
Installing and Configuring Distributed Administration

1.0



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PART 1

Introduction

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CHAPTER 1

Introduction

This release contains Distributed Administration for The Solution Series. This Release Guide highlights the new functionality provided by this feature and includes installation instructions for upgrading your 'vanilla' (as delivered, unmodified) system environment with this new functionality.

Documentation has been included with this release that explains how to use the new features.

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Introduction

This release contains Distributed Administration for The Solution Series. This Release Guide highlights the new functionality provided by this feature and includes installation instructions for upgrading your 'vanilla' (as delivered, unmodified) system environment with this new functionality.

Documentation has been included with this release that explains how to use the new features.

Scope

This release applies to all non-relational and relational users of The Solution Series. The information in this Release Guide has been written for customers currently using The Solution Series who wish to install and implement the Distributed Administration.

Prerequisites

The Solution Series and the Distributed Administration must be installed at all sites where you wish to distribute data.

Who should read this Install Guide

This Release Guide is divided into a number of chapters, with each chapter aimed at a different audience.

Chapter 2: Installation - Installing the System

This chapter details how to install the Distributed Administration with The Solution Series system. It should be read by the system administrator and others who will be responsible for installing the DS feature.

Appendix A: Machine Parameters

This appendix details machine parameter information for Distributed Administration programs.

Appendix B: Delivered Scripts

This appendix lists the delivered files.

For more information

Refer to our manual *Using the Distributed Administration* for more information on planning, configuring, and performing Distributed Administration operations.

What is Distributed Administration?

Distributed Administration provides a means of capturing data created and revised at remote locations and sharing those changes dynamically with other sites. This allows multiple sites to simultaneously run The Solutions Series while dynamically updating remote data and receiving updates to their local data.

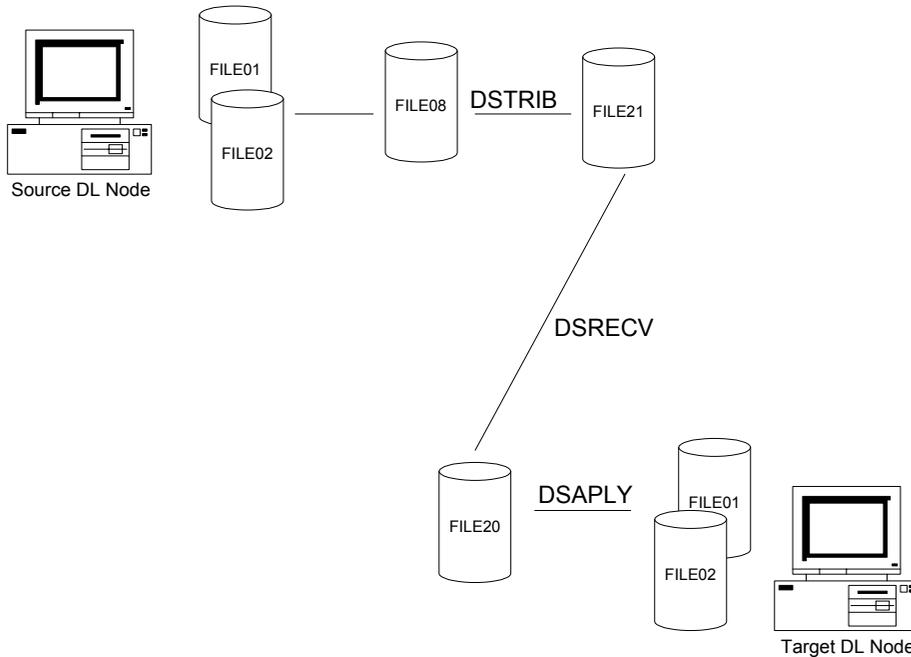
Unlike other distribution processes, Distributed Administration does not require master/slave relationships. This process supports peer-to-peer, hierarchical, and specialized server topologies where bi-directional replication is based on user-defined data sharing decisions.

Distributed Administration employs a 'store and forward' data sharing technique, where The Solution Series human resources and payroll changes are collected real-time and placed in a holding file. Data can be filtered from the holding file and distributed on a daily or more frequent basis. Additionally, the holding file acts as a recovery facility, permitting re-extraction of previously transmitted data and resubmission to a requesting site.

What occurs when Distributed Administration is active

When configured to use Distributed Administration files, the source Distributed Location (DL) automatically logs all local data additions, revisions, and deletions into its Data Replication File (FILE08). This process is performed automatically by The Solution Series core programs .

Only those data changes a target node is allowed to share (per the source DL's configured distribution rules) are distributed from the source node's Replication Holding File (FILE08) to the Replication Packet File (FILE21) when the Replication Distribution Program (DSTRIB) is invoked. This only occurs if the node is set up to share its data updates, and then only when DSTRIB is run.



Each target (remote) DL must invoke the Replication Distribution Program (DSRECV) to obtain data left for it in a source DL's Replication Packet File (FILE21), then run the Replication Application Program (DSAPLY) to convert the data appropriately and apply the updates (FILE20) to its local System Control Repository (Control File; FILE01) and Employee Database (Master File; FILE02).

Dynamic data sharing

The Distributed Administration application follows a store and forward replication methodology, where data is collected in real time and placed into a holding file. Once new or revised data has been replicated (copied into a holding file), it can be distributed to other locations on your network. This form of dynamic data sharing allows much faster and more efficient updates to the locations where the data is being used. The holding file also acts as a recovery facility that permits re-extraction of previously transmitted data for resubmission to a requesting site.

The FILE08 Replication Holding File

The Replication Holding File (FILE08) contains records of those changes made on the local computer that may be distributed to other locations at some point in time (determined by

you). If the local distribution rules dictate that these updates be shared with a particular DL, they will be copied to the Replication Packet File (FILE21) for that DL.

Note Each FILE21 is target-specific. There may be as many target-specific Replication Packet Files as there are target DLs.

The FILE21/20 Replication Packet File

The Replication Packet File (FILE21) contains those updates ready to be distributed to a node on the network and FILE20 contains updates obtained from other nodes on the network.

Replication vs. distribution

Simply because data is replicated (copied into a holding file), does not mean the data will be distributed to other locations throughout the network. Data changes are distributed to other locations based entirely on how the source DL's distribution rules are configured. Likewise, your local DL (acting as a target DL) will only receive those data changes from remote locations that the remote DL administrators allow your site to receive. If the source DL's distribution rules restrict your target DL's access to specific data changes, you will not be able to access the specified data.

Data types that can be replicated and distributed

All data on each DL will not necessarily be replicated. For instance, each DL owns its own System Control Repository (Control File; FILE01). Only codesets and tables are replicated, and only replicated data may be distributed to other DLs.

Below is a list of the types of data that *will* be replicated, and thus may be distributed:

- Any changes made to codesets and tables (except Distributed Administration tables) in the System Control Repository (Control File; FILE01)
- Any changes resulting from user input/revisions to the Employee Database (Master File; FILE02)
- Any changes resulting from batch processing (including payroll batch processing)

PART 2

Part 2 - Installing and Configuring Distributed Administration

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CHAPTER 2

Installing the System

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Introduction

This chapter provides detailed instructions for installing Distributed Administration on all supported platforms. The instructions in this section presume you have installed a 'vanilla' (as delivered, non modified) version of The Solution Series.

Deliverables

You should have received the installation files on CD-ROM, as well as this guide and the *Using Distributed Administration* manual in .pdf format in the \docs directory of the CD.

If you are missing any of these, please contact your Cyborg representative.

Overview of the installation

Task 1. Load the programs on a PC

Task 2. Move files from the PC to the Server

Task 3. Install Distributed Administration files

Task 4. Create the Replication Holding File (FILE08)

Installation Instructions

Note: It is strongly recommended that a **BACKUP** of the entire Solution Series environment be performed before beginning this procedure. Refer to the *Technical Administration of The Solution Series* guide for **BACKUP** instructions.

Load the programs on a PC

Insert the installation CD into the CD-ROM drive, and the installation web page automatically appears. From this page, click on the following:

Install Distributed Administration

Follow the installation prompts. The following table tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\CYBORG50	use default, or... Other:
Setup Type	*Typical (default) *Compact *Custom	

The installation program will prompt you when it is complete.

Move files from the PC to the server (Windows 2000 only)

Copy files to correct The Solution Series directories on server

If you look in the directory where the files have been installed, you will find the following directory:

..\ADS\NT

Under the \NT directory, you will find the following subdirectories:

- ..\Data
- ..\Runs

Copy the contents of those subdirectories into the corresponding subdirectories of the The Solution Series environment.

Move files from the PC to the server (UNIX, OS/390, and AS/400)

Note For AS/400 installations, this process also creates *FILE08*, *FILE20*, and *FILE21*.

1. Edit FTP job for the correct server name or IP Address

Job Used: jftp

Before running this job, you must edit it to use the correct server name or IP Address of the machine where The Solution Series is installed. Open the job in a text editor and add the server name or IP Address to the following line:

```
SET FTPTOSYS=
```

2. Edit FTP job for the correct platform

Job Used: jftp

Before running this job, you must edit it to use the proper ftp commands script. Open the job in text editor and add one of the following filenames, depending on which platform you are installing:

- **AS/400 filename:** ftpcmds_ds.as4
- **OS/390 filename:** ftpcmds_ds.os2
- **UNIX filename:** ftpcmds_ds.unx

Add the correct ftp command filename to the following line in the jftp job:

```
SET FTPCMDS=
```

Save the changes once complete.

3. Download the files

Job Used: jftp

At the command prompt, run the edited jftp job. When entering the command to execute this job, the format should be:

```
jobname username
```

You will be prompted for the password. Review the ftpupload.log, located in the same directory as the install files, for error messages.

You should see 'Job completed'.

Install Distributed Administration files

1. Apply The Solution Series changes

Download and MAINTI all .ptfs affecting Distributed Administration from CUBBS.

2. Allocate files (OS/390 only)

Note: Windows, UNIX, and AS/400 installations may skip to the next step..

Job used: JDELDEF8

This job defines FILE08.

Note: For OS/390 installations, FILE20 and FILE21 have already been defined.

The following example demonstrates the characteristics for the FILE20:

```
Data Set Name . . . : CYBORG.FILE20
```

```

General Data                               Current Allocation
Volume serial . . . : TSO30A                Allocated cylinders : 4
Device type . . . . : 3390                  Allocated extents . : 1
Organization . . . . : PS
Record format . . . . : VB
Record length . . . . : 640
Block size . . . . . : 27998                Current Utilization
1st extent cylinders: 4                      Used cylinders . . . : 1
Secondary cylinders : 5                      Used extents . . . . : 1

Creation date . . . : 2001/05/17
Referenced date . . : 2001/05/17
Expiration date . . : ***None***
    
```

The following example demonstrates the characteristics of the FILE21:

```

Data Set Name . . . : CYBORG.FILE21

General Data                               Current Allocation
Volume serial . . . : TSO30A                Allocated cylinders : 4
Device type . . . . : 3390                  Allocated extents . : 1
Organization . . . . : PS
Record format . . . . : V
Record length . . . . : 850
Block size . . . . . : 854                  Current Utilization
1st extent cylinders: 4                      Used cylinders . . . : 1
Secondary cylinders : 5                      Used extents . . . . : 1

Creation date . . . : 2001/04/25
Referenced date . . : 2001/05/17
Expiration date . . : ***None***
    
```

3. Extract, compile, and link Distributed Solution programs

**Jobs Used: JXDSPACK
JXDSTRIB
JXDSRECV**

These jobs use the delivered library file (DSCYBMST) and P9CNVT to extract, compile, and link Distributed Solution programs (DSPACK, DSTRIB, and DSRECV).

Refer to the delivered JCLs for any overrides that may be necessary.

4. Review jobs to remove remarks from FILE08 references (OS/390 only)

Note: *Windows, UNIX, and AS/400 installations may skip this step.*

For OS/390 installations of *The Solution Series*, any jobs that reference CBSVB will also have lines of code referecing FILE08. As delivered, these lines referring to FILE08 are remarked out with an asterisk. To integrate these jobs with Distributed Administration, you must edit each one to remove the remark (*) from the beginning of the line.

Initialize the Replication Holding File (FILE08)

It is important to initialize the Replication Holding File (FILE08) on your system before you activate Distributed Administration.

Initialize a Replication Holding File (FILE08)

Job used: JDSCR08

This job accesses and initializes FILE08.

*Your installation of Distributed Administration for
The Solution Series is now complete.*

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Delivered Scripts

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Introduction

This appendix provides lists, by platform, of the delivered scripts used to install The Distributed Solution.

Delivered Scripts

UNIX, AS/400

- Jdsaply
- Jdscr08
- Jdspack
- Jdsrecv
- Jdsrset
- Jdstrib
- Jdsuset
- Jxdspack
- Jxdsrecv
- Jxdstrib

OS/390

- jdeldef8
- jdsaply
- jdscr08
- jdspack
- jdsrecv
- jdsrset
- jdstrib
- jdsuset
- jxdspack
- jxdsrecv
- jxdstrib

Windows NT/2000

- jdsaply.bat
- jdscr08.bat
- jdspack.bat
- jdsrecv.bat
- jdsrset.bat
- jdstrib.bat
- jdsuset.bat
- jxdspack.bat
- jxdsrecv.bat
- jxdstrib.bat

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Introduction

This appendix provides detailed machine parameter information for Distributed Administration programs. These machine parameters are to be used along with the delivered library file (DSCYBMST) to extract, compile, and link Distributed Administration executables (DSTRIB, DSRECV, and DSPACK).

UNIX and Windows Platforms Using Merant Compiler (with or without relational database)

```

      1   1   2   2   3   3   4   4   5
1...5...0...5...0...5...0...5...0...5...0
DSTRIB      | ISEV@C                MICRO-FOCUS.
  ** C.DSTRIB
  999999
DSRECV      | ISEV@C                MICRO-FOCUS.
  ** C.DSRECV
  999999
DSPACK      | ISEV@C                MICRO-FOCUS.
  ** C.DSPACK
  999999

```

AS/400 Platforms (with or without relational database)

```

          1      1      2      2      3      3      4      4      5
1...5...0...5...0...5...0...5...0...5...0
DSTRIB      MI54ECY                      AS400.
  ** C.DSTRIB
    999999
DSRECV      MI54ECY                      AS400.
  ** C.DSRECV
    999999
DSPACK      MI54ECY                      AS400.
  ** C.DSPACK
    999999
```

IBM Mainframe Platforms (with or without relational database)

	1	1	2	2	3	3	4	4	5
1...5...0...5...0...5...0...5...0...5...0									
DSTRIB	OPCY								IBM-370.
** C.DSTRIB									
999999									
DSRECV	OPCY								IBM-370.
** C.DSRECV									
999999									
DSPACK	OPCY								IBM-370.
** C.DSPACK									
999999									

eCyborg

Installing and Configuring eCyborg 5.0 (UNIX)

1.1



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PART 1

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CHAPTER 1

Introduction

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Welcome

This document provides detailed installation instructions for eCyborg Version 5.0 on a UNIX environment.

Overview of this Installation Guide

This Installation Guide is divided into the following chapters and appendices:

Read this chapter	For
1. Introduction	An overview and description of the prerequisites required for successful installation
2. Indexed Solution Series Installation and Configuration	Detailed instructions for installing the indexed version of The Solution Series on a UNIX server
3. Relational Solution Series Installation and Configuration	Detailed instructions for installing the indexed version of The Solution Series on a UNIX server
4. Cyborg Application Service (CAS) Installation and Configuration	Detailed instructions for installing the CAS on the server
5. Installing and Configuring the Web Client on the Web Application Server	Detailed instructions for installing the Web Client server components on the Web Application Server
6. Client Installation and Configuration	Details of the prerequisite Administrative client configuration for use with the UNIX server
A. Directory Contents	Detailed information on the files used and programs installed during the course of the installation and the purposes they serve
B. Installation Checklists	Detailed checklists ideal for use when installing this implementation of The Solution Series on your UNIX server
C. Creating Separate Environments on the Server for the Client	Basic instructions for creating separate environments of The Solution Series
D. Database Considerations	Detailed instructions to properly create the database and minimize any 'rework' in the future or troubleshoot database problems

Read this chapter	For
E. Administering the Cyborg Application Server (CAS) Daemon	Instructions on how to perform administrative tasks on the CAS daemon, including how to use the CAS Administration Utility
F. Disk Requirements Worksheets	Guidance in calculating the disk space your company will need

How to get additional help

If you can not find the answers to your questions in this manual, contact Customer Support, who will be able to answer specific questions and give you general advice on training.

Please visit our web site www.Cyborg.com for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

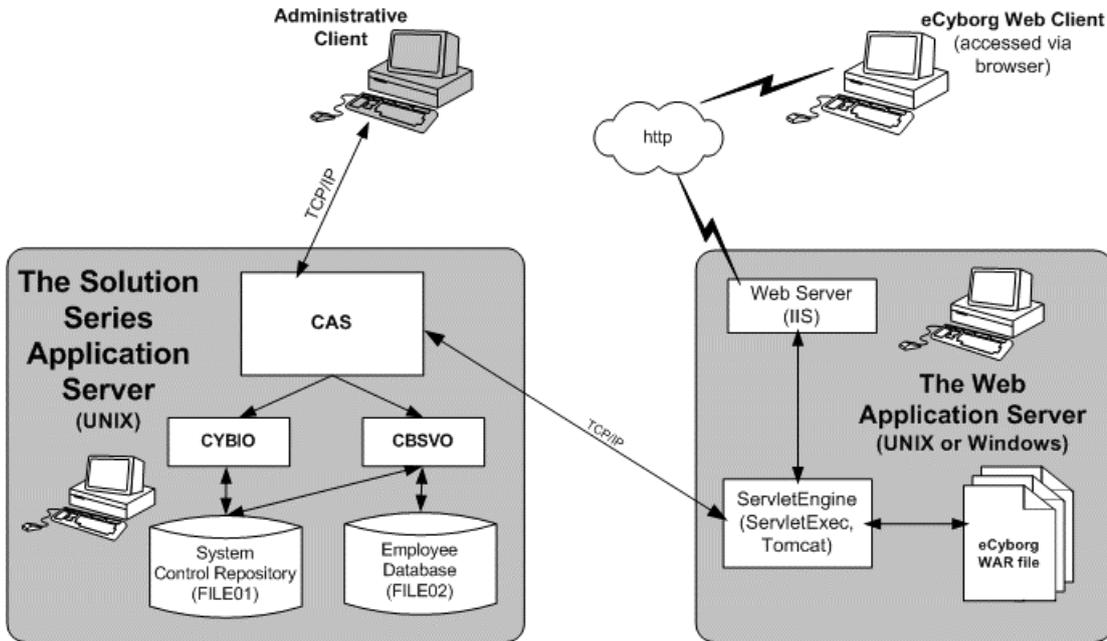
Prerequisites

This Installation Guide will be most beneficial if you are familiar with the terminology used throughout. You should be familiar with The Solution Series and UNIX and ORACLE Database Server concepts. Other prerequisites are detailed below.

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Installation of eCyborg

When installing eCyborg, you will be installing and configuring several machines. In UNIX implementations, The Solution Series Application Server is a UNIX machine, while The Web Application Server is run on a Windows machine, as shown here:



The Solution Series Application Server

The core of the system is The Solution Series: CYBIO, CBSVO, the System Control Repository (FILE01), and the Employee Database (FILE02). Along with these, the Cyborg Application Service (CAS) is installed.

The Web Application Server

The software which generates the Web Client can be installed on a separate machine, referred to in this guide as The Web ApplicationServer, or on the same machine as The Solution Series Application Server (indicated by the dotted line in the illustration above).

If you are running eCyborg alone, you may have the Web Application Server on the same machine as The Solution Series Application Server, or on a separate UNIX machine.

If you are running eCyborg with Interactive Workforce, you may have both the Web Client software and Interactive Workforce installed on the same Windows Server if you wish to share ServletExec between the two systems.

The Administrative Client

The Administrative Client is the Windows interface to The Solution Series, and includes the FILECL.

The Web Client

Not part of the installation, any PC with a web browser can access The Solution Series through the Web Client.

Server disk requirements

The server contains both the System Control Repository—containing system objects and data dictionary (F and RFM records)—and the Employee Database. The disk space requirements on the server can vary depending on the access method used. These access methods include the following:

- Indexed
- Relational

The following table shows the approximate disk requirements for the server files in these environments. Note that these figures only reflect the amount of disk space required for the data on the System Control Repository and the Employee Database as delivered. Additional space may be needed to support your data:

	Indexed	Relational
System Control Repository	75MB	75MB
Employee Database	Typical: 12,500 bytes/employee	Typical: 27,500 bytes/employee

Additional disk space may be required based upon the amount of payroll and labor distribution history retained online.

The storage requirements of the The Solution Series are efficient and expandable based on data content to accommodate the data retention requirements of customers. There is no system constraint on the amount of data retained or the length of time for which it is retained.



*Refer to **ORACLE Disk Requirements Worksheets** for guidance in calculating the disk space your company will need.*

The Solution Series Application Server

HP-UX hardware and software requirements

HP-UX Minimum Hardware Requirements

Operating system	HP-UX 11 or later
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB plus 500 MB per Cyborg environment, in addition to operating system requirements
Processor	650 MHz dual
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor
File partition	Dedicated file partition to install the Cyborg server software
User account	Cyborg installation user account that has full access to above partition

The operating system must support the following Open Group standards:

- Internationalized System Calls and Libraries Extended (formerly known as XPG4 Internationalized System Calls and Libraries Extended Component)
- Sockets (formerly known as XPG4 Sockets Component)

HP-UX Software Requirements - The Solution Series Application Server

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Indexed

Operating System	HP-UX 11 or later
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit)
C Compiler	HPa C v.B.11.01.20
Suggested Maintenance	HP aC++ runtime, with library patches PHSS 21906 or later
Other	■ NFS (for ERP)

Relational (Oracle)

Operating System	HP-UX 11 or later
Database Server	ORACLE8i Enterprise Edition (8.1.7) Dedicated Oracle Instance ¹
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit) -and- Pro*Cobol 1.8
C Compiler	HPa C v.B.11.01.20
Suggested Maintenance	HP aC++ runtime, with library patches PHSS 21906 or later
Other	■ NFS (for ERP)

1. The Cyborg application uses eight ORACLE tablespaces to store information. For optimal performance, it is recommended spanning these tablespaces through three partitions. These partitions have to be owned by the ORACLE DBA account.

Solaris hardware and software requirements**Solaris Minimum Hardware Requirements - The Solution Series Application Server**

Operating system	Solaris 8 or later
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB plus 500 MB per Cyborg environment, in addition to operating system requirements
Processor	650 MHz dual
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor
File partition	Dedicated file partition to install the Cyborg server software
User account	Cyborg installation user account that has full access to above partition

The operating system must support the following Open Group standards:

- Internationalized System Calls and Libraries Extended (formerly known as XPG4 Internationalized System Calls and Libraries Extended Component)
- Sockets (formerly known as XPG4 Sockets Component)

Solaris Software Requirements - The Solution Series Application Server

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Indexed

Operating System	Solaris 8
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit)
C Compiler	Forte Developer 6 C compiler
Other	■ NFS (for ERP)

Relational (Oracle)

Operating System	Solaris 8
Database Server	ORACLE8i Enterprise Edition (8.1.7) Dedicated Oracle Instance ¹
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit) -and- Pro*Cobol 1.8
C Compiler	Forte Developer 6 C compiler
Other	■ NFS (for ERP)

1. The Cyborg application uses eight ORACLE tablespaces to store information. For optimal performance, it is recommended spanning these tablespaces through three partitions. These partitions have to be owned by the ORACLE DBA account.

AIX hardware and software requirements

AIX Minimum Hardware Requirements

Operating system	AIX 4.3.3 or later
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB plus 500 MB per Cyborg environment, in addition to operating system requirements
Processor	950 CPW
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor
File partition	Dedicated file partition to install the Cyborg server software
User account	Cyborg installation user account that has full access to above partition

The operating system must support the following Open Group standards:

- Internationalized System Calls and Libraries Extended (formerly known as XPG4 Internationalized System Calls and Libraries Extended Component)
- Sockets (formerly known as XPG4 Sockets Component)

AIX Software Requirements

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Indexed

Operating System	AIX 4.3.3
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit)
C Compiler	C for AIX v6.0
Recommended Maintenance	Visual Age C++ runtime, with PTF 5.0.2.1 or later
Other	■ NFS (for ERP)

Relational (Oracle)

Operating System	AIX 4.3.3
Database Server	ORACLE8i Enterprise Edition (8.1.7) Dedicated Oracle Instance ¹
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit) -and- Pro*Cobol 1.8
C Compiler	C for AIX v6.0
Suggested Maintenance	Visual Age C++ runtime, with PTF 5.0.2.1 or later
Other	■ NFS (for ERP)

1. The Cyborg application uses eight ORACLE tablespaces to store information. For optimal performance, it is recommended spanning these tablespaces through three partitions. These partitions have to be owned by the ORACLE DBA account.

The Web Application Server - eCyborg

HP-UX Minimum Hardware Requirements

Operating system	HP-UX 11, HP9000
RAM	1 GB, in addition to operating system requirements
Disk space	500 MB
Processor	650 MHz dual
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor

Solaris Minimum Hardware Requirements

Operating system	Solaris 8, Sun Solaris Ultra SPARC
RAM	1 GB, in addition to operating system requirements
Disk space	500 MB
Processor	650 MHz dual
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor

AIX Minimum Hardware Requirements

Operating System	AIX 4.3.3, RS 6000 - pSeries
RAM	1 GB
Disk space	500 MB
Processor	750 MHz dual
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor

UNIX Software Requirements - The Web Application Server

Web Server	Apache 2.0.32
Servlet Engine	Tomcat 4.01
Java	Sun Java Development Kit (JDK) 1.3.1

The Web Application Server - eCyborg with Interactive Workforce

If you are running eCyborg with Interactive Workforce, the Web Client software and Interactive Workforce should be installed on the same Windows Web Application Server.

Minimum Hardware Requirements

The Web Application Server requires the following:

Operating system	Microsoft Windows 2000, Service Pack 2
RAM	1 GB
Disk space	500 MB
Processor	800 MHz dual
Media access	Access to CD-ROM drive (locally or on a network)

Software Requirements

Note: Cyborg supports a Windows 2000 server with SQL Server 2000 database management software OR a Windows 2000 server with SQL 2000 database management software.

The Web Application Server (eCyborg only)

Operating System	Microsoft Windows 2000 (Service Pack 2)
Web Server	Internet Information Server (IIS) 5.0
Servlet Engine	Jakarta Tomcat 4.01 -or- ServletExec 4.1.1 (Service Pack 7)
Java Development Kit	Java Development Kit (JDK) 1.3.1 with Java Cryptology Extension (JCE) 1.2.1

The Web Application Server (with Interactive Workforce*)

Operating System	Microsoft Windows 2000 (Service Pack 2)
Database Server	SQL 2000
Web Server	Internet Information Server (IIS) 5.0
Servlet Engine	ServletExec 4.1.1 (Service Pack 7)
Java Development Kit	Java Development Kit (JDK) 1.3.1 with Java Cryptology Extension (JCE) 1.2.1

*If you already have eCyborg Interactive Workforce installed, then these prerequisites will already be installed on the machine and may be shared with the eCyborg Web Server software.

The Administrative Client hardware and software requirements

Minimum Hardware Requirements

The Administrative Client requires the following:

Operating system	Windows 2000 Professional (Service Pack 2) Windows XP Professional Edition Windows NT Workstation Professional Edition
RAM	128 MB
Disk space	250 MB
Processor	500 MHz Pentium 500 or higher
Media access	Access to a CD-ROM drive (either locally or on a network)
Monitor	SVGA 800x600

Software Requirements

The Administrative Client requires the following software:

Administrative Client Software Requirements
Microsoft Windows 2000 -or- Windows XP Professional Edition -or- Windows NT Professional Edition
Microfocus runtime license
Windows messaging
TCP/IP

Note: Based upon your employees' individual client workstation setups, there may be missing shared .dll or .ocx files that the Cyborg product uses that are non-distributable Microsoft shared system files. If this occurs, your IT staff will need to locate and download (usually on the Microsoft website) the required file for inclusion on your PCs.

PART 2

Installing and Configuring The Solution Series Application Server

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CHAPTER 2

Indexed Solution Series Installation and Configuration

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Indexed Server Installation and Configuration

This section provides detailed instructions for installing The Solution Series Application Server on a UNIX system.

This is a technical section aimed at system administrators.

Note: Throughout this section, we have suggested a naming convention for log files created when you run the batch job. By entering a command such as:

```
rz jpayxtr
```

you run the script and create the log. You may name the log any way you wish, but be sure to review all output after each script is run to identify and address any errors that may have occurred.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for UNIX'
1	Installing and Configuring eCyborg 5.0 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Prepare for installation

Phase 2: Extract and Transfer Install

Phase 3: Compile Batch and Build FILE01

Phase 4: Compile CBSVO and CYBIO

Phase 5: Create Test p20in Batch Master

Phase 6: Create Employee Database with pay history

Phase 7: Extract HR reports

Phase 8: Apply System Control Repository Menu Additions



Refer to Appendix B: Installation Checklists for detailed checklists to use when installing The Solution Series on your UNIX server.

Phase 1: Prepare for installation

Install and configure prerequisite software

It is assumed that you have already installed and configured the prerequisite software on the server. These must be in place before beginning the installation.

Create user and file system

To create the user and file system for your installation, perform the following steps:

1. Check for or create a file system

Set a file system for CYBORG with at least 500 MB of free space.

2. Create the installation user account

A user ID of 'cyborg' is required for the installation of the Cyborg Application Server (CAS) daemon. You must set up the permissions for this new account (for example '777' for the app directory and the files within it).

Note If you already have an existing 'cyborg' account from a previous installation, re-use the existing 'cyborg' user account.

3. Log into the system

Log into the system using the given installation user account.

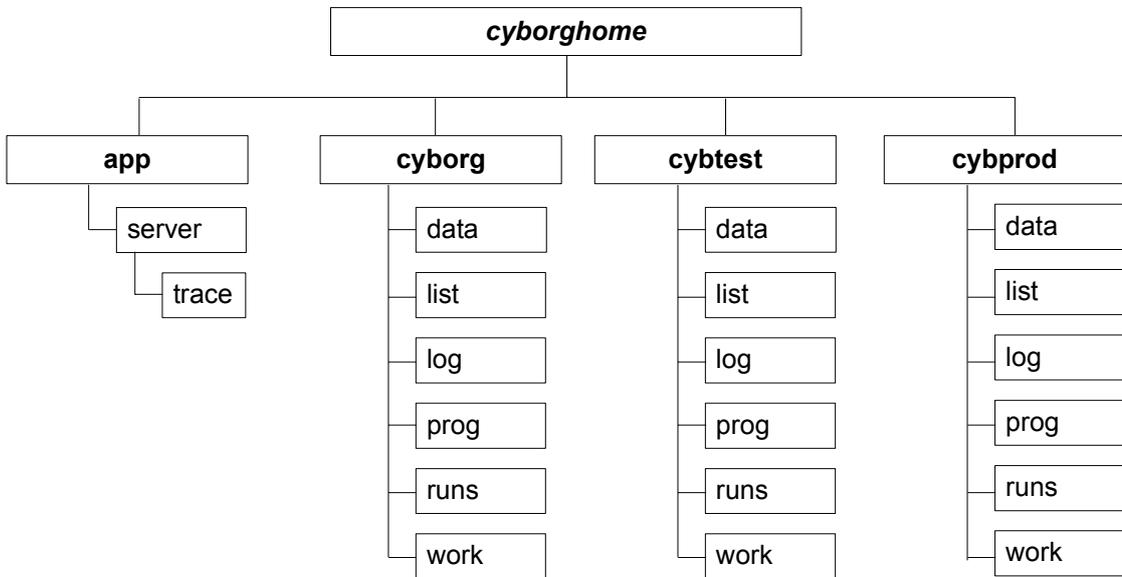
Phase 2: Extract and Transfer Install Files

The Solution Series directory structure

The Cyborg server software is delivered in two main directories: `/cyborghome/app` and `/cyborghome/Cyborg`. The name of the directory `/cyborghome` and subdirectory `Cyborg` is customizable during media installation.

Follow the appropriate steps listed below to copy the installation files and directory structure to your server.

Note As shown in the diagram below, the `/cyborghome/app` directory must exist only **once**—no matter how many Cyborg environments you have installed.



Extract install files to a PC

Be sure to have at hand the configuration worksheet completed as part of the project planning phase as you may need to refer to it as you load programs on the PC.

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page starts automatically. Scroll through the page, then click on the following link to start the autoinstall:

Install The Solution Series Application Server

Follow the installation prompts. The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Setup Type	*Typical (default) *Compact *Custom	
UNIX	*AIX RS6000 (default) *HP-UX *Solaris	
Destination	C:\Cyborg50-UNIX\	Other:
Select Index or Relational	*Indexed (default) *Relational (Oracle)	
UNIX Server HOSTNAME or IP Address	HOSTNAME	Enter IP Address or Hostname of UNIX Server:
File System	/cyborghome/CYBORG50	Other:

The installation program will prompt you when it is complete.

Transfer install files from the PC to the server

1. Verify system name and variables

FTP Command Script: `ftpcmds_xx_idx.unx`

The information that was entered during the copying of programs from the CD to the PC has been inserted into this file.

2. Run the file transfer program

Script used: `jftp`

Run the file transfer script from a command prompt on the Windows client. This will load the The Solution Series files from the PC to the UNIX machine.

Note You will need to have the FTP capability enabled on both systems.

Example of command line to run this job:

JFTP USERNAME

You will be prompted for the password. You can verify the ftp by checking the `ftpupload.log` file which will be generated in the same directory with the ftp job.

Note The following command is included in the ftp script:

```
quote site chmod 755 jinstallst
```

If the following error "SITE command not implemented" is present in your `ftpupload.log` file, you must manually enable the access modifier to '755' on the `jinstallst` script before running it.

Extract server install files

Script used: jinstallst

This script should be run while logged in as 'CYBORG' user, and it extracts and installs the UNIX files onto the server.

Follow the installation prompts. The table following tells you what information the install script will require. If you need anything other than the defaults, use the information in the 'Enter the following...' column.

Prompt	Options/ Defaults	Enter the following...
Enter the directory where the installation files were uploaded.	/installfiles/ CYB50_Install	Other:
Enter the top-level directory where the software will be installed.	/cyborghome	Other:
Please indicate whether you would like to install the base The Solution Series product.	—	yes
Enter the name of the directory where The Solution Series will be installed	CYB50	Other:
Please indicate whether you would like to install the Cyborg Application Server (CAS)	—	yes

The installation script will prompt you to verify that the information entered is correct and if you wish to proceed with the installation. Once the files have been successfully installed,

you may delete the The CYB50_Install directory and all its files created by the FTP process.

Note: The install program pipes error messages sent to the screen through user parameter \$PAGER to control error messages from scrolling off the screen. Press a key when you see the -MORE- prompt.

Set up user profile

The 'Cyborg' user needs its profile to include the updated values for the MicroFocus environment variables and \$PATH.

To set up the user profile, perform the following steps:

1. Modify Cyborg environment variable lines in the .profile

You need to modify the .profile identifying necessary variables for the Cyborg environment. Include the following lines in the .profile:

```
data=/cyborghome/CYBORG50/data      ; export data
work=/cyborghome/CYBORG50/work      ; export work
list=/cyborghome/CYBORG50/list      ; export list
prog=/cyborghome/CYBORG50/prog      ; export prog
runs=/cyborghome/CYBORG50/runs      ; export runs
TERM=vt100                          ; export TERM
PATH=$PATH:/cyborghomeThe Solution Series45/runs ; export PATH
```

Note The directory /cyborghome/CYBORG50 is the default directory for the Cyborg product.

2. Include Micro Focus environment variable lines in the .profile

You need to modify the .profile identifying necessary variables for the Micro Focus COBOL Compiler. Include the following lines in the .profile:

```
COBDIR=/usr/lib/cobol                ; export COBDIR
LD_LIBRARY_PATH=/usr/lib/cobol/coblib ; export LD_LIBRARY_PATH
SHLIB_PATH=/usr/lib/cobol/coblib     ; export SHLIB_PATH
```

Note Please refer to the Micro Focus installation guide for the settings for these Mvariables.

3. Include location of C compiler in the PATH

You need to add the file path of the C compiler to the .profile. For example:

HP-UX example:

```
PATH=/opt/ansic/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

AIX example:

```
PATH=/usr/vac/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

Solaris example:

```
PATH=/opt/SUNWspro/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

4. Refresh environment variables

Refresh the environment so the logical names take effect by executing the following:

```
././profile (dot-space-dot-slash-dot-profile)
```

Verify compiler versions

The delivered binary programs were compiled on the certified platform versions, and are not guaranteed to run on earlier versions. To verify that MicroFocus variables are set correctly, perform the following steps:

1. Execute the cob command

To verify that Micro Focus variables are set correctly, execute the following command:

```
cob
```

The response should be:

```
I see no work
```

Note If you do not receive this response, verify that your Micro Focus environment variables are set correctly.

2. Verify the version of the installed compilers

To verify what version of Micro Focus is installed, execute the following command:

```
cat $COBDIR/etc/cobver
```

This will show you the version and revision level of the COBOL compiler installed.

To obtain the C version, perform the following command for your operating system:

Sun Solaris

```
$ cc -V 2>&1 |head -1
```

AIX

```
$ ls1pp -L|grep ibmcxx.cmp|cut -c30-34|head-
```

HP-UX

```
$ what /usr/bin/cc|head -2|tail -1
```

Note These examples are case-sensitive.

Check special requirements

Perform the following steps to check special requirements each time a script is run:

1. Check output

Each time a script is run, check all output before another one is executed. For example, verify the output of the compiles and/or audit reports.

2. For HP9000 machines, compile all COBOL programs with the 'hoptimize' compiler directive off

Set the `hoptimize` compiler directive to off in your existing HP9000 compile jobs. The following is a sample of how you set this compiler directive:

```
cob -xv -C "align(4) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt  
hoptimize=0" $prog/{program}.cob -o $prog/{program}
```

3. If your operating system is 64-bit, compile all COBOL programs with the 'align(8)' compiler directive

Insert the `align(8)` compiler directive into your existing compile jobs. The following is a sample of how you include this compiler directive:

```
cob -xv -C "align(8) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt"  
$prog/{program}.cob -o $prog/{program}
```

4. If you have more than one HP PA-RISC platform, insert the '+DAportable' native code generator

Beginning with the HP-UX 10.20 release, the default object code generated by HP compilers is determined automatically as that of the machine on which you compile. (Previously the default code generation was PA-RISC 1.0 on all Series 700 and 800 systems.)

To avoid PA-RISC platform conflicts, set the `+DAportable` native code generator in your existing HP compile jobs. The following is a sample of how you set this native code generator:

```
cob -xv -C "align(8) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt  
hoptimize=0 +DAportable" $prog/{program}.cob -o $prog/{program}
```

Phase 3: Compile Batch and Build FILE01

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (or logs) to determine success or failure before another script is executed.

Pull all cybmst programs

Script used: jxcybmst

To extract and compile all `cybmst` COBOL programs (`p9cnvt`, `p2edit`, `p4calc`, `p5prnt`, `o4calc`), execute the `jxcybmst` script from the `$runs` subdirectory.

For example:

```
rx jxcybmst
```

Review the log, then the `cybmst.03` list file in the `$list` subdirectory to determine if there were any errors.

Compile and link the delivered cbsvb and cbsvrft

Script used: jcmpcvbn

To compile the non-relational batch program `cbsvb` as delivered by Cyborg, execute the `jcmpcvbn b` script from the `$runs` subdirectory. The 'b' parameter is passed onto the script in order to specifically compile the batch program (that is, `cbsvb`).

For example:

```
rx jcmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Script used: jcmpsort

To compile `p10sort.cob`, `p45sort.cob`, `p80sort.cob`, `p80copy.cob`, and `pfssort.cob`, execute the `jcmpsort` script from the `$runs` subdirectory.

For example:

```
rx jcmpsort
```

Review the log to determine if there were any errors.

Create System Control Repository

Script used: jdemo01

This procedure creates a random System Control Repository. Execute the `jdemo01` job.

For example:

`rj jdemo01`

Review the log, then the `demo.03` list file in the `$list` subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages. For example:

```
DEMO01 V001 07-17-2002 15:09:14 RECORD COUNT=567,062
-----
CSSS <UTIL( (999999(DISPLY( ( ( )15:57:33 07-25 XXXX
ZZTEST 99999E RELOAD IS OK. Ver-5.0 LENGTH 531 07-25-02 15:55:09
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P RDEMRQ ***** RELOAD NOT FOUND *****
P RDTBPL ***** RELOAD NOT FOUND *****
P RTCTRL ***** RELOAD NOT FOUND *****
P TBLENT ***** RELOAD NOT FOUND *****
P TBLINQ ***** RELOAD NOT FOUND *****
P TBLUPD ***** RELOAD NOT FOUND *****
P TBLVER ***** RELOAD NOT FOUND *****
P V-NAME ***** RELOAD NOT FOUND *****
P WPTM ***** RELOAD NOT FOUND *****
```

Phase 4: Compile CBSV and CYBIO

Pull all cbsv programs - jpulcvn

Script used: jpulcvn

For example:

```
rj jpulcvn
```

Review the log, then the `pulcvn.03` list file in the `$list` subdirectory to determine if there were any errors.

Compile and link all cbsv programs

Script used: jcmpcvn

For example:

```
rj jcmpcvn
```

Review the log, to determine if there were any errors.

Compile and link cybio

Script used: jcmpcbio

To compile and link the `scncybio.c`, `logging.c`, and `cybio.cob` programs, execute the `jcmpcbio` script from the `$runs` subdirectory. For example:

```
rj jcmpcbio
```

Review the log, to determine if there were any errors.

Phase 5: Create Test p20in Batch Master

Create test p20in Batch Master

Script used: **jp20strt (U.S.)**
 jp20strc (Canada)

To extract the report generators from `cybmst` and create the `p20in` Batch Master File, execute the `jp20strt` script from the `$runs` subdirectory with `p9strt` and `p9cbstv` as input.

Input files

<code>p05t80</code>	<code>p9strt</code>
<code>p05t81</code>	<code>p9cbstv (U.S.)</code>
	<code>p9cbvsc (Canada)</code>

The `p2edit`, `p4calc`, and `p5prnt` programs are processed.

For example:

```
rp jp20strt
```

Review the log, then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

```
audit2.trl  
p20strt.03  
translod
```

Phase 6: Create Employee Database with pay history

Create test Employee Database

Script used: jpaymrg

To create a test Employee Database, execute the `jpaymrg` script from the `$runs` subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Populate database with test data

To populate the database with test data, perform the following steps:

1. Apply demo test data

**Script used: jprdemo (U.S.)
 jprdemoc (Canada)**

To pull test data from the System Control Repository and populate fields in the online Employee Database, execute the `jprdemo` script from the `$runs` subdirectory.

For example:

```
rj jprdemo
```

Review the log, then the `prdemo.03` list file in the `$list` subdirectory to determine if there were any errors.

2. Apply remaining demo test data

**Script used: jhrdemo (U.S.)
 jhrdemoc (Canada)**

To pull the remaining test data from the System Control Repository and populate fields in the online Employee Database, execute the `jhrdemo` script from the `$runs` subdirectory.

For example:

```
rj jhrdemo
```

Review the log, then the `hrdemo.03` list file in the `$list` subdirectory to determine if there were any errors.

3. Build alternate keys

Script used: jbldaky

To build or rebuild the Employee Name Alternate Key, run the `jbldaky` script located in the `$runs` directory.

Note This job may be altered to accommodate your build of the alternate keys once your data has been added to the system.

For example:

```
  rj jldaky
```

Review the log, then the `ldaky.03` list file in the `$list` subdirectory to determine if there were any errors.

Update p20in Batch Master File

Script used: `jpaxtr`

To update the `p20in` Batch Master File with the demo test data, execute the `jpaxtr` script from the `$runs` subdirectory.

The timecards and adjustments will be pulled from the online Employee Database and placed in `FILE12`. This will be the new `p20in` master file.

`FILE10` (`payxtr10`), which contains time cards and adjustments, is also created. `payxtr10` becomes input to the `jpaxrun` as `p05t81`.

For example:

```
  rj jpaxtr
```

Review the log, then the `payxtr.03` list file in the `$list` subdirectory to determine if there were any errors.

Apply taxes, timecards, and adjustments

Script used: `jpaxrun`

To apply taxes (`taxfile`) and the timecards and adjustments (`payxtr10`) to the `p20in` file, execute the `jpaxrun` script from the `$runs` subdirectory with `p05t80` and `p05t81` as input. The `p2edit`, `p4calc`, and `p5prnt` programs will be processed.

Note Verify that the `taxfile` being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).

Input files

<code>p05t80</code>	<code>taxfile</code> (US)
	<code>taxfilec</code> (Canada)
<code>p05t81</code>	<code>payxtr10</code>

Note If you are a Canadian customer, modify the job to pull `taxfilec` instead of the `taxfile`.

For example:

```
  rj jpaxrun
```

Review the log, then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

auditr1.lis
checknum.lis
checks.u.lis
checks.v.lis
combreg.lis
translod.lis

Create pay history

Script used: `jmnrtrun`

To create pay history and labor records and apply check numbers to the newly created history records on the `p20in` Batch Master File, execute the `jmnrtrun` script from the `$runs` subdirectory. The `p2edit`, `p4calc`, and `p5prnt` programs will be processed.

For example:

```
rj jmnrtrun
```

Review the log, then the `transload2.lis` and `audit2` list files in the `$list` subdirectory to determine if there were any errors.

Update the Employee Database

Script used: `jpymrg`

To create a new random Employee Database, execute the `jpymrg` script from the `$runs` subdirectory.

For example:

```
rj jpymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 7: Extract HR reports

Script Used: jreport

To extract Human Resource batch reports, execute the `jreport` script from the `$runs` subdirectory. For example:

```
rd jreport
```

Review the log, then the `rtprnt.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 8: Apply System Control Repository Menu Additions

If you plan on implementing the Report Launcher, Process Monitor, and Desktop Document Interface facilities on the client, then you must apply additional menu items to the System Control Repository (FILE01).

Build report menus

Script used: jrptmnu

To build a menu containing the delivered report groups, run `jrptmnu` located in the `$runs` directory.

For example:

```
jrptmnu
```

Review the log, then the `rptmnu.03` list file in the `$list` subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

To apply menu items for online user access to batch processes, run the `jmainti` script from the `$runs` directory, using the `epRDDI05` file as FILE05 input:

For example:

```
jmainti
```

Review the log, then the `mainti.03` list file in the `$data` subdirectory to determine if there were any errors.

CHAPTER 3

Relational Solution Series Installation and Configuration

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Indexed Server Installation and Configuration

This section provides detailed instructions for installing The Administrative Server on a UNIX system.

This is a technical section aimed at system administrators.

Note: Throughout this section, we have suggested a naming convention for log files created when you run the batch job. By entering a command such as:

```
rm jpayxtr
```

you run the script and create the log. You may name the log any way you wish, but be sure to review all output after each script is run to identify and address any errors that may have occurred.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for UNIX'
1	Installing and Configuring eCyborg 5.0 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Prepare for installation

Phase 2: Extract and Transfer Install

Phase 3: Compile Batch and Build FILE01

Phase 4: Create Cyborg Relational Databases

Phase 5: Compile CBSVO and CYBIO

Phase 6: Create Test p20in Batch Master

Phase 7: Create Employee Database with pay history

Phase 8: Extract HR reports

Phase 9: Apply System Control Repository Menu Additions



Refer to Appendix B: Installation Checklists for detailed checklists to use when installing The Solution Series on your UNIX server.

Phase 1: Prepare for installation

Install and configure prerequisite software

It is assumed that you have already installed and configured the prerequisite software on the server. These must be in place before beginning the installation.

Create user and file system

To create the user and file system for your installation, perform the following steps:

1. Check for or create a file system

Set a file system for CYBORG with at least 500 MB of free space.

2. Create the installation user account

A user ID of 'cyborg' is required for the installation of the Cyborg Application Server (CAS) daemon. You must set up the permissions for this new account (for example '777' for the app directory and the files within it).

Note If you already have an existing 'cyborg' account from a previous installation, re-use the existing 'cyborg' user account.

3. Log into the system

Log into the system using the given installation user account.

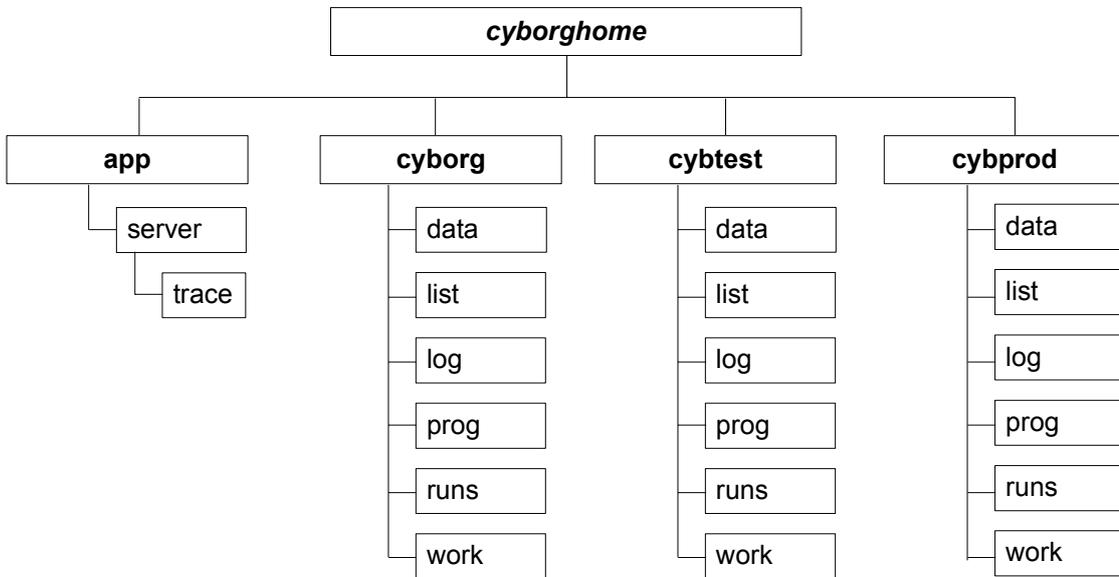
Phase 2: Extract and Transfer Install Files

The Solution Series directory structure

The Cyborg server software is delivered in two main directories: `/cyborghome/app` and `/cyborghome/Cyborg`. The name of the directory `/cyborghome` and subdirectory `Cyborg` is customizable during media installation.

Follow the appropriate steps listed below to copy the installation files and directory structure to your server.

Note As shown in the diagram below, the `/cyborghome/app` directory must exist only **once**—no matter how many Cyborg environments you have installed.



Extract install files to a PC

Be sure to have at hand the configuration worksheet completed as part of the project planning phase as you may need to refer to it as you load programs on the PC.

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page starts automatically. Scroll through the page, then click on the following link to start the autoinstall:

Install The Solution Series Application Server

Follow the installation prompts. The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Setup Type	*Typical (default) *Compact *Custom	
UNIX	*AIX RS6000 (default) *HP-UX *Solaris	
Destination	C:\Cyborg50-UNIX\	Other:
Select Index or Relational	*Indexed (default) *Relational (Oracle)	
UNIX Server HOSTNAME or IP Address	HOSTNAME	Enter IP Address or Hostname of UNIX Server:
File System	/cyborghome/CYBORG50	Other:

The installation program will prompt you when it is complete.

Transfer install files from the PC to the server

1. Verify system name and variables

FTP Command Script: `ftpcmds_xx_ora.unx`

The information that was entered during the copying of programs from the CD to the PC has been inserted into this file.

2. Run the file transfer program

Script used: `jftp`

Run the file transfer script from a command prompt on the Windows client. This will load the The Solution Series files from the PC to the UNIX machine.

Note You will need to have the FTP capability enabled on both systems.

Example of command line to run this job:

JFTP USERNAME

You will be prompted for the password. You can verify the ftp by checking the `ftpupload.log` file which will be generated in the same directory with the ftp job.

Note The following command is included in the ftp script:

```
quote site chmod 755 jinstallst
```

If the following error "SITE command not implemented" is present in your `ftpupload.log` file, you must manually enable the access modifier to '755' on the `jinstallst` script before running it.

Extract server install files

Script used: jinstallst

This script should be run while logged in as 'CYBORG' user, and it extracts and installs the UNIX files onto the server.

Follow the installation prompts. The table following tells you what information the install script will require. If you need anything other than the defaults, use the information in the 'Enter the following...' column.

Prompt	Options/ Defaults	Enter the following...
Enter the directory where the installation files were uploaded.	/installfiles/ CYB50_Install	Other:
Enter the top-level directory where the software will be installed.	/cyborghome	Other:
Please indicate whether you would like to install the base The Solution Series product.	—	yes
Enter the name of the directory where The Solution Series will be installed	CYB50	Other:
Please indicate whether you would like to install the Cyborg Application Server (CAS)	—	yes

The installation script will prompt you to verify that the information entered is correct and if you wish to proceed with the installation. Once the files have been successfully installed,

you may delete the The CYB50_Install directory and all its files created by the FTP process.

Note: The install program pipes error messages sent to the screen through user parameter \$PAGER to control error messages from scrolling off the screen. Press a key when you see the -MORE- prompt.

Set up user profile

The 'Cyborg' user needs its profile to include the updated values for the MicroFocus environment variables and \$PATH.

To set up the user profile, perform the following steps:

1. Modify Cyborg environment variable lines in the .profile

You need to modify the .profile identifying necessary variables for the Cyborg environment. Include the following lines in the .profile:

```
data=/cyborghome/CYBORG50/data      ; export data
work=/cyborghome/CYBORG50/work      ; export work
list=/cyborghome/CYBORG50/list      ; export list
prog=/cyborghome/CYBORG50/prog      ; export prog
runs=/cyborghome/CYBORG50/runs      ; export runs
TERM=vt100                          ; export TERM
PATH=$PATH:/cyborghomeThe Solution Series45/runs ; export PATH
```

Note The directory /cyborghome/CYBORG50 is the default directory for the Cyborg product.

2. Include Micro Focus environment variable lines in the .profile

You need to modify the .profile identifying necessary variables for the Micro Focus COBOL Compiler. Include the following lines in the .profile:

```
COBDIR=/usr/lib/cobol                ; export COBDIR
LD_LIBRARY_PATH=/usr/lib/cobol/coblib ; export LD_LIBRARY_PATH
SHLIB_PATH=/usr/lib/cobol/coblib     ; export SHLIB_PATH
```

Note Please refer to the Micro Focus installation guide for the settings for these Mvariables.

3. Include location of C compiler in the PATH

You need to add the file path of the C compiler to the .profile. For example:

HP-UX example:

```
PATH=/opt/ansic/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

AIX example:

```
PATH=/usr/vac/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

Solaris example:

```
PATH=/opt/SUNWspro/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

4. Refresh environment variables

Refresh the environment so the logical names take effect by executing the following:

```
././profile (dot-space-dot-slash-dot-profile)
```

Verify compiler versions

The delivered binary programs were compiled on the certified platform versions, and are not guaranteed to run on earlier versions. To verify that MicroFocus variables are set correctly, perform the following steps:

- 1. Execute the cob command**

To verify that Micro Focus variables are set correctly, execute the following command:

```
cob
```

The response should be:

```
I see no work
```

Note If you do not receive this response, verify that your Micro Focus environment variables are set correctly.

- 2. Verify the version of the installed compilers**

To verify what version of Micro Focus is installed, execute the following command:

```
cat $COBDIR/etc/cobver
```

This will show you the version and revision level of the COBOL compiler installed.

To obtain the C version, perform the following command for your operating system:

Sun Solaris

```
$ cc -V 2>&1 |head -1
```

AIX

```
$ ls1pp -L|grep ibmcxx.cmp|cut -c30-34|head-
```

HP-UX

```
$ what /usr/bin/cc|head -2|tail -1
```

Note These examples are case-sensitive.

Check special requirements

Perform the following steps to check special requirements each time a script is run:

- 1. Check output**

Each time a script is run, check all output before another one is executed. For example, verify the output of the compiles and/or audit reports.

- 2. For HP9000 machines, compile all COBOL programs with the 'hpoptimize' compiler directive off**

Set the hpoptimize compiler directive to off in your existing HP9000 compile jobs. The following is a sample of how you set this compiler directive:

```
cob -xv -C "align(4) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt  
hpoptimize=0" $prog/{program}.cob -o $prog/{program}
```

3. If your operating system is 64-bit, compile all COBOL programs with the 'align(8)' compiler directive

Insert the `align(8)` compiler directive into your existing compile jobs. The following is a sample of how you include this compiler directive:

```
cob -xv -C "align(8) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt"
$prog/{program}.cob -o $prog/{program}
```

4. If you have more than one HP PA-RISC platform, insert the '+DAportable' native code generator

Beginning with the HP-UX 10.20 release, the default object code generated by HP compilers is determined automatically as that of the machine on which you compile. (Previously the default code generation was PA-RISC 1.0 on all Series 700 and 800 systems.)

To avoid PA-RISC platform conflicts, set the `+DAportable` native code generator in your existing HP compile jobs. The following is a sample of how you set this native code generator:

```
cob -xv -C "align(8) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt
hpoptimize=0 +DAportable" $prog/{program}.cob -o $prog/{program}
```

Phase 3: Compile Batch and Build FILE01

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (or logs) to determine success or failure before another script is executed.

Pull all cybmst programs

Script used: jxcybmst

To extract and compile all `cybmst` COBOL programs (`p9cnvt`, `p2edit`, `p4calc`, `p5prnt`, `o4calc`), execute the `jxcybmst` script from the `$runs` subdirectory.

For example:

```
rx jxcybmst
```

Review the log, then the `cybmst.03` list file in the `$list` subdirectory to determine if there were any errors.

Compile and link the delivered cbsvb and cbsvrft

Script used: jcmpcvbn

To compile the non-relational batch program `cbsvb` as delivered by Cyborg, execute the `jcmpcvbn b` script from the `$runs` subdirectory. The 'b' parameter is passed onto the script in order to specifically compile the batch program (that is, `cbsvb`).

For example:

```
rx jcmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Script used: jcmpsort

To compile `p10sort.cob`, `p45sort.cob`, `p80sort.cob`, `p80copy.cob`, and `pfssort.cob`, execute the `jcmpsort` script from the `$runs` subdirectory.

For example:

```
rx jcmpsort
```

Review the log to determine if there were any errors.

Create System Control Repository

Script used: jdemo01

This procedure creates a random System Control Repository. Execute the `jdemo01` job.

For example:

`rojdemo01`

Review the log, then the `demo.03` list file in the `$list` subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages. For example:

```
DEMO01 V001 07-17-2002 15:09:14 RECORD COUNT=567,062
-----
CSSS <UTIL( (999999(DISPLY( ( ( )15:57:33 07-25 XXXX
ZZTEST 99999E RELOAD IS OK. Ver-5.0 LENGTH 531 07-25-02 15:55:09
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P RDEMRO ***** RELOAD NOT FOUND *****
P RDTBPL ***** RELOAD NOT FOUND *****
P RTCTRL ***** RELOAD NOT FOUND *****
P TBLENT ***** RELOAD NOT FOUND *****
P TBLINQ ***** RELOAD NOT FOUND *****
P TBLUPD ***** RELOAD NOT FOUND *****
P TBLVER ***** RELOAD NOT FOUND *****
P V-NAME ***** RELOAD NOT FOUND *****
P WPTM ***** RELOAD NOT FOUND *****
```

Phase 4: Compile CBSV and CYBIO

Extract the CASE tool

Your installation may have custom overrides which need to be extracted. rdbpgm0.cob, rdbpgm2, rdbpgm3 and rdbpgm4 are delivered with the media. However, you can extract the CASE tool if you want to create overrides to module rdbpgm to change the delivered CASE tool.

Script Used: jpul_rdb

To extract rdbpgm0, execute the jpul_rdb job. This script will extract rdbpgm0, rdbpgm2, rdbpgm3 and rdbpgm4.

To execute this job, type:		rj jpul_rdb platform
where:		platform = MF2

Review the log, then pul_rdb.03 in the \$list subdirectory to determine if there were any errors.

Compile rdbpgm0.cob

Script Used: jcmprdb0

To compile the rdbpgm0.cob program, execute the jcmprdb0 script from the \$runs subdirectory.

For example:

```
rj jcmprdb0
```

Review the log to determine if there were any errors.

Export F1 and FTM records

Script Used: jexport

To export the F1 and FTM (RFT and RFM) records from the System Control Repository, execute the jexport script from the \$runs subdirectory.

For example:

```
rj jexport
```

Review the log, then the export.03 list file in the \$list subdirectory to determine if there were any errors.

Execute the make command

To be able to precompile, compile, and link The Solution Series relational programs, execute the make command and test the sample1 program delivered by ORACLE.



Please refer to the ORACLE installation guide for information on the name and location of the make file.

Log in as the ORACLE administrator and execute the make command as in the following example (actual commands may differ according to compiler):

```
cd $ORACLE_HOME/precomp/demo/procob2
make -f demo_procob18.mk sample1
```

If the above program was linked without any error, run the make command again. This time create a model script for the precompile, compile, and link steps using the command below:

```
make -f precomp.mk -n sample2 > $runs/cyborg.mk
```

Note If the program above generate a "Undefined symbol: pthread_yield" error, this is due to the fact that pthread_yield() was removed from the Posix (XOpen Version 5) standard. IBM provides a compatibility library for vendors who still use pthread_yield(). You will still need to create the cyborg.mk file, however you will need to modify the cyborg.mk file to include a reference to "-lpthreads_compat" near the start of the file.

ORACLE linkage

The ORACLE linkage step (cyborg.mk) created by the make command will be needed for the relational jobs. A sample is shown here:

```
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqintf.o -
lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o /u01/app/oracle/804/lib/nautab.o
/u01/app/oracle/804/lib/naect.o /u01/app/oracle/804/lib/naect.o
/u01/app/oracle/804/lib/naedhs.o `cat /u01/app/oracle/804/lib/naldflgs` -
lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -
lcommon -lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -
lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -
lgeneric -lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -
lcommon -lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread
```

Please copy and paste the linkage step generated by the cyborg.mk to replace the sample linkage step as delivered in the following jobs:

```
jcmprdb1
jcmprdb2
jcmprdb3
jcmprdb4
jcmprdb5
jcmprdb6
jcmprdb7
jcmprdb8
jcmprdb9
jcmprdb10
jcmprdb11
jcmprdb12
jcmprdb13
jcmprdb14
jcmprdb15
jcmprdb16
jcmprdb17
jcmprdb18
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```

Execute the CASE tool

Script Used: jcrtpgms

1. **Modify the control record in jcrtpgms**

Modify the control record in jcrtpgms to include the datafile path, database connect string, and the tablespace indicator to uniquely identify this environment.

<p>IMPORTANT: The Cyborg Database must be created by the Database Administrator. In addition to the rdbpgm1 program created in this step, all cbsv programs will contain the connect clause for the database.</p>
--

2. **Execute the jcrtpgms job**

Execute the jcrtpgms script from the \$runs subdirectory. For example:

```
rj jcrtpgms
```

Review the log to determine if there were any errors.

Pre-compile, compile, and link rdbpgm1

Script Used: jcmprdb1

To pre-compile, compile, and link the program rdbpgm1, execute the jcmprdb1 script from the \$runs subdirectory. rdbpgm1 creates the tablespaces, tables, indexes, and views needed to support the relational version of The Solution Series.

For example:

```
rj jcmprdb1
```

<p>Add Oracle linkage before running this job: This delivered script includes a sample ORACLE linkage step (highlighted in the example below). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in <i>Execute the make command</i> (on page 52).</p>
--

The following is the jcmprdb1 job, with highlights on the lines which should be replaced with the Oracle linkage step:

```
echo "\n\n\t JCMRDB1 IN PROGRESS \n"
echo "\n\n\t CHECKING FOR FILES \n"
test -f $prog/rdbpgm1.pco || echo "\n\t rdbpgm1.pco does not exist"
cd $prog

procob ireclen=132 oreclen=132 select_error=no litdelim=apost mode=ansi
iname=rdbpgm1.pco oname=rdbpgm1.cob
cob -xv -C "IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8)" -N
"nocheck noboundopt" -o rdbpgm1 rdbpgm1.cob \
\
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlintf.o -
lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o /u01/app/oracle/804/lib/nautab.o
/u01/app/oracle/804/lib/naet.o /u01/app/oracle/804/lib/naet.o
/u01/app/oracle/804/lib/naedhs.o `cat /u01/app/oracle/804/lib/naldflgs` -
lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -
lcommon -lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -
lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -
lgeneric -lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -
lcommon -lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread
cd $runs
echo "\n\n\t JCMRDB1 COMPLETE "
```

Remove the slashes (as shown in the box below) and join the newly replaced linkage with the previous line.

```
noboundopt" -o rdbpgm1 rdbpgm1.cob -L/u01/app/oracle/804/lib...
```

Review the log to determine if there were any errors.

Create the tablespaces, tables, indexes, and views in the Cyborg database

Script Used: jrcrtyb

To execute the SQL statements defined in rdbpgm1 and create the tablespaces, tables, indexes, and views, execute the jrcrtyb script from the \$runs subdirectory. There is no output from this run, but you or your database administrator can execute the SQL statements to verify the tablespaces, tables, indexes, and views have been created.

For example:

```
rl jrcrtyb
```

Review the log to determine if there were any errors.

Create the tablespaces, tables, indexes, and views in the Cyborg database Pre-compile, compile, and link rdbpgma through rdbpgmh

Script Used: jcmpsbr

To pre-compile, compile, and link the programs rdbpgma through rdbpgmh, execute the jcmpsbr script from the \$runs subdirectory.

For example:

```
rl jcmpsbr
```

Add Oracle linkage before running this job: This delivered script includes a sample ORACLE linkage step (highlighted in the job). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in .

The following is the jcmpsbr job, with highlights on the lines which should be replaced with the Oracle linkage step:

```
echo "\n\n\t JCMPSUBR IN PROGRESS \n"
echo "\n\n\t CHECKING FOR FILES \n"
test -f $prog/rdbpgma.pco || echo "\n\t rdbpgma.pco does not exist"
test -f $prog/rdbpgmb.pco || echo "\n\t rdbpgmb.pco does not exist"
test -f $prog/rdbpgmc.pco || echo "\n\t rdbpgmc.pco does not exist"
test -f $prog/rdbpgmd.pco || echo "\nrdbpgmd.pco does not exist"
test -f $prog/rdbpgme.pco || echo "\n\t rdbpgme.pco does not exist"
test -f $prog/rdbpgmf.pco || echo "\n\t rdbpgmf.pco does not exist"
test -f $prog/rdbpgmg.pco || echo "\n\t rdbpgmg.pco does not exist"
test -f $prog/rdbpgmh.cob || echo "\n\t rdbpgmh.cob does not exist"
cd $prog

for file in rdbpgma rdbpgmb rdbpgmc rdbpgmd rdbpgme rdbpgmf rdbpgmg
do
echo "\n\n\t COMPILATION OF '${file}' IN PROGRESS \n"
procob iname=${file}.pco oname=${file}.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C "ibmcomp noosvs nobound notrunc align(8)" -N "nocheck
noboundopt" -o ${file} ${file}.cob \
\
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlintf.o
-lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o
/u01/app/oracle/804/lib/nautab.o /u01/app/oracle/804/lib/naect.o
/u01/app/oracle/804/lib/naect.o /u01/app/oracle/804/lib/naedhs.o `cat
/u01/app/oracle/804/lib/naldflgs` -lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -
lnttcp -lnetwork -lclient -lvsn -lcommon -lgeneric -lmm -lnlsrtl3 -lcore4 -
lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp -
lnetwork -lclient -lvsn -lcommon -lgeneric -lepc -lnlsrtl3 -lcore4 -
lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -lcommon -lgeneric -lnlsrtl3 -
lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat /u01/app/oracle/804/lib/sysliblist` -
lc -laio -lm -lthread
echo "\n\n\t COMPILATION OF '${file}' COMPLETE \n"
done

echo "\n\n\t COMPILATION OF RDBPGMH IN PROGRESS \n"
cob -xv -C "ibmcomp noosvs nobound notrunc align(8)" -N "nocheck
noboundopt" $prog/rdbpgmh.cob -o $prog/rdbpgmh
echo "\n\n\t COMPILATION OF RDBPGMH COMPLETE \n"
cd $runs
echo "\n\n\t JCMPSUBR COMPLETE "
```

Review the log to determine if there were any errors.

Remove the slashes (as shown in the example below) and join the newly replaced linkage with the previous line.

```
noboundopt" -o ${file} ${file}.cob -L/u01/app/oracle/804/lib...
```

The following table lists and describes each program generated by the CASE tool.

Program	Description
rdbspma	The subroutine that handles inserting a new row in a table.
rdbspmb	The subroutine that handles selecting data from a row in a table and passing it to cbsv.
rdbspmc	The subroutine that handles updating values in an existing row.
rdbspmd	The subroutine that handles deleting an existing row from a table.
rdbspme	The subroutine called when a PAYMRG 171 process is run. It removes all rows from all tables in preparation for reinsertion of data from the P20 file. It also disables then re-enables all indexes (where applicable).
rdbspmf	The subroutine called when a PAYMRG 222 process is run. It deletes all rows from the appropriate tables that belong to the Organizations being paid.
rdbspmg	The subroutine that cursors through the database and rebuilds the IDX records on the database, recreating Control 1, Control 2, and Employee Number pointers on the Employee Database (Master File; FILE02).
rdbspmh	The subroutine that provides segment and segment key length for each segment and location of date and date type within each segment.

Extract, compile, and link o4calc

Script Used: jxo4calr

To extract COBOL program o4calc from cybmst, compile the program, and link the machine-specific subroutines, execute the jxo4calr script from the \$runs subdirectory. For example:

```
rx jxo4calr
```

Add Oracle linkage before running this job: This delivered script includes a sample ORACLE linkage step (highlighted in the job). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in .

The following is the jxo4calr job, with highlights on the lines which should be replaced with the Oracle linkage step:

```
echo "\n\n\t JXO4CALR IN PROGRESS '  
echo "\n\n\t CHECKING FOR FILES \n'  
test -f $prog/p9cnvt    || echo "\n\t p9cnvt does not exist'  
test -f $data/cybmst    || echo "\n\t cybmst does not exist'  
test -f $data/vers80.ovr || echo "\n\t vers80.ovr does not exist'  
test -f $prog/rdbpgma.o || echo "\n\t rdbpgma.o does not exist'  
test -f $prog/rdbpgmb.o || echo "\n\t rdbpgmb.o does not exist'  
test -f $prog/rdbpgmc.o || echo "\n\t rdbpgmc.o does not exist'  
test -f $prog/rdbpgmd.o || echo "\n\t rdbpgmd.o does not exist'  
test -f $prog/rdbpgmh.o || echo "\n\t rdbpgmh.o does not exist'  
  
echo "\n\n\t CREATION OF O4CALC (RELATIONAL) IN PROGRESS \n'  
echo 'O4CALC |ISEV@PCYd& 24 MICRO-FOCUS.'> $work/o4calc.04  
cat $data/vers80.ovr >> $work/o4calc.04  
FILE1=$prog/o4calc.pco ; export FILE1  
PRINT1=$list/o4calc.03 ; export PRINT1  
P05RDR=$work/o4calc.04 ; export P05RDR  
CYBMST=$data/cybmst ; export CYBMST  
$prog/p9cnvt  
  
cd $prog  
echo "\n\n\t COMPILATION OF O4CALC IN PROGRESS \n'  
procob iname=o4calc.pco oname=o4calc.cob ireclen=132 oreclen=132  
select_error=no litdelim=apost mode=ansi  
cob -xv -C "IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8)" -N  
"NOCHECK NOBOUND OPT" -o o4calc o4calc.cob rdbpgma.o rdbpgmb.o  
rdbpgmc.o rdbpgmd.o rdbpgmh.o \  
\  
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlintf.o -lclntsh  
-lclient /u01/app/oracle/804/lib/libsql.a /u01/app/oracle/804/lib/scorept.o  
/u01/app/oracle/804/lib/sscoreed.o /u01/app/oracle/804/rdbms/lib/kpudfo.o  
/u01/app/oracle/804/lib/nautab.o /u01/app/oracle/804/lib/naect.o  
/u01/app/oracle/804/lib/naect.o /u01/app/oracle/804/lib/naedhs.o `cat  
/u01/app/oracle/804/lib/naldflgs` -lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp  
-lnetwork -lclient -lvsn -lcommon -lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -  
lcore4 -lnlsrtl3 -lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -  
lvsn -lcommon -lgeneric -lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient  
-lvsn -lcommon -lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat  
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread  
cd $runs  
echo "\n\n\t JXO4CALR COMPLETE '
```

Remove the slashes (as shown in the example below) and join the newly replaced linkage with the previous line.

```
rdbpgmh.o -L/u01/app/oracle/804/lib...
```

Review the log, then the o4calc.03 list file in the \$list subdirectory to determine if there were any errors.

Edit cbsv.ovr

Edit the cbsv.ovr file located in the \$data directory to include your database connect string, as in the example shown here:

```
C141250+R -E 01 USERID          PIC X(08) VALUE 'CYBORG50'.
C141300+R -E 01 PASSWD         PIC X(08) VALUE 'CYBDBA'.
C142100+R 01 DB-NAME           PIC X(8)  VALUE 'CYBORG50'
```

Phase 5: Compile CBSV and CYBIO

Pull all cbsv programs - jpulcvr

Script used: jpulcvr

For example:

```
rl jpulcvr
```

Review the log, then the `pulcvr.03` list file in the `$list` subdirectory to determine if there were any errors.

Add Oracle link to jmpcvr

Before running `jmpcvr`, you must first add Oracle link. This delivered script (note that there are two areas in the script where this must be changed) includes a sample ORACLE linkage step (highlighted in the job). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in Execute the make command.

The following is the `jmpcvr` job:

```

echo "\n\n\t JCMPCVR IN PROGRESS \n"
echo "\n\n\t CHECKING FOR FILES \n"
test -f $prog/cbsvb.pco || echo "\n\t cbsvb.pco does not exist"
test -f $prog/cbsvbt.pco || echo "\n\t cbsvbt.pco does not exist"
test -f $prog/cbsvo.pco || echo "\n\t cbsvo.pco does not exist"
test -f $prog/cbsvot.pco || echo "\n\t cbsvot.pco does not exist"
cd $prog
for file in cbsvb cbsvbt
do
echo "\n\n\t COMPILATION OF '${file}' IN PROGRESS \n"
procob iname=${file}.pco oname=${file}.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C "IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8)" -N
"NOCHECK NOBOUND OPT" -o ${file} ${file}.cob rdbpgma.o rdbpgmb.o
rdbpgmc.o rdbpgmd.o rdbpgme.o rdbpgmf.o rdbpgmg.o rdbpgmh.o \
\
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlintf.o -
lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o /u01/app/oracle/804/lib/nautab.o
/u01/app/oracle/804/lib/naet.o /u01/app/oracle/804/lib/naet.o
/u01/app/oracle/804/lib/naedhs.o `cat /u01/app/oracle/804/lib/naldflgs` -
lnetv2 -lnttcp -lnetwork -lnr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -
lcommon -lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -
lnttcp -lnetwork -lnr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -
lgeneric -lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -
lcommon -lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread
echo "\n\n\t COMPILATION OF '${file}' COMPLETE \n"
done

```

(continued following)

(continued from previous)

```
for file in cbsvo cbsvot
do
echo "\n\n\t COMPILATION OF '${file}' IN PROGRESS \n"
procob iname=${file}.pco oname=${file}.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C "IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8)" -N
"NOCHECK NOBOUND OPT" -o ${file} ${file}.cob o4calc.o rdbpgma.o
rdbpgmb.o rdbpgmc.o rdbpgmd.o rdbpgme.o rdbpgmf.o rdbpgmg.o rdbpgmh.o \
\
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlintf.o -
lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o /u01/app/oracle/804/lib/nautab.o
/u01/app/oracle/804/lib/naect.o /u01/app/oracle/804/lib/naect.o
/u01/app/oracle/804/lib/naedhs.o `cat /u01/app/oracle/804/lib/naldflgs` -lnetv2
-lnttcp -lnetwork -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -
lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -lnttcp -
lnetwork -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -lgeneric -
lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -lcommon -
lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread
echo "\n\n\t COMPILATION OF '${file}' COMPLETE \n"
done
cd $runs
echo "\n\n\t JCMPCVR COMPLETE "
```

Remove the slashes (as shown in the example below) and join the newly replaced linkage with the previous line.

```
rdbpgmc.o rdbpgmd.o rdbpgme.o rdbpgmf.o rdbpgmg.o rdbpgmh.o -L/u01/app/...
```

Review the log to determine if there were any errors.

Compile and link all csv programs - Solution Series Install UNIX

Script used: `jcmpcvr`

For example:

```
rj jcmpcvr
```

Review the log, to determine if there were any errors.

Compile and link cybio

Script used: `jcmpcbio`

To compile and link the `sckcybio.c`, `logging.c`, and `cybio.cob` programs, execute the `jcmpcbio` script from the `$runs` subdirectory. For example:

```
rj jcmpcbio
```

Review the log, to determine if there were any errors.

Phase 6: Create test p20in Batch Master

Create test p20in Batch Master

Script used: **jp20strt (U.S.)**
 jp20strc (Canada)

To extract the report generators from `cybmst` and create the `p20in` Batch Master File, execute the `jp20strt` script from the `$runs` subdirectory with `p9strt` and `p9cbvsc` as input.

Input files

<code>p05t80</code>	<code>p9strt</code>
<code>p05t81</code>	<code>p9cbvsc (U.S.)</code>
	<code>p9cbvsc (Canada)</code>

The `p2edit`, `p4calc`, and `p5prnt` programs are processed.

For example:

```
rp jp20strt
```

Review the log, then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

```
audit2.trl  
p20strt.03  
translod
```

Phase 7: Create Employee Database with Pay History

Create test Employee Database

Script used: jpaymrg

To create a test Employee Database, execute the `jpaymrg` script from the `$runs` subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Populate option list and application tables

Script Used: jpopf01

To synchronize the System Control Repository and relational tables for option lists and specific application tables (Cx through Xx), execute the `jpopf01` script from the `$runs` subdirectory. For example:

```
rj jpopf01
```

Populate database with test data

To populate the database with test data, perform the following steps:

1. Apply demo test data

**Script used: jprdemo (U.S.)
 jprdemoc (Canada)**

To pull test data from the System Control Repository and populate fields in the online Employee Database, execute the `jprdemo` script from the `$runs` subdirectory.

For example:

```
rj jprdemo
```

Review the log, then the `prdemo.03` list file in the `$list` subdirectory to determine if there were any errors.

2. Apply remaining demo test data

**Script used: jhrdemo (U.S.)
 jhrdemoc (Canada)**

To pull the remaining test data from the System Control Repository and populate fields in the online Employee Database, execute the `jhrdemo` script from the `$runs` subdirectory.

For example:

```
rj jhrdemo
```

Review the log, then the `hrdemo.03` list file in the `$list` subdirectory to determine if there were any errors.

3. Build alternate keys

Script used: `jbldaky`

To build or rebuild the Employee Name Alternate Key, run the `jbldaky` script located in the `$runs` directory.

Note This job may be altered to accommodate your build of the alternate keys once your data has been added to the system.

For example:

```
rj jbldaky
```

Review the log, then the `bldaky.03` list file in the `$list` subdirectory to determine if there were any errors.

Update p20in Batch Master File

Script used: `jpaxtr`

To update the `p20in` Batch Master File with the demo test data, execute the `jpaxtr` script from the `$runs` subdirectory.

The timecards and adjustments will be pulled from the online Employee Database and placed in `FILE12`. This will be the new `p20in` master file.

`FILE10` (`payxtr10`), which contains time cards and adjustments, is also created. `payxtr10` becomes input to the `jpaxrun` as `p05t81`.

For example:

```
rj jpaxtr
```

Review the log, then the `payxtr.03` list file in the `$list` subdirectory to determine if there were any errors.

Apply taxes, timecards, and adjustments

Script used: `jpaxrun`

To apply taxes (`taxfile`) and the timecards and adjustments (`payxtr10`) to the `p20in` file, execute the `jpaxrun` script from the `$runs` subdirectory with `p05t80` and `p05t81` as input. The `p2edit`, `p4calc`, and `p5prnt` programs will be processed.

Note Verify that the `taxfile` being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).

Input files

<code>p05t80</code>	<code>taxfile</code> (US)
	<code>taxfilec</code> (Canada)
<code>p05t81</code>	<code>payxtr10</code>

Note If you are a Canadian customer, modify the job to pull `taxfilec` instead of the `taxfile`.

For example:

```
rj jpayrun
```

Review the log, then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

```
auditrl1.lis  
checknum.lis  
checks_u.lis  
checks_v.lis  
combreg.lis  
translod.lis
```

Create pay history

Script used: jmntrun

To create pay history and labor records and apply check numbers to the newly created history records on the `p20in` Batch Master File, execute the `jmntrun` script from the `$runs` subdirectory. The `p2edit`, `p4calc`, and `p5prnt` programs will be processed.

For example:

```
rj jmntrun
```

Review the log, then the `transload2.lis` and `audit2` list files in the `$list` subdirectory to determine if there were any errors.

Update the Employee Database

Script used: jpaymrg

To create a new random Employee Database, execute the `jpaymrg` script from the `$runs` subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 8: Extract HR Reports

Script Used: jreport

To extract Human Resource batch reports, execute the `jreport` script from the `$runs` subdirectory. For example:

```
rd jreport
```

Review the log, then the `rtprnt.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 9: Apply System Control Repository Menu Additions

Build report menus

Script used: jrptmnu

To build a menu containing the delivered report groups, run `jrptmnu` located in the `$runs` directory.

For example:

```
jr jrptmnu
```

Review the log, then the `rptmnu.03` list file in the `$list` subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

To apply menu items for online user access to batch processes, run the `jmainti` script from the `$runs` directory, using the `eprddi05` file as `FILE05` input:

For example:

```
jr jmainti
```

Review the log, then the `mainti.03` list file in the `$data` subdirectory to determine if there were any errors.

CHAPTER 4

Cyborg Application Server (CAS) Installation and Configuration

In This Chapter

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Installing and Configuring CAS

This section provides detailed instructions for installing the Cyborg Application Server (CAS) on The Solution Series Application Server on a UNIX system.

This is a technical section aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for UNIX'
1	Installing and Configuring eCyborg 5.0 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Install and Configure the Cyborg Application Server (CAS)

The 'Cyborg' user needs its profile to include the updated values for the MicroFocus environment variables and \$PATH.

As a CBSV user, CAS (as a CYBORG user) needs a copy of the same profile except for data, work, list, prog, and runs.

Install CAS

Perform the following steps to install the CAS daemon:

1. Verify that CAS can execute on the system

Execute the following command from the `/cyborghome/app/server` directory:

```
./cybservd -v
```

CAS should respond with:

```
Cyborg Application Server for <system name> version x.xx
```

Note: *Operating system names are Solaris for Solaris (from Sun Microsystems), AIX for AIX (from IBM), and HP-UX for HP-UX (from Hewlett-Packard).*

If a message such as 'Exec format error' appears, then CAS will not run on the system and CAS needs to be compiled specially for that particular UNIX server.

If an error appears and CAS will not run, please contact the Help Desk.

2. Add CAS environment variables to CAS (first CAS install only)

The 'Cyborg' user needs its profile to include the updated values for the MicroFocus environment variables and \$PATH.

If you are installing another CAS, skip to the next step.

3. Add the Cyborg port to the network services file

Because CAS is a TCP/IP server, it uses a system resource called a *port number*. A port number is simply a number at which a server program can be located. Cyborg obtained the international recognition that port number 9888 is reserved for Cyborg's own use. (In particular, Cyborg will use it for CAS.) The port will be configured in a system-wide file called `/etc/services`.

1. Edit the file `/etc/services` to add the Cyborg port to the network services file. The entries in the file are usually given in numeric order, so find the location where 9888 should appear, then add the following line to the file:

```
cyborg 9888/tcp # Assigned by IANA to Cyborg Systems
```

Note: *You also need to enter the 9888 port number on the Cyborg Connection Editor during client installation, as described in **Installing and Configuring the Administrative Client** (on page 93).*

2. Save the file and exit the editor.

☞ *If you have any problems with CAS installation, see the Troubleshooting section in **Administering the Cyborg Application Server (CAS) Daemon** (on page 187).*

4. **Add CAS to the list of programs to launch at system startup**

This step should be performed by the administrator. Add the script `/cyborghome/app/server/cas` to the list of programs to launch at system startup. This ensures that clients will be able to access The Solution Series even if the machine is rebooted.

Start cas

CAS can only be started by the administrator or a similarly privileged process. To launch CAS, log in as `root` and execute the script `cas`. The following output should be displayed:

```
CAS version x.xx for <system name> started successfully (process ID xxxx)
```

where `xxxx` is the process ID of the daemon.

Note *Operating system names are `Solaris` for Solaris (from Sun Microsystems), `AIX` for AIX (from IBM), and `HP-UX` for HP-UX (from Hewlett-Packard).*

The command prompt is returned to the user, as CAS has placed itself into the background and will continue to run in the background. This script encapsulates the settings that are used by this installation.

☞ *For information on the `cas` script, see the Explanation of the `cas` script section in Appendix E: Administering the Cyborg Application Server (CAS) Daemon.*

☞ *If you are unable to start CAS or have any other problems with CAS installation, see the Troubleshooting section in Appendix E: Administering the Cyborg Application Server (CAS) Daemon.*

Configure the environment

Follow the directions in the 'Configuring a new environment on the server' section in Appendix E: Administering the Cyborg Application Server (CAS) Daemon, to configure the environment for this installation.

PART 3

Installing and Configuring The Web Application Server

CHAPTER 5

Installing the Web Client Server

In This Chapter

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Introduction

This chapter provides detailed instructions for installing and configuring the components of the eCyborg Web Client on the Web Server.

This is a technical chapter aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for UNIX'
1	Installing and Configuring eCyborg 5.0 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Web Client considerations

When setting up the eCyborg Web Client server, you should consider the following:

Windows or UNIX Web Application Server

There are two options for installing the Web Application Server:

- Installing The Web Application Server on a Windows server and using this to access The Solution Series Server on UNIX
- Installing The Web Application Server on a UNIX server and using this to access The Solution Series Server on UNIX

Running the eCyborg Web Client with Interactive Workforce and Servlet Exec

If you intend to install the Web Client and Interactive Workforce on the same web server then it is recommended that you install JDK and Servlet Exec from the Interactive Workforce media and this would be used by both the Web Client and Interactive Workforce.

Proceed as follows :

- Install JDK from the Interactive Workforce media (needed for Interactive Workforce and Web Client)
- Install Servlet Exec from Interactive Workforce media and create a Servlet Exec Instance
- Install the Servlet Exec patch from the Interactive Workforce media
- Install the Web Client using the Servlet Exec instance that has been created
- When you install Interactive Workforce (from the media) refer to the Servlet Exec instance created above

If you already have installed the eCyborg Web Client on a Windows server (running Servlet Exec as the Servlet Engine) and decide later to install Interactive Workforce, you need to perform the following :-

- Install Interactive Workforce using the instance of Servlet Exec that has been installed previously for the Web Client.
- Test the Installation of the Web Client and Interactive Workforce

You could also decide to have two Servlet Exec instances (one for Interactive Workforce and the other for Web Client) and this will provide the capability of stopping the Servlet Exec instance used by one application (eg. Web Client) without affecting the other application (eg. Interactive Workforce). This is helpful when you need to perform maintenance without affecting the other application. However if you have a separate Servlet Exec instance for Web Client and Interactive Workforce you may need 2 Servlet Exec licenses.

eCyborg session timeout

If a user is accessing the system via a publicly accessible client computer and they walk away from a session leaving it open, then there is a risk that someone else may come along and tamper with the data. In order to help secure the system against such tampering, you should set a Timeout to close a session after one has been inactive for an appropriate amount of time.

The duration of the timeout should be based on the implementation. For example, an implementation which is setup for employees to access eCyborg at home via the internet should have a shorter time, while an implementation setup strictly for access over a network might be alright with a longer time.

There is a session timeout that can be set in the eCyborg Web Client software. To enable this timeout setting, open the following file:

```
..\eCyborg_War\webgui\login.jsp
```

and set the following parameter:

```
session.setMaxInactiveInterval(xxxx);
```

where 'xxxx' is the number of seconds a session will remain inactive before being shut down.

Secure Socket Layers (SSL)

If the eCyborg is going to be set up for home use by employees over the Internet, it is highly recommended that you secure the system using Secure Socket Layers (SSL) to encrypt transmitted data. SSL can be implemented through a provider, such as Verisign.

eCyborg encryption between Web Client Server and Solution Series Server

If the Web Client server resides on a different machine than the Solution Series Server, it is recommended that you encrypt the data that flows between the two.

Installing the Web Client Server on a Windows server

Install Web Client server files

Insert the CD-ROM into The Web Application Server machine. The Getting Started page automatically appears. Scroll through the page, then click on the following link to start the autoinstall:

[Install Web Client \(on a web server\)](#)

This will begin the process of extracting the eCyborg .war files.

Unzip the eCyborg Web Server .war files

Unzip the eCyborg .war files to the Windows-based Web Application Server machine.

Extract the following files:

- eCyborg.war
- eCyborgHelp.war

For Tomcat, copy the files into the following directory:

..\Tomcat\webapps

For ServletExec, the files should be copied into the following filepath:

..\ServletExec*instancename*\webapps\default

Add eCyborg to ServletExec.properties (ServletExec only)

Add the base URL to the application parameter of the ServletExec.properties file, located in the following default location:

..\inetpub\scripts

For example:

```
servletexec.instance.hosts=  
servletexec.instance.applications=/eCyborg, /eCyborgHelp  
servletexec.instance.aliases=  
servletexec.instance.instances=127.0.0.1:8889
```

In the example above, 'instance' should be replaced with the actual name of the ServletExec instance.

Stop and restart IIS

In Windows implementations, you must stop and restart the Internet Information Service (IIS) for these changes to take effect. This can be done from the Services panel by making the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Server Manager ► IIS

This will bring up the Service dialog for IIS. Click on Stop, then on Start again to restart the service.

Start the servlet engine (eg. ServletExec or Tomcat)

When you start the servlet engine during the install, it will expand the .war files to create the files needed for running the eCyborg Web Client.

In Tomcat, the eCyborg Web Client files will be expanded into the following directory:

..\Tomcat\webapps\eCyborg\war

In ServletExec, the eCyborg Web Client files will be expanded into the following directory:

..\ServletExecData\default\eCyborg\

Important! Depending on the speed of the microprocessor in the server, it might take 15 to 20 minutes or more for the files to completely expand. Please be patient and wait for the expansion to complete before trying to access the Web Client. To ensure that the expansion is complete, you may check to see if the directories listed above have been created and populated.

Add the Cyborg environment to the environments properties file

1. Add the environment to the environments.properties file

The environments.properties file tells the servlet engine which environments to connect. To add an environment, locate and open the following file:

environment.properties

For Tomcat implementations, it should be located along the following filepath:

..\Tomcat\webapps\eCyborg\war\environments.properties

For ServletExec implementations, it should be located along the following filepath:

..\ServletExecData\default\eCyborg\WAR\environments.properties

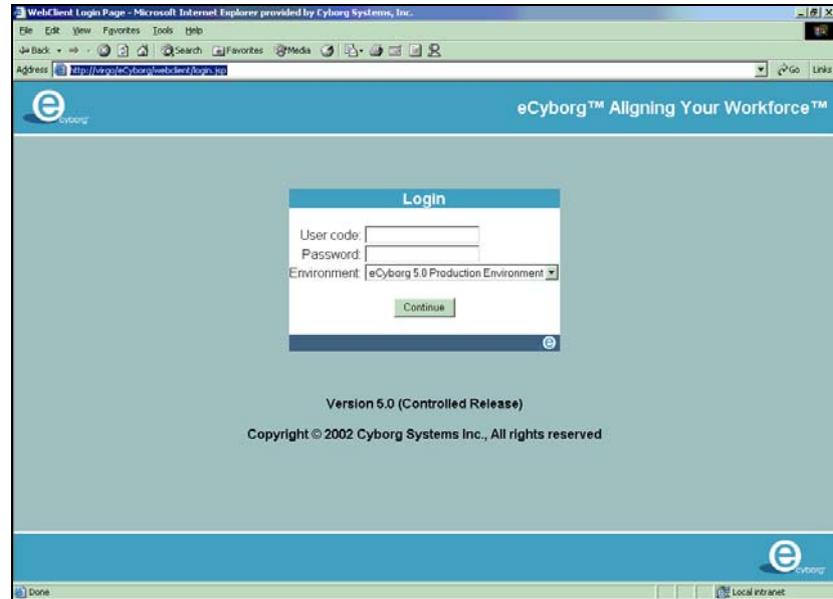
Add an environment, using the following format:

EnvironmentName=Environment Description

The EnvironmentName should contain no spaces, and should reflect the name of the Cyborg Application Service (CAS) of the environment. The Environment Description will appear on the log on page, and should tell the user the environment to which they are connecting. For example:

Default=eCyborg 5.0 Default Environment
eCybtest=eCyborg 5.0 Test Environment
eCybprod=eCyborg 5.0 Production Environment

Using our last example above, the description 'eCyborg 5.0 Production Environment' will appear on the log on page for the user to select and log in to that environment:



2. **Create a properties file for each environment**

Once the servlet engine reads the environments.properties file to see which environments to create, it then looks for a properties file for each environment in order to read the required variables. For example, each of the environments in the examples listed above would have the corresponding files:

Default.properties
eCybtest.properties
eCybprod.properties

environment properties file parameters

The ..\eCyborg directory contains the following template:

WebGui.properties

To create the properties file, copy and rename this file using the environment name, for example:

eCyborg.properties

Then, edit the variables in the file as per environment requirements. The following parameters must be defined:

Parameter	Definition	Example	Value
connector	TCP/IP driver for connecting to CAS	com.cyborg.comms.tcpip.CasConnector	
Host	Hostname of server	HOSTNAME	
Port	Port for CAS connections	9888	

For example:

```
connector=com.cyborg.comms.tcpip.CasConnector
Host=HOSTNAME
Port=9888
```

Test the eCyborg Web Server

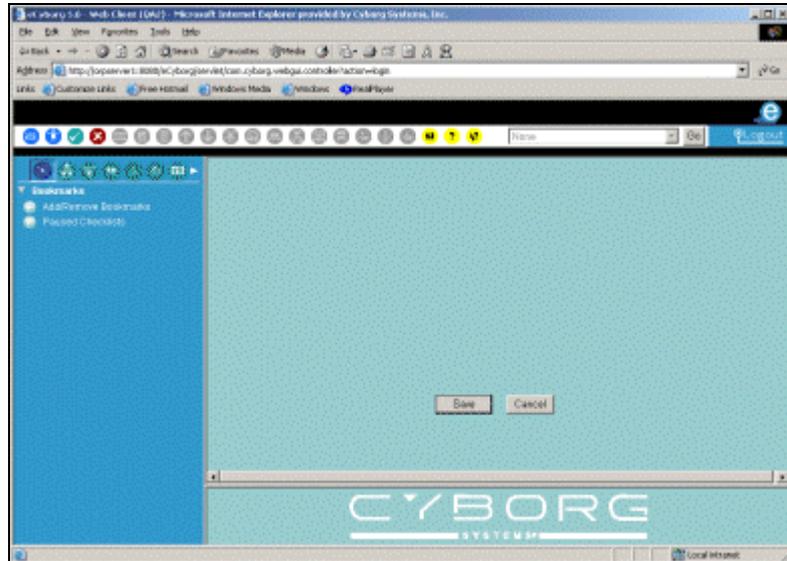
Access the eCyborg web client from a remote PC

From another PC, access eCyborg web client by opening a browser and accessing the following URL:

<http://hostname/eCyborg/WebClient/login.jsp>

Replace 'hostname' with the name of the eCyborg Web Server machine. For testing purposes, you may log on using the 'S.O.' user and password. The initial logon to the eCyborg Web Client may take some time, as the system needs to set up a number of files during this first access. The eCyborg web client should appear:

Installing and Configuring eCyborg 5.0 (UNIX)



Installing the Web Client Server on a UNIX server

Verify prerequisite software

Check that Apache and Tomcat are installed and running on the UNIX server.

To check Apache, access the Apache page by using the following URL from a web browser:

`http://UnixServerName:80`

To check Tomcat, access the Tomcat page by using the following URL from a web browser:

`http://UnixServerName:8080`

Install Web Client server files

Insert the CD-ROM into The Web Application Server machine. The Getting Started page automatically appears. Scroll through the page, then click on the following link to start the autoinstall:

Install Web Client (on a web server)

This will begin the process of extracting the eCyborg .war files.

Unzip the eCyborg Web Server .war files

Unzip the eCyborg .war files to a Windows-based machine.

Extract the following files to any directory for transfer to the UNIX machine:

- eCyborg.war
- eCyborgHelp.war

FTP the eCyborg .war file to the UNIX server

FTP the following files from the Windows machine to the UNIX Web Application Server:

- eCyborg.war
- eCyborgHelp.war

They should be transferred in binary mode to the following directory:

`.../apache-2.0.39/jakarta-tomcat-4.0.1/webapps`

Stop and restart Apache

Shut down Apache

To shut down the Apache web server, go to the following directory:

`.../apache-2.0.39/jakarta-tomcat-4.0.1/bin`

and execute the following command:

```
./shutdown.sh
```

When Apache is shut down, you will see output similar to the example shown here:

```
Using CLASSPATH: /techdev/apache-2.0.39/jakarta-tomcat-4.0.1/bin/bootstrap.jar:/usr/j2se/lib/tools.jar
Using CATALINA_BASE: /techdev/apache-2.0.39/jakarta-tomcat-4.0.1
Using CATALINA_HOME: /techdev/apache-2.0.39/jakarta-tomcat-4.0.1
Using JAVA_HOME: /usr/j2se
```

Restart Apache

To restart Apache, stay in the same directory:

```
.../apache-2.0.39/jakarta-tomcat-4.0.1/bin
```

and execute the following command:

```
./startup.sh
```

When Apache is started, you will see output similar to the following example:

```
Using CLASSPATH: /techdev/apache-2.0.39/jakarta-tomcat-4.0.1/bin/bootstrap.jar:/usr/j2se/lib/tools.jar
Using CATALINA_BASE: /techdev/apache-2.0.39/jakarta-tomcat-4.0.1
Using CATALINA_HOME: /techdev/apache-2.0.39/jakarta-tomcat-4.0.1
Using JAVA_HOME: /usr/j2se
```

When you start Apache, it will expand the .war files to create the files needed for running the eCyborg Web Client.

Important! Depending on the speed of the microprocessor in the server, it might take 15 to 20 minutes or more for the files to completely expand. Please be patient and wait for the expansion to complete before trying to access the Web Client. To ensure that the expansion is complete, you may check to see if the directories listed above have been created and populated.

Add the Cyborg environment to the environments properties file

1. Add the environment to the environments.properties file

The environments.properties file tells the servlet engine which environments to connect. To add an environment, locate and open the following file:

```
environment.properties
```

For Tomcat implementations, it should be located along the following filepath:

```
..\\Tomcat\\webapps\\eCyborg\\war\\environments.properties
```

For ServletExec implementations, it should be located along the following filepath:

..\ServletExecData\default\eCyborg\WAR\environments.properties

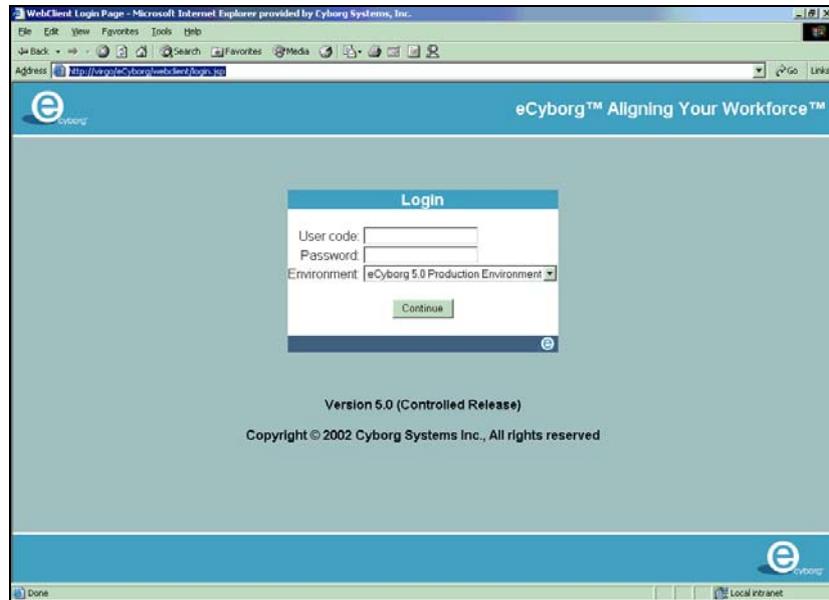
Add an environment, using the following format:

EnvironmentName=Environment Description

The EnvironmentName should contain no spaces, and should reflect the name of the Cyborg Application Service (CAS) of the environment. The Environment Description will appear on the log on page, and should tell the user the environment to which they are connecting. For example:

Default=eCyborg 5.0 Default Environment
eCybtest=eCyborg 5.0 Test Environment
eCybprod=eCyborg 5.0 Production Environment

Using our last example above, the description 'eCyborg 5.0 Production Environment' will appear on the log on page for the user to select and log in to that environment:



2. Create a properties file for each environment

Once the servlet engine reads the environments.properties file to see which environments to create, it then looks for a properties file for each environment in order to read the required variables. For example, each of the environments in the examples listed above would have the corresponding files:

Default.properties
eCybtest.properties
eCybprod.properties

environment properties file parameters

The ..\eCyborg directory contains the following template:

WebGui.properties

To create the properties file, copy and rename this file using the environment name, for example:

eCyborg.properties

Then, edit the variables in the file as per environment requirements. The following parameters must be defined:

Parameter	Definition	Example	Value
connector	TCP/IP driver for connecting to CAS	com.cyborg.comms.tcpip.CasConnector	
Host	Hostname of server	HOSTNAME	
Port	Port for CAS connections	9888	

For example:

```
connector=com.cyborg.comms.tcpip.CasConnector
Host=HOSTNAME
Port=9888
```

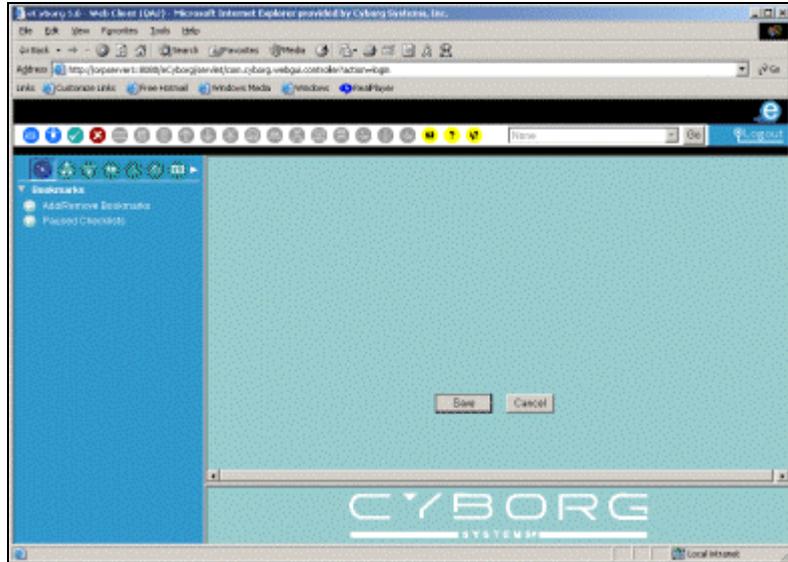
Test the eCyborg Web Server

Access the eCyborg web client from a remote PC

From another PC, access eCyborg web client by opening a browser and accessing the following URL:

<http://hostname/eCyborg/WebClient/login.jsp>

Replace 'hostname' with the name of the eCyborg Web Server machine. For testing purposes, you may log on using the 'S.O.' user and password. The initial logon to the eCyborg Web Client may take some time, as the system needs to set up a number of files during this first access. The eCyborg web client should appear:



PART 4

Installing and Configuring the Administrative Client

CHAPTER 6

Installing and Configuring the Administrative Client

In This Chapter

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Introduction

This chapter provides detailed instructions for configuring clients of the UNIX server running The Solution Series.

This is a technical chapter aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for UNIX'
1	Installing and Configuring eCyborg 5.0 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Prepare for installation

Phase 2: Install the software

Phase 3: Configure the software

Phase 4: Test the installation

Phase 1: Prepare for installation

It is important to appropriately prepare for the client installation of The Solution Series. Because the client and server will work together, you must ensure that they are both synchronized in communication.

Before successful operations may be carried on between the server running The Solution Series and the client, you are required to install and configure the prerequisite software. This software must be in place before beginning the installation.

Note: Based upon your employees' individual client workstation setups, there may be missing shared .dll or .ocx files that the Cyborg product uses that are non-distributable Microsoft shared system files. If this occurs, your IT staff will need to locate and download (usually on the Microsoft website) the required file for inclusion on your PCs.

Ensure Cyborg Application Service is active

The Cyborg Application Server daemon must be running on the server.

To verify that you have an active CAS daemon running on your server, type the following Administration Utility command at the command prompt:

```
casmgr -isrunning
```

where:

- casmgr is the command that invokes the CAS Administration utility
- -isrunning is the switch that determines whether CAS is running

Note: If you did not use the expected 'cyborg' directory, you must add a location reference (for example, '/cyborghome/app.server/casmgr -isrunning').

This command will determine whether there is a CAS process on the specified machine at the specified port. If the daemon is active, the following message is displayed:

```
CAS is running on machine, port nnnn.
```

Otherwise, the following message is displayed:

```
CAS is NOT running on machine, port nnnn.
```



Refer to *Administering the Cyborg Application Server (CAS) Daemon* for more information on using the Administration Utility.

Complete a configuration worksheet

During the installation, you will be prompted to supply client and server information. Complete the table below in advance preparation for these entries:

	Description	Your Configuration
Installation Location	Identify where you want the client files installed. If you accept the default location, the files will be placed at C:\Program Files\Cyborg Systems\Clientxx(where 'xx' indicates the release level of the installation).	
Type of Installation	Determine if you want to perform a Typical (recommended), Compact, or Custom installation.	
Connection Type	The only connection type available at this time is the Cyborg Application Service (CAS).	
Connection Name	<p>Identify a title for the connection you will configure between the client and the server.</p> <p>For the initial installation, accept the 'default' connection name (Defaultxx, where 'xx' indicates the release level of The Solution Series installation). If a user requires multi-environment access, additional environments can be set up later.</p> <p>This label must not contain the characters "\:*?\"<>_'. If you name the connection by another name, additional steps must be performed.</p> <p> Refer to the appendices for more information on creating multiple environments (see "Creating Separate Environments on the Server for the Client" on page 147).</p>	
Host	Host name or IP address of the server to which you want the client to connect.	
Port	Identify the port address of the server. Cyborg has registered the port address of 9888 for the Cyborg Application Service (CAS). This address must be the same as was specified during the installation and configuration of Cyborg Application Service (CAS).	9888
Environment	Identify the environment name (up to 8 characters) that was established during the Cyborg Application Service (CAS) installation, for example, CYBORG, CYBPROD, CYBTEST, or CYBDEV.	

Phase 2: Install the software

Install client files

Be sure to have at hand the configuration worksheet completed as preparation as you may need to refer to it as you load programs on the PC.

1. Insert the CD-ROM into the Administrative client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Administrative client' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files	use default, or ... Other:
Setup Type	*Typical (default) *Compact *Custom	use default, or ... select one of the other options
Are you running The Solution Series on an OS/390 Server?	--	No
Launch the Connection Editor?	Deselected (No)	Do not select this option if you are installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR) (Windows and Unix only). Select this option if you are not installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR).

The installation program will prompt you when it is complete.

Install Enhanced Payroll and Reporting (EPR)---optional

If you wish to use the Enhanced Payroll and Reporting, you must first install the EPR client files.

1. Insert the CD-ROM into the Administrative Client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Enhanced Payroll and Reporting' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...'
column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files\Cyborg Systems\Clientxx	use default, or... Other:

The installation program will prompt you when it is complete.

Note: Prior to using the Process Monitor, you must specify the correct environment and user folder. The Specify Environment Folder and Specify User Folder dialogs will display the first time the Process Monitor utility is run.

Install Document Data Interface (DDI)---optional

If you wish to use the Document Data Interface, you must first install the DDI client files.

1. Insert the CD-ROM into the Administrative Client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Document Management Facility' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...'
column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files\Cyborg Systems\Clientxx	use default, or... Other:

The installation program will prompt you when it is complete.

Phase 3: Configure the software

Set Up Your Environment

To set up your environment, perform the following steps:

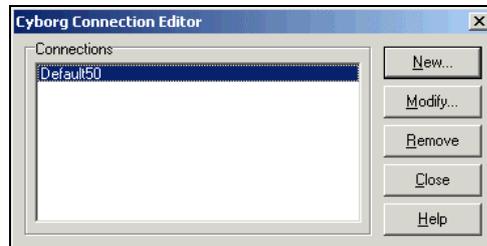
1. Access the dialog box

Access this dialog box at the end of the installation or by selecting:

Start ► Programs ► The Solution Series xxx ► Connection Editor

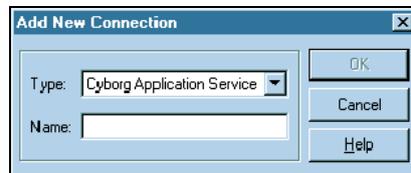
2. Click New

Click on the New button to set up a new configuration.



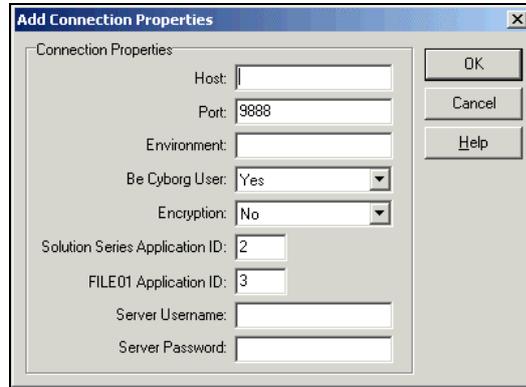
3. Type the name of your new connection

Leave Cyborg Application Service selected in the Type drop-down list box. Type the name of the connection you are creating in the Name text box.



4. Click OK

The Add Connection Properties dialog displays.

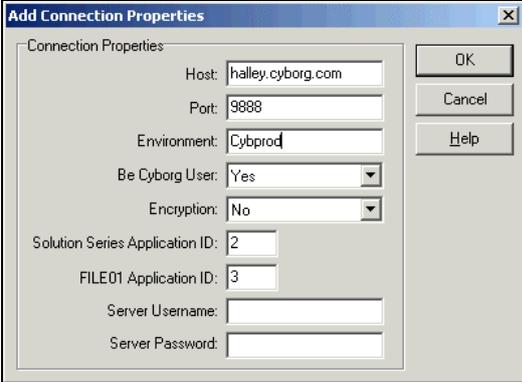


5. Type the configuration details

Type the configuration details under Connection Properties on the Connection Editor dialog box:

Item	Description
Host	Identify the system name of the server.
Port	Identify the port address of the server. For the Cyborg Application Server (CAS), Cyborg has registered the port address of 9888.
Environment	Identify the environment name (up to 8 characters) on the server. Examples are: CYBPROD, CYBTEST, and so on.
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
Solution Series Application ID	The application name and ID number for The Solution Series application. This application ID is configured to 2.
FILE01 Application ID	The application name and ID number for the CYBIO application. This application ID is configured to 3.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

After you have made these entries on the Cyborg Connection Editor, it should look similar to the following example:



The screenshot shows a dialog box titled "Add Connection Properties" with a close button (X) in the top right corner. The dialog is divided into a main area labeled "Connection Properties" and a right-hand side with three buttons: "OK", "Cancel", and "Help". The "Connection Properties" area contains the following fields:

- Host: halley.cyborg.com
- Port: 9888
- Environment: Cybprod
- Be Cyborg User: Yes (dropdown menu)
- Encryption: No (dropdown menu)
- Solution Series Application ID: 2
- FILE01 Application ID: 3
- Server Username: (empty text box)
- Server Password: (empty text box)

- 6. Click OK**
The connection properties are specified.
- 7. Click Close**
The connection has been configured between the server and the client.

Phase 4: Test the installation

Run the Messaging Test Tool

The Messaging Test Tool is used to ensure that the Address Book dialog can be properly accessed and that an email can be sent. This is a separate program packaged with The Solution Series. Messaging is essential in order for email integration to work properly.

To run the Messaging Test Tool, complete the following steps:

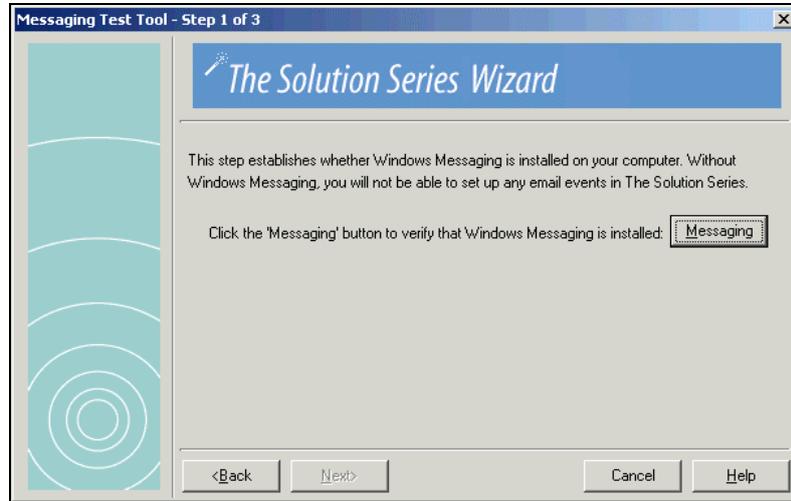
1. Launch the Messaging Test Tool

Run the Messaging Test Tool by starting the executable located in the following file path:

..\Program Files\Cyborg Systems\Clientxx\MessagingTestTool.exe

2. Click Next

The Messaging button appears:



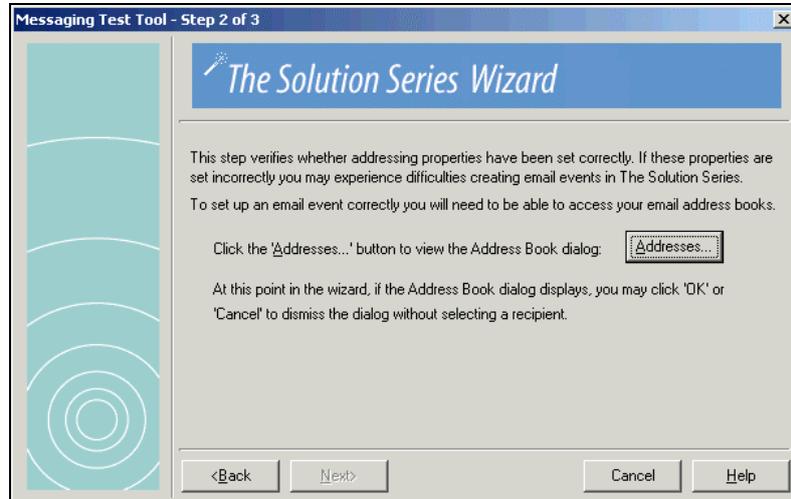
3. Click Messaging

Messaging is required to provide the system files used by MAPI-compliant email packages.

If your default email application is MAPI compliant, then the Tool will allow you to proceed. If not, contact your IT department.

4. Click **N**ext

The Address button appears:



5. Click **A**ddresses

At this point, you may get a prompt asking for your email password, depending on your email system and if you are already logged on to email.

The dialog will list the email addresses in your system. Check them to verify that this is the correct listing.

6. Click **O**K

Clicking OK will return you to Step 2 of 3 in the Messaging Test Tool dialog.

7. Click **N**ext

The dialog will now prompt you to send an email. This is to test that an email can be sent. The Subject and Message fields are editable on this dialog. If you wish to change either of these, you may do so.

8. Click **T**o

The Address Book dialog will appear, allowing you to select an email address.

9. Select an address

This is the address where the test email will be sent. It is suggested that you use either your own or another easily accessed address—this will make it easier to confirm that the email has been properly sent and received.

10. Click **O**K

This will accept the address selection.

11. Click **S**end

The Messaging Diagnostics Tools will now send the test email.

12. Click OK

This will close the dialog.

13. Click Next

The dialog will display all three steps, indicating whether or not they were completed successfully.

14. Click Finish

This will close the Messaging Test Tool.

When you are finished with this task, you should check the In Box at the address the email has been sent to in order to verify that it has been received. It is recommended that you use an email address you can easily access.

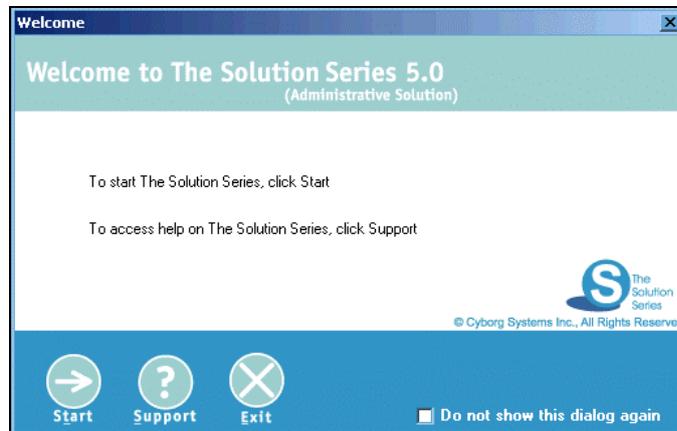
Test the connection to the server

To test the connection to the server, perform the following steps:

1. Launch The Solution Series

Select:

Start ► Programs ► The Solution Series ► The Solution Series



2. Click Start on the Welcome screen

The Login dialog box appears.

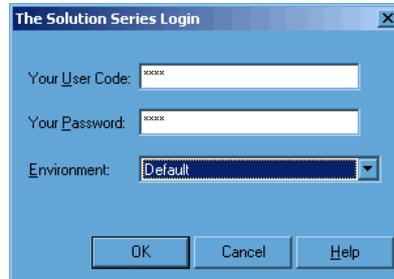
Note: If you see an error message instead of this Welcome screen, refer to the error listing in [Optional SQL Server Procedures](#) or [Optional ORACLE Procedures](#) for further information.

Test the GUI

To test the GUI, perform the following steps:

1. Log on as Security Officer

Select the environment you want to access from the option list, then type your user name and password:

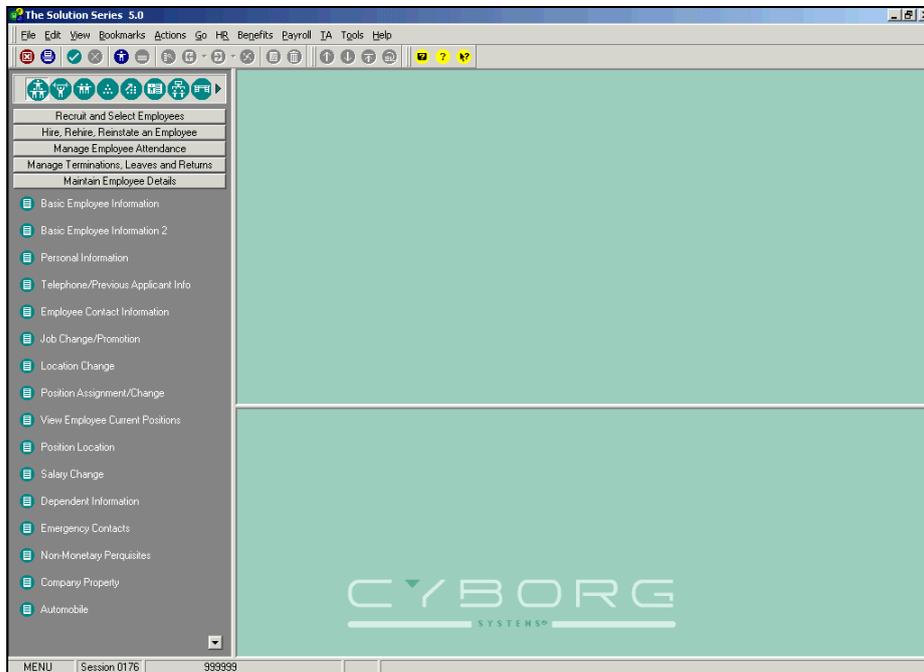


The Solution Series Login dialog box contains the following fields and controls:

- Your User Code:** A text input field with masked characters (xxxxxx).
- Your Password:** A text input field with masked characters (xxxxxx).
- Environment:** A dropdown menu currently set to "Default".
- Buttons:** "OK", "Cancel", and "Help".

2. Click OK

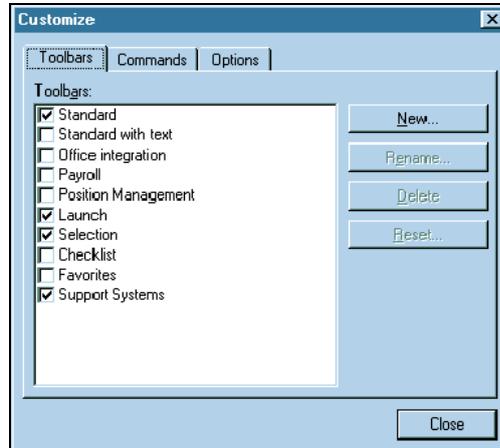
The work area for The Solution Series displays:



Refer to Creating Separate Environments for information on creating additional environments.

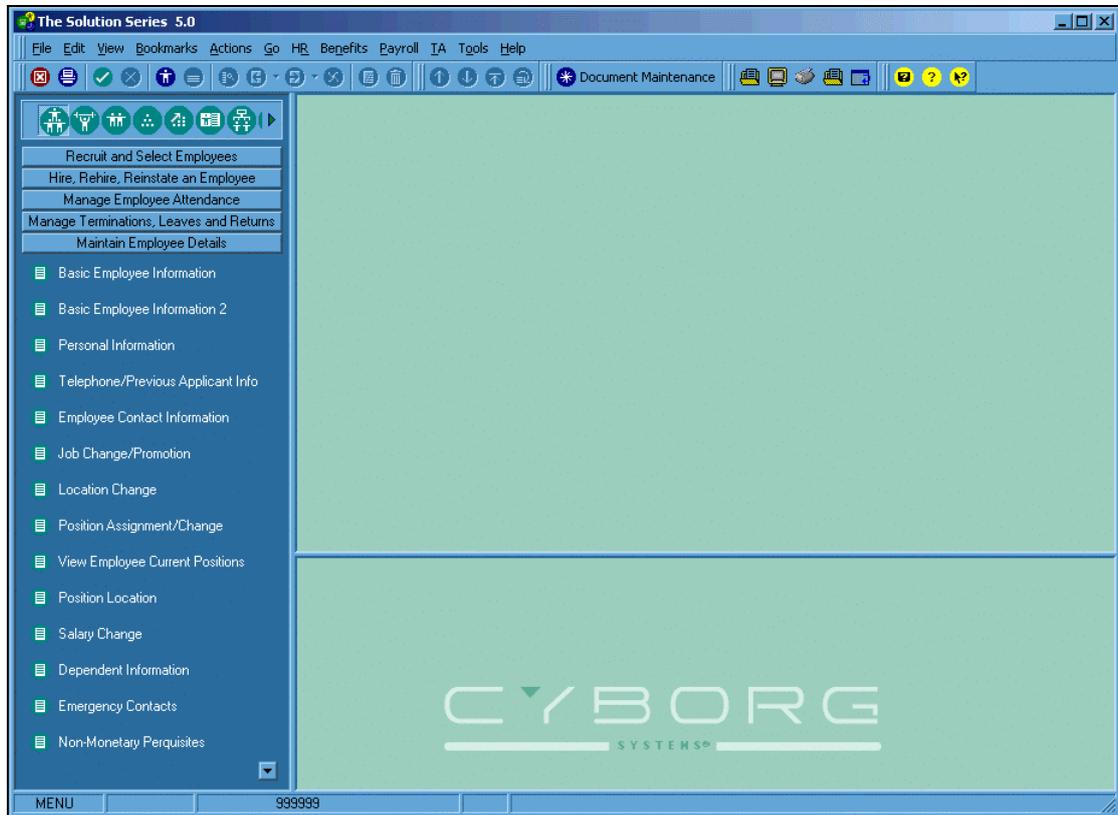
View the Favorites Toolbar

1. **Logon**
2. **To add the Launch Bar to the Menu Bar, customize the toolbar**
View ► **Customize Toolbars**
On the Toolbars tab, click beside 'Launch'.



3. Click Close

The Launch toolbar will appear:



Define the email and letter template folder

Document templates are created when a letter or email communication event is set up. These templates contain the body of the letter or email. Where the templates are stored is important. The location is specified by the 'Main Document Path' text box on the System Options form (SCOPTS).

Before setting the Main Document Path, you will need to create or determine which folder will be used for storing the templates. Communication events that will be used by multiple users should be stored on a network drive. This allows any user who might trigger the event, either manually or automatically through an action or condition, access to the templates.

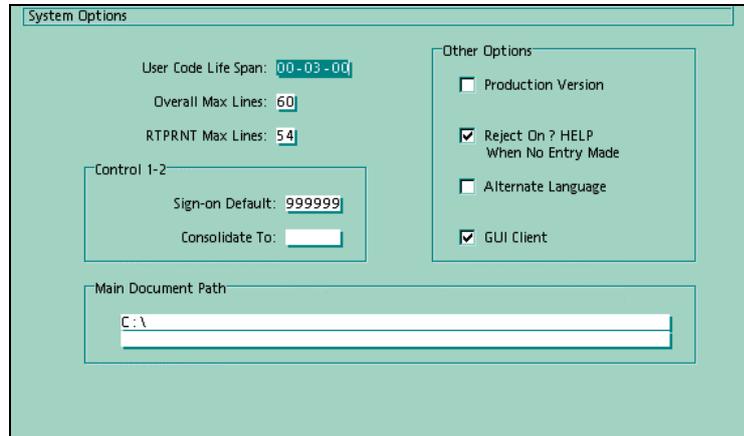
To set the Main Document Path, complete the following steps:

1. **Access the System Options form (SCOPTS)**

Access this form by selecting the following:

- Component:**  Security Tools
- Process:** Security Tools
- Task:**  Specify System Options

The System Options form (SCOPTS) appears:



The screenshot shows the 'System Options' form with the following fields and options:

- User Code Life Span: 00-03-00
- Overall Max Lines: 60
- RTPRNT Max Lines: 54
- Control 1-2: Sign-on Default: 999999, Consolidate To: []
- Main Document Path: C:\
- Other Options:
 - Production Version
 - Reject On ? HELP When No Entry Made
 - Alternate Language
 - GUI Client

2. **Enter the Main Document Path**

In the Main Document Path box, type in the path of the folder which contains the email and letter templates which the Office Integration will utilize. For general use, it is required that this path be accessible to all Administrative Clients.

3. **Press Enter**

The Main Document Path has now been set, allowing the system will to find the path where the templates are stored.

4. **Exit The Solution Series**

Before the Main Document Path will take effect, you need to log off and log back onto The Solution Series.

Test Word integration

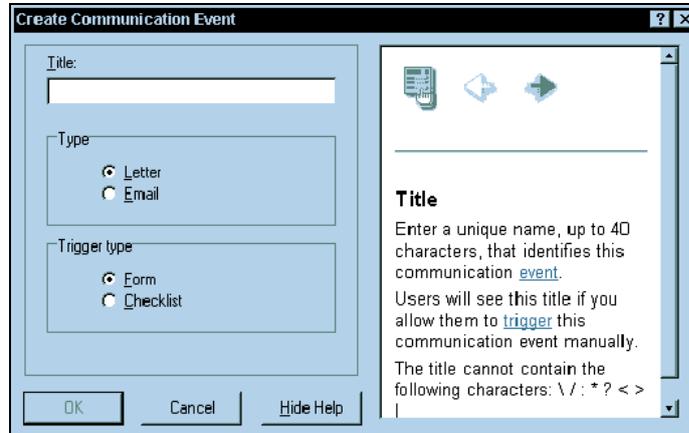
1. **Access the Communication Event dialog**

Access this dialog by making the following selections from the Navigator:

- Component:**  Administrator Tools
- Process:** Administrator Tools
- Task:**  Manage Events

2. Click **Create**

The Create Communication Event dialog appears:



3. Enter a **Title**

Type a unique title, up to 40 characters, for this communication event. For the test letter, type the following:

Test Letter

4. Select **Letter**

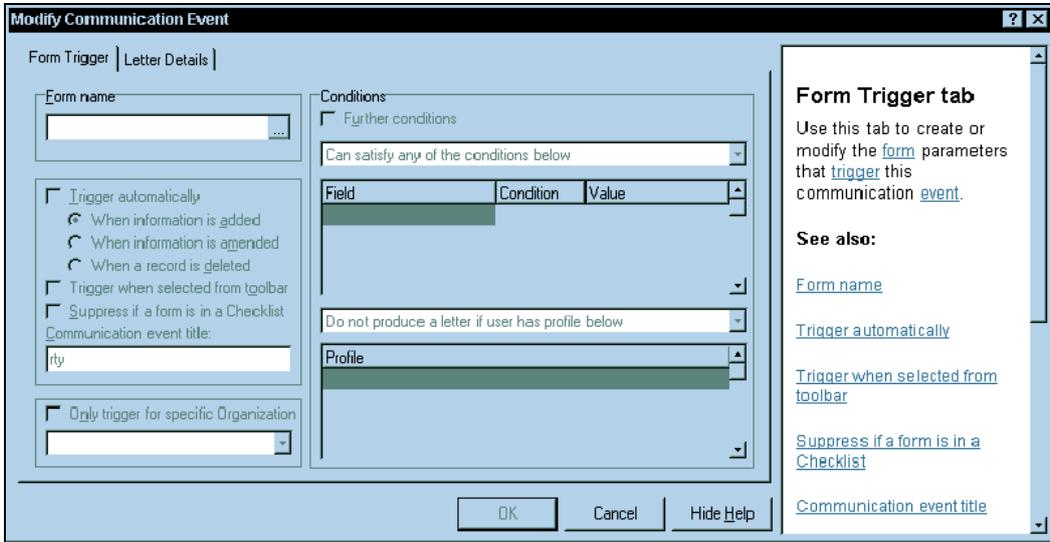
By default, Letter is the communication event Type selected when the dialog is first displayed. Verify that Letter is selected.

5. Select **Form**

By default, Form is the communication event Trigger type selected when the dialog is first displayed. Verify that Form is selected.

6. Click OK

Click OK to create the communication event. The Modify Communication Event dialog appears:

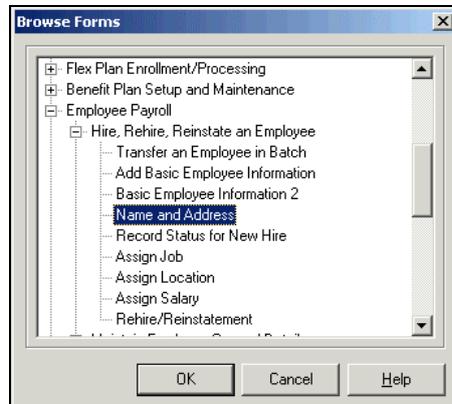


7. Select the Form name

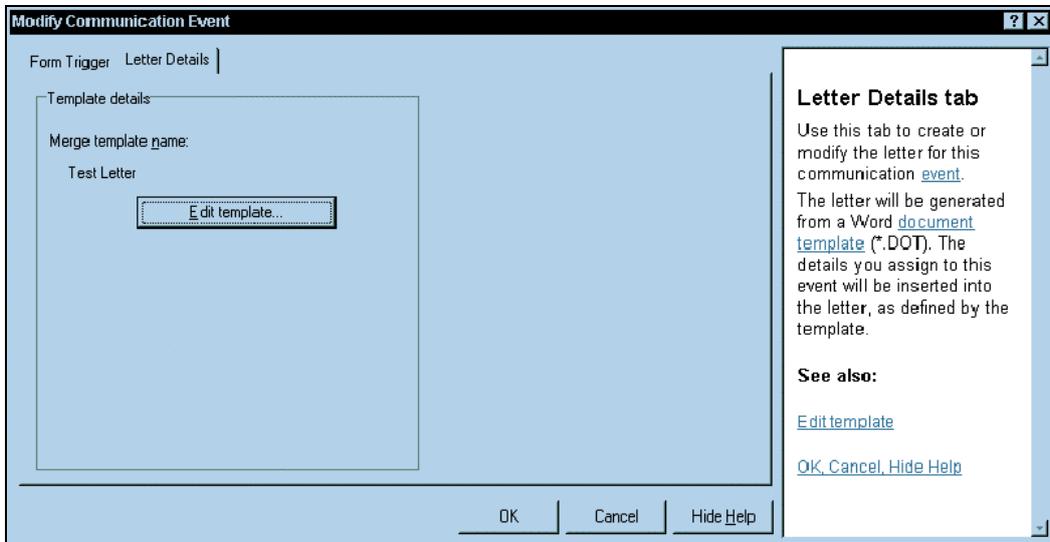
Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus.

For the test letter, select:

Employee Payroll ► Hire, Rehire, Reinstatement an Employee ► Name and Address



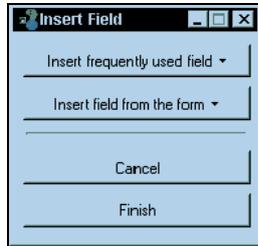
8. **Click OK**
This will select the form.
9. **Select the automatic trigger conditions**
Select 'Trigger automatically'. This will activate the trigger options.
10. **Select 'When information is amended'**
'When information is added' is the default selection – change this.
11. **Click on the 'Letter Details' tab**
The 'Letter Details' tab appears:



12. **Click 'Edit Template'**
This will open Word and the New dialog. The New dialog allows you to select existing templates on which to base the new one.
13. **Select 'Blank Document'**
This is the default.

14. Click OK

Word creates a new blank document, and the Insert Field dialog appears:



The Insert Field dialog allows you to include information directly from The Solution Series in the template.

15. Add the 'First_Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'First_Name' from the drop-down list.

This selection and the next couple will test if The Solution Series information is being pulled into the Word template properly.

16. Type a space

17. Add the 'Last_Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Last_Name' from the drop-down list.

18. Press Enter

This will start a new line on the Word document.

19. Type in a line

For the test letter, type the following line:

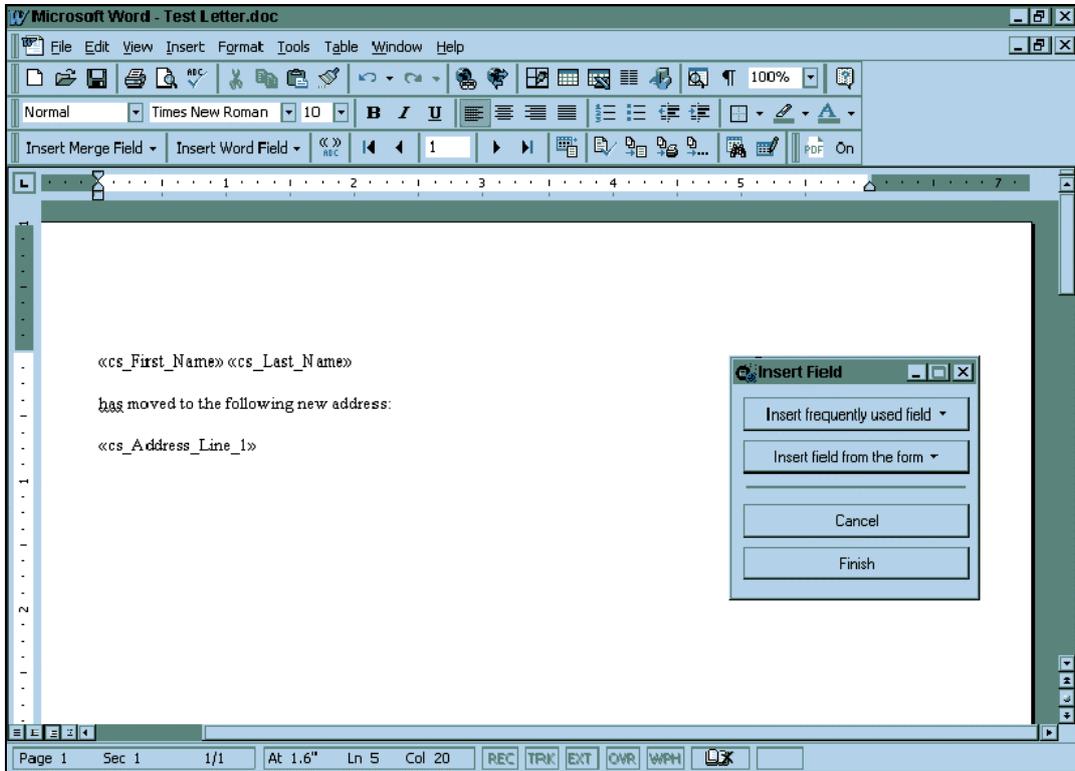
has moved to the following address:

20. Press Enter

This will start a new line on the Word document.

21. Add the 'Address_Line_1' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Address_Line_1' from the drop-down list. The display should appear like this:



22. Click Finish

Word will save the letter.

23. Click OK

This will close the Modify Communication Event dialog.

24. Click OK

This will close the Communication Event Manager dialog.

25. Access the Name and Address form

Make the following selections:

- Component:**  Employee Resourcing
Process: Hire, Rehire, Reinstatement of an Employee
Task:  Name and Address

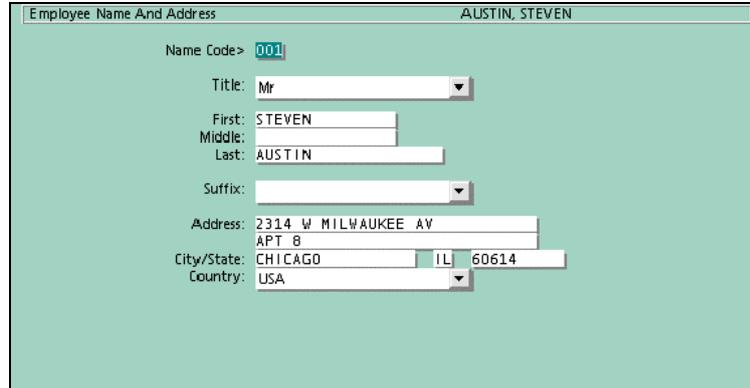
26. Select an employee

In the Number field, type:

1234

27. Click OK

The Employee Name and Address form (FF-SCR) appears with the employee information:



The screenshot shows a form titled "Employee Name And Address" with the name "AUSTIN, STEVEN" in the top right corner. The form contains the following fields and values:

- Name Code: 001
- Title: Mr
- First: STEVEN
- Middle:
- Last: AUSTIN
- Suffix:
- Address: 2314 W MILWAUKEE AV, APT 8
- City/State: CHICAGO, IL
- Country: USA

28. Type a new address

In the Address field, type the following:

1523 W. Axel Road

29. Press Enter

This will enter the new address. At this point, the Confirmation dialog appears:



The screenshot shows a "Confirmation" dialog box with the following text and buttons:

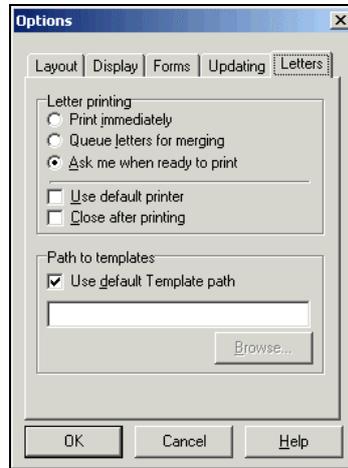
The following letter is ready to be printed
Test Letter

Buttons: View Letter, Print Now, Add to Queue, Cancel

Note: In order for this dialog to appear, you must have the 'Ask me when ready to print' option selected. This option can be found by going into The Solution Series and selecting the following:

View ► Change Options

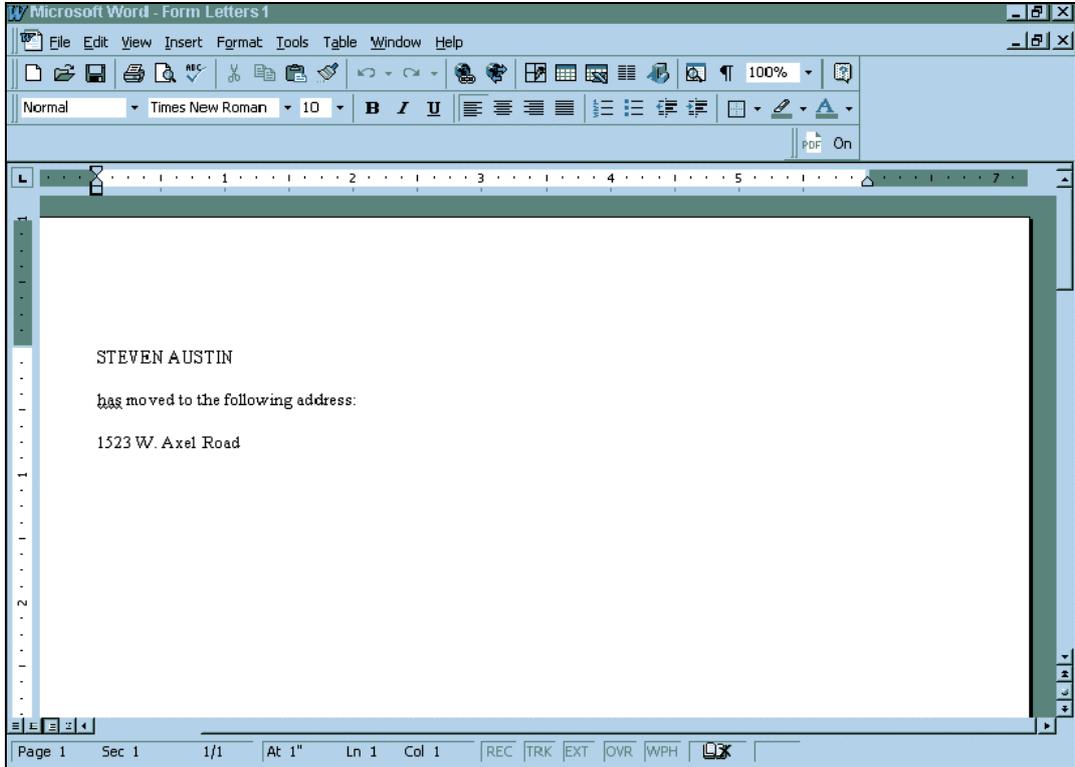
The Options dialog appears. View the Letters tab.



Select the 'Ask me when ready to print' option, then click OK.

30. **Click View Letter**

The system opens up the letter in Word and it includes the employee information. The display should appear as shown here:



Test email integration

1. Access the Communication Event dialog

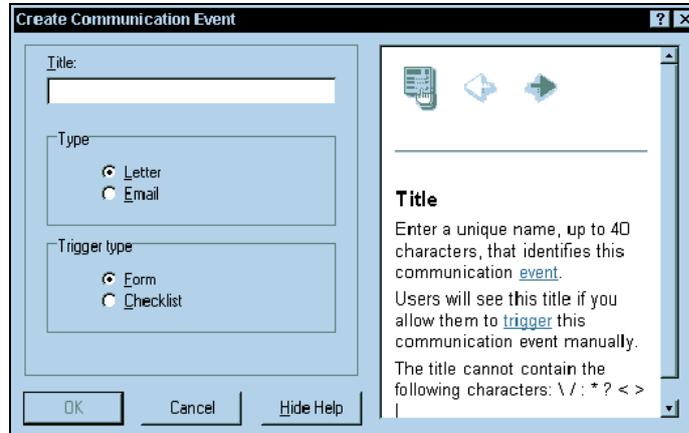
Access this dialog by making the following selections from the Navigator:

Component:  Administrator Tools
Process: Administrator Tools
Task:  Manage Events

Note: At this point, you may want to delete the Test Letter created in the task 'Test Word integration'. This can be done on the Communication Event dialog by selecting Test Letter in the Event list, then clicking Remove.

2. Click **Create**

The Create Communication Event dialog appears:



3. Enter a **Title**

Type a unique title, up to 40 characters, for this communication event. For the test letter, type the following:

Test Email

4. Select **Email**

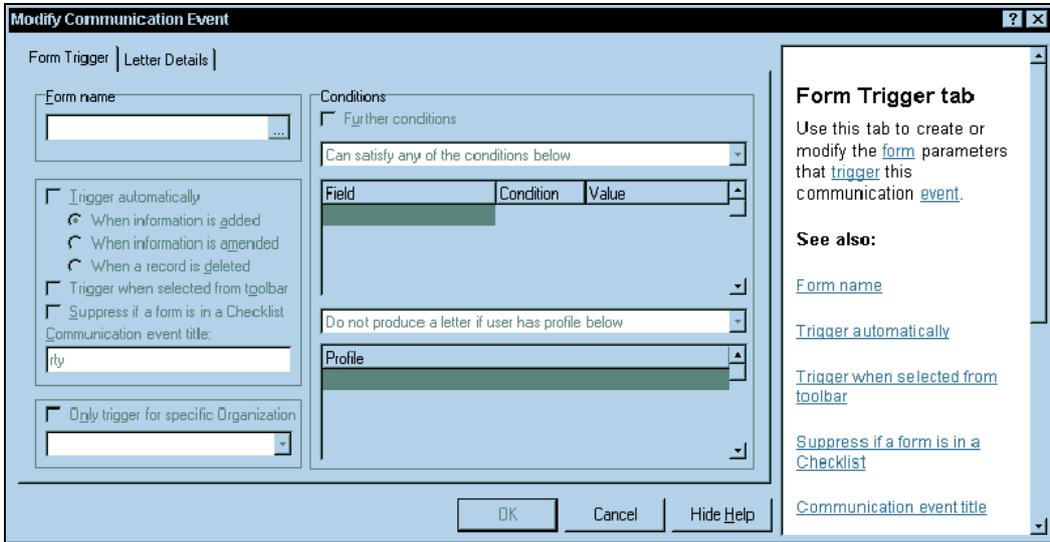
By default, Letter is the communication event Type selected when the dialog is first displayed. Change the selection to Email.

5. Select **Form**

By default, Form is the communication event Trigger type selected when the dialog is first displayed. Verify that Form is selected.

6. Click OK

The Modify Communication Event dialog appears:

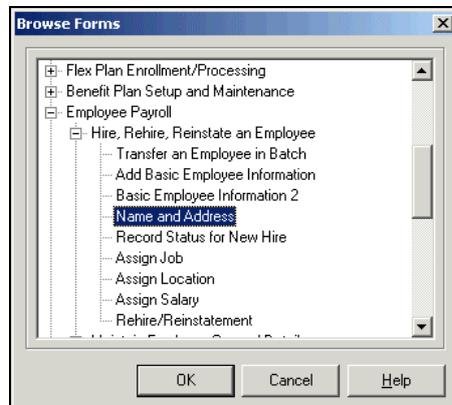


7. Select the Form name

Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus.

For the test email, select:

Employee Payroll ► Hire, Rehire, Reinstatement an Employee ► Name and Address



8. Click OK

9. Select the automatic trigger conditions

Select 'Trigger automatically'. This will activate the trigger options.

10. Select 'When information is amended'

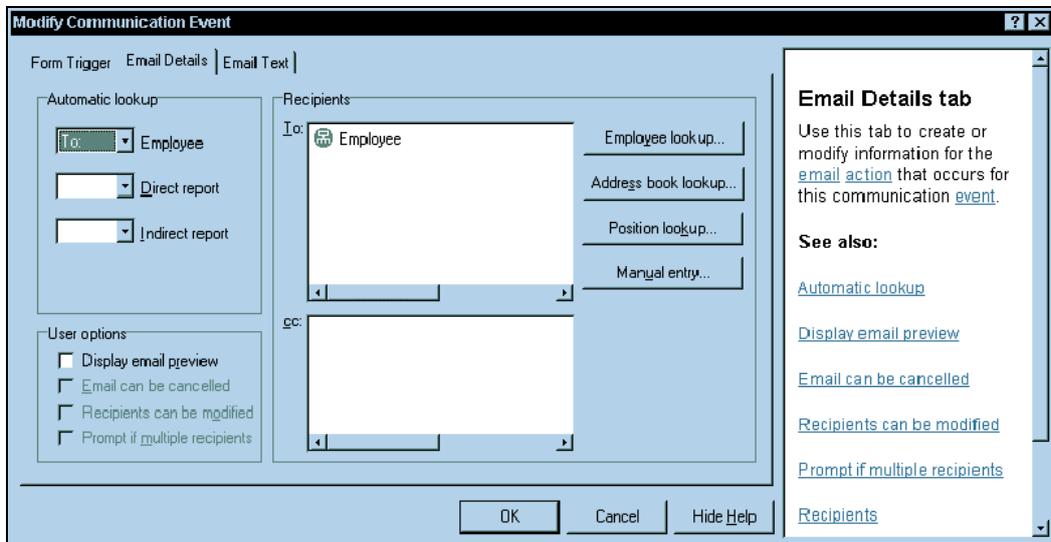
'When information is added' is the default selection—change this.

11. Click the Email Details tab

The Email Details tab will appear:

12. In the Employee field, select 'To'

Click on the down arrow, and a drop-down list will appear—select 'To' from this list. Once you select 'To', the system will automatically include the Employee field, in order to pull the email address of the required employee.



13. Select another email address

Click 'Address book lookup' and select the desired email address. This will send the email to another address, which you can use to check that the email has been received—you may want to use your own or another easily accessible address.

14. Click OK

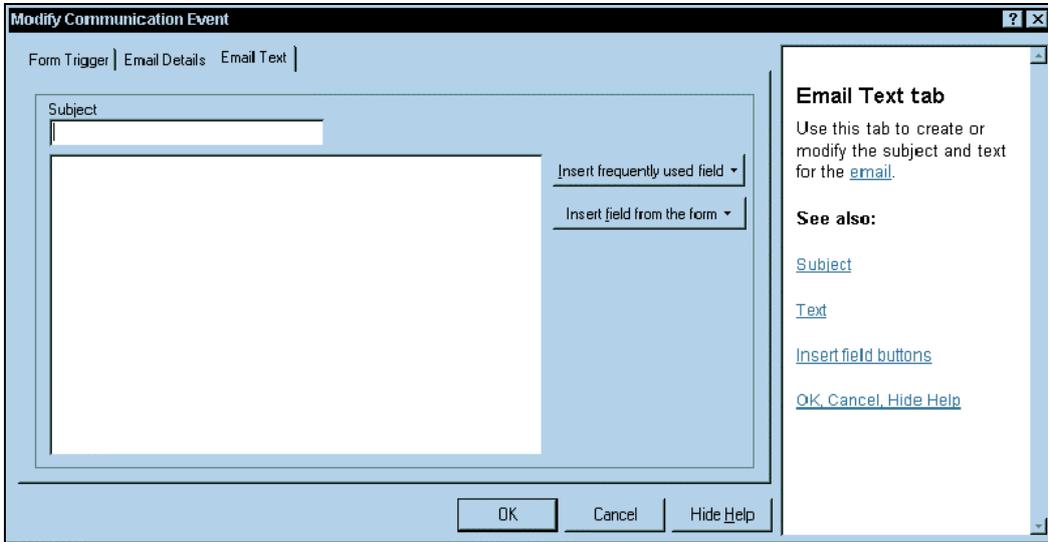
This will select the email address and return you to the Modify Communication Event dialog.

15. Click on the 'Display email preview' option

This is located in the lower left corner of the Email Details tab. Once this option is selected, the system will automatically generate a dialog which prompts you when it is generating the email.

16. Click on the Email Text tab

The Email Text tab appears:



This is where you create the email.

17. Type the Subject

In the subject field, type the following:

Test Email

18. Add the 'First Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'First Name' from the drop-down list.

This selection and the next couple will test if The Solution Series information is being pulled into the Word template properly.

19. Type a space

20. Add the 'Last Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Last Name' from the drop-down list.

21. Press Enter

This will start a new line in the email.

22. Type in a line

For the test letter, type the following line:

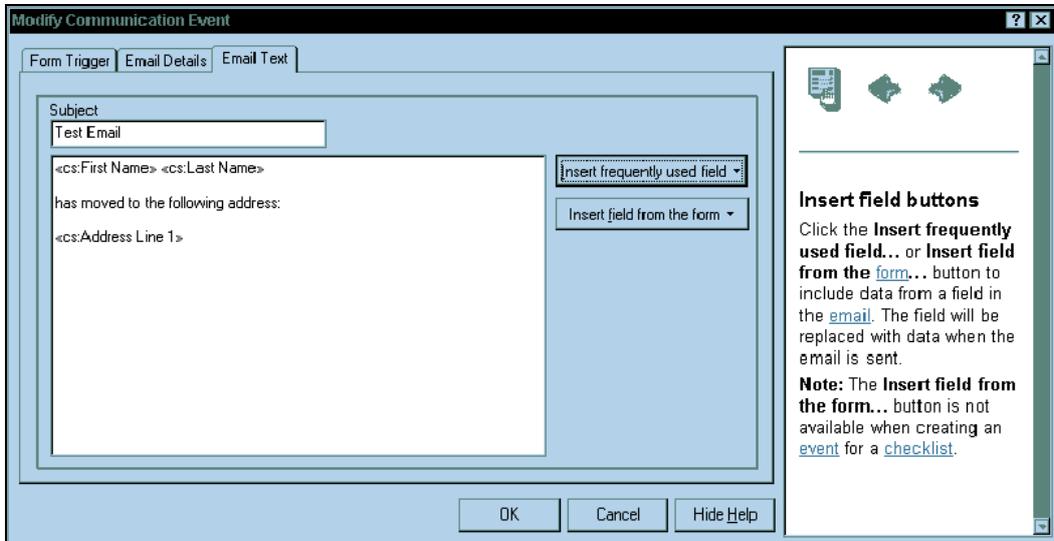
has moved to the following address:

23. Press Enter

This will start a new line in the email.

24. Add the 'Address Line 1' field

Click 'Insert Frequently used field', then select 'Address Line 1' from the drop-down list. The display should appear like this:



25. Click OK

This will enter the data and return you to the Communication Event Manager dialog.

26. Click OK

This will close the Event Manager dialog.

27. Access the Name and Address form

Make the following selections:

- Component:**  Employee Resourcing
Process: Hire, Rehire, Reinstatement of an Employee
Task:  Name and Address

28. Select an employee

In the Number field, type:

1234

29. Click OK

The Employee Name and Address form (FF-SCR) appears with the employee information:

The form displays the following information:

- Name Code: 001
- Title: Mr
- First: STEVEN
- Middle:
- Last: AUSTIN
- Suffix:
- Address: 1523 W. Rocky Road
- City/State: CHICAGO IL 60614
- Country: USA

30. Type a new address

In the Address field, type the following:

1523 W. Rocky Road

31. Press Enter

This will enter the new address. At this point, the Email Preview dialog appears:

The dialog box shows the following details:

- Recipients:** To: AUSTIN, STEVEN
- Email Text:** Subject: Test Email
- Message Body:** STEVEN AUSTIN has moved to the following address: 1523 W. Rocky Road

32. Click Send

This will send the email to the selected address.

When you are finished with this task, you should check the In Box at the address the email has been sent to in order to verify that it has been received. It is recommended that you use an email address you can easily access.

Test the import facility

This task will walk you through a test import with a sample Excel spreadsheet in order to ensure that the import functionality is working properly.

1. Access the Import Profile Manager dialog

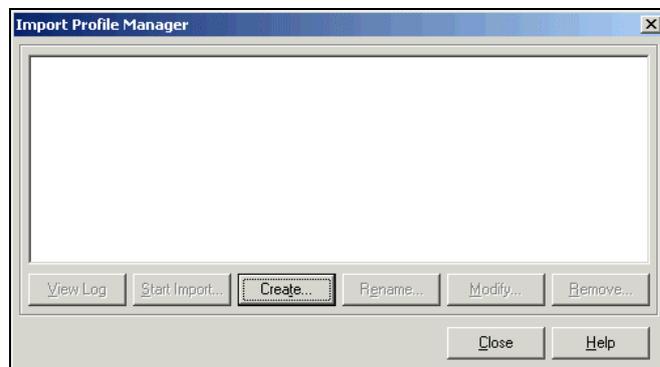
Access this dialog by selecting the Import Manager icon from the toolbar:



Alternatively, make the following selections from the menu:

Actions ► Office Integration ► Import

The Import Profile Manager dialog is displayed:



2. Click Create

Click Create to activate the Import Creation and Amendment wizard.

3. Click Next

4. Click Browse

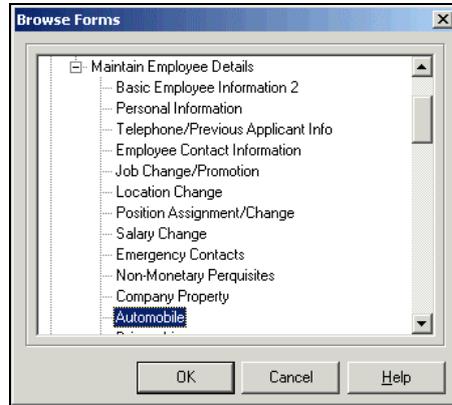
If the form displayed in the dialog is not the form to be selected for import, or if no form is being displayed, click Browse to view a list of available forms. This list contains only those forms you are authorized to access. Forms that can not be used with the import functionality are not displayed.

Use this dialog to select the The Solution Series form into which the test file will be imported.

5. Select the The Solution Series form

For the test file, make the following selections:

Employee Resourcing ► Maintain Employee Details ► Automobile



6. **Click OK**
Clicking OK will select The Solution Series form.
7. **Click Next**
8. **Click Browse**
The Open dialog will appear. Use this dialog to select the import file.
9. **Select the import file**
Use the Open dialog to find the following file path:
\\Program Files\Cyborg Systems\Clientxx\Samples\car.xls
10. **Click Open**
This will select the Excel file.
11. **Click Next**
12. **Select the First record is a header option**
This option tells the system to use the first record in the spreadsheet as a column heading.
13. **Click Next**
Now you must establish the relationship between the spreadsheet you are importing and the form into which you exporting it.
14. **Click Next**
Define the relationship between the spreadsheet and the form. The next step of this task will explain more about this relationship.
15. **Map the import-to-form relationship**
Use the 'select the name' method to map the fields in the spreadsheet to the Automobile Information form.

- For each spreadsheet field displayed in the bottom section of the dialog, click on the top row of the column. A drop-down list will display.
- Choose the field name from the drop-down list that matches the column names. The top row of the column will be updated to show the field name, and the matching field on the form will change to yellow to show that mapping has occurred. You will not see any color changes for the fields 'organization' and 'employee'.

(Organization)	Fleet ID	Number	Make	Model	Color
(Organization)	Fleet	Number	Make	Model	Color
(Employee)	6215	12345	Nissan	Sentra	Blue

- Type the letter 'T' in the Date field. This causes the current date to be used. The field color will change to blue.
- Leave the other fields on the form blank.

16. Click Next

17. Click Finish

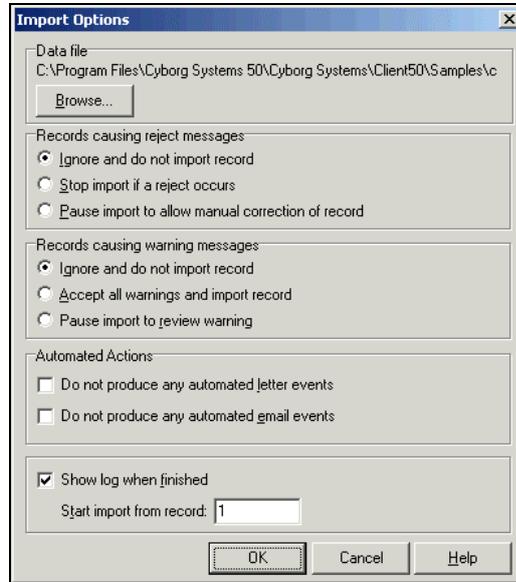
The Wizard will return you to the Import Profile Manager, and the import profile you have just created will appear in the dialog.

18. Select the desired import

Select the Import from car to Automobile Information form.

19. Select Start Import

Click **Start Import** to start the import of data to The Solution Series. The Import Options dialog is displayed:



20. Click OK

Click **OK** to continue the import.

The Solution Series will display a log after the import is complete. If no errors are reported, then the import was a success.

Your installation of The Solution Series for Microsoft Windows on the Administrative client is now complete.

PART 5

Appendices

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A P P E N D I X A

Directory Contents

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Server directory structure

Overview

The Cyborg server software is delivered in two main directories:
`/cyborghome/app` and `/cyborghome`The Solution Series.

/cyborghome/app

The `/cyborghome/app` directory contains application-specific delivered source and executables.

- The `/cyborghome/app/server` subdirectory contains the delivered scripts and executable of the Cyborg Application Server (CAS) daemon. This directory will also contain the system log of CAS execution and events.
- The `/cyborghome/app/server/trace` subdirectory will contain the detail trace files of execution of every client when CAS is in debug mode.

/cyborghome/cyborgxx

The `/cyborghome/cyborgxx` root directory contains the following subdirectories:

Subdirectory	Description
	Data files and control records
	Output from script processing
	Optional output from script processing
	Source and executable files
	Delivered scripts

Subdirectory	Description
	Temporary files

/cyborghome/app/server

The following files are shipped with CAS under the `/cyborghome/app/server` directory:

Filename	Description
<code>cybservd</code>	The CAS server executable
<code>casmgr</code>	CAS administration utility
<code>cas</code>	Script to start CAS
<code>cybapp.cfg</code>	List of The Solution Series applications
<code>cybenv.cfg</code>	List of The Solution Series environments
<code>viewlog</code>	Prints all detail from the System Log/trace file
<code>viewlog.msg</code>	Prints only the log message from the System Log/trace file

The following files are created by CAS as it executes:

Filename	Description
<code>/cyborghome/app/server/system.log</code>	Log of CAS execution and events
<code>/cyborghome/app/server/trace/*.trc</code>	Detailed trace files of execution of every client

cyborghome/cyborgxx/data

The `cyborghome/cyborgxx/data` directory contains the following files:

Filename	Description
<code>taxfile</code>	The Tax Authority file (U.S.).
<code>taxfilec</code>	The Tax Authority file (Canada).
<code>BESS</code>	Command Line Script called by the RSPAWNNESS script to run the Enhanced Interactive Workforce System.
<code>BHLD</code>	Called by the RSPAWN script to call the bulk load program to copy extracted data into the tables specified.

BHRD	Called by the RSPAWN script. This script runs report and creates intermediate files.
BISLOCK	Checks to see if specified file is available for access.
BISW	Called by the RSPAWN script to run the Enhanced Is/Was report and create intermediate files.
BIWE	Called by the RSPAWN script to run the Enhanced Interactive Workforce Is/Was report, create intermediate files, then rename files in the users sub-directory.
BMRG	Runs an online batch payroll merge.
BPAY	Runs an online batch payrun.
BRDT	Runs an online batch report.
BXTR	Runs an online batch pay extract.
cbsv	Contains source code for cbsvb, cbsvbt, cbsvo, and cbsvot.
cbsv.ovr	Overrides to cbsv source.
cybmst	Contains source code for all the batch programs (p2edit, p4calc, p5prnt, p9cnvt, and o4calc), COBOL and assembler subroutines, and report generators.
demo0105	The Solution Series System Control Repository in sequential format. This file contains option lists, tables, documentation, test data, and all Cyborg Scripting Language programs.
eprddio05	Special MAINTI05 file for including Enhanced Payroll Processing and DDI CheckList and Menu records via an additional installation process.
JPRT	Submit/View. Produces printed copy of reports held for online viewing.
JQRY	Submit/View. Produces printed copy of online query.
JRPT	Submit/View. Produces printed copy of a submitted report.
P05rdrgt.dat	File used for pulling quarterly rg's and qtrmisc.
P5prnt.ovr	Overrides to p5prnt source.
p9cnvt.ovr	Overrides to p9cnvt source.
p9cbsv.04	Report generator extract parameters for jxp9cbsv.
p9strt.04	Report generator extract parameters for jxp9strt.
rdbrgm	Relational only. Contains source code for rdbpgm0.cob, rdbpgm2.cob, rdbpgm3.cob, and rdbpgm4.cob
RESS	Required for Enhanced Reporting. Starts RSPAWNESS to revert control back to CBSVO.

RLCH	Required for Enhanced Reporting. Starts RSPAWN to revert control back to CBSVO.
RMRG	Required for Enhanced Reporting. Starts RSPAWMRG to revert control back to CBSVO.
RPAY	Required for Pay Process. Starts RSPAWNPAY to revert control back to CBSVO.
RSPAWN	Used for generating CBSVB output message logs on RLCH.
RSPAINESS	Used for generating CBSVB output message logs on RESS.
RSPAWNMRG	Used for generating CBSVB output message logs on RMRG.
RSPAWNPAY	Used for generating CBSVB output message logs on RPAY.
vers80.ovr	Overrides to <code>cybmst</code> source.

/cyborghome/cyborgxx/prog

The `/cyborghome/cyborgxx/prog` directory contains the following files:

Filename	Description
<code>cbsvb.cob</code>	Non-relational program source code used to process The Solution Series in batch
<code>cbsvb.mf2</code>	Non-relational program source code used to process The Solution Series in batch
<code>cbsvbt.cob</code>	Non-relational trace program source code used to process The Solution Series in batch
<code>cbsvo.cob</code>	Non-relational program source code used to process The Solution Series online
<code>cbsvot.cob</code>	Non-relational trace program source code used to process The Solution Series online
<code>cbsvrft.cob</code>	Subroutine used in non-relational installations to determine segment and segment key lengths
<code>cybio.cob</code>	Program for System Control Repository (<code>FILE01</code>) IO
<code>p10sort.cob</code>	Program that sorts data records in ascending order. Files used: <code>p05in</code> and <code>p05out</code>
<code>p45sort.cob</code>	Program that sorts data records in ascending order. Files used: <code>p40in1</code> and <code>p40out</code>
<code>p80copy.cob</code>	Program that adds carriage returns and line feeds to each record in a data file
<code>p80sort.cob</code>	Program that sorts data records in ascending order.
<code>pfssort.cob</code>	Program that sorts data records in ascending order Used in <code>f-segm</code>

Filename	Description
p9cnvt.cob	Program source code used to extract any member from the cybmst file

/cyborghome/cyborgxx/runs

The /cyborghome/cyborgxx/runs directory contains the following files:

Filename	Description
jbackem	Creates a sequential version of FILE1
jbldaky	Builds alternate keys
jclean01	Removes extraneous information from the MAINTO. For upgrades from 3.2 or 4.0.
jclean3x	Removes extraneous information from the MAINTO. For upgrades from 4.5.1 or 4.5.2.
jcmpcbio	Compiles and links cybio, skcybio, and logging
jcmpcvbn	Compiles the delivered non-relational batch programs
jcmpcvn	Compiles the non-relational batch programs as pulled from the csv file
jcmpcvr	Relational only. Compiles the relational batch programs as pulled from the csv file
jcmprdb0	Relational only. Compiles and links rdbpgm0.cob program
jcmprdb1	Relational only. Precompiles, compiles, and links the rdbpgm1.cob program
jcmpsort	Compiles p10sort.cob, p25sort.cob, p80sort.cob, p80copy.cob and pfssort.cob
jcmpsubr	Relational only. Compiles rdbpgma through rdbpgmh
jconvna	Converts 3.0/4.0 name format to 3.2/4.5 format
jrteyb	Relational only. Creates the tablespaces, tables, indexes and views for the CYBORG database
jrtpgms	Relational only. Creates RDB programs rdbpgm1, and rdbpgma through rdbpgmh
jcycio	Initiates the online System Control Repository (FILE01) IO by executing the cybio program
jdemo01	Creates indexed System Control Repository from sequential FILE05 (demo0105)
jexport	Exports the 'F1' and 'FTM' records from the System Control Repository. The output FILE10 is used as input FILEIN2 in jrtpgms
jf-xref	Recreates RFT records on System Control Repository (FILE01).

Filename	Description
jhrdemo	Pulls test data from the System Control Repository and populates the online Employee Database.
jhrdemoc	Pulls test data from the System Control Repository and populates the online Employee Database. (Canada.)
jmainti	Updates the System Control Repository
jmainto	Compares current System Control Repository with original FILE05 (demo0105) and produces FILE10 (mainto10), which contains the differences found
jmakecl	Extracts option list values, field definitions, screen security, and PC menu records from the System Control Repository
jmnrtrun	Updates Labor and History records following the Batch pay calculation
jp20strt	Creates the p20in batch Master File for the first time
jpymrg	Creates or updates the online Employee Database
jpayrun	Calculates pay and produces checks, reports, and a combined register
jpaxtr	Pulls timecards and adjustments from the online Employee Database and creates FILE12 (P20 Master), which will be the new p20in file
jpffsort	Sample script to run segment layout report
jpgopf01	Relational only. Populates the option list and specific application tables
jpgdemo	Pulls test data from the System Control Repository (Control File; FILE01) and populates fields in the online Employee Database. This script is used when first building the employee database during installation.
jpgdemoc	Pulls test data from the System Control Repository (Control File; FILE01) and populates fields in the online Employee Database. This script is used when first building the employee database during installation. (Canada)
jpul_rdb	Relational only. Extracts the CASE tool, rdbpgm0, rdbpgm2, rdbpgm3, and rdbpgm4
jpulcvn	Pulls non-relational batch programs cbsvb, cbsvbt, cbsvo, and cbsvot from the csv file
jpulcvr	Relational only. Pulls relational batch programs cbsvb, cbsvbt, cbsvo, and cbsvot from the csv file
jqtrrun	Runs the quarterly processor.
jrebuild	Recreates System Control Repository using the output from jbackem

Filename	Description
jreload	Reloads (Cyborg's compile routine) Cyborg Scripting Language programs in the System Control Repository
jreport	Extracts reports from System Control Repository and the Employee Database
jrptmnu	Creates menu records on System Control Repository for enhanced pay processing.
jupdcybm	Updates the cybmst file with program updates or report generators
jxcybmst	Extracts and compiles cybmst programs (o4calc, p2edit, p4calc, p5prnt, and p9cnvt)
jxo4calr	Extracts COBOL program o4calc from cybmst, compiles the relational program, and links the machine-specific sub-routines
jxp5qtr	Creates P5QTR file.
jxp5w2pr	Extracts data for quarterly processor.
jxrept20	Extracts report generator 20 from cybmst in order to add new Organization Control Number values (companies) to the p20in Batch Master File
jxrptgen	Extracts report generators from cybmst
online	Initiates the online Solution SeriesThe Solution Series system by executing the cbsvo program
onlinet	Initiates the trace online Solution SeriesThe Solution Series system by executing the cbsvot program
rj	Command used for installing UNIX files.

A P P E N D I X B

Installation Checklists

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Installation Checklist - Indexed Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Create user and file system

Phase 2: Extract and Transfer Install Files

- The Solution Series directory structure
- Extract install files to a PC
- Transfer install files from the PC to the server
- Extract server install files
- Set up user profile
- Verify compiler versions
- Check special requirements

Phase 3: Compile Batch and Build FILE01

- Pull all cybmst programs
- Compile and link the delivered cbsvb and cbsvrft
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository

Phase 4: Compile CBSV and CYBIO

- Pull all cbsv programs - jpulcvn/r
- Compile and link all cbsv programs
- Compile and link cybio

Phase 5: Create Test p20in Batch Master

- Create test p20in Batch Master

Phase 6: Create Employee Database with pay history

- Create test Employee Database
- Populate database with test data
- Update p20in Batch Master File

- Apply taxes, timecards, and adjustments
- Create pay history
- Update the Employee Database

Phase 7: Extract HR reports

- Script Used: jreport

Phase 8: Apply System Control Repository Menu Additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Relational Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Create user and file system

Phase 2: Extract and Transfer Install Files

- The Solution Series directory structure
- Extract install files to a PC
- Transfer install files from the PC to the server
- Extract server install files
- Set up user profile
- Verify compiler versions
- Check special requirements

Phase 3: Compile Batch and Build FILE01

- Pull all cybmst programs
- Compile and link the delivered cbsvb and cbsvrft
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository

Phase 4: Compile CBSV and CYBIO

- Extract the CASE tool
- Compile rdbpgm0.cob
- Export F1 and FTM records
- Execute the make command
- Execute the CASE tool
- Pre-compile, compile, and link rdbpgm1
- Create the tablespaces, tables, indexes, and views in the Cyborg database
- Create the tablespaces, tables, indexes, and views in the Cyborg database
- Pre-compile, compile, and link rdbpgma through rdbpgmh

- Script Used: jcmpsubr
- Create the tablespaces, tables, indexes, and views in the Cyborg database
- Create the tablespaces, tables, indexes, and views in the Cyborg database

Phase 5: Create Test p20in Batch Master

- Pull all csv programs - jpulcvn/r
- Add Oracle link to jcpcvr
- Compile and link all csv programs
- Compile and link cybio

Phase 6: Create Employee Database with pay history

- Create test p20in Batch Master

Phase 7: Extract HR reports

- Create test Employee Database
- Populate option list and application tables
- Populate database with test data
- Update p20in Batch Master File
- Apply taxes, timecards, and adjustments
- Create pay history
- Update the Employee Database

Phase 8: Apply System Control Repository Menu Additions

- Script Used: jreport

Phase 9: Apply System Control Repository Menu Additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Cyborg Application Service (CAS) Installation and Configuration

Install and Configure the Cyborg Application Server (CAS)

- Install CAS
- Start cas
- Configure the environment

Installation Checklist - Installing the Web Client Software on the Web Server

Installing the Web Client Server

- Install the eCyborg Web Server files
- Add eCyborg to ServletExec.properties (ServletExec only)
- Add eCyborg to uriworkermap.properties (Tomcat only)
- Start the servlet engine
- Add the Cyborg environment to the environments properties file
- Test the eCyborg Web Server

Installation Checklist - Installing and Configuring the Administrative Client

Phase 1: Prepare for installation

- Ensure Cyborg Application Service is active
- Complete a configuration worksheet

Phase 2: Install the software

- Install Client files
- Install Document Data Interface (DDI)---optional
- Install Enhanced Payroll and Reporting (EPR)---optional

Phase 3: Configure the software

- Set Up Your Environment
- Configure the Cyborg Desktop (Optional)

Phase 4: Test the installation

- Run the Messaging Test Tool
- Test the connection to the server
- Test the GUI
- View the Favorites Toolbar
- Define the email and letter template folder
- Test Word integration
- Test email integration
- Test the import facility

APPENDIX C

Creating Separate Environments on the Server for the Client

In This Appendix

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Phase 2:Performing client configuration.....	152

Phase 1: Performing server configuration

Task overview

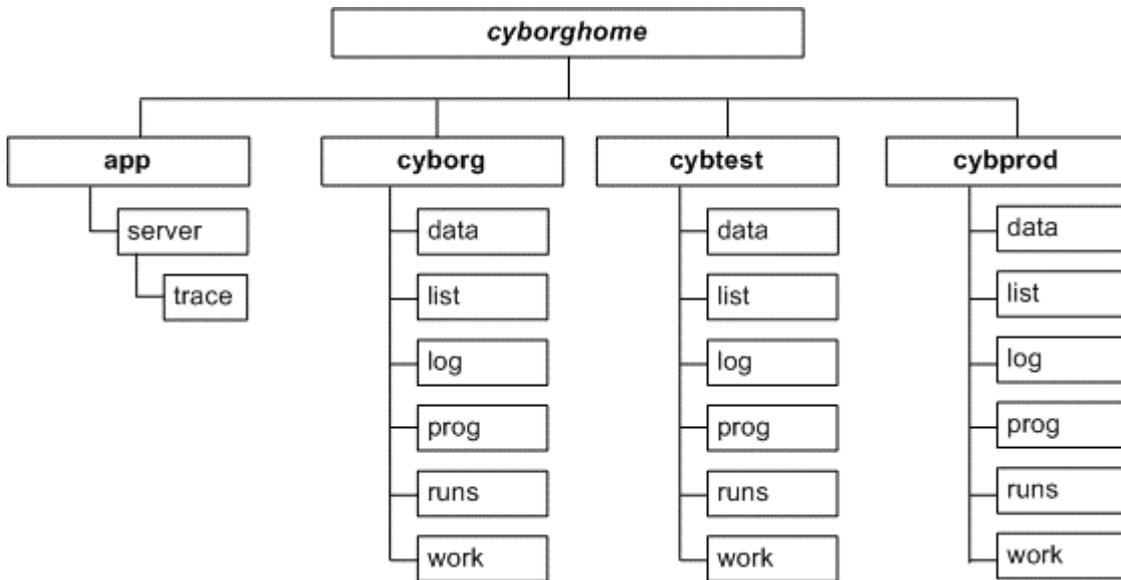
Complete the following tasks depending upon the type of environment you are configuring:

If <i>existing</i> configuration is ...	And <i>new</i> configuration is ...	Perform
non-relational	non-relational	<ul style="list-style-type: none">■ Create a unique directory under <code>cyborghome</code>■ Copy programs from the first installed environment■ Add additional environments to the Cyborg environment configuration file■ Grant read, write, execute permissions to user Id 'CYBORG' for each new subdirectory (runs, work, list, prog, data)
relational	non-relational	All Tasks
non-relational	relational	<ul style="list-style-type: none">■ Create a unique directory under <code>cyborghome</code>■ Copy programs from the first installed environment■ Complete the Installation

Create a unique directory under cyborghome

Create a unique directory structure at the server.

Note As shown in the diagram below, the `/cyborghome/app` directory must exist only **once**—no matter how many Cyborg environments you have installed.



Copy programs from the first installed environment

Maintaining the directory structure, copy all files from the first environment you installed at the server (for example, copy contents of `/cyborghome/cyborg` onto `/cyborghome/CybProd`).

Delete programs that will be recreated

Delete the following programs from your new directory on the server:

```

/cyborghome/CybProd/prog/del rdbpgm1.*
/cyborghome/CybProd/prog/del rdbpgma.*
/cyborghome/CybProd/prog/del rdbpgmb.*
/cyborghome/CybProd/prog/del rdbpgmc.*
/cyborghome/CybProd/prog/del rdbpgmd.*
/cyborghome/CybProd/prog/del rdbpgme.*
/cyborghome/CybProd/prog/del rdbpgmf.*
/cyborghome/CybProd/prog/del rdbpgmg.*
/cyborghome/CybProd/prog/del rdbpgmh.*
/cyborghome/CybProd/prog/del cbsv*.*
/cyborghome/CybProd/list/del *.*
  
```

Note Assumes `/cyborghome/cyborg` is the current relational environment and `/cyborghome/CybProd` is the second environment to be set up.

Copy Cyborg delivered files

Copy the Cyborg delivered files:

```
/cyborghome/CybProd/prog/cbsvb.mf2
to
/cyborghome/CybProd/prog/cbsvb.cob
/cyborghome/CybProd/prog/cbsvrft.cob
to
/cyborghome/CybProd/prog/cbsvrft.cob
```

Complete the Installation

To complete the installation, following the instructions below for either non-relational or relational:

Non-relational

To complete a *non-relational* installation, go to **Indexed Server Installation and Configuration**, and perform the Phases and Tasks listed below:

- **Phase 3: Compile Batch and Build FILE01 - Solution Series Install UNIX** (see "Phase 3: Compile Batch and Build FILE01" on page 29)
 - **Pull all cybmst programs** (on page 29)
 - Compile and link the delivered `cbsvb` and `cbsvrft` (on page 29)
 - **Create System Control Repository** (on page 30)
- **Phase 4: Compile CBSV and CYBIO** (on page 31)
 - Pull all `cbsv` programs (see "Pull all cbsv programs - jpulcvn" on page 31)
 - Compile and link all `cbsv` programs
 - Compile and link `cybio` (on page 31)
- **Phase 6: Create Employee Database with pay history** (see "Phase 6: Create Employee Database with pay history" on page 33)
 - Complete all tasks.

Relational

To complete a *relational* installation, go to Relational Server Installation and Configuration, and perform the Phases and Tasks listed below:

- **Phase 3: Compile Batch and Build FILE01** (on page 29)
 - Compile and link the delivered `cbsvb` and `cbsvrft`
 - Create System Control Repository

- **Phase 4: Create Cyborg Relational Databases** (see "Phase 4: Compile CBSV and CYBIO" on page 51)
 - Export F1 and FTM records
 - Execute the make command
 - Execute the CASE tool (`rdbpgm0` program)
 - Pre-compile, compile and link `rdbpgm1`
 - Create the tablespaces. Tables, indexes, and views in the Cyborg database
 - Pre-compile, compile, and link `rdbpgma` through `rdbpgmh`
 - Extract, compile, and link `04calc`
 - Edit `cbsv.ovr`
 - Pull all `cbsv` programs
 - Pre-compile, compile, and link all `cbsv` programs

- Phase 4: Create Employee Database with pay history
 - Complete all tasks.

Add additional environments to the Cyborg environment configuration file

Edit the file `cybenv.cfg` to configure an environment for *The Solution Series* users.



*For instructions on how to edit the `cybenv.cfg` file, see the *Configuring a new environment on the server* section in **Administering the Cyborg Application Server (CAS) Daemon** (on page 187).*

Grant read, write, execute permissions to user Id 'CYBORG' for each new subdirectory (runs, work, list, prog, data)

Phase 2: Performing client configuration

Configure a new environment connection at the client

To configure a new environment connection at the client, perform the following steps:

1. Access the Connection Editor dialog box

Access this dialog box by selecting:

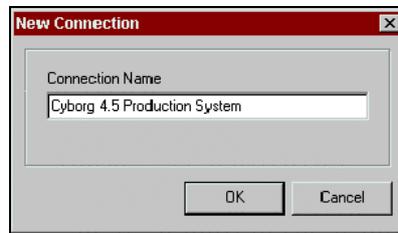
Start > Programs > The Solution Series xxx > Connection Editor

2. Click New

The New Connection entry dialog box displays.

3. Enter a Connection Name

Identify a title for the connection you will configure between the client and the server. For example, if your production environment is called `CYBPROD` and your test environment is called `CYBTEST`, you can assign a more user friendly name here such as Cyborg 4.5 Production System. If a user requires multi-environment access, additional environments can be set up later. This label must not contain characters `\\:*?!\"<>_'`.



Note You must create a folder on the server which will match the Connection Name that you enter here. See *Build the Client Data File, Step 6*. Create a connection subdirectory at the client.

4. Click OK

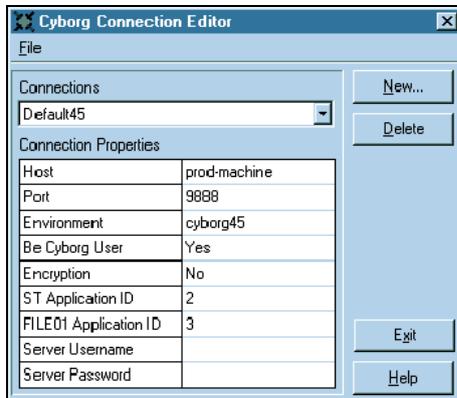
The Connection Editor dialog box displays a new connection with default settings, ready for configuration.

5. Type the configuration details

Type the following configuration details under Connection Properties on the Connection Editor dialog box:

Item	Description
Host	Identify the system name of the UNIX server, as identified on the network.
Port	Identify the port address of the UNIX server. For the Cyborg Application Server (CAS), Cyborg has registered the port address of 9888. Note You must also identify the 9888 port address on the server by editing the <code>/etc/services</code> file, as described in Chapters 3 and 4, Phase 6: Install and configure Cyborg Application Server (CAS) daemon.
Environment	Identify the environment name (up to 8 characters). Examples are: <code>ST45PROD</code> , <code>ST45TEST</code> . Note This same environment name must also be entered in the <code>cybenv.cfg</code> file on the server, as described in Appendix E: Administering the Cyborg Application Server (CAS) Daemon.
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
ST Application ID	The application name and ID number for The Solution Series application. This application ID is configured to 2 as identified in <code>cybapp.cfg</code> on the server.
FILE01 Application ID	The application name and ID number for the <code>CYBIO</code> application. This application ID is configured to 3 as identified in <code>cybapp.cfg</code> on the server.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

After you have made these entries on the Cyborg Connection Editor, it should look like this:



6. Click Exit

The new connection has been configured between the server and the client.

Build the Client Data File

This task details how to build the Client Data File using the Build FileCL utility.

Note You can build one Client Data File at the server for each environment, then copy it to each client.

Note The Client Data File can also be built by deleting the existing FILECL32. When a person logs on to the system after this has been deleted, The Solution Series will automatically build a new Client Data File.

1. Run Export Client File utility (makecl) on the server

Script used: jmakecl

To obtain the source file for the Client Data File, execute the `jmakecl` script from the `$runs` subdirectory. For example:

```
nohup jmakecl > jmakecl.log &
```

Review the log to determine if there were any errors.

The `makecl110` file (FILE10) must then be copied to a local client PC.

Note Run this script in each environment for which you want to create a client data file.

2. Launch the Build Client Data File Builder program

Launch this dialog box at the client by selecting:

Start > Programs > The Solution Series ST 4.5 > Build Filecl

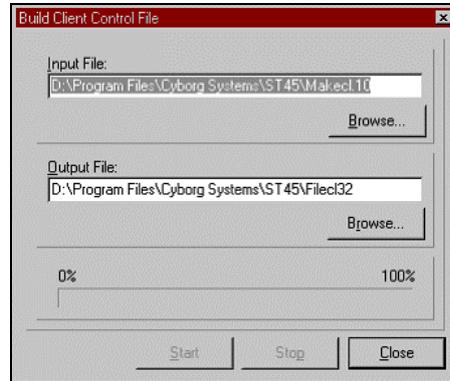
Note This executable is only available where you selected a Custom installation and included this program in the installation.

3. Locate the Input file

Browse to the location of the output file from step 1, which was copied to the local client PC from the server, and select it.

4. Locate the new Client Data File

Browse to the temporary location where you want the new Client Data File (FILECL32) to be built. From this location, the Client Data File will be copied to the client locations.



5. Click Start

A new FILECL32 is created. When the file is built, the Start button will be re-enabled. Click Cancel.

6. Create a connection subdirectory at the client

Copy the Default environment directory under the C:\Program Files\Cyborg Systems\ST4\Environments directory and rename it by the same name as the new connection name.

For example, copy contents

from: C:\Program Files\Cyborg Systems\ST45\Environments\Default
to: C:\Program Files\Cyborg Systems\ST45\Environments\Cyborg
Production System.

Note The folder that you create here must match the name that you entered in the Cyborg Connection Editor dialog box in Task 1: Configure a new environment connection at the client.

7. Copy the Client Data File to the client directory

Copy this Client Data File (FILECL32) to the appropriate environment directory on the client (for example, C:\Program Files\Cyborg Systems\ST4\Environments\Cyborg Production System).

8. Edit the Wallpaper.bmp file (optional)

The wallpaper.bmp file is located in each environment subdirectory.

Copy wallpaper.bmp to each environment you create.

Using any graphics package, edit the delivered graphic or create a new image or save it as `Wallpaper.bmp` in the new subdirectory.

Note We highly recommend you change the Wallpaper when you have multiple versions of the system. This will help the user easily identify which version they are working in.

Test the connection (on the client)

1. Launch The Solution Series

Select:

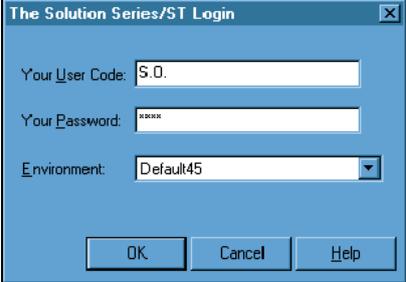
Start ► Programs ► The Solution Series ► The Solution Series
The Welcome screen displays.

2. Select the Start button on the Welcome screen

The sign on dialog box displays.

3. Sign on as the Security Officer

Select the environment you want to access, enter your user name and password.



The Solution Series/ST Login

Your User Code: S.O.

Your Password: *****

Environment: Default45

OK Cancel Help

4. Click OK

The work area for The Solution Series displays.

5. Sign off The Solution Series

APPENDIX D

ORACLE Database Considerations

In This Appendix

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Overview

This section has been provided to assist Cyborg customer DBAs to properly create the database and minimize any 'rework' in the future or troubleshoot database problems.

Understanding the Cyborg Database

There are several things you should understand when working with the Cyborg database. This section explains the specifics of the database.

Tablespaces

There are 8 database tablespaces created to hold Cyborg data and index objects:

Tablespace 0	Temporary tablespace the Cyborg user will use
Tablespace 1	Company data + Labor/History Indexes
Tablespace 2	Other Record data + Employee Indexes
Tablespace 3	Tax data + Tax Indexes
Tablespace 4	Employee data + Other Record Indexes
Tablespace 5	Labor/History data + Company Indexes
Tablespace 6	Option List/Application Tables
Tablespace 7	Option List/Application Table Indexes

Cyborg user account

An ORACLE user account should be created to own the Cyborg database objects. Use the following guidelines:

- Minimum database privileges this user should be granted.
- Create database tables, views, synonyms, roles, procedures, and triggers.
- Select, insert, update, and delete for database tables and views.

Enough memory on machine

Before tuning memory for ORACLE, ensure that enough memory resides on your machine for the following:

- Operating system
- Assortment of support mechanisms for the operating system
- Database engine, tools, and shadow processes for your version of ORACLE
- Software that coexists with ORACLE on your machine
- Network of operating system buffers
- ORACLE databases that coexist on your machine
- Memory overhead per user on the system
- Operating system overhead for supporting the read-and-write requests of all of those users

Tuning ORACLE with INIT.ORA parameters

To see the current value of your `init.ora` parameters, you can no longer rely on reading the `init.ora` file; you should select all of the parameter names and values from `V$PARAMETER` instead. The setting of the `INIT.ORA` Parameters customizes the performance of each ORACLE instance to its particular needs. While default settings often yield adequate performance, the peak performance ORACLE is capable of delivering can often be attained only by careful tuning of each parameter.

While most of the parameters can be adjusted only after the database is in use, the following parameters can be adjusted immediately upon installation:

- SYSTEM GLOBAL AREA (SGA)
 - `DB_BLOCK_SIZE`
 - `DB_BLOCK_BUFFERS`
 - `SHARED_POOL_SIZE`
- `OPEN_CURSORS`
- `PROCESSES`
- `SORT_AREA_SIZE`
- `DML_LOCKS`
- `LOG_BUFFER`
- `ROLLBACK_SEGMENTS`

The parameters are listed in order of maximum performance gain.

SYSTEM GLOBAL AREA (SGA)

It is important that the `SHARED_POOL_SIZE` and `DB_BLOCK_BUFFERS` account for 90% of the SGA total size. In addition, the SGA should never take over 50% of the available memory. In a `SVRMGR` session, enter the following to determine the SGA values:

```
sho SGA
```

DB_BLOCK_SIZE

The size of a database block in bytes. We suggest using the default value of 2048.

DB_BLOCK_BUFFERS

The number of database blocks cached in memory. Each buffer in the cache contains one ORACLE block. The larger the cache, the more data ORACLE can hold in memory. If the data is not in memory, ORACLE issues the needed I/O request to obtain the data, which is the slowest operation a computer can perform. Set this value to the maximum number of buffers that could be added without causing paging.

SHARED_POOL_SIZE

The size in bytes of shared pool. If the ratio of reloads to pins exceed 1 percent, you should increase this parameter. This can be determined by a simple query:

```
SQL>SELECT (SUM(reloads/SUM(pins)) * 100 'Miss %' from V$LIBRARYCACHE;
```

OPEN_CURSORS

This parameter is the maximum number of cursors that a user can have open at one time. To fully use the higher value for `SHARED_POOL_SIZE`, you may also want to increase the number of cursors available to each user (`OPEN_CURSORS`).

PROCESSES

This parameter limits the number of users who can concurrently access the instance. This parameter does not effect performance but is a useful starting point in defining expected requirements for ORACLE. Keep in mind that the background processes are included in this number and if the application spawns processes recursively, all these spawned processes count.

SORT_AREA_SIZE

This is the amount of memory per user process that is allocated for sorting. Size your `SORT_AREA_SIZE` to fit the need of the users. This is a big user of memory and also a big help with performance.

DML_LOCKS

This parameter is the maximum number of locks that can be placed on all tables by all users at one time. Experience has shown this parameter should be set high, as this parameter has no effect on performance.

LOG_BUFFER

This parameter is the number of bytes that are allocated to the redo log buffer in the SGA. If the ORACLE system is processing many in-process transactions, this parameter should be increased to reduce I/O to the redo logs.

ROLLBACK_SEGMENTS

This parameter is a list of all the rollback segments available to user processes. The system rollback segment should never appear in this parameter's list. All of the user rollback segments should be the same size since they are allocated randomly. Rollback segments should be large enough to contain all of the rollback information for any anticipated transaction. Always name your rollback segments in the initialization parameter file. Always place your rollback segments in their own tablespace.



Refer to 'Managing Rollback Segments', later in this appendix.

Space Management

Space is needed for the following objects to extend tables and indexes, rollback segments, and temporary tables:

Tables and indexes

This is caused by the said objects needing additional space to satisfy an insert or update.

Rollback segments

If the culprit is a rollback segment, the error ora-1562 'failed to extend rollback segment (id = %s)' will always precede the ora-1547. The ora-1562 is telling us that it could not extend the rollback segment, and the reason is the ora-1547—not enough space.

Temporary tables

These are tables created by the ORACLE kernel to do a sort on behalf of the user. A user can tell that he is running out of space for a temporary table, based on the operation he/she is performing (such as creating an index, doing a query with an order by, or a lengthy join statement). The temporary tablespace the user will use can be seen by performing the following query:

```
SQL>select temporary_tablespace from sys.dba_users where
username='<USERNAME>';
```

If the space being used seems too large, you may want to investigate the default storage for the temp tablespace—it is possible that the defaults are too small. To see the default storage, perform the following query:

```
SQL>select initial_extent, next_extent, min_extents, pct_increase
from sys.dba_tablespaces
```

```
where tablespace_name='<NAME>;
```

Adjustments can be made to the default storage of the tablespace by issuing the following command:

```
SQL>alter tablespace <NAME> storage (initial xxx next xxx....);
```

Space can be added to a tablespace using the 'ALTER TABLESPACE' command (full syntax below). This statement will create a database file on disk and enlarge the existing tablespace. The statement can be performed on all tablespaces (including system) without shutting down the database or taking the tablespace offline. Immediately following the completion of the statement, the space is available.

```
SQL>alter tablespace <TABLESPACE_NAME> add datafile '<PATH/FILENAME>'
size <size_of_file> reuse;
```

To get an idea of the naming conventions or locations for existing files, perform the following query:

```
SQL>select file_name from sys.dba_data_files where  
tablespace_name='<NAME>';
```

Understanding and resolving common ORACLE sizing errors with tablespaces

Error 01658: Unable to create INITIAL extent for segment in tablespace %s

Cause:	Failed to find sufficient contiguous space to allocate INITIAL extent for segment being created.
Action:	Use ALTER TABLESPACE ADD DATAFILE to add additional space to the tablespace or retry with a smaller value for INITIAL.

ORACLE will ALWAYS try to allocate CONTIGUOUS space. Although the tablespace may have enough free space, if it is not contiguous, the error will occur. To see if you have enough contiguous space in the tablespace, perform the following query:

```
SQL>select max(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This will return one record which shows the biggest chunk of space free in the tablespace in question. This number will be lower than the one returned by the error. If you wish to compare the contiguous space with total space, perform the following query:

```
SQL>select sum(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This also returns one record. This value can be compared to the record above to see how much of the total space is contiguous.

Understanding and resolving common ORACLE sizing errors with tables

Error 01631: Max # extents (%s) reached in table %s.%s

Cause:	A table tried to extend past maxextents.
Action:	Recreate the table with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01653: Unable to extend table %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for table segment in tablespace
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and Resolving commonORACLE sizing errors with indexes

Error 01632: Max # extents (%s) reached in index %s.%s

Cause:	An index tried to extend past maxextents.
Action:	Recreate the index with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01654: Unable to extend index %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for index segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and resolving common ORACLE sizing errors with rollback segments

Error 01628: Max # extents (%s) reached for rollback segment %s

Cause:	Tried to extend rollback segment already at maxextents value.
Action:	Recreate the rollback segment with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01650: Unable to extend rollback segment %s by %s in tablespace %s

Cause:	Failed to allocate an extent for rollback segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Managing rollback segments

A rollback segment consists of contiguous multi-block pieces called extents. The segment uses these extents in an ordered circular fashion, moving from one to the next after the current extent is full. A transaction writes a record to the current location in the rollback segment and advances the current pointer by the size of the record.

To determine a general rollback segment configuration, balance the number of segments against the size of each segment, such that the space needed will fit into the available disk space.

Make sure that there are enough segments to avoid contention as processes access them. But also make sure that individual rollback segments are large enough for their transaction load.

Balancing transaction requirements

The next section discusses balancing these two requirements.

- A transaction can only use one rollback segment to store all of its rollback (undo) records.
- Multiple transactions can write to the same extent.

There are two issues that need to be considered when deciding if your segment is large enough.

First, make sure that transactions will not cause the head to wrap around too fast. This causes the segment to extend in size, per the principles mentioned above.

Second, if you have long running queries that access data that frequently changes, make sure that the rollback segment does not wrap around to prevent the construction of a read consistent view.



Refer to the ORACLE Database Administrator's Guide for discussions on 'read consistency' on 'avoiding the snapshot too old error'.

The size needed for a rollback segment depends directly on the transaction activity of your database. Be concerned about the activity during normal processing of the database, not with rare or semi-frequent large transactions. These special cases are to be dealt with separately.

The number of rollback segments needed to prevent contention between processes can be determined with the help of the monitor rollback display and the use of the V\$WAITSTAT table.

Undo headers may occur if there are not enough rollback segments to support the number of concurrent transactions. The following V\$WAITSTAT query will display the number of waits since instance startup:

```
SQL>SELECT * FROM V$WAITSTAT WHERE CLASS = 'undo header';
```

To find out the size and number of rollback segments needed for normal processing on the database, you need to do some testing. A good test is to start with small rollback segments.

Allow your application to force them to extend. Here are the steps to run such a test:

1. Create a rollback segment tablespace.
2. Create a number of rollback segments in the tablespace.
3. Create the rollback segments so that all extents are the same size. Choose an extent size that you suspect will need between 10 to 30 extents when the segments grow to full size.
4. Each rollback segment should start with two extents before the test is run. This is the minimum number of extents any rollback segment can have.
5. Activate only the rollback segments that you are testing by making the status 'online'. The only other segment that should be 'online' is the system rollback segment.
6. Run transactions with a load typical of the application.
7. Watch for rollback segment contention.
8. Watch for the maximum size a rollback extends to.

The maximum size any one of the rollback segments reaches during the test is the size you want to use when configuring. This size we will call the 'minimum coverage size'. If you see contention, adjust the number of segments and rerun the test. Also, if the largest size requires fewer than 10 extents, or more than 30, it is a good idea to lower or raise the extent size respectively, and rerun the test.

For sizing rollback segment extents, we strongly recommend that each extent be of the same size. In fact, we also suggest that the size of the rollback tablespace is some multiple of the common extent size. The number of extents for an individual segment should be around 20.

In the rollback segment storage clause, please use the OPTIMAL parameter. OPTIMAL sets an optimal size in bytes for a rollback segment. It can be specified in kilobytes or megabytes. ORACLE will dynamically deallocate extents in the rollback segment to maintain the optimal size.

NULL means that ORACLE never deallocates the rollback segment extents, and this is the default behavior. You must supply a size greater than, or equal to, the initial space allocated for the rollback segment by the MINEXTENTS, INITIAL, NEXT, and PCTINCREASE parameters.

Extent deallocation is expensive in regards to performance. This means that an OPTIMAL setting may decrease performance if it is too low.

Changing an ORACLE user's password

You can use the ALTER USER command as a DBA or as the user itself to accomplish this task.

```
SQL>CONNECT userid/password;
```

where *userid* is your database userid or the userid of the DBA and *password* is your current password or the password of the DBA.

```
SQL>ALTER USER john IDENTIFIED BY test;
```

Dropping the Cyborg Database

Dropping a database is not supported by ORACLE. However, taking the tablespaces offline, dropping each tablespace, dropping the Cyborg user, and deleting all related data, initialization, and control files will accomplish this.

For each of the 8 tablespaces created for the Cyborg database, perform the following two commands:

```
SQL>alter tablespace <TABLESPACE_NAME> offline;  
SQL>drop tablespace <TABLESPACE_NAME> including contents cascade  
constraints;
```

Then drop the Cyborg user:

```
SQL>drop user <USER> cascade;
```

Delete all related data, initialization, and control files in the operating system.

APPENDIX E

ORACLE Disk Requirements Worksheets

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Introduction

The tables in this appendix show an example for an Oracle database of the overhead space required for each of the tables. To calculate the table required, multiply the average row length by the number of occurrences for each table.

To calculate the overhead space required for each of the indexes, multiply the number of rows in each table by 15%.

Table 1

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
D	COMPANY	30	356	389
DB	CO_EARN_DED_RULE	31	221	255
DCAF	PAY_PROCESS_OPT	40	127	170
DCAG	PAY_STUB_MESSAGE1	3	73	79
DCAH	PAY_STUB_MESSAGE2	3	73	79
DCAJ	PAY_FREQUENCY	23	272	298
DCAK	GL_ACCOUNT_NBRS	9	84	96
DCAL	PAY_DOC_PRINT	6	93	102
DCAM	COMPANY_ROE	10	63	76
DD	PAYROLL_REPT_DEFN	18	33	54
DIDX	DIDX	4	204	211
TABLE 1				
TABLE 5 INDEXES				
TABLE 1 TOTAL				

Table 2

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
F	F_OTHER_RECORD	5	86	94
G	G_OTHER_RECORD	5	86	94
W	W_OTHER_RECORD	6	86	95
X	X_OTHER_RECORD	6	86	95
TABLE 2				

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
TABLE 4 INDEXES				
TABLE 2 TOTAL				

Table 3

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
H	TAX_SPECIFICATION	41	758	802
H4	TAX_TABLE_DEFN	23	456	482
H5	TAX_TABLE_BRACKET	9	148	160
HIDX	HIDX	5	204	212
TABLE 3				
TABLE 3 INDEXES				
TABLE 3 TOTAL				

Table 4

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MEE	EMPLOYEE	28	107	138
MEEA	EMPLOYEE_PAYMT	17	196	216
MEEB	EMPLOYEE_TRANSFER	8	84	95
MF	NAME_ADDRESS	9	158	170
MG	PAY_ALLOCATIONS	10	86	99
MH	EMP_EARN_DED	28	381	412
MIDX	MIDX	5	204	212
MJ	EMP_TAX_DED	52	827	882
MLO1	DEPENDENT	12	102	117
MLO2	DEPENDENT_EMPLYR	6	79	88
MLO3	DEPENDENT_INSUR	9	75	87
MLO4	EMRGY_CONTACT	7	79	89
MLO5	EMRGY_CONTACT_ADDR	7	79	89
MLO6	EMRGY_PHYSICIAN	7	79	89

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLO7	EMRGY_PHYS_ADDR	7	79	89
MLO8	EEO_6	10	39	52
MLOA	BENEFICIARY	11	101	115
MLOB	BENEFICIARY_ADDR	6	79	88
MLOC	BENEFICIARY_CITY	6	54	63
MLOD	COVERED_DEPENDENTS	21	74	98
MLOF	APPLICANT	12	112	127
MLOG	APPLCNT_REFERENCE	11	101	115
MLOH	APPLCNT_REF_ADDR	8	97	108
MLOI	JOB_APPLIED_FOR	16	113	132
MLOJ	WORK_PREFERENCES	21	168	192
MLOZ	EMP_FLEX_PLN_CR_PR	14	167	184
MLPB	V80_INSURANCE	14	150	167
MLPC	V80_MED_COVERAGE	11	60	74
MLPD	V80_BENEFIT	18	209	230
MLPH	SALARY_CHANGE	19	239	261
MLPM	EMP_INCUMBENCY	19	156	178
MLPQ	CAN_EMP_EQUITY	11	57	71
MLPR	V80_INJURY_DISABLE	15	117	135
MLQ0	EMP_RETIREMENT	13	70	86
MLQ1	EMP_WELFARE_PLAN	13	76	92
MLQ2	LEAVE_OF_ABSENCE	10	51	64
MLQ3	EMP_PLAN_SERVICE	14	68	85
MLQ4	EMP_DEFERRED_PLAN	14	63	80
MLQ5	EMP_PLAN_CONTRIB	20	171	194
MLQ6	PENSION_BENEFIT	16	118	137
MLQ7	PENSION_PROJCTION	15	225	243
MLQ8	EMP_PLAN_COVERAGE	12	123	138
MLQ9	EMP_PLAN_VESTING	9	69	81
MLQA	TS_FUND_ALLOCATION	16	211	230
MLQB	TS_FUND_ACCUM	17	191	211
MLQC	TS_FUND_ACTIVITY	15	111	129
MLQD	TS_FUND_TRANSFER	11	59	73
MLQE	DC_CONTRIBUTION	14	134	151
MLQF	TS_FUND_BALANCE_1	14	182	199
MLQG	TS_FUND_BALANCE_2	14	168	185

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLQH	TS_FUND_SHARE	11	116	130
MLQI	DB_PLAN_ACCUM	16	190	209
MLQJ	DB_ACCT_BALANCE	13	181	197
MLQK	DB_ACCT_ACTIVITY	8	71	82
MLQL	DC_PLAN_ACCUM	16	190	209
MLQM	DC_ACCT_ACTIVITY	14	110	127
MLQN	DC_ACCT_TRANSFER	9	57	69
MLQO	EMP_FLEX_CREDITS	17	191	211
MLQP	DC_ACCT_BALANCE_1	13	181	197
MLQQ	DC_ACCT_BALANCE_2	13	181	197
MLQR	AVG_DEFERRAL_PCT	13	184	200
MLQS	BENEFICIARY_PCT	21	226	250
MLQT	FSA_ACCT_BALANCE	14	166	183
MLQU	FSA_CLAIM	15	167	185
MLQV	HIGHLY_PAID_DEF_1	19	131	153
MLQW	HIGHLY_PAID_DEF_2	11	35	49
MLQX	FINAL_AVG_EARNINGS	9	93	105
MLQY	COBRA_QUALIFY_EVNT	15	96	114
MLQZ	J_S_BENEFIT_WAIVER	14	90	107
MLR0	SHARE_DISTRIBUTION	14	128	145
MLR1	SHARE_WITHDRAWAL	18	138	159
MLR2	SHARE_ACCT_BALANCE	11	115	129
MLR3	STOCK_CASH_BALANCE	14	128	145
MLR4	SAVINGS_BOND	9	51	63
MLR5	ALT_COMP_TOTALS	11	151	165
MLRA	EMP_ELIGIBILITY	10	57	70
MLRD	DISCIPLINE_ACTION	10	50	63
MLRJ	RELOCATION_1	13	200	216
MLRK	RELOCATION_2	13	200	216
MLRL	RELOCATION_3	21	209	233
MLRM	HOUSE_HUNTING_EXP	17	273	293
MLRN	MOVING_EXPENSE	16	251	270
MLRO	TEMP_LIVING_EXP	17	253	273
MLRP	SHIPPING_EXP	19	262	284
MLRQ	CLOSING_COST_EXP	17	236	256
MLRR	BRIDGE_LOAN	14	174	191

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLRS	POSITION_ASSIGNMT	9	103	115
MLRT	AUTH_TIME_OFF	14	228	245
MLRU	UNAUTH_TIME_OFF	8	96	107
MLT0	EMP_CLASS_REG	9	38	50
MLT1	EMP_TRAIN_REQ	8	32	43
MLT2	EMP_CLASS_RESULT	18	96	117
MLT3	EMP_COURSE_OBJ	25	84	112
MLT4	EMP_TRAIN_SALARY	9	55	67
MLT5	EMP_CLASS_COST	20	154	177
MLTB	ISSUED_BADGE	9	78	90
MLTS	SCHEDULE_ASSIGNMNT	9	80	92
MLVA	ABSENCE	15	99	117
MLVE	EEO_4_EXEMPTIONS	6	46	55
MLVF	EMPLOYEE_NAME			
MLVG	GRIEVANCE	13	97	113
MLVH	EMPLOYEE_ADDRESS			
MLWA	IMAGE_INFORMATION	8	100	111
MLWF	EMPLOYEE_CONTACT	10	106	119
MLYA	EMP_ROE_1	12	107	122
MLYB	EMP_ROE_2	13	108	124
MLYC	EMP_ROE_3	14	198	215
MLYD	EMP_ROE_4	10	122	135
MLYE	EMP_ROE_5	6	98	107
MLZ1	FORMAL_EDUCATION	13	163	179
MLZ2	TUITION_REIMBURSMT	18	250	271
MLZ3	EMP_TRAIN_COURSE	21	153	177
MLZ4	EMP_SKILL	15	73	91
MLZ5	APPL_INTERVIEW	10	82	95
MLZ6	PRIOR_EMPLOYMENT	11	110	124
MLZ7	PHYSICAL_EXAM	15	71	89
MLZ8	PHYSICAL_EXAM_RSLT	15	78	96
MLZ9	APPL_PRE_TRANSFER	18	140	161
MLZA	EMPLOYEE_1	16	118	137
MLZB	CITIZENSHIP	17	103	123
MLZC	EMPLOYMT_ACTIVITY	18	92	113
MLZD	JOB_ASSIGNMENT	11	103	117

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLZE	BONUS	12	94	109
MLZF	SALARY	19	250	272
MLZG	PERFORMANCE_RATING	17	123	143
MLZH	NON_MONETARY_PERQ	9	82	94
MLZI	ASSIGNED_PROPERTY	9	82	94
MLZJ	ASSIGNED_AUTO	12	119	134
MLZK	EXIT_INTERVIEW	9	103	115
MLZL	DRIVERS_LICENSE	10	75	88
MLZM	HEALTH_CONDITION	17	61	81
MLZN	CERTIFICATION	9	47	59
MLZO	PROFESSIONAL_ASSOC	7	44	54
MLZP	PLANNED_SALARY	17	176	196
MLZQ	SALARY_REVIEW	10	86	99
MLZR	EMP_LOCATION	15	85	103
MLZS	SCHEDULED_APPRSL	10	86	99
MLZT	MONETARY_PERQ	10	94	107
MP	PAY_PERIOD	7	89	99
TABLE 4				
TABLE 2 INDEXES				
TABLE 4 TOTAL				

Table 5

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
NEE	EMPLOYEE_LH	29	111	143
NEEA	EMPLOYEE_PAYMT_LH	18	200	221
NF	EMP_NAME_ADDR_LH	6	72	81
NG	EMP_LOCATION_LH	11	90	104
NH	LABOR_HIS_EARN_DED	7	86	96
NIDX	NIDX	6	204	213
NJ	LABOR_HIS_TAX_DED	13	203	219
NLG1	LABOR_DIST_SPLIT1	5	88	96
NLG2	LABOR_DIST_SPLIT2	5	88	96

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
NLG3	LABOR_DIST_SPLIT3	5	88	96
QEE	EMPLOYEE_MM	29	111	143
QEEA	EMPLOYEE_PAYMT_MM	18	200	221
QF	EMP_NAME_ADDR_MM	10	162	175
QG	EMP_LOCATION_MM	11	90	104
QH	EMP_EARN_DED_MM	29	385	417
QIDX	QIDX	6	204	213
QJ	EMP_TAX_DED_MM	53	831	887
TABLE 5				
TABLE 1 INDEXES				
TABLE 5 TOTAL				

Table 6

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
UDS1	NODE_CONTROL_TABLE	5	28	36
UDS2	MACHINE_PARAMETERS	3	6	12
UDS3	DISTRIB_ACCES_LOG	7	78	88
UDS4	DISTRIBUTION_RULES	5	23	31
URT01	REQ_BASIC_DETAILS	15	91	109
URT11	REQ_CAND_BASIC	12	70	85
URT12	REQ_CAND_BASIC_2	7	72	82
Y40FN	FIELD_NAMES	19	161	183
YPR0	POSITION_HEADER	10	18	31
YPR1	POSITION_CTL_BASIC	16	93	112
YPR2	POSITION_FROM_DATA	8	62	73
YPR3	POSITION_TO_DATA	8	62	73
YPR4	POSITION_NARRATIVE	5	75	83
YPR5	POSITION_DEPT	17	122	142
YPR6	POSITION_BUDGET_PC	12	144	159
YPR7	POSITION_ACTUAL	13	181	197
YPR8	POSITION_REQ	14	117	134
YPR9	POSITION_INCUMBENT	15	101	119

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YPRH	POSITION_CTRL_HDR	3	35	41
YPRS	POSITION_CTL_SKILL	15	63	81
YT	ACCRUAL_SELECTION	14	72	89
YT_A	COURSE_DEVP_COST	5	82	90
YT_AB	ABSENCE_EARN_CODE	11	74	88
YT_ARA	ACCRUAL_ROUTINE	19	269	291
YT_ARB	ACCRUAL_ROUTINE_B	11	211	225
YT_ARC	ACCRUAL_ROUTINE_C	8	145	156
YT_C_A	COORDINATOR	5	62	70
YT_C_B	COORDINATOR_B	9	62	74
YT_C_C	COORDINATOR_C	6	63	72
YT_C_D	COORDINATOR_D	11	60	74
YT_C_E	COORDINATOR_E	11	60	74
YT_C2A	CREW_ROTATION_08_A	28	83	114
YT_C2B	CREW_ROTATION_08_B	31	64	98
YT_C2C	CREW_ROTATION_08_C	11	24	38
YT_C3A	CREW_ROTATION_14_A	28	83	114
YT_C3B	CREW_ROTATION_14_B	31	64	98
YT_C3C	CREW_ROTATION_14_C	31	64	98
YT_C3D	CREW_ROTATION_14_D	26	54	83
YT_D_A	COURSE_OFFERING	8	74	85
YT_D_B	COURSE_OFFERING_B	23	149	175
YT_D_C	COURSE_OFFERING_C	20	74	97
YT_D_D	COURSE_OFFERING_D	21	119	143
YT_D_E	COURSE_OFFERING_E	17	104	124
YT_D_F	COURSE_OFFERING_F	7	73	83
YT_EC	TA_EARN_CODE	6	56	65
YT_N_A	COURSE_PROVIDER	4	66	73
YT_N_B	COURSE_PROVIDER_B	8	64	75
YT_N_C	COURSE_PROVIDER_C	4	54	61
YT_N_D	COURSE_PROVIDER_D	10	64	77
YT_N_E	COURSE_PROVIDER_E	10	64	77
YT_P	POLICY_ACTIVITY	27	462	492
YT_P_A	PROGRAM_SCHEDULE	15	62	80
YT_P_B	PROGRAM_SCHEDULE_B	15	62	80
YT_P_C	PROGRAM_SCHEDULE_C	15	62	80

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YT_P_D	PROGRAM_SCHEDULE_D	15	62	80
YT_P_E	PROGRAM_SCHEDULE_E	14	61	78
YT_P_F	PROGRAM_SCHEDULE_F	4	64	71
YT_PT	POLICY_TABLE	15	129	147
YT_R	COMPANY_XREF	3	50	56
YT_RP	ROSTER_QUERY_PARMS	6	84	93
YT_S	SCHEDULE_ACTIVITY	27	462	492
YT_S_A	CLASS_SCHEDULE	16	155	174
YT_S_B	CLASS_SCHEDULE_B	18	184	205
YT_S_C	CLASS_SCHEDULE_C	17	161	181
YT_S_D	CLASS_SCHEDULE_D	16	86	105
YT_S_E	CLASS_SCHEDULE_E	7	75	85
YT_SP	SHIFT_PREMIUM	22	158	183
YT_ST	SCHEDULE_TABLE	13	126	142
YT_T	TRAINING_REQUIRED	6	26	35
YT_X	CANCEL_COURSE_BOOK	18	124	145
YT_Y	CLASS_EVALUATION	19	88	110
YT_Z	COURSE_BOOKING	18	124	145
YT0A01	POSITION_BASIC	12	92	107
YT0A02	POSITION_BASIC_02	7	75	85
YT0A03	POSITION_EVAL	8	93	104
YT0A04	POSITION_EVAL_CRIT	8	78	89
YT0A05	POSITION_SKILLS	15	63	81
YT0A06	POSITION_MEMBERSHIP	7	73	83
YT0A07	POSITION_LICENSES	7	73	83
YT0A08	POSITION_EDUCATION	8	77	88
YT0A09	POSITION_NEXT_JOB	7	75	85
YT0A10	POSITION_DOC_REF	8	90	101
YT0A11	POSITION_REQ_EXP	8	74	85
YT0A12	POSITION_MISC_DATA	12	65	80
YT0A13	POSITION_REQ_TRAIN	7	75	85
YT0A50	POSITION_STATUS	8	50	61
YT0A51	POSITION_LOCATION	9	61	73
YT0A52	POSITION_FUND	11	110	124
YT0A53	POSITION_VEHICLE	10	95	108
YT0A54	POSITION_NEXT_REVW	8	78	89

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YT0A55	POSITION_FTE	9	127	139
YT0A56	POSITION_COMPLEMNT	8	105	116
YT0B01	ORG_UNIT_BASIC	11	83	97
YT0B02	ORG_UNIT_LVL_NAME	6	69	78
YT0B03	ORG_UNIT_FTE	9	127	139
YT0B10	ORG_UNIT_DOC_REF	8	90	101
YT0B99	ORG_UNIT_DEF_NAME	6	69	78
YT0D01	JOB_BASIC	11	91	105
YT0D02	JOB_BASIC_02	8	85	96
YT0D03	JOB_EVALUATION	8	93	104
YT0D04	JOB_EVAL_CRIT	8	78	89
YT0D05	JOB_SKILLS	8	82	93
YT0D06	JOB_MEMBERSHIP	7	73	83
YT0D07	JOB_LICENCES	7	73	83
YT0D08	JOB_EDUCATION	8	77	88
YT0D09	JOB_NEXT_JOB	7	75	85
YT0D10	JOB_DOC_REF	8	90	101
YT0D11	JOB_REQ_EXP	8	74	85
YT0D13	JOB_REQ_TRAINING	7	75	85
YTA_A	JOB_CODE	14	94	111
YTA_B	JOB_CODE_B	12	79	94
YTBA	SALARY_GRADE_ANN	12	152	167
YTBB	SALARY_GRD_PAY_PD	13	174	190
YTBC	SALARY_GRADE_HRLY	12	173	188
YTC_A	JOB_EVAL_PROFILE	23	267	293
YTC_B	JOB_EVAL_PROFILE_B	10	98	111
YTDC1	SALARY_INC_DEFN_1	13	152	168
YTDC2	SALARY_INC_DEFN_2	14	153	170
YTDC3	SALARY_INC_DEFN_3	19	284	306
YTDC4	SALARY_INC_DEFN_4	19	284	306
YTDR1	SALARY_INC_DEFN_5	13	152	168
YTDR2	SALARY_INC_DEFN_6	14	153	170
YTDR3	SALARY_INC_DEFN_7	19	284	306
YTDR4	SALARY_INC_DEFN_8	19	284	306
YTDT1	SALARY_INC_DEFN_9	13	152	168
YTDT2	SALARY_INC_DEFN_0	14	153	170

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YTE	OCCUPATION_GROUP	8	24	35
YTF	ADJ_EMP_STATUS	24	51	78
YTG	SYSTEM_OPTIONS	19	30	52
YTH	SALARY_PLAN	8	66	77
YTI	SALARY_GRADE	11	120	134
YTJ__A	PLAN_RETIRE_RULE	15	76	94
YTJ__B	PLAN_RETIRE_RULE_B	14	50	67
YTK__A	BENEFIT_PLAN	16	70	89
YTK__B	BENEFIT_PLAN_B	14	48	65
YTL	PLAN_ELIGIBILITY	23	87	113
YTM	COVERAGE_COST	14	138	155
YTN__A	PLAN_PARTICIPATE	17	110	130
YTN__B	PLAN_PARTICIPATE_B	15	63	81
YTO	ACCUMULATOR_RULES	40	51	94
YTP	MASTER_PLAN	22	68	93
YTQ	ANNUITANT_FACTOR	18	281	302
YTRA	PLAN_INTEREST_RATE	9	123	135
YTRB	FUND_INTEREST_RATE	8	103	114
YTRC	PLAN_ALLOC_METHOD	16	115	134
YTRD	FUND_ALLOC_METHOD	12	68	83
YTS	PLAN_EARN_DED_RULE	16	141	160
YTT	PLAN_OPT_ACTIVITY	29	77	109
YTU__A	BREAK_IN_SVC_RUL	25	228	256
YTU__B	BREAK_IN_SVC_RUL_B	15	122	140
YTV	DISCRIMINATION_TST	16	148	167
YTW__A	PRIOR_YEAR_TOTAL	8	125	136
YTW__B	PRIOR_YEAR_TOTAL_B	9	147	159
YTX__A	EEO_ESTABLISHMNT	12	65	80
YTX__B	EEO_ESTABLISHMNT_B	7	65	75
YTX__C	EEO_ESTABLISHMNT_C	7	69	79
YTX__D	EEO_ESTABLISHMNT_D	9	126	138
YTX__E	EEO_ESTABLISHMNT_E	10	148	161
YTY	EEO_STATISTICS	19	301	323
YTZ	COVERAGE_COST_B	9	68	80
YTZAX	HR_TABLE_CTRL	13	55	71
YTZAY	BENEFIT_TABLE_CTRL	14	61	78

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YTZAZ	ACCRUAL_TABLE_CTRL	3	17	23
YU1	FLEX_CREDIT_CALC	19	46	68
YU2	FLEX_PLAN_OPTS	18	47	68
ZCSC12	CODESET_C12	8	75	86
ZCSUNV	CODESET	6	75	84
TABLE 6 TOTAL				
TABLE 7 TOTAL				
TABLE 0 TOTAL				

A P P E N D I X F

Administering the Cyborg Application Server (CAS) Daemon

In This Appendix

Overview of the Cyborg Application Server Daemon188

Overview of the Cyborg Application Server Daemon

This appendix introduces you to the Cyborg Application Server (CAS) daemon and includes information on how to:

- Start CAS
- Configure a new environment on the server
- Use the CAS Manager to perform administrative functions
- Monitor CAS using the system log File
- Troubleshoot any problems you may encounter when installing CAS
- Enable and disable tracing
- Stop CAS (terminate the CAS daemon entirely by forcing CAS to exit)
- Uninstall CAS

What is the Cyborg Application Server (CAS) daemon?

Overview of CAS

The Cyborg Application Server (CAS) is a server that provides network transparency of clients for server applications. It allows an existing application, such as CBSV, to become the server in a client/server architecture with almost no modification to that application.

The client connects to CAS across the network via TCP/IP. The client, such as The Administrative Client, is fully aware of CAS and sends requests and receives responses via messages. Among other things, these messages ask CAS to start the server application, send input to the application, receive data from the application, and receive responses from the server.

CAS supports multiple server applications on a single system. Many clients can be connected to a Cyborg environment via CAS at the same time. Furthermore, CAS supports multiple environments on a single server. Each client can run any number of server applications available to it.

'listening' CAS and 'talking' CAS

The CAS works by creating copies of itself to allow multiple clients to access the server applications.

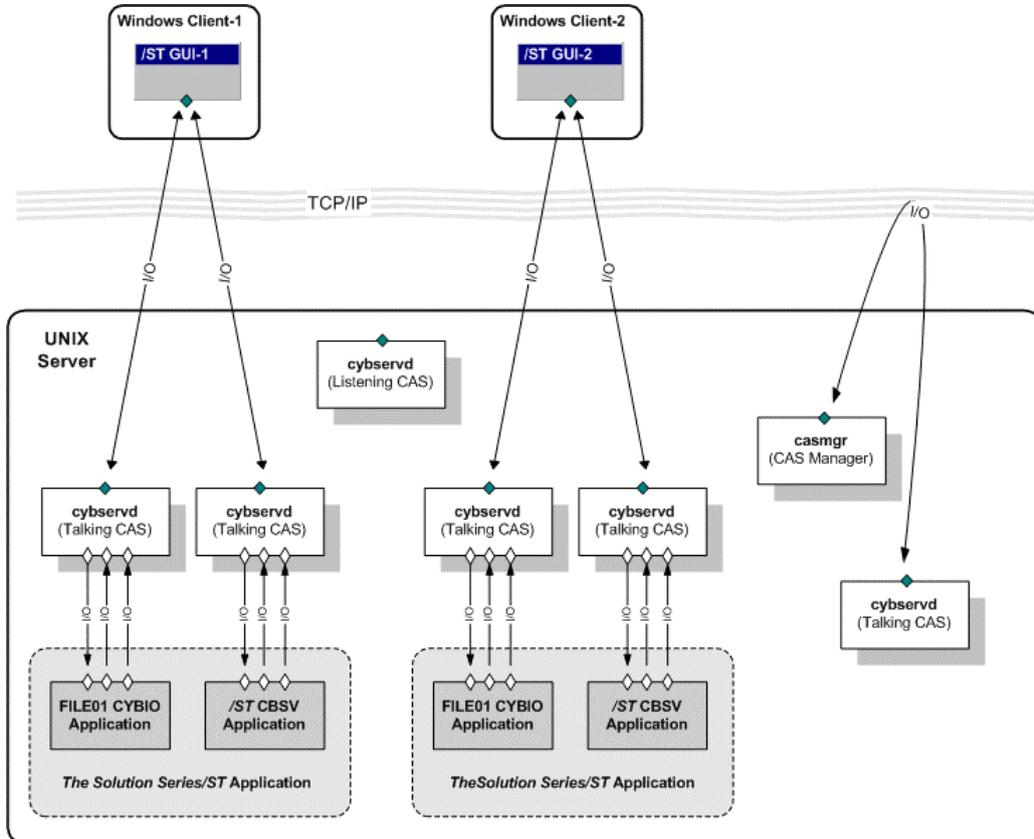
The CAS daemon is informally known as 'listening' CAS because it listens for incoming client requests from the network. When it receives a request from the client, it creates a child process—informally known as 'talking' CAS—to interact with the client application:

- The CAS daemon begins its execution as 'listening' CAS by waiting for a client connection from the network.
- When 'listening' CAS detects that a client has connected, it immediately creates a copy of itself; this copy is 'talking' CAS.

- After creating the copy, 'listening' CAS is free to listen for new clients, while 'talking' CAS will be responsible for starting the server application and handling all subsequent communication with that client, including passing I/O between the client and server application.
- At any time, there is only one 'listening' CAS on the UNIX system, while there can be any number (including zero) 'talking' CAS processes.

Major components of CAS

The following diagram gives you an overview of the major components of the Cyborg Application Server as it is implemented on a UNIX platform. It shows the processes that interact with UNIX CAS and their I/O relationships.



Explanation of the cas script

To launch the Cyborg Application Server (CAS) daemon, you need to execute the `cas` script. The following is the delivered `cas` script:

```
#!/bin/ksh
```

```
#
# {cyborg home}/app/server/cas script 1.16 for Unix CAS 1.04
#
# The Cyborg Application Server files and directories all reside in the
# same directory as this script.
#
cd `dirname $0` || exit 1
casdir=`pwd`
daemon=$casdir/cybservd
appcfg=cybapp.cfg
envcfg=cybenv.cfg
tracedir=trace
maxusers=2000
#
# Enter MicroFocus (and Oracle) environment variable lines here.
#-----
#
#-----
#
#
# Check that the proper files and directories exist
#
assert()
{
    if command test ! $1
    then
        echo "The current directory is `pwd`"
        echo "Error:" $2
        exit 1
    fi
}
assert "-e $daemon" \
"The CAS executable \"$daemon\" does not exist"
assert "-f $daemon" \
"The CAS executable \"$daemon\" is not a regular file"
assert "-x $daemon" \par "The CAS executable \"$daemon\" does not have
executable permission"
assert "-e $appcfg" \
"The application configuration file \"$appcfg\" does not exist"
assert "-f $appcfg" \
"The application configuration file \"$appcfg\" is not a regular file"
assert "-e $envcfg" \
"The environment configuration file \"$envcfg\" does not exist"
assert "-f $envcfg" \
"The environment configuration file \"$envcfg\" is not a regular file"
assert "-e $tracedir" \
"The trace file directory \"$tracedir\" does not exist"
assert "-d $tracedir" \
"The trace file directory \"$tracedir\" is not a directory"
#
# Calculate the number of connections required.
# - Each user requires two sessions: one for online and one for cybio
# - The administrator should also get a session
#
peruser=2
maxconn=`expr $peruser \* $maxusers + 1`
#
# By default, CAS creates the system log and trace files with read/write
# privileges for everyone (user, group, other). Set the permission mask
# so that trace files have the desired permissions (e.g., 066 to only allow
```

```
# access by the file owner or 022 to allow anyone to read the file, but
# only write by the owner).
#
umask 066
#
# Launch the daemon
#
$daemon -a$appcfg -e$envcfg -T$tracedir -c$maxconn
```

The `cas` script:

- Is delivered in the `/cyborghome/app/server` directory.
- Contains the `cybservd` command line that launches the CAS daemon.
- Specifies the location of the `cybenv.cfg`, `cybapp.cfg`, system log and trace files. As delivered, the default location of these files is: `/cyborghome/app/server` directory.

Note The *Micro Focus* and *ORACLE* environmental variables that were identified in Chapters 3 and 4 (Task 4) must be included where shown in this script before CAS is started.

CAS script port

To edit the CAS script to include reference to new port

```
$daemon -pnnnn -a$appcfg -e$envcfg -T$tracedir -c$maxconn
```

where *nnnn* is the new port number

Explanation of `cybapp.cfg`

The following is the delivered `cybapp.cfg` data file. It should not be changed.

```
#
# cybapp.cfg: application configurations for the Solution Series/ST
#
# Each definition must fit on a line, and the fields in each definition
# are separated by colons.
#
# Name                Type                Description
# -----
# App ID              Number: greater than 2  ID from the app configuration file
# Enabled             Boolean: 'Y' or 'N'     Whether the environment is enabled
# Name                String: up to 32 chars  Name of the application
#
2:Y:/ST Application
3:Y:FILE01 Application
```

Configuring a new environment on the server

As part of Phase 6: Install and configure Cyborg Application Server (CAS) daemon of the server installation in Chapters 3 and 4, you need to configure an environment for Solution Series users by editing the `cybenv.cfg` file.

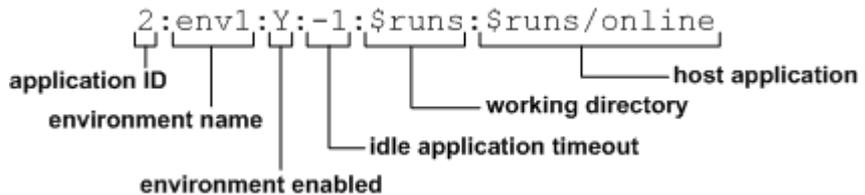
The `cybenv.cfg` file defines the two environments necessary for each client application to run The Solution Series:

```

#
# cybenv.cfg: environment configurations for the Solution Series/ST
#
# The string "$runs" on the last few lines must be replaced with the
# absolute path to the appropriate directory for that environment.
#
#
#
# Each definition must fit on a line, and the fields in each definition
# are separated by colons.
#
# Name          Type          Description
# -----
# App ID       Number: greater than 2  ID from the app configuration file
# Environment   String: 1-8 characters  Environment where the app is used
# Enabled      Boolean: 'Y' or 'N'     Whether the environment is enabled
# Idle timeout Positive number or -1  Timeout in minutes before application
#              is shut down by the server; use a
#              value of -1 to disable the timeout.
#
# Working dir   String: directory       Starting directory of host app
# Executable    String: filename       Program to launch as the host app
# Parameters    String (optional)     Parameters to the host app
#
#
2:env1:Y:-1:$runs:$runs/online
3:env1:Y:-1:$runs:$runs/jcybio

```

Each environment definition (highlighted in the script above) has six fields, with the fields separated by a colon (:). All fields must appear in their defined order. The following diagram identifies those six fields:



The following table describes the environment definition fields and how to edit the `cybenv.cfg` file:

Field	Description	How to edit cybenv.cfg
application ID	<p>This field is the application ID of the application with which this environment is associated.</p> <p>This ID must correspond to the application ID in the application configuration file (<code>cybapp.cfg</code>).</p>	<p>Enter:</p> <ul style="list-style-type: none"> ■ 2 for /ST application (online) ■ 3 for FILE01 application (jcybio) <p>IMPORTANT: Each environment must have two entries in the <code>cybenv.cfg</code> file:</p> <ul style="list-style-type: none"> ■ One for an application ID of 2 (for the /ST application), and ■ A second for an application ID of 3 (for the FILE01 application).

Field	Description	How to edit cybenv.cfg
environment name	This field identifies the environment name (up to 8 characters). Examples are: ST45PROD, ST45TEST. All environment names for each application ID must be unique and are not case-sensitive. For example, ST45PROD and ST45prod are not unique and are, in fact, the same environment.	To set up a Cyborg prod environment, enter: 2:prod:... 3:prod:... This environment will be the same environment as set in the configuration using the /ST 4.5 Cyborg Connection Editor on the client workstations, as described in Chapter 5: Installing and Configuring The Solution Series/ST on the Client.
environment enabled	This field is a denotes whether the application is enabled with values of Y or N. If the application is disabled, then any request to execute it will be refused.	Enter a Y to signify that each application is enabled. 2:prod:Y:... 3:prod:Y:...
idle application timeout	This field controls how long a program may remain open when there is no activity. The amount of time is specified in minutes. If there is no communication between the client and application program within this period of time, the program is terminated. A setting of -1 disables this feature.	The timeout value is either a positive number (1, 2, 3, and so forth) or is disabled with a value of -1. As delivered, the /ST application has a value of 20 in this field, indicating that it will be terminated after 20 minutes of inactivity. The FILE01 application is delivered with a value of -1 in this field, indicating that it will never be terminated due to inactivity.
working directory	This field refers to the directory path of the working directory. Each Cyborg user should have executable permission to this directory.	Change the path to reflect the current installation by replacing \$runs with the full path.
server application	This field refers to the script that will be launched by CAS for each application. Each Cyborg user should have executable permission for this file.	Change the path to reflect the current installation by replacing \$runs with the full path to each script that will be launched by CAS.

Using the CAS Manager

Overview of the CAS Manager

The CAS Manager is a standalone program that is used to manage any version of UNIX CAS from anywhere across the network. The CAS Manager is a command-line application that is driven by the options selected on the command line.

The CAS Manager allows an administrator to perform the following tasks:

- Determine whether CAS is running
- Determine the version of CAS and the operating system on which CAS is running
- Determine whether the CAS service is enabled (in other words, whether clients are allowed to start applications)
- Disable the CAS service to disallow future clients from starting applications
- Enable the CAS service to allow future clients to start applications
- Obtain a list of sessions
- Terminate a single server application, such as CBSVO/T or CYBIO, for a specific client
- Terminate all server applications
- Terminate the CAS service entirely by terminating the CAS daemon
- Tracing the execution of CAS as it handles a single server application for a given client
- Trace the execution of every CAS process
- Disable the tracing of CAS for a single server application for a given client
- Disable the tracing of every CAS process
- Trace the execution of CAS for subsequent clients
- Disable the tracing of CAS for subsequent clients

Passwords

Prompting for a password

If a switch requires a password and none is provided on the command line, then the user is prompted for a password (this is the password for the user ID 'cyborg'), similar to the `su(1)` or `rlogin(1)` commands. If a switch requires a password and one is provided on the command line, then the user is not prompted.

For example, the `-tracedefault` switch requires a password:

```
casmgr -tracedefault
Password: _
```

If the password prompt is used, the typed password does not echo on the screen and cannot be redirected from a file; it must be typed from the console.

Password security

We advise that you do *not* use the `-password` modifier unless CAS Manager is needed in a script. Instead, let CAS Manager prompt for a password, as shown above. This method negates the need to remember which commands require passwords.

CAS Manager syntax

The `casmgr` command invokes the CAS Manager. To use the CAS Manager, use the syntax shown below:

```
$ casmgr -switch -port:nnn -password:cyborg user's password
```

Note If you want a description of the syntax or a brief description of each switch, run the CAS Manager without any switches specified.

To find out/do this	Use this switch
Is CAS is running now?	-isrunning
Is CAS service is enabled now?	-isenabled
Disable CAS service	-disable
Enable CAS service	-enable
What version of CAS or CAS Manager is this?	-version
What clients are connected?	-sessions
Trace a single session on the talking CAS	-tracesession:yyy
Disable the trace on a single session on the talking CAS	-notracesession:yyy
Trace all CAS processes	-traceall
Disable the trace on all CAS processes	-notraceall
What is the default trace setting now for new CAS processes?	-istracedefault
Enable tracing for all new CAS processes	-tracedefault
Disable tracing for all new CAS processes	-notracedefault
Terminate a single host application for a single session	-killsession:yyy
Terminate all host applications	-killtalking

CAS switch details

The following describes the various switches that can be used with the `casmgr` command. The switches are in alphabetical order:

```
-disable
-enable
-isenabled
-isrunning
-istracedefault
-killdaemon
-killsession:yyy
-killtalking
-notraceall
-notracedefault
-notracesession:yyy
-sessions
-traceall
-tracedefault
-tracseession:yyy
-version
```

-disable

Disable CAS

Use this switch to disable the CAS daemon by disallowing future clients from starting applications:

casmgr -disable

This will place CAS in the disabled state. CAS will still be running, but will refuse any requests to start server applications. Previously connected clients will continue to run normally.

Note This command requires a password.

-enable

Enable CAS

Use this switch to enable the CAS daemon, allowing future clients to start applications:

casmgr -enable

This will place CAS in the enabled state. CAS will accept requests to start server applications.

Note This command requires a password.

-isenabled

Determine whether CAS is enabled or disabled

Use this switch to determine whether the CAS daemon is enabled (that is, whether clients are allowed to start applications):

casmgr -isenabled

This will print whether the CAS daemon is enabled or disabled. When the daemon is enabled, CAS will accept requests to start server application programs. When the daemon is disabled, CAS will still be running but will refuse any requests to start server applications. Use the `-enable` and `-disable` switches to enable and disable CAS.

-isrunning

Determine whether CAS is running

Use this switch to determine whether CAS is running:

casmgr -isrunning

This will determine whether there is a CAS process running on the server.

-killdaemon

Terminate the CAS service

Use the `-killdaemon` switch to terminate the CAS daemon entirely and force the CAS process to exit:

casmgr -killdaemon

The daemon cannot be restarted using the CAS Manager, as there is no longer any daemon to answer CAS Manager commands. CAS must be re-started by the system administrator, `crond`, or other external UNIX facility.

Use the 'determine whether CAS is running' switch (`-isrunning`) to verify that CAS has terminated.

Note This command requires a password.

-killsession

Terminate a single server application program for a specific client

Use this switch to terminate a single server application program for a specific client:

casmgr -killsession:sessionID

This will terminate a single server application program for a specific GUI client. The application program is identified with a session ID, as determined by the 'obtain a list of connected sessions' switch (`-sessions`).

Use the 'obtain a list of connected sessions' switch (`-sessions`) to verify that the application program was terminated.

Note This command requires a password.

-killtalking

Terminate all client application programs

Use this switch to terminate all application programs that are currently running.

casmgr -killtalking

Even after this command is used, CAS can still start new application programs if it is enabled. The 'disable CAS' switch (`-disable`) is often used before this command to prevent new server application programs from starting.

Use the 'obtain a list of connected sessions' switch (`-sessions`) to verify that the application programs were terminated.

Note This command requires a password.

-notraceall

Disable the tracing of every CAS process

Use this switch to disable tracing of CAS for all sessions:

casmgr -notraceall

This will disable the tracing of the CAS process and general I/O through CAS for every session: sessions with host applications, sessions managing administrative sessions, and the listening CAS session.

Tracing can be enabled using the 'enable tracing of every CAS process' switch (-traceall) or by using the 'enable tracing for a single application program for a single client' switch (-tracesession).

Note This command requires a password.

-notracedefault

Disable the tracing of CAS for subsequent clients

Use this switch to disable tracing for all new application programs:

casmgr -notracedefault

This will cause subsequent application programs to not trace immediately upon their startup. Currently executing application programs are not affected.

Tracing can be enabled using the 'enable tracing of every CAS process' switch (-traceall) or by using the 'enable tracing for a single application program for a single client' switch (-tracesession).

Note This command requires a password.

-notracesession

Disable tracing of CAS for a single host application for a given client

Use this switch to disable tracing of CAS for a single application program for a single client:

casmgr -notracesession:sessionID

This will disable the tracing of the CAS process and I/O through CAS for single application program for a particular GUI client. The application program is identified with a session ID, as determined by the 'obtain a list of connected sessions' switch (-sessions).

Note This command requires a password.

-sessions

Obtain a list of connected sessions

Use this switch to obtain a list of connected sessions:

casmgr -sessions

This will print the list of sessions connected to CAS with the following information:

- Application ID of the server application
- Environment of the server application
- Login of the user using the server application
- Starting date and time of the application program
- Process ID of the CAS process on the server that is responsible for the server application
- Hostname or IP address of the client
- Whether tracing is enabled for this application

-traceall

Enable tracing of every CAS process

Use this switch to enable tracing of CAS for all CAS processes:

casmgr -traceall

This will enable the tracing of the CAS process and general I/O through CAS for every session: sessions with host applications, sessions managing administrative sessions, and the primary server session.

Note This command requires a password.

-tracedefault

Enable tracing of CAS for subsequent clients

Use this switch to enable tracing for all new application programs:

casmgr -tracedefault

This will cause subsequent application programs to begin tracing immediately upon their startup. Currently executing sessions are not affected.

Tracing can be disabled using the 'disable tracing of every CAS process' switch (`-notraceall`) or by using the 'disable tracing for a single application program for a single client' switch (`-notracesession`).

Note This command requires a password.

-tracesession

Enable tracing for a single application program for a single client

Use this switch to enable tracing of CAS for a single server application program for a specific client:

casmgr -tracesession:sessionID

This will enable the tracing of the CAS process and I/O through CAS for a single server application program for a particular GUI client. The application program is identified with a session ID, as determined by the 'obtain a list of connected sessions' switch (`-sessions`).

Note This command requires a password.

■ **Using a trace file**

For more information about trace output

-version

Determine the version of CAS

Use this switch to determine the version of CAS:

casmgr -version

This will print the version of CAS Manager and CAS. It will also print the operating system on which CAS is running.

Monitoring the CAS daemon

Tracing

CAS can create trace files to debug a CAS installation and monitor the messages that are sent and received between the client and server application.

- CAS turns on the trace mechanism in response to an Enable Tracing message.
- CAS turns off the trace mechanism in response to a Disable Tracing message.

Tracing can be enabled or disabled by using various switches with the CAS Manager (`casmgr`) command, including:

```
-notraceession  
-notraceall  
-notracedefault  
-tracesession  
-traceall  
-tracedefault
```

Using the system log File

What is the system log file?

The system log is a single, system-wide log shared by every CAS instance on a particular machine for recording significant events (such as newly connected clients, disconnected clients, and so forth) that occur during CAS execution.

Because it is important for an administrator to see the sequence of events that occur while CAS executes, all events are recorded in the system log file.

Filename

The filename of the system log file is `system.log` and it is found in the `/cyborghome/app/server` directory.

The following is an example of a system log file:

```
1998/12/21 08:53:29 cybservd:1153 Info 15456 Initialize service  
(Service) (None) /ST 4.0 for Unix: CAS version  
  
1.00  
1998/12/21 08:53:29 cybservd:1157 Info 15456 Initialize service  
(Service) (None) Compiled on HP-UX version A,  
  
release B.10.20
```

```

1998/12/21 08:53:29 cybservd:1169 Info 15456 Initialize service
(Service) (None) Executing on machine bldrux1:

HP-UX version A, release

B.10.20
1998/12/21 08:53:29 sharmem:353 Info 15458 Initialize service
(Service) (None) Allocated semaphore (semaphore

ID=299)
1998/12/21 08:53:29 sharmem:357 Info 15458 Initialize service
(Service) (None) Allocated shared memory (shared

memory ID=4208): 293152 bytes

for 4001 users
1998/12/21 08:53:29 cybservd:649 Info 15458 Initialize service
(Service) (None) Listening on TCP port 2345 for

incoming requests
1998/12/21 08:53:29 cybservd:472 Info 15458 Initialize service
(Service) (None) CAS version 1.00 for HP-UX

started successfully (process

ID=15458)
1998/12/21 08:53:44 acpt_conn:376 Info 15459 New connection
(Session) pcl.company.com Received connection from

pcl.company.com (CAS process

ID=15459)
1998/12/21 08:53:45 acpt_conn:376 Info 15461 New connection
(Session) pcl.company.com Received connection from

pcl.company.com (CAS process

ID=15461)
1998/12/21 08:54:11 sighandlers:744 Info 15458 Session termination
(Service) (None) Closed connection to

Pcl.company.com (CAS process

ID=15461)
1998/12/21 08:54:12 sighandlers:744 Info 15458 Session termination
(Service) (None) Closed connection to

Pcl.company.com (CAS process

ID=15459)
1998/12/21 08:58:00 acpt_conn:376 Info 15483 New connection
(Session) server1.company.com Received connection from

server1.company.com (CAS

process ID=15483)
1998/12/21 08:58:00 msg_handlers:996Info 15483 Terminate Cyborg
Service(Session) server1.company.com The CAS service is being

terminated by session 15483
1998/12/21 08:58:00 sharmem:398 Info 15458 Service termination
(Service) (None) Deallocated semaphore

```

```
(semaphore ID=299)
1998/12/21 08:58:00 sharmem:400 Info 15458 Service termination
(Service) (None) Deallocated shared memory

(shared memory ID=4208)
1998/12/21 08:58:00 sighandlers:361 Info 15458 Service termination
(Service) (None) CAS service shut down via CAS

Manager
```



See the Message format of the system log and trace files section for a description of the message format.

Using a trace file

What is a trace file?

A trace file is a file that records the execution of CAS for tracing and debugging purposes. This file is created only when tracing is enabled. Every CAS instance has its own, private trace file, so the number of trace files can equal the number of CAS processes. Trace files can contain binary data as part of their trace.

The following is an example of a trace file:

```
1998/12/21 08:53:44 acpt_conn:376 Info 15459 New connection
(Session) pcl.company.com Received connection from

pcl.company.com (CAS process

ID=15459)
1998/12/21 08:53:44 acpt_conn:379 Trace 15459 New connection
(Session) pcl.company.com New process for pcl.company.com

(pid=15459)
1998/12/21 08:53:44 sharmem:492 Trace 15459 Initialize service
(Session) pcl.company.com CAS process 15459 has been

registered
1998/12/21 08:53:44 proc_msg:106 Trace 15459 Getting new message
(Session) pcl.company.com Beginning to wait for messages

from the client
1998/12/21 08:53:44 read_msg:652 Trace 15459 Start Application request
(Session) pcl.company.com Start Application received
1998/12/21 08:53:44 read_msg:714 Trace 15459 Start Application request
(Session) pcl.company.com Start Application information
1998/12/21 08:53:44 read_msg:1305 Trace 15459 Start Application request
(Session) pcl.company.com Message version = 0
1998/12/21 08:53:44 read_msg:1309 Trace 15459 Start Application request
(Session) pcl.company.com Application ID = 3
1998/12/21 08:53:44 read_msg:1313 Trace 15459 Start Application request
(Session) pcl.company.com Use Cyborg account = Yes
1998/12/21 08:53:44 read_msg:1318 Trace 15459 Start Application request
(Session) pcl.company.com Environment name = "env1"
1998/12/21 08:53:44 read_msg:1324 Trace 15459 Start Application request
(Session) pcl.company.com Username = (not

applicable)
1998/12/21 08:53:44 read_msg:1339 Trace 15459 Start Application request
(Session) pcl.company.com Encrypt data = Yes
1998/12/21 08:53:44 sharmem:1003 Trace 15459 Internal processing
(Session) pcl.company.com Updated information about CAS
```

```

process 15459
1998/12/21 08:54:12 start_app:846 Trace 15459 Application
cyborg pcl.company.com Waiting for data from either

client or host application
1998/12/21 08:54:12 start_app:972 Trace 15459 Output from host app
cyborg pcl.company.com Activity detected on stdout of

FILE01 Application
1998/12/21 08:54:12 start_app:994 Trace 15459 Output from host app
cyborg pcl.company.com Read 18 bytes from stdout of

FILE01 Application
1998/12/21 08:54:12 start_app:1001 Trace 15459 Output from host app
cyborg pcl.company.com Data from stdout: "0007C14200

GOODBY"
1998/12/21 08:54:12 write_msg:348 Trace 15459 Output from host app
cyborg pcl.company.com Writing 18 bytes of data from

stdout to client
1998/12/21 08:54:12 write_msg:353 Trace 15459 Output from host app
cyborg pcl.company.com "0007C14200 GOODBY"
1998/12/21 08:54:12 write_msg:1009 Trace 15459 Start Application response
cyborg pcl.company.com Writing message header:

class=3, type=1, length=18
1998/12/21 08:54:12 start_app:1008 Trace 15459 Output from host app
cyborg pcl.company.com Successfully sent 18 bytes to

pcl.company.com
1998/12/21 08:54:12 start_app:846 Trace 15459 Application
cyborg pcl.company.com Waiting for data from either

client or host application
1998/12/21 08:54:12 start_app:846 Trace 15459 Application
cyborg pcl.company.com Waiting for data from either

client or host application
1998/12/21 08:54:12 start_app:972 Trace 15459 Output from host app
cyborg pcl.company.com Activity detected on stdout of

FILE01 Application
1998/12/21 08:54:12 start_app:989 Trace 15459 Output from host app
cyborg pcl.company.com stdout pipe has closed
1998/12/21 08:54:12 start_app:1349 Trace 15459 Session termination
cyborg pcl.company.com Checking if FILE01 Application

has terminated (attempt 1)
1998/12/21 08:54:12 start_app:1387 Trace 15459 Session termination
cyborg pcl.company.com FILE01 Application (process

ID=15460) exited normally
1998/12/21 08:54:12 start_app:623 Trace 15459 Session termination
cyborg pcl.company.com FILE01 Application has completed

successfully
1998/12/21 08:54:12 acpt_conn:405 Trace 15459 Session termination
cyborg pcl.company.com Communication with

pcl.company.com has completed

```

```
successfully (process ID=15459)
```



See the *Message format of the system log and trace files* section for a description of the message format.

Filenames

Each instance of CAS creates its own trace file (located in the `/cyborghome/app/server/trace` directory). When there are many clients connected, the number of trace files increases similarly. The filenames of the trace files are designed to assist the administrator in finding the file for a particular client among the multitude of files.

■ For 'talking' CAS

For each CAS process started by the execution of the client session ('talking' CAS), the filename is derived from the client hostname (or IP address if the hostname is not available) and process ID of the associated 'talking' CAS. The format of the filename is:

clientaddress_processID.trc

For example:

`pc1.company.com_29159.trc`

This indicates that the client address is `pc1.company.com` and that the process ID of the 'talking' CAS process is 29159.

The usage of process ID in the filename allows a single client to connect multiple times without erasing the previous log while clearly separating each connection.

Note If tracing is enabled and disabled several times within a single connection, all traces will be written to the same file, since the client and process ID of the 'talking' CAS remain the same.

■ For 'listening' CAS

'Listening' CAS was started by the `cas` script. There is no connected client, so the filename is derived solely from the process ID of 'listening' CAS. The format of the filename is:

cybservd_processID.trc

For example:

`cybservd_29150.trc`

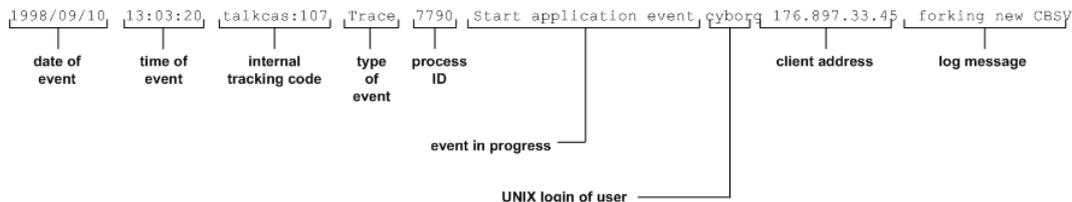
This indicates that 'listening' CAS has a process ID of 29150.

Trace file maintenance

It is the responsibility of the system administrator to remove or back up trace files. New files will be generated for each session when tracing is enabled.

Message format of the system log and trace files

The following diagram illustrates the fields found in each message:



Each message (record) will contain the following nine fields separated by tabs:

Name	Description
Date of event	Date of the event. The date format is YYYY/MM/DD.
Time of event	Time of the event. The time format is HH:MI:SS. The time is taken from the local system time on the UNIX server.
Internal tracking code	For Cyborg use only.
Type of event	The type of event. Possible values are: <ul style="list-style-type: none"> ■ Error (error) ■ Info (informational) ■ Trace (trace)
Process ID	The process ID of the CAS process that is logging the message.
Event in progress	The event in progress when the log entry was created. Examples are: New connection Getting new message
UNIX login of user	The identity under which the server application is running. For the Cyborg user, this will be 'cyborg'.
Client address	The hostname of the GUI client connected to the 'talking' CAS which is logging the event. If the hostname is not available, then the IP address is printed in dotted decimal notation.
Log message	The actual log message.

Viewing the system log and trace files

Although the system log and trace files are basically text files and can be viewed in any editor, the long text lines are difficult to manage. The scripts `viewlog` and `viewlogmsg` in the `/cyborghome/app/server` directory can be used to view the system log and trace files.

Both `viewlog` and `viewlogmsg` are `awk` scripts that use the standard **awk(1)** utility. Both scripts take the filename of the log or the trace file as their argument. If no argument is given, then they will read from standard input.

The script `viewlog` prints all the details from its input file in a more readable format, spreading the information across multiple lines and labeling each field. The script `viewlogmsg` prints only the log message without any of the other fields.

Examples:

```
viewlog system.log | more
viewlogmsg trace/pcl.company.com_29159.trc | more
tail -f system.log | viewlogmsg
```

Troubleshooting the CAS daemon

CAS installation error messages

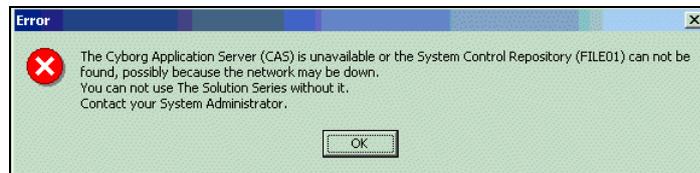
If the expected output is not displayed when starting CAS, then check the following error message table for a possible solution and then re-execute the `cas` script.

Shell	Error	Problem	Solution
bourne korn c	cas: execute permission denied ksh: cas: cannot execute cas: Permission denied.	The cas script does not have executable permissions	At the operating system command prompt, enter: <code>chmod u+x cas</code>
bourne korn c	cybservd: execute permission denied ksh: cybservd: cannot execute cybservd: Permission denied.	The cybservd binary does not have executable permissions	At the operating system command prompt, enter: <code>chmod u+x cybservd</code>
bourne korn c	cas: not found ksh: cas: not found cas: Command not found.	The cas script is not in the: <code>/cyborghome/app/server</code> directory	Change to the <code>/cyborghome/app/server</code> directory, and verify that the cas script exists by using <code>ls cas</code> .
bourne korn c	cybservd: not found ksh: cybservd: not found cybservd: Command not found.	The cybservd binary is not in the <code>/cyborghome/app/server</code> directory	Change to the <code>/cyborghome/app/server</code> directory, and verify that cybservd exists by using <code>ls cybservd</code> .

Shell	Error	Problem	Solution
bourne korn c	cybservd: Port 9888 is already in use by another process Cyborg Application Server version 1.04 terminated.	Other pre-existing software might already be configured to use this port and could be conflicting with CAS	You must change the port used by CAS by editing the /etc/services file. The administrator is responsible to ensure that each GUI client knows that CAS is no longer at 9888 but rather some other port.
		The CAS daemon is already running	Verify that the CAS daemon is running by using the following command: casmgr -isrunning
bourne korn c	If you use the following command: ps -ef grep cybservd and no processes are found	The cybservd process has aborted	Enable tracing of the CAS session immediately upon startup, so that all system error and trace messages will be sent to the trace file. To enable tracing at startup, edit the cas script. Add '-t' to the last command in the file. You must then log in as root and execute the script cas. After the process again aborts, examine the trace file using viewlogmsg to determine the reason for the process abort.
bourne korn c	cyborg: No such user on local machine	The Cyborg user has not been created	You must create the Cyborg user 'cyborg' in the operating system.

Client installation error messages

If the following error occurs:



Try one of the following:

Problem	Solution
The server is not a valid machine.	Correct the 'Host' field in the Cyborg Connection Editor for the environment in question. The server will differ from installation to installation.
The server exists but the port is not a valid number.	Correct the 'Port' field in Cyborg Connection Editor for the environment in question. The port number is listed in the /etc/services file on the server under the service name of 'cyborg'. The recommended value is 9888.
The server exists but is not the correct machine.	Use the Cyborg Connection Editor to examine the connection properties and ensure that the listed server host is the machine on which CAS is running.
The server is correct but the port is incorrect.	Use Cyborg Connection Editor to examine the connection properties and ensure that the port is correct. The port is usually 9888.
CAS is not started.	Make sure that CAS is running on the server. To launch CAS, log in as root and execute the script cas.

CAS Manager messages

Following is a list of messages you may encounter from the CAS Manager.

Additional error messages: command line parsing

Message	Condition
casmgr: Invalid switch invalidswitch	Invalid switch on command line
casmgr: Missing colon for invalidswitch	Missing colon for any switch that requires an argument

Message	Condition
casmgr: Value required after invalidswitch	No argument after any switch except -password that requires an argument (see note below table for -password)
casmgr: Bad number invalidnumber	A badly-formed number is given where a number is expected
casmgr: Too many passwords specified	Two or more passwords on command line
casmgr: Too many commands specified	Two or more commands on command line
(Display the syntax for the command)	No arguments given on command line
casmgr: No command specified	No command on command line, but a password was specified

Note It is not an error to omit the password after the `-password` switch. This situation corresponds to using the empty string as the password.

Additional error messages: network I/O

Message	Condition
casmgr: Insufficient memory	Memory allocation failure
casmgr: CAS is not running on server, port nnnn.	CAS is not running on the current Unix host at the TCP port specified in the <code>/etc/services</code> file under 'cyborg'
casmgr: Unable to send data to server	Write error while writing to socket
casmgr: Unable to receive data from server	Read error while reading from socket

Warning messages

Warning messages are printed by CAS Manager or standard output, but do not prevent the command from completing.

Message	Condition
casmgr: Warning: password not needed	Single password on command line, but a password is not needed by the command

Stopping CAS

In the event of a payroll run or backup

All environments

To prevent online usage to all environments, we suggest that you perform the following steps:

1. `casmgr -disable`
This prevents new users from signing on.
2. `casmgr -killtalking`
This terminates any remaining processes, if required.
3. `casmgr -enable`
Once batch processing or backup is concluded, this will allow online usage.

A single environment

To prevent online usage to one environment, we suggest that you perform the following steps:

1. Edit the `cybenv.cfg` file, locate the record associated with application ID 3 for this environment and change the field labeled 'enabled' to 'N'.
This prevents new users from signing on to this one environment
2. `casmgr -killtalking`
This terminates any remaining processes, if required.
3. Once batch processing or backup is concluded, edit the `cybenv.cfg` file, locate the record associated with application ID 3 for this environment and change the field labeled 'enabled' to 'Y'.

Uninstalling CAS

To uninstall the CAS daemon, perform the following steps:

1. Stop the CAS daemon (`casmgr -killdaemon`).
2. Delete the CAS files and directories:
`cd cyborghome/app/server`
`rm cybservd cas cybapp.cfg cybenv.cfg viewlog viewlogmsg`
`rm -r system.log trace`
3. Edit the file `/etc/services` to remove the Cyborg port to the network services database. The entries in the file are usually given in numeric order, so find the location where 9888 should appear, then remove the following line of the file:
`cyborg 9888/tcp # Assigned by IANA to Cyborg Systems`
4. Save the file and exit the editor.

Installing the eCyborg Collaborative Platform 5.0

1.0



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PART 1

Introduction

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CHAPTER 1

Introduction

In This Chapter

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Welcome

This document provides an overview of the eCyborg Collaborative Platform as well as detailed installation instructions for the Collaborative Platform.

As the Collaborative Platform is installed on an eCyborg web server, there are also instructions for configuring the Cyborg Application Server (CAS) service.

Steps are also included for modifying the Application Server to support the Collaborative Platform.

Please read the section '*Overview of Cyborg's Collaborative Platform*' (see "Overview of eCyborg's Collaborative Platform" on page 15) to learn more about our collaboration capabilities.

Who should read this installation guide

This guide is intended for a technical audience (ideally a Cyborg installation specialist and Web developer), but the information may also be used by the technical/system administrator at the customer site.

A = Anyone who wishes to have an overview of eCyborg or who needs to know how to prepare for an installation.

I = Cyborg installation specialist or customer performing the installation.

This installation guide is divided into two sections and two appendices:

Who	Read this section	For
A	1. Introduction	An installation overview and prerequisites
A	2. Overview of the Collaborative Platform Services	An overview of web collaboration and description of the prerequisites required for successful installation.
I	3. Installing the eCyborg Server Component of the Collaborative Platform	Detailed instructions for installing the Collaborative Platform components.
I	A. Installation Checklists	Detailed checklists ideal for use when installing the Collaborative Platform.
I	B. Member Contents	Detailed information on the files used and programs installed during the course of the installation and the purposes they serve.

eCyborg's levels of Collaboration

Collaborative partners

The Collaborative Platform is just one way we offer collaborative capabilities. There are other ways such as integrating specific products offered by our collaborative partners.

Cyborg has established agreements with a number of vendors that offer value-added services. eCyborg can be used to collaborate with other web-based products through the use of the products offered by our collaborative partners.

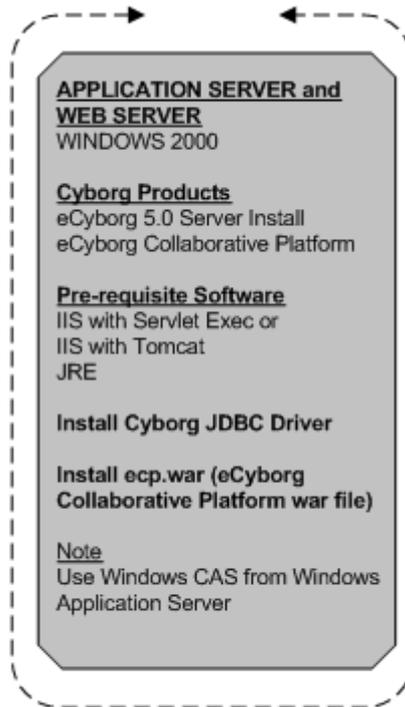
Note: None of these products is included with eCyborg. You must establish your own licensing agreements with each vendor directly.

Collaborative Partner	Offers
Enwisem	Provides content management (such as employee handbooks). Links can be made in eCyborg's Interactive Workforce to access the content using a virtual log on for employees.
Sheakley Employment Verification	An electronic process for granting access for employment verification. Cyborg provides an interface to pass data to the Sheakley system.
ezTaxReturn.com	Provides an Internet delivery of W-2s. Employees can file their taxes directly from the site. There is a Cyborg-delivered file for each W-2.
Workbrain	Provides web-based time and attendance scheduling. Entries will feed our payroll module.

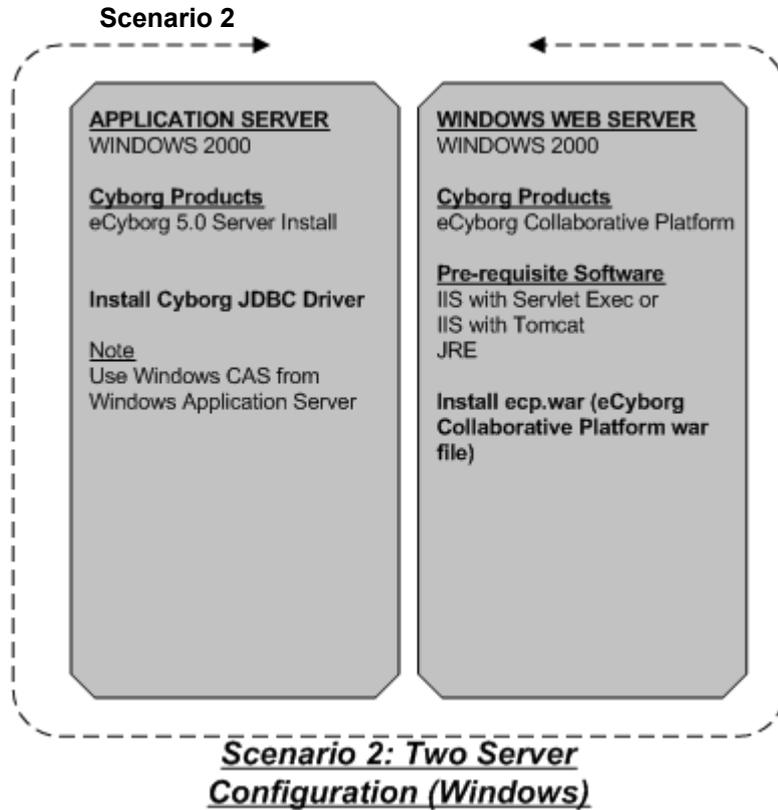
Installation scenarios

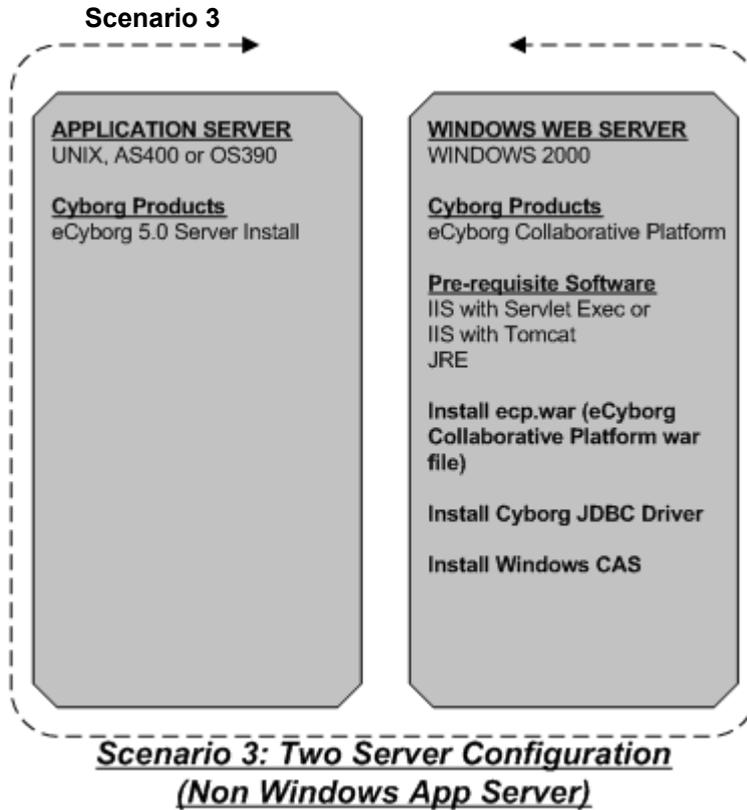
There are several hardware and Solution Series configurations that exist which will determine where the Collaborative Platform software will be installed and which additional software packages may be needed.

Scenario 1



Scenario 1: Single Server Configuration (Windows)





Other platform configurations are possible. Please contact Cyborg Systems' Professional Services for assistance if your configuration varies from any of those above.

Prerequisites

Refer to the preceding *Installation Scenarios* (on page 7) to determine where you will install:

eCyborg 5.0 (indexed or relational)
Windows 2000 web server
JDK version 1.3.1 or JRE (if Interactive WorkForce is not installed) Note: If you have JDK then you have JRE.
Microsoft Internet Information Server v5.0 (IIS)
ServletExec 4.1.1 with Service Pack 7 or Jakarta -Tomcat 4.01

Deliverables

Included in the Collaborative Platform install, are the:

Windows CAS
eCyborg JDBC driver
Collaborative Platform WAR file (ecp.war)

How to get additional help

If you cannot find the answers to your questions in this manual, contact Customer Support, who will be able to answer specific questions and give you general advice on training.

Please visit our web site www.Cyborg.com for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

CHAPTER 2

Overview of eCyborg's Collaborative Platform

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Definitions

With the introduction of Web Collaboration comes several new terms:

client applications	Cyborg or third party applications with which the collaboration takes place
data store	Repository where data is stored. Client applications request information that is retrieved from a Cyborg data store.
HR-XML schema	The HR-XML Consortium (www.hr-xml.org (see "HR-XML Consortium - http://www.hr-xml.org ")) is an independent, nonprofit organization dedicated to the development and promotion of a standard suite of XML specifications to enable e-business and the automation of human resources-related data exchanges.
JDBC™ API	Java Database Connectivity Application Programming Interface. An application programming interface for accessing tabular data sources from the JAVA programming language.
SOAP	Simple Object Access Protocol. This is an XML-based protocol that is designed to exchange structured and typed information on the Web.
XML	Extensible Markup Language. A markup language for documents containing structured information.
XML Schema Definition Language	A language for describing and constraining the content of XML documents.
XSLT	Extensible Stylesheet Language Transformations. A language for transforming XML documents into other XML documents.

The Collaborative Platform component of eCyborg

The eCyborg Collaborative Platform is a central component of eCyborg. Cyborg Systems believes it will become the single most important interface to employee data that Cyborg offers.

Although eCyborg offers a wealth of functionality for the employee, as well as the Human Resources department — and there are other, specific interfaces into the system (such as for COBRA or General Ledger)— the Collaborative Platform offers a standard access mechanism for ANY outside application needing employee data to fulfill its purpose.

The eCyborg Collaborative Platform is a Java™ web application that provides standards-based access to Solution Series data via a SOAP interface.

The Collaborative Platform allows other applications to interface real-time with eCyborg as shown in the following diagram.



The Collaborative Platform uses XML data schemas and SOAP (Simple Object Access Protocol).

Authentication

Client applications are authenticated using Solution Series security. Each client application must be assigned a Solution Series user id and password.

As data is not encrypted, if you are passing data to an application outside your firewall, you should use Secured Socket Layers (SSL).

XML schemas

The Collaborative Platform uses the SOAP interface to transform data into a format defined by XML schemas.

For the initial release of the Collaborative Platform, eCyborg delivers two XML schemas that are compliant with the standards of the HR-XML Consortium.

- PersonName 1.2
- PostalAddress 1.2 (Name and address information)

Both of these schemas draw mapped data from the Employee Information form (EF-SCR).

These schemas can be used to share data with other web-based products. Data sharing in this manner is called 'web services'.

XML document transformation

The Collaborative platform uses the eCyborg JDBC driver to connect to a Solution Series data source resulting in a JDBC result set.

A JDBC result set is a tabular data structure in which each record corresponds to a row and each field corresponds to a column.

The mapping file allows you to specify which fields appear in the generated XML document, but the structure of the document is, by design, inherently tied to the two-dimensional structure of a JDBC result set.

For maximum flexibility, the Collaborative Platform allows you to specify an XSLT stylesheet that is applied to the basic generated document to produce the document that is returned to the client application.

The use of a stylesheet is optional. If a view definition does not specify that a transformation be applied, the Collaborative Platform will return the basic generated document to the client application.

XSLT usage

Using XSLT allows a single mapping file to serve as the basis for a number of different response schemas.

This is illustrated by the two HR-XML schemas, `PersonName` and `PostalAddress`, that are included in this installation.

The data required to generate an XML document conforming to either schema is in a single Solution Series table, `EMP_BASIC_DETAILS`.

The Collaborative Platform includes a mapping file that retrieves all the columns from the `EMP_BASIC_DETAILS` table. It also retrieves two XSLT stylesheets, `PersonName.xml` and `PostalAddress.xml`.

Applying the `PersonName.xml` to the basic XML document generated by the Collaboration Platform produces a document that conforms to the HR-XML `PersonName` schema.

Applying the `PostalAddress.xml` to the generated document produces a document that conforms to the HR-XML `PostalAddress` schema.

Web service views

The Collaboration Platform uses a view definition file to determine which views are available to client applications.

Each entry in the view definition file gives the name of a view, the mapping file, and, optionally, an XSLT stylesheet that is used to produce the file that is returned to the client application.

The file is read each time a request is received, so views can be added or removed while the application is running.

This example is a view definition that defines views for the two HR-XML views, `PersonName` and `PostalAddress`.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<ecp:views xmlns:ecp="http://www.cyborg.com/eCyborg/ecp">
  <ecp:view name="PersonName">
    <ecp:map>PersonMap.xml</ecp:map>
    <ecp:xsl>PersonName.xsl</ecp:xsl>
  </ecp:view>

  <ecp:view name="PostalAddress">
    <ecp:map>PersonMap.xml</ecp:map>
    <ecp:xsl>PostalAddress.xsl</ecp:xsl>
  </ecp:view>
</ecp:views>
```

Data mapping

The Collaborative platform web service uses a map file to define the data retrieved and to create an XML file.

As data is extracted, it is formatted according to the map file. The map file determines the data extracted, the name and structure of the new file, and where the extracted data is stored.

Structure of the mapping file

The mapping file is an XML document containing the following information:

- A 'database' element that defines the eCyborg JDBC driver and URL used to connect to the Solution Series data store
- A 'query' element that contains a SQL statement specifying the columns to be retrieved
- A 'root' element that, through attributes, specifies the name of the destination root element and the name of the elements that are to represent either Solution Series records or database rows
- An 'element' element that provides the new element name and any attribute or content elements

For example, if the 'LastName' element should have a 'code' attribute that represents the 'name code' field from the employee record and the employee's LAST_NAME as the content, the map file would represent it as:

```
<element name="LastName">
  <attribute name="code">NAME_CODE</attribute>
  <content>LAST_NAME</content>
</element>
```

Mapping file example

Following is an example of a mapping file used to extract basic employee information from The Solution Series.

The Collaborative Platform creates an XML document where the root element (the overall structure of the generated XML document) is called 'PersonInfo' and the data for each record appears within a 'Person' element.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<mapping>
  <database url="jdbc:cyborg:localhost/default"
    driver="com.cyborg.jdbc.client.XmlDriver" >
  </database>

  <query sql="SELECT * FROM EMP_BASIC_DETAILS"/>

  <root name="PersonInfo" rowName="Person">
    <element name="FirstName">
      <content>FIRST_NAME</content>
    </element>
    <element name="LastName">
      <content>LAST_NAME</content>
    </element>
  </root>
</mapping>
```

```
</element>
<element name="MiddleName">
  <content>MIDDLE_NAME</content>
</element>
<element name="Prefix">
  <content>NAME_PREFIX</content>
</element>
<element name="Address1">
  <content>ADDRESS</content>
</element>
<element name="Address2">
  <content>ADDRESS_2</content>
</element>
<element name="City">
  <content>CITY</content>
</element>
<element name="State">
  <content>STATE</content>
</element>
<element name="Zip">
  <content>ZIP_CODE</content>
</element>
<element name="Country">
  <content>COUNTRY</content>
</element>
</root>
</mapping>
```

This example also shows how Solution Series field names or database column names can be redefined in the XML output file. This can prove to be useful when the XML document that is returned to the SOAP client application must conform to a particular XML schema in which the element names do not match the names of the Solution Series fields.

Mapping file output example

The following is an example of the XML document produced from the preceding mapping file.

This is a temporary document used to make sure the mapping will be successful.

```
<?xml version="1.0" encoding="UTF-8" ?>
<PersonInfo>
  <Person>
    <FirstName>Steve</FirstName>
    <LastName>Austin</LastName>
    <MiddleName>Ian</MiddleName>
    <Prefix>Mr</Prefix>
    <Address1>2314 W MILWAUKEE AV</Address1>
    <Address2>APT 8</Address2>
    <City>CHICAGO</City>
    <State>IL</State>
    <Zip>60614</Zip>
    <Country>US</Country>
  </Person>
</PersonInfo>
```

Request Process

Data requests from the Web Service

In the Collaborative Platform Web Services, business logic is separate from the content of the inbound XML documents that it receives.

Cyborg's web services accepts an XML document. The document contains only data and no explicit binding to the business logic that is to be applied to produce the response. The inbound document is not explicitly mapped to the business logic; that is, specific methods are not invoked on the service.

The Collaborative Platform Web Services applies its business logic to the inbound XML document and the document content determines the processing workflow.

An inbound request contains the Solution Series user code and password of the principal, name of the view to process and, optionally, a set of constraints that are applied when determining the data to be retrieved.

The example following show a request for the PersonName view.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<soap-env:Envelope xmlns:soap-env="http://schemas.xmlsoap.org/soap/envelope/">
<soap-env:Header>
  <ecp:ViewName
xmlns:ecp="http://www.cyborg.com/eCyborg/ecp">PersonName</ecp:ViewName>
  <ecp:UserCode xmlns:ecp="http://www.cyborg.com/eCyborg/ecp">S.O.</ecp:UserCode>
  <ecp>Password xmlns:ecp="http://www.cyborg.com/eCyborg/ecp">S.O.</ecp>Password>
</soap-env:Header>
<soap-env:Body>
  <ecp:constraint xmlns:ecp="http://www.cyborg.com/eCyborg/ecp"
name="COMPANY_NUMBER">
    999999
  </ecp:constraint>
  <ecp:constraint xmlns:ecp="http://www.cyborg.com/eCyborg/ecp"
name="EMPLOYEE_NUMBER">
    1001
  </ecp:constraint>
</soap-env:Body>
</soap-env:Envelope>
```

Request processing

Upon receipt of the preceding request, the Collaborative Platform reads the view definition file and finds that a PersonName response should be produced using the instructions found in the mapping document, PersonMap.xml.

The SQL statement in PersonMap.xml is combined with constraints (the 'where' condition) from the request to produce the following query:

```
Select * from EMP_BASIC_DETAILS where COMPANY_NAME = '999999' and
EMPLOYEE_NUMBER = '1001'
```

The query is executed and the SQL results are used to create a temporary XML document as specified by the definition from the mapping file.

The response message

After the outbound XML document is produced, the Collaboration Platform Web Service produces a SOAP response message.

The body of the message contains the extracted data in the specified format.

Example:

```
<?xml version="1.0" encoding="UTF-8"?>
<soap-env:Envelope xmlns:soap-env="http://schemas.xmlsoap.org/soap/envelope/">
  <soap-env:Header/>
  <soap-env:Body>
    <PersonName>
      <GivenName>JUNE</GivenName>
      <FamilyName>MEYER</FamilyName>
      <Affix type="formOfAddress">Ms</Affix>
    </PersonName>
  </soap-env:Body>
</soap-env:Envelope>
```

The response message is returned to the client application, completing the message exchange.

PART 2

Installation

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CHAPTER 3

Installing the eCyborg Collaborative Platform

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Introduction

This chapter provides detailed instructions for installing and configuring the components of the eCyborg Collaborative Platform software on the Web Server.

This is a technical chapter aimed at system administrators.

If your application server is not a Windows 2000 server, then you must install the Cyborg Application Server (CAS) on a Windows 2000 server in order to run the Collaborative Platform.

The eCyborg JDBC driver must be installed on the same Windows server on which you installed CAS.

See also

- Installation scenarios (*on page 7*)

For examples of possible server combinations that may be used for the Collaborative Platform installation

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg Collaborative Platform 5.0'
1	Installing the eCyborg Collaborative Platform 5.0 (this guide)



Refer to **Directory Contents** (on page 55) for a listing of directories and files installed during the installation.

Considerations

You should consider the following:

Running the eCyborg Web Client with Interactive Workforce and ServletExec

If you have installed the web client and Interactive Workforce on the same web server then you have already installed JDK and ServletExec from the Interactive Workforce media. This would be used by the web client, Interactive Workforce, and the Collaboration Platform.

If you already have installed the eCyborg web client on a Windows server (running ServletExec as the Servlet Engine) and have not installed Interactive Workforce, you need to perform the following:

- Install JDK
- Install ServletExec and create a ServletExec Instance
- Install the ServletExec patch
- Install the eCyborg Collaborative Platform using the ServletExec instance that has been created

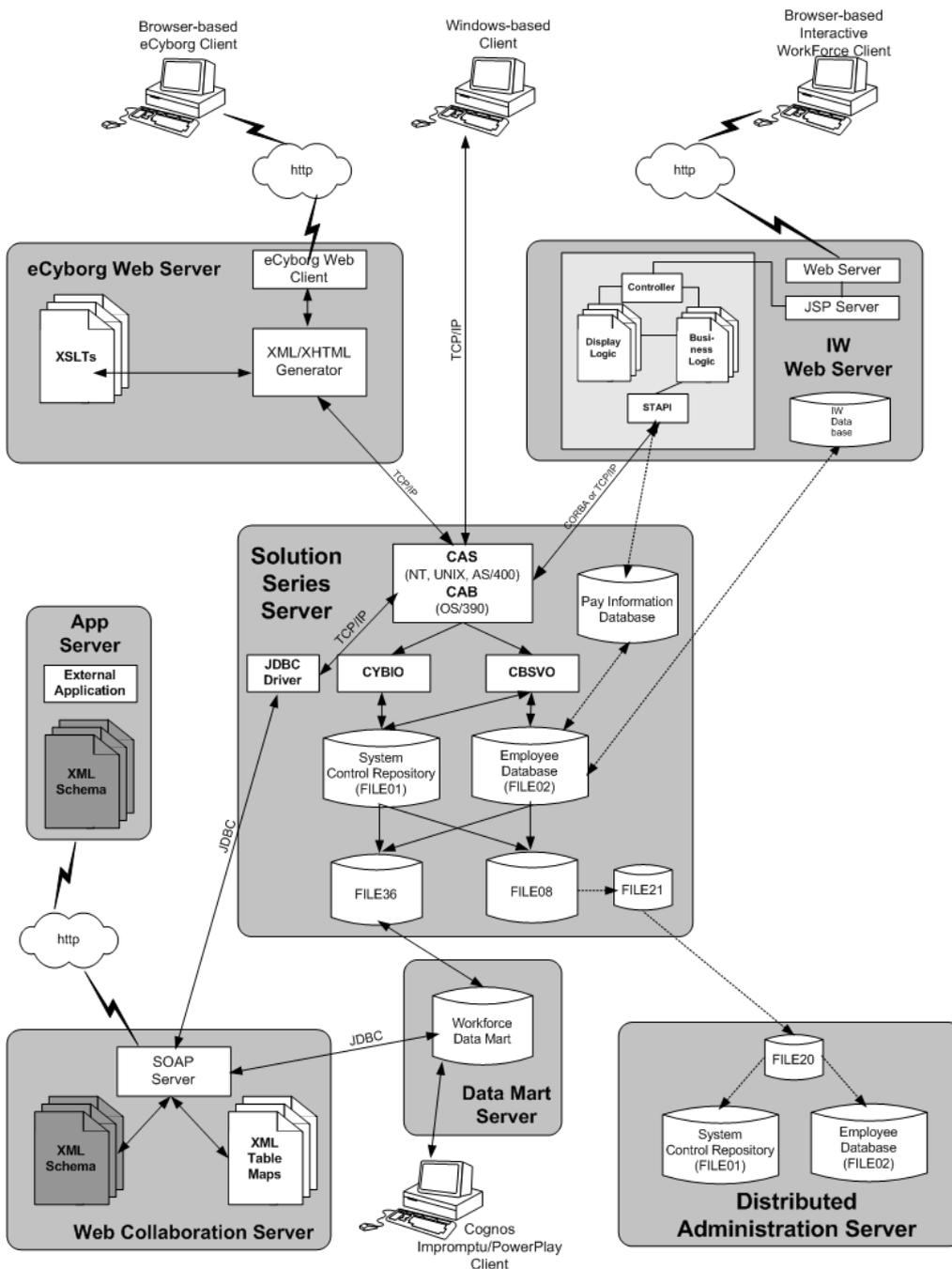
You could also decide to have three ServletExec instances (one for Interactive Workforce, one for the Collaborative Platform, and one for web client). This will provide the capability of stopping the ServletExec instance used by one application (for example, Collaborative Platform) without affecting the other application (for example, Interactive Workforce or web client).

This is helpful when you need to perform maintenance without affecting the other applications.

Installation overview

When installing the Collaborative Platform, you may be installing and configuring several machines. In the following diagram, the Web Application Server is a Windows machine; the eCyborg application server is also a Windows machine, but it could be an AS/400, UNIX or an OS/390—wherever you have installed Cyborg's Administrative Solutions.

Installing the eCyborg Collaborative Platform 5.0



The eCyborg Application Server

The core of the system is the eCyborg Application Server: CYBIO, CBSVO, the System Control Repository (FILE01), and the Employee Database (FILE02). Along with these, the Cyborg Application Service (CAS) is installed. eCyborg's Administrative Solutions reside on the application server.

The Web Application Server

The software that generates the Collaborative Platform can be installed on a separate machine, referred to in this guide as The Web Application Server, or on the same machine as eCyborg Application Server (indicated by the dotted line in the illustration above).

The SOAP interface, XML schemas, and XML table maps used for web collaboration are also installed on this server.

Note: CAS is also installed on the Web Application Server for use by the eCyborg Collaborative Platform.

The Administrative Client

The Administrative Client is the Windows interface to eCyborg and includes the Client Data File (FILECL32).

The Administrative Client is not affected by the addition of the Collaborative Platform.

Phase 1: Extract eCyborg Collaborative Platform files

Insert the CD-ROM.

The Getting Started page automatically appears.

Scroll through the page to find the applicable links to the software you will be installing and configuring.

HTML entry	This chapter topic
Install the Cyborg Application Server (CAS)	Phase 2: Installing and Configuring the Cyborg Application Server (CAS) service
Install Cyborg JDBC driver	Phase 3: Installing and Configuring the eCyborg JDBC driver
Install eCyborg Collaborative Platform .war file	Phase 4: Installing and Configuring the eCyborg Collaborative Platform

Phase 2: Installing and configuring the Cyborg Application Server (CAS) service on Windows on a web server

Installing CAS

To Install CAS

1. Extract cybservd.exe (Service executable) and CybCpnl.cpl (Cyborg Control Panel DLL) from the CAS50.zip file to the Microsoft Windows System root directory (normally WINNT\system32).
2. Type the following command from the DOS prompt in the Microsoft Windows System directory:

```
cybservd -install
```

3. Press Enter.

To Uninstall CAS

If you want to uninstall the eCyborg application server, complete the steps below:

1. Execute the following:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

2. Select the 'Cyborg Application Service' entry in the Service option list.
3. Click Stop.
4. Close the dialog.
5. Type the following command from the DOS prompt in the Microsoft Windows System directory:

```
cybservd -remove
```

6. Press Enter.

Set up services (Windows 2000)

1. Add Cyborg port to services

Edit the TCP/IP services file (normally WINNT\system32\DRIVERS\etc\ SERVICES) to add an entry of 'cyborg 9888 /tcp'. (9888 is Cyborg's registered TCP port #).

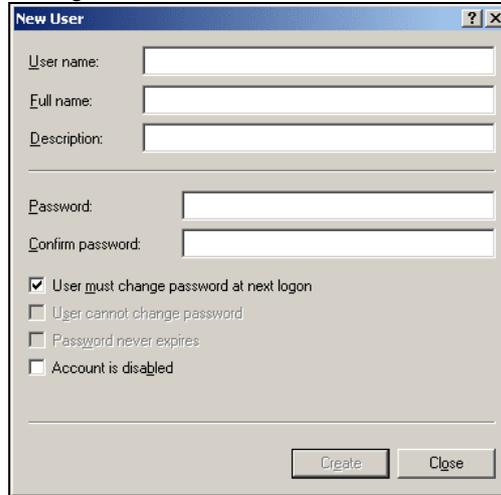
Note: The Cyborg services address should be placed in its numerical order.

2. Create a Cyborg user

1. Execute the following from Windows:

Start ► Settings ► Control Panel ► Administrative Tools ► Computer Management ► Local Users and Groups Users

then right click on User and select New User.



2. Enter the username (for example, 'Cyborg') and description.
3. Clear the 'User Must Change Password at Next Logon' option.
4. Select the 'Password Never Expires' option on the New User dialog.
5. Configure a Cyborg user password.

Note: It is important to set up a password because it will be required later by the Cyborg Application Server (CAS) service. Note the use of upper and lower case for use in CAS later.

6. Click Create on the New User dialog box to establish a new user. When you exit the New User dialog box, the new user appears in the Computer Management window.

3. Set up access permissions

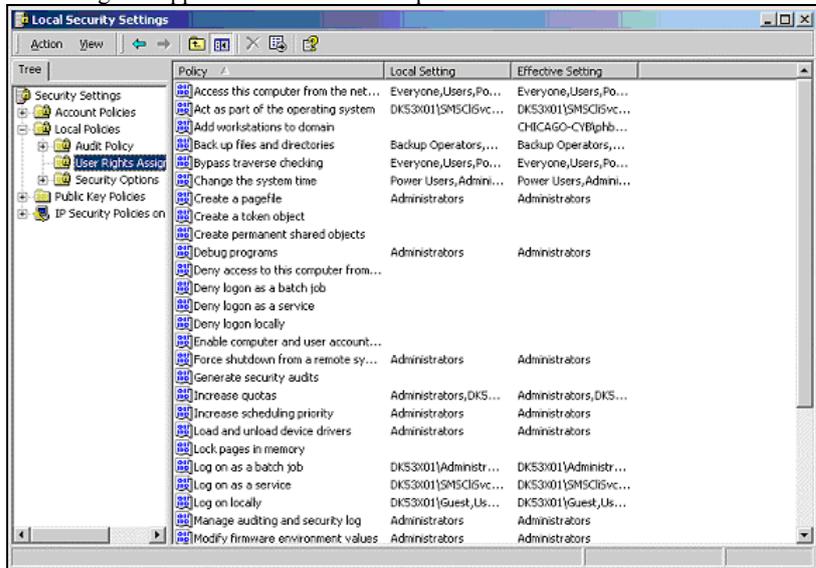
1. Access the Cyborg properties dialog by right clicking on properties.
2. Select the 'Member Of' tab
3. Click Add.
4. Select the group you want to add.
5. Click OK.

4. Set up user rights for 'Cyborg' user

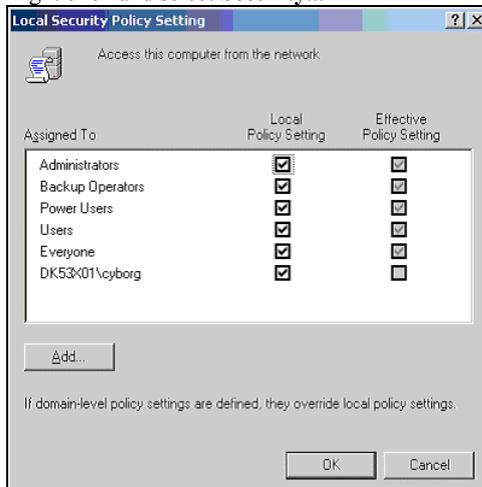
1. Execute the following:

Start ► Settings ► Control Panel ► Administrative Tools ► Computer Management ► Local Policies ► User Rights Assignment

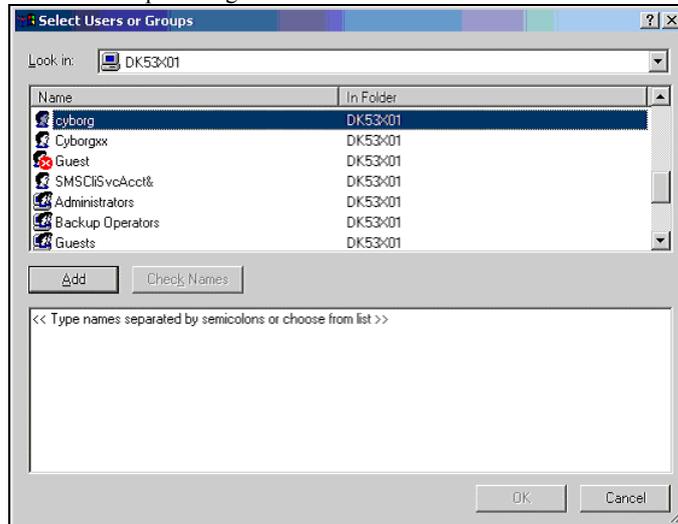
The dialog will appear similar to the example:



2. Select a policy. You will have to perform the next steps separately for each of the following policies:
 - Access this computer from network
 - Act as part of the operating system
 - Increase Quotas
 - Log on as a service
 - Replace a process level token
3. Right click and select **Security...**



4. Click **Add...**
5. With the local computer selected in the 'Look in:' field, select cyborg user in the 'Select Users or Groups' dialog:



6. Click **Add**
7. Click **OK**
8. Click **OK**
9. Repeat steps 2-8 for each policy listed in step 2.

5. Set up services for the environment

1. Execute the following:

Start ► Settings ► Control Panel ► Cyborg Service

2. Click the General tab and type the password for the Cyborg user.
3. Select the Information check box to allow you to view Cyborg Application Service Startup and Shutdown messages and other basic errors in the Event Viewer. By default, this check box is selected.
4. (Optional) Select the Debug check box to enable more advanced diagnostic features of the Cyborg Application Service.

Phase 3: Installing and configuring the eCyborg JDBC driver

Installing the JDBC driver

Note: The eCyborg JDBC driver is installed on the same server as the Windows CAS in Phase 2, Installing the Cyborg Application Server (CAS) service.

The eCyborg JDBC driver implements standard JDBC interfaces that allow the Solution Series forms to be accessed as database tables from JAVA code.

The eCyborg JDBC driver is made up of a JAVA component, an XML table definition file, and the run.bat file.

Note: An eCyborg JDBC driver application must be configured for each Solution Series environment that is to be used by the Collaborative Platform.

If your installation is a non-Windows platform, JDBC must be installed on a Windows 2000 platform with CAS.

This initial release of the JDBC driver requires that the JDBC server application is running on the same computer as the Windows CAS.

1. Configure CAS with the JDBC driver

1. Install the JAVA 1.3.1 runtime or JDK making sure that java.exe is in the path.

Note: This can be verified from a command prompt by typing 'java -version'. If the java.exe is not in the path, then an error message will be displayed: 'java -version is not recognized as an internal or external command'

2. Create a JDBC directory to receive the JDBC files on the same server on which the Windows CAS has been installed; for example, c:\apps\jdbc.
3. Extract the files from the JDBC50.zip file into the newly created directory on the same server on which the Windows CAS has been installed.

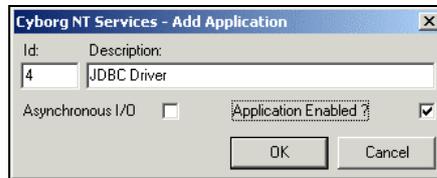
2. Set up JDBC services

1. Execute the following:

Start ► Settings ► Control Panel ► Cyborg Service

2. Click the General tab and type the password for the Cyborg user.
3. Select the Information check box to allow you to view Cyborg Application Service Startup and Shutdown messages and other basic errors in the Event Viewer. By default, this check box is selected.
4. (Optional) Select the Debug check box to enable more advanced diagnostic features of the Cyborg Application Service.
5. Select the Settings tab and click New in the Application area.

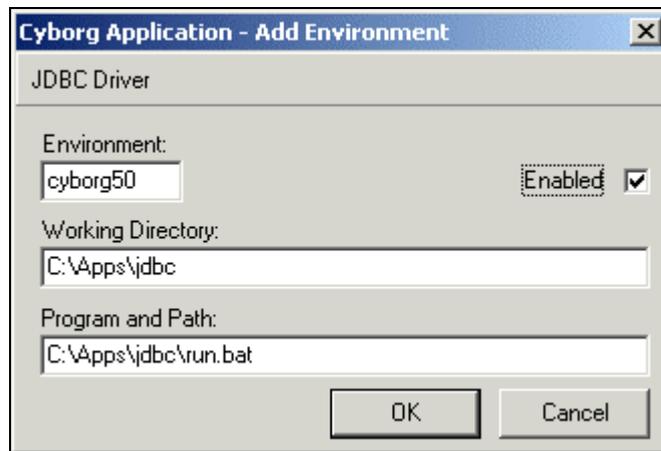
6. Type an ID of '4' with the description 'JDBC Driver', select the Application Enabled check box, and click OK:



3. Create a new environment for the JDBC driver application

Note: This step must be repeated for each environment that is to be used by the eCyborg Collaborative Platform.

The working directory must point to the location that contains the jdbcserver.jar file and run.bat. This is the directory in which you extracted the jdbc50.zip file.



1. With 'JDBC Driver' selected in the application area, click Add in the Environments area.
2. Type up to 8 characters in the Environment field (for example, cyborg50) and select the Enabled check box.

Note: The name used in the Environment field must be the name of the Solution Series environment that was created on the application server and the one to which you want to connect for use of the Collaborative Platform.

1. Type the Working Directory where the JDBC files were extracted (see Step 3 of the preceding topic 'Installing the JDBC server').
For example:
C:\Apps\jdbc
2. Type the full Program Path and program name of the batch file, run.bat.
3. Click OK.

Start CAS

1. **Execute the following:**
Start ► Settings ► Control Panel ► Administrative Tools ► Services
2. **Select the 'Cyborg Application Service' entry in the Service option list**
3. **Select 'Automatic' as the startup type**
4. **Click Start**
5. **Click OK**

Verify installation

1. **Open the Application log using the Event Viewer**
Select Application log.
2. **Locate messages relevant to the Cyborg installation (identified by a 'CyborgService' entry in the Source column)**

Note: Icon symbols can be identified as follows:

Red = Errors

Yellow = Warnings

Blue = Information

3. **Double-click the Cyborg-relevant entries to see the messages**
The message should read 'CyborgService message: Service started.' The event icon should be blue in the Event Viewer.

Phase 4: Installing and configuring the eCyborg Collaborative Platform

Unzip the eCyborg Collaborative Platform .WAR file

Unzip the Web Collaboration '.war' file to the Windows-based Web Application Server machine.

Extract the following file contained in the ecp50.zip:

- ecp.war

For ServletExec, the file should be extracted into the following filepath:

..\ServletExec\web-ecp\webapps\default
(where '..\' is relative to where you have installed ServletExec and 'web-ecp' if the instancename.)

For Tomcat, extract the file into the following directory:

..\Tomcat\webapps
(where '..\' is relative to where you have installed Tomcat.)

Add Web Collaboration to ServletExec.properties

Note: The step is only needed if you are using ServletExec.

Consult the documentation for your servlet container for detailed instructions on installing Web applications.

A 'context' is a name that is mapped to a Web application. The default context of the eCyborg Collaborative Platform application is '/ecp'.

To install an application to a servlet container, the container and HTTP server must be notified the 'context' is available.

1. Add a context to the ServletExec.properties files

Add the context to the application parameter of the ServletExec.properties file, located in the following default location:

..\inetpub\scripts
(where '..\' is relative to the IIS installation)

In the following example, 'web-ecp' is the name of the ServletExec instance used for the Collaborative Platform.

```
servletexec.web-ecp.hosts=all
servletexec.web-ecp.applications= /eCyborg, /ecp, /eCyborghelp
servletexec.web-ecp.aliases=/servlet, .jsp
servletexec.web-ecp.instances=127.0.0.1:8888
```

2. Stop and restart IIS

You must stop and restart the Internet Information Service (IIS) for these changes to take effect. This can be done from the Services panel by making the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Internet Services Manager

This will bring up the Service dialog for IIS.

1. Right click on the web server name.
2. Choose Restart IIS from the drop down list.
3. On the Option menu, chose Restart Internet services.
4. Click OK.
5. Wait for services to shut down and restart automatically.
(When the box closes, restart is complete.)

Start Tomcat or ServletExec

To start Tomcat or ServletExec make the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

Start Tomcat

1. Find Apache Tomcat in the listing.
2. Click the Start Service icon on the menu or right click and select the Start option.

Or

Start ServletExec

1. Find the instance of ServletExec that was previously created for the Collaborative Platform.
2. Click the Start Service icon on the menu or right click and select the Start option.

When you start Tomcat or ServletExec during the install, it will expand the .war files to create the files needed for running the eCyborg Collaborative Platform.

In Tomcat, the eCyborg Collaborative Platform files will be expanded into the following directory:

```
..\Tomcat\webapps\ecp\war
```

In ServletExec, the eCyborg Collaborative Platform files will be expanded into the following directory:

```
..\InstanceName\ServletExecData\default\ecp
```

Important! Please be patient while the war file expands. To ensure expansion is complete, you may check to see if the directories listed below have been created and populated.

WAR directory structure

When the WAR file is expanded a subdirectory called 'WEB-INF' is created that contains the following file and directories:

web.xml	The Web application deployment descriptor
classes	A directory that contains server-side classes, Servlets, and utility classes
lib	A directory that contains JAR archives of libraries used by the server-side classes
conf	A directory that contains the Collaborative Platform configuration files, the view definition file, a data extraction map and two XSLT stylesheets.

Refer to *Directory Contents* (on page 55) for a complete list of the directories and their contents.

Configuring the Collaborative Platform

The Collaborative Platform uses JDBC to access Solution Series data.

Each data extraction map contains the database URL that identifies the Solution Series environment from which data is retrieved.

The WAR file contains a sample data extraction map named PersonMap.xml (in the WEB-INF/conf directory) in which the database URL points to an environment named 'Default'.

This URL should be modified so that it correctly identifies the environment you wish to use.

The data extraction map is read each time the Collaborative Platform receives a request.

Any changes made to an extraction map are effective immediately after the file is saved. There is no need to restart the Collaborative Platform after editing the file.

1. Locate and edit PersonMap.xml

If the JDBC driver is not running on the same machine as the eCyborg Collaborative Platform, you will need to replace 'localhost' with the host name or IP address of a machine on which the JDBC driver has been installed.

The following XML fragment is taken from the sample data extraction map, PersonMap.xml.

```
<database url="jdbc:cyborg:localhost/Default"
  driver="com.cyborg.jdbc.client.XmlDriver" >
</database>
```

2. Modify the environment name

The environment name is delivered as 'Default' and should also be modified so that it corresponds to the name of a valid Solution Series environment as defined in Phase 3, Installing and configuring the eCyborg JDBC driver.

Modify the environment properties with the application server connection properties

Note: Perform these steps on the server where the eCyborg JDBC driver is installed.

The properties file contains information needed for the JDBC driver to connect to the Solution Series environment.

The JDBC directory contains two files - default.properties and ibmdefault.properties.

1. Copy the default.properties or ibmdefault.properties file

If your application server is an AS400, Windows 2000 or Unix platform, copy the Default.properties file to a file called, for example, 'cyborg50.properties.'

If you are using an OS/390, copy the ibmdefault.properties file to a new environments file, for example, 'Cyborg50.properties'.

Note: The name must match the Solution Series environment name as defined in the JDBC driver. It must be the same as the URL.

The environment name should contain no spaces and should reflect the environment name of the JDBC connection name of the CAS for that environment. The Environment Description will appear on the logon page and should tell the user the environment to which they are connecting.

This copy should reside where the JDBC driver software is installed.

2. Edit the new properties file

Edit the new copy of the properties file created in Step 1 to add the information in the following table.

Windows 2000, UNIX, and AS400

Edit the variables in the file created in Step 1 as per environment requirements. The following parameters must be defined:

Parameter	Definition	Example	Value
Host	Hostname of application server	HOSTNAME	

Parameter	Definition	Example	Value
Port	Port for CAS connections of the application server	9888	

For example:

```
connector=com.cyborg.comms.tcpip.CasConnector
Host=HOSTNAME
Port=9888
```

OS/390

The following parameters in the file created in Step 1 must be defined:

Parameter	Definition	Example	Value
IOR =	Fully qualified filepath of file containing string of Generic Factory ID	c:\genfac.ior or c:\apps\genfac.ior Note: Two back slashes are required for defining the directory structure.	

Following is an example of a file defining an environment for an OS/390 system:

```
#####
# Connector #
#####

# Cyborg Application Broker for OS/390 connector
connector=com.cyborg.comms.corba.CabConnector

# Generic Factory ID of Application Broker
broker=com::cyborg::Online::ApplicationBroker

#####

# User Preferences #
#####

# Fully qualified path of file containing Generic Factory stringified IOR
IOR=c:\\apps\\genfac.ior
```

```
# Java class that implements the org.omg.CORBA.ORB interface.
# This property need only be supplied if a specific ORB implementation is
# required. The value for the J2SDK Platform 1.3 Java IDL ORB is:
# com.sun.corba.se.internal.iiop.ORB.
# When using the J2SDK supplied with Borland JBuilder 6 Enterprise Edition,
# the default ORB implementation (provided by VisiBroker), must be overridden.

org.omg.CORBA.ORBClass=com.sun.corba.se.internal.iiop.ORB
```

Test the Web Server

Included in the ecp WAR file is a simple client application that can be used to verify correct installation of the Collaborative Platform Web Services application. The client application can be accessed using an HTML page that is also included in the WAR file.

Access the Collaborative Platform Web Services

To run the client application, open a browser and access the following URL:

<http://hostname/ecp/client.html>

Replace 'hostname' with the name or IP address of the machine on which the Collaborative Platform (ecp.war) is installed.

The default TCP/IP port used by http servers is 80. If your HTTP server is not configured to accept requests on the default port, you must include the port number in the URL.

For example:

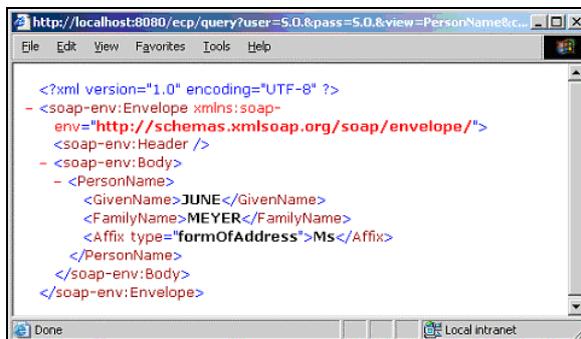
<http://host:8080/ecp/client.html>

If the application has been installed correctly, your Web browser will display an HTML form, the fields of which will contain default values.

Before submitting the form, ensure that the user name, password, company number, and employee number fields contain values that are valid for your Solution Series environment.

Submit the form by clicking on the button labeled Query.

If you receive a response similar to the following, the Collaborative Platform Web Services has been correctly installed.



The screenshot shows a web browser window with the address bar containing the URL: `http://localhost:8080/ecp/query?user=5.0.&pass=5.0.&view=PersonName&c...`. The browser's menu bar includes 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'. The main content area displays an XML document with the following structure:

```
<?xml version="1.0" encoding="UTF-8" ?>
- <soap-env:Envelope xmlns:soap-
  env="http://schemas.xmlsoap.org/soap/envelope/">
  <soap-env:Header />
  - <soap-env:Body>
  - <PersonName>
    <GivenName>JUNE</GivenName>
    <FamilyName>MEYER</FamilyName>
    <Affix type="formOfAddress">Ms</Affix>
  </PersonName>
  </soap-env:Body>
</soap-env:Envelope>
```

The status bar at the bottom of the browser window shows 'Done' and 'Local intranet'.

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Installation Checklist

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Phase 2: Installing and configuring the Cyborg Application Service (CAS)

- Install CAS
- Setup services (Windows 2000)

Phase 3: Installing and configuring the eCyborg JDBC driver

- Install the JDBC server
- Start CAS
- Verify installation

Phase 4: Installing the Collaborative Platform

- Unzip the Web Collaboration .WAR file
- Add Web Collaboration to ServletExec.properties
- Start Tomcat of ServletExec
- Configure the Collaborative Platform
- Add the eCyborg environment to the environments properties file
- Test the Web Server

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ViewDefinition.class

QueryProcessor.class

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SendingServlet.class

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saaj-ri.jar

commons-logging

jaxm-runtime.jar

sax.jar

cybjdbc.jar

jaxp-api.jar

xalan.jar

dom.jar

mail.jar

xercesImpl.jar

dom4j.jar

saaj-api.jar

xsltc.jar

conf

db.properties PersonName.xsl

eCP-views.xml PostalAddress.xsl

PersonMap.xml

Glossary of Terms

XSLT

Extensible Stylesheet Language Transformations. A language for transforming XML documents into other XML documents.

Data store

Repository where data is stored. Client applications request information that is retrieved from a Cyborg data store.

HR-XML

The HR-XML Consortium is an independent, non-profit organization dedicated to the development and promotion of a standard suite of XML specifications to enable e-business and the automation of human resources-related data exchanges.

JDBC

Java Database Connectivity Application Programming Interface. An application programming interface for accessing tabular data sources from the JAVA programming language.

SOAP

Simple Object Access Protocol. This is an XML-based protocol that is designed to exchange structured and typed information on the Web.

SQL

Structured Query Language. This language is used to retrieve information from a relational database so it can populate the Impromptu reports.

XML

Extensible Mark-up Language. A mark-up language for documents containing structured information.

XML Schema Definition Language

A language for describing and constraining the content of XML documents.

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eCyborg

Installing and Configuring eCyborg 5.0 (Windows)

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PART 1

Before You Begin...

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CHAPTER 1

Introduction

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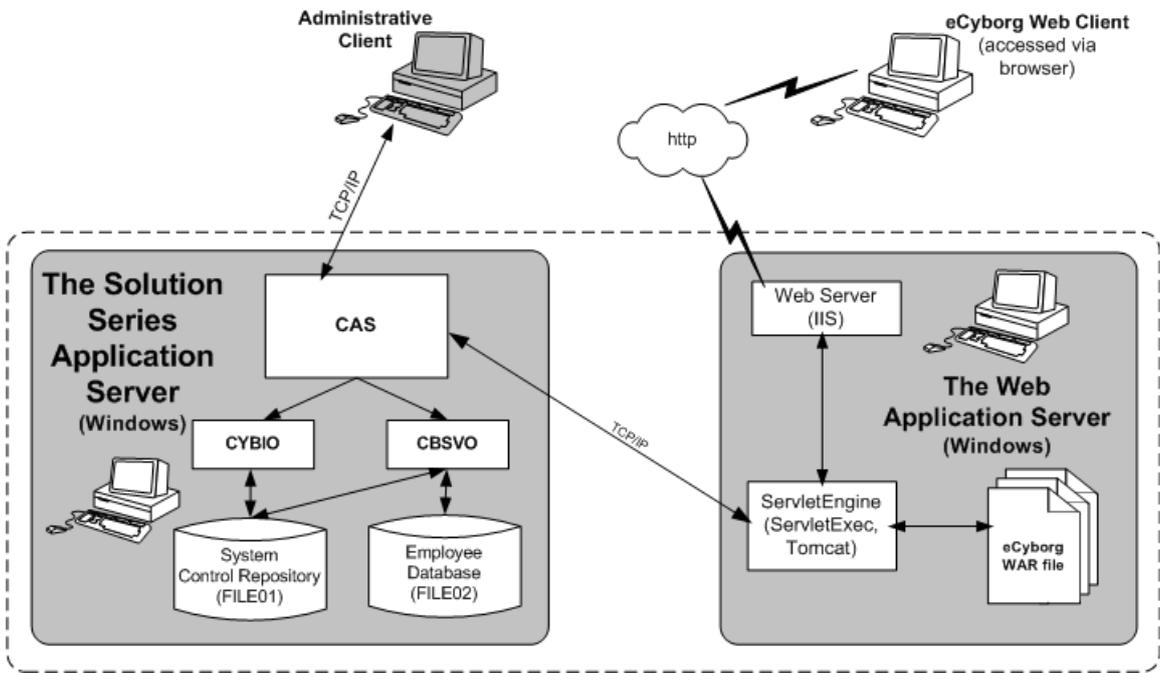
Welcome

This document provides detailed installation instructions for eCyborg Version 5.0 on a Microsoft Windows environment.

Note: This guide covers the installation and configuration of eCyborg on a Windows server. The prerequisite software, as well as a majority of the procedures are either very close to the same or are, indeed, the same. We have attempted to distinguish those few areas where there is a difference between the two.

Installation of eCyborg

When installing eCyborg, you will be installing and configuring several machines:



The Solution Series Application Server

The core of the system is The Solution Series: CYBIO, CBSVO, the System Control Repository (FILE01), and the Employee Database (FILE02). Along with these, the Cyborg Application Service (CAS) is installed.

The Web Application Server

The software which generates the Web Client can be installed on a separate machine, referred to in this guide as The Web ApplicationServer, or on the same machine as The Solution Series Application Server (indicated by the dotted line in the illustration above).

This machine may also include Interactive Workforce, if you wish to share ServletExec between the two systems.

The Administrative Client

The Administrative Client is the Windows interface to The Solution Series, and includes the FILECL.

The Web Client

Not part of the installation, any PC with a web browser can access The Solution Series through the Web Client.

Who should read this Installation Guide

This guide is intended for a technical audience (ideally a Cyborg installation specialist), but the information may also be used by the technical/system administrator at the customer site.

A = Anyone who wishes to have an overview of The Administrative Solution or who needs to know how to prepare for an installation.

I = Cyborg installation specialist or customer performing the installation.

This Installation Guide is divided into seven chapters and eight appendices:

Who	Read this chapter	For
A	1. Introduction	An overview and description of the prerequisites required for successful installation.
I	2. The Administrative Solution Indexed Server Installation and Configuration	Detailed instructions for installing an indexed version of The Administrative Solution on a Microsoft Windows server.
I	3. The Administrative Solution Relational Server Installation and Configuration (SQL Server)	Detailed instructions for installing a relational version of The Administrative Solution in SQL Server environment.
I	4. The Administrative Solution Relational Server Installation and Configuration (Oracle)	Detailed instructions for installing a relational version of The Administrative Solution in an <i>Oracle</i> environment.
I	5. Cyborg Application service (CAS) Installation and Configuration	Detailed instructions for installing the Cyborg Application service.
I	6. Installing and Configuring the Web Client Server	Detailed instructions for installing the eCyborg Web Client Server software.
I	7. Installing and Configuring the Administrative Client	Detailed instructions for installing the Administrative Client software and configuring for access to The Solution Series Application Server.

Installing and Configuring eCyborg 5.0 (Windows)

Who	Read this chapter	For
I	A. Directory Contents	Detailed information on the files used and programs installed during the course of the installation and the purposes they serve.
I	B. Installation Checklists	Detailed checklists ideal for use when installing this implementation of The Administrative Solution on your Microsoft Windows NT server.
I	C. Creating Separate Environments	Basic instructions for creating separate environments of The Administrative Solution.
I	D. Optional SQL Server Procedures	Detailed instructions for optional operations, such as reviewing device numbers, increasing device size, and recreating a database.
I	E. ORACLE Database Considerations	Detailed instructions for optional operations, such as ensuring there is enough machine memory, tuning ORACLE with INIT.ORA parameters, understanding and resolving common ORACLE errors, managing rollback segments, changing an ORACLE user's password, and dropping the Cyborg database.
I	F. ORACLE Disk Requirements Worksheets	Guidance in calculating the disk space your company will need for an Oracle installation.

Prerequisites

This Installation Guide will be most beneficial if you are familiar with the terminology used throughout. You should be familiar with The Administrative Solution and Microsoft Windows server concepts.

Refer to the system information provided on CUBBS for the most up-to-date information on supported software, as well as any hardware requirements.

The Solution Series Application Server

Server disk requirements

The server contains both the System Control Repository—containing system objects and data dictionary (F and RFM records)—and the Employee Database. The disk space requirements on the server can vary depending on the access method used. These access methods include the following:

- Indexed
- Relational

The following table shows the approximate disk requirements for the server files in these environments. Note that these figures only reflect the amount of disk space required for the delivered system. Additional space is needed to support your data:

	Indexed	Relational
System Control Repository	75MB	75MB
Employee Database	Typical: 12,500 bytes/employee	Typical: 27,500 bytes/employee

Additional disk space may be required based upon the amount of payroll and labor distribution history retained online.

The storage requirements of the Cyborg The Administrative Solution are efficient and expandable based on data content to accommodate your data retention requirements. There is no system constraint on the amount of data retained or the length of time for which it is retained.



If using Oracle, refer to ORACLE Disk Requirements Worksheets for guidance in calculating the disk space your company will need.

Minimum Hardware Requirements

The Solution Series Application Server requires the following:

Operating system	Microsoft Windows 2000, Service Pack 2
RAM	1 GB
Disk space	1 GB (minimum per Cyborg environment), in addition to operating system requirements, for up to 2,000 employees. Allow an another 60 MB for every additional 1,000 employees. Allow additional space for temporary files.
Processor	800 MHz dual
Media access	Access to a CD-ROM drive (either locally or on a network)

Software Requirements

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Note: Cyborg supports a Windows 2000 server with SQL Server 2000 database management software OR a Windows 2000 server with SQL 2000 database management software.

Indexed

Operating System	Windows 2000 (Service Pack 2)
Cobol Compiler	NetExpress 3.1
Other	■ TCP/IP ■ Sleep Command (from Windows Resource Toolkit)

Relational (SQL Server)

Operating System	Windows 2000 (Service Pack 2)
Database Server	SQL Server 2000
Cobol Compiler	NetExpress 3.1
Other	■ TCP/IP ■ Sleep Command (from Windows Resource Toolkit)

Relational (Oracle)

Operating System	Windows 2000 (Service Pack 2)
Database Server	ORACLE8i Enterprise Edition (8.1.7)
Cobol Compiler	NetExpress 3.1 -and- Pro*COBOL 1.8
Other	<ul style="list-style-type: none"> ■ TCP/IP ■ Sleep Command (from Windows Resource Toolkit)

Application server message monitoring

You can monitor messages from the application using one of the programs in the following table:

Name	Source	Notes
Microsoft Process Viewer (PVIEW.EXE)	Provided in the Server Resource Kit	Similar to the 'ps' command in Unix
Event Viewer	Provided with Windows	System, Security, Application Logs

The Web Application Server**Minimum Hardware Requirements**

The Web Application Server requires the following:

Operating system	Microsoft Windows 2000, Service Pack 2
RAM	1 GB
Disk space	500 MB
Processor	800 MHz dual
Media access	Access to CD-ROM drive (locally or on a network)

Software Requirements

Note: Cyborg supports a Windows 2000 server with SQL Server 2000 database management software OR a Windows 2000 server with SQL 2000 database management software.

The Web Application Server (eCyborg only)

Operating System	Microsoft Windows 2000 (Service Pack 2)
Web Server	Internet Information Server (IIS) 5.0
Servlet Engine	Jakarta Tomcat 4.01 -or- ServletExec 4.1.1 (Service Pack 7)
Java Development Kit	Java Development Kit (JDK) 1.3.1 with Java Cryptology Extension (JCE) 1.2.1

The Web Application Server (with Interactive Workforce*)

Operating System	Microsoft Windows 2000 (Service Pack 2)
Database Server	SQL 2000
Web Server	Internet Information Server (IIS) 5.0
Servlet Engine	ServletExec 4.1.1 (Service Pack 7)
Java Development Kit	Java Development Kit (JDK) 1.3.1 with Java Cryptology Extension (JCE) 1.2.1

*If you already have eCyborg Interactive Workforce installed, then these prerequisites will already be installed on the machine and may be shared with the eCyborg Web Server software.

Minimum Web Client Hardware and Software Requirements

A computer accessing the Web Client requires the following:

Operating system	Windows 2000
RAM	128 MB, in addition to operating system requirements
Disk space	Sufficient to run the web browser
Processor	500 MHz Pentium 500 or higher
Media access	Access to a CD-ROM drive (either locally or on a network)
Monitor	SVGA 1024 x 768
Browser	Internet Explorer 6.0 and higher -or- Netscape 6.2.1 and higher

The Administrative Client Minimum Hardware Requirements

The Administrative Client requires the following:

Operating system	Windows 2000 Professional (Service Pack 2) Windows XP Professional Edition Windows NT Workstation Professional Edition
RAM	128 MB
Disk space	250 MB
Processor	500 MHz Pentium 500 or higher
Media access	Access to a CD-ROM drive (either locally or on a network)
Monitor	SVGA 800x600

Software Requirements

The Administrative Client requires the following software:

Administrative Client Software Requirements
Microsoft Windows 2000 -or- Windows XP Professional Edition -or- Windows NT Professional Edition
Microfocus runtime license
Windows messaging
TCP/IP

Note: Based upon your employees' individual client workstation setups, there may be missing shared .dll or .ocx files that the Cyborg product uses that are non-distributable Microsoft shared system files. If this occurs, your IT staff will need to locate and download (usually on the Microsoft website) the required file for inclusion on your PCs.

How to get additional help

If you can not find the answers to your questions in this manual, contact Customer Support, who will be able to answer specific questions and give you general advice on training.

Please visit our web site www.Cyborg.com for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

PART 2

Installing and Configuring The Solution Series Application Server

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CHAPTER 2

Indexed Solution Series Installation and Configuration

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Introduction

This chapter provides detailed instructions for installing an indexed version of The Solution Series on a Microsoft Windows server system.

This is a technical chapter aimed at system administrators.

Note: Throughout this chapter we prefix our command line examples with 'rj' (run job). This is in reference to an executable delivered by Cyborg that automatically launches a program and displays the log output immediately after the program completes its run. Only log files are displayed; you must still navigate to the /LIST subdirectory to launch and view list files such as FILE03s.



Refer to **Relational Server Installation and Configuration (SQL Server)** (see "Relational Solution Series Installation and Configuration (SQL Server)" on page 27) or **Relational Server Installation and Configuration (SQL Server)** (see "Relational Solution Series Installation and Configuration (Oracle)" on page 51) for installation instructions for the relational version.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for Windows 2000'
1	Installing and Configuring eCyborg 5.0 (Windows 2000) (this guide)



Refer to *Directory Contents* for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

- Phase 1: Prepare for installation
- Phase 2: Install batch programs
- Phase 3: Create test P20IN Batch Master
- Phase 4: Create Employee Database with pay history
- Phase 5: Extract HR reports
- Phase 6: Apply System Control Repository menu additions



Refer to *Installation Checklists* for detailed checklists to use when installing The Solution Series on your Microsoft Windows server.

Phase 1: Prepare for installation

Install and configure prerequisite software

Verify that there is adequate space for the Microsoft 32-bit Incremental Linker by ensuring that the \TEMP directory has at least 40 MB of free space.

Copy Sleep command

Copy SLEEP.EXE from the Windows Resource Kit to the .\SYSTEM32 folder. This program is used in conjunction with the Enhanced Payroll Process, and sets a 20-second pause required to allow users to log off the system prior to running a Pay Merge from the Payroll Checklist.

Install server files

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page should open automatically. Scroll through the page, then click on the following link to start the autoinstall:

Install The Solution Series Application Server

Follow the prompts to install the software.

Modify delivered MicroFocus environment variables

The Merant environment variables are automatically set at the server. At the Administrative client PC, the variables must be called from a file originally generated by the server. To create the file to be used by the client PC, use a text editor to modify the delivered sample MFSETUP.BAT file so it reflects your designated NetExpress drive and path.

Phase 2: Build The Solution Series Environment

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes: This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (logs and list files) to determine success or failure before another script is executed. Log files are found in the \logs directory, while list files are found in the \list directory.

Pull and compile all CYBMST programs

Job Used: JXCYBMST

To extract and compile all CYBMST COBOL programs (P9CNVT, P2EDIT, P4CALC, P5PRNT, O4CALC), execute the JXCYBMST.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxcybmst
```

Review the log, then the cybmst.03 list file in the \LIST subdirectory to determine if there were any errors.

Compile and link CBSVB and CBSVRF

Job Used: JCMPCVBN B

To compile the non-relational batch program CBSVB as delivered by Cyborg and compile the CBSVRF subroutine, execute the JCMPCVBN.BAT B jobstream from the \RUNS subdirectory. The 'b' parameter is passed onto the jobstream in order to specifically compile the batch program (that is, CBSVB).

For example:

```
rj jmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Job Used: JCMPSORT

To compile P10SORT.CBL, P45SORT.CBL, P80SORT.CBL, P80COPY.CBL, and PFSSORT.CBL execute the JCMPSORT.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jcmpsort
```

Review the log to determine if there were any errors.

Note: Your company may have different sort utilities, but by using the Cyborg delivered sort programs, we can provide you with better support should you encounter difficulties. Client supplied sort utilities are not supported by Cyborg.

Compile and link the US Quarterly Processor

Job Used: JXP5QTR

To compile the batch program P5QTR as delivered by Cyborg, execute the JXP5QTR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxp5qtr
```

Review the log to determine if there were any errors.



Refer to Using the Quarterly Processor for instructions on selecting generators, configuring the processor, and generating quarterly report output.

Create System Control Repository

Job Used: JDEMO01

This procedure creates a random System Control Repository. Execute the JDEMO01.BAT jobstream. The jobstream will utilize DEMO1.P1, DEMO1.P2, DEMO1.P3, and DEMO1.Y3 as input files.

For example:

```
rj jdemo01
```

This job may run for approximately 15 minutes depending on your system.

Review the log, then the demos01.03 list file in the \LIST subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages.

For example:

```

CSSS <UTIL( (999999(DISPLY( ( ( ( )13:38:02 02-29 XXXX
ZZTEST 99999E RELOAD IS OK. Ver-4.5 LENGTH 531 02-29-00 13:34:42*
*****
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P CYBRCI ***** RELOAD NOT FOUND *****
P CYBSCK ***** RELOAD NOT FOUND *****
P CYBSEC ***** RELOAD NOT FOUND *****
P CYBWCI ***** RELOAD NOT FOUND *****
P CYBWRK ***** RELOAD NOT FOUND *****
P CYBWZQ ***** RELOAD NOT FOUND *****
P CYBX02 ***** RELOAD NOT FOUND *****
P EXCTRL ***** RELOAD NOT FOUND *****
P QMCTRL ***** RELOAD NOT FOUND *****
P RDTBPL ***** RELOAD NOT FOUND *****
P RTCTRL ***** RELOAD NOT FOUND *****
P TBLENT ***** RELOAD NOT FOUND *****
P TBLINQ ***** RELOAD NOT FOUND *****
P TBLUPD ***** RELOAD NOT FOUND *****

```

```
P TBLVER ***** RELOAD NOT FOUND ***** _  
P V-NAME ***** RELOAD NOT FOUND ***** _  
P WPTM ***** RELOAD NOT FOUND ***** _  
-----  
24SSS <UTIL( (999999(DEMOY3( ( ( )13:38:02 02-29 XXXX
```

Pull all CBSV programs

Job Used: JPULCVN

To pull all The Administrative Solution CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JPULCVN.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpulcvn
```

Review the log, then the pulcvn.03 list file in the \LIST subdirectory to determine if there were any errors.

Compile and link all CBSV programs

Job Used: JCMPCVN

To compile and link all CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JCMPCVN.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jcmpcvn
```

Review the log, to determine if there were any errors.

Note: 'Could not find' messages are normal on the first execution of the job and should be ignored.

Phase 3: create test P20IN Batch Master

**Job Used: JP20STRT (US)
JP20STRC (Canada)**

To extract the report generators from CYBMST and create the P20IN Batch Master File, execute the JP20STRT.BAT jobstream from the \RUNS subdirectory with P9STRT and P9CBSV as input.

Input files:

P05T80 (P9STRT)
P05T81(P9CBSV for US or P9CBSVC for Canada)

The P2EDIT, P4CALC, and P5PRNT programs are processed.

For example:

```
sj jp20strt
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

AUDIT2.TRL
P20STRT.03
TRANSLOD

Phase 4: Create Employee Database with pay history

Create test Employee Database

Job Used: JPAYMRG

To create a test Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rl jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate database with test data - Solution Series Install Win2000

1. Apply demo test data

Job Used: JPRDEMO (US)

JPRDEMOC (Canada)

To load test data from the System Control Repository and populate fields in the online Employee Database, execute the JPRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

```
rl jprdemo
```

Review the log, then the prdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

2. Apply remaining demo test data

Job Used: JHRDEMO (US)

JHRDEMOC (Canada)

To load the remaining test data from the System Control Repository and populate fields in the online Employee Database, execute the JHRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

```
rl jhrdemo
```

Review the log, then the hrdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

3. Build alternate keys

Job Used: JBLDAKY

To build or rebuild the Employee Name Alternate Key, run JBLDAKY.BAT located in the \Runs directory.

Note: This job may be modified to accommodate your build of the alternate keys once your data has been added to the system.

For example:

```
  rj jbdaky
```

Review the log, then the jbdaky.03 list file in the \LIST subdirectory to determine if there were any errors.

Update P20IN Batch Master File

Job Used: JPAYXTR

To update the P20IN Batch Master File with the demo test data, execute the JPAYXTR.BAT jobstream from the \RUNS subdirectory.

The time entries and adjustments will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

FILE10 (PAYXTR10), which contains time entries and adjustments, is also created. PAYXTR10 becomes input to the JPAYRUN as P05T81.

For example:

```
  rj jpayxtr
```

Review the log, then the payxtr.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply taxes, time entries, and adjustments

Job Used: JPAYRUN

To apply taxes (TAXFILE) and the time entries and adjustments (PAYXTR10) to the P20IN file, execute the JPAYRUN.BAT jobstream from the \RUNS subdirectory with P05T80 and P05T81 as input. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Note: Verify that the TAXFILE being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).

Input files:

```
P05T80(TAXFILE for US and TAXFILEC for Canada)
P05T81(PAYXTR10)
```

Note: If you are a Canadian customer, modify the JPAYRUN.BAT to pull the TAXFILEC instead of the TAXFILE.

For example:

```
  rj jpayrun
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

AUDITRL.LIS
CHECKNUM.LIS
PAYSLIPS.LIS
DEPSLIPS.LIS
COMBREG.LIS
TRANSLOD.LIS

Note: A number of errors display on the 9E9E (Master File Status) report the first time a PAYRUN is executed. Errors include 'INVALID SSN', 'NO ACTIVE STATES', 'NORMAL SALARY MISSING', 'NORMAL RATE MISSING', and 'SHIFT MISSING'. Disregard these errors.

Create pay history

Job Used: JMNTRUN

To create pay history and labor records and apply check numbers to the newly created history records on the P20IN Batch Master File, execute the JMNTRUN.BAT jobstream from the \RUNS subdirectory. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

For example:

```
rj jmntrun
```

Review the log, then the tranlod2.lis and auditrl2.lis list files in the \LIST subdirectory to determine if there were any errors.

Update the Employee Database

Job Used: JPAYMRG

To create a new random Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Phase 5: Extract HR reports

Job Used: JREPORT

To extract Human Resource batch reports, execute the JREPORT.BAT jobstream from the \RUNS subdirectory.

The report group that is executed is HR0001.

For example:

```
rj jreport
```

Review the log, then the rtpnt.03 and report.03 list files in the \LIST subdirectory to determine if there were any errors.

Phase 6: Apply System Control Repository menu additions

If you plan to implement the Report Launcher, Process Monitor, and Desktop Document Interface facilities on the client, then you must apply additional menu items to the System Control Repository (FILE01).

Build report menus

Job Used: jrptmnu

To build a menu containing the delivered report groups, run JRPTMNU.BAT from the \RUNS subdirectory.

For example:

```
rx jrptmnu
```

Review the log, then the rptmnu.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Job Used: jmainti

To apply menu items for online user access to batch processes and update checklists, run the JMAINTI.BAT jobstream from the \RUNS subdirectory, using EPRDDI05 as the FILE05 input.

For example:

```
rx jmainti
```

Review the log, then the mainti.03 list file in the \LIST subdirectory to determine if there were any errors.

Your installation of The Solution Series Indexed for the server is now complete. Go to the chapter 'Install and Configure Cyborg Application Server (CAS) service' for instruction on the installation and configuration of the Cyborg Application Server (CAS) service.

CHAPTER 3

Relational Solution Series Installation and Configuration (SQL Server)

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Introduction

This chapter provides detailed instructions for installing a relational version of The Solution Series on a Microsoft Windows server.

This is a technical chapter aimed at system administrators.

Note: Throughout this chapter we prefix our command line examples with 'rj' (run job). This is in reference to an executable delivered by Cyborg that automatically launches a program and displays the log output immediately after the program completes its run. Only log files are displayed; you must still navigate to the /LIST subdirectory to launch and view list files such as FILE03s.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for Windows 2000'
1	Installing and Configuring eCyborg 5.0 (Windows 2000) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Prepare for installation

Phase 2: Install batch programs

Phase 3: Create test P20IN Batch Master

Phase 4: Configure ODBC

Phase 5: Create Employee Database with pay history

Phase 6: Extract HR reports

Phase 7: Apply System Control Repository menu additions



Refer to Installation Checklists for detailed checklists to use when installing The Solution Series on your Microsoft Windows server.

Phase 1: Prepare for installation

Install and configure prerequisite software

Verify that there is adequate space for the Microsoft 32-bit Incremental Linker by ensuring that the \TEMP directory has at least 40 MB of free space.

Copy Sleep command

Copy SLEEP.EXE from the Windows Resource Kit to the .\SYSTEM32 folder. This program is used in conjunction with the Enhanced Payroll Process, and sets a 20-second pause required to allow users to log off the system prior to running a Pay Merge from the Payroll Checklist.

Install server files

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page should open automatically. Scroll through the page, then click on the following link to start the autoinstall:

Install The Solution Series Application Server

Follow the prompts to install the software.

Modify delivered MicroFocus environment variables

The MicroFocus environment variables are automatically set at the server. At the client PC, the variables must be called from a file originally generated by the server. To create the file to be used by the client PC, use a text editor to modify the delivered sample MFSETUP.BAT file so it reflects your designated NetExpress and SQL Server drive and path.

Modify the case tool variables

Modify the case tool variables in JCRTPGMS.BAT to include the required database information.

IMPORTANT:

The database name identified by DB_NAME must be the DB_NAME in the CBSV override file for all CBSV programs. Change the security option in the SQL database for the Cyborg users to 'SQL Server and Windows'.

Name	Example	Your System	Comment
DB_NAME	CYBORGxx		Database name. Important! There is an 8 position limit on the DB_NAME, and that name must begin with an alpha character. The 'xx' is a variable, where you might exchange the 'xx' with '50' (for example, 'cyborg50') to designate a release level.
DB_USER	cyborg		Recommended to be 'Cyborg'. Important! There is an 8 position limit on the DB_USER, and that name must begin with an alpha character.
DB_PASS	cybdba		Password for Cyborg user. Important! There is an 8 position limit on the DB_PASS, and that name must begin with an alpha character.
DB_PATH	F:\CYBORGxx\Data\		Path to database device file. (If the directory chosen does not exist, you will have to create it.) Important! The back slash (\) at the end of the entry must be present.
DB_SIZE	150		Size in MB of initial database
DB_MAX	200		Max size of database in MB; do not exceed available OS space
DB_GROWTH	500		Size in KB for expansion

Name	Example	Your System	Comment
LOG_PATH	F:\CYBORGxx\Data\		Path to log device. (If the directory chosen does not exist, you will have to create it.) Important! The back slash (\) at the end of the entry must be present. Spaces in the filename may cause problems.
LOG_SIZE	75		Size in MB of initial log
LOG_MAX	150		Max size in MB; do not exceed available OS space
LOG_GROWTH	500		Size in KB needed for log expansion

Modify the CBSV override file

Edit the CBSV.OVR override file in the \DATA subdirectory to include your database name, user ID, and server name.

Name	Example	Your System
Database name	CYBORGxx	
User ID	cyborg	
Server name	HOSTNAME	

Modify the database variables

Edit the JCRTCYB.BAT jobstream in the \RUNS subdirectory to provide required database information:

```
:
:
setlocal
set SRVNAME=server
set SYSADMUS=sa
set SYSADMPW=master
set DB_NAME=CYBORGxx
set DB_USER=cyborg
set DB_PASS=cybdba
:
:
```

Name	Example	Your System	Comment
SRVNAME	ntserver		Network server name where the Cyborg database resides
SYSADMUS	sa		SQL Server System Admin user name
SYSADMPW	master		SQL Server System Admin password
DB_NAME	CYBORGxx		Database name. Important! There is an 8 position limit on the DB_NAME, and that name must begin with an alpha character
DB_USER	cyborg		Recommended to be 'Cyborg'
DB_PASS	cybdba		Password for Cyborg user

Phase 2: Build The Solution Series Environment

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes: This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (logs and list files) to determine success or failure before another script is executed. Log files are found in the \logs directory, while list files are found in the \list directory.

Pull and compile all CYBMST programs

Job Used: JXCYBMST

To extract and compile all CYBMST COBOL programs (P9CNVT, P2EDIT, P4CALC, P5PRNT, O4CALC), execute the JXCYBMST.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxcybmst
```

Review the log, then the cybmst.03 list file in the \LIST subdirectory to determine if there were any errors.

Compile and link CBSVB and CBSVRFT

Job Used: JCMPCVBN B

To compile the non-relational batch program CBSVB as delivered by Cyborg and compile the CBSVRFT subroutine, execute the JCMPCVBN.BAT B jobstream from the \RUNS subdirectory. The 'b' parameter is passed onto the jobstream in order to specifically compile the batch program (that is, CBSVB).

For example:

```
rj jcmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Job Used: JCMPSORT

To compile P10SORT.CBL, P45SORT.CBL, P80SORT.CBL, P80COPY.CBL, and PFSSORT.CBL execute the JCMPSORT.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jcmpsort
```

Review the log to determine if there were any errors.

Note: Your company may have different sort utilities, but by using the Cyborg delivered sort programs, we can provide you with better support should you encounter difficulties. Client supplied sort utilities are not supported by Cyborg.

Compile and link the US Quarterly Processor

Job Used: JXP5QTR

To compile the batch program P5QTR as delivered by Cyborg, execute the JXP5QTR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxp5qtr
```

Review the log to determine if there were any errors.



Refer to Using the Quarterly Processor for instructions on selecting generators, configuring the processor, and generating quarterly report output.

Create System Control Repository

Job Used: JDEMO01

This procedure creates a random System Control Repository. Execute the JDEMO01.BAT jobstream. The jobstream will utilize DEMO1.P1, DEMO1.P2, DEMO1.P3, and DEMO1.Y3 as input files.

For example:

```
rj jdemo01
```

This job may run for approximately 15 minutes depending on your system.

Review the log, then the demos01.03 list file in the \LIST subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages.

For example:

```
CS55 <UTIL( 999999(DISPLY( ( ( ( )13:38:02 02-29 XXXX
ZZTEST 99999E RELOAD IS OK. Ver-4.5 LENGTH 531 02-29-00 13:34:42*
*****
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****_
P CYBHL ***** RELOAD NOT FOUND *****_
P CYBP15 ***** RELOAD NOT FOUND *****_
P CYBPZQ ***** RELOAD NOT FOUND *****_
P CYBRCI ***** RELOAD NOT FOUND *****_
P CYBSCK ***** RELOAD NOT FOUND *****_
P CYBSEC ***** RELOAD NOT FOUND *****_
P CYBWCI ***** RELOAD NOT FOUND *****_
P CYBWRK ***** RELOAD NOT FOUND *****_
P CYBWZQ ***** RELOAD NOT FOUND *****_
P CYBX02 ***** RELOAD NOT FOUND *****_
P EXCTRL ***** RELOAD NOT FOUND *****_
P QMCTRL ***** RELOAD NOT FOUND *****_
P RDTBPL ***** RELOAD NOT FOUND *****_
P RTCTRL ***** RELOAD NOT FOUND *****_
P TBLENT ***** RELOAD NOT FOUND *****_
P TBLINQ ***** RELOAD NOT FOUND *****_
P TBLUPD ***** RELOAD NOT FOUND *****_
```


Execute the case tool

Job Used: JCRTPGMS

Execute the JCRTPGMS.BAT jobstream from the \RUNS subdirectory. For example:

```
ry jcrtpgms
```

Review the log to determine if there were any errors.

Disregard the following messages:

```
:  
CYBRES-01 in MLPO May be within the segment key area.  
CYBRES-01 in MLPP May be within the segment key area.  
CYBRES-01 in MLQ4 May be within the segment key area.  
:
```

Create the database, tables, index, and views

Job Used: JCRTCYB

Note: If the database currently exists, you will need to drop the database before continuing with this step.



Refer to *Optional SQL Server Procedures for detailed instructions for recreating the database, should it be necessary later.*

To execute the SQL statements defined in RDBPGM1A and RDBPGM1B and create the database, tables, and index, execute the JCRTCYB.BAT jobstream from the \RUNS subdirectory. The RDBPGM1A.SQL script creates the database and permissions. The RDBPGM1B.SQL script creates tables and views.

For example:

```
ry jcrtcyb
```

Review the log to determine if there were any errors.

Rdbpgm1a.err and rdbpgm1b.err are not a part of the log and will contain information indicating a successful completion of their respective scripts. They can be found in the \Runs subdirectory.

Pre-compile, compile, and link RDBPGMA through RDBPGMH

Job Used: JCMPSUBR

To pre-compile, compile, and link the programs RDBPGMA through RDBPGMH, execute the JCMPSUBR.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jcmpsubr
```

Review the log to determine if there were any errors.

The following table lists and describes each subroutine generated by the CASE tool:

Program	Subroutine Description
RDBPGMA	Inserts a new row in a table
RDBPGMB	Selects data from a row in a table and passes it to CBSV
RDBPGMC	Updates values in an existing row
RDBPGMD	Deletes an existing row from a table
RDBPGME	Called when a PAYMRG 171 process is run; removes all rows from all tables in preparation for reinsertion of data from the P20 file; also disables then re-enables all indexes (where applicable)
RDBPGMF	Called when a PAYMRG 222 process is run; deletes all rows from the tables that belong to the organizations being paid
RDBPGMG	Cursors through the database and rebuilds the IDX records on the database, recreating Control 1, Control 2, and Employee Number pointers on the Employee Database; used mainly with the FIXIDX program
RDBPGMH	Provides segment and segment key length for each segment, and location of date and date type within each segment; the link between the database and The Administrative Solution

Extract, compile, and link O4CALC

Job Used: JXO4CALR

To extract COBOL program O4CALC from CYBMST, compile the program, and link the machine-specific subroutines, execute the JXO4CALR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rx jxo4calr
```

Review the log, then the o4calc.03 list file in the \LIST subdirectory to determine if there were any errors.

Pull all CBSV programs

Job Used: JPULCVR

To pull all The Administrative Solution CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JPULCVR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rx jpulcvr
```

Review the log, then the pulcvr.03 list file in the \LIST subdirectory to determine if there were any errors.

Pre-compile, compile, and link all CBSV programs

Job Used: JCMPCVR

To pre-compile, compile, and link all the CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JCMPCVR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rx jcmpcvr
```

Review the log to determine if there were any errors.

Phase 3: Configure ODBC

Run ODBC

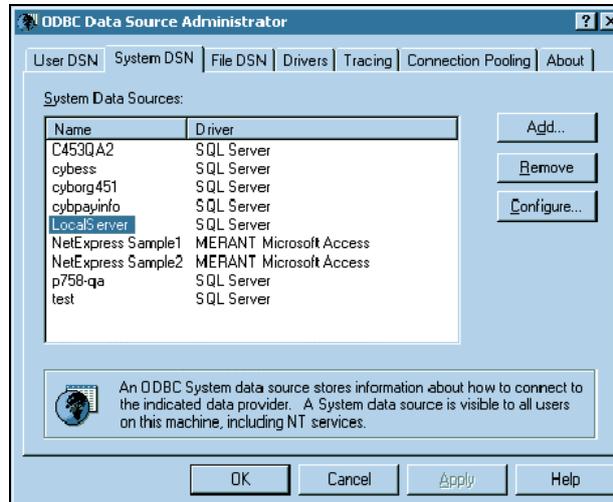
1. **Open the Data Sources (ODBC) dialog**

To start the ODBC Data Sources dialog:

Start Settings ► Control Panel ► Administrative Tools ► Data Sources (ODBC)

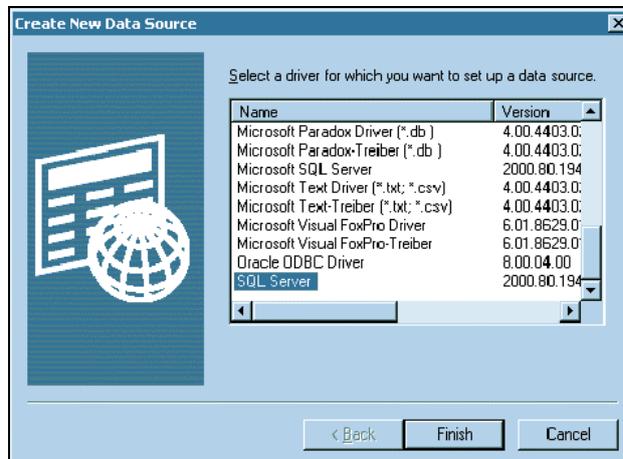
2. **Select the System DSN folder**

The screen appears as shown here:



3. **Click Add**
4. **Select the SQL Server driver**

The screen appears as shown here:

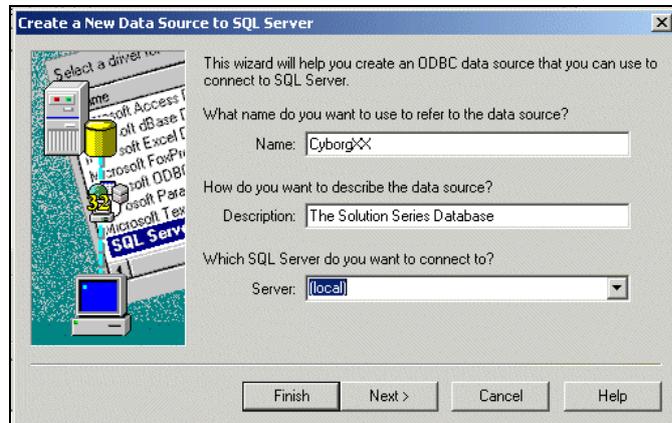


5. **Click Finish**
6. **Enter data in the 'Create a New Data Source to SQL Server' form**

Fill the following fields with the information listed:

Field	Information
Name:	CYBORG50 (should be the same as the DB_NAME in the CBSV override file for all CBSV programs, which must be the Database Name identified by DB_NAME in the script JCRTPGMS.BAT.)
Description:	Cyborg Database
Server:	<local> or 'server name'

The screen should appear as shown here:



7. Click Next

8. Enable 'Connect to SQL Server to obtain default settings for the additional configuration information'

Click on the checkbox to enable this functionality. Accept the default authentication setting.

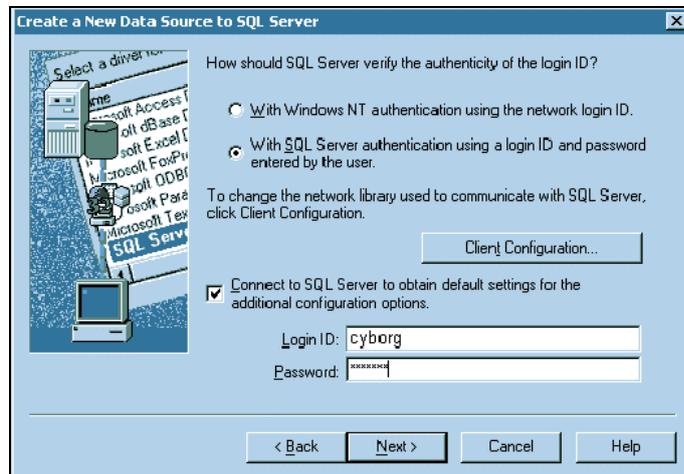
9. Verify network library

Click on Client Configuration and verify that the proper network library has been set.

10. Enter the Login ID and the Password

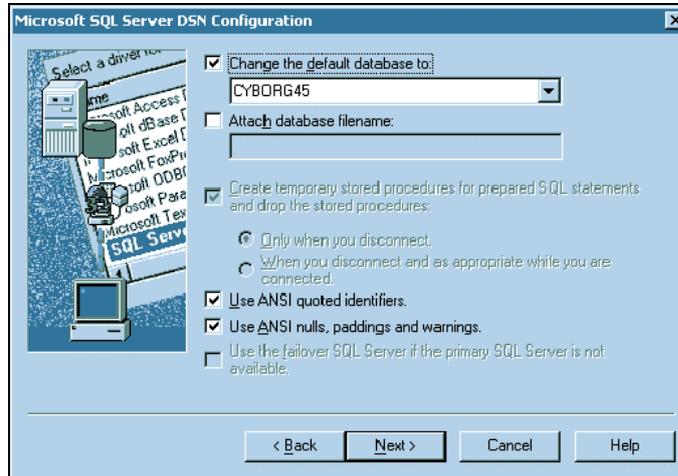
If you are using the defaults, type 'cyborg' in the Login ID field and type the current password for the SQL 'cyborg' user in the Password: field. The default is 'cybdba'.

The screen should appear as shown here:

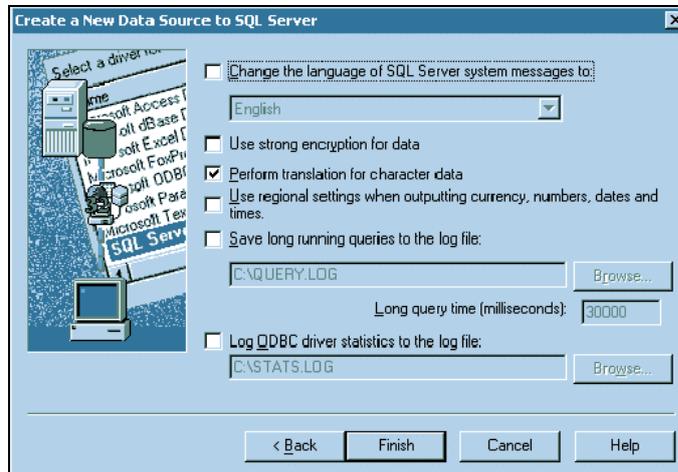


11. **Click Next**
12. **Change the default to your Cyborg Solution Series database**
CYBORGxx is the filename of the database in our example.

The window appears as shown here:

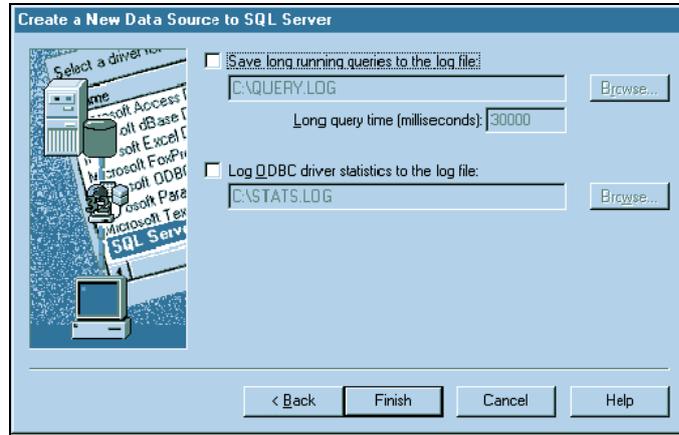


13. **Click Next**
The window appears as shown here:



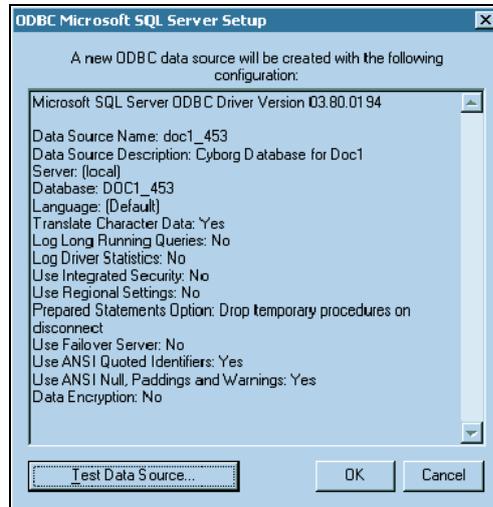
14. **Click Finish**

The window appears as shown here:



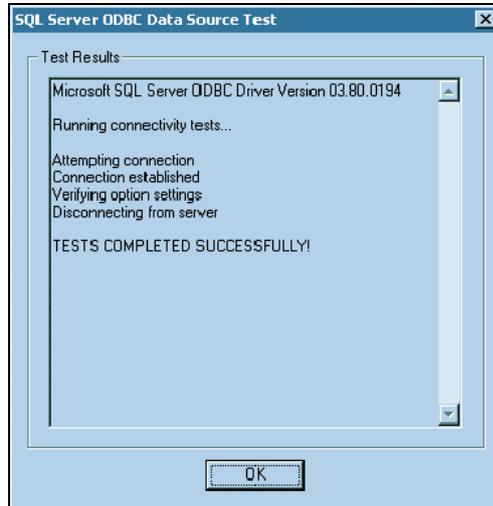
15. **On the next window, click Finish**

The window should appear as shown here:



16. Click 'Test Data Source'

You should receive a message replying, 'Tests Completed Successfully'. The window will appear as shown here:



17. Click OK

The window returns to the configurations display.

18. Click OK

Your Cyborg Solution Series database will now appear in the System Data Sources option list of the ODBC Data Source Administrator Window. The ODBC is now connected to the database.

19. Click OK

This will exit the ODBC.

Phase 4: create test P20IN Batch Master

Job Used: JP20STRT (US) JP20STRC (Canada)

To extract the report generators from CYBMST and create the P20IN Batch Master File, execute the JP20STRT.BAT jobstream from the \RUNS subdirectory with P9STRT and P9CBSV as input.

Input files:

P05T80 (P9STRT)

P05T81(P9CBSV for US or P9CBSVC for Canada)

The P2EDIT, P4CALC, and P5PRNT programs are processed.

For example:

```
sj jp20strt
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

AUDIT2.TRL

P20STRT.03

TRANSLOD

Phase 5: Create Employee Database with pay history

Create test Employee Database

Job Used: JPAYMRG

To create a test Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate RDBMS tables

Job Used: JPOPF01

To synchronize the System Control Repository and relational tables for option lists and specific application tables (Cx through Xx), execute the JPOPF01.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpopf01
```

Review the log, then the popf01.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate database with test data - Solution Series Install Win2000

1. Apply demo test data

Job Used: JPRDEMO (US)

JPRDEMOC (Canada)

To load test data from the System Control Repository and populate fields in the online Employee Database, execute the JPRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jprdemo
```

Review the log, then the prdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

2. Apply remaining demo test data

Job Used: JHRDEMO (US)

JHRDEMOC (Canada)

To load the remaining test data fields in the online Employee Database, execute the JHRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

rj jhrdemo

Review the log, then the hrdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

3. Build alternate keys

Job Used: JBLDAKY

To build or rebuild the Employee Name Alternate Key, run JBLDAKY.BAT located in the \Runs directory.

Note: This job may be modified to accommodate your build of the alternate keys once your data has been added to the system.

For example:

rj jbdaky

Review the log, then the jbdaky.03 list file in the \LIST subdirectory to determine if there were any errors.

Update P20IN Batch Master File

Job Used: JPAYXTR

To update the P20IN Batch Master File with the demo test data, execute the JPAYXTR.BAT jobstream from the \RUNS subdirectory.

The time entries and adjustments will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

FILE10 (PAYXTR10), which contains time entries and adjustments, is also created. PAYXTR10 becomes input to the JPAYRUN as P05T81.

For example:

rj jpayxtr

Review the log, then the payxtr.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply taxes, time entries, and adjustments

Job Used: JPAYRUN

To apply taxes (TAXFILE) and the time entries and adjustments (PAYXTR10) to the P20IN file, execute the JPAYRUN.BAT jobstream from the \RUNS subdirectory with P05T80 and P05T81 as input. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Note: Verify that the TAXFILE being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).

Input files:

P05T80(TAXFILE for US and TAXFILEC for Canada)
P05T81(PAYXTR10)

Note: If you are a Canadian customer, modify the JPAYRUN.BAT to pull the TAXFILEC instead of the TAXFILE.

For example:

```
ry jpayrun
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

```
AUDITRL.LIS  
CHECKNUM.LIS  
PAYSLIPS.LIS  
DEPSLIPS.LIS  
COMBREG.LIS  
TRANSLD.LIS
```

Note: A number of errors display on the 9E9E (Master File Status) report the first time a PAYRUN is executed. Errors include 'INVALID SSN', 'NO ACTIVE STATES', 'NORMAL SALARY MISSING', 'NORMAL RATE MISSING', and 'SHIFT MISSING'. Disregard these errors.

Create pay history

Job Used: JMNTRUN

To create pay history and labor records and apply check numbers to the newly created history records on the P20IN Batch Master File, execute the JMNTRUN.BAT jobstream from the \RUNS subdirectory. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

For example:

```
ry jmntrun
```

Review the log, then the tranlod2.lis and auditrl2.lis list files in the \LIST subdirectory to determine if there were any errors.

Update the Employee Database

Job Used: JPAYMRG

To create a new random Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Phase 6: Extract HR reports

Job Used: JREPORT

To extract Human Resource batch reports, execute the JREPORT.BAT jobstream from the \RUNS subdirectory.

The report group that is executed is HR0001.

For example:

```
rj jreport
```

Review the log, then the rtpnt.03 and report.03 list files in the \LIST subdirectory to determine if there were any errors.

Phase 7: Apply System Control Repository menu additions

If you plan to implement the Report Launcher, Process Monitor, and Desktop Document Interface facilities on the client, then you must apply additional menu items to the System Control Repository (FILE01).

Build report menus

Job Used: jrptmnu

To build a menu containing the delivered report groups, run JRPTMNU.BAT from the \RUNS subdirectory.

For example:

```
rx jrptmnu
```

Review the log, then the rptmnu.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Job Used: jmainti

To apply menu items for online user access to batch processes and update checklists, run the JMAINTI.BAT jobstream from the \RUNS subdirectory, using EPRDDI05 as the FILE05 input.

For example:

```
rx jmainti
```

Review the log, then the mainti.03 list file in the \LIST subdirectory to determine if there were any errors.

Your installation of The Solution Series Version for the SQL server is now complete. Go to the chapter 'Install and Configure Cyborg Application Server (CAS) service' for instruction on the installation and configuration of the Cyborg Application Server (CAS) service.

CHAPTER 4

Relational Solution Series Installation and Configuration (Oracle)

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Introduction

This chapter provides detailed instructions for installing a relational version of The Solution Series on a Microsoft Windows server.

This is a technical chapter aimed at system administrators.

Note: Throughout this chapter we prefix our command line examples with 'rj' (run job). This is in reference to an executable delivered by Cyborg that automatically launches a program and displays the log output immediately after the program completes its run. Only log files are displayed; you must still navigate to the /LIST subdirectory to launch and view list files such as FILE03s.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for Windows 2000'
1	Installing and Configuring eCyborg 5.0 (Windows 2000) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

- Phase 1: Prepare for installation
- Phase 2: Install batch programs
- Phase 3: Create test P20IN Batch Master
- Phase 4: Create Employee Database with pay history
- Phase 5: Extract HR reports
- Phase 6: Apply System Control Repository menu additions



Refer to Installation Checklists for detailed checklists to use when installing The Solution Series on your Microsoft Windows server.

Phase 1: Prepare for installation

Install and configure prerequisite software

Verify that there is adequate space for the Microsoft 32-bit Incremental Linker by ensuring that the \TEMP directory has at least 40 MB of free space.

Copy Sleep command

Copy SLEEP.EXE from the Windows Resource Kit to the .\SYSTEM32 folder. This program is used in conjunction with the Enhanced Payroll Process, and sets a 20-second pause required to allow users to log off the system prior to running a Pay Merge from the Payroll Checklist.

Install server files

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page should open automatically. Scroll through the page, then click on the following link to start the autoinstall:

[Install The Solution Series Application Server](#)

Follow the prompts to install the software.

Scroll through the page, then click on the following link to start the autoinstall:

[Install The Solution Series Application Server](#)

Follow the prompts to install the software.

Modify delivered MicroFocus environment variables

The MicroFocus environment variables are automatically set at the server. At the client PC, the variables must be called from a file originally generated by the server. To create the file to be used by the client PC, use a text editor to modify the delivered sample MFSETUP.BAT file so it reflects your designated NetExpress and ORACLE drive and path.

Modify the case tools variables

Modify the case tool variables in JCRTPGMS.BAT to include the required database information.

Name	Example	Your System	Comment
Operating system	MF2		'MF2' is required to indicate this is a Windows operating system.
Relational database system	ORA		'ORA' is required input to indicate this is an Oracle database.
ASCII machine type	A		'A' is required input, indicating this is an ASCII system.
ORACLE's system manager password	manager		Required. Password of the system's manager user ID. Maximum 8 alphanumeric characters.
datafile path	F:\cyborg45\data\		Operating system path to the data files that make up the tablespaces. The 'xx' is a variable, where you might exchange the 'xx' with '45' (for example, 'cyborg45') to designate a release level. The back slash (\) at the end of the entry must be input. Maximum 30 alphanumeric characters.
ORACLE's user name	CYBORG		Cyborg Oracle user ID for execution of DDL and DML. Recommended to be 'Cyborg'. Maximum 8 alphanumeric characters.
ORACLE's user password	CYBDBA		Password for Cyborg Oracle user ID. Maximum 8 alphanumeric characters.
Tablespace indicator	S		Required. Tablespace identifier (for example, P=production, and D=development). Maximum 1 character.

The database connect string should look like the following:

```
rem .....1.....2.....3.....4.....5.....6
rem 1...5...0...5...0...5...0...5...0...5...0...5...0...
echo MF2ORAAmanager F:\cyborgxx\data\          CYBORG CYBDBA S> ..\work\control.ora
```

Modify the CBSV override file

Edit the CBSV.OVR override file in the \DATA subdirectory to include your database name, user ID, and server name.

Name	Example	Your System
Database name	CYBORGxx	
User ID	cyborg	
Server name	HOSTNAME	

Modify the database variables

Review and modify JCMRDB1.BAT as needed to show the path to the Oracle libraries.

Phase 2: Build The Solution Series Environment

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes: This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (logs and list files) to determine success or failure before another script is executed. Log files are found in the \logs directory, while list files are found in the \list directory.

Pull and compile all CYBMST programs

Job Used: JXCYBMST

To extract and compile all CYBMST COBOL programs (P9CNVT, P2EDIT, P4CALC, P5PRNT, O4CALC), execute the JXCYBMST.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxcybmst
```

Review the log, then the cybmst.03 list file in the \LIST subdirectory to determine if there were any errors.

Compile and link CBSVB and CBSVRF

Job Used: JCMPCVBN B

To compile the non-relational batch program CBSVB as delivered by Cyborg and compile the CBSVRF subroutine, execute the JCMPCVBN.BAT B jobstream from the \RUNS subdirectory. The 'b' parameter is passed onto the jobstream in order to specifically compile the batch program (that is, CBSVB).

For example:

```
rj jmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Job Used: JCMPSORT

To compile P10SORT.CBL, P45SORT.CBL, P80SORT.CBL, P80COPY.CBL, and PFSSORT.CBL execute the JCMPSORT.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jcmpsort
```

Review the log to determine if there were any errors.

Note: Your company may have different sort utilities, but by using the Cyborg delivered sort programs, we can provide you with better support should you encounter difficulties. Client supplied sort utilities are not supported by Cyborg.

Compile and link the US Quarterly Processor

Job Used: JXP5QTR

To compile the batch program P5QTR as delivered by Cyborg, execute the JXP5QTR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxp5qtr
```

Review the log to determine if there were any errors.



Refer to Using the Quarterly Processor for instructions on selecting generators, configuring the processor, and generating quarterly report output.

Create System Control Repository

Job Used: JDEMO01

This procedure creates a random System Control Repository. Execute the JDEMO01.BAT jobstream. The jobstream will utilize DEMO1.P1, DEMO1.P2, DEMO1.P3, and DEMO1.Y3 as input files.

For example:

```
rj jdemo01
```

This job may run for approximately 15 minutes depending on your system.

Review the log, then the demos01.03 list file in the \LIST subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages.

For example:

```

CSSS <UTIL( (999999(DISPLY( ( ( ( )13:38:02 02-29 XXXX
ZZTEST 99999E RELOAD IS OK. Ver-4.5 LENGTH 531 02-29-00 13:34:42*
*****
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P CYBRCI ***** RELOAD NOT FOUND *****
P CYBSCK ***** RELOAD NOT FOUND *****
P CYBSEC ***** RELOAD NOT FOUND *****
P CYBWC I ***** RELOAD NOT FOUND *****
P CYBWRK ***** RELOAD NOT FOUND *****
P CYBWZQ ***** RELOAD NOT FOUND *****
P CYBX02 ***** RELOAD NOT FOUND *****
P EXCTRL ***** RELOAD NOT FOUND *****
P QMCTRL ***** RELOAD NOT FOUND *****
P RDTBPL ***** RELOAD NOT FOUND *****
P RTCTRL ***** RELOAD NOT FOUND *****
P TBLENT ***** RELOAD NOT FOUND *****
P TBLINQ ***** RELOAD NOT FOUND *****
P TBLUPD ***** RELOAD NOT FOUND *****

```


Execute the case tool

Job Used: JCRTPGMS

Execute the JCRTPGMS.BAT jobstream from the \RUNS subdirectory. For example:

```
rj jcrtpgms
```

Review the log to determine if there were any errors.

Disregard the following messages:

```
:
CYBRES-01 in MLPO  May be within the segment key area.
CYBRES-01 in MLPP  May be within the segment key area.
CYBRES-01 in MLQ4  May be within the segment key area.
:
```

Pre-compile, compile and link RDBPGM1

Job Used: JCMPRDB1

To pre-compile, compile, and link the program RDBPGM1, execute the JCMPRDB1.BAT jobstream from the \RUNS subdirectory.

RDBPGM1 creates the database, tables, and indexes needed to support the relational version of The Administrative Solution.

For example:

```
rj jcmprdb1
```

Review the log to determine if there were any errors.

Create the database, tables, index, and views

Job Used: JCRTCYB



Refer to ORACLE Database Considerations for detailed instructions for recreating the database should it be necessary later.

To execute the SQL statements defined in JDBPGM1 and create the tables and indexes, execute the JCRTCYB.BAT jobstream from the \RUNS subdirectory.

There is no output from this run, but you or your database administrator can verify that the users, database, and tables have been created.

For example:

```
rj jcrtcycb
```

Review the log to determine if there were any errors.

Pre-compile, compile, and link RDBPGMA through RDBPGMH

Job Used: JCMPSUBR

To pre-compile, compile, and link the programs RDBPGMA through RDBPGMH, execute the JCMPSUBR.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jcmpsubr
```

Review the log to determine if there were any errors.

The following table lists and describes each subroutine generated by the CASE tool:

Program	Subroutine Description
RDBPGMA	Inserts a new row in a table
RDBPGMB	Selects data from a row in a table and passes it to CBSV
RDBPGMC	Updates values in an existing row
RDBPGMD	Deletes an existing row from a table
RDBPGME	Called when a PAYMRG 171 process is run; removes all rows from all tables in preparation for reinsertion of data from the P20 file; also disables then re-enables all indexes (where applicable)
RDBPGMF	Called when a PAYMRG 222 process is run; deletes all rows from the tables that belong to the organizations being paid
RDBPGMG	Cursors through the database and rebuilds the IDX records on the database, recreating Control 1, Control 2, and Employee Number pointers on the Employee Database; used mainly with the FIXIDX program
RDBPGMH	Provides segment and segment key length for each segment, and location of date and date type within each segment; the link between the database and The Administrative Solution

Extract, compile, and link O4CALC

Job Used: JXO4CALR

To extract COBOL program O4CALC from CYBMST, compile the program, and link the machine-specific subroutines, execute the JXO4CALR.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jxo4calr
```

Review the log, then the o4calc.03 list file in the \LIST subdirectory to determine if there were any errors.

Pull all CBSV programs

Job Used: JPULCVR

To pull all The Administrative Solution CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JPULCVR.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jpulcvr
```

Review the log, then the pulcvr.03 list file in the \LIST subdirectory to determine if there were any errors.

Pre-compile, compile, and link all CBSV programs

Job Used: JCMPCVR

To pre-compile, compile, and link all the CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JCMPCVR.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jcmpcvr
```

Review the log to determine if there were any errors.

Phase 3: create test P20IN Batch Master

Job Used: JP20STRT (US)

JP20STRC (Canada)

To extract the report generators from CYBMST and create the P20IN Batch Master File, execute the JP20STRT.BAT jobstream from the \RUNS subdirectory with P9STRT and P9CBSV as input.

Input files:

P05T80 (P9STRT)

P05T81(P9CBSV for US or P9CBSVC for Canada)

The P2EDIT, P4CALC, and P5PRNT programs are processed.

For example:

```
sj jp20strt
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

AUDIT2.TRL

P20STRT.03

TRANSLOD

Phase 4: Create Employee Database with pay history

Create test Employee Database

Job Used: JPAYMRG

To create a test Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate RDBMS tables

Job Used: JPOPF01

To synchronize the System Control Repository and relational tables for option lists and specific application tables (Cx through Xx), execute the JPOPF01.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jpopf01
```

Review the log, then the popf01.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate database with test data - Solution Series Install Win2000

1. Apply demo test data

Job Used: JPRDEMO (US)

JPRDEMO (Canada)

To load test data from the System Control Repository and populate fields in the online Employee Database, execute the JPRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jprdemo
```

Review the log, then the prdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

2. Apply remaining demo test data

Job Used: JHRDEMO (US)

JHRDEMO (Canada)

To load the remaining test data from the System Control Repository and populate fields in the online Employee Database, execute the JHRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

ry jhrdemo

Review the log, then the hrdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

3. **Build alternate keys**

Job Used: JBLDAKY

To build or rebuild the Employee Name Alternate Key, run JBLDAKY.BAT located in the \Runs directory.

Note: This job may be modified to accommodate your build of the alternate keys once your data has been added to the system.

For example:

ry jbldak

Review the log, then the jbldak.03 list file in the \LIST subdirectory to determine if there were any errors.

Update P20IN Batch Master File

Job Used: JPAYXTR

To update the P20IN Batch Master File with the demo test data, execute the JPAYXTR.BAT jobstream from the \RUNS subdirectory.

The time entries and adjustments will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

FILE10 (PAYXTR10), which contains time entries and adjustments, is also created. PAYXTR10 becomes input to the JPAYRUN as P05T81.

For example:

ry jpayxtr

Review the log, then the payxtr.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply taxes, time entries, and adjustments

Job Used: JPAYRUN

To apply taxes (TAXFILE) and the time entries and adjustments (PAYXTR10) to the P20IN file, execute the JPAYRUN.BAT jobstream from the \RUNS subdirectory with P05T80 and P05T81 as input. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Note: Verify that the TAXFILE being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).

Input files:

P05T80(TAXFILE for US and TAXFILEC for Canada)
P05T81(PAYXTR10)

Note: If you are a Canadian customer, modify the JPAYRUN.BAT to pull the TAXFILEC instead of the TAXFILE.

For example:

```
rj jpayrun
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

```
AUDITRL.LIS  
CHECKNUM.LIS  
PAYSLIPS.LIS  
DEPSLIPS.LIS  
COMBREG.LIS  
TRANSLOD.LIS
```

Note: A number of errors display on the 9E9E (Master File Status) report the first time a PAYRUN is executed. Errors include 'INVALID SSN', 'NO ACTIVE STATES', 'NORMAL SALARY MISSING', 'NORMAL RATE MISSING', and 'SHIFT MISSING'. Disregard these errors.

Create pay history

Job Used: JMNTRUN

To create pay history and labor records and apply check numbers to the newly created history records on the P20IN Batch Master File, execute the JMNTRUN.BAT jobstream from the \RUNS subdirectory. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

For example:

```
rj jmntrun
```

Review the log, then the tranlod2.lis and auditrl2.lis list files in the \LIST subdirectory to determine if there were any errors.

Update the Employee Database

Job Used: JPAYMRG

To create a new random Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Phase 5: Extract HR reports

Job Used: JREPORT

To extract Human Resource batch reports, execute the JREPORT.BAT jobstream from the \RUNS subdirectory.

The report group that is executed is HR0001.

For example:

```
rj jreport
```

Review the log, then the rptprt.03 and report.03 list files in the \LIST subdirectory to determine if there were any errors.

Phase 6: Apply System Control Repository menu additions

If you plan to implement the Report Launcher, Process Monitor, and Desktop Document Interface facilities on the client, then you must apply additional menu items to the System Control Repository (FILE01).

Build report menus

Job Used: jrptmnu

To build a menu containing the delivered report groups, run JRPTMNU.BAT from the \RUNS subdirectory.

For example:

```
rj jrptmnu
```

Review the log, then the rptmnu.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Job Used: jmainti

To apply menu items for online user access to batch processes and update checklists, run the JMAINTI.BAT jobstream from the \RUNS subdirectory, using EPRDDI05 as the FILE05 input.

For example:

```
rj jmainti
```

Review the log, then the mainti.03 list file in the \LIST subdirectory to determine if there were any errors.

Your installation of The Solution Series for the ORACLE server is now complete. Go to the chapter 'Install and Configure Cyborg Application Server (CAS) service' for instruction on the installation and configuration of the Cyborg Application Server (CAS) service.

CHAPTER 5

Cyborg Application Service (CAS) Installation and Configuration

In This Chapter

Introduction	70
Phase 1: Install and configure the Cyborg Application Server (CAS) service	71
Phase 2: Optional---Verify mapping on server	77

Introduction

This chapter provides detailed instructions for installing the CAS on a Microsoft Windows server system.

This is a technical chapter aimed at system administrators.



*Refer to **Indexed Server Installation and Configuration**, **Relational Server Installation and Configuration (SQL Server)** (see "Relational Solution Series Installation and Configuration (SQL Server)" on page 27), and **Relational Server Installation and Configuration (SQL Server)** (see "Relational Solution Series Installation and Configuration (Oracle)" on page 51) for installation instructions.*

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for Windows 2000'
1	Installing and Configuring eCyborg 5.0 (Windows 2000) (this guide)



*Refer to **Directory Contents** for detailed information on scripts used and programs installed during the installation and the purposes they serve.*

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Install and configure Cyborg Application Server (CAS) service

Phase 2: Optional—Verify mapping on server

Phase 1: Install and configure the Cyborg Application Server (CAS) service

Install CAS

To Install CAS

Note: If you are replacing CAS (*cybservd.exe*), you must first Uninstall the prior version.

1. Copy *cybservd.exe* (Service executable) and *CybCpnl.cpl* (Cyborg Control Panel DLL) from the *CYBORGxx\PROG* subdirectory to the Microsoft Windows System root directory (normally *WINNT\system32*).
2. Type the following command from the DOS prompt in the Microsoft Windows System directory:

```
cybservd -install
```

3. Press Enter.

To Uninstall CAS

If you want to uninstall the solution series application server, complete the steps below:

1. Execute the following:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

2. Select the 'Cyborg Application Service' entry in the Service option list.
3. Click Stop.
4. Close the dialog.
5. Type the following command from the DOS prompt in the Microsoft Windows System directory:

```
cybservd -remove
```

6. Press Enter.

Set up services (Windows 2000)

1. Add Cyborg port to services

1. Edit the TCP/IP services file (normally *WINNT\system32\DRIVERS\etc\ SERVICES*) to add an entry of 'cyborg 9888 /tcp'. (9888 is Cyborg's registered TCP port #).

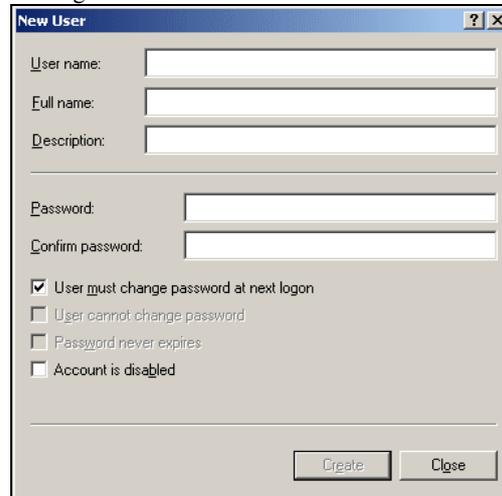
Note: The Cyborg services address should be placed in its numerical order.

2. Create a Cyborg user

1. Execute the following from Windows:

Start ► Settings ► Control Panel ► Administrative Tools ► Computer Management ► Local Users and Groups ► Users

then right-click on User and select New User.



2. Enter the username (for example, 'Cyborg') and description.
3. Clear the 'User Must Change Password at Next Logon' option.
4. Select the 'Password Never Expires' option on the New User dialog.
5. Configure a Cyborg user password.

Note: It is important to set up a password because it will be required later by the Cyborg service (CAS). Note the use of upper and lower case for use in CAS later.

6. Click Create on the New User dialog box to establish a new user. When you exit the New User dialog box, the new user appears in the Computer Management window.

3. Set up access permissions

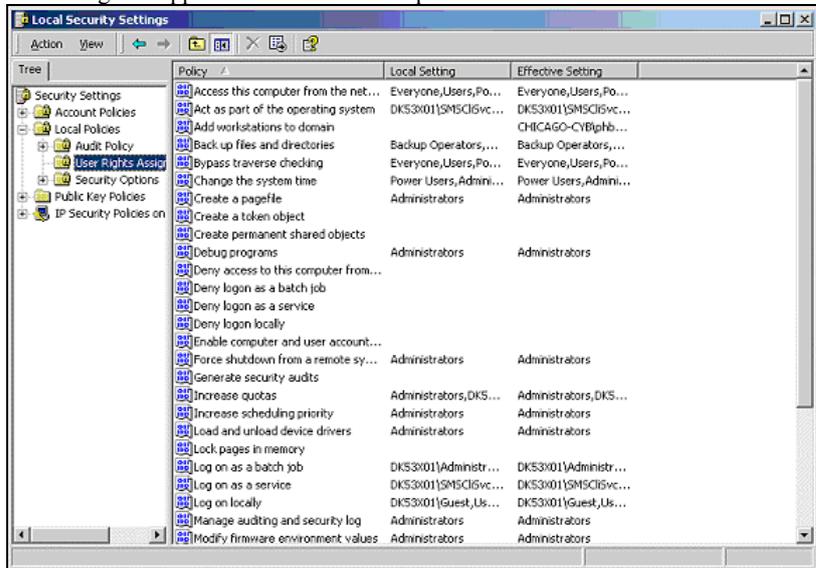
1. Access the Cyborg properties dialog by right-clicking on properties.
2. Select the 'Member Of' tab
3. Click Add.
4. Select the group you want to add.
5. Click OK.

4. Set up user rights for 'Cyborg' user

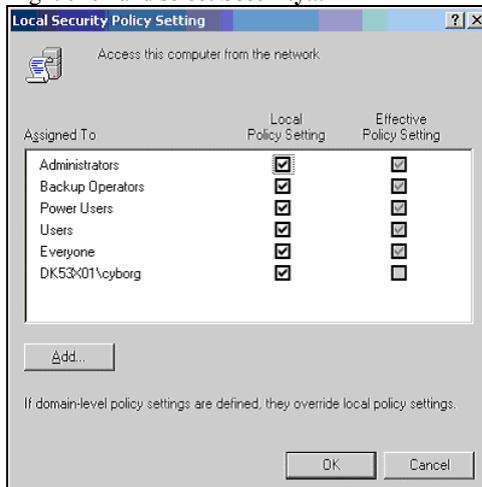
1. Execute the following:

Start ► Settings ► Control Panel ► Administrative Tools ► Computer Management ► Local Policies ► User Rights Assignment

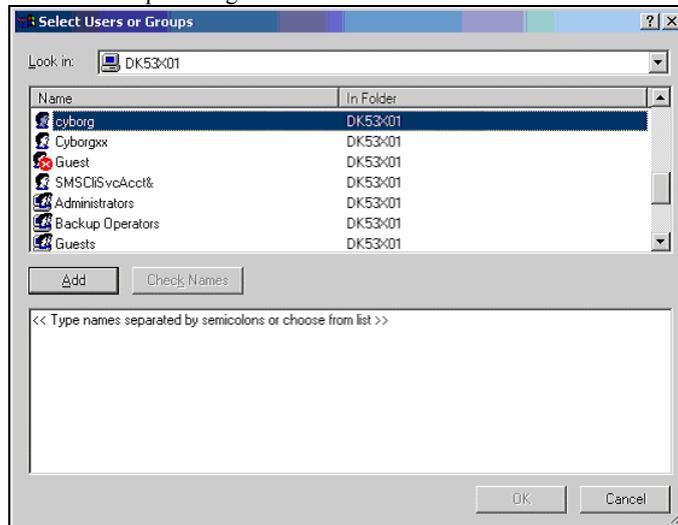
The dialog will appear similar to the example:



2. Select a policy. You will have to perform the next steps separately for each of the following policies:
 - Access this computer from network
 - Act as part of the operating system
 - Increase Quotas
 - Log on as a service
 - Replace a process level token
3. Right click and select **Security...**



4. Click **Add...**
5. With the local computer selected in the 'Look in:' field, select cyborg user in the 'Select Users or Groups' dialog:



6. Click **Add**
7. Click **OK**
8. Click **OK**
9. Repeat steps 2-8 for each policy listed in step 2.

5. Set up services for the environment

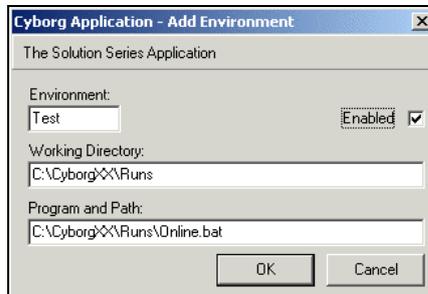
1. Execute the following:

Start ► Settings ► Control Panel ► Cyborg Service

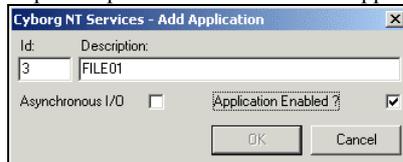
2. Click the General tab and type the password for the Cyborg user.
3. Select the Information check box to allow you to view Cyborg Application Service Startup and Shutdown messages and other basic errors in the Event Viewer. By default, this check box is selected.
4. (Optional) Select the Debug check box to enable more advanced diagnostic features of the Cyborg Application Service.
5. Select the Settings tab and click New in the Application area.
6. Type an ID of '2' with a description (for example, 'The Solution Series Application'), select the Application Enabled check box, and click OK:



7. With 'The Solution Series Application' selected in the Application area, click Add in the Environments area.
8. Type up to 8 characters in the Environment field (for example, 'Test') and select the Enabled check box.
9. Type the Working Directory of the (Test) system (for example, 'C:\CYBORGxx\RUNS').
10. Type the full Program Path (and program name) of the batch file that starts up CBSVO (for example, 'C:\CYBORGxx\RUNS\Online.bat');

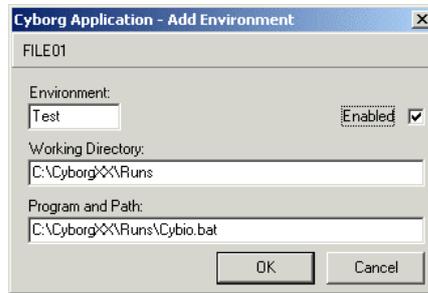


11. Click OK (on the Add Environment dialog box).
Repeat steps 5–11 for the 'FILE01 Application' with an ID of '3', for example:



Note: The FILE01 application's configuration must exactly mirror the configuration for the 'The Administrative Solution Application'. The exact same working directory must be set up.

13. Type the full Program Path (and program name) of the batch file that starts up CYBIO (for example, 'C:\CYBORGxx\RUNS\Cybio.bat').



14. Click OK

Start CAS

1. **Execute the following:**

Start ► Settings ► Control Panel ► Administrative Tools ► Services

2. **Select the 'Cyborg Application Service' entry in the Service option list.**
3. **Select 'Automatic' as the startup type.**
4. **Click Start.**
5. **Click OK.**

Verify installation

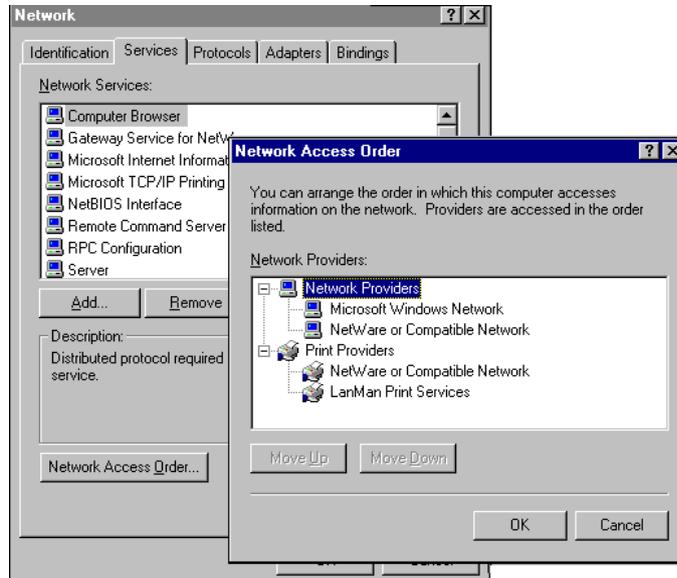
1. **Open the Application log**
Select Application log.
2. **Locate messages relevant to the Cyborg installation (identified by a 'CyborgService' entry in the Source column)**
Note: Icon symbols can be identified as follows: Red = Errors, Yellow = Warnings, Blue = Information.
3. **Double-click the Cyborg-relevant entries to see the messages**
The message should read 'CyborgService message: Service started.' The event icon should be blue in the Event Viewer.

Phase 2: Optional---Verify mapping on server

Note: You need only perform these steps if the server is attached to more than one network.

To avoid problems accessing the database from clients running in batch, the Network Access Order on the Server must have Microsoft Windows Network as the first Network Provider.

1. **Execute the following:**
Start ► Settings ► Control Panel ► Network
2. **Select the Services tab and then click Network Access Order:**



Microsoft Windows Network must be the first Network Provider. If it is not, select it and click Move Up.

3. **Click OK to save the changes.**

Your installation of The Solution Series CAS Service for Microsoft Windows on the server is now complete. Go to Client Installation and Configuration.

PART 3

Installing and Configuring The Web Application Server

CHAPTER 6

Installing the Web Client Server

In This Chapter

Introduction	82
Installing the Web Client Server on a Windows server	84

Introduction

This chapter provides detailed instructions for installing and configuring the components of the eCyborg Web Client on the Web Server.

This is a technical chapter aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for Windows 2000'
1	Installing and Configuring eCyborg 5.0 (Windows 2000) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Web Client considerations

When setting up the eCyborg Web Client server, you should consider the following:

Running the eCyborg Web Client with Interactive Workforce and Servlet Exec

If you intend to install the Web Client and Interactive Workforce on the same web server then it is recommended that you install JDK and Servlet Exec from the Interactive Workforce media and this would be used by both the Web Client and Interactive Workforce.

Proceed as follows :

- Install JDK from the Interactive Workforce media (needed for Interactive Workforce and Web Client)
- Install Servlet Exec from Interactive Workforce media and create a Servlet Exec Instance
- Install the Servlet Exec patch from the Interactive Workforce media
- Install the Web Client using the Servlet Exec instance that has been created
- When you install Interactive Workforce (from the media) refer to the Servlet Exec instance created above

If you already have installed the eCyborg Web Client on a Windows server (running Servlet Exec as the Servlet Engine) and decide later to install Interactive Workforce, you need to perform the following :-

- Install Interactive Workforce using the instance of Servlet Exec that has been installed previously for the Web Client.
- Test the Installation of the Web Client and Interactive Workforce

You could also decide to have two Servlet Exec instances (one for Interactive Workforce and the other for Web Client) and this will provide the capability of stopping the Servlet Exec instance used by one application (eg. Web Client) without affecting the other application (eg. Interactive Workforce). This is helpful when you need to perform maintenance without affecting the other application. However if you have a separate Servlet Exec instance for Web Client and Interactive Workforce you may need 2 Servlet Exec licenses.

eCyborg session timeout

If a user is accessing the system via a publicly accessible client computer and they walk away from a session leaving it open, then there is a risk that someone else may come along and tamper with the data. In order to help secure the system against such tampering, you should set a Timeout to close a session after one has been inactive for an appropriate amount of time.

The duration of the timeout should be based on the implementation. For example, an implementation which is setup for employees to access eCyborg at home via the internet should have a shorter time, while an implementation setup strictly for access over a network might be alright with a longer time.

There is a session timeout that can be set in the eCyborg Web Client software. To enable this timeout setting, open the following file:

```
..\eCyborg_War\webgui\login.jsp
```

and set the following parameter:

```
session.setMaxInactiveInterval(xxxx);
```

where 'xxxx' is the number of seconds a session will remain inactive before being shut down.

Secure Socket Layers (SSL)

If the eCyborg is going to be set up for home use by employees over the Internet, it is highly recommended that you secure the system using Secure Socket Layers (SSL) to encrypt transmitted data. SSL can be implemented through a provider, such as Verisign.

eCyborg encryption between Web Client Server and Solution Series Server

If the Web Client server resides on a different machine than the Solution Series Server, it is recommended that you encrypt the data that flows between the two.

Installing the Web Client Server on a Windows server

Install Web Client server files

Insert the CD-ROM into The Web Application Server machine. The Getting Started page automatically appears. Scroll through the page, then click on the following link to start the autoinstall:

[Install Web Client \(on a web server\)](#)

This will begin the process of unzipping the eCyborg .war files.

Unzip the eCyborg Web Server .war files

Unzip the eCyborg .war files to the Windows-based Web Application Server machine.

Extract the following files:

- eCyborg.war
- eCyborgHelp.war

For Tomcat, copy the files into the following directory:

..\Tomcat\webapps

For ServletExec, the files should be copied into the following filepath:

..\ServletExec*instancename*\webapps\default

Add eCyborg to ServletExec.properties (ServletExec only)

Add the base URL to the application parameter of the ServletExec.properties file, located in the following default location:

..\inetpub\scripts

For example:

```
servlethec.instance.hosts=  
servlethec.instance.applications=/eCyborg, /eCyborgHelp  
servlethec.instance.aliases=  
servlethec.instance.instances=127.0.0.1:8889
```

In the example above, 'instance' should be replaced with the actual name of the ServletExec instance.

Stop and restart IIS

In Windows implementations, you must stop and restart the Internet Information Service (IIS) for these changes to take effect. This can be done from the Services panel by making the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Server Manager ► IIS

This will bring up the Service dialog for IIS. Click on Stop, then on Start again to restart the service.

Start the servlet engine (eg. ServletExec or Tomcat)

When you start the servlet engine during the install, it will expand the .war files to create the files needed for running the eCyborg Web Client.

In Tomcat, the eCyborg Web Client files will be expanded into the following directory:

..\Tomcat\webapps\eCyborg\war

In ServletExec, the eCyborg Web Client files will be expanded into the following directory:

..\ServletExecData\default\eCyborg\

Important! Depending on the speed of the microprocessor in the server, it might take 15 to 20 minutes or more for the files to completely expand. Please be patient and wait for the expansion to complete before trying to access the Web Client. To ensure that the expansion is complete, you may check to see if the directories listed above have been created and populated.

Add the Cyborg environment to the environments properties file

1. Add the environment to the environments.properties file

The environment.properties file tells the servlet engine which environments to connect. To add an environment, locate and open the following file:

environment.properties

For Tomcat implementations, it should be located along the following filepath:

..\Tomcat\webapps\eCyborg\war\environments.properties

For ServletExec implementations, it should be located along the following filepath:

..\ServletExecData\default\eCyborg\WAR\environments.properties

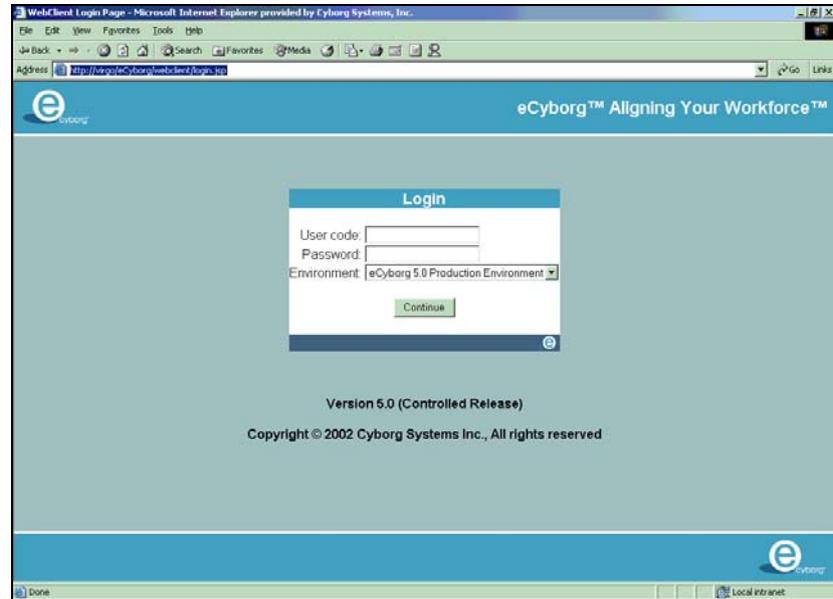
Add an environment, using the following format:

EnvironmentName=Environment Description

The EnvironmentName should contain no spaces, and should reflect the name of the CAS of the environment. The Environment Description will appear on the log on page, and should tell the user the environment to which they are connecting. For example:

Default=eCyborg 5.0 Default Environment
eCybtest=eCyborg 5.0 Test Environment
eCybprod=eCyborg 5.0 Production Environment

Using our last example above, the description 'eCyborg 5.0 Production Environment' will appear on the log on page for the user to select and log in to that environment:



2. **Create a properties file for each environment**

Once the servlet engine reads the environments.properties file to see which environments to create, it then looks for a properties file for each environment in order to read the required variables. For example, each of the environments in the examples listed above would have the corresponding files:

Default.properties
eCybtest.properties
eCybprod.properties

environment properties file parameters

The ..\eCyborg directory contains the following template:

WebGui.properties

To create the properties file, copy and rename this file using the environment name, for example:

eCyborg.properties

Then, edit the variables in the file as per environment requirements. The following parameters must be defined:

Parameter	Definition	Example	Value
connector	TCP/IP driver for connecting to CAS	com.cyborg.comms.tcpip.CasConnector	
Host	Hostname of server	HOSTNAME	
Port	Port for CAS connections	9888	

For example:

```
connector=com.cyborg.comms.tcpip.CasConnector
Host=HOSTNAME
Port=9888
```

Test the eCyborg Web Server

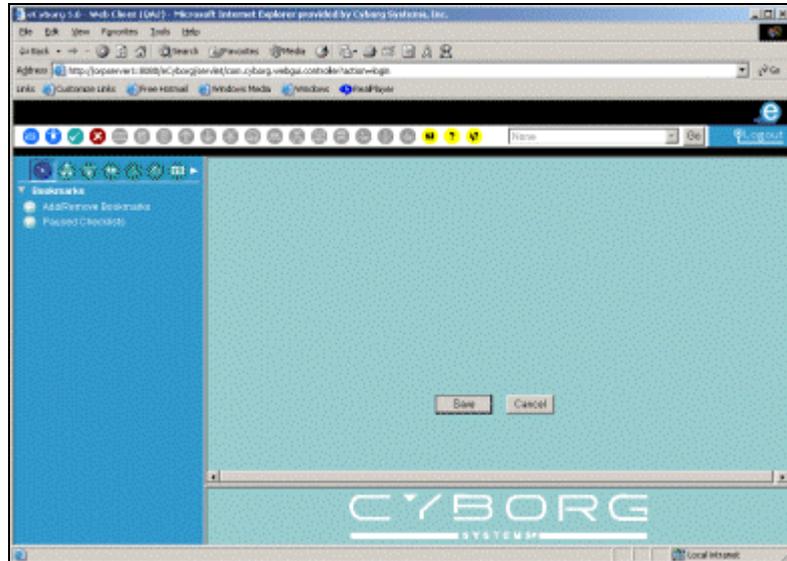
Access the eCyborg web client from a remote PC

From another PC, access eCyborg web client by opening a browser and accessing the following URL:

<http://hostname/eCyborg/WebClient/login.jsp>

Replace 'hostname' with the name of the eCyborg Web Server machine. For testing purposes, you may log on using the 'S.O.' user and password. The initial logon to the eCyborg Web Client may take some time, as the system needs to set up a number of files during this first access. The eCyborg web client should appear:

Installing and Configuring eCyborg 5.0 (Windows)



PART 4

Installing and Configuring the Administrative Client

CHAPTER 7

Installing and Configuring the Administrative Client

In This Chapter

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Introduction

This chapter provides detailed instructions for configuring clients of the Windows 2000 server running The Solution Series.

This is a technical chapter aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg'
1	Installing The Solution Series and Configuring and Administering CAS (v5.0 on Windows 2000) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

- Phase 1: Prepare for installation
- Phase 2: Install the software
- Phase 3: Configure the software
- Phase 4: Test the installation

Phase 1: Prepare for installation

It is important to appropriately prepare for the client installation of The Solution Series. Because the client and server will work together, you must ensure that they are both synchronized in communication.

Before successful operations may be carried on between the server running The Solution Series and the client, you are required to install and configure the prerequisite software. This software must be in place before beginning the installation.

Note: Based upon your employees' individual client workstation setups, there may be missing shared .dll or .ocx files that the Cyborg product uses that are non-distributable Microsoft shared system files. If this occurs, your IT staff will need to locate and download (usually on the Microsoft website) the required file for inclusion on your PCs.

Ensure Cyborg Application Service is active

The Cyborg Application Service must be running on the server.



Refer to *Install and Configure Cyborg Application Server (CAS) Service* to learn how you can tell if CAS service is active.

Complete a configuration worksheet

During the installation, you will be prompted to supply client and server information. Complete the table below in advance preparation for these entries:

	Description	Your Configuration
Installation Location	Identify where you want the client files installed. If you accept the default location, the files will be placed at C:\Program Files\Cyborg Systems\Clientxx(where 'xx' indicates the release level of the installation).	
Type of Installation	Determine if you want to perform a Typical (recommended), Compact, or Custom installation.	
Connection Type	The only connection type available at this time is the Cyborg Application Service (CAS).	

Installing and Configuring eCyborg 5.0 (Windows)

	Description	Your Configuration
Connection Name	<p>Identify a title for the connection you will configure between the client and the server.</p> <p>For the initial installation, accept the 'default' connection name (Defaultxx, where 'xx' indicates the release level of The Solution Series installation). If a user requires multi-environment access, additional environments can be set up later.</p> <p>This label must not contain the characters "\:*?\"<>_'. If you name the connection by another name, additional steps must be performed.</p> <p> Refer to the appendices for more information on creating multiple environments (see "Creating Separate Environments" on page 149).</p>	
Host	Host name or IP address of the server to which you want the client to connect.	
Port	Identify the port address of the server. Cyborg has registered the port address of 9888 for the Cyborg Application Service (CAS). This address must be the same as was specified during the installation and configuration of Cyborg Application Service (CAS).	9888
Environment	Identify the environment name (up to 8 characters) that was established during the Cyborg Application Service (CAS) installation, for example, CYBORG, CYBPROD, CYBTEST, or CYBDEV.	

Note If installing the client on the server, then either enter 'local host' or '127.0.0.1'.

Phase 2: Install the software

Install client files

Be sure to have at hand the configuration worksheet completed as preparation as you may need to refer to it as you load programs on the PC.

1. Insert the CD-ROM into the Administrative client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Administrative client' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files	use default, or ... Other:
Setup Type	*Typical (default) *Compact *Custom	use default, or ... select one of the other options
Are you running The Solution Series on an OS/390 Server?	--	No
Launch the Connection Editor?	Deselected (No)	Do not select this option if you are installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR) (Windows and Unix only). Select this option if you are not installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR).

The installation program will prompt you when it is complete.

Install Enhanced Payroll and Reporting (EPR)---optional

If you wish to use the Enhanced Payroll and Reporting, you must first install the EPR client files.

1. Insert the CD-ROM into the Administrative Client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Enhanced Payroll and Reporting' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...'
column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files\Cyborg Systems\Clientxx	use default, or... Other:

The installation program will prompt you when it is complete.

Note: Prior to using the Process Monitor, you must specify the correct environment and user folder. The Specify Environment Folder and Specify User Folder dialogs will display the first time the Process Monitor utility is run.

Install Document Data Interface (DDI)---optional

If you wish to use the Document Data Interface, you must first install the DDI client files.

1. Insert the CD-ROM into the Administrative Client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Document Management Facility' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files\Cyborg Systems\Clientxx	use default, or... Other:

The installation program will prompt you when it is complete.

Phase 3: Configure the software

Set Up Your Environment

To set up your environment, perform the following steps:

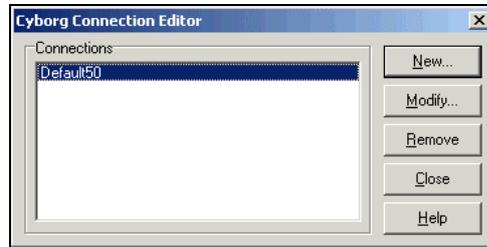
1. Access the dialog box

Access this dialog box at the end of the installation or by selecting:

Start ► Programs ► The Solution Series xxx ► Connection Editor

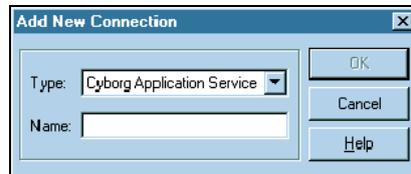
2. Click New

Click on the New button to set up a new configuration.



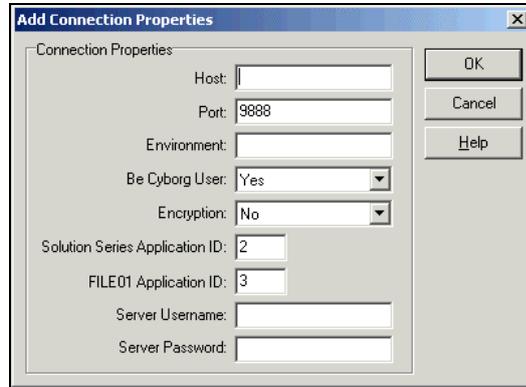
3. Type the name of your new connection

Leave Cyborg Application Service selected in the Type drop-down list box. Type the name of the connection you are creating in the Name text box.



4. Click OK

The Add Connection Properties dialog displays.

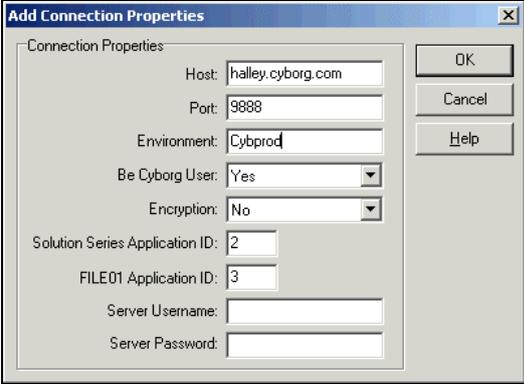


5. Type the configuration details

Type the configuration details under Connection Properties on the Connection Editor dialog box:

Item	Description
Host	Identify the system name of the server.
Port	Identify the port address of the server. For the Cyborg Application Server (CAS), Cyborg has registered the port address of 9888.
Environment	Identify the environment name (up to 8 characters) on the server. Examples are: CYBPROD, CYBTEST, and so on.
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
Solution Series Application ID	The application name and ID number for The Solution Series application. This application ID is configured to 2.
FILE01 Application ID	The application name and ID number for the CYBIO application. This application ID is configured to 3.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

After you have made these entries on the Cyborg Connection Editor, it should look similar to the following example:



The screenshot shows a dialog box titled "Add Connection Properties" with a close button (X) in the top right corner. The dialog is divided into two main sections. The left section, labeled "Connection Properties", contains several input fields and dropdown menus: "Host" with the value "halley.cyborg.com", "Port" with "9888", "Environment" with "Cybprod", "Be Cyborg User" with a dropdown menu set to "Yes", "Encryption" with a dropdown menu set to "No", "Solution Series Application ID" with a text box containing "2", "FILE01 Application ID" with a text box containing "3", "Server Username" with an empty text box, and "Server Password" with an empty text box. The right section contains three buttons: "OK", "Cancel", and "Help".

- 6. Click OK**
The connection properties are specified.
- 7. Click Close**
The connection has been configured between the server and the client.

Phase 4: Test the installation

Run the Messaging Test Tool

The Messaging Test Tool is used to ensure that the Address Book dialog can be properly accessed and that an email can be sent. This is a separate program packaged with The Solution Series. Messaging is essential in order for email integration to work properly.

To run the Messaging Test Tool, complete the following steps:

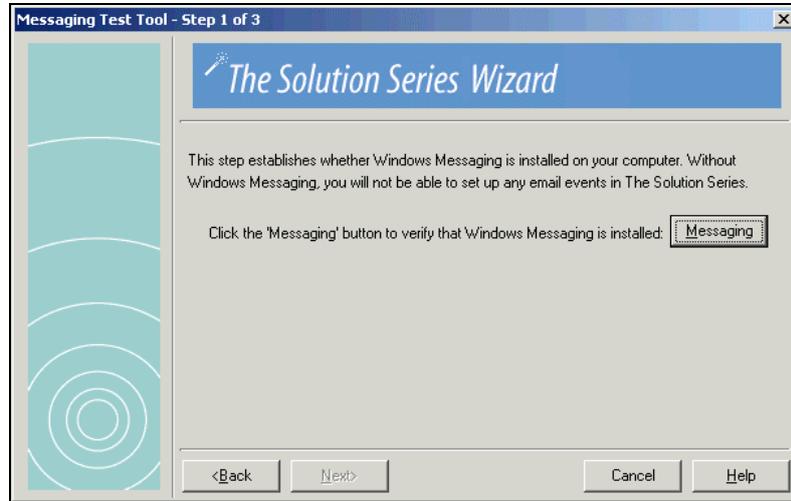
1. Launch the Messaging Test Tool

Run the Messaging Test Tool by starting the executable located in the following file path:

..\Program Files\Cyborg Systems\Clientxx\MessagingTestTool.exe

2. Click Next

The Messaging button appears:



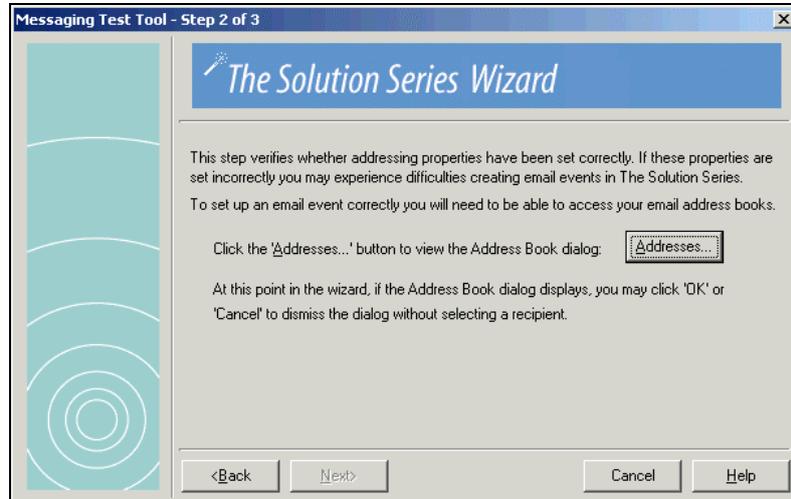
3. Click Messaging

Messaging is required to provide the system files used by MAPI-compliant email packages.

If your default email application is MAPI compliant, then the Tool will allow you to proceed. If not, contact your IT department.

4. Click **N**ext

The Address button appears:



5. Click **A**ddresses

At this point, you may get a prompt asking for your email password, depending on your email system and if you are already logged on to email.

The dialog will list the email addresses in your system. Check them to verify that this is the correct listing.

6. Click **O**K

Clicking OK will return you to Step 2 of 3 in the Messaging Test Tool dialog.

7. Click **N**ext

The dialog will now prompt you to send an email. This is to test that an email can be sent. The Subject and Message fields are editable on this dialog. If you wish to change either of these, you may do so.

8. Click **T**o

The Address Book dialog will appear, allowing you to select an email address.

9. Select an **a**ddress

This is the address where the test email will be sent. It is suggested that you use either your own or another easily accessed address—this will make it easier to confirm that the email has been properly sent and received.

10. Click **O**K

This will accept the address selection.

11. Click **S**end

The Messaging Diagnostics Tools will now send the test email.

12. Click OK

This will close the dialog.

13. Click Next

The dialog will display all three steps, indicating whether or not they were completed successfully.

14. Click Finish

This will close the Messaging Test Tool.

When you are finished with this task, you should check the In Box at the address the email has been sent to in order to verify that it has been received. It is recommended that you use an email address you can easily access.

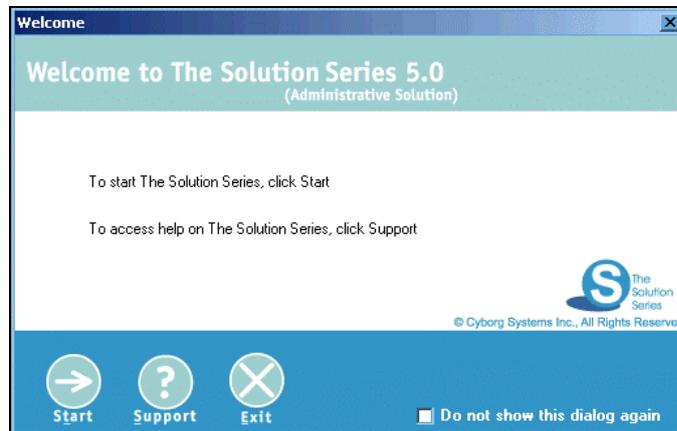
Test the connection to the server

To test the connection to the server, perform the following steps:

1. Launch The Solution Series

Select:

Start ► Programs ► The Solution Series ► The Solution Series



2. Click Start on the Welcome screen

The Login dialog box appears.

Note: If you see an error message instead of this Welcome screen, refer to the error listing in [Optional SQL Server Procedures](#) or [Optional ORACLE Procedures](#) for further information.

Test the GUI

To test the GUI, perform the following steps:

1. Log on as Security Officer

Select the environment you want to access from the option list, then type your user name and password:

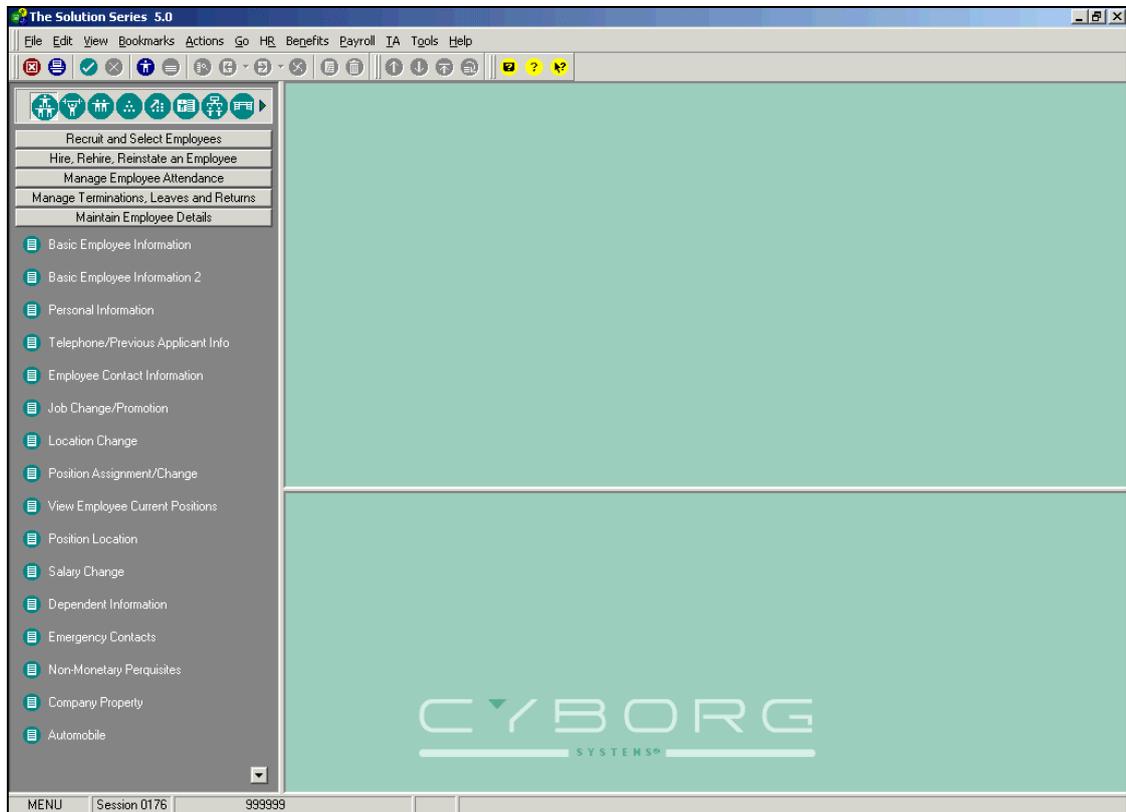


The Solution Series Login dialog box contains the following fields and controls:

- Your User Code:** A text input field with masked characters (XXXXXX).
- Your Password:** A text input field with masked characters (XXXXXX).
- Environment:** A dropdown menu currently set to "Default".
- Buttons:** "OK", "Cancel", and "Help".

2. Click OK

The work area for The Solution Series displays:

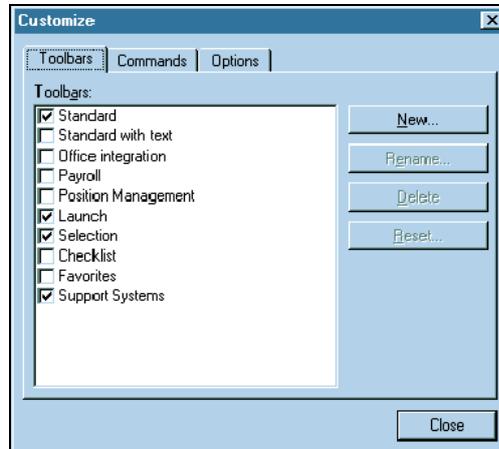




Refer to Creating Separate Environments for information on creating additional environments.

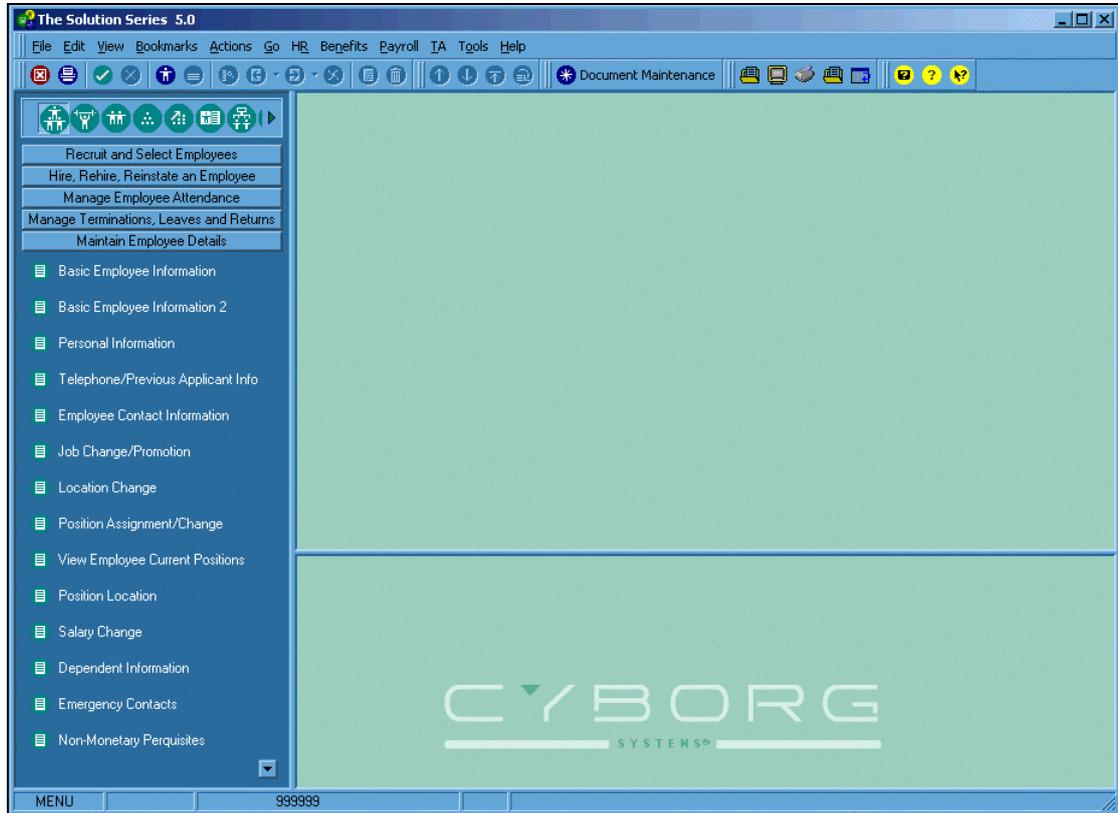
View the Favorites Toolbar

1. **Logon**
2. **To add the Launch Bar to the Menu Bar, customize the toolbar**
View ► **Customize Toolbars**
On the Toolbars tab, click beside 'Launch'.



3. Click Close

The Launch toolbar will appear:



Define the email and letter template folder

Document templates are created when a letter or email communication event is set up. These templates contain the body of the letter or email. Where the templates are stored is important. The location is specified by the 'Main Document Path' text box on the System Options form (SCOPTS).

Before setting the Main Document Path, you will need to create or determine which folder will be used for storing the templates. Communication events that will be used by multiple users should be stored on a network drive. This allows any user who might trigger the event, either manually or automatically through an action or condition, access to the templates.

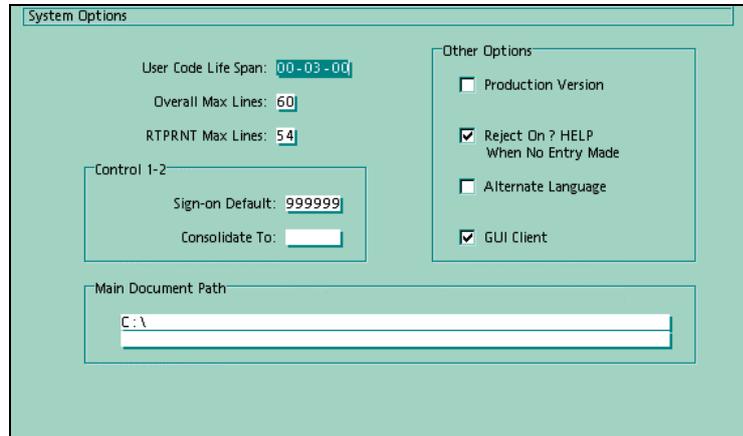
To set the Main Document Path, complete the following steps:

1. **Access the System Options form (SCOPTS)**

Access this form by selecting the following:

- Component:**  Security Tools
Process: Security Tools
Task:  Specify System Options

The System Options form (SCOPTS) appears:



The screenshot shows the 'System Options' form with the following fields and options:

- User Code Life Span: 00-03-00
- Overall Max Lines: 60
- RTPRNT Max Lines: 54
- Control 1-2: Sign-on Default: 999999, Consolidate To: []
- Main Document Path: C:\
- Other Options:
 - Production Version
 - Reject On ? HELP When No Entry Made
 - Alternate Language
 - GUI Client

2. **Enter the Main Document Path**

In the Main Document Path box, type in the path of the folder which contains the email and letter templates which the Office Integration will utilize. For general use, it is required that this path be accessible to all Administrative Clients.

3. **Press Enter**

The Main Document Path has now been set, allowing the system will to find the path where the templates are stored.

4. **Exit The Solution Series**

Before the Main Document Path will take effect, you need to log off and log back onto The Solution Series.

Test Word integration

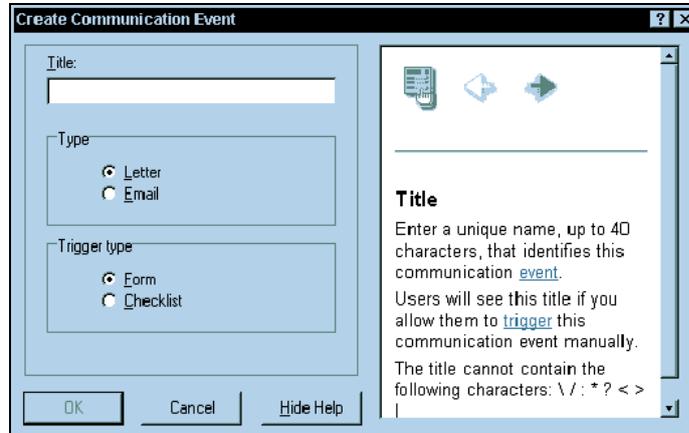
1. **Access the Communication Event dialog**

Access this dialog by making the following selections from the Navigator:

- Component:**  Administrator Tools
Process: Administrator Tools
Task:  Manage Events

2. Click **Create**

The Create Communication Event dialog appears:



3. Enter a **Title**

Type a unique title, up to 40 characters, for this communication event. For the test letter, type the following:

Test Letter

4. Select **Letter**

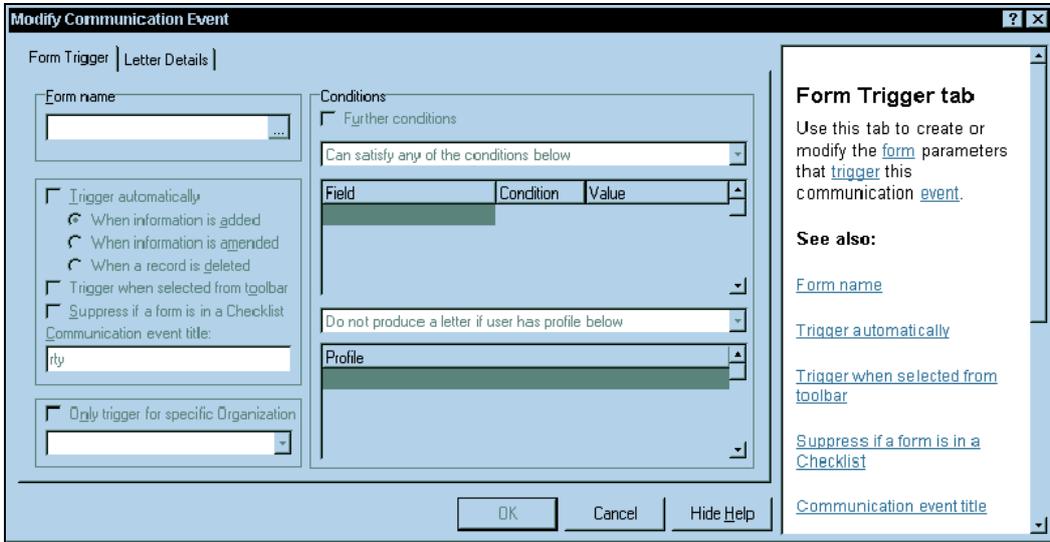
By default, Letter is the communication event Type selected when the dialog is first displayed. Verify that Letter is selected.

5. Select **Form**

By default, Form is the communication event Trigger type selected when the dialog is first displayed. Verify that Form is selected.

6. Click OK

Click OK to create the communication event. The Modify Communication Event dialog appears:

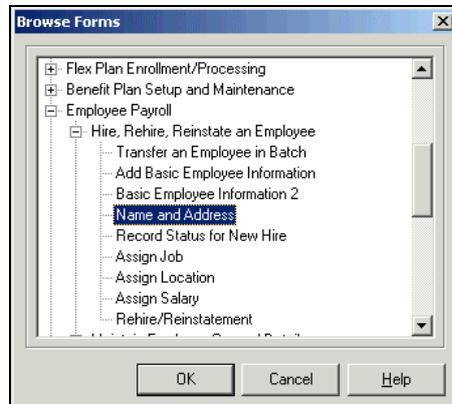


7. Select the Form name

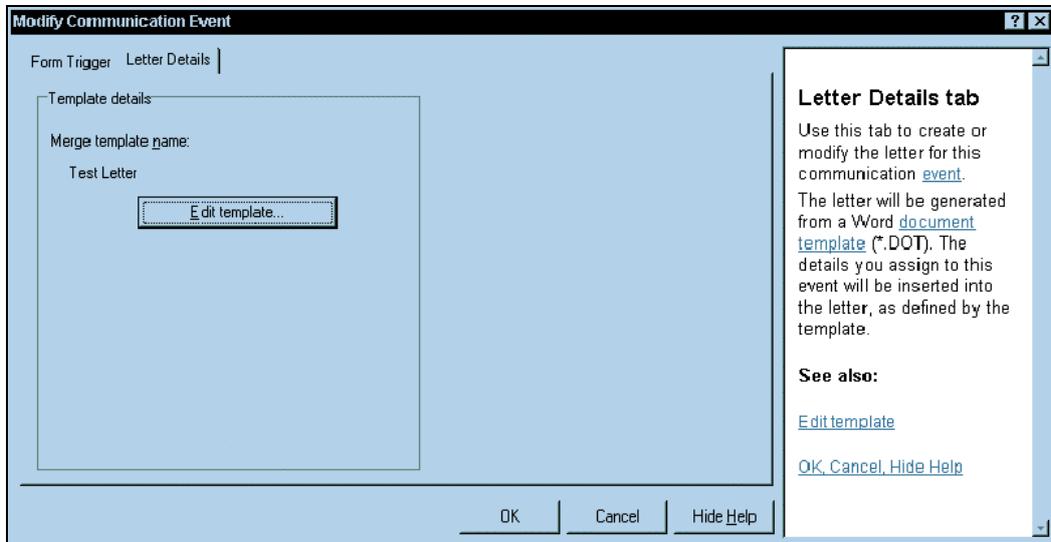
Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus.

For the test letter, select:

Employee Payroll ► Hire, Rehire, Reinstatement an Employee ► Name and Address



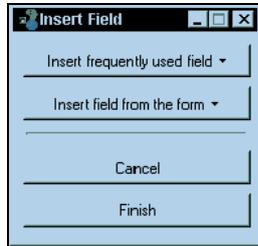
8. **Click OK**
This will select the form.
9. **Select the automatic trigger conditions**
Select 'Trigger automatically'. This will activate the trigger options.
10. **Select 'When information is amended'**
'When information is added' is the default selection – change this.
11. **Click on the 'Letter Details' tab**
The 'Letter Details' tab appears:



12. **Click 'Edit Template'**
This will open Word and the New dialog. The New dialog allows you to select existing templates on which to base the new one.
13. **Select 'Blank Document'**
This is the default.

14. Click OK

Word creates a new blank document, and the Insert Field dialog appears:



The Insert Field dialog allows you to include information directly from The Solution Series in the template.

15. Add the 'First_Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'First_Name' from the drop-down list.

This selection and the next couple will test if The Solution Series information is being pulled into the Word template properly.

16. Type a space

17. Add the 'Last_Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Last_Name' from the drop-down list.

18. Press Enter

This will start a new line on the Word document.

19. Type in a line

For the test letter, type the following line:

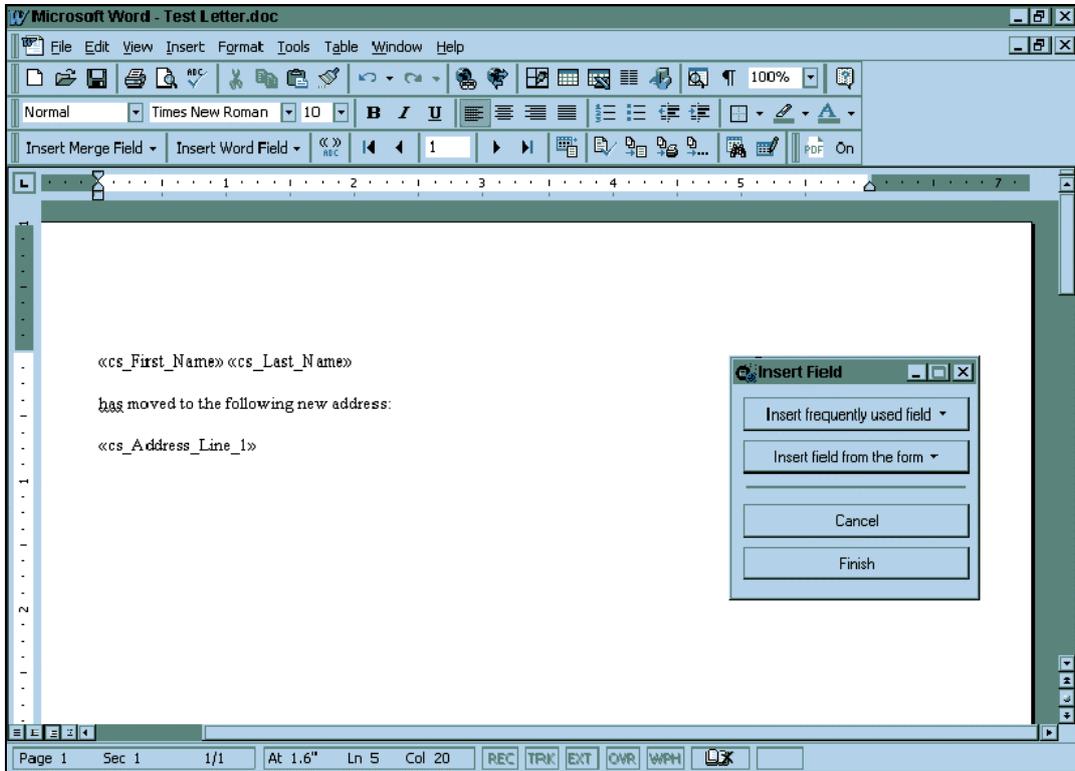
has moved to the following address:

20. Press Enter

This will start a new line on the Word document.

21. Add the 'Address_Line_1' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Address_Line_1' from the drop-down list. The display should appear like this:



22. Click Finish

Word will save the letter.

23. Click OK

This will close the Modify Communication Event dialog.

24. Click OK

This will close the Communication Event Manager dialog.

25. Access the Name and Address form

Make the following selections:

- Component:**  Employee Resourcing
Process: Hire, Rehire, Reinstatement an Employee
Task:  Name and Address

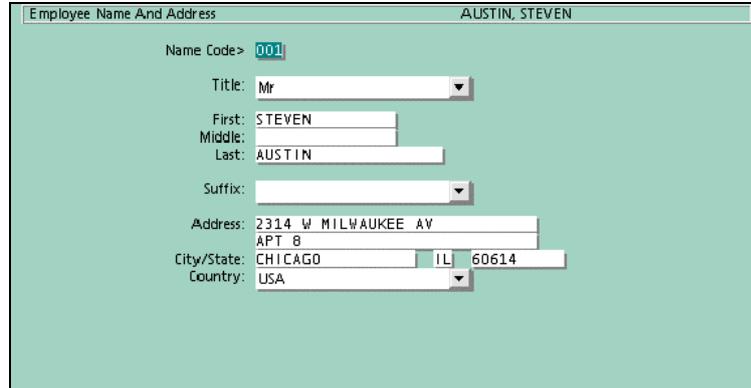
26. Select an employee

In the Number field, type:

1234

27. Click OK

The Employee Name and Address form (FF-SCR) appears with the employee information:



The screenshot shows a form titled "Employee Name And Address" for "AUSTIN, STEVEN". The form contains the following fields and values:

- Name Code: 001
- Title: Mr
- First: STEVEN
- Middle:
- Last: AUSTIN
- Suffix:
- Address: 2314 W MILWAUKEE AV, APT 8
- City/State: CHICAGO, IL
- Country: 60614, USA

28. Type a new address

In the Address field, type the following:

1523 W. Axel Road

29. Press Enter

This will enter the new address. At this point, the Confirmation dialog appears:



The screenshot shows a "Confirmation" dialog box with the following text and buttons:

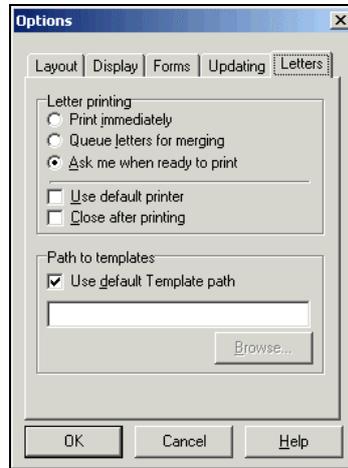
The following letter is ready to be printed
Test Letter

Buttons: View Letter, Print Now, Add to Queue, Cancel

Note: In order for this dialog to appear, you must have the 'Ask me when ready to print' option selected. This option can be found by going into The Solution Series and selecting the following:

View ► Change Options

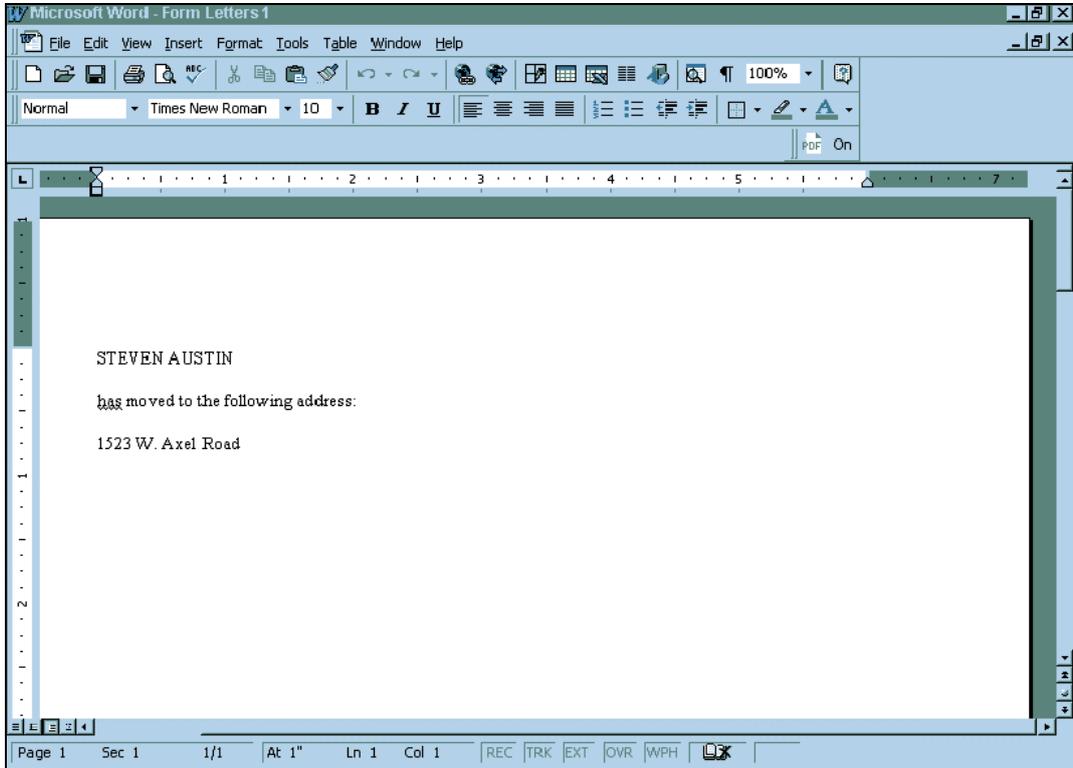
The Options dialog appears. View the Letters tab.



Select the 'Ask me when ready to print' option, then click OK.

30. Click View Letter

The system opens up the letter in Word and it includes the employee information. The display should appear as shown here:



Test email integration

1. Access the Communication Event dialog

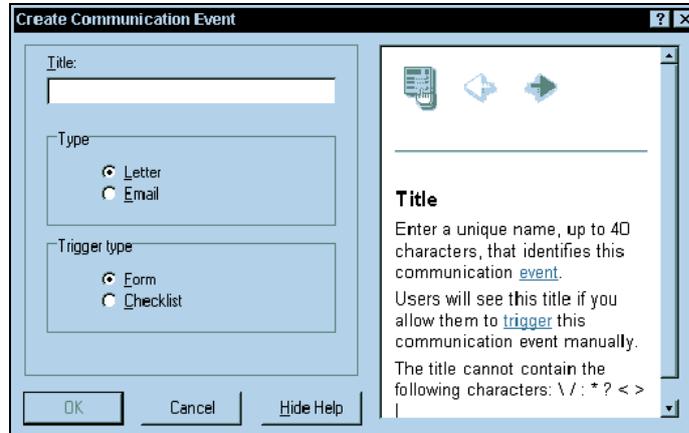
Access this dialog by making the following selections from the Navigator:

- Component:**  Administrator Tools
Process: Administrator Tools
Task:  Manage Events

Note: At this point, you may want to delete the Test Letter created in the task 'Test Word integration'. This can be done on the Communication Event dialog by selecting Test Letter in the Event list, then clicking Remove.

2. Click **Create**

The Create Communication Event dialog appears:



3. Enter a **Title**

Type a unique title, up to 40 characters, for this communication event. For the test letter, type the following:

Test Email

4. Select **Email**

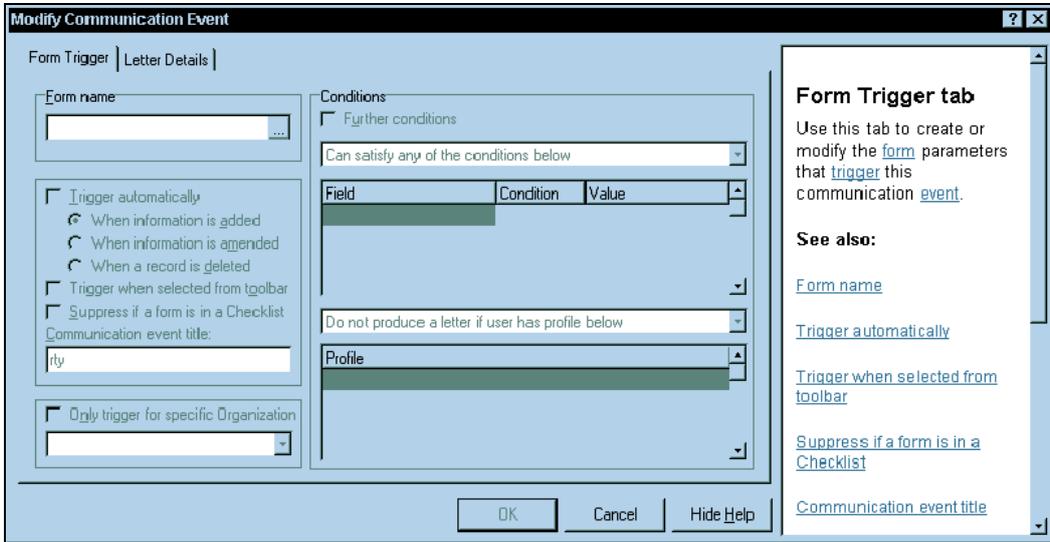
By default, Letter is the communication event Type selected when the dialog is first displayed. Change the selection to Email.

5. Select **Form**

By default, Form is the communication event Trigger type selected when the dialog is first displayed. Verify that Form is selected.

6. Click OK

The Modify Communication Event dialog appears:

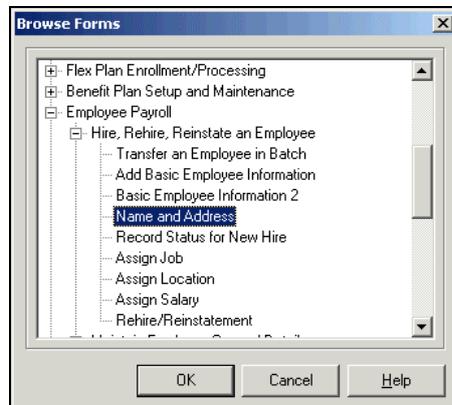


7. Select the Form name

Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus.

For the test email, select:

Employee Payroll ► Hire, Rehire, Reinstatement an Employee ► Name and Address



8. Click OK

9. Select the automatic trigger conditions

Select 'Trigger automatically'. This will activate the trigger options.

10. Select 'When information is amended'

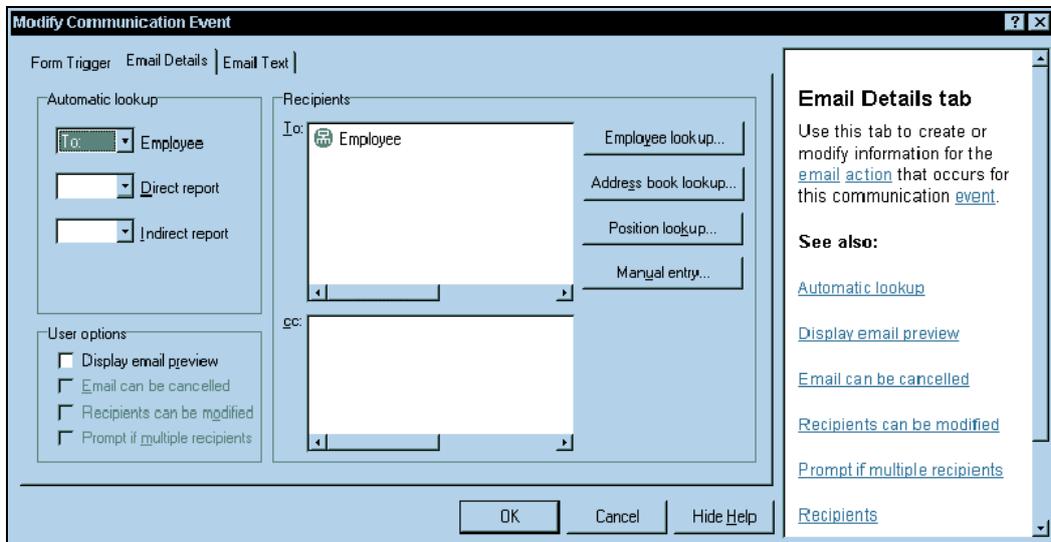
'When information is added' is the default selection—change this.

11. Click the Email Details tab

The Email Details tab will appear:

12. In the Employee field, select 'To'

Click on the down arrow, and a drop-down list will appear—select 'To' from this list. Once you select 'To', the system will automatically include the Employee field, in order to pull the email address of the required employee.



13. Select another email address

Click 'Address book lookup' and select the desired email address. This will send the email to another address, which you can use to check that the email has been received—you may want to use your own or another easily accessible address.

14. Click OK

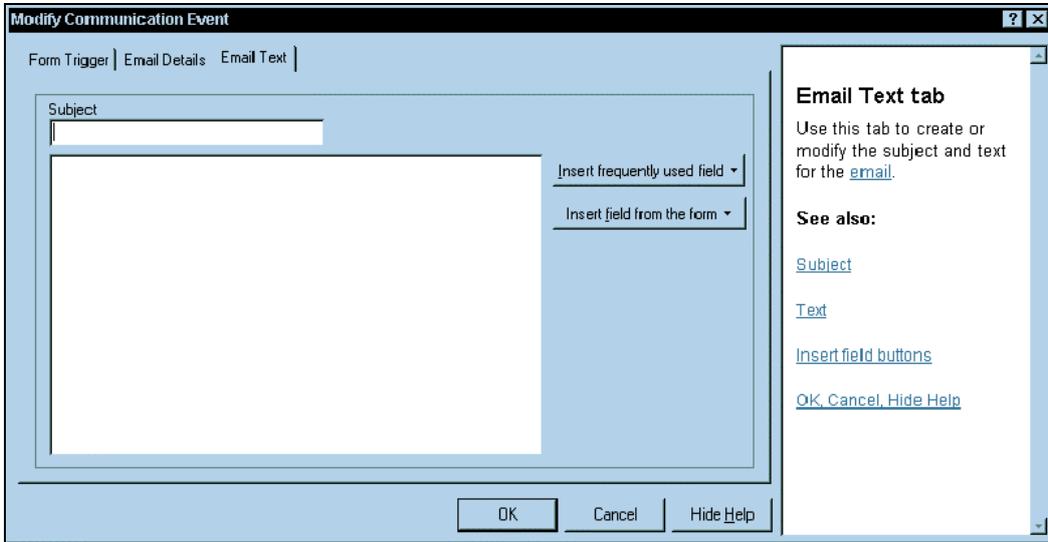
This will select the email address and return you to the Modify Communication Event dialog.

15. Click on the 'Display email preview' option

This is located in the lower left corner of the Email Details tab. Once this option is selected, the system will automatically generate a dialog which prompts you when it is generating the email.

16. Click on the Email Text tab

The Email Text tab appears:



This is where you create the email.

17. Type the Subject

In the subject field, type the following:

Test Email

18. Add the 'First Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'First Name' from the drop-down list.

This selection and the next couple will test if The Solution Series information is being pulled into the Word template properly.

19. Type a space

20. Add the 'Last Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Last Name' from the drop-down list.

21. Press Enter

This will start a new line in the email.

22. Type in a line

For the test letter, type the following line:

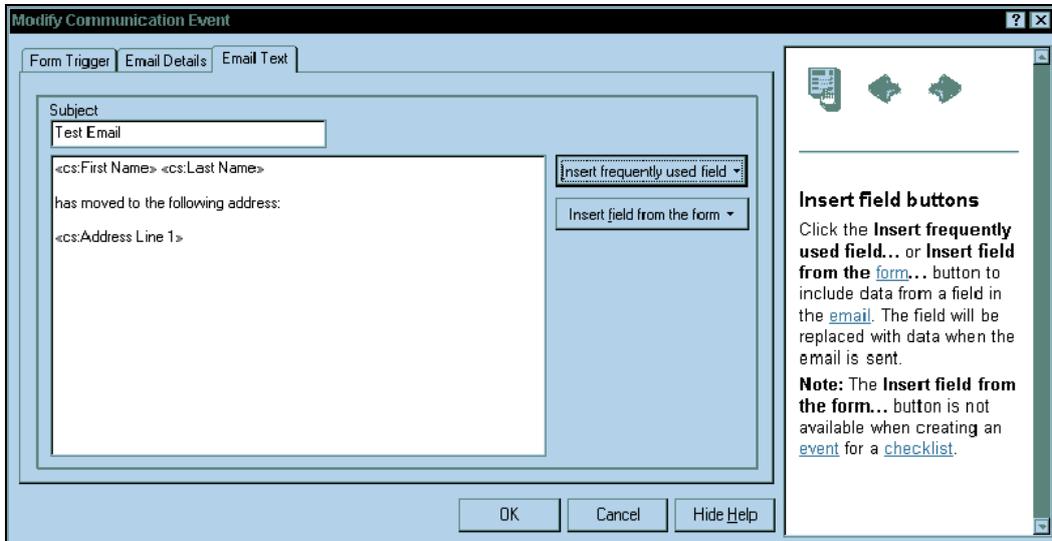
has moved to the following address:

23. Press Enter

This will start a new line in the email.

24. Add the 'Address Line 1' field

Click 'Insert Frequently used field', then select 'Address Line 1' from the drop-down list. The display should appear like this:



25. Click OK

This will enter the data and return you to the Communication Event Manager dialog.

26. Click OK

This will close the Event Manager dialog.

27. Access the Name and Address form

Make the following selections:

- Component:**  Employee Resourcing
Process: Hire, Rehire, Reinstatement of an Employee
Task:  Name and Address

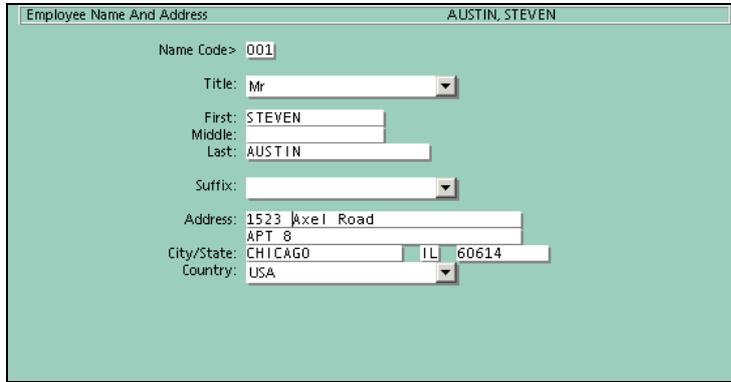
28. Select an employee

In the Number field, type:

1234

29. Click OK

The Employee Name and Address form (FF-SCR) appears with the employee information:



Employee Name And Address AUSTIN, STEVEN

Name Code: 001

Title: Mr

First: STEVEN

Middle:

Last: AUSTIN

Suffix:

Address: 1523 W. Rocky Road
APT 8

City/State: CHICAGO IL 60614

Country: USA

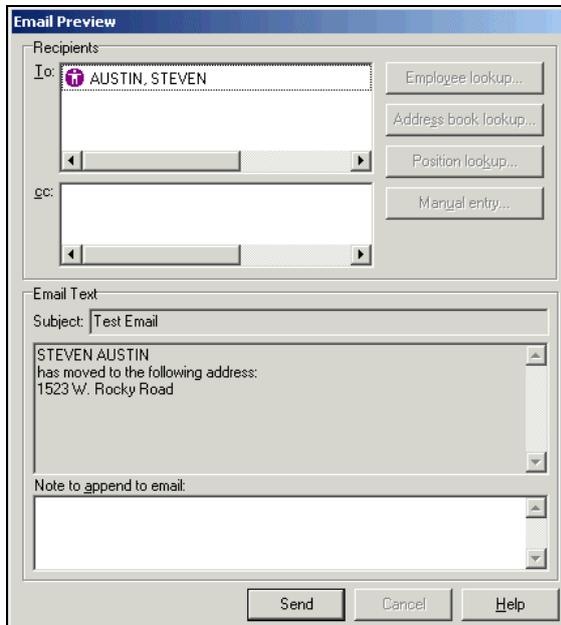
30. Type a new address

In the Address field, type the following:

1523 W. Rocky Road

31. Press Enter

This will enter the new address. At this point, the Email Preview dialog appears:



Email Preview

Recipients

To: AUSTIN, STEVEN

Employee lookup...

Address book lookup...

Position lookup...

Manual entry...

cc:

Email Text

Subject: Test Email

STEVEN AUSTIN
has moved to the following address:
1523 W. Rocky Road

Note to append to email:

Send Cancel Help

32. Click Send

This will send the email to the selected address.

When you are finished with this task, you should check the In Box at the address the email has been sent to in order to verify that it has been received. It is recommended that you use an email address you can easily access.

Test the import facility

This task will walk you through a test import with a sample Excel spreadsheet in order to ensure that the import functionality is working properly.

1. Access the Import Profile Manager dialog

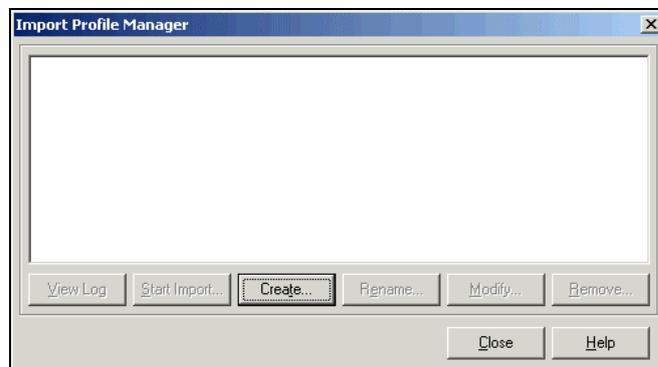
Access this dialog by selecting the Import Manager icon from the toolbar:



Alternatively, make the following selections from the menu:

Actions ► Office Integration ► Import

The Import Profile Manager dialog is displayed:



2. Click Create

Click Create to activate the Import Creation and Amendment wizard.

3. Click Next

4. Click Browse

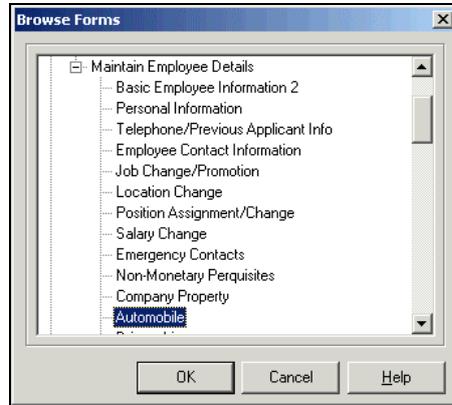
If the form displayed in the dialog is not the form to be selected for import, or if no form is being displayed, click Browse to view a list of available forms. This list contains only those forms you are authorized to access. Forms that can not be used with the import functionality are not displayed.

Use this dialog to select the The Solution Series form into which the test file will be imported.

5. Select the The Solution Series form

For the test file, make the following selections:

Employee Resourcing ► Maintain Employee Details ► Automobile



6. **Click OK**
Clicking OK will select The Solution Series form.
7. **Click Next**
8. **Click Browse**
The Open dialog will appear. Use this dialog to select the import file.
9. **Select the import file**
Use the Open dialog to find the following file path:
\\Program Files\Cyborg Systems\Clientxx\Samples\car.xls
10. **Click Open**
This will select the Excel file.
11. **Click Next**
12. **Select the First record is a header option**
This option tells the system to use the first record in the spreadsheet as a column heading.
13. **Click Next**
Now you must establish the relationship between the spreadsheet you are importing and the form into which you exporting it.
14. **Click Next**
Define the relationship between the spreadsheet and the form. The next step of this task will explain more about this relationship.
15. **Map the import-to-form relationship**
Use the 'select the name' method to map the fields in the spreadsheet to the Automobile Information form.

- For each spreadsheet field displayed in the bottom section of the dialog, click on the top row of the column. A drop-down list will display.
- Choose the field name from the drop-down list that matches the column names. The top row of the column will be updated to show the field name, and the matching field on the form will change to yellow to show that mapping has occurred. You will not see any color changes for the fields 'organization' and 'employee'.

Fleet ID	Number	Make	Model	Color
Fleet	Number	Make	Model	Color
6215	12345	Nissan	Sentra	Blue

- Type the letter 'T' in the Date field. This causes the current date to be used. The field color will change to blue.
- Leave the other fields on the form blank.

16. Click Next

17. Click Finish

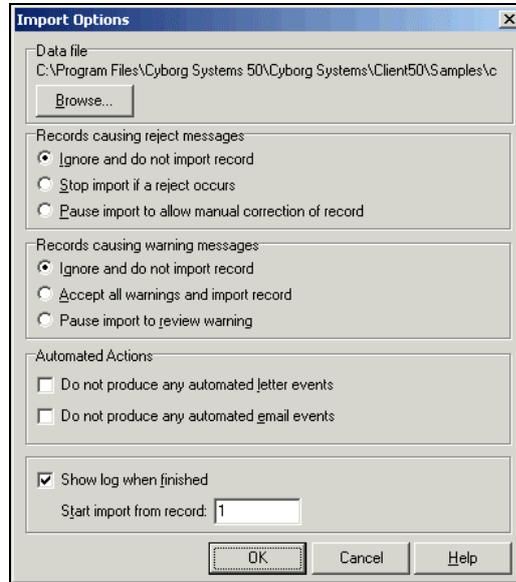
The Wizard will return you to the Import Profile Manager, and the import profile you have just created will appear in the dialog.

18. Select the desired import

Select the Import from car to Automobile Information form.

19. Select Start Import

Click **Start Import** to start the import of data to The Solution Series. The Import Options dialog is displayed:



20. Click OK

Click **OK** to continue the import.

The Solution Series will display a log after the import is complete. If no errors are reported, then the import was a success.

Your installation of The Solution Series for Microsoft Windows on the Administrative client is now complete.

PART 5

Appendices

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A P P E N D I X A

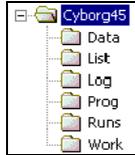
Directory Contents

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Server Directory Structure

The Cyborg server software is delivered in the following directory structure:



CYBORGxx\DATA Directory

The CYBORGxx\DATA directory contains the following files:

BESS.BAT	Runs the Enhanced Interactive Workforce System
BHLD.BAT	Calls the bulk load program to copy extracted data into the tables specified
BHRD.BAT	Runs report and creates intermediate files
BISLOCK.BAT	Checks to see if specified file is available for access
BISW.BAT	Runs the Enhanced Is/Was report and create intermediate files
BIWE.BAT	Runs the Enhanced Interactive Workforce Is/Was report, create intermediate files, then rename files in the users sub-directory
BMRG.BAT	Runs an online batch payroll merge
BPAY.BAT	Runs an online batch payrun
BRPT.BAT	Runs an online batch report
BXTR.BAT	Runs an online batch pay extract
CBSV	Contains source code for CBSVB, CBSVBT, CBSVO, and CBSVOT
CBSV.OVR	Overrides to CBSV source
CBSVB.04	Pull parameters for relational program CBSVB
CBSVBNR.04	Pull parameters for non-relational program CBSVB
CBSVBT.04	Pull parameters for relational program CBSVBT
CBSVBTNR.04	Pull parameters for non-relational program CBSVBT
CBSVO.04	Pull parameters for relational program CBSVO
CBSVONR.04	Pull parameters for non-relational program CBSVO
CBSVOT.04	Pull parameters for relational program CBSVOT
CBSVOTNR.04	Pull parameters for non-relational program CBSVOT

CYBMST	Contains source code for all the batch programs (P2EDIT, P4CALC, P5PRNT, P9CNVT, and O4CALC), COBOL and Assembler subroutines, and report generators
DEMO1.P1	Control record for program DEMO01
DEMO1.P2	Control record for program DEMO02
DEMO1.P3	Control record for program DEMO03
DEMO1.Y3	Control record for program DEMOY3
DEMO0105	The Solution Series System Control Repository in sequential format; contains option lists, tables, documentation, test data, and all Cyborg Scripting Language programs
EPRDDI05	Special MAINTI05 file for including Enhanced Payroll Processing and DDI CheckList and Menu records via an additional installation process
ISLOCK.EXE	Used by the Batch GUI PAYMRG step to determine if FILE02 is currently locked (being accessed) by a user
JPRT.BAT	SUBMIT/VIEW; produces printed copy of reports held for online viewing
JQRY.BAT	SUBMIT/VIEW; produces printed copy of online query
JRPT.BAT	SUBMIT/VIEW; produces printed copy of a submitted report
O4PART1	Pull parameters for relational O4CALC
O4PRT1NR	Pull parameters for non-relational O4CALC
P05RDRQT.DAT	File used for pulling quarterly RG's and qtrmisc
P2PART1	Pull parameters for program P2EDIT
P4PART1	Pull parameters for program P4CALC
P5PART1	Pull parameters for program P5PRNT
P5PRNT.OVR	Overrides to program P5PRNT
P5QPART1	Machine parameter card for the extract of P5QTR
P5QTR.OVR	Override file for the extract of P5QTR program
P9CBSV.04	Report generator extract parameters for JXP9CBSV.BAT
P9CBSVC.04	Canadian report generator extract parameters for JXP9CBSV.BAT
P9CNVT.OVR	Overrides to program P9CNVT
P9PART1	Pull parameters for P9CNVT
P9STRT.04	Report generator extract parameters for JXP9STRT.BAT
RDBPGM	Case tool repository. Relational only

REPT20.04	Control record for script JXREPT20.BAT
RESS.BAT	This Command Line Script is launched by CBSVO, using the ESSLCR program. This script is the first of 3 scripts that are required to run the Enhanced Reporting System. The RLCH.BAT script starts the RSPAWNNESS.BAT script in order to relinquish control back to the CBSVO program. This allows the client to perform other tasks.
RLCH.BAT	This Batch file is launched by the CBSVO program using the REQJOB EAL program. This batch job is the first of 3 batch files that are required to run reports using the Enhanced Reporting System. The RLCH.BAT batch file performs a START on the RSPAWN.BAT file in order to relinquish control back to the CBSVO program freeing up the user to perform other tasks. There are 3 parameters passed form CBSVO.
RMRG.BAT	This Batch file is launched by the CBSVO program using the UPOLCR EAL program. This batch job is the first of 3 batch files that are required to run the pay MERGE. The RMRG.BAT batch file performs a START on the RSPAWNMRG.BAT file in order to relinquish control back to the CBSVO program freeing up the user to perform other tasks. Parameters passed form CBSVO.
RPAY.BAT	This Batch file is launched by the CBSVO program using the PAYLCR EAL program. This batch job is the first of 3 batch files that are required to run the pay process. The RPAY.BAT batch file performs a START on the RSPAWNPAY.BAT file in order to relinquish control back to the CBSVO program freeing up the user to perform other tasks. Parameters passed form CBSVO.
RPTGEN.04	Control record for script JXRPTGEN.BAT
RSPAWN.BAT	This Batch file is called by RLCH.BAT. This file calls the BRPT batch file REM that creates the reports and the logs. The call is used to ensure that all output messages are collected on the LOW (LOG) file. This batch then renames LOW file to LOG. This log contains all of the output messages from the CBSVB and the sort as well as all the embedded Echo statements found in the batch job. There are 3 parameters passed form RLCH.BAT.

RSPAWNESS.BAT	This script file is called by RESS.BAT. This file calls the BESS script file that creates the reports and the logs. The call is used to ensure that all output messages are collected on the LOW (LOG) file. This script then renames LOW file to LOG. This log contains all of the output messages from the CBSVB and the sort as well as all the embedded Echo statements found in the script job. There are 3 parameters passed form RESS.BAT.
RSPAWNMRG.BAT	This Batch file is called by RMRG.BAT. This file calls the BMRG batch file that runs the pay merge. The call is used to ensure that all output messages are collected on the LOW (LOG) file. This batch then renames LOW file to LOG. This log contains all of the output messages from the CBSVB and the sort as well as all the embedded Echo statements found in the batch job. Parameters passed form RMRG.BAT.
RSPAWNPAY.BAT	RSPAWNPAY Command Line Script is called by the RPAY script. This is the second script required to run the Enhanced Pay Process. This script ensures that all output messages are collected in intermediate (*.LOW) file(s). When the process is complete the script renames all intermediate (*.LOW) file(s) TO (*.LOG) file(s). The log file(s) contains all of the output messages from CBSVB, the sort, and all embedded Echo statements found in the command line script jobs.
TAXFILE	The Tax Authority file
TAXFILEC	The Canadian Tax Authority file
VERS80.OVR	Overrides to CYBMST source

CYBORGxx\PROG Directory

The CYBORGxx\PROG directory contains the following files:

CBSVB.CBL	Non-relational program source code used to process The Solution Series in batch
CBSVB.MF2	Copy of CBSVB.CBL used to create separate environments
CBSVBT.CBL	Non-relational trace program source code used to process The Solution Series in batch
CBSVO.CBL	Non-relational program source code used to process The Solution Series online
CBSVOT.CBL	Non-relational trace program source code used to process The Solution Series online
CBSVRFT.CBL	Subroutine used in non-relational installations to determine segment and segment key lengths

CYBIO.EXE	Executable program for System Control Repository (FILE01) IO
CYBCPNL.CPL	Cyborg Control Panel DLL
CYBGETKY.C	C++ program used with online programs CBSVO and CBSVOT
CYBGETKY.OBJ	Accepts input from the screen for Windows NT
CYBSERVD.EXE	Service executable
LOGGING.C	Submodule for FILE01 IO
P10SORT.CBL	Sorts data records in ascending order; uses P05IN and P05OUT
P45SORT.CBL	Sorts data records in ascending order; uses P40IN1 and P40OUT
P80COPY.CBL	Adds carriage returns and line feeds to each record in a data file copied from tape
P80SORT.CBL	Sorts data records in ascending order; used in the JDOCPRT script
PFSSORT.CBL	Sorts data records in ascending order; used in F-SEGM
P9CNVT.CBL	Source code used to extract any member from the CYBMST file
SCKCYBIO.C	Submodule for FILE01
SCKCYBIO.H	SCKCYBIO and LOGGING
UNISTD.H	Header files used by programs

CYBORGxx\RUNS Directory

The CYBORGxx\RUNS directory contains the following files:

CYBIO.BAT	Initiates the online FILE01 IO by executing the CYBIO program
JBACKEM.BAT	Creates a sequential version of FILE1
JBLDAKY.BAT	Builds or rebuilds the Employee Name Alternate Key
JCLEAN01.BAT	Removes extraneous information from the MAINTO. Standard clean job.
JCLEAN3X.BAT	Reads a MAINTO file and removes any obsolete records
JCMPCVBN.BAT	Compiles the delivered non-relational batch programs
JCMPCVN.BAT	Compiles the non-relational batch programs as pulled from the CBSV file
JCMPCVON.BAT	Compiles the non-relational batch programs as pulled from the CBSV file
JCMPCVR.BAT	RELATIONAL ONLY. Compiles the relational batch programs as pulled from the CBSV file

JCMPP9CV.BAT	Compiles P9CNVT program
JCMPRDB0.BAT	RELATIONAL ONLY. Compiles RDBPGM0.CBL program
JCMPRDB1.BAT	RELATIONAL ONLY. Precompiles, compiles, and links the RDBPGM1.CBL program. ORACLE ONLY
JCMPSORT.BAT	Compiles P10SORT.CBL, P25SORT.CBL, P80SORT.CBL, P80COPY.CBL and PFSSORT.CBL
JCMPSUBR.BAT	RELATIONAL ONLY. Pre-compiles and compiles relational database subroutine programs RDBPGMA through RDBPGMH
JCRTCYB.BAT	RELATIONAL ONLY. Creates the Cyborg database, which contains relational tables, indexes and views
JCRTPGMS.BAT	RELATIONAL ONLY. Creates RDB programs RDBPGM1, and RDBPGMA through RDBPGMG
JDEMO01.BAT	Creates indexed System Control Repository from sequential FILE05 (DEMO0105)
JEXPORT.BAT	Exports the 'F1' and 'FTM' records from the System Control Repository; output FILE10 is used as input FILEIN2 in JCRTPGMS
JF-XREF.BAT	Builds Field Name Table (F-NAME) cross references (RFT records)
JHRDEMO.BAT	Pulls test data from the System Control Repository and populates fields in the online Employee Database
JHRDEMO.C.BAT	(Canada) Pulls test data from the System Control Repository and populates fields in the online Employee Database
JMAINTI.BAT	Updates the System Control Repository
JMAINTO.BAT	Compares current System Control Repository with original FILE05 (DEMO0105) and produces FILE10 (MAINTO10), which contains the differences found
JMAKECL.BAT	Extracts option list values, field definitions, screen security, and PC menu records from the System Control Repository
JMNTRUN.BAT	Updates Labor and History records following the Batch pay calculation
JP20STRT.BAT	Creates the P20IN Batch Master File for the first time
JPAYMRG.BAT	Creates or updates the online Employee Database
JPAYRUN.BAT	Calculates pay and produces checks, reports, and a combined register
JPAYXTR.BAT	Pulls timecards and adjustments from the online Employee Database and creates FILE12 (P20 Master), which will be the new P20IN file

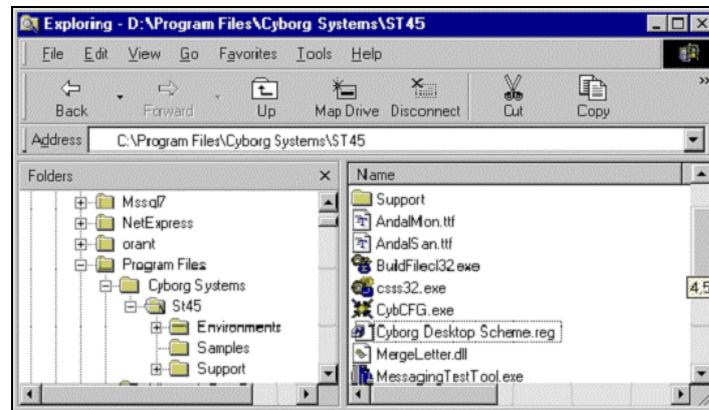
JPFSSORT.BAT	Sample script to run segment layout report
JPOPF01.BAT	RELATIONAL ONLY. Populates the RDBMS tables Cx through Xx
JPRDEMO.BAT	Pulls test data from the System Control Repository (Control File; FILE01) and populates fields in the online Employee Database; jobstream is used when first building the employee database during installation
JPUL_RDB.BAT	RELATIONAL ONLY. Extracts the CASE tool, RDBPGM0, RDBPGM2, RDBPGM3, and RDBPGM4
JPULCVN.BAT	Pulls non-relational batch programs CBSVB, CBSVBT, CBSVO, and CBSVOT from the CBSV file
JPULCVR.BAT	Pulls relational batch programs CBSVB, CBSVBT, CBSVO, and CBSVOT from the CBSV file
JQTRRUN.BAT	Runs the Quarterly Processor
JREBUILD.BAT	Recreates System Control Repository using the output from JBACKEM.BAT
JRELOAD.BAT	Reloads (Cyborg's compile routine) Cyborg Scripting Language programs in the System Control Repository
JREPORT.BAT	Extracts reports from System Control Repository and the Employee Database
JRPTMNU.BAT	Build a menu containing the delivered report groups for Enhanced Payroll Reporting
JUPDCYBM.BAT	Updates the CYBMST file with program updates or report generators
JXCYBMST.BAT	Extracts and compiles CYBMST programs (O4CALC, P2EDIT, P4CALC, P5PRNT, and P9CNVT)
JXO4CALC.BAT	Extracts COBOL program O4CALC from CYBMST; compiles the non-relational program
JXO4CALR.BAT	RELATIONAL ONLY. Extracts COBOL program O4CALC from CYBMST, compiles the relational program, and links the machine-specific sub-routines
JXP2EDIT.BAT	Extracts P2EDIT from CYBMST, compiles and links machine specific subroutines
JXP4CALC.BAT	Extracts P4CALC from CYBMST, compiles and links machine specific subroutines
JXP5PRNT.BAT	Extracts P5PRNT from CYBMST, compiles and links machine specific subroutines
JXP5QTR.BAT	Extracts P5QTR from CYBMST, compiles and links machine specific subroutines
JXP9CNVT	Extracts P9CNVT form CYBMST and compiles the program

JXREPT20.BAT	Extracts report generator 20 from CYBMST in order to add new Organization Control Number values (companies) to the P20IN Batch Master File
JXRPTGEN.BAT	Extracts report generators from CYBMST
MFSETUP.BAT	File located on the server that the client calls for environment variables
ONLINE.BAT	Initiates the online Solution Series system by executing the CBSVO program
ONLINET.BAT	Initiates the trace online Solution Series system by executing the CBSVOT program
RJ.BAT	Executable delivered by Cyborg that automatically launches a program and displays the log output immediately after the program completes its run

Client Directory Structure

The Cyborg client software is delivered in the root directory 'Cyborg Systems' in the Program Files directory. The home directory indicates the version of the release. You may have several versions of the software and several environments set up for each version of the software. By default, the following subdirectory are created:

- Environments—This directory contains the files necessary for a successful connection to The Solution Series from a client in a default environment.
- Support—This directory contains files necessary for hypertext help. The content of this directory depends upon whether a custom installation was performed and if specific (de)selections were made.



A P P E N D I X B

Installation Checklists

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Installation Checklist - Indexed Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Copy Sleep command
- Install server files
- Modify delivered MicroFocus environment variables

Phase 2: Build The Solution Series Environment

- Pull and compile all CYBMST programs
- Compile and link CBSVB and CBSVRFT
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository
- Pull all CBSV programs
- Compile and link all CBSV programs

Phase 3: create test P20IN Batch Master

Phase 4: Create Employee Database with pay history

- Create test Employee Database
- Populate database with test data - Solution Series Install Win2000
- Update P20IN Batch Master File
- Apply taxes, time entries, and adjustments
- Create pay history
- Update the Employee Database

Phase 5: Extract HR reports

- Phase 6: Apply System Control Repository menu additions
 - Build report menus
 - Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Relational Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Copy Sleep command
- Install server files
- Modify delivered MicroFocus environment variables
- Modify the case tool variables
- Modify the CBSV override file
- Modify the database variables

Phase 2: Build The Solution Series Environment

- Pull and compile all CYBMST programs
- Compile and link CBSVB and CBSVRFT
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository
- Extract the CASE tool
- Compile RDBPGM0.CBL
- Export F1 and FTM records
- Execute the case tool
- Create the database, tables, index, and views
- Pre-compile, compile, and link RDBPGMA through RDBPGMH
- Extract, compile, and link O4CALC
- Pull all CBSV programs
- Pre-compile, compile, and link all CBSV programs

Phase 3: Configure ODBC

- Run ODBC

Phase 4: create test P20IN Batch Master

Phase 5: Create Employee Database with pay history

- Create test Employee Database

- Populate RDBMS tables
- Populate database with test data - Solution Series Install Win2000
- Update P20IN Batch Master File
- Apply taxes, time entries, and adjustments
- Create pay history
- Update the Employee Database

Phase 6: Extract HR reports

Phase 7: Apply System Control Repository menu additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Relational Administrative Solution Installation and Configuration (Oracle)

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Copy Sleep command
- Install server files
- Modify delivered MicroFocus environment variables
- Modify the case tools variables
- Modify the CBSV override file
- Modify the database variables

Phase 2: Build The Solution Series Environment

- Pull and compile all CYBMST programs
- Compile and link CBSVB and CBSVRFT
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository
- Extract the CASE tool
- Compile RDBPGM0.CBL
- Export F1 and FTM records
- Execute the case tool
- Pre-compile, compile and link RDBPGM1 - Relational ORACLE ST
Install NT
- Create the database, tables, index, and views - Relational ORACLE ST
Install NT
- Pre-compile, compile, and link RDBPGMA through RDBPGMH
- Extract, compile, and link O4CALC
- Pull all CBSV programs
- Pre-compile, compile, and link all CBSV programs

Phase 3: create test P20IN Batch Master

Phase 4: Create Employee Database with pay history

- Create test Employee Database
- Populate RDBMS tables
- Populate database with test data - Solution Series Install Win2000
- Update P20IN Batch Master File
- Apply taxes, time entries, and adjustments
- Create pay history
- Update the Employee Database

Phase 5: Extract HR reports

Phase 6: Apply System Control Repository menu additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Cyborg Application Service (CAS) Installation and Configuration

Phase 1: Install and configure Cyborg Application Server (CAS) service

- Task 1: Install CAS
- Task 2: Set up services
- Task 3: Start CAS
- Task 4: Verify installation

Phase 2: Optional—Verify mapping on server

Installation Checklist - Installing the Web Client Software on the Web Server

Installing the Web Client Server

- Install the eCyborg Web Server files
- Add eCyborg to ServletExec.properties (ServletExec only)
- Add eCyborg to uriworkermap.properties (Tomcat only)
- Start the servlet engine
- Add the Cyborg environment to the environments.properties file
- Test the eCyborg Web Server

Installation Checklist - Installing and Configuring the Administrative Client

Phase 1: Prepare for installation

- Ensure Cyborg Application Service is active
- Complete a configuration worksheet

Phase 2: Install the software

- Install Client files
- Install Document Data Interface (DDI)---optional
- Install Enhanced Payroll and Reporting (EPR)---optional

Phase 3: Configure the software

- Set Up Your Environment
- Configure the Cyborg Desktop (Optional)

Phase 4: Test the installation

- Run the Messaging Test Tool
- Test the connection to the server
- Test the GUI
- View the Favorites Toolbar
- Define the email and letter template folder
- Test Word integration
- Test email integration
- Test the import facility

APPENDIX C

Creating Separate Environments

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Server

Create root directory at server

(Server)

Create a unique directory structure at the server:



Copy files from the first installed environment

Maintaining the directory structure, copy all files from the first environment you installed at the server (for example, copy contents of C:\CYBORG onto D:\CYBDEV).

Delete files in LIST, LOG, and WORK subdirectories

The files in these subdirectories are generated during normal operations and are environment-specific, so they should be removed—they are not relevant to this new environment.

Delete programs that will be recreated

Delete the following programs from your new directory on the server:

D:\cybdev\cbsv*.*

If you have a relational environment, also delete the following programs from your new directory on the server:

D:\cybdev\prog\del rdbpgma.*
D:\cybdev\prog\del rdbpgmb.*
D:\cybdev\prog\del rdbpgmc.*
D:\cybdev\prog\del rdbpgmd.*
D:\cybdev\prog\del rdbpgme.*
D:\cybdev\prog\del rdbpgmf.*
D:\cybdev\prog\del rdbpgmg.*
D:\cybdev\prog\del rdbpgmh.*

If you have a SQL Server relational environment, also delete the following program from your new directory on the server:

D:\cybdev\runs\del rdbpgm1.*

If you have an ORACLE relational environment, also delete the following program from your new directory on the server:

D:\cybdev\prog\del rdbpgm1.*

Note: Assumes C:\CYBORG is the current production environment and D:\CYBDEV is the second environment to be set up.

Copy Cyborg delivered files

Copy the Cyborg delivered files:

C:\CYBORG\PROG\CBSVB.MF2 to D:\CYBDEV\PROG\CBSVB.CBL

C:\CYBORG\PROG\CBSVRFT.CBL to D:\CYBDEV\PROG\CBSVRFT.CBL

Complete the Installation

Non-relational

To complete a *non-relational* installation, go to Chapter 2: Indexed Server Installation and Configuration, and perform the Phases and Tasks listed below:

- Phase 1: Prepare for Installation
(Required if on a different server)

- Phase 2: Build The Solution Series Environment
 - Task 1: Pull and compile all CYBMST programs
 - Task 2: Compile and link CBSVB
 - Task 5: Pull all CBSV programs
 - Task 6: Compile and link all CBSV programs

- Phase 4: Create Employee Database with pay history
 - Task 1: Create test Employee Database (JPAYMRG)

Relational (SQL Server)

To complete a SQL Server *relational* installation, go to Chapter 3: Relational Server Installation and Configuration (SQL Server) and perform the Phases and Tasks listed below:

- Phase 1: Prepare for Installation
(Required if on a different server)

- Phase 2: Build The Administrative Solution Environment
 - Task 2: Compile and link CBSVB and CBSVRFT
 - Task 8: Export F1 and FTM records
 - Task 9: Execute the case tool
 - Task 10: Create the database, tables, index, and views
 - Task 11: Pre-compile, compile, and link RDBPGMA through RDBPGMH
 - Task 12: Extract, compile, and link O4CALC
 - Task 13: Pull all CBSV programs
 - Task 14: Pre-compile, compile, and link all CBSV programs

- Phase 3: Configure ODBC
Complete all tasks

- Phase 5: Create Employee Database with pay history
 - Task 1: Create test Employee Database
 - Task 2: Populate RDBMS tables

Relational (Oracle)

To complete a SQL Server *relational* installation, go to Chapter 4: Relational Server Installation and Configuration (Oracle) and perform the Phases and Tasks listed below:

- Phase 1: Prepare for Installation
(Required if on a different server)

- Phase 2: Build The Administrative Solution Environment
 - Task 1: Pull and compile all CYBMST programs
 - Task 2: Compile and link CBSVB and CBSVRFT
 - Task 8: Export F1 and FTM records
 - Task 9: Execute the case tool
 - Task 10: Pre-compile, compile and link RDBPGM1
 - Task 11: Create the database, tables, index, and views
 - Task 12: Pre-compile, compile, and link RDBPGMA through RDBPGMH
 - Task 13: Extract, compile, and link O4CALC
 - Task 14: Pull all CBSV programs
 - Task 15: Pre-compile, compile, and link all CBSV programs

- Phase 4: Create Employee Database with pay history
 - Task 1: Create test Employee Database
 - Task 2: Populate RDBMS tables

Add additional environments to the Cyborg Application Panel

1. Execute the following:

Start ► Settings ► Control Panel ► Cyborg Service

2. Select 'ST Application' from the Settings tab.
3. In the Environments section, click Add.
4. Type up to 8 characters in the Environment field (for example, 'Test') and select the Enabled check box.
5. Type the Working Directory of the (Test) system (for example, 'D:\CYBDEV\RUNS').
6. Type the full Program Path (and program name) of the batch file that starts up CBSVO (for example, 'D:\CYBDEV\RUNS\Online.bat').
7. Click OK (on the Add Environment dialog box).
8. Click OK (on the Service Properties dialog box).
9. Repeat steps 2–8, but select the 'FILE01 Application' and type the full Program Path (and program name) of the batch file that starts up CYBIO (for example, 'D:\CYBDEV\RUNS\Cybio.bat').

Client

Set Up Your Environment

To set up your environment, perform the following steps:

1. Access the dialog box

Access this dialog box by selecting:

Start ► Programs ► The Administrative Solution ► Connection Editor

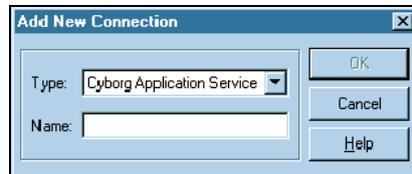
2. Click New

Click on the New button to set up a new configuration.



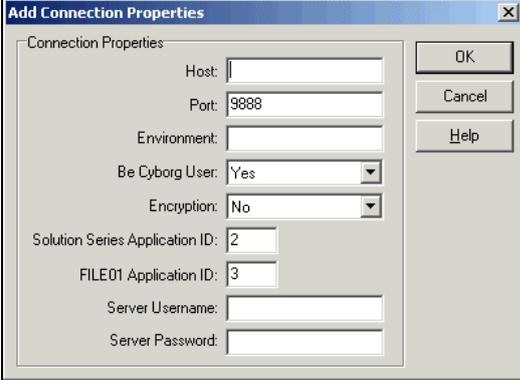
3. Type the name of your new connection

Leave Cyborg Application Service selected in the Type drop-down list box. Type the name of the connection you are creating in the Name text box.



4. Click OK

The Add Connection Properties dialog displays.

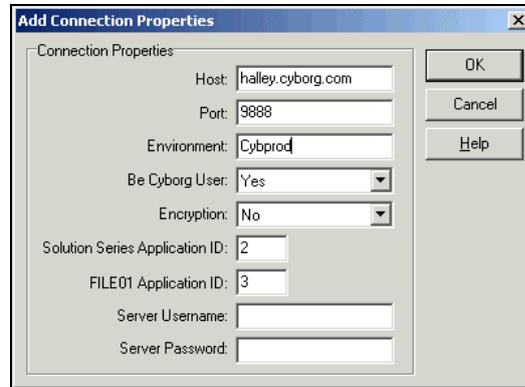


5. Type the configuration details

Type the configuration details under Connection Properties on the Connection Editor dialog box:

Item	Description
Host	Identify the system name of the server.
Port	Identify the port address of the server. For the Cyborg Application Server (CAS), Cyborg has registered the port address of 9888.
Environment	Identify the environment name (up to 8 characters) on the server. Examples are: CYBPROD, CYBTEST.
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
ST Application ID	The application name and ID number for The Administrative Solution application. This application ID is configured to 2.
FILE01 Application ID	The application name and ID number for the CYBIO application. This application ID is configured to 3.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

After you have made these entries on the Cyborg Connection Editor, it should look similar to the following example:



6. Click OK

The connection properties are specified.

7. Click Close

The connection has been configured between the server and the client.

Note: We highly recommend you change the Wallpaper when you have multiple versions of the system. This will help users easily identify the environment in which they are.

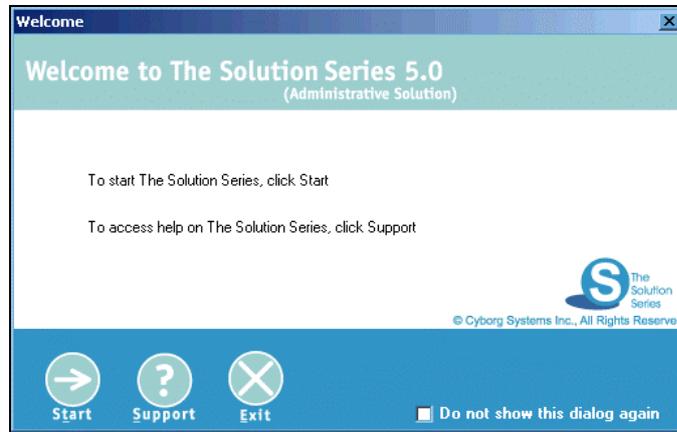
Test the connection on the client

1. Launch *The Administrative Solution/ST*

Select:

Start ► Programs ► The Administrative Solution ► The Administrative Solution
ST

The Welcome screen displays:

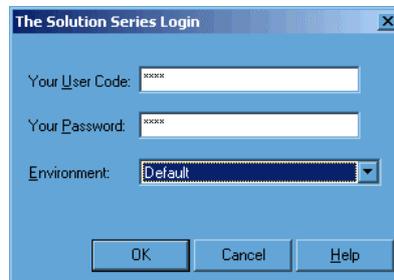


2. Click Start on the Welcome screen

The Login dialog box displays.

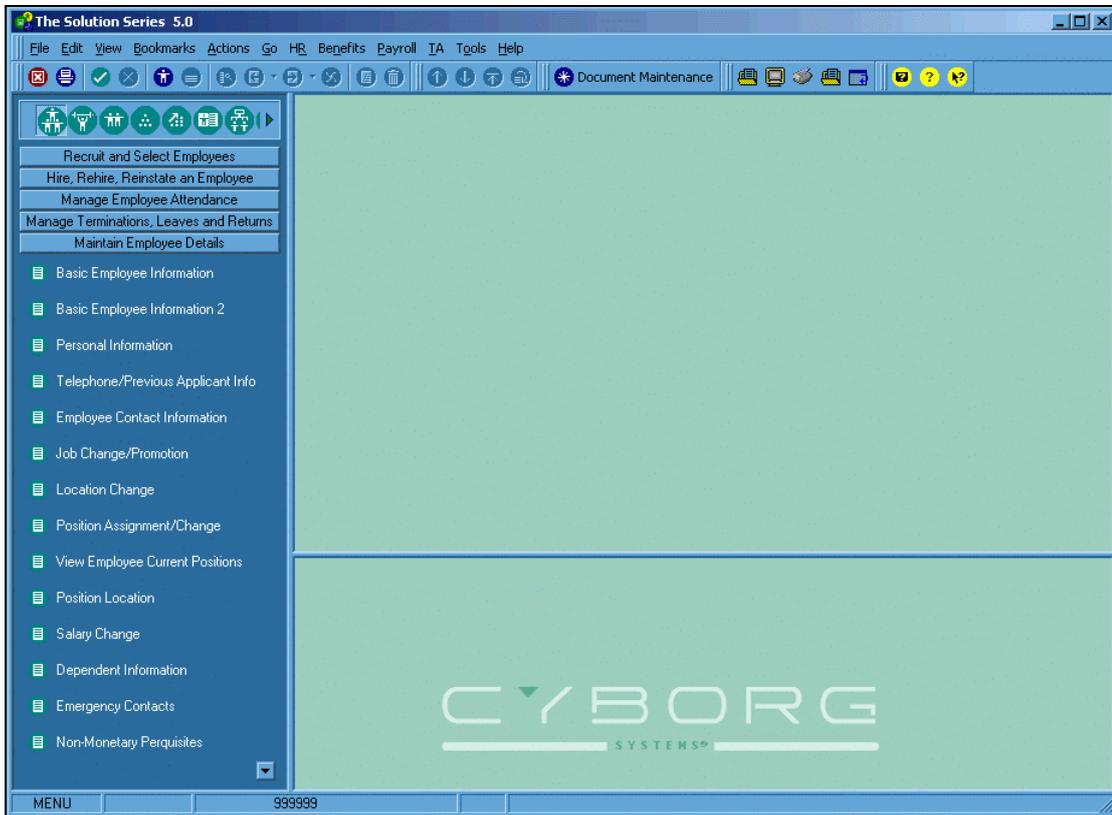
3. Log on as the Security Officer

Select the environment you want to access, then type your user name and password:



4. Click OK

The work area for The Administrative Client displays:



5. Log off The Administrative Solution

APPENDIX D

Optional SQL Server Procedures

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Password for SQL Server Login ID

Note: The commands described below are case sensitive.

1. Type:

```
isqlw -Uxxxx -Pyyyy
```

Where:

xxxx = userid

yyyy = password

2. Press Enter

3. Type:

```
sp_password [[@old =] 'old_password',] {@new = ] 'new_password'},[@loginame  
=] 'login']
```

Arguments

[@old =] 'old_password'

Is the old password. *old_password* is **sysname**, with a default of NULL.

[@new =] 'new_password'

Is the new password. *New_password* is **sysname** with no default. *old_password* must be specified if named parameters are not used.

[@login_name =] 'login'

Is the name of the login affected by the password change. Login is **sysname**, with a default of NULL. Login must already exist and can only be specified by a member of the **sysadmin** fixed server role.

How to find SQL Server messages (Enterprise Manager)

1. Expand the server group; then right-click the server.
2. Point to 'All Tasks;' then click 'Manage SQL Server Messages'.
3. On the Search tab, specify the text, error number, and severity level for the message. You can also choose to include only logged or user-defined messages.
4. Click Find.
5. The message(s) meeting the specified criteria will be displayed.

How to increase the size of a Database or Transaction Log (Enterprise Manager)

1. **Expand the server group; then expand the server.**
2. **Expand Databases, right-click the database to increase, and then click Properties.**
3. **To increase the data space, click the General tab. To increase the transaction log space, click the Transaction Log tab.**
4. **To add a new file, click the next empty row and, in the File name column, enter the file name that will contain the additional space.**

Note: The file location is generated automatically and given the *.ndf* suffix for a database file, or an *.ldf* suffix for a transaction log file.

5. **To change the default values provided in the File name, Location, Space allocated (MB), and Filegroup (not applicable for the transaction log) columns, click the cell to change and enter the new value.**

Note: For existing files, only the Space allocated (MB) value can be changed; the new value must be larger than the existing value.

6. **To specify how the file should grow, select from these options:**
 - To allow the currently selected file to grow as more data space is needed, select Automatically grow file.
 - To specify that the file should grow by fixed increments, select In megabytes and specify a value.
 - To specify that the file should grow by a percentage of the current file size, select By percent and specify a value.
7. **To specify the file size limit, select from these options:**
 - To allow the file to grow as much as necessary, select Unrestricted filegrowth.
 - To specify the maximum size the file should be allowed to grow to, select Restrict filegrowth (MB) and specify a value.

How to clear the TransactionLog (Enterprise Manager)

If log records were never deleted from the transaction log, the log would keep growing until it filled all the available space on the disks holding the log.

If log file exceeded size and log is not necessary:

Choose SQL Server Query Analyzer

The database context of the connection must be in the master database to use:

Type:

dump transaction *database_name* with *no_log|truncate_only*}

Where:

database_name = the logical name of the database where the transaction log is to be truncated.

no_log = used only when you have run out of space in the database and want the option to remove the inactive part of the log without making a backup copy of it; it saves space by not logging the operation.

truncate_only = removes the inactive part of the log without making a backup copy of it.

If a database log backup sequence is not being maintained for a database, the database can be set into log truncate mode. The 'trunc. log on chkpt.' database option must be set to TRUE for a database to be eligible for log truncate mode.

To change the database to truncate Log on Checkpoint

1. Expand the server group; then expand the server.
2. Expand Databases, right-click the database to change, and then click Properties.
3. Click the Options tab, and select Truncate Log on Checkpoint.
4. Click Apply, then OK.

Note: The 'tempdb' database is always in log truncate mode. Log truncation always occurs on a checkpoint in 'tempdb' regardless of the setting of the 'trunc. log on chkpt.' option.

How to Drop a Database

Removes one or more databases from Microsoft SQL Server. Removing a database deletes the database and the disk files used by the database.

1. **Choose SQL Server Query Analyzer.**
2. **The database context of the connection must be in the master database to use:**

Type:

```
DROP DATABASE database_name [, ...n]
```

In SQL Server version 7.0, DROP DATABASE removes damaged databases that have been marked suspect. DROP DATABASE removes the specified database unless it has been marked OFFLINE.

A database that has been dropped can be recreated only by restoring a backup. You cannot drop a database currently in use (open for reading or writing by any user). Whenever a database is dropped, the master database should be backed up.

Permissions

DROP DATABASE permission defaults to the database owner and members of the sysadmin fixed server role and is not transferable.

Example

Drop a single database

This example removes all references for the publishing database from the system tables.

```
DROP DATABASE publishing
```

Drop multiple databases

This example removes all references for each of the listed databases from the system tables.

```
DROP DATABASE pubs, newpubs
```

APPENDIX E

ORACLE Database Considerations

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Overview

This section has been provided to assist Cyborg customer DBAs to properly create the database and minimize any 'rework' in the future or troubleshoot database problems.

Understanding the Cyborg Database

There are several things you should understand when working with the Cyborg database. This section explains the specifics of the database.

Tablespaces

There are 8 database tablespaces created to hold Cyborg data and index objects:

Tablespace 0	Temporary tablespace the Cyborg user will use
Tablespace 1	Company data + Labor/History Indexes
Tablespace 2	Other Record data + Employee Indexes
Tablespace 3	Tax data + Tax Indexes
Tablespace 4	Employee data + Other Record Indexes
Tablespace 5	Labor/History data + Company Indexes
Tablespace 6	Option List/Application Tables
Tablespace 7	Option List/Application Table Indexes

Cyborg user account

An ORACLE user account should be created to own the Cyborg database objects. Use the following guidelines:

- Minimum database privileges this user should be granted.
- Create database tables, views, synonyms, roles, procedures, and triggers.
- Select, insert, update, and delete for database tables and views.

Enough memory on machine

Before tuning memory for ORACLE, ensure that enough memory resides on your machine for the following:

- Operating system
- Assortment of support mechanisms for the operating system
- Database engine, tools, and shadow processes for your version of ORACLE
- Software that coexists with ORACLE on your machine
- Network of operating system buffers
- ORACLE databases that coexist on your machine
- Memory overhead per user on the system
- Operating system overhead for supporting the read-and-write requests of all of those users

Tuning ORACLE with INIT.ORA parameters

To see the current value of your `init.ora` parameters, you can no longer rely on reading the `init.ora` file; you should select all of the parameter names and values from `V$PARAMETER` instead. The setting of the INIT.ORA Parameters customizes the performance of each ORACLE instance to its particular needs. While default settings often yield adequate performance, the peak performance ORACLE is capable of delivering can often be attained only by careful tuning of each parameter.

While most of the parameters can be adjusted only after the database is in use, the following parameters can be adjusted immediately upon installation:

- SYSTEM GLOBAL AREA (SGA)
 - DB_BLOCK_SIZE
 - DB_BLOCK_BUFFERS
 - SHARED_POOL_SIZE
- OPEN_CURSORS
- PROCESSES
- SORT_AREA_SIZE
- DML_LOCKS
- LOG_BUFFER
- ROLLBACK_SEGMENTS

The parameters are listed in order of maximum performance gain.

SYSTEM GLOBAL AREA (SGA)

It is important that the `SHARED_POOL_SIZE` and `DB_BLOCK_BUFFERS` account for 90% of the SGA total size. In addition, the SGA should never take over 50% of the available memory. In a `SVRMGR` session, enter the following to determine the SGA values:

```
sho SGA
```

DB_BLOCK_SIZE

The size of a database block in bytes. We suggest using the default value of 2048.

DB_BLOCK_BUFFERS

The number of database blocks cached in memory. Each buffer in the cache contains one ORACLE block. The larger the cache, the more data ORACLE can hold in memory. If the data is not in memory, ORACLE issues the needed I/O request to obtain the data, which is the slowest operation a computer can perform. Set this value to the maximum number of buffers that could be added without causing paging.

SHARED_POOL_SIZE

The size in bytes of shared pool. If the ratio of reloads to pins exceed 1 percent, you should increase this parameter. This can be determined by a simple query:

```
SQL>SELECT (SUM(reloads/SUM(pins)) * 100 'Miss %' from V$LIBRARYCACHE;
```

OPEN_CURSORS

This parameter is the maximum number of cursors that a user can have open at one time. To fully use the higher value for `SHARED_POOL_SIZE`, you may also want to increase the number of cursors available to each user (`OPEN_CURSORS`).

PROCESSES

This parameter limits the number of users who can concurrently access the instance. This parameter does not effect performance but is a useful starting point in defining expected requirements for ORACLE. Keep in mind that the background processes are included in this number and if the application spawns processes recursively, all these spawned processes count.

SORT_AREA_SIZE

This is the amount of memory per user process that is allocated for sorting. Size your `SORT_AREA_SIZE` to fit the need of the users. This is a big user of memory and also a big help with performance.

DML_LOCKS

This parameter is the maximum number of locks that can be placed on all tables by all users at one time. Experience has shown this parameter should be set high, as this parameter has no effect on performance.

LOG_BUFFER

This parameter is the number of bytes that are allocated to the redo log buffer in the SGA. If the ORACLE system is processing many in-process transactions, this parameter should be increased to reduce I/O to the redo logs.

ROLLBACK_SEGMENTS

This parameter is a list of all the rollback segments available to user processes. The system rollback segment should never appear in this parameter's list. All of the user rollback segments should be the same size since they are allocated randomly. Rollback segments should be large enough to contain all of the rollback information for any anticipated transaction. Always name your rollback segments in the initialization parameter file. Always place your rollback segments in their own tablespace.



Refer to 'Managing Rollback Segments', later in this appendix.

Space Management

Space is needed for the following objects to extend tables and indexes, rollback segments, and temporary tables:

Tables and indexes

This is caused by the said objects needing additional space to satisfy an insert or update.

Rollback segments

If the culprit is a rollback segment, the error ora-1562 'failed to extend rollback segment (id = %s)' will always precede the ora-1547. The ora-1562 is telling us that it could not extend the rollback segment, and the reason is the ora-1547—not enough space.

Temporary tables

These are tables created by the ORACLE kernel to do a sort on behalf of the user. A user can tell that he is running out of space for a temporary table, based on the operation he/she is performing (such as creating an index, doing a query with an order by, or a lengthy join statement). The temporary tablespace the user will use can be seen by performing the following query:

```
SQL>select temporary_tablespace from sys.dba_users where
username='<USERNAME>';
```

If the space being used seems too large, you may want to investigate the default storage for the temp tablespace—it is possible that the defaults are too small. To see the default storage, perform the following query:

```
SQL>select initial_extent, next_extent, min_extents, pct_increase
from sys.dba_tablespaces
```

```
where tablespace_name='<NAME>';
```

Adjustments can be made to the default storage of the tablespace by issuing the following command:

```
SQL>alter tablespace <NAME> storage (initial xxx next xxx....);
```

Space can be added to a tablespace using the 'ALTER TABLESPACE' command (full syntax below). This statement will create a database file on disk and enlarge the existing tablespace. The statement can be performed on all tablespaces (including system) without shutting down the database or taking the tablespace offline. Immediately following the completion of the statement, the space is available.

```
SQL>alter tablespace <TABLESPACE_NAME> add datafile '<PATH/FILENAME>'
size <size_of_file> reuse;
```

To get an idea of the naming conventions or locations for existing files, perform the following query:

```
SQL>select file_name from sys.dba_data_files where  
tablespace_name='<NAME>';
```

Understanding and resolving common ORACLE sizing errors with tablespaces

Error 01658: Unable to create INITIAL extent for segment in tablespace %s

Cause:	Failed to find sufficient contiguous space to allocate INITIAL extent for segment being created.
Action:	Use ALTER TABLESPACE ADD DATAFILE to add additional space to the tablespace or retry with a smaller value for INITIAL.

ORACLE will ALWAYS try to allocate CONTIGUOUS space. Although the tablespace may have enough free space, if it is not contiguous, the error will occur. To see if you have enough contiguous space in the tablespace, perform the following query:

```
SQL>select max(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This will return one record which shows the biggest chunk of space free in the tablespace in question. This number will be lower than the one returned by the error. If you wish to compare the contiguous space with total space, perform the following query:

```
SQL>select sum(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This also returns one record. This value can be compared to the record above to see how much of the total space is contiguous.

Understanding and resolving common ORACLE sizing errors with tables

Error 01631: Max # extents (%s) reached in table %s.%s

Cause:	A table tried to extend past maxextents.
Action:	Recreate the table with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01653: Unable to extend table %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for table segment in tablespace
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and Resolving common ORACLE sizing errors with indexes

Error 01632: Max # extents (%s) reached in index %s.%s

Cause:	An index tried to extend past maxextents.
Action:	Recreate the index with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01654: Unable to extend index %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for index segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and resolving common ORACLE sizing errors with rollback segments

Error 01628: Max # extents (%s) reached for rollback segment %s

Cause:	Tried to extend rollback segment already at maxextents value.
Action:	Recreate the rollback segment with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01650: Unable to extend rollback segment %s by %s in tablespace %s

Cause:	Failed to allocate an extent for rollback segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Managing rollback segments

A rollback segment consists of contiguous multi-block pieces called extents. The segment uses these extents in an ordered circular fashion, moving from one to the next after the current extent is full. A transaction writes a record to the current location in the rollback segment and advances the current pointer by the size of the record.

To determine a general rollback segment configuration, balance the number of segments against the size of each segment, such that the space needed will fit into the available disk space.

Make sure that there are enough segments to avoid contention as processes access them. But also make sure that individual rollback segments are large enough for their transaction load.

Balancing transaction requirements

The next section discusses balancing these two requirements.

- A transaction can only use one rollback segment to store all of its rollback (undo) records.
- Multiple transactions can write to the same extent.

There are two issues that need to be considered when deciding if your segment is large enough.

First, make sure that transactions will not cause the head to wrap around too fast. This causes the segment to extend in size, per the principles mentioned above.

Second, if you have long running queries that access data that frequently changes, make sure that the rollback segment does not wrap around to prevent the construction of a read consistent view.



Refer to the ORACLE Database Administrator's Guide for discussions on 'read consistency' on 'avoiding the snapshot too old error'.

The size needed for a rollback segment depends directly on the transaction activity of your database. Be concerned about the activity during normal processing of the database, not with rare or semi-frequent large transactions. These special cases are to be dealt with separately.

The number of rollback segments needed to prevent contention between processes can be determined with the help of the monitor rollback display and the use of the V\$WAITSTAT table.

Undo headers may occur if there are not enough rollback segments to support the number of concurrent transactions. The following V\$WAITSTAT query will display the number of waits since instance startup:

```
SQL>SELECT * FROM V$WAITSTAT WHERE CLASS = 'undo header';
```

To find out the size and number of rollback segments needed for normal processing on the database, you need to do some testing. A good test is to start with small rollback segments.

Allow your application to force them to extend. Here are the steps to run such a test:

1. Create a rollback segment tablespace.
2. Create a number of rollback segments in the tablespace.
3. Create the rollback segments so that all extents are the same size. Choose an extent size that you suspect will need between 10 to 30 extents when the segments grow to full size.
4. Each rollback segment should start with two extents before the test is run. This is the minimum number of extents any rollback segment can have.
5. Activate only the rollback segments that you are testing by making the status 'online'. The only other segment that should be 'online' is the system rollback segment.
6. Run transactions with a load typical of the application.
7. Watch for rollback segment contention.
8. Watch for the maximum size a rollback extends to.

The maximum size any one of the rollback segments reaches during the test is the size you want to use when configuring. This size we will call the 'minimum coverage size'. If you see contention, adjust the number of segments and rerun the test. Also, if the largest size requires fewer than 10 extents, or more than 30, it is a good idea to lower or raise the extent size respectively, and rerun the test.

For sizing rollback segment extents, we strongly recommend that each extent be of the same size. In fact, we also suggest that the size of the rollback tablespace is some multiple of the common extent size. The number of extents for an individual segment should be around 20.

In the rollback segment storage clause, please use the OPTIMAL parameter. OPTIMAL sets an optimal size in bytes for a rollback segment. It can be specified in kilobytes or megabytes. ORACLE will dynamically deallocate extents in the rollback segment to maintain the optimal size.

NULL means that ORACLE never deallocates the rollback segment extents, and this is the default behavior. You must supply a size greater than, or equal to, the initial space allocated for the rollback segment by the MINEXTENTS, INITIAL, NEXT, and PCTINCREASE parameters.

Extent deallocation is expensive in regards to performance. This means that an OPTIMAL setting may decrease performance if it is too low.

Changing an ORACLE user's password

You can use the ALTER USER command as a DBA or as the user itself to accomplish this task.

```
SQL>CONNECT userid/password;
```

where *userid* is your database userid or the userid of the DBA and *password* is your current password or the password of the DBA.

```
SQL>ALTER USER john IDENTIFIED BY test;
```

Dropping the Cyborg Database

Dropping a database is not supported by ORACLE. However, taking the tablespaces offline, dropping each tablespace, dropping the Cyborg user, and deleting all related data, initialization, and control files will accomplish this.

For each of the 8 tablespaces created for the Cyborg database, perform the following two commands:

```
SQL>alter tablespace <TABLESPACE_NAME> offline;  
SQL>drop tablespace <TABLESPACE_NAME> including contents cascade  
constraints;
```

Then drop the Cyborg user:

```
SQL>drop user <USER> cascade;
```

Delete all related data, initialization, and control files in the operating system.

A P P E N D I X F

ORACLE Disk Requirements Worksheets

In This Appendix

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Introduction

The tables in this appendix show an example for an Oracle database of the overhead space required for each of the tables. To calculate the table required, multiply the average row length by the number of occurrences for each table.

To calculate the overhead space required for each of the indexes, multiply the number of rows in each table by 15%.

Table 1

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
D	COMPANY	30	356	389
DB	CO_EARN_DED_RULE	31	221	255
DCAF	PAY_PROCESS_OPT	40	127	170
DCAG	PAY_STUB_MESSAGE1	3	73	79
DCAH	PAY_STUB_MESSAGE2	3	73	79
DCAJ	PAY_FREQUENCY	23	272	298
DCAK	GL_ACCOUNT_NBRS	9	84	96
DCAL	PAY_DOC_PRINT	6	93	102
DCAM	COMPANY_ROE	10	63	76
DD	PAYROLL_REPT_DEFN	18	33	54
DIDX	DIDX	4	204	211
TABLE 1				
TABLE 5 INDEXES				
TABLE 1 TOTAL				

Table 2

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
F	F_OTHER_RECORD	5	86	94
G	G_OTHER_RECORD	5	86	94
W	W_OTHER_RECORD	6	86	95
X	X_OTHER_RECORD	6	86	95
TABLE 2				

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
TABLE 4 INDEXES				
TABLE 2 TOTAL				

Table 3

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
H	TAX_SPECIFICATION	41	758	802
H4	TAX_TABLE_DEFN	23	456	482
H5	TAX_TABLE_BRACKET	9	148	160
HIDX	HIDX	5	204	212
TABLE 3				
TABLE 3 INDEXES				
TABLE 3 TOTAL				

Table 4

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MEE	EMPLOYEE	28	107	138
MEEA	EMPLOYEE_PAYMT	17	196	216
MEEB	EMPLOYEE_TRANSFER	8	84	95
MF	NAME_ADDRESS	9	158	170
MG	PAY_ALLOCATIONS	10	86	99
MH	EMP_EARN_DED	28	381	412
MIDX	MIDX	5	204	212
MJ	EMP_TAX_DED	52	827	882
MLO1	DEPENDENT	12	102	117
MLO2	DEPENDENT_EMPLYR	6	79	88
MLO3	DEPENDENT_INSUR	9	75	87
MLO4	EMRGY_CONTACT	7	79	89
MLO5	EMRGY_CONTACT_ADDR	7	79	89
MLO6	EMRGY_PHYSICIAN	7	79	89

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLO7	EMRGY_PHYS_ADDR	7	79	89
MLO8	EEO_6	10	39	52
MLOA	BENEFICIARY	11	101	115
MLOB	BENEFICIARY_ADDR	6	79	88
MLOC	BENEFICIARY_CITY	6	54	63
MLOD	COVERED_DEPENDENTS	21	74	98
MLOF	APPLICANT	12	112	127
MLOG	APPLCNT_REFERENCE	11	101	115
MLOH	APPLCNT_REF_ADDR	8	97	108
MLOI	JOB_APPLIED_FOR	16	113	132
MLOJ	WORK_PREFERENCES	21	168	192
MLOZ	EMP_FLEX_PLN_CR_PR	14	167	184
MLPB	V80_INSURANCE	14	150	167
MLPC	V80_MED_COVERAGE	11	60	74
MLPD	V80_BENEFIT	18	209	230
MLPH	SALARY_CHANGE	19	239	261
MLPM	EMP_INCUMBENCY	19	156	178
MLPQ	CAN_EMP_EQUITY	11	57	71
MLPR	V80_INJURY_DISABLE	15	117	135
MLQ0	EMP_RETIREMENT	13	70	86
MLQ1	EMP_WELFARE_PLAN	13	76	92
MLQ2	LEAVE_OF_ABSENCE	10	51	64
MLQ3	EMP_PLAN_SERVICE	14	68	85
MLQ4	EMP_DEFERRED_PLAN	14	63	80
MLQ5	EMP_PLAN_CONTRIB	20	171	194
MLQ6	PENSION_BENEFIT	16	118	137
MLQ7	PENSION_PROJCTION	15	225	243
MLQ8	EMP_PLAN_COVERAGE	12	123	138
MLQ9	EMP_PLAN_VESTING	9	69	81
MLQA	TS_FUND_ALLOCATION	16	211	230
MLQB	TS_FUND_ACCUM	17	191	211
MLQC	TS_FUND_ACTIVITY	15	111	129
MLQD	TS_FUND_TRANSFER	11	59	73
MLQE	DC_CONTRIBUTION	14	134	151
MLQF	TS_FUND_BALANCE_1	14	182	199
MLQG	TS_FUND_BALANCE_2	14	168	185

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLQH	TS_FUND_SHARE	11	116	130
MLQI	DB_PLAN_ACCUM	16	190	209
MLQJ	DB_ACCT_BALANCE	13	181	197
MLQK	DB_ACCT_ACTIVITY	8	71	82
MLQL	DC_PLAN_ACCUM	16	190	209
MLQM	DC_ACCT_ACTIVITY	14	110	127
MLQN	DC_ACCT_TRANSFER	9	57	69
MLQO	EMP_FLEX_CREDITS	17	191	211
MLQP	DC_ACCT_BALANCE_1	13	181	197
MLQQ	DC_ACCT_BALANCE_2	13	181	197
MLQR	AVG_DEFERRAL_PCT	13	184	200
MLQS	BENEFICIARY_PCT	21	226	250
MLQT	FSA_ACCT_BALANCE	14	166	183
MLQU	FSA_CLAIM	15	167	185
MLQV	HIGHLY_PAID_DEF_1	19	131	153
MLQW	HIGHLY_PAID_DEF_2	11	35	49
MLQX	FINAL_AVG_EARNINGS	9	93	105
MLQY	COBRA_QUALIFY_EVNT	15	96	114
MLQZ	J_S_BENEFIT_WAIVER	14	90	107
MLR0	SHARE_DISTRIBUTION	14	128	145
MLR1	SHARE_WITHDRAWAL	18	138	159
MLR2	SHARE_ACCT_BALANCE	11	115	129
MLR3	STOCK_CASH_BALANCE	14	128	145
MLR4	SAVINGS_BOND	9	51	63
MLR5	ALT_COMP_TOTALS	11	151	165
MLRA	EMP_ELIGIBILITY	10	57	70
MLRD	DISCIPLINE_ACTION	10	50	63
MLRJ	RELOCATION_1	13	200	216
MLRK	RELOCATION_2	13	200	216
MLRL	RELOCATION_3	21	209	233
MLRM	HOUSE_HUNTING_EXP	17	273	293
MLRN	MOVING_EXPENSE	16	251	270
MLRO	TEMP_LIVING_EXP	17	253	273
MLRP	SHIPPING_EXP	19	262	284
MLRQ	CLOSING_COST_EXP	17	236	256
MLRR	BRIDGE_LOAN	14	174	191

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLRS	POSITION_ASSIGNMT	9	103	115
MLRT	AUTH_TIME_OFF	14	228	245
MLRU	UNAUTH_TIME_OFF	8	96	107
MLT0	EMP_CLASS_REG	9	38	50
MLT1	EMP_TRAIN_REQ	8	32	43
MLT2	EMP_CLASS_RESULT	18	96	117
MLT3	EMP_COURSE_OBJ	25	84	112
MLT4	EMP_TRAIN_SALARY	9	55	67
MLT5	EMP_CLASS_COST	20	154	177
MLTB	ISSUED_BADGE	9	78	90
MLTS	SCHEDULE_ASSIGNMNT	9	80	92
MLVA	ABSENCE	15	99	117
MLVE	EEO_4_EXEMPTIONS	6	46	55
MLVF	EMPLOYEE_NAME			
MLVG	GRIEVANCE	13	97	113
MLVH	EMPLOYEE_ADDRESS			
MLWA	IMAGE_INFORMATION	8	100	111
MLWF	EMPLOYEE_CONTACT	10	106	119
MLYA	EMP_ROE_1	12	107	122
MLYB	EMP_ROE_2	13	108	124
MLYC	EMP_ROE_3	14	198	215
MLYD	EMP_ROE_4	10	122	135
MLYE	EMP_ROE_5	6	98	107
MLZ1	FORMAL_EDUCATION	13	163	179
MLZ2	TUITION_REIMBURSMT	18	250	271
MLZ3	EMP_TRAIN_COURSE	21	153	177
MLZ4	EMP_SKILL	15	73	91
MLZ5	APPL_INTERVIEW	10	82	95
MLZ6	PRIOR_EMPLOYMENT	11	110	124
MLZ7	PHYSICAL_EXAM	15	71	89
MLZ8	PHYSICAL_EXAM_RSLT	15	78	96
MLZ9	APPL_PRE_TRANSFER	18	140	161
MLZA	EMPLOYEE_1	16	118	137
MLZB	CITIZENSHIP	17	103	123
MLZC	EMPLOYMT_ACTIVITY	18	92	113
MLZD	JOB_ASSIGNMENT	11	103	117

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLZE	BONUS	12	94	109
MLZF	SALARY	19	250	272
MLZG	PERFORMANCE_RATING	17	123	143
MLZH	NON_MONETARY_PERQ	9	82	94
MLZI	ASSIGNED_PROPERTY	9	82	94
MLZJ	ASSIGNED_AUTO	12	119	134
MLZK	EXIT_INTERVIEW	9	103	115
MLZL	DRIVERS_LICENSE	10	75	88
MLZM	HEALTH_CONDITION	17	61	81
MLZN	CERTIFICATION	9	47	59
MLZO	PROFESSIONAL_ASSOC	7	44	54
MLZP	PLANNED_SALARY	17	176	196
MLZQ	SALARY_REVIEW	10	86	99
MLZR	EMP_LOCATION	15	85	103
MLZS	SCHEDULED_APPRSL	10	86	99
MLZT	MONETARY_PERQ	10	94	107
MP	PAY_PERIOD	7	89	99
TABLE 4				
TABLE 2 INDEXES				
TABLE 4 TOTAL				

Table 5

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
NEE	EMPLOYEE_LH	29	111	143
NEEA	EMPLOYEE_PAYMT_LH	18	200	221
NF	EMP_NAME_ADDR_LH	6	72	81
NG	EMP_LOCATION_LH	11	90	104
NH	LABOR_HIS_EARN_DED	7	86	96
NIDX	NIDX	6	204	213
NJ	LABOR_HIS_TAX_DED	13	203	219
NLG1	LABOR_DIST_SPLIT1	5	88	96
NLG2	LABOR_DIST_SPLIT2	5	88	96

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
NLG3	LABOR_DIST_SPLIT3	5	88	96
QEE	EMPLOYEE_MM	29	111	143
QEEA	EMPLOYEE_PAYMT_MM	18	200	221
QF	EMP_NAME_ADDR_MM	10	162	175
QG	EMP_LOCATION_MM	11	90	104
QH	EMP_EARN_DED_MM	29	385	417
QIDX	QIDX	6	204	213
QJ	EMP_TAX_DED_MM	53	831	887
TABLE 5				
TABLE 1 INDEXES				
TABLE 5 TOTAL				

Table 6

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
UDS1	NODE_CONTROL_TABLE	5	28	36
UDS2	MACHINE_PARAMETERS	3	6	12
UDS3	DISTRIB_ACCES_LOG	7	78	88
UDS4	DISTRIBUTION_RULES	5	23	31
URT01	REQ_BASIC_DETAILS	15	91	109
URT11	REQ_CAND_BASIC	12	70	85
URT12	REQ_CAND_BASIC_2	7	72	82
Y40FN	FIELD_NAMES	19	161	183
YPR0	POSITION_HEADER	10	18	31
YPR1	POSITION_CTL_BASIC	16	93	112
YPR2	POSITION_FROM_DATA	8	62	73
YPR3	POSITION_TO_DATA	8	62	73
YPR4	POSITION_NARRATIVE	5	75	83
YPR5	POSITION_DEPT	17	122	142
YPR6	POSITION_BUDGET_PC	12	144	159
YPR7	POSITION_ACTUAL	13	181	197
YPR8	POSITION_REQ	14	117	134
YPR9	POSITION_INCUMBENT	15	101	119

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YPRH	POSITION_CTRL_HDR	3	35	41
YPRS	POSITION_CTL_SKILL	15	63	81
YT	ACCRUAL_SELECTION	14	72	89
YT_A	COURSE_DEVP_COST	5	82	90
YT_AB	ABSENCE_EARN_CODE	11	74	88
YT_ARA	ACCRUAL_ROUTINE	19	269	291
YT_ARB	ACCRUAL_ROUTINE_B	11	211	225
YT_ARC	ACCRUAL_ROUTINE_C	8	145	156
YT_C_A	COORDINATOR	5	62	70
YT_C_B	COORDINATOR_B	9	62	74
YT_C_C	COORDINATOR_C	6	63	72
YT_C_D	COORDINATOR_D	11	60	74
YT_C_E	COORDINATOR_E	11	60	74
YT_C2A	CREW_ROTATION_08_A	28	83	114
YT_C2B	CREW_ROTATION_08_B	31	64	98
YT_C2C	CREW_ROTATION_08_C	11	24	38
YT_C3A	CREW_ROTATION_14_A	28	83	114
YT_C3B	CREW_ROTATION_14_B	31	64	98
YT_C3C	CREW_ROTATION_14_C	31	64	98
YT_C3D	CREW_ROTATION_14_D	26	54	83
YT_D_A	COURSE_OFFERING	8	74	85
YT_D_B	COURSE_OFFERING_B	23	149	175
YT_D_C	COURSE_OFFERING_C	20	74	97
YT_D_D	COURSE_OFFERING_D	21	119	143
YT_D_E	COURSE_OFFERING_E	17	104	124
YT_D_F	COURSE_OFFERING_F	7	73	83
YT_EC	TA_EARN_CODE	6	56	65
YT_N_A	COURSE_PROVIDER	4	66	73
YT_N_B	COURSE_PROVIDER_B	8	64	75
YT_N_C	COURSE_PROVIDER_C	4	54	61
YT_N_D	COURSE_PROVIDER_D	10	64	77
YT_N_E	COURSE_PROVIDER_E	10	64	77
YT_P	POLICY_ACTIVITY	27	462	492
YT_P_A	PROGRAM_SCHEDULE	15	62	80
YT_P_B	PROGRAM_SCHEDULE_B	15	62	80
YT_P_C	PROGRAM_SCHEDULE_C	15	62	80

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YT_P_D	PROGRAM_SCHEDULE_D	15	62	80
YT_P_E	PROGRAM_SCHEDULE_E	14	61	78
YT_P_F	PROGRAM_SCHEDULE_F	4	64	71
YT_PT	POLICY_TABLE	15	129	147
YT_R	COMPANY_XREF	3	50	56
YT_RP	ROSTER_QUERY_PARMS	6	84	93
YT_S	SCHEDULE_ACTIVITY	27	462	492
YT_S_A	CLASS_SCHEDULE	16	155	174
YT_S_B	CLASS_SCHEDULE_B	18	184	205
YT_S_C	CLASS_SCHEDULE_C	17	161	181
YT_S_D	CLASS_SCHEDULE_D	16	86	105
YT_S_E	CLASS_SCHEDULE_E	7	75	85
YT_SP	SHIFT_PREMIUM	22	158	183
YT_ST	SCHEDULE_TABLE	13	126	142
YT_T	TRAINING_REQUIRED	6	26	35
YT_X	CANCEL_COURSE_BOOK	18	124	145
YT_Y	CLASS_EVALUATION	19	88	110
YT_Z	COURSE_BOOKING	18	124	145
YT0A01	POSITION_BASIC	12	92	107
YT0A02	POSITION_BASIC_02	7	75	85
YT0A03	POSITION_EVAL	8	93	104
YT0A04	POSITION_EVAL_CRIT	8	78	89
YT0A05	POSITION_SKILLS	15	63	81
YT0A06	POSITION_MEMBERSHIP	7	73	83
YT0A07	POSITION_LICENSES	7	73	83
YT0A08	POSITION_EDUCATION	8	77	88
YT0A09	POSITION_NEXT_JOB	7	75	85
YT0A10	POSITION_DOC_REF	8	90	101
YT0A11	POSITION_REQ_EXP	8	74	85
YT0A12	POSITION_MISC_DATA	12	65	80
YT0A13	POSITION_REQ_TRAIN	7	75	85
YT0A50	POSITION_STATUS	8	50	61
YT0A51	POSITION_LOCATION	9	61	73
YT0A52	POSITION_FUND	11	110	124
YT0A53	POSITION_VEHICLE	10	95	108
YT0A54	POSITION_NEXT_REVW	8	78	89

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YT0A55	POSITION_FTE	9	127	139
YT0A56	POSITION_COMPLEMNT	8	105	116
YT0B01	ORG_UNIT_BASIC	11	83	97
YT0B02	ORG_UNIT_LVL_NAME	6	69	78
YT0B03	ORG_UNIT_FTE	9	127	139
YT0B10	ORG_UNIT_DOC_REF	8	90	101
YT0B99	ORG_UNIT_DEF_NAME	6	69	78
YT0D01	JOB_BASIC	11	91	105
YT0D02	JOB_BASIC_02	8	85	96
YT0D03	JOB_EVALUATION	8	93	104
YT0D04	JOB_EVAL_CRIT	8	78	89
YT0D05	JOB_SKILLS	8	82	93
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Phase 1: Methodology

Calculate the number of rows on a page

Assumptions:

- 2016 represents a 2K page.
- 100 average Cyborg row size

Therefore, $2016/100$ is the number of rows per page.

Calculate the number of data pages required

Number of rows/Number of rows per page

For the number of rows use the summary of rows from the RDBPGM3 output.

Double the number of 2K pages

This will represent the total megabytes needed for data.

Add 20% for the index overhead

The total of these four tasks represents the estimate for the database file. Remember that for SQL Server the number of megabytes for the database is entered and the log file is automatically allocated at 50% of that number.

Also be aware that the SQL Server fill factor specifies how full SQL Server should make each page. The amount of empty space on an index page is important because as an index page fills up, the system must take time to split the page to make room for additional rows. The number 2016 assumes 90% fill.

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CAS Error Messages

These are the error messages that may be written to the Windows NT event log by the Cyborg Application Server (CAS).

When a WIN32 error code is written to the event log, a brief explanation of the system call that produced the error and the context in which the call was made is provided.

Please refer to Microsoft's WIN32 SDK documentation for a more complete description of system calls.

The following messages may be displayed as a result of a failure to start a requested application, typically CBSVO or CYBIO. These messages will be displayed if either the CAS or the GUI application is incorrectly configured.

- **Service Error: Unknown Application Id** *application-id* [Errno: *error-code*]
- **Application** *application-id* **disabled!**
- **Application** [*application-id*] **Environment** [*environment-name*] **disabled!**
- **Service Error: Invalid definition entry** [Working Directory] *working-directory*
- **Service Error: Invalid definition entry** [Program Name] *program-name*

The following messages may be displayed as a result of a runtime error during a CAS session:

- **Invalid initial message type** "*message-class/message-type*"
- **Unsupported Version** *<message-version>*'
- **Unknown Message Type** *<message-type>*

Message	Condition
Connection has been forcibly closed by client	The client application has either specifically closed its end of the socket connection, or terminated before the CAS could return data.
Cyborg server disabled!	The CAS service has been disabled. The service can be re-enabled using the control panel applet.
Error: Application has shutdown! - Exit Code = <i>exit-code</i>	A server application has unexpectedly terminated. Exit-code is the value the server application returned operating system on exit.
Invalid Password	The password for the 'Cyborg' user is invalid.
Invalid Username/Password	An invalid user name/password has either been supplied by the client application or specified in the control panel applet.
Server Failed: Bad Poll Event notified! [<i>Error-code</i>]	The 'WaitForMultipleObjects' system call has failed. Error-code contains the WIN32 error code.
Server Failed: Creating pipe (1) [<i>Errno:error-code</i>]	An error occurred while attempting to create a named pipe to facilitate communication with the server application. Error-code is the return value of the WIN32 'CreateNamedPipe' system call.

Message	Condition
Server Failed: Creating pipe (2) [Errno:error-code]	An error occurred while attempting to open a named pipe for write access. Error-code is the return values of the WIN32 'CreateFile' system call.
Server Failed: Execute application process [Errno:error-code]	An error has occurred while attempting to launch a server application. Error-code is the return value of either the WIN32 'CreateProcess' or 'CreateProcessAsUser' system calls.
Server Failed: Reading pipe message (1) [Errno:error-code]	An error has occurred while reading data from a server application's named pipe. Error-code is the return value of the WIN32 'GetOverlappedResult' system call.
Server Failed: Reading pipe message (2) [Errno:error-code]	An error has occurred while reading the output of a server application's named pipe. Error-code is the return value of the WIN32 'ReadFile' system call.
Server Failed: Reading socket message (1) [Errno:error-code]	An error has occurred while reading data from the client application's socket. Error-code is the return value of the WIN32 'GetOverlappedResult' system call.
Server Failed: Reading socket message (2) [Errno:error-code]	An error has occurred while reading data from the client application's socket. Error-code is the return value of the WIN32 'ReadFile' system call.
Server Failed: Writing pipe message [Errno:error-code]	An error has occurred while writing data to a server application. Error-code is the return value of the WIN32 'WriteFile' system call.
Server Failed: Writing socket message [Errno:error-code]	An error has occurred while writing data to the client application's socket. Error-code is the return value of the WIN32 'WriteFile' system call.

The following messages may be displayed as a result of a failure to load the Windows sockets dynamic link library.

Error error-code on Socket DLL wsock32.dll Load – error-description

Error Code	Error Description
0	Insufficient memory
2	File not found
3	Path not found
5	Sharing/Network error
6	Separate data segment required
8	Out of memory
10	Invalid Windows version

The following is a list of possible communications-related error codes along with their extended explanations. Errors are listed in alphabetical order by error symbolic name.

WSAEACCES

(10013)

Permission denied.

An attempt was made to access a socket in a way forbidden by its access permissions. An example is using a broadcast address for `sendto` without broadcast permission being set using `setsockopt(SO_BROADCAST)`.

Another possible reason for the WSAEACCES error is that when the **bind** function is called (on Windows NT 4 SP4 or later), another application, service, or kernel mode driver is bound to the same address with exclusive access. Such exclusive access is a new feature of Windows NT 4 SP4 and later, and is implemented by using the `SO_EXCLUSIVEADDRUSE` option.

WSAEADDRINUSE

(10048)

Address already in use.

Only one usage of each socket address (protocol/IP address/port) is normally permitted. This error occurs if an application attempts to **bind** a socket to an IP address/port that has already been used for an existing socket, or a socket that wasn't closed properly, or one that is still in the process of closing. For server applications that need to bind multiple sockets to the same port number, consider using **setsockopt** (`SO_REUSEADDR`). Client applications usually need not call `bind` at all - **connect** chooses an unused port automatically. When `bind` is called with a wildcard address (involving `ADDR_ANY`), a WSAEADDRINUSE error could be delayed until the specific address is committed. This could happen with a call to another function later, including `connect`, `listen`, `WSAConnect` or `WSAJoinLeaf`.

WSAEADDRNOTAVAIL

(10049)

Cannot assign requested address.

The requested address is not valid in its context. This normally results from an attempt to **bind** to an address that is not valid for the local machine. This can also result from **connect**, **sendto**, **WSAConnect**, **WSAJoinLeaf**, or **WSASendTo** when the remote address or port is not valid for a remote machine (for example, address or port 0).

WSAEAFNOSUPPORT

(10047)

Address family not supported by protocol family.

An address incompatible with the requested protocol was used. All sockets are created with an associated address family (that is, `AF_INET` for Internet Protocols) and a generic protocol type (that is, `SOCK_STREAM`). This error is returned if an incorrect protocol is explicitly requested in the **socket** call, or if an address of the wrong family is used for a socket, for example, in **sendto**.

WSAEALREADY

(10037)

Operation already in progress.

An operation was attempted on a nonblocking socket with an operation already in progress - that is, calling **connect** a second time on a nonblocking socket that is already connecting, or canceling an asynchronous request (WSAAsyncGetXbyY) that has already been canceled or completed.

WSAECONNABORTED

(10053)

Software caused connection abort.

An established connection was aborted by the software in your host machine, possibly due to a data transmission time-out or protocol error.

WSAECONNREFUSED

(10061)

Connection refused.

No connection could be made because the target machine actively refused it. This usually results from trying to connect to a service that is inactive on the foreign host—that is, one with no server application running.

WSAECONNRESET

(10054)

Connection reset by peer.

A existing connection was forcibly closed by the remote host. This normally results if the peer application on the remote host is suddenly stopped, the host is rebooted, or the remote host used a hard close (see **setsockopt** for more information on the SO_LINGER option on the remote socket.) This error may also result if a connection was broken due to keepalive activity detecting a failure while one or more operations are in progress. Operations that were in progress fail with WSAENETRESET. Subsequent operations fail with WSAECONNRESET.

WSAEDESTADDRREQ

(10039)

Destination address required.

A required address was omitted from an operation on a socket. For example, this error is returned if **sendto** is called with the remote address of ADDR_ANY.

WSAEFAULT

(10014)

Bad address.

The system detected an invalid pointer address in attempting to use a pointer argument of a call. This error occurs if an application passes an invalid pointer value, or if the length of the buffer is too small. For instance, if the length of an argument which is a SOCKADDR structure is smaller than the sizeof(SOCKADDR).

WSAEHOSTDOWN

(10064)

Host is down.

A socket operation failed because the destination host is down. A socket operation encountered a dead host. Networking activity on the local host has not been initiated. These conditions are more likely to be indicated by the error WSAETIMEDOUT.

WSAEHOSTUNREACH

(10065)

No route to host.

A socket operation was attempted to an unreachable host. See WSAENETUNREACH

WSAEINPROGRESS

(10036)

Operation now in progress.

A blocking operation is currently executing. Windows Sockets only allows a single blocking operation to be outstanding per task (or thread), and if any other function call is made (whether or not it references that or any other socket) the function fails with the WSAEINPROGRESS error.

WSAEINTR

(10004)

Interrupted function call.

A blocking operation was interrupted by a call to **WSACancelBlockingCall**.

WSAEINVAL

(10022)

Invalid argument.

Some invalid argument was supplied (for example, specifying an invalid level to the **setsockopt** function). In some instances, it also refers to the current state of the socket – for instance, calling **accept** on a socket that is not listening.

WSAEISCONN

(10056)

Socket is already connected.

A connect request was made on an already connected socket. Some implementations also return this error if **sendto** is called on a connected SOCK_DGRAM socket (For

SOCK_STREAM sockets, the *to* parameter in **sendto** is ignored), although other implementations treat this as a legal occurrence.

WSAEMFILE

(10024)

Too many open files.

Too many open sockets. Each implementation may have a maximum number of socket handles available, either globally, per process, or per thread.

WSAEMSGSIZE

(10040)

Message too long.

A message sent on a datagram socket was larger than the internal message buffer or some other network limit, or the buffer used to receive a datagram was smaller than the datagram itself.

WSAENETDOWN

(10050)

Network is down.

A socket operation encountered a dead network. This could indicate a serious failure of the network system (that is, the protocol stack that the Windows Sockets .dll runs over), the network interface, or the local network itself.

WSAENETRESET

(10052)

Network dropped connection on reset.

The connection has been broken due to keep-alive activity detecting a failure while the operation was in progress. It can also be returned by **setsockopt** if an attempt is made to set SO_KEEPALIVE on a connection that has already failed.

WSAENETUNREACH

(10051)

Network is unreachable.

A socket operation was attempted to an unreachable network. This usually means the local software knows no route to reach the remote host.

WSAENOBUFS

(10055)

No buffer space available.

An operation on a socket could not be performed because the system lacked sufficient buffer space or because a queue was full.

WSAENOPROTOPT

(10042)

Bad protocol option.

An unknown, invalid or unsupported option or level was specified in a **getsockopt** or **setsockopt** call.

WSAENOTCONN

(10057)

Socket is not connected.

A request to send or receive data was disallowed because the socket is not connected and (when sending on a datagram socket using **sendto**) no address was supplied. Any other type of operation might also return this error—for example, **setsockopt** setting `SO_KEEPALIVE` if the connection has been reset.

WSAENOTSOCK

(10038)

Socket operation on non-socket.

An operation was attempted on something that is not a socket. Either the socket handle parameter did not reference a valid socket, or for **select**, a member of an `fd_set` was not valid.

WSAEOPNOTSUPP

(10045)

Operation not supported.

The attempted operation is not supported for the type of object referenced. Usually this occurs when a socket descriptor to a socket that cannot support this operation, for example, trying to accept a connection on a datagram socket.

WSAEPFNOSUPPORT

(10046)

Protocol family not supported.

The protocol family has not been configured into the system or no implementation for it exists. Has a slightly different meaning to `WSAEAFNOSUPPORT`, but is interchangeable in most cases, and all Windows Sockets functions that return one of these specify `WSAEAFNOSUPPORT`.

WSAEPROCLIM

(10067)

Too many processes.

A Windows Sockets implementation may have a limit on the number of applications that may use it simultaneously. **WSAStartup** may fail with this error if the limit has been reached.

WSAEPROTONOSUPPORT

(10043)

Protocol not supported.

The requested protocol has not been configured into the system, or no implementation for it exists. For example, a **socket** call requests a SOCK_DGRAM socket, but specifies a stream protocol.

WSAEPROTOTYPE

(10041)

Protocol wrong type for socket.

A protocol was specified in the **socket** function call that does not support the semantics of the socket type requested. For example, the ARPA Internet UDP protocol cannot be specified with a socket type of SOCK_STREAM.

WSAESHUTDOWN

(10058)

Cannot send after socket shutdown.

A request to send or receive data was disallowed because the socket had already been shut down in that direction with a previous **shutdown** call. By calling shutdown a partial close of a socket is requested, which is a signal that sending or receiving or both have been discontinued.

WSAESOCKTNOSUPPORT

(10044)

Socket type not supported.

The support for the specified socket type does not exist in this address family. For example, the optional type SOCK_RAW might be selected in a **socket** call, and the implementation does not support SOCK_RAW sockets at all.

WSAETIMEDOUT

(10060)

Connection timed out.

A connection attempt failed because the connected party did not properly respond after a period of time, or the established connection failed because the connected host has failed to respond.

WSATYPE_NOT_FOUND

(10109)

Class type not found.

The specified class was not found.

WSAEWOULDBLOCK

(10035)

Resource temporarily unavailable.

This error is returned from operations on nonblocking sockets that cannot be completed immediately, for example **recv** when no data is queued to be read from the socket. It is a non-fatal error, and the operation should be retried later. It is normal for **WSAEWOULDBLOCK** to be reported as the result from calling **connect** on a nonblocking **SOCK_STREAM** socket, since some time must elapse for the connection to be established.

WSAHOST_NOT_FOUND

(11001)

Host not found.

No such host is known. The name is not an official host name or alias, or it cannot be found in the database(s) being queried. This error may also be returned for protocol and service queries, and means the specified name could not be found in the relevant database.

WSA_INVALID_HANDLE

(OS dependent)

Specified event object handle is invalid.

An application attempts to use an event object, but the specified handle is not valid.

WSA_INVALID_PARAMETER

(OS dependent)

One or more parameters are invalid.

An application used a Windows Sockets function which directly maps to a Win32 function. The Win32 function is indicating a problem with one or more parameters.

WSA_INVALIDPROC

(OS dependent)

Invalid procedure table from service provider.

A service provider returned a bogus procedure table to **WS2_32.dll**. (Usually caused by one or more of the function pointers being **NULL**.)

WSA_INVALID_PROVIDER

(OS dependent)

Invalid service provider version number.

A service provider returned a version number other than 2.0.

WSA_IO_INCOMPLETE

(OS dependent)

Overlapped I/O event object not in signaled state.

The application has tried to determine the status of an overlapped operation which is not yet completed. Applications that use `WSAGetOverlappedResult` (with the *Wait* flag set to `FALSE`) in a polling mode to determine when an overlapped operation has completed get this error code until the operation is complete.

WSA_IO_PENDING

(OS dependent)

Overlapped operations will complete later.

The application has initiated an overlapped operation which cannot be completed immediately. A completion indication will be given at a later time when the operation has been completed.

WSA_NOT_ENOUGH_MEMORY

(OS dependent)

Insufficient memory available.

An application used a Windows Sockets function which directly maps to a Win32 function. The Win32 function is indicating a lack of required memory resources.

WSANOTINITIALISED

(10093)

Successful `WSAStartup` not yet performed.

Either the application has not called `WSAStartup` or `WSAStartup` failed. The application may be accessing a socket which the current active task does not own (that is, trying to share a socket between tasks), or `WSACleanup` has been called too many times.

WSANO_DATA

(11004)

Valid name, no data record of requested type.

The requested name is valid and was found in the database, but it does not have the correct associated data being resolved for. The usual example for this is a host name -> address translation attempt (using `gethostbyname` or `WSAAsyncGetHostByName`) which uses the DNS (Domain Name Server), and an MX record is returned but no A record – indicating the host itself exists, but is not directly reachable.

WSANO_RECOVERY

(11003)

This is a non-recoverable error.

This indicates some sort of non-recoverable error occurred during a database lookup. This may be because the database files (for example, BSD-compatible HOSTS, SERVICES, or PROTOCOLS files) could not be found, or a DNS request was returned by the server with a severe error.

WSAPROVIDERFAILEDINIT

(OS dependent)

Unable to initialize a service provider.

Either a service provider's DLL could not be loaded (LoadLibrary failed) or the provider's WSPStartup/NSPStartup function failed.

WSASYSSCALLFAILURE

(OS dependent)

System call failure.

Returned when a system call that should never fail does. For example, if a call to WaitForMultipleObjects fails or one of the registry functions fails trying to manipulate the protocol/name space catalogs.

WSASYSNOTREADY

(10091)

Network subsystem is unavailable.

This error is returned by **WSAStartup** if the Windows Sockets implementation cannot function at this time because the underlying system it uses to provide network services is currently unavailable. Users should check:

- That the appropriate Windows Sockets DLL file is in the current path.
- That they are not trying to use more than one Windows Sockets implementation simultaneously. If there is more than one WINSOCK DLL on your system, be sure the first one in the path is appropriate for the network subsystem currently loaded.
- The Windows Sockets implementation documentation to be sure all necessary components are currently installed and configured correctly.

WSATRY_AGAIN

(11002)

Non-authoritative host not found.

This is usually a temporary error during host name resolution and means that the local server did not receive a response from an authoritative server. A retry at some time later may be successful.

WSAVERNOTSUPPORTED

(10092)

WINSOCK.DLL version out of range.

The current Windows Sockets implementation does not support the Windows Sockets specification version requested by the application. Check that no old Windows Sockets .dll files are being accessed.

WSAEDISCON

(10094)

Graceful shutdown in progress.

Returned by **WSARecv** and **WSARecvFrom** to indicate that the remote party has initiated a graceful shutdown sequence.

WSA_OPERATION_ABORTED

(OS dependent)

Overlapped operation aborted.

An overlapped operation was canceled due to the closure of the socket, or the execution of the SIO_FLUSH command in **WSAIoctl**.

eCyborg

Installing and Configuring Interactive Workforce 5.0 (UNIX)

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CHAPTER 1

Introduction

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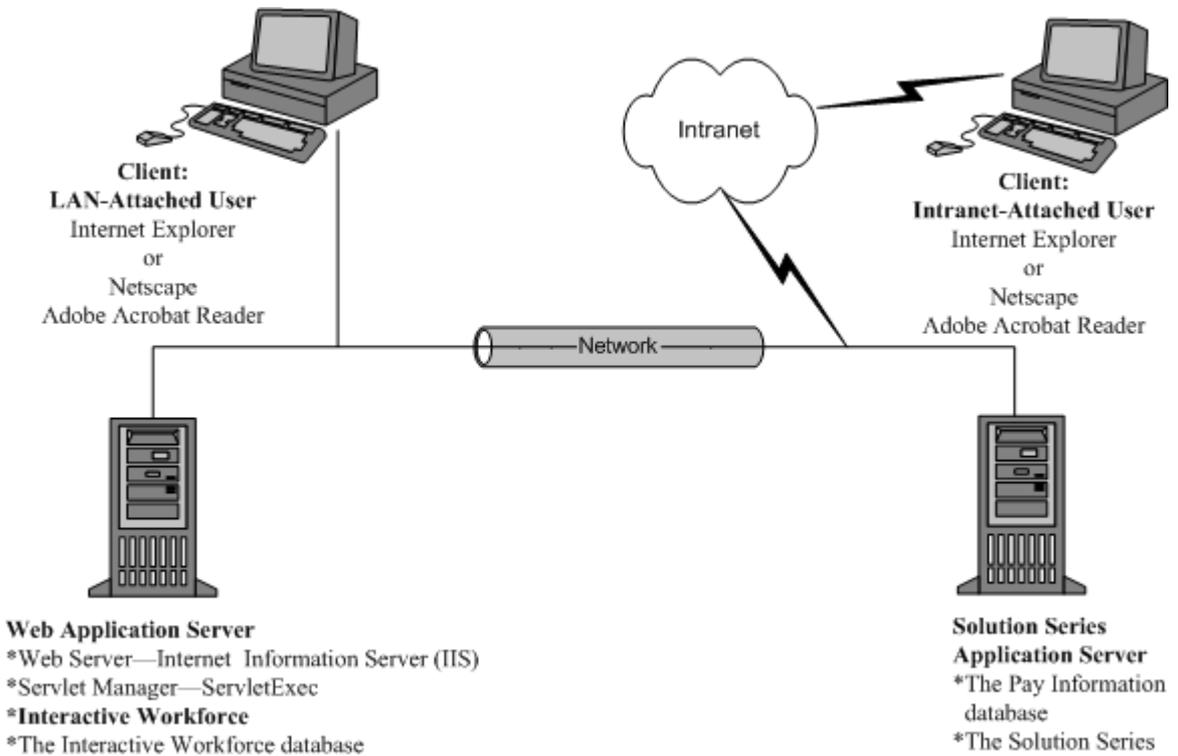
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Introduction

This document provides detailed installation instructions for Interactive Workforce.

Server configuration

Interactive Workforce on UNIX Operating Systems is installed as shown in the illustration below. the Application Server is on the UNIX platform, and runs The Solution Series as well as the required software components of Interactive Workforce. the Web Server is on the Windows 2000 platform, and runs all the web-related software components of the system.



Who should read this Installation Guide?

This Installation Guide is intended for IT Specialists, System Administrators, and Installers who already have a working knowledge of *The Solution Series*.

Important: Please ensure you review 'Chapter 2: Preparation and Prerequisite Software' prior to the installation.

Read this chapter	For
1. Introduction	An overview and description of the prerequisites required for successful installation.
2. Preparation and Prerequisite Software	The first phase of the process in which all software prerequisites are verified and/or configured prior to the installation of Interactive Workforce.
3. Installing <i>Interactive Workforce</i>	A detailed explanation of the tasks and steps performed to install Interactive Workforce.
A. Installation Checklists	A step-by-step checklist of the installation process.
B. Multiple Environments on the Same Servers	A detailed explanation of creating multiple environments on the same server(s) from the initial installation.
C. Implementation of SSL Certification	A detailed explanation of the tasks and steps to implement Secure Socket Layers for Interactive Workforce.

Prerequisites

This Installation Guide will be most beneficial if you are familiar with the terminology used throughout. You should be familiar with The Solution Series and UNIX and ORACLE Database Server concepts. Other prerequisites are detailed below.

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

The Solution Series Application Server

Hardware Prerequisites

The Solution Series Application Server requires the following hardware specifications for installing Interactive Workforce components:

Operating System	HP-UX 11 -or- Solaris 2.6 -or- AIX 4.3.3
RAM	512 MB RAM (recommended) in addition to operating system requirements
Disk space	2.6 GB disk space (based on a company of 5,000 employees retaining one year of pay history) in addition to the operating system requirements
Media access	Access to a CD-ROM drive (either locally or on a network)

Prerequisite Software

The Solution Series Application Server requires the following software:

HP-UX 11 -or- Solaris 2.6 -or- AIX 4.3.3
The Solution Series 5.0
Oracle 8i
Object Cobol Developer Suite 4.1.x with Object Pro Cobol v8.1

The Web Application Server

Hardware Requirements

The Web Application Server requires the following:

Operating system	Microsoft Windows 2000, Service Pack 2
RAM	1 GB
Disk space	500 MB
Processor	800 MHz dual
Media access	Access to CD-ROM drive (locally or on a network)

Software Requirements

Note: Cyborg supports a Windows 2000 server with SQL Server 2000 database management software OR a Windows 2000 server with SQL 2000 database management software.

Operating System	Microsoft Windows 2000 (Service Pack 2)
Database Server	SQL 2000
Web Server	Internet Information Server (IIS) 5.0
Servlet Engine	ServletExec 4.1.1 (Service Pack 7)*
Java Development Kit	Java Development Kit (JDK) 1.3.1* with Java Cryptology Extension (JCE) 1.2.1

*Supplied with Interactive Workforce.

Interactive Workforce Client Prerequisites

Hardware Requirements

The Interactive Workforce client requires the following:

Operating system	Windows 95, Windows 98, or Windows 2000 Workstation
RAM	128 MB RAM in addition to operating system requirements
Processor	Intel Pentium 500 or higher (recommended)
Monitor	Monitor with SVGA (1024x768) screen resolution, 16-bit (High Color) color resolution

Client (Windows 95, 98, 2000, NT)

The Client requires the following software. Place a checkmark on the table below for each client:

Windows 95/98/2000/NT
Microsoft Internet Explorer v6.0 or higher -or- Netscape v6.2.1 or higher
Adobe Acrobat Reader 5.0

Delivered Server Software

Interactive Workforce delivers the following:

Recommended Server Configuration

	Web Application Server	The Solution Series Application Server
ServletExec v4.1.1	*	
Orbix v3.3.3	*	
OrbixWeb v3.2	*	
Sun Java Development Kit v1.3.1	*	
STAPI	*	
The Interactive Workforce database	*	
The Pay Information database		*
Interactive Workforce	*	

Multiple Environments

Interactive Workforce can support multiple environments. They are used in moving from an initial installation to full production as part of the implementation process. There are two methods of running Multiple Environments:

- Multiple environments on separate servers
- Multiple environments on the same servers

For multiple environments on separate servers, install the software according to the directions in Section 3: Installing the Two-Server Configuration, or Section 4: Installing the Single-Server Configuration (depending on the desired configuration).

For multiple environments on the same servers, follow the instructions in Appendix B: Multiple Environments on the Same Servers. These instructions are intended to maximize the use of your hardware by creating all the environments on the same machine(s).

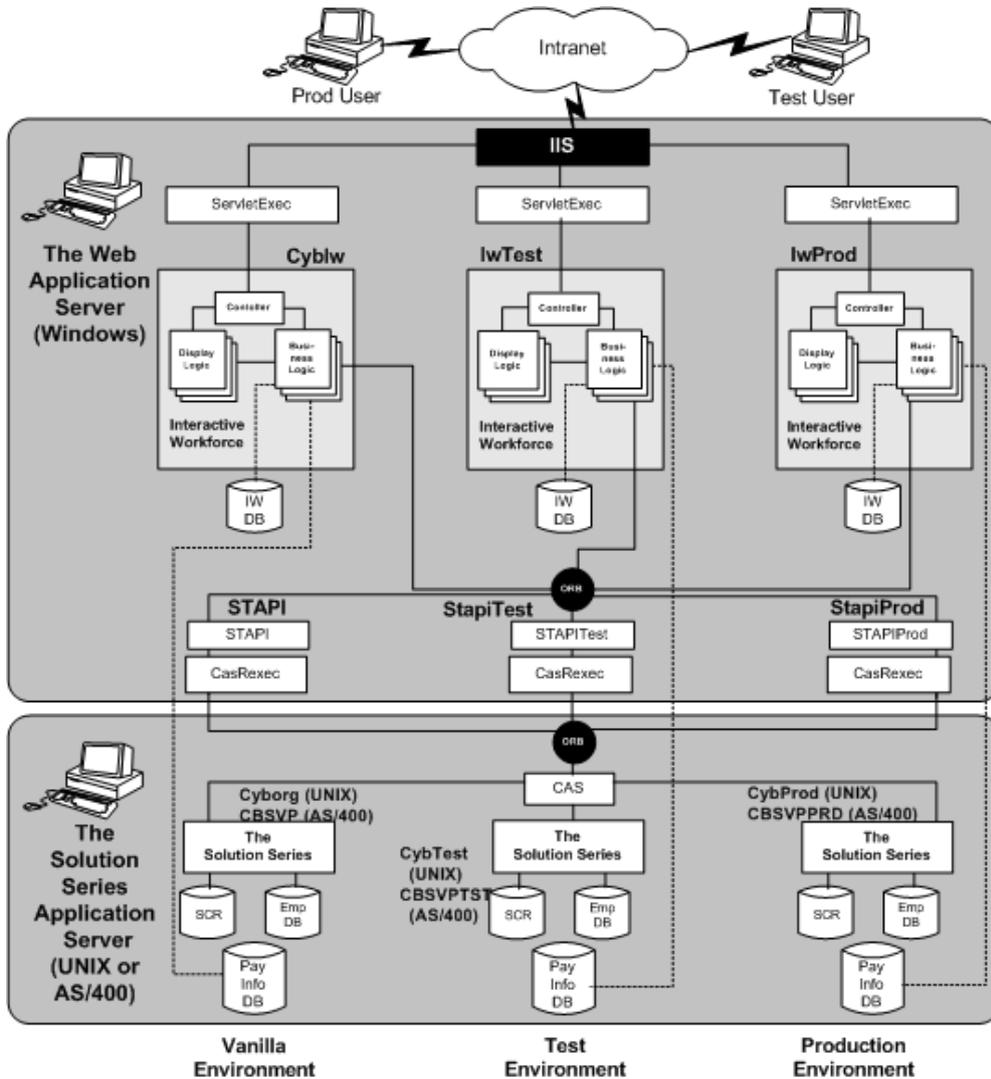
Which you choose depends on your available hardware and the level of risk you perceive by combining environments. Experience has demonstrated that the latter risk level is low, but you may want your staff to become familiar with the custom first. An installation of The Solution Series can support multiple environments on the same server configuration. These separate environments are used for parallel development and testing outside of your production environment. Multiple environments may also be used to support multiple production systems, for example, each supports a different organization within a company.

Multiple environments on the same servers

Multiple environments can also be installed on the same computer setup, as shown in the illustration below. To achieve this setup requires the copying and renaming of installed default files and modifying them for the new environment.



Refer to Appendix B: Multiple Environments on the Same Servers for more information.



Overview of the installation process

Three environments may be configured during the installation of Interactive Workforce. The first Interactive Workforce environment will be configured against the initial installation of The Solution Series. Once installed this environment may be copied to create a test and/or Production environment that may be pointed to a copy of your Test and/or Production environment of The Solution Series system.

Installing the system

The following phases and steps need to be completed to successfully install a Two-Server Configuration of Interactive Workforce:

- Preparation Phase: Preparation and prerequisite software
- Phase 1: Install the Web Server
- Phase 2: Install the Application Server
- Phase 3: Create and Populate the Pay Information database on the Application Server
- Phase 4: Create and Populate the Interactive Workforce database on the Web Server
- Phase 5: Test the installation

Phases of the installation

This section gives a general description of each phase of the installation.

Preparation and prerequisite software

Before starting the installation it is imperative that you verify that all prerequisites exist and have been configured correctly. This installation guide provides detailed steps that enable the installer to verify that the system is configured and ready for installation of Interactive Workforce. Included in these steps is a configuration worksheet designed to help the installer keep track of important information such as user names, passwords, and directories. Certain provided prerequisite software is also installed in this phase.

Install the Web Server

The components of Interactive Workforce that interface with the Intranet are installed on a separate computer called the Web Server. During this phase of the installation the installer will use the media to install all components of the Web Server. All software is installed on the Web Server, but UNIX files are copied over to the Application Server.

Install the Application Server

The components of Interactive Workforce which interface directly with The Solution Series are installed on a separate computer called the Application Server.

The UNIX files are installed on the Web Server directly from the CD, then they must be copied over to the Application Server. Once copied, a script is run to extract and create all the required programs and files.

Create and Populate the Pay Information database on the Application Server

During this phase of the installation, the installer will execute the Pay Information database creation script to create the Pay Information tables. Once the database has been created, you must use the Oracle Client ODBC interface to enable access to the Pay Information database.

Create and Populate the Interactive Workforce database

During this phase of the installation the installer will execute the Interactive Workforce database creation script to create the Interactive Workforce tables. Once the tables exist, the installer will use the ODBC interface to enable access to both the Interactive Workforce and Pay Information databases.

Test the installation

After completing the installation of the servers and databases, the installer accesses Interactive Workforce and uses the administration tool to perform the tasks necessary to test the install. Once the initial administration tasks are completed, users will be loaded into the system, and the installer will access the system as a user to verify that the user data exists.

Installing the Test and Production environments

The remaining steps of the installation of the Test and Production environments consist of copying certain components of the initial environment, then reconfiguring them.



Refer to Appendix B: Multiple Environments on the Same Servers for detailed step-by-step instructions.

Please note that it may not be immediately possible to install the Test and Production environments if you have customized any programs within The Solution Series with which Interactive Workforce communicates. Analysis of your MAINTO file will help you determine if your customizations will affect the Interactive Workforce installation.

Implementation of SSL Certificate

This is an optional step. The Secure Sockets Layer (SSL) is a protocol that provides secure communication between web browsers and web servers. This feature enables Interactive Workforce to encrypt data that is transmitted over your intranet.

Cyborg does not support SSL but provides a Certificate that you can administer yourself. If you wish to implement this you can. Alternatively Interactive Workforce will work with any SSL certificate from a third-party.



Refer to the appendix on Implementation of SSL Certification for more details on SSL Certificates.

How to get additional help

If you cannot find the answers to your questions in this manual, the following resource is available:

Contact	For
Customer Support	Answers to specific questions and general advice on training

Training is available on the subject covered in this manual and many related subjects. Please visit our web site www.Cyborg.com for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

CHAPTER 2

Preparation and Prerequisite Software

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Introduction

This section provides detailed instructions for verifying that all system prerequisites have been installed and configured properly prior to the installation of Interactive Workforce.

Deliverables

You will receive the following installation deliverables:

1	CD-ROM labeled 'Interactive Workforce 5.0'
1	Installing and Configuring eCyborg Interactive Workforce 5.0 (UNIX) (this manual)

Pre installation Requirements

Before starting the installation, be sure to verify that each of the servers is able to connect to the other over the network. Also, make sure that all prerequisite software has been installed and configured for any of the environments that are going to be installed. Verifying the existence and correct version of all prerequisite software will enable the Interactive Workforce installation to run seamlessly and without errors. These steps should be completed in preparation for the installer's visit.

Note: If you previously installed The ESS Solution, do not install Interactive Workforce on the same Web Server. The new version of ServletExec installed with Interactive Workforce cannot co-exist on the same Web Server as the previous version of ServletExec.

Verify the Application Server Prerequisites

The following tests should be completed to verify that the pre-installation requirements are installed and working.

Verify network connection

Ensure that the Solution Series Application machine is able to access the Web Server over the network by using the 'ping' command. From the command line enter the command 'ping' followed by a space and the server name of the Web Server:

```
ping servername
```

Alternately, you can use 'ping' followed by the IP Address of the Web Server, for example:

```
ping 10.64.2.35
```

If the servers connect, the response should appear similar to the example shown here:

```
The Solution Series_App_servername $ ping 10.64.2.35
PING cybrelmgmt1.cyborg.com: 64 byte packets
64 bytes from 10.64.2.35: icmp_seq=0. time=1. ms
64 bytes from 10.64.2.35: icmp_seq=1. time=0. ms
```

Note: When verifying the network connection, you must also make sure that the Web Server has been defined in the hosts file of the Application Server.

Verify UNIX version

For UNIX systems, you can verify the UNIX version by using the following command:

```
/usr/bin/uname -sr
```

Verify Oracle version

Verify the Oracle version by using the following command:

```
echo $ORACLE_HOME
```

The output should appear as in the example shown here:

```
The Solution Series_App_servername $ echo $ORACLE_HOME
/oral/app/oracle/product/8.1.6
```

Verify the Web Server Prerequisites

The following tests should be completed to verify that the pre-installation requirements are installed and working.

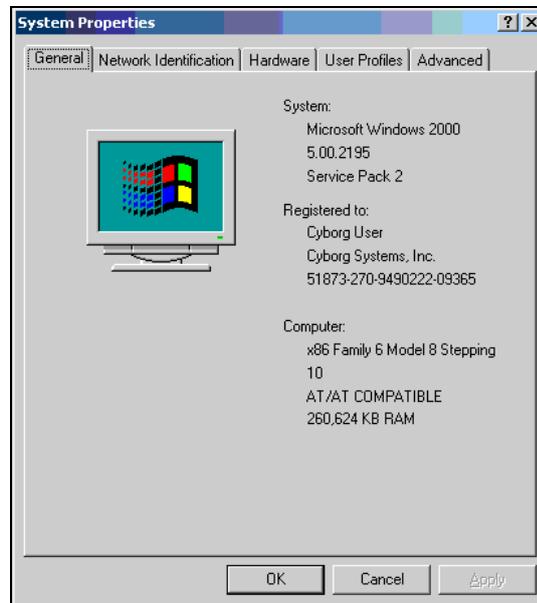
Verify network connection

Ensure that the Web Server machine is able to access the Application Server over the network by using the 'ping' command. From the command line enter the command 'ping' followed by a space and the server name of the Application Server.

```
ping servername
```

Verify Service Pack 2 for Windows 2000

On the Web Application and the Solution Series Application Servers access Windows 2000 to verify the service pack version applied to your system. From your desktop, right click the icon for My Computer, and select Properties. Be sure the General tab is selected. Windows displays the following screen showing the system information.



Verify Microsoft SQL

On the Web Application and the Solution Series Application Servers, access SQL Server 2000 Query Analyzer and verify the software. To begin the process enter the following commands:

Start ► Programs ► Microsoft SQL Server ► Query Analyzer

You will be prompted for the system administrator's username and password to access the system. At the prompt, enter username and password then click OK to connect.

Note: You may have to verify this username and password with the system administrator in case the default SQL Server username and password were changed. Refer to the configuration worksheet for the username and password.

Verify Microsoft SQL Server Character Sort Order

On the Web Application and the Solution Series Application Servers access SQL Sever Query Analyzer and verify the character sort order. To begin the process enter the following commands:

Start ► Programs ► Microsoft SQL Server ► Query Analyzer

Enter the command: sp_helpsort

The output at the bottom of the screen will enable you to verify that the system is set up as case insensitive. In SQL, Server object names can be case-sensitive depending on the character sort order chosen during installation of the system. Among the case-sensitive choices are 'Binary Order' and 'Dictionary order, case-sensitive'. Your system may offer other choices. Be sure you choose a sort order that is not case sensitive. Interactive Workforce will not work properly with a case-sensitive SQL server installation.

Note: SQL Server 2000 must be installed so the sort order of object names is case-insensitive for Interactive Workforce to work as documented.

Verify Microsoft Internet Explorer or Netscape Communicator versions

On the Web Application and the Solution Series Application Servers access your browser to verify the existing version. From the main menu select the following options:

Help ► About Internet Explorer

OR

Help ► About Communicator

Make sure that the correct version of your browser is installed and configured or you will not be able to access Interactive Workforce at the end of the installation. Currently supported are the following versions:

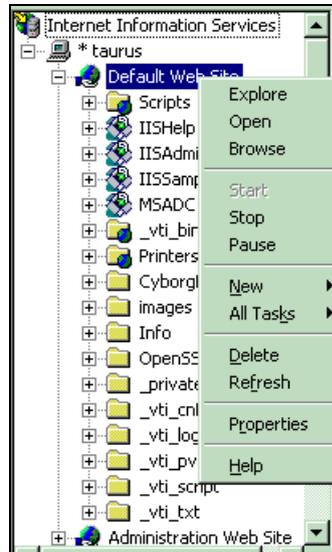
- Internet Explorer 6.0 or higher
- Netscape 5.2.1 or higher

Verify IIS Web Server V5.0 for Windows 2000

On the Web Server, verify that IIS V5.0 is installed on your system by entering the following commands:

Start ► Settings ► Control Panel ► Administrative Tools ► Internet Service Manager

Double click on Internet Service Manager; right mouse click on Default Web Site to ensure IIS is running. If the start option is greyed out, IIS is running.



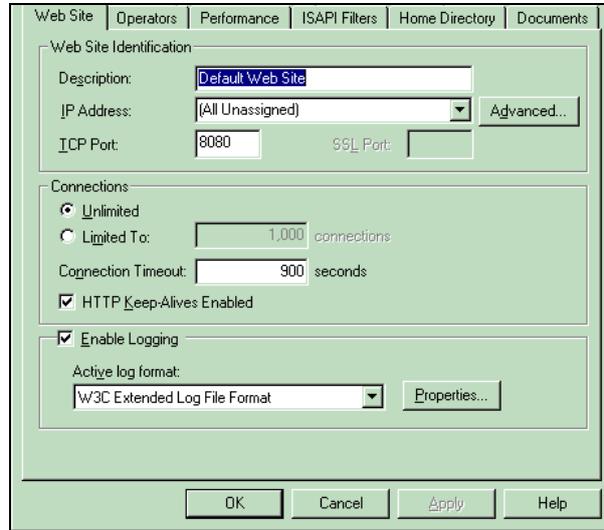
The default port for Internet Service Manager (IIS) is port 80. If IIS is not running, please check to see if port 80 is already in use. Use the following path

`\\winnt\system32\drivers\etc\services` file

to view the current port allocation. If port 80 is already in use, please choose another port for IIS by accessing the default site properties file:

Start ► Settings ► Control Panel ► Administrative Tools ► Internet Service Manager

Double click on Internet Service Manager; right mouse click on Default Web Site. Choose properties, and update the TCP port.



Verify version of ODBC

On the Web Server access the ODBC Data Application to verify the correct version. Select the System DSN tab on the ODBC Data Source Administrator dialog and click the Add button.

Start ► Settings ► Control Panel ► Administrative Tools ► Data Sources (ODBC) ► System DSN

The dialog shows the ODBC drivers and should look similar to the following. Use the horizontal slide bar to view the SQL Server and Client Access version. The following chart shows the ODBC drivers for each platform.

	Win2000	UNIX	OS390 V2R9	AS400 V5R1
Data Server including ODBC Driver	SQL 2000 Oracle 8i (8.1.7)	Oracle 8i (8.1.7)	DB2 for OS390 6.1	DB2 for AS400 V4R1

Verify the Client Prerequisites

Access the servers

Ensure that the client machine is able to access the Web Server and the Solution Series Application Server over the network by using the 'ping' command. From the command line enter the command 'ping' followed by a space and the name of the server.

```
C:\ping servername
```

Shared .dll or .ocx files

Based on your employees' individual client workstation setups, shared .dll or .ocx files that the Cyborg product uses and that are non-distributable Microsoft shared system files may be missing. If this occurs, your IT staff must locate and download (usually from the Microsoft website) the required file for inclusion on your PCs.

Verify Microsoft Internet Explorer OR Netscape Communicator versions

On the client access your browser to verify the existing version. From the main menu select the following options:

Help ► About Internet Explorer

OR

Help ► About Communicator

Make sure that the correct version of your browser is installed and configured or you will not be able to access Interactive Workforce at the end of the installation. Currently supported are the following versions:

- Internet Explorer 6.0 or higher
- Netscape 6.2.1 or higher

Configuration Worksheet

During the installation, you will be prompted to supply client and server information. Complete the configuration worksheet below **in advance** preparation for these entries.

Name	Description	Initial	Test	Production
Location of The Solution Series	The installation program needs to know the location of the Solution Series files.			
The Solution Series Environment Name	The name of the Solution Series environment, on the App Server, corresponding to an Interactive Workforce environment.			
Port	The port of the Solution Series environment.			
Interactive Workforce Environment Name	This is the name you are using to identify each separate Interactive Workforce environment.			
Hostname	Identify the system name of the host server. (To find the hostname, you can use the 'hostname' command at the command line.)	Web Server hostname: App Server hostname:	Web server hostname: App Server hostname:	Web server hostname: App Server hostname:
SQL Server password	In order to create the Interactive Workforce and Pay Information databases, the installation program needs to know the SQL Server username and password. Default SQL Server Username: 'sa' Default SQL Server Password: 'sa' Contact the System Administrator for the SQL Server username and password that may have been changed from the defaults listed above.	SQL Server Login ID: SQL Server Password:	SQL Server Login ID: SQL Server Password:	SQL Server Login ID: SQL Server Password:

Name	Description	Initial	Test	Production
Pay Information database name	This is the name of the Pay Information database.			
Pay Information database username and password	In order to create and enable access to the Pay Information database, you will need to know the owner user name and the password.	Pay Information Login ID: Pay Information Password:	Pay Information Login ID: Pay Information Password:	Pay Information Login ID: Pay Information Password:
Oracle_SID				
Pay Information database filepath	Path where the Pay Information files are stored.			
COBOL compiler directory	This is the directory name where the COBOL compiler used for The Solution Series is stored.			
IIS location	If the installation program cannot find IIS, it will prompt you for the filepath of the Inetpub directory. Default: C:\inetpub			

PART 2

Part 2 - Installing Interactive Workforce

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CHAPTER 3

Installing Interactive Workforce

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Introduction

Installing The Interactive Workforce Solution for UNIX falls into 5 phases:

- Phase 1: Install the Web Server
- Phase 2: Install the the Application Server
- Phase 3: Create and Populate the Pay Information database on the Application Server
- Phase 4: Create and Populate the Interactive Workforce database on the Web Server
- Phase 5: Test the installation

Throughout this document, the following (..) is used to represent the install drive on the Web Server. This drive should be consistent with the drive you are using throughout the installation.

Phase 1: Install the Web Server

This should be performed on the Web Server machine.

The tasks in this phase should be performed in the following order:

1. Install the Java Development Kit (JDK)
2. Install ServletExec
3. Install ServletExec patch
4. Install the Interactive Workforce Web Server software

Install the Java Development Kit (JDK)

If you do not already have the JDK or ServletExec installed on the machine, the Installation CD-ROM provides these. This Phase shows you how to install the JDK and ServletExec from the install CD.

The Java Development Kit must be installed once on the web server. It does not have to be installed for each Interactive Workforce environment. Cyborg provides this software. The following instructions explain how to find these on the installation CD and install them.

Note: For a three-server configuration, install JDK on the Database Application Server if JDK is not already installed.

1. Start the Installation

Insert the Installation CD into the CD-ROM drive of the computer that will be the Web Server. Read through the page of instructions that displays.

2. Click 'Install Java Development Kit (JDK)'

On the instructions that display, click 'Install Java Development Kit (JDK).' The Welcome window is the first dialog box that appears during the installation process.

Click Next to display the license agreement.

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

3. Accept the license agreement

Click OK or Next to accept the license agreement.

4. Choose the Destination folder

Install into the Cyborg recommended default directory:

...\\eCyborg\\IW\\jdk1.3.1_03

You can select this directory by clicking Browse and typing the file path into the Browse dialog. When you click Next, the install program prompts you to create the directories—click Yes.

Note The drive you select here must be used consistently throughout the installation of the Solution Series Application Server.

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'For this installation...!' column.

Prompt	Use the following...
JDK Destination	..\eCyborg\IW\jdk1.3.1_03

5. Click Next

When the browser dialog box appears, choose the browser for the application. Cyborg recommends you select both browsers.

6. Click Next

When the components dialog box appears, accept the default selection of the components and click next.

7. Click Finish

Install ServletExec

Two licenses for ServletExec are included in your license for Interactive Workforce. These licenses are for the Test and Production environments. The initial installation will be installed with an unlicensed version of ServletExec. As this environment is used just for testing the installation there is no need to allocate a license.

Note: For the initial installation, ServletExec may be installed in 'Unregistered' mode. While in Unregistered mode, ServletExec is limited to processing three concurrent client requests. Cyborg recommends using the two supplied ServletExec licenses for the Test and Production environments.

1. Click 'Install ServletExec'

On the Installation CD instructions that display, click 'Install ServletExec.'

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

2. Select Setup Type

Select the option 'Install a ServletExec AS Instance' and click Next to continue.

3. Click Yes to accept the License Agreement

4. Click Next to continue

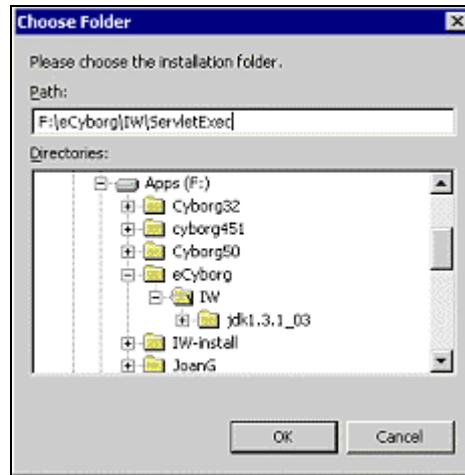
5. Choose the destination folder

We suggest you install the application in the eCyborg\IW that matches the directory of the Interactive Workforce installation. For the Initial environment, use the directory created in Step 1 of this task:

...\eCyborg\IW\ServletExec

The table following tells you what information the installation program requires. If you need anything other than the defaults, use the information in the 'For this installation...' column.

Prompt	Default	Select the following...
Install Type	Install a ServletExec AS Instance	use default
Destination	..\ServletExec	..\eCyborg\IW\ServletExec
ServletExec Instance Name	Server name default	CybIW
Setup Type	Microsoft IIS or PWS	use default



6. Enter Servlet Exec Instance Name

Enter a name to uniquely identify the ServletExec Application Server instance for the Initial environment, for example:

CybIW

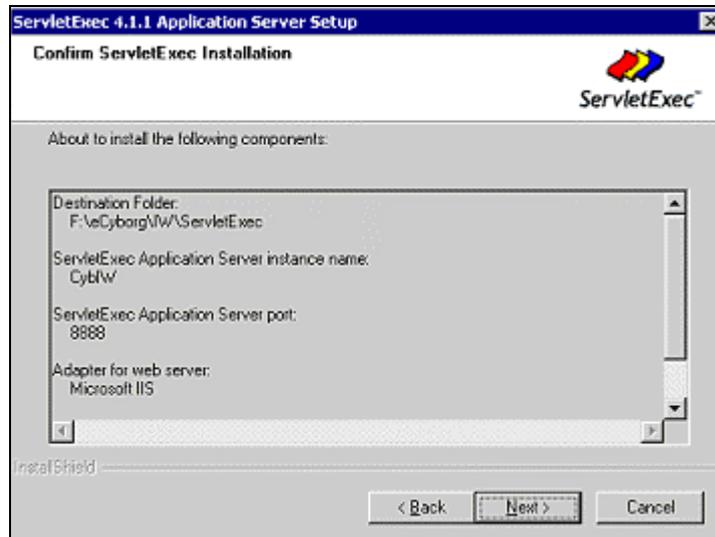
Click Next to continue.

Note: These are suggested names. If you wish to use others, be sure to do so consistently.

Note: If you have an instance of ServletExec on the Web Client, the setup program asks you to enter a port and a URL (comma-separated list of application URLs to be processed by the Web Server adapter). Enter a port number that differs from the port number of the existing instance. ServletExec license agreements are per instance per port.

7. Select setup type

Select 'Microsoft IIS or PWS' setup type and click Next to continue.



8. Click Next to confirm installation

9. Click Yes

In the dialog box that asks if you want to install ServletExec as an NT service, click Yes.

10. Click OK

In the dialog box that lists the file that you must check for errors and for the location of the backed up version of servletexec.properties, click OK.

11. Click OK

In the dialog box that reminds you to restart the web server, click OK.

12. Click Finish

Click Finish to complete the installation of ServletExec.

Note: Once the server name is defined in the hosts parameter, that server name must always be used when accessing that environment. For example, if you register the server by its hostname (eg., 'ThisServer') in the hosts parameter, you cannot access the environment using an extended domain name (eg., 'ThisServer.ThisNetwork.ThisDomain').

Install Patch for ServletExec

1. Execute the ServletExec Patch software

On the instructions that displayed when you inserted the CD Rom, click 'Install patch for ServletExec.'

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

2. Extract the ServletExec41.jar file to the folder that contains the ServletExec software.

Extract the ServletExec 41.jar file to the folder where you installed the ServletExec software in the previous task.

3. Copy the file to ServletExec Lib directory

If the system displays a message asking if you want to replace the existing file with the new file, click Yes.

Install the Interactive Workforce Web Application Server software

This task should be performed on the Web Server. Scroll through the page, then click on the following link to start the autoinstall:

Install Interactive Workforce

Follow the installation prompts:

Prompt	Options/Defaults	Select the following...
License	Enter the delivered license key	
Operating System	*AS/400 *OS390 *UNIX *Windows (default)	Select UNIX
CasRexec configuration	* Hostname: UNIX server name * Port: (Ex. 9888) * Env Name: Name of CASRexec (Ex. Default, iwtest)	* Hostname: * Port * Environment Name:
Pay Information DB configuration	* DB Dir: Directory of DB install (Ex. cybpaydb) * DB Owner: Owner name of DB (Ex. cybpaydba) * DB Pwd: DB Owner password (Ex. cybpaydba)	* DB Dir: * DB Owner: * DB Pwd:
Where is ServletExec?	Location of ServletExec instance. For example: C:\Program Files\ServletExec\se-CybiW	ServletExec Instance filepath:
Destination Folder	Folder where IW files will be installed. Default: C drive	Other:
Components	The components that will be installed.	Verify components.
Where is IIS installed?	Location of IIS. For example: C:\inetpub\	

Note: If the setup cannot locate Inetpub you will be prompted to enter its location. If you are prompted for the location of the Inetpub directory (which stores IIS server files) refer to the configuration worksheet.

The installation program has installed all the software required on the Web Server, and the Setup Complete window indicates that the installation is complete. In order to activate the Web Server components, you will need to reboot the computer.

Phase 2: Install the Application Server

This procedure leads you through a series of tasks that constitute the steps necessary to install all of the components on the the Application Server. This phase should be performed on the Application Server machine. Once this chapter is complete, only a single environment will be installed.

See also

- Multiple Environments on the Same Servers (*on page 93*) .
For more information on creating additional environments.

The tasks in this phase should be done in the following order:

1. Transfer install files from the PC to the server
2. Log in to the system under administration account
3. Update The Solution Series test data for Interactive Workforce
4. Update The Solution Series Report Generators for Interactive Workforce
5. Configure CAS for the STAPI

Transfer install files from the PC to the server

1. Verify system name and variables

FTP Command Script: ftpcmds_ESS.UNX

Open the ftp command script, which is read by the transfer program, to verify the name and variables entered during the autoinstall. The file is located in the following directory:

/eCyborg/IW/upload/UNIX

2. Run the file transfer program

Job Used: JFTP

Run the file transfer job from a command prompt on the Windows client. This will load the Solution Series files from the PC to the UNIX server.

Note: You will need to have the FTP capability enabled on both systems.

Example of command line to run this job:

JFTP USERNAME

You can verify the ftp by checking the ftpupload.log file which will be generated in the same directory with the ftp job. Both are located in the following directory:

/eCyborg/IW/upload/UNIX

Log into the system under the administration account

If you already have an existing system administration account from a previous installation, you may wish to use the same account. In the case of Multiple Environments, you may wish to use the user account from the corresponding Solution Series environment while

installing the Interactive Workforce part of the environment. You must set up the permissions for this new account.

Log into the system using the given installation user account.

Update The Solution Series test data for Interactive Workforce

Job used: jiwdemo

Note: By preceding the batch job with 'rj' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.

Interactive Workforce provides new employee test data to the standard test company (999999). The data contained in these new test employees will allow you to thoroughly test your installation of Interactive Workforce. Open a command prompt and apply the Interactive Workforce test data by running the following script from the \$runs directory:

```
./rj jessdemo > $log/jessdemo.log
```

This will merge the new test data with the standard test data prior to loading it into the Interactive Workforce database.

Update The Solution Series Report Generators for Interactive Workforce

Important! All users must be logged off of The Solution Series in order to perform this task.
--

1. Execute the Pay Extract script

Job used: jpayxtr

From the \$runs directory of your Solution Series system, execute the following script:

```
./rj jpayxtr > $log/jpayxtr.log
```

This script will create a new p20in file in the \$data directory.

2. Extract the Interactive Workforce Report Generators

Job used: jxessrptgen

From the \$runs directory of your Solution Series system, execute the following script:

```
./rj jxessrptgen > $log/jxessrptgen.log
```

3. Load the Interactive Workforce Generators

Job used: jloadessgen

From the \$runs directory of your Solution Series system, execute the following script:

```
./rj jloadessgen > $log/jloadessgen.log
```

4. Execute the Pay Merge script

Job used: jpaymrg

From the \$runs directory of your Solution Series system, execute the following script:

```
./rj jpaymrg > $log/jpaymrg.log
```

Configure CAS for the STAPI

In order to configure the Cyborg Application Service (CAS) to work with the STAPI, open the following file:

```
[Cyborg Home]/app/server/cybenv.cfg
```

and add a couple lines to point the CAS to the new online and CYBIO programs, as in the following example:

```
2:IW_Env:Y:-1:/Cyborg_Home/runs:/Cyborg_Home/runs/onlineE  
3:IW_Env:Y:-1:/Cyborg_Home/runs:/Cyborg_Home/runs/jcybio
```

Phase 3: Create and Populate the Pay Information database on the Solution Series Application Server

This phase should be performed on the the Application Server machine.

Perform the tasks in this phase in the following order:

1. Create the Pay Information database
2. Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series
3. Configure the Organization Options form (AF-SCR) in The Solution Series
4. Set up a payroll run
5. Perform the payroll run
6. Load the Pay Information database

Create the Pay Information database

Note: You must create the Pay Information database for Interactive Workforce to operate, even if your implementation will not use the Pay functionality. If you are not using Pay functionality, after this task is complete, then you may skip the remainder of this phase.

1. Generate the code to create the Pay Information database

Access the following directory:

```
$DB_DIR/payinfodb/$DB_OWNER/bin
```

Where DB_DIR is the location of the Pay Information Database file from the install, and DB_OWNER is the user from the install. Set access permissions on the file by executing the following:

```
chmod 777 createdbsql
```

Then execute the job as shown here:

```
./createdbsql > ../log/createdbsql.log
```

2. Create the Pay Information database Job Used: createpaydb

Access the following directory:

```
$DB_DIR/payinfodb/$DB_OWNER/bin
```

Where DB_DIR is the location of the Pay Information Database file from the install, and DB_OWNER is the user from the install. Set access permissions on the file by executing the following:

```
chmod 777 createpaydb
```

Then execute the job as shown here:

./createpaydb

When you run the script, you will be prompted for an Oracle User ID:

Please enter your Database Administrator User ID => system Please enter your Database Administrator Password =>
--

Note: Depending on the speed of the processor, this script may take some time to execute. On the recommended configuration, creation of the Pay Information database may take a couple of minutes.

3. Review the database creation logs

Once the Pay Information database script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Pay Information database as well as verify that the tables were created. On the Application Server in the \$ECYBORG_ENVIRONMENT_HOME/payinfodb/log directory access the following files:

- payinfo_container.log
- payinfo_owner.log
- payinfo_tables.log

Now, the Pay Information database has been created. However, there are still tasks to be performed before the database can be populated.

Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series

To set up the Interactive Workforce Payrun (7L) and Payslip (7M) generators, you must log in to The Solution Series with Security Officer access.

Note: Contact your payroll expert before continuing with these steps.

1. Set up the Payrun (7L) Report Generator

On The Solution Series system, access the Report Request form (DD-SCR) to set up the 7L7L report generator. Access the Report Request form by making the following selections:

Tools ► Reporting ► Report Scheduling ► Schedule Payroll Run Reports

To execute a payrun, the 7L7L generator must be loaded into your P20IN file using the desired company(ies). For the initial installation, use the 999999 company.

On the Report Requests form:

- The Report Code field must be set to '7L7L'
- The Report Select field must be set to '1'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your Solution Series system.

The screenshot shows the 'Report Requests' form with the following fields and values:

- Report Code:** 7L7L
- Report Select:** 1
- User Field:** (empty)
- Extra Copy:** (dropdown menu)
- Data Types:**
 - Company Level: Do Not Print
 - Tax Tables: Do Not Print
 - Labor Record: Do Not Print
 - Other Record: Do Not Print
- Adjustments:**
 - Plus: Do Not Print
 - Minus: Do Not Print
 - Manual: Do Not Print
- To-date Amounts:**
 - Current: Print Every Run
 - Month: Do Not Print
 - Quarter: Do Not Print
 - Year: Do Not Print

2. Set up the Payslip (7M) Report Generator

On your Solution Series system, while still on the Report Request form (DD-SCR) set up the 7M7M report generator. To execute a payrun, the 7M7M generator must be loaded into your P20IN file. On the Report Requests form:

- The Report Code field must be set to '7M7M'
- The Report Select field must be set to 'E'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your The Solution Series system.

The screenshot shows the 'Report Requests' form with the following fields:

- Report Code:** 7M7M
- Report Select:** E
- User Field:** (empty)
- Extra Copy:** (dropdown menu)
- Adjustments:**
 - Plus: Do Not Print
 - Minus: Do Not Print
 - Manual: Do Not Print
- Data Types:**
 - Company Level: Do Not Print
 - Tax Tables: Do Not Print
 - Labor Record: Do Not Print
 - Other Record: Do Not Print
- To-date Amounts:**
 - Current: Print Every Run
 - Month: Do Not Print
 - Quarter: Do Not Print
 - Year: Do Not Print

3. Refresh the selection list

Refresh the selection list to view the records for the report generators.

Configure the Organization Options form (AF-SCR) in The Solution Series

To ensure that the system is set up correctly for the payroll run, you must configure the Months Retained settings on the Organization Options form (AF-SCR) in The Solution Series. These settings must be configured so the payroll run does *not* purge the Payment History and Labor Records. To do this you must have entered anything other than zero (0) on the 'Months Retained' field of the second Organization Options form (AF-SCR).

Important! In addition to changing the AF-SCR options, do not use the batch purge option in the same run as the Report Generator extract.

1. Access the Organization Options form (AF-SCR)

While still in The Solution Series, access the Company Options form (AF-SCR) by making the following selections:

Payroll ► Payroll Setup Processing ► Organization Setup ► Organization Options

The Organization Options form appears.

2. Click on More Options

The second half of the form appears.

3. Set the Months Retained fields

The Months Retained fields define the number of months the Payment History and Labor Records are stored on the Employee Database in The Solution Series before they are dropped. Enter anything other than zero (0) in the "Months Retained" fields. Failing to do

so will result in mismatched Pay Information records in the database tables and the inability to view Pay Information in Interactive Workforce.

The defaults are 88.

The form should appear similar to the one shown here:

The screenshot shows a window titled "Organization Options" with a light blue background. It contains several input fields and checkboxes. On the left side, there are fields for "Common Tax Org:", "Report Frequency:" (set to "Rpt Only Paid Freque"), "Country:" (set to "United States"), "Local Currency:", "No Pay Warning:" (set to "No Force;No Msg"), "Routing Number:", "Org Category:" (set to "Pay-Normal Master"), and "Mag Stripe/Bar Cde:". On the right side, there are checkboxes for "Clear Then Adjust", "Frick Tape", "Tax MC Override", and "Reciprocal Rules". Below these is a "Months Retained:" section with two spinners: "Hist:" (set to 88) and "Labor:" (set to 88). At the bottom right, there is a "Build Alt Key" section with checkboxes for "Phonetic" and "Emple ID", both of which are checked. At the bottom center, there is a "Return to 1st Screen" button.

4. Press Enter

This completes the changes to the form.

Set up a payroll run

Processing the payroll run will both verify that the new scripts and report generators are working correctly, and will create the text files used to populate the Pay Information database. This task must be performed while logged in to The Solution Series with Security Officer access.

1. Define the Pay Run Parameters

On The Solution Series system, access the Payroll Run Process Control form (AE-SCR) by making the following selections:

Payroll ► Payroll Processing ► Payroll Scheduling ► Schedule Payroll Runs

To set up the payroll run parameters, as represented in the graphic below, for the following three pay frequencies:

1. Weekly
2. Bi-Weekly
3. Semi-Monthly

Be sure to set all of the fields as shown below. The Run Date field is optional and may be left blank. The Payment Date field must be the current or another relevant date.

In the Frequency field, enter one of the following values then press enter:

- '1' to set up a Weekly pay pay run
- '2' for a Bi-Weekly pay run
- '3' for a Semi-Monthly pay run

From this point forward, the tasks and steps include the execution of programs and processes from the normal administration of the system. This is done here both to demonstrate successful component installation and to provide the data needed to confirm that the entire system is working.

2. Log off the Solution Series

Perform the payroll run

Processing the payroll run will both verify that the new scripts and report generators are working correctly and will create the text files which are used to populate the Pay Information database.

1. Execute the Pay Extract script

Job used: jpayxtr

Execute the following script from the \$runs directory of your Solution Series system:

```
./rj jpayxtr > $log/jpayxtr.log
```

2. Execute the Pay Run script

Job used: jpayrun

Execute the following script from the \$runs directory of your Solution Series system:

```
./rj jpayrun > $log/jpayrun.log
```

Once you have executed a payrun, check the auditrl.pay.lis and checknum.lis files in the \$list directory for errors. Also check the \$data directory to ensure that the following files have been created:

- essedr.txt
- esseer.txt
- esstxr.txt

3. Execute the Maintenance script

Job used: jmntrun

Execute the following script from the \$runs directory of your Solution Series system:

```
./rj jmntrun > $log/jmntrun.log
```

Check in the \$data directory to ensure that the following file has been created:

esspsr.txt

4. Execute the Pay Merge script

Job used: jpaymrg

Execute the following script from the \$runs directory of your Solution Series system.

```
./rj jpaymrg > $log/jpaymrg.log
```

Load the Pay Information database

This task will take the output files created by the 7L and 7M generators during the payroll run, then load them into the Pay Information database.

1. Copy the Pay Run output files

Copy the four output files created during the pay run from the \$data directory:

- essedr.txt
- esseer.txt
- esstxr.txt
- esspsr.txt

to the following directory:

```
$SECYBORG_ENVIRONMENT_HOME/cybpaydba/src
```

2. Execute the Load Pay Information script

This issues all of the commands necessary to load data from The Solution Series payroll output files into the Pay Information database. The four files listed above in Step 1 are bulk loaded into four tables. Once the process is complete, the four files are deleted.

Note: In order to execute `imppayinfo` you must have access to the Oracle tool 'sqlldr'. Be sure that your `$ORACLE_HOME/bin` directory is in your `PATH`.

To load the pay information data, access the following directory:

```
$SECYBORG_ENVIRONMENT_HOME/payinfodb/bin
```

Set access permissions on the file by executing the following:

```
chmod 777 imppayinfo
```

Execute the following:

```
./imppayinfo
```

Verify the data load by checking to see that the following files have been created in the \$SECYBORG_ENVIRONMENT_HOME/payinfodb/log directory:

- basics.log
- deductions.log
- employee.log
- taxes.log

Phase 4: Create and Populate the Interactive Workforce database on the Web Server

This phase should be performed on the Web Server machine.

Perform the tasks in this phase in the following order:

1. Create the Interactive Workforce database
2. Add ODBC Data Source for the Interactive Workforce database
3. Create Oracle ODBC Service for the Pay Information database
4. Add ODBC Data Source for the Pay Information database
5. Start Orbix and ServletExec
6. Launch Interactive Workforce
7. Access the Interactive Workforce Administrator Utility
8. Load option lists
9. Select organizations for loading
10. Select resulting statuses for loading
11. Set up direct deposit HEDs
12. Load Interactive Workforce Users

Create the Interactive Workforce database

Note: For a three-server configuration, run this script on the Database Application Server.

1. Execute the Interactive Workforce database creation script

Job Used: createessdb

This file can be run by double clicking on the filename using the Windows Explorer. The default file path is:

```
...eCyborg\IW\ESSDatabase\CybiW\createessdb.bat
```

When this job runs, you will be prompted for the 'sa' user password. Enter the password.

Note: Depending on the speed of the processor, this script may take some time to execute. Creation of the Interactive Workforce database may take a couple of minutes.

Note: If you have not already done so, you may want to tune the size of the database, depending on your use of the environment.



Refer to *eCyborg Interactive Workforce: Technical Implementation* for information on editable parameters in the database configuration files.

2. Review the database creation logs

Once the Interactive Workforce database script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Interactive Workforce database as well as verify that the tables were created. On the Web Server in the eCyborg\IW\ESSDatabase\CybiW directory access the following log files:

- setCybiWVal.log
- createIWTBL.log
- createCybiWDBTBL.log

The directories with the log files are:

\$eCyborg\IWESSDatabase\CybiW

Make a note of the database access information; you will need it later.

Add ODBC Data Source for the Interactive Workforce database

This task should be performed on the Web Server computer. ODBC is a programming interface that enables Interactive Workforce to access data from SQL Server.

1. Run ODBC

Make the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Data Sources (ODBC)

2. Select the System DSN tab

Name is LocalServer; driver is SQL Server.

3. Click Add

4. Select SQL Server

Select the SQL Server from the list of drivers.

5. Click Finish

6. Enter data in the Create a New Data Source to SQL Server dialog

For the Interactive Workforce database, fill the fields with the information listed in the following table:

Field	Information
Name:	CybiW (case sensitive)
Description:	Cyborg Interactive Workforce Database
Server:	(local) or 'server name'

Note: If you are installing multiple environments on the same machines, we recommend using Names and Descriptions fitting the environment. For example: 'Cyborg Interactive Workforce Database—Test Environment'.

7. **Click Next**
8. **Select 'With SQL Server authentication using a login ID and password entered by the user' option**
9. **Verify that 'Connect to SQL Server to obtain default settings for the additional configuration options' is selected**
10. **Enter the Login ID and the Password**

For the Interactive Workforce database, use the following for the Login ID and Password:
cybiwdba

When these steps have been completed, the dialog should show the correct name.
11. **Click Next**
12. **Select 'Change the default database to'**

Be sure the 'Change the default database to' is checked.
13. **Select the database**

Select the following:
CybiW (the Interactive Workforce database)
14. **Deselect ANSI options**

Deselect the following options by removing the checkmark from the select box:

 - Use ANSI quoted identifiers
 - Use ANSI nulls, paddings, and warnings

These options are defaults for the ODBC SQL driver, and result in the addition of extra characters to data that is retrieved through the ODBC/JDBC bridge. These defaults must be turned off during the setup of the database to ensure data integrity.
15. **Click Next**
16. **Click Finish**
17. **Click Test Data Source**

You should receive a message replying, 'TESTS COMPLETED SUCCESSFULLY!'
18. **Click OK**

The window returns to the configurations display.
19. **Click OK**

The database now appears in the System Data Sources option list of the ODBC Data Source Administrator Window. The ODBC is now connected to the Interactive Workforce database. Once you perform this task for either the Interactive Workforce or Pay Information database, you must repeat it for the other.

Create Oracle ODBC Service and test connectivity

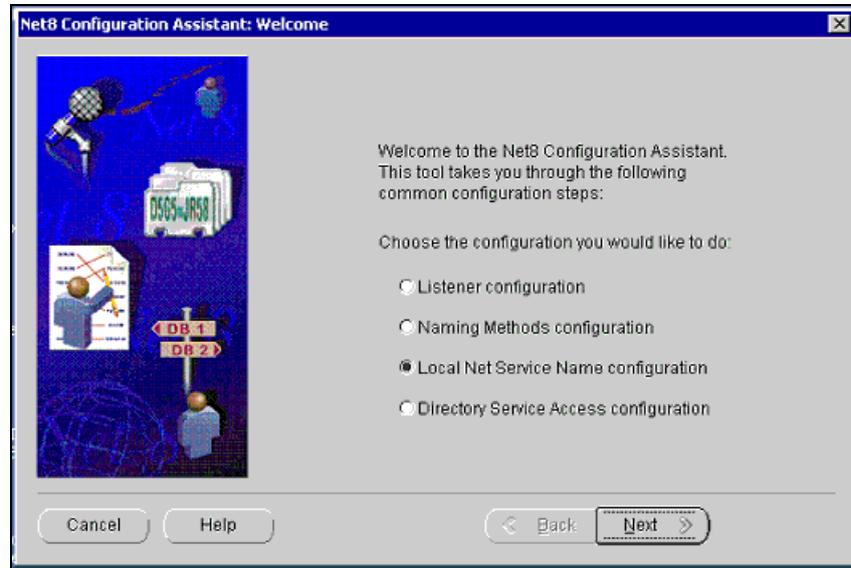
Before you can Add an ODBC Data Source for the Pay Information database, you must create and test connectivity of a connect descriptor stated in a local tnsnames.ora file.

1. Run Oracle Net 8 Easy Config

Make the following selections:

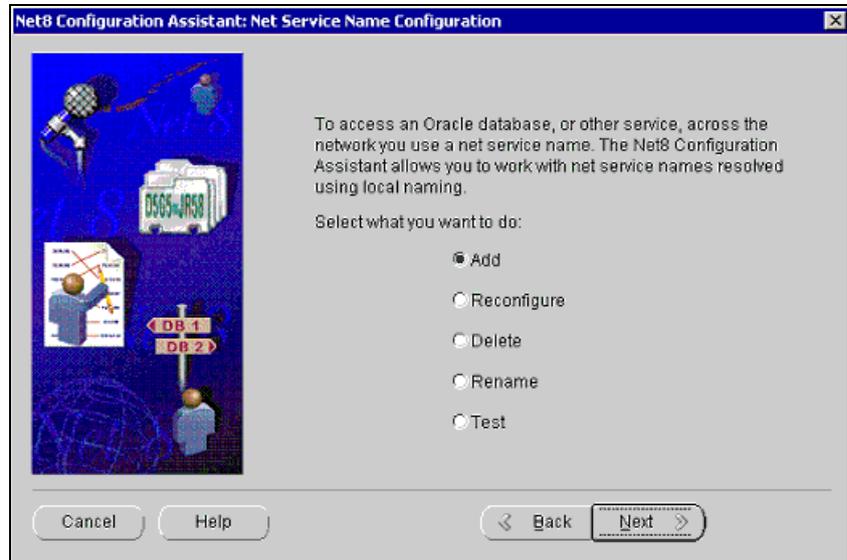
Start ► Programs ► Oracle - Orahome81 ► Network Administration ► Net 8 Configuration Assistant

The Oracle Net 8 Easy Config dialog appears:



2. Select Local Net Service Name configuration

Click Local Net Service Name configuration, and click Next. The system displays the next dialog box.



3. Select Add

Click Add, and click Next.

4. Select Local Net Server

Click Create, and enter the name of the Pay Information database in the New Net Service Name field. This will be the same name used for adding the ODBC connection in Task 4: Add ODBC Data Source for the Pay Information database.

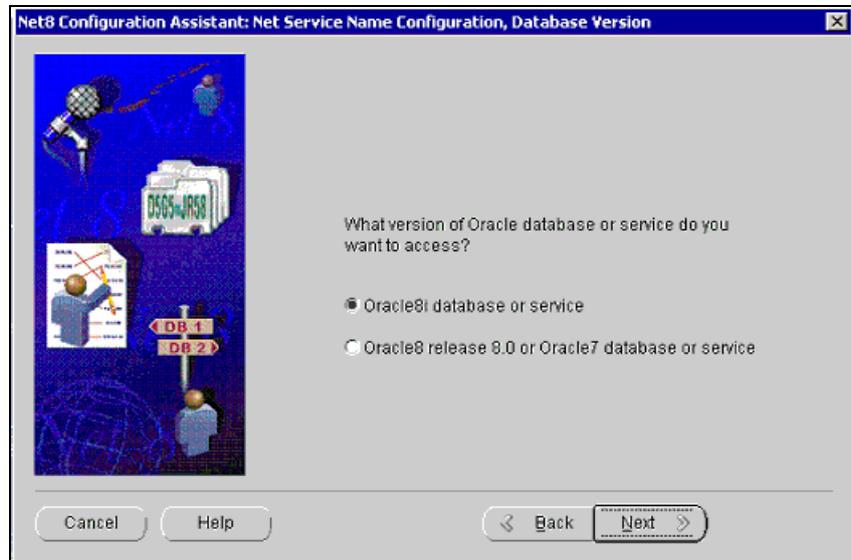
The default name is:

cybpaydb

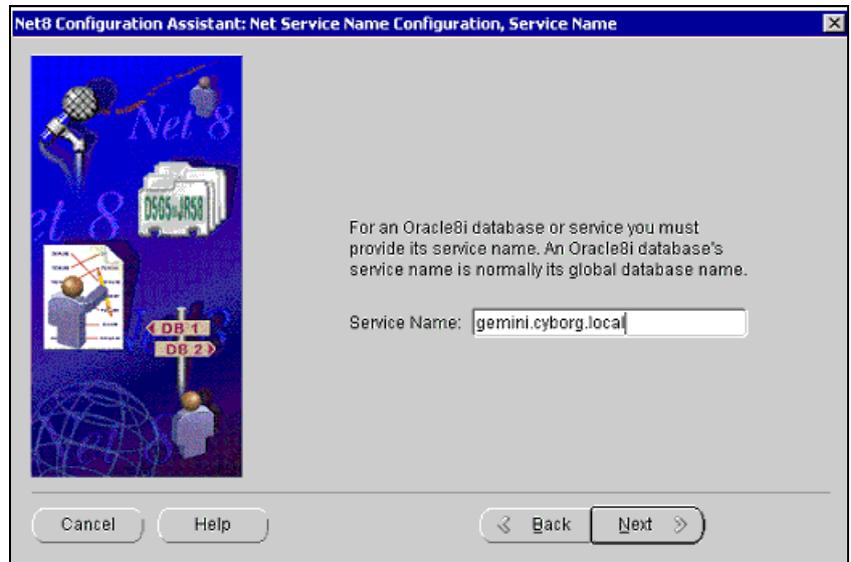
When this information has been entered, click Next.

5. Select the version of Oracle service you want to access

Click Oracle 8i database or service, and click Next.

**6. Enter a service Name**

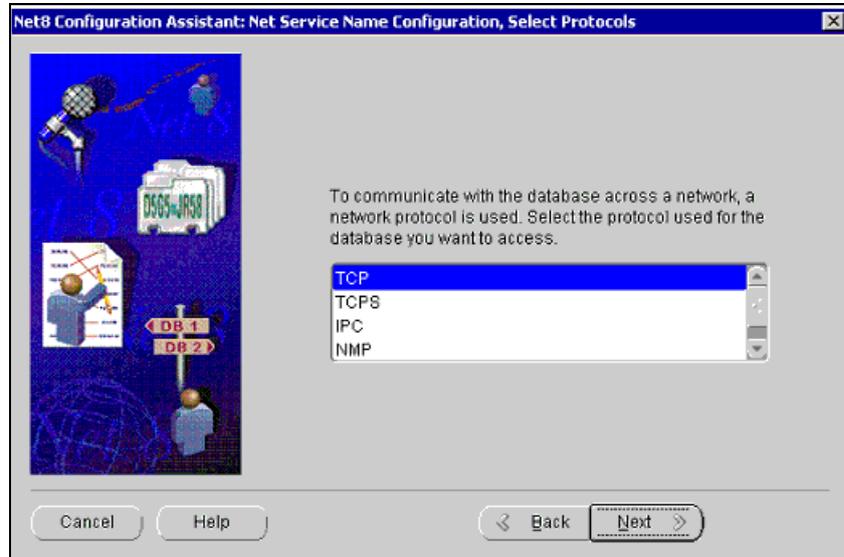
Enter the Service Name, and click Next.



7. **Select Networking Protocol**

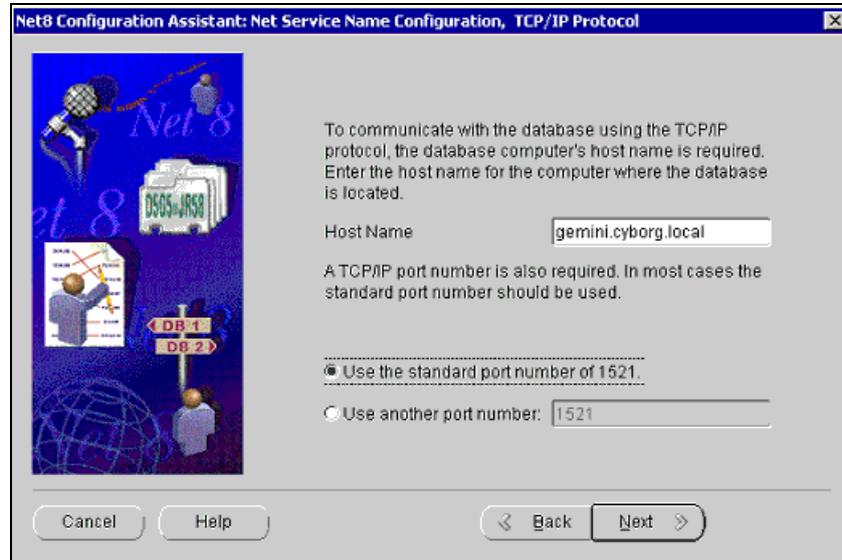
Select the following protocol:

TCP



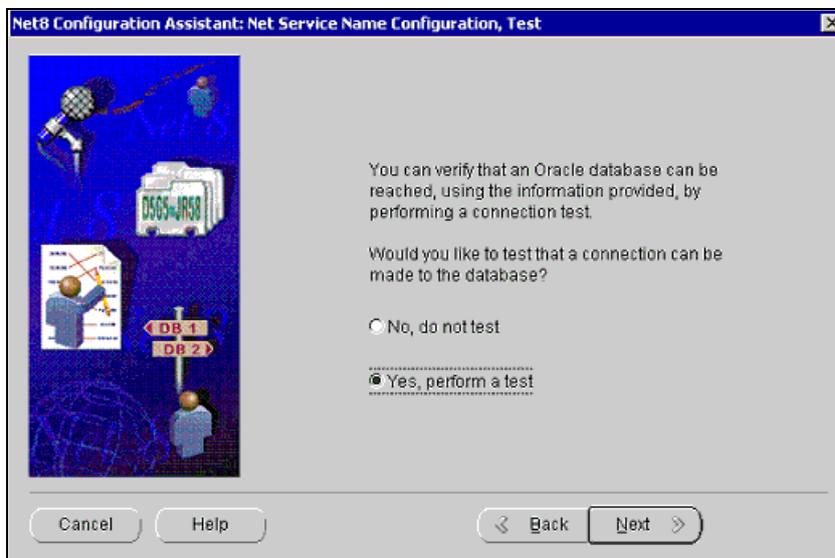
8. Specify the Host Name of the Application Server

In the Host Name field, enter the host name of the Application Server machine. You may leave the default port. When finished, click Next. A dialog should appear showing your entry.

**9. Click Test (Optional)**

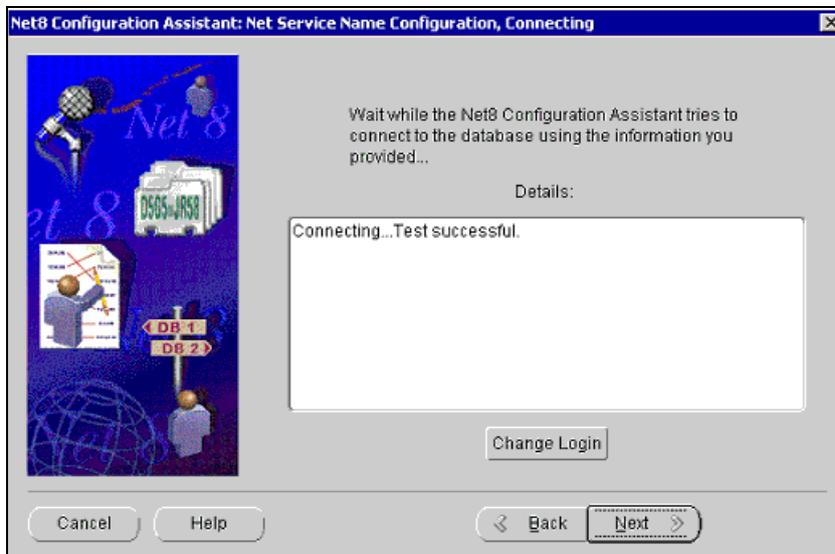
Enter the Username and Password for the database in the respective fields. The defaults for the Pay Information database are:

Field	Information
Name:	CYBPAYDBA (case sensitive)
Password:	CYBPAYDBA (case sensitive)



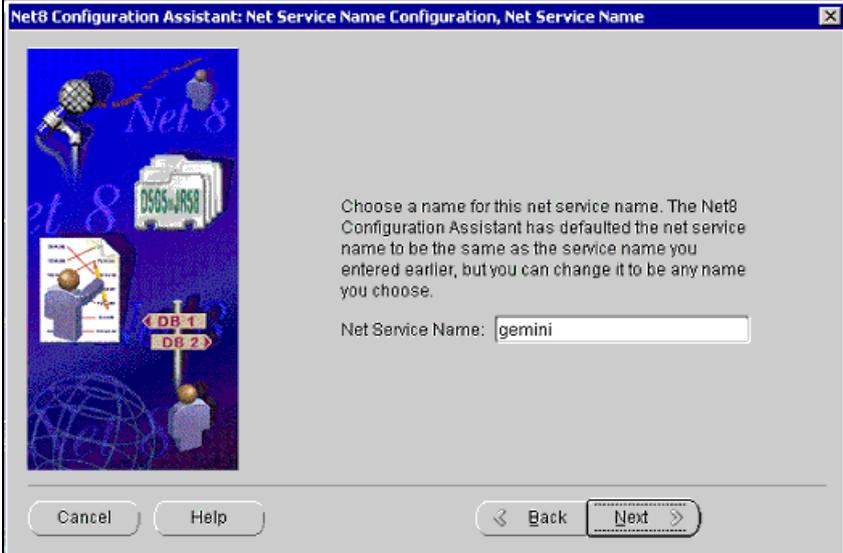
10. Test successful

If successful, the following dialog displays. Click Next.



11. Choose a name for this net service

Enter the name for this net service, and click next.



Net8 Configuration Assistant: Net Service Name Configuration, Net Service Name

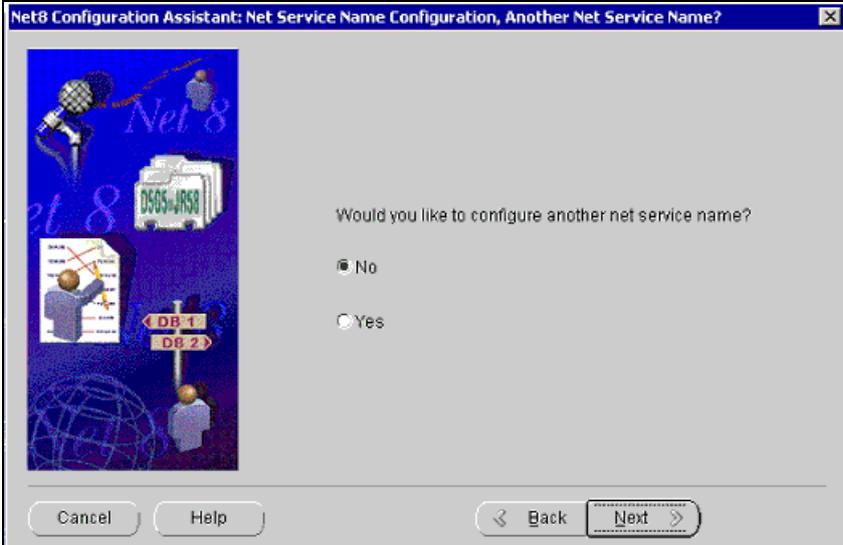
Choose a name for this net service name. The Net8 Configuration Assistant has defaulted the net service name to be the same as the service name you entered earlier, but you can change it to be any name you choose.

Net Service Name:

Cancel Help Back Next

12. Would you like to configure another net service name

Click no, and click Next.



Net8 Configuration Assistant: Net Service Name Configuration, Another Net Service Name?

Would you like to configure another net service name?

No

Yes

Cancel Help Back Next

13. Confirmation complete

The system displays a confirmation dialog box.



Add ODBC Data Source for the Pay Information database

Note: For implementations that are not using the Pay functionality, this task must still be completed for the Pay Information database in order for The Interactive Workforce Solution to work properly.

This task should be performed on the Web Server computer. ODBC is a programming interface that enables *The Interactive Workforce Solution* to access data from SQL Server.

Important! You will need to perform this task twice: once for the Pay Information database, and again for the Interactive Workforce database. Although the Pay Information database physically resides on another computer, this task performed on the Web Server will connect ODBC to that database.

1. Run ODBC

Make the following selections:

Start ► Settings ► Control Panel ► ODBC Data Sources

2. Select the System DSN tab

Name is LocalServer; driver is SQL Server.

3. Click Add

4. Select Oracle ODBC Driver

You must have Oracle ODBC Driver 8.1.7.0 or higher.

Note: Do not use Microsoft ODBC for Oracle.

5. Click Finish

6. Enter data in the Oracle8 ODBC Driver Setup dialog

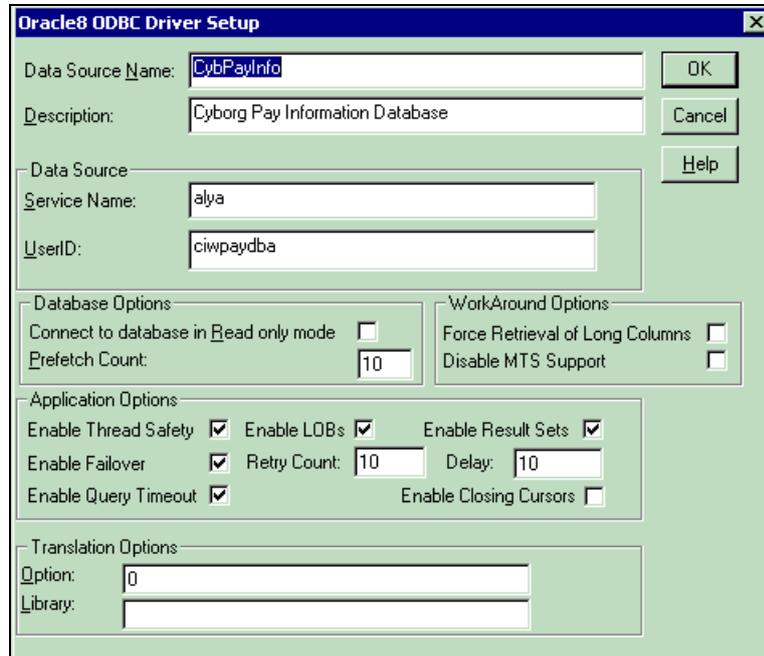
For the Pay Information database, fill the fields with the required information as in the following example:

Field	Information
Data Source Name	CybPayInfo (case sensitive)
Description:	Cyborg Pay Information Database
Service Name:	cybpaydb
User ID:	cybpaydba

Note: The Service Name here should be the same Service Name used in the task: Create Oracle ODBC Service for Pay Information database, Step 3.

Note: If you are installing multiple environments on the same machines, we recommend using Names and Descriptions fitting the environment. For example: 'Cyborg Pay Information—Test Environment'.

The following dialog displays:



7. Click OK

Start Orbix and ServletExec

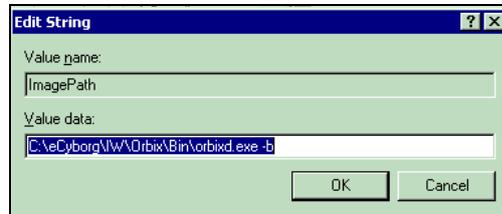
This task is performed on the Web Server.

Edit your registry for the Orbix Daemon Image Path

On the Solution Series Application Server, edit the Orbix Daemon Image Path. Access the registry by making the following selections:

Start ► Run ► regedit ► HKEY_LOCAL_MACHINE ► SYSTEM ►
CurrentControlSet ► Services ► Orbix Daemon

In the 'Image Path' entry change the Orbix.exe** to orbixd.exe -b.



After editing the registry, start Orbix and ServletExec using the following steps:

1. Start the Orbix daemon

In a two-server configuration, this step must be performed on the Application Server.

To start the Orbix daemon, access the Services control panel by making the following selections from the Windows desktop:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

From the Services dialog select the Orbix daemon service, and click on Start. This will start the Orbix daemon, which ensures that the appropriate STAPI server is started automatically when it is needed.

2. Start ServletExec

In a two-server configuration, this must be performed on the Web Server.

To start an instance of the ServletExec service, access the Services control panel by making the following selections from the Windows desktop:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

In the Service list box, select the desired instance of ServletExec and click Start.

For Interactive Workforce to operate, you need the Internet Information Server (IIS) running.

Launch Interactive Workforce

In a two-server configuration use your browser on the Web Server to access the Interactive Workforce Administration utility, and enter the following URL:

<http://localhost/CyborgESS>

When you get to the Start page, click 'Launch Interactive Workforce'. At the log in page, to access the system:

- the initial login and password are both: **'initialadm'**.

Once you access the system you will be prompted to change passwords. Change the password to 'iwadm', or any other password you desire. We recommend the easily remembered 'iwadm' because security is not needed in the initial system, as it contains no live data.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's *HOSTNAME* instead of 'localhost'.

Access the Interactive Workforce Administrator Utility

Once you have accessed Interactive Workforce, click Administrator in the Navigator panel on the left portion of the screen and select Interactive Workforce and then Data Import. The remaining tasks must be performed in the following order:

- Option List Import
- Organization Selection
- Resulting Statuses Selection
- Load Interactive Workforce users

Import option lists

Before performing the remainder of the tasks in this phase of the installation, you must use the Option List Import function. You must perform this task after the system is installed and before you select any statuses or organizations used as selection parameters to load users.

This tab page displays the option lists available in The Solution Series that must be imported into Interactive Workforce. Follow these steps to extract the option lists from The Solution Series and load them into the Interactive Workforce database.

1. Access the Option List Import page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Load Options Lists tab.

Administrator ► Interactive Workforce ► Data Import ► Option List Import

2. Click Perform Extract

The application extracts the option lists and imports the lists into the Interactive Workforce database.

Refer to the eCyborg Interactive Workforce: Technical Implementation documentation for more information on the data import from The Solution Series to Interactive Workforce.

Note: When you click Perform Extract, the system imports the appropriate Solution Series option lists to Interactive Workforce. No message confirming the import displays.

Select organizations for loading

Using the Organization Selection tab page, you select the organizations to include when performing the extract and load process. This page displays the organizations set up in your company's Solution Series and works in conjunction with the Resulting Statuses Selection tab page to create the users IDs for Interactive Workforce.

Follow these steps to select organizations to include in the Interactive Workforce load.

1. Access the Organization Selection tab page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Organization Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Organization Selection

2. Select the appropriate check boxes in the extract column

Click the check boxes for at least the following organization:

999999 ACME MANUFACTURING

Note: If you make no selections on this page, no employee information can be extracted. In an initial environment this may be the only organization you select.

3. Click Save Changes

The system saves your changes.



Refer to *Interactive Workforce: The Administrators' Guide* for more information on the data import from *The Solution Series* to *Interactive Workforce*.

Select resulting statuses for loading

Using the Resulting Statuses Selection tab page to select the groups of employees who will have authority to use the online application. The employee statuses that display are those set up in your organization's application of The Solution Series.

Note: This page works in conjunction with the Organization Selection tab page to create the employee user IDs for Interactive Workforce.

Follow these steps to select statuses for the Interactive Workforce database load.

1. Access the Select Resulting Statuses for Loading page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Resulting Statuses Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Resulting Statuses Selection

2. Select the appropriate radio button for each group status

Note: The default settings will not extract any data. You must, as this time, make these selections in order for the data load to work properly.

This page displays employee statuses set up for your organization. You may have to scroll down the page to see all the available group status information. Three radio buttons appear for each group status.

- All employees in this status
- No employees in this status
- Only those with status selected below

Click one radio button for each group status.

3. Select the appropriate checkboxes in the group statuses

If you clicked 'Only those with status selected below', for the following groups:

- All Active
- Leave of Absence with Pay
- Leave of Absence without Pay
- Retired

Check the 'All employees in the group' box for each of the groups listed above. Check the following options below each group: 'Active-Salrd Reg FT' and 'Active-Hrly Reg FT'. Once completed, each group should look similar to example of the 'All Active Employees' group shown here:

4. Click Save Changes

The system saves your changes.



Refer to eCyborg Interactive Workforce: Technical Implementation for more information on the data import from The Solution Series to Interactive Workforce.

Set up direct deposit HEDs

To set up direct deposit HEDs for organizations, follow these steps.

1. Access the Set Up Direct Deposit Organizations page

On the Administrator area of the Navigator, select Payroll. Then select Direct Deposit HED Setup. The system displays the page for the first step of the Direct Deposit HED Setup process. On this page you select the organizations for which you want to set up direct deposit HEDs. All organizations are listed on the page.

Administrator ► Payroll ► Direct Deposit HED Setup

2. Select an organization

The system displays all organizations whose information has been loaded into Interactive Workforce. Click the name of the organization for which you want to set up direct deposit HEDs. Select (at least) the following organization:

999999 ACME MANUFACTURING

3. Select the direct deposit categories for the organization

The page displays the Category 53 HEDs set up in Payroll Administration for the organization you selected. Check the appropriate account type for the HED. The chart that follows shows the account types you can select and the constraints for each.

	Primary Account used for Remaining Net Pay	Expense Reimbursement Account	Secondary Accounts
Allowable HEDs	999 or 998	999	998 if 999 is used as Primary Account and HEDs 501 to 997

4. Check the Remaining Net Pay Account

Click the Remaining Net Pay Account checkbox to set up the account as the account that receives the net pay remaining after all deductions and deposits to other accounts.

Note: If you do not check this checkbox, users will not be able to view their pay information online using Interactive Workforce.

5. Change the name of the HED

If you want to change the name of the HED to something more appropriate for your organization, delete the existing name and enter the new name. The name should be descriptive of your use of the HED. The new name displays only in Interactive Payroll and does not affect Payroll Administration. If you do not want to change the name of the HED, go to the next step.

6. Click the appropriate radio button to indicate whether your organization allows employees to receive paychecks

At the bottom of the page click Yes if your organization allows employees to receive a check. Click No if employees must have their pay deposited into an account at a financial institution.

7. Click Save Changes

Click Save Changes to save the parameters you set. Employees of the organization you selected will be able to view and maintain their deposit information based on the choices set on this page.

8. Log off Interactive Workforce

Now that you have completed the necessary functional administration tasks, you may log off Interactive Workforce.



Refer to *Interactive Workforce: The Administrators' Guide* for more information on the data import from *The Solution Series to Interactive Workforce*.

Load Interactive Workforce Users

This task will create the text file that will be used to populate the Interactive Workforce database with users. The Interactive Workforce database will be created later.

1. On the the Application Server, execute the Interactive Workforce User extract script

Job used: jessxpt

This first step must be executed on the Application Server, and extracts all valid users from The Solution Series Employee Database. It writes the user information into a text file which will be used to populate the Interactive Workforce database.

From the \$runs directory of your Solution Series system on the Application Server machine, execute the following script:

```
./rj jessxpt > $log/jessxpt.log
```

The user extract program creates the following export file in the \$data directory:

```
EssUsers.txt
```

This file must now be transferred to the Web Server via FTP (File Transfer Protocol) to be loaded into the Interactive Workforce database. The next few steps demonstrate the transfer of the EssUsers.txt file to the Web Server via FTP.

Note: The *jessxpt* script will take some time to extract employee information and create the text file, depending on the size of the company and the processing speed of the computer. For example, a company of 2000 employees may take up to two minutes to extract from the *The Solution Series Employee database*.

2. On the Web Server, open a command prompt

Go to the Web Server machine and open a command prompt. You can open a command prompt by making the following selections from the NT desktop:

```
Start ► Programs ► Command Prompt
```

3. Change directories to the Interactive Workforce database directory specific to that environment

The `EssUsers.txt` file needs to be transferred to the Interactive Workforce database directory for the desired environment. For example, for the default installed environment, change directory to the following:

```
... \eCyborg\IWESSDatabase\CybIW
```

4. Open FTP access to the the Application Server

Open FTP access from the Web Server to the the Application Server using the 'ftp' command followed by the hostname of the the Application Server machine:

ftp The Solution Series_Application_Server_Hostname

When the command executes, you will be prompted for the UNIX administrator user name and password. Enter these as prompted.

5. **Change directories to the \$data directory for the desired The Solution Series environment**

From the `ftp>` prompt, use the 'cd' command to change to the \$data directory of the desired The Solution Series environment. For example:

```
ftp> cd /CYBORG_ENVIRONMENT_HOME/data
```

6. **Transfer EssUser.txt from the the Application Server**

Transfer the EssUsers.txt file from the the Application Server using the 'get' command, as following:

```
ftp> get EssUsers.txt
```

When executed, 'ftp' will transfer the EssUsers.txt file from the the Application Server to the Web Server. When complete, the prompt should appear similar to the example shown here:

```
ftp> get EssUsers.txt
 200 PORT command successful.
150 Opening ASCII mode data connection for EssUsers.txt (26069 bytes).
226 Transfer complete.
26200 bytes received in 0.02 seconds (1637.50 Kbytes/sec)
ftp>
```

7. **Execute the Load Users script**

While still in the command prompt and at the `...\\eCyborg\ESS\CybESS\` directory, execute the following script:

```
loadusers.bat
```

This script will populate the Interactive Workforce database with the data in the EssUsers.txt file. After the initial population, this script also compares the data in the latest EssUsers.txt file to that already existing in the Interactive Workforce database, adding only new or changed data. Once this step is complete, the Interactive Workforce database has been populated and/or updated.

Note: *Populating the Interactive Workforce database will take some time, depending on the size of the company and the processing speed of the computer. For example, a company of 2000 employees may take up to three minutes to load in the database.*

8. **Access Query Analyzer**

We are now going to take a 'short cut' to get the password of a specific user in the sample data set using the SQL 7 Query Analyzer.

To access SQL 7 Query Analyzer enter the following commands:

Start ► Programs ► Microsoft SQL Server 7.0 ► Query Analyzer

Important! Remember to log in to the Query Analyzer using the login for the correct database. Use the following login:
cybiwdba

Note: If you have Interactive Workforce Administrator access, you may also use the Interactive Workforce Administration functionality to find the user password. Refer to the eCyborg Interactive Workforce: The Administrators' Guide for information on using the Interactive Workforce Administration functionality.

9. Collect the Initial Password to Access Interactive Workforce

In order to access Interactive Workforce you need to collect the initial password for employees '4001' and '4002' from the Cyborg_User table. From the Query Analyzer window enter the following command:

```
select login_name, initial_password
from cyborg_user
where login_name in ('4001', '4002')
```

Then, click the Play button  or type CTRL-E. The initial password for employees '4001' and '4002' will be output to the bottom part of the window. Write these numbers down or highlight and copy them for use in the next step.

Phase 5: Update The Solution Series Data

To test Interactive Benefits and Interactive Manager, complete the tasks in this phase.

1. Update Benefits information
2. Create workflow routing for Vacation Regular
3. Set up boundaries for Time Away Balances
4. Set up Position Administration for Interactive Manager

Update Benefits Information

To display next year's benefits information in Interactive Benefits, you must make the following changes to The Solution Series.

1. Access the Benefit Plan Rules form (TK-SCR)

On The Solution Series system, access the Benefit Plan Rules form (TK-SCR) by making the following selections:

Benefits ► Benefit Plan Setup ► Flex Plans ► Plan Name and Basic Rules

2. Clear fields and enter the Plan ID

Clear all the fields on the form and enter Plan ID 100.

3. Enter the effective date for Plan 100

To display benefits information for the 'next plan year' in Interactive Workforce, enter the Effective Date of 01-01-2003.

4. Enter the Plan Name

Enter 10000 Flex Master for the Plan Name.

5. Select a Plan Type

Select Flex Benefit Master as the Plan Type.

The screenshot shows the 'Benefit Plan Rules' form with the following fields and values:

- Plan ID: 100
- Effective Date: 01-01-2003
- Year End: 12-31
- Plan Name: 10000 Flex Master
- Plan Type: Flex Benefit Master
- Service Date: Original Hire Date
- Class: Mandatory
- Flex Master: [empty]
- Group Master: [empty]
- Accum Name: [empty]
- Ins Carrier: [empty]

The 'Default Enrollment' section has 'Option' set to a dropdown menu, with 'Pre-tax' and 'Post-tax' radio buttons. The 'HEDs' section has input fields for 'Basic Pre-tax', 'Basic Post-tax', 'Company', 'Supplemental Pre-tax', and 'Supplemental Post-tax'. A 'Continue Plan Rules' button is located at the bottom right.

6. Click Continue Plan Rules

When asked whether to Save Changes, click Yes. The system displays the next panel

7. Press Enter or Click Save

8. Access the Flex Benefits Master Plan Rules form (TKFSCR)

On The Solution Series system, access the Flex Benefits Master Plan Rules form (TKFSCR) by making the following selections:

Benefits ► Benefit Plan Setup ► Flex Plans ► Flex Benefits Master Plan Rules

9. Clear fields and enter the Plan ID and effective date

Clear all the fields on the form and enter Plan ID 100 and Effective Date is 01-01-2003.

10. Use Net Credits Meth

Click the radio button for Use Net Credits Meth.

11. Select Total Credits

Click the radio button for Before Enrollment.

12. Press Enter or Click Save

13. Access the Flex Master/Group Plan Components form (TP-SCR)

Benefits ► Benefit Plan Setup ► Flex Plans ► Flex Master/Group Plan Components

14. Clear fields and enter the Plan ID and effective date

Clear all the fields on the form and enter Plan ID 100 and Effective Date is 01-01-2003.

15. Enter Component Plans

Enter Component Plans 700, 701, 708, 712, 723, and 726.

Flex Master/Group Plan Components Control Number> 9999

Plan ID> 100

Effective Date> 01-01-2003

Plan Type: Flex Benefit Master

Component Plans

<input type="checkbox"/> 700 BC/BS Indemnity	<input type="checkbox"/> Metlife Health Plan	<input type="checkbox"/> EyeMed Vision
<input type="checkbox"/> 701 Cigna PPD	<input type="checkbox"/> Ameritas Dental-PPD	<input type="checkbox"/> Eye Care Intl
<input type="checkbox"/> 708 Ameritas Dental-Ind	<input type="checkbox"/> Ameritas Dental-Ind	<input type="checkbox"/> BC/BS Vision
<input type="checkbox"/> 712 EyeMed Vision	<input type="checkbox"/> Delta USA-Dental	<input type="checkbox"/> BeneScript
<input type="checkbox"/> 723 Hartford Basic Life	<input type="checkbox"/> Cigna Dental	<input type="checkbox"/> Rx America PDP
<input type="checkbox"/> 726 Medical FSA	<input type="checkbox"/> VSP-Vision Plan	

More Plans

16. Press Enter or Click Save

Create workflow routing for Vacation Regular

In Interactive Manager an employee's time away from work requests can be routed to the employee's manager and/or the HR department. This routing must be set up for each request type. In this task you set up the routing for the request type Vacation Regular so you can verify that the function works. A time away request for Vacation Regular will be routed to the employees' manager.

Note: To limit the types of time-away requests an employee can make, edit the TA05, Request Type, option list to include only the request types available in your organization.

1. Access the Workflow Routing Control Table form (T93SCR)

On The Solution Series system, access the Workflow Routing Control Table form (T93SCR) by making the following selections:

HR ► Employee Resourcing ► Manage Employee Attendance ► Time Away Workflow Setup

2. Select a Request Type

Select Vacation Regular from the drop down menu for Request Type.

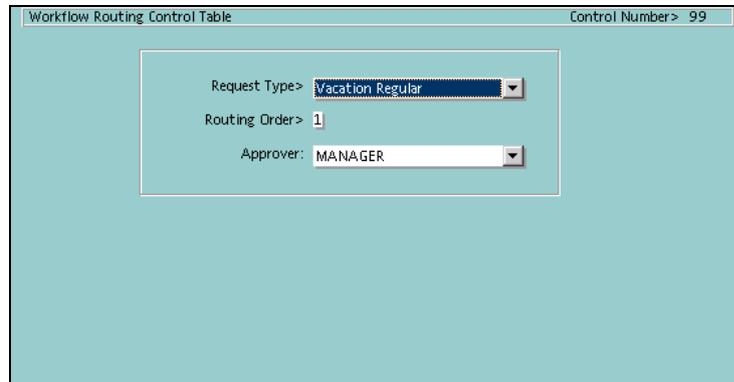
3. Enter a Routing Order

In the Routing Order text box, enter 1. This is the sequence for the routing of time away requests for Vacation Regular.

4. Select an Approver

Select Manager from the drop down menu for Approver. When an employee requests time away for regular vacation, Interactive Manager routes the request to the employee's manager.

The form should look similar to the following:



5. **Press Enter or Click Save**

Set up boundaries for Time Away Balances

Interactive Manager updates employees available time away from work balances based on the time away requests approved and time away entitlements earned during the year. To determine new time away entitlements earned and apply them to the employee balances, Interactive Manager sets a Time Away Boundary to indicate to the system the start of the year for calculating balances. Follow these steps to set boundaries.

1. **Access the Time Away Boundary Control Table form (T93JCR)**

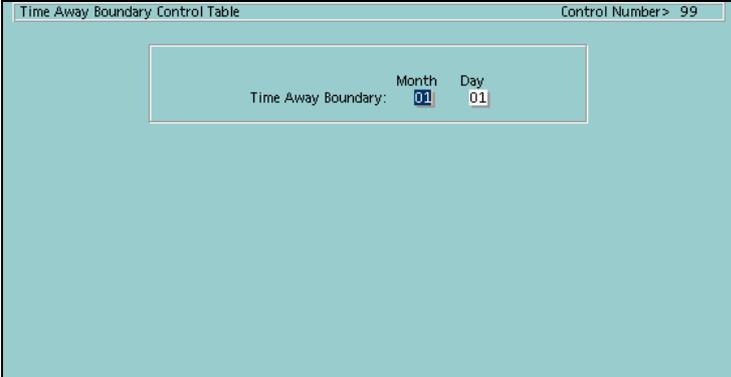
On The Solution Series system, access the Time Away Boundary Control Table form (T93JCR).

HR ► Employee Resourcing ► Manage Employee Attendance ► Time Away Boundary Control Table

2. **Enter the date from which to calculate time away balances**

Enter the Month and Date when you want the system to start calculating balances. If your organization uses a calendar year for calculating time away from work, for example, vacation entitlement, enter 01 (January) for the month and 01 for the day. If your organization uses a fiscal year that differs from the calendar year to calculate time away entitlement, enter that month and day. To set up data to test Interactive Manager, use 01 for the month and 01 for the day.

Your completed form should look similar to the following:



The screenshot shows a window titled "Time Away Boundary Control Table" with a "Control Number" of 99. The main content area contains a box with the text "Time Away Boundary:" followed by two input fields: "Month" with the value "01" and "Day" with the value "01".

3. **Press Enter or Click Save**

Set up Position Administration for Interactive Manager

To use Interactive Manager, users must use Position Administration. Follow the steps below to set up information for Interactive Manager.

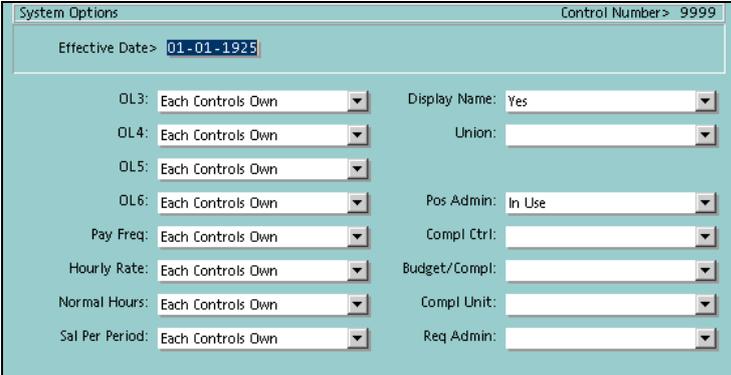
1. **Access the System Options form (TG-SCR)**

On The Solution Series system, access the System Options form (TG-SCR) by making the following selections:

HR ► HR Setup ► Setup HR Rules ► System Options

2. **Turn Position Administration on**

To use Interactive Manager, users must be using Position Administration. In the Position Admin drop down menu select In Use.



The screenshot shows a window titled "System Options" with a "Control Number" of 9999. The "Effective Date" is set to 01-01-1925. The form contains several dropdown menus:

OL3:	Each Controls Own	Display Name:	Yes
OL4:	Each Controls Own	Union:	
OL5:	Each Controls Own		
OL6:	Each Controls Own	Pos Admin:	In Use
Pay Freq:	Each Controls Own	Compl Ctrl:	
Hourly Rate:	Each Controls Own	Budget/Compl:	
Normal Hours:	Each Controls Own	Compl Unit:	
Sal Per Period:	Each Controls Own	Req Admin:	

3. **Press Enter or Click Save**

4. Access the Delete/Build T0P Cross-Reference Records form (ME5SCR)

Interactive Manager uses organization information in Position Administration to build records that relate managers to their staff members (direct reports). You must build these records any time an organization change is made that affects employees.

5. Select Perform Rebuild

Click the Perform Rebuild checkbox. When you save the information, the system rebuilds the records used by Interactive Manager.



The screenshot shows a web form with a title bar that reads "Delete/Build T0P Cross-reference Records". The main content area is light blue and contains a white-bordered text box with the text "Delete/Build T0P Cross-reference records?". Below this text box is a checkbox labeled "Perform Rebuild" which is checked.

6. Press Enter or Click Save

Phase 6: Test the installation

Once the installation is complete, you should test Interactive Workforce to ensure that it is working properly by logging in as an employee user to check functionality. Before doing that, you need to log in as the Initial or Benefits Administrator to verify Interactive Workforce Benefits functionality. Perform the tasks in this phase in the following order:

1. Verify Interactive Employee
2. Verify Interactive Benefits functionality (if installed)
3. Verify Interactive Manager functionality (if installed)

Verify Interactive Employee functions

In this task, you log on as a test user and complete the New User steps in Interactive Workforce. Completing this task ensures that the installation is fully functional.

1. Launch Interactive Workforce

Use your browser to access Interactive Workforce; enter the following URL:

`http://localhost/CyborgESS`

When you access the system, enter the employee ID '4001' in the login box. Next, enter the initial password for employee '4001' which you collected when you loaded Interactive Workforce users. When you access the system, you will be prompted to change passwords. Change the password to be the same as the user identification, in this case, '4001'.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's `HOSTNAME` instead of 'localhost'.

The Navigator displays New User when you log onto the system and the New User page displays.

New User Checklist

Welcome CATHERINE L. THOMPSON-WHITEFIELD

As a new user of Interactive Workforce it is important that you verify and complete the information below. After you complete these items, you will have access to the full functionality of Interactive Workforce

Once you have visited all items on this page, a Finished link will appear. You have to click this Finished link before you can access the full functionality.

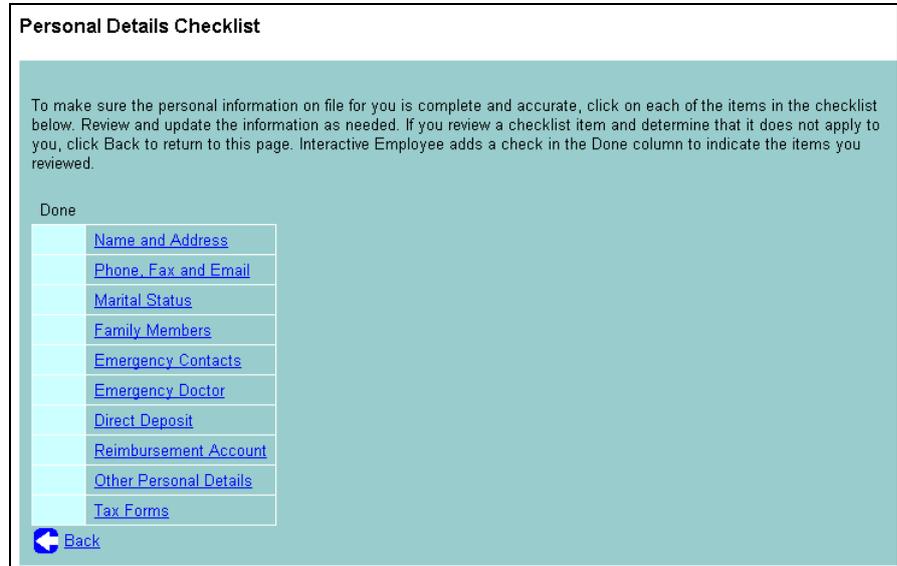
To exit the system during the process, click Log Off. You can log back on and continue at any time. The system keeps track of your progress.

Done Step

① [Personal Details](#)

2. Access the New User Personal Details

Click Personal Details to access the personal information for user 4001. To demonstrate that the system is fully functional and to be able to test Interactive Manager, click each of the personal details to display the page. Then click Back to return to the checklist. A check mark appears in the done column for each selection.



3. Click Finished on the Personal Details Checklist page

When a check mark appears for all Personal Details pages, click Finished. The system displays the original New User page.

4. Click Finished on the New User page

Click Finished on the initial page. The Navigator now shows the additional functions available to employee 4001.

5. Access the Pay Information options

From the Employee area of the Navigator, select Pay Information and then Pay Advice to verify access to the Pay Information database.

Congratulations! The system is working! Interactive Workforce may be accessed using the following URL:

`http://WebAppServerHostname/CyborgIW`

Verify Benefits functionality (Benefits installations only)

This task updates the benefits information for the next year and verifies that the Benefits pages are working properly. Pages that display should look similar to the graphics that follow.

1. Log in to Interactive Workforce as the Initial Administrator

Log in as the Initial Administrator using the password you entered when you launched Interactive Workforce in Phase 4 of the installation.

Administrator ► Benefits ► Benefit Plan Management ► Select Flex Master Plan

2. Verify the Next Year Flex Master Plan

On the Select Flex Master Plan page verify that Flex Master 100 is selected for the next plan year. If Flex Master 100 is not selected, click the radio button to select the plan.

It is of the utmost importance that Interactive Benefits use the correct Flex Master Plan when it displays benefit plan information to your employees. Select the correct Flex Master Plan for each organization. "Current year" should reflect the Flex Master Plan you are currently using for mid-year enrollments. "Next year" should reflect the Flex Master Plan you are using for this year's open enrollment period which will be the next benefit plan year. The dates displayed in the first column include all Flex Master Plans with effective dates within the past year including today's date. The dates displayed in the second column are all Flex Master Plans with an effective date that is greater than today's date.

Org ID	Organization	Select Your Current Year Flex Master Plan		Select Your Next Year Flex Master Plan	
		Number	Effective Date	Number	Effective Date
999999	ACME MANUFACTURING	<input checked="" type="radio"/> 100	January 1, 2002	<input checked="" type="radio"/> 100	January 1, 2003
		<input type="radio"/> 800	January 1, 2002		

[Save Changes](#)

3. Verify 'Maintain Flex Master Plan Information' page

On the Navigator, click Flex Master Plan Maintenance. The page for the first step of the Maintain Flex Master Plan Information displays.

Interactive Benefits requires additional information that is not in The Solution Series before your employees can start viewing and enrolling in benefits. For each Flex Master Plan you need to specify dates for open enrollment and initial enrollment. You also need to specify how excess flex credits will be handled. Select a Flex Master Plan below to view or update this information.

Current Year Plans

Done	Flex Master Plan	Participating Organizations
<input checked="" type="checkbox"/>	100	995555, 999999

Next Year Plans

Done	Flex Master Plan	Participating Organizations
<input checked="" type="checkbox"/>	100	995555, 999999

4. Select Next Year's Flex Master Plan

The system displays the Maintain Flex Master Plan Step 2 page. Enter a Beginning Date of January 1, 2002 and an Ending Date of January 1, 2003.

5. Enter the number of days for the Initial Enrollment Window

Enter 365 as the number of days for initial enrollment.

6. Display a message for Excess Flex Credits

Click the radio button to display a message for excess flex credits. Enter a short message in the message box, for example, Unused flex credits will be added to your wages.

Interactive Benefits requires some additional information that is not stored in The Solution Series that relates to eligible enrollment periods. If this Flex Master has flex credits, you may display a message to employees explaining how excess flex credits are handled.

Flex Master Plan ID: 100 Plan Year Effective Date: January 1, 2003

Open Enrollment Period

Beginning Date : * January 1 2002

Ending Date : * January 1 2003

Initial Enrollment Window

Specify the number of days from hire date that the employee is eligible to enroll in plans specific to this flex master plan

Number of Days : * 365

Excess Flex Credit Designation

Not applicable for this flex master.

Display following message to employees:

Unused flex credits will be added to your wages.

[← Back](#) [Save Changes](#)

7. Save Changes

8. Verify 'Maintain Benefit Plan Information' page

On the Navigator, click Benefit Plan Maintenance. The page for the first step of the Benefit Plan Maintenance displays:

Interactive Benefits requires additional information that is not in The Solution Series before your employees can start viewing and enrolling in benefits. For each Flex Master Plan you need to specify dates for open enrollment and initial enrollment. You also need to specify how excess flex credits will be handled. Select a Flex Master Plan below to view or update this information.

Current Year Plans

Done Flex Master Plan Participating Organizations

[100](#) 999999

Next Year Plans

Done Flex Master Plan Participating Organizations

[100](#) 999999

9. Select Next Year Plan

The system displays the 'Maintain Benefit Plan Information, Step 2 of 3' page. Select Plan 100 in the Next Year Plans.

10. Update the plan information

Select each of the plans (700, 701, 708, 712, 723, and 726) on the 'Maintain Benefit Plan Information, Step 3 of 3' page and use the following chart to update the information for each plan.

Plan	Subgroup	Company Contribution Checked?	Beneficiaries Checked?
700: BC/BS Indemnity	Medical Insurance	Yes	No
701: Cigna PPO	Medical Insurance	Yes	No
708: Ameritas Dental-Ind	Dental Insurance	Yes	No
723: Hartford Basic Life	Basic Life Insurance	Yes	Yes
726: Medical FSA	Medical Spending Account	No	No

Plan 726: Medical FSA also requires a maximum amount representing the maximum contribution or coverage amount for the plan and, if an FSA account, the latest date on which claims can be submitted. Enter 10000 for the Maximum Amount and select January 1, 2004 for the FSA date. The bottom portion of the following page displays only for plans that require a maximum contribution or coverage amount.

Interactive Benefits allows you to control the information that is displayed to your employees on a plan by plan basis. Update or review the information for the current plan.

Plan ID : 726 Flex Master Plan : 100 Effective Date : January 1, 2003

Plan Name : *

Subgroup : *

Place a check in the check box if the answer to the following questions is yes :

Do you wish to display a Company Contribution? Yes

Does this Plan have associated beneficiaries? Yes

ONLY FOR PLANS THAT REQUIRE A VARIABLE ENTRY

This box is being displayed because this plan requires the employee to enter a variable amount. Enter the maximum contribution or coverage amount allowed for this plan below.

Maximum Amount : *

Flexible Spending Accounts Only

If the plan you selected is eligible against a Flexible Spending Account, enter the FSA Submissions deadline below. Otherwise leave the entry box blank.

Deadline :

[← Back](#) [Save Changes](#)

11. Verify 'Maintain Dependent Coverage Options' page

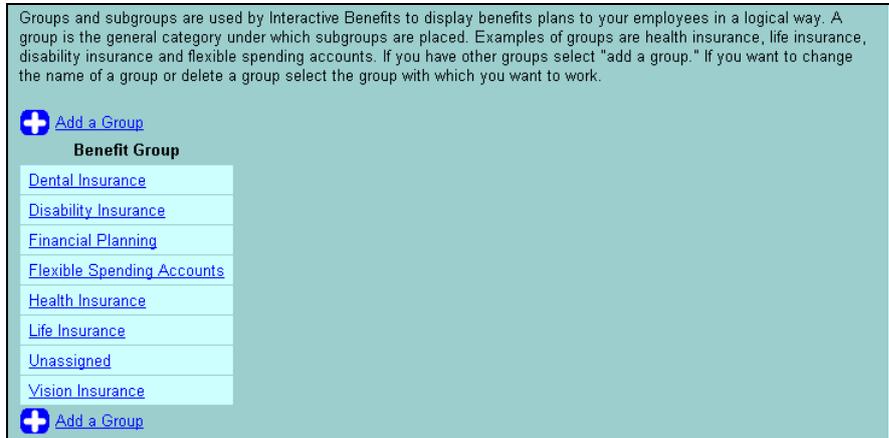
On the Navigator, click Dependents and Beneficiaries, and select the Dependent Coverage tab. Verify that the options below are selected:

- Employee & Spouse
- Employee & One Child
- Family/EE & Some Dep
- Family/EE & All Deps
- Employee & Sponsored
- Family/EE & Sponsored
- Emplie&spse/one 65+
- Emplie&spse/both 65+
- Emplie Only/65+
- LTC-Emp & Spouse
- LTC-Emp & Family

12. Verify the 'Benefit Plan Groups' page

On the Navigator, click Groups and Subgroups and then Benefit Plan Groups. Verify that the page for the first step of the Manage Benefit Plan Groups displays.

Groups and subgroups are used by Interactive Benefits to display benefits plans to your employees in a logical way. A group is the general category under which subgroups are placed. Examples of groups are health insurance, life insurance, disability insurance and flexible spending accounts. If you have other groups select "add a group." If you want to change the name of a group or delete a group select the group with which you want to work.



The screenshot shows a teal background with a list of benefit groups. At the top left is a blue plus icon followed by the text "Add a Group". Below this is the heading "Benefit Group" in bold. The list contains the following items, each on a light blue background with a white border and a blue underline: "Dental Insurance", "Disability Insurance", "Financial Planning", "Flexible Spending Accounts", "Health Insurance", "Life Insurance", "Unassigned", and "Vision Insurance". At the bottom left of the list is another blue plus icon followed by the text "Add a Group".

13. Verify 'Benefit Plan Subgroups' page

On the Navigator select 'Benefit Plan Subgroups.' The page for step 1 of the Manage Benefit Plan Subgroups process displays.

Interactive Benefits makes use of benefit groups and subgroups to display benefits to your employees in a logical way. Subgroups also perform an important function in Interactive Benefits as only one plan can be selected by an employee from each subgroup. Use the drop down lists to assign each subgroup to its appropriate group. You can add a new subgroup by selecting "Add a Subgroup." You can modify a subgroup's name or delete it by selecting the name of the subgroup.

[+ Add a Subgroup](#)

Benefit Subgroup	Group
Basic Life Insurance	Life Insurance
Dental Insurance	Dental Insurance
Dependent Care Spending Account	Flexible Spending Accounts
Dependent Life Insurance	Life Insurance
Financial Planning	Financial Planning
Legal Spending Account	Flexible Spending Accounts
Long Term Disability	Disability Insurance
Medical Insurance	Health Insurance
Medical Spending Account	Flexible Spending Accounts
Prescription Drug	Health Insurance
Short Term Disability	Disability Insurance
Supplemental Life Insurance	Life Insurance
Travel Spending Account	Flexible Spending Accounts
Vision Insurance	Vision Insurance

14. Verify the Display Order of benefit plan information

On the Navigator select 'Display Order.' The numbers for the Group Display Order shows the sequence in which groups of benefits display. The numbers in the Subgroup Display Order boxes show the sequence in which the subgroups display under the groups.

Group Display Order		Subgroup Display Order	
1	Dental Insurance	1	Dental Insurance
5	Disability Insurance	1	Long Term Disability
		2	Short Term Disability
7	Financial Planning	1	Financial Planning
6	Flexible Spending Accounts	2	Dependent Care Spending Account
		3	Legal Spending Account
		1	Medical Spending Account
		4	Travel Spending Account
2	Health Insurance	2	Medical Insurance
		1	Prescription Drug
4	Life Insurance	1	Basic Life Insurance
		3	Dependent Life Insurance
		2	Supplemental Life Insurance
9999	Unassigned		
3	Vision Insurance	1	Vision Insurance

Benefits Functionality has now been updated and verified.

Verify Interactive Manager (if installed)

Interactive Manager provides employees with the ability to request time away from work online. Interactive Manager then routes the request to the manager and/or the HR department based on the routing set up for the request type on the Workflow Routing Control Table form (T93SCR). Interactive Manager also allows managers to view personal and work information for their staff members (direct reports). To test this functionality in Interactive Manager, follow these steps.

1. Log in to Interactive Workforce as employee 4002

Log in as employee 4002 using the password you collected when you loaded Interactive Workforce users in Phase 4. When requested, change the password to 4002.

2. Access the Time Away Request page

From the Employee area of the Navigator select Time Away.

Employee ► Time Away

3. Complete the time away request

Complete the time away request by entering the following information:

Start Date	Enter the date for any weekday in the near future, for example, 09-09-2002
Request Type	From the drop down menu select Vacation Regular
Number of Days	2
Include Weekends	Leave this checkbox empty.
Hours per Day	8

The page should look similar to the page that follows.

Complete the fields below and click Submit to create a new request. Check the box labeled Include Weekends only if your normal work schedule includes weekends AND you want to take weekends off.

You may also select a previous request from the list below to view or withdraw the request. The Status indicates where your time away request is in the approval process.

Start Date: * 07-22-02 

Request Type: * Vacation Regular 

Number of Days: * 2

Include Weekends:

Hours Per Day: * 8

4. Submit the request

Click Submit to submit the request. The new request appears on the list of time away requests at the bottom of the page with a status of 'Pending Mgr Approval.'

5. Log off the system**6. Log on to the system as employee 4001**

Log in as employee 4001 using the password you reset when you verified Interactive Employee.

- 7. Access the Inbox**
From the Manager area of the Navigator click Inbox. Be sure the time away request for employee 4002 appears in the inbox.
- 8. Access the Staff Members page**
On the Manager area of the Navigator click Staff Members. This manager, employee 4001, should have one staff member, employee 4002.
- 9. Click Employee 4002 to display additional information**
Click the employee's name to display the tab page with Contact, Work, and Personal information.
- 10. Verify information for employee 4001**
Click each tab (Contact, Work, and Personal Information) to verify that information for employee 4001 displays.
- 11. Log off the system**
Congratulations - Interactive Manager is installed and functioning correctly.

PART 3

Part 3 - Appendices

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A P P E N D I X A

Installation Checklists

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Pre-Installation activities

The following activities are to be completed by the installer:

- Verify that the following people are available during the installation:
 - Database Administrator
 - System Administrator
 - Payroll Administrator
- Verify that the minimum system requirements are met.
- Verify that the minimum software requirements are met.

Installation

The following activities are to be completed by the client prior to the installer's arrival:

- Preparation Phase: Preparation and prerequisite software
 - Pre installation Requirements
 - Verify the Server Prerequisites
 - Verify the Client Prerequisites
 - Configuration Worksheet
 - Install the prerequisite software

The following activities are to be completed by the installer:

- Phase 1: Install the Web Server
 - Install the Java Development Kit (JDK)
 - Install ServletExec and patch if applicable
 - Install the Interactive Workforce Web Server software
- Phase 2: Install the the Application Server
 - Transfer install files from the PC to the server
 - Log in to system under administration account
 - Set execute permission
 - Update The Solution Series test data for Interactive Workforce
 - Update The Solution Series Report Generators for Interactive Workforce
 - Configure CAS for the STAPI
- Phase 3: Create and Populate the Pay Information database on the the Application Server
 - Create the Pay Information database
 - Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series
 - Configure the Organizaition Options form (AF-SCR) in The Solution Series
 - Setup a payroll run
 - Perform the payroll run
 - Load the Pay Information database
- Phase 4: Create and Populate the Interactive Workforce database on the Web Server
 - Create the Interactive Workforce database
 - Add ODBC Data Source for the Interactive Workforce database
 - Create Oracle ODBC Service for Pay Information database

- Add ODBC Data Source for the Pay Information database
- Start Orbix and ServletExec
- Launch Interactive Workforce
- Access the Interactive Workforce Administrator Utility
- Import Option Lists from The Solution Series
- Select Organizations for Interactive Workforce
- Select Resulting Statuses for Interactive Workforce
- Set up Direct Deposit HEDs
- Load Interactive Workforce Users

- Phase 5: Update The Solution Series data
 - Update Benefits information
 - Create workflow routing for Vacation Regular
 - Set up boundaries for Time Away Balances
 - Set up Position Administration for Interactive Manager
- Phase 6: Test the installation
 - Verify Interactive Employee
 - Verify Interactive Benefits (if installed)
 - Verify Interactive Manager (if installed) Verify Interactive Employee functions

A P P E N D I X B

Multiple Environments on the Same Servers

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Multiple Environments on the Same Servers

This appendix addresses important topics related to configuring Interactive Workforce for multiple environments of The Solution Series with all environments installed on the same server(s).

Interactive Workforce is an extension of The Solution Series, and it also supports multiple environments. Cyborg recommends a two-server configuration for Interactive Workforce. In the two-server configuration, multiple Interactive Workforce environments run on the web server and communicate with one or more of The Solution Series environments on the Solution Series Application Server.

At the completion of the installation, the following environments may be established:

- Default
- Test
- Production

The Interactive Workforce auto-install program creates the Default environment. The Default environment provides verification of a full Interactive Workforce system. It is strongly recommended that the Default environment be maintained to provide a base on which to install and verify later software releases.

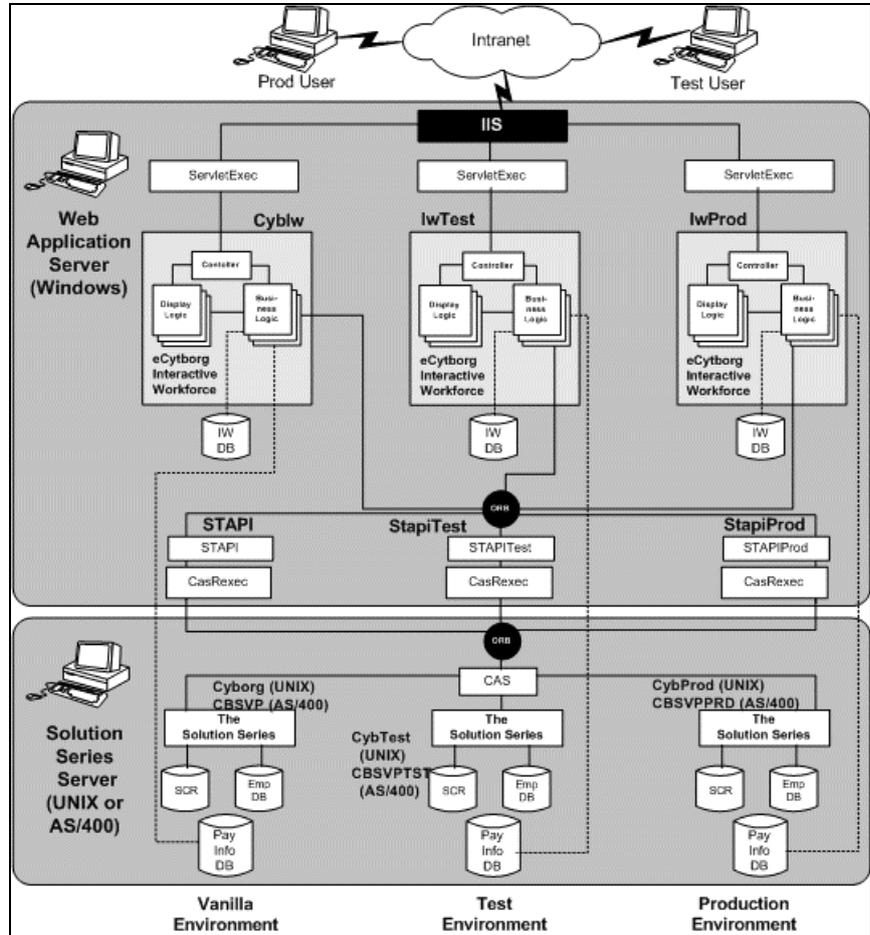
The Default environment also provides a source from which the Test and Production environments are created. The Test and Production environments are created manually by following the directions in this appendix.

Interactive Workforce utilizes a software package, ServletExec from Unify, which requires separate licensing. Each Interactive Workforce environment requires a separate instance of ServletExec to run. For each Interactive Workforce environment that is intended to be used widely with reasonable performance, a separate ServletExec license is required. Cyborg provides two ServletExec licenses, one for the Test environment and one for the Production environment. The Default environment is usable, but with a limit of 5 concurrent users. Contact your Cyborg representative if you need additional ServletExec licenses.

Multiple environments on the same servers

With multiple environments installed on the same two-server configuration, they all can share the same IIS and Orbix. Within this setup, each one requires some environment-specific file and directory names. Each environment would be accessed through a different web site on the Web Server.

This appendix shows how to set up multiple environments in this manner.



Internet Information Server (IIS)

The IIS is the web server software for the Windows 2000 Server. It handles requests from browsers Internet Explorer and Netscape Navigator.

A single instance of the IIS supports any number of Interactive Workforce environments. Each environment requires a separate web site that is configured in IIS. Each web site must be configured with a unique port and/or hostname by which it is accessed, as well as a unique home directory which stores the Display Logic.

ServletExec

The ServletExec software plugs into IIS. It performs preprocessing for all Interactive Workforce requests, then forwards them on to Interactive Workforce. A separate instance of ServletExec is required to support each Interactive Workforce environment. This is done to ensure isolation between the environments—for example, if you want to reconfigure the

ServletExec for the test environment and need to restart, then it will not affect the production environment. Each instance of ServletExec is installed into its own directory.

Interactive Workforce

Interactive Workforce consists of many components. The components can be grouped into two types: Display Logic and Business Logic. For each environment, these two groups must be installed in two different areas on the Web Server. The Display Logic directory is the home directory of the web site and stores all of the Interactive Workforce Display Logic files. The Business Logic directory is the install directory of the ServletExec instance and stores all of the Interactive Workforce Business Logic files.

Interactive Workforce and Pay Information databases

The Interactive Workforce database primarily contains Interactive Workforce administration data. The Pay Information database stores pay history information for Interactive Workforce users. Each Interactive Workforce environment requires unique Interactive Workforce and Pay Information databases. Each environment-specific database is stored in its own directory and is maintained by a set of scripts, configuration files, and log files stored in the directory.

The STAPI and CORBA

The STAPI provides access to The Solution Series. Each Solution Series environment that underlies an Interactive Workforce environment must be a separate instance of the STAPI. Each instance of the STAPI is configured to connect to a Solution Series environment.

Interactive Workforce in turn is configured to communicate with an instance of STAPI

All STAPI instances are supported by a single directory structure, whereas most components require a separate directory structure for each environment.

The Solution Series Environment

The Solution Series provides the backend for Interactive Workforce. It is simplest to maintain a one-to-one relationship between Interactive Workforce and corresponding Solution Series backends. However, it is possible to configure multiple Interactive Workforce environments against a single Solution Series backend. In this case Cyborg strongly recommends that there is no overlap in the set of employees that use each Interactive Workforce environment.

In order for a Solution Series environment to support Interactive Workforce, some updates must be applied to the Solution Series environment. These updates are applied by running the Interactive Workforce install software as described in this document.

Multiple Environments directory structure

The process of creating multiple environments on the same servers is primarily one of duplication of directories and configuration of the files in those directories. In the process, some directory and file names must be changed to become environment-specific.

The following table details the directory structure of the Default, Test, and Production environments, and how any subsequent new environments need to be modeled. It shows which directories must have environment-specific names and the files they contain. It also shows which files must have environment-specific names.

WEB Application Server Installation with three Interactive Workforce Environments

Default Environment	Test Environment	New Environment
Inetpub\ \wwwroot \CyborgIW\ \Info \OpenSSL \Resources	\eCyborg\CybIWTest \CyborgIW \Info \Resources	\eCyborg\CybIWProd \CyborgIW \Info \Resources
eCyborg\IW\ESSDatabase\ \CybIW\ \SQLData\ createdbssl.cmd createessdb.bat essdb.cfg ESSDB.sql LoadUsers.fmt LoadUsers.bat LoadUsers.sql PasswordGen.cfg PassswordGen.properties SetEssInitialValues.sql	\CybIWTest\ \SQLData\ createdbssl.cmd createessdb.bat essdb.cfg EssDB.sql LoadUsers.fmt LoadUsers.bat LoadUsers.sql PasswordGen.cfg PassswordGen.properties SetEssInitialValues.sql	\CybIWProd\par \SQLData\ createdbssl.cmd createessdb.bat essdb.cfg EssDB.sql LoadUsers.fmt LoadUsers.bat LoadUsers.sql PasswordGen.cfg PassswordGen.properties SetEssInitialValues.sql

Default Environment	Test Environment	New Environment
eCyborg\IW\ServletExec \se-CybiIW\Maps\ ClientErrors.properties ess.properties essmdf.properties locale.properties OptionListExtract.properties OrbixWeb.properties ServerErrors.properties startServletExec.bat stopServletExec.bat	\se-CybiIWTest\Maps\ ClientErrors.properties ess.properties essfdf.properties essmdf.properties locale.properties OptionListExtract.properties OrbixWeb.properties ServerErrors.properties startServletExec.bat stopServletExec.bat	\se-CybiIWProd\Maps\ ClientErrors.properties ess.properties essfdf.properties essmdf.properties locale.properties OptionListExtract.properties OrbixWeb.properties ServerErrors.properties startServletExec.bat stopServletExec.bat
\ecyborg\IW\Stapi \bin ResumeStapi.bat StapiServer.bat SuspendStapi.bat SuspendStapi.properties \config Stapi.cfg	ResumeStapiTest.bat StapiServerTest.bat SuspendStapiTest.bat SuspendStapiTest.properties StapiTest.cfg	ResumeStapiProd.bat StapiServerProd.bat SuspendStapiProd.bat SuspendStapiProd.properties StapiProd.cfg
\ecyborg\IW\CasRexec \bin crxcbsvo.bat crxcybio.bat \etc crxcbsvo.properties crxcybio.properties	crxcbsvotest.bat crxcybiotest.bat crxcbsvotest.properties crxcybiotest.properties	crxcbsvoprod.bat crxcybioprod.bat crxcbsvoprod.properties crxcybioprod.properties

Phase 1: Preparation

These tasks, performed in advance, help you determine the configurations, directory names, and file names. They also give you a reference tool to use while setting up the environment and for future maintenance of the system.

Perform the tasks in the following order:

1. Plan for the new environment
2. Complete the environment worksheet

Plan for the new environment

1. Ensure there is enough disk space



Refer to Hardware Requirements in the beginning of this Guide.

Note: If you are creating an environment other than the full production system, you may wish to lower the amount of disk space required by the database. You may do so by lowering the DBSIZE parameter in the database configuration file. Refer to Technical Administration of Interactive Workforce for more information on the database configuration files.

2. Decide on a new, unique name for the new Interactive Workforce environment

This name is used to retain consistency throughout the directory structure while naming directories and renaming files. When you have multiple environments set up, it is important that the files and directories for each environment are named appropriately to help you distinguish which files and directories belong with each corresponding environment as you configure and maintain the system. The following naming convention is used in examples in this guide:

CybESSTest

3. Choose an Interactive Workforce source environment

An existing Interactive Workforce environment provides a source from which to create the new Interactive Workforce environment. Locate all of the directories that support the source environment.



Refer to the Multiple Environments directory structure for a detailed listing of directories and files.

4. Determine The Solution Series environment that the new Interactive Workforce environment will access

The following information about the The Solution Series environment is necessary:

- The hostname of the server on which The Solution Series resides
- The path of The Solution Series environment that will be accessed by the new Interactive Workforce environment.

Complete the environment worksheet

The following worksheet helps you keep track of the environment-dependent configurations, to serve as a reference as you configure and maintain an environment. You should fill this out as you review this appendix prior to implementing multiple environments.

**Environment Configuration
Web Application Server**

Environment Parameter	Environment Setting
Interactive Workforce Environment Name	Default: CybIW Test: CybIWTest (suggested)
Web Application Server hostname The name of the machine where IIS is installed.	Mars (example)
Display Logic Directory The home directory of the IIS configured web site for the environment and the location of all Interactive Workspace display logic files. <i>Note: This directory is created by ServletExec; you do not need to manually create the directory.</i>	Default: Inetpub\wwwroot Test: Inetpub\eCyborg\CybIWTest (suggested)
Business Logic Directory ServletExec install directory and the location of Interactive Workforce business logic files	Default: eCyborg\IW\ServletExec\se-CybESS Test: eCyborg\IW\ServletExec\se-CybIWTest (suggested)
IIS Port Unique TCP Port for the IIS configured web site.	Default: 80 (default) Test: 8080 (example)
SSL Port Unique SSL Port for the IIS configured web site.	Default: 443 (default) Test: 8480 (example)
URL Universal Resource Locator for Interactive Workforce	Default: http://hostname/CyborgIW/ Test: http://hostname:IISport/CyborgIW/ (suggested) http://mars:8080/CyborgIW (example)
ServletExec Loop Back Port Port on which IIS and ServletExec communicate. This is determined in the ServletExec install. <i>Note: ServletExec will choose the port for you.</i>	Default: 8888 Test: 889 (example)
Interactive Workforce Database Name	Default: CybIW Test: CybIWTest (example)
Interactive Workforce Database User Name	Default: cybessdba Test: cybesstestdba (example)
Pay Info Database Name	Default: CybPayInfo Test: CybPay InfoTest (example)
Pay Info Database User Name	Default: cybpaydba Test: cybpayinfotestdba (example)
Pay Info Database User Password	Default: cybpayinfodba Test: cybpayinfotestdba (example)

Solution Series Application Server

Environment Parameter	Environment Setting
the Solution Series Application Server hostname	Default: jupiter (example) Test: jupiter (example)
The Solution Series Environment Name The name of The Solution Series environment as it appears in the drop-down list on The Solution Series login dialog.	Default: st50 (example) Test: st50test (example)
The Solution Series Environment Location	Default: d:\Cyborg\st500\ (example) UNIX: /u01/cyborg/prod/st50 (example) Test: d:\Cyborg\500test\ (example) UNIX: /u01/cyborg/test/st50 (example)

Phase 2: Install the Solution Series Application Server Environment Components

This tasks in this phase should be performed in the following order:

1. Install the new environment files on a PC
2. Transfer install files from the PC to the server
3. Log in to the UNIX server under administrator account
4. Set execute permission
5. Update The Solution Series for Interactive Workforce text data
6. Update The Solution Series Report Generators for Interactive Workforce
7. Load Interactive Workforce Users

Install the new environment files on a PC

This task should be performed on the PC to generate files which will be uploaded to the UNIX server.

Start the Installation

Insert the Installation CD into the CD-ROM drive of the computer that will be the Web Server. From the NT desktop, make the following selections:

Start ► Run

In the Run dialog, run the following program from the CD-ROM drive:

NewEnv(Unix).exe

Follow the installation prompts.

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'For this installation...' column.

Prompt	Default	Select the following...
Hostname	n/a	Hostname of UNIX Server:
ST Dir	n/a	Directory of The Solution Series environment:
Pay Information Database Configuration	<ul style="list-style-type: none"> ■ DB Dir (default n/a) ■ DB Owner (default n/a) ■ DB Pwd (default n/a) 	<ul style="list-style-type: none"> ■ Directory location of DB files: ■ Oracle Username of DB Owner: ■ Password of Oracle DB Owner:

Transfer install files from the PC to the server

1. **Verify system name and variables**

FTP Command Script: ftpcmds_ESS.UNX

Open the ftp command script, which is read by the transfer program, to verify the name and variables entered during the autoinstall. The file is located in the following directory:

```
../eCyborg/ESS/upload/NewEnvUNIX
```

2. **Run the file transfer program**

Job Used: JFTP

Run the file transfer job from a command prompt on the Windows client. This will load the The Solution Series files from the PC to the Solaris UNIX server.

Note: You will need to have the FTP capability enabled on both systems.

Example of command line to run this job:

```
JFTP USERNAME
```

You can verify the ftp by checking the ftpupload.log file which will be generated in the same directory with the ftp job. Both are located in the following directory:

```
../eCyborg/ESS/upload/UNIX
```

Log in to the UNIX server under administration account

If you already have an existing system administration account from a previous installation, you may wish to use the same account. In the case of Multiple Environments, you may wish to use the user account from the corresponding The Solution Series environment while installing the Interactive Workforce part of the environment. You must set up the permissions for this new account.

Log into the system using the given installation user account.

Set execute permission

On the UNIX machine, go to the directory on where you loaded the The Solution Series files into the `$runs` directory. Execute:

```
chmod 777 setESSperm
```

Once that is completed execute `setESSperm` script. This will set the permission to the additional scripts:

- jessdemo
- jessxpt
- jiswase
- jloadessgen
- jxessrptgen
- onlineE
- jess_service_pack

Update The Solution Series test data for Interactive Workforce

Job used: jiwdemo

Note: By preceding the batch job with 'rj' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.

Interactive Workforce provides new employee test data to the standard test company (999999). The data contained in these new test employees will allow you to thoroughly test your installation of Interactive Workforce. Open a command prompt and apply the Interactive Workforce test data by running the following script from the \$runs directory:

```
./rj jessdemo > $log/jessdemo.log
```

This will merge the new test data with the standard test data prior to loading it into the Interactive Workforce database.

Update The Solution Series Report Generators for Interactive Workforce

Important! All users must be logged off of The Solution Series in order to perform this task.
--

1. Execute the Pay Extract script

Job used: jpayxtr

From the \$runs directory of your Solution Series system, execute the following script:

```
./rj jpayxtr > $log/jpayxtr.log
```

This script will create a new p20in file in the \$data directory.

2. Extract the Interactive Workforce Report Generators

Job used: jxessrptgen

From the \$runs directory of your Solution Series system, execute the following script:

```
./rj jxessrptgen > $log/jxessrptgen.log
```

3. Load the Interactive Workforce Generators

Job used: jloadessgen

From the \$runs directory of your Solution Series system, execute the following script:

```
./rj jloadessgen > $log/jloadessgen.log
```

4. Execute the Pay Merge script

Job used: jpaymrg

From the \$runs directory of your Solution Series system, execute the following script:

```
./rj jpaymrg > $log/jpaymrg.log
```

Load Interactive Workforce Users

This task will create the text file that will be used to populate the Interactive Workforce database with users. The Interactive Workforce database will be created later.

1. On the the Application Server, execute the Interactive Workforce User extract script

Job used: jessxpt

This first step must be executed on the Application Server, and extracts all valid users from The Solution Series Employee Database. It writes the user information into a text file which will be used to populate the Interactive Workforce database.

From the \$runs directory of your Solution Series system on the Application Server machine, execute the following script:

```
./rj jessxpt > $log/jessxpt.log
```

The user extract program creates the following export file in the \$data directory:

EssUsers.txt

This file must now be transferred to the Web Server via FTP (File Transfer Protocol) to be loaded into the Interactive Workforce database. The next few steps demonstrate the transfer of the EssUsers.txt file to the Web Server via FTP.

Note: The jessxpt script will take some time to extract employee information and create the text file, depending on the size of the company and the processing speed of the computer. For example, a company of 2000 employees may take up to two minutes to extract from the The Solution Series Employee database.

2. On the Web Server, open a command prompt

Go to the Web Server machine and open a command prompt. You can open a command prompt by making the following selections from the NT desktop:

Start ► Programs ► Command Prompt

3. Change directories to the Interactive Workforce database directory specific to that environment

The `EssUsers.txt` file needs to be transferred to the Interactive Workforce database directory for the desired environment. For example, for the default installed environment, change directory to the following:

```
...\\eCyborg\IW\ESSDatabase\CybIW
```

4. Open FTP access to the the Application Server

Open FTP access from the Web Server to the the Application Server using the 'ftp' command followed by the hostname of the the Application Server machine:

```
ftp The Solution Series_Application_Server_Hostname
```

When the command executes, you will be prompted for the UNIX administrator user name and password. Enter these as prompted.

5. Change directories to the \$data directory for the desired The Solution Series environment

From the ftp> prompt, use the 'cd' command to change to the \$data directory of the desired The Solution Series environment. For example:

```
ftp> cd /CYBORG_ENVIRONMENT_HOME/data
```

6. Transfer EssUser.txt from the the Application Server

Transfer the EssUsers.txt file from the the Application Server using the 'get' command, as following:

```
ftp> get EssUsers.txt
```

When executed, 'ftp' will transfer the EssUsers.txt file from the the Application Server to the Web Server. When complete, the prompt should appear similar to the example shown here:

```
ftp> get EssUsers.txt
 200 PORT command successful.
 150 Opening ASCII mode data connection for EssUsers.txt (26069 bytes).
 226 Transfer complete.
26200 bytes received in 0.02 seconds (1637.50 Kbytes/sec)
ftp>
```

7. Execute the Load Users script

While still in the command prompt and at the ...\\eCyborg\ESS\CybESS\ directory, execute the following script:

```
loadusers.bat
```

This script will populate the Interactive Workforce database with the data in the EssUsers.txt file. After the initial population, this script also compares the data in the latest EssUsers.txt file to that already existing in the Interactive Workforce database, adding only new or changed data. Once this step is complete, the Interactive Workforce database has been populated and/or updated.

Note: Populating the Interactive Workforce database will take some time, depending on the size of the company and the processing speed of the computer. For example, a company of 2000 employees may take up to three minutes to load in the database.

8. Access Query Analyzer

We are now going to take a 'short cut' to get the password of a specific user in the sample data set using the SQL 7 Query Analyzer.

To access SQL 7 Query Analyzer enter the following commands:

```
Start ► Programs ► Microsoft SQL Server 7.0 ► Query Analyzer
```

Important! Remember to log in to the Query Analyzer using the login for the correct database. Use the following login:
cybiwdba

Note: If you have Interactive Workforce Administrator access, you may also use the Interactive Workforce Administration functionality to find the user password. Refer to the eCyborg Interactive Workforce: The Administrators' Guide for information on using the Interactive Workforce Administration functionality.

9. Collect the Initial Password to Access Interactive Workforce

In order to access Interactive Workforce you need to collect the initial password for employees '4001' and '4002' from the Cyborg_User table. From the Query Analyzer window enter the following command:

```
select login_name, initial_password
from cyborg_user
where login_name in ('4001', '4002')
```

Then, click the Play button  or type CTRL-E. The initial password for employees '4001' and '4002' will be output to the bottom part of the window. Write these numbers down or highlight and copy them for use in the next step.

When finished, exit the command console.

Determine whether a folder appears with the name of the targeted The Solution Series environment. Expand the folder to verify that a STAPIServer is registered there. If the STAPI is registered for the The Solution Series environment skip to the next Task.

Phase 3: Configuring the New Interactive Workforce Environment with the Solution Series Environment

As described above, Interactive Workforce communicates with The Solution Series via the STAPI. This section describes how to configure an instance of STAPI for The Solution Series environment and how to configure Interactive Workforce to communicate with STAPI.

This section also contains optional instructions for those customers that want to configure multiple Interactive Workforce environments to a single Solution Series environment.

The following tasks must be performed on the Solution Series Application Server. Perform the tasks in the following order:

1. Determine whether an instance of STAPI has been configured
2. Create an environment-specific STAPI
3. Register the STAPI environment with Orbix
4. Enable STAPI suspension during payroll run
5. Optional: Configure The Solution Series to support multiple Interactive Workforce environments

Determine whether an instance of STAPI has been configured

1. Open the Orbix Server Manager

To open the Orbix Server, make the following selections from the desktop:

Start Programs ► Interactive Workforce ► Orbix Tools ► Server Manager

2. Access the Connect to Host dialog

From the menu bar of the Server Manager, make the following selections:

Connect ► Connect

The Connect to Host dialog appears indicating the localhost and port number.

3. Click Connect

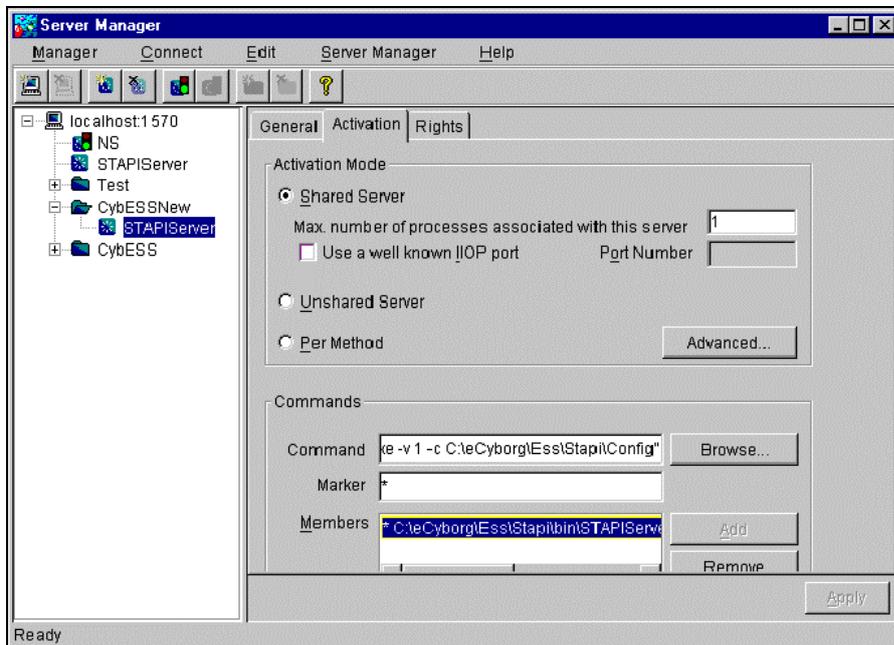
The Server Manager will connect to the localhost.

4. Review registered STAPIs

The left side of the navigator lists registered servers and folders. It should show at least two registered servers: NS and STAPIServer. The NS server is the CORBA Naming Service. The STAPIServer is the instance of STAPI that supports the Default environment.

Other STAPI servers are registered under folders bearing the name of an environment. It is recommended that each STAPI be registered under the name of The Solution Series environment and not the Interactive Workforce environment. This standard is consistent with the fact that there is a one-one relationship between STAPI and The Solution Series and potentially a many to one relationship between Interactive Workforce and The Solution Series.

Determine whether a folder appears with the name of the targeted The Solution Series environment. Expand the folder to verify that a STAPIServer is registered there. The STAPI configuration file for the environment-specific instance of STAPI should be listed in the command line arguments. If the STAPI is registered for the The Solution Series environment skip to Task 5: Modify Interactive Workforce Configuration.



Create environment-specific cbsvo and cybio files

- 1. Copy the crxcybio.bat and crxcbsvo.bat files**

Each environment requires environment-specific copies of these two files. They are located in the following directory:

```
...leCyborg\Ess\CasRExec\bin
```
- 2. Paste the copies into the same directory**

Environment-specific files must be located in the same directory.
- 3. Rename the copies with environment-specific names**

In order to distinguish the files, they require names based on the environment name. For example:

crxcbsvoTest.bat
 crxcybioTest.bat

4. Edit the files to set the location of the environment-specific properties files

Open each of the new files in a text editor and set the `set` `PROPERTIES` variables to reflect the location of the The Solution Series environment. The new properties files will be created in the next steps.

Example: crxcybioTest.bat

```
setlocal
set PROPERTIES=%~dp0.\etc\crxcybioTest.properties
set JAR=%~dp0.\lib\casrexec.jar
if exist %CYBORG_HOME%\config\javaenv.cfg for /f "eol=#
delims== tokens=1-2" %%i in
(%CYBORG_HOME%\config\javaenv.cfg) do set %%i=%%j
if "%JAVA_HOME%x" == "x" goto No_JAVA_HOME
"%JAVA_HOME%\bin\java.exe" -jar %JAR% -p
%PROPERTIES%
goto End
```

(complete file not shown)

Example: crxcbsvoTest.bat

```
setlocal
set PROPERTIES=%~dp0.\etc\crxcbsvoTest.properties
set JAR=%~dp0.\lib\casrexec.jar
if exist %CYBORG_HOME%\config\javaenv.cfg for /f "eol=# delims==
tokens=1-2" %%i in (%CYBORG_HOME%\config\javaenv.cfg) do set %%i=%%j
if "%JAVA_HOME%x" == "x" goto No_JAVA_HOME
"%JAVA_HOME%\bin\java.exe" -jar %JAR% -p %PROPERTIES%
goto End
```

(complete file not shown)

5. Save the new files

6. Copy the crxcybio.properties and crxcybsvo.properties files

Each environment requires environment-specific copies of these two files. They are located in the following directory:

...leCyborg\Ess\CasRExec\etc

7. Paste the copies into the same directory

Environment-specific files must be located in the same directory.

8. Rename the copies with environment-specific names

In order to distinguish the files, they require names based on the environment name. For example:

```
crxcbsvoTest.properties  
crxcybioTest.properties
```

9. Edit the files to reference new Interactive Workforce environment

Open each of the new files in a text editor and set the `set PROPERTIES` variables to reflect the location of the The Solution Series environment. The new properties files will be created in the next steps.

5. Save the new files

6. Copy the `crxcybio.properties` and `crxcybsvo.properties` files

Each environment requires environment-specific copies of these two files. They are located in the following directory:

```
...\eCyborg\Ess\etc
```

7. Paste the copies into the same directory

Environment-specific files must be located in the same directory.

8. Rename the copies with environment-specific names

In order to distinguish the files, they require names based on the environment name. For example:

```
crxcbsvoTest.properties  
crxcybioTest.properties
```

9. Edit the files to reference new Interactive Workforce environment

Open each of the new files in a text editor and set the `set PROPERTIES` variables to reflect the location of the The Solution Series environment. The new properties files will be created in the next steps.

Example: crxcybioTest.properties

```
# com.cyborg.casrexec.app.environment={<string>}
#
# Specifies the environment defined in the CAS
# configuration. The names "test" and "prod" are often
# used for environments, for example. The environment can
# be at most 8 characters long.
#
# com.cyborg.casrexec.app.id={<number>}
#
# Specifies the application ID of the application to
# execute. This is defined in the CAS configuration.
# Application 2 represents the The Solution Series application
(CBSVO),
# while application 3 represents the FILE01 application
# (CYBIO).
#
com.cyborg.casrexec.app.environment=essTest
com.cyborg.casrexec.app.id=3
                                     (complete file not shown)
```

Example: crxcbsvoTest.properties

```
# com.cyborg.casrexec.app.environment={<string>}
#
# Specifies the environment defined in the CAS
# configuration. The names "test" and "prod" are often
# used for environments, for example. The environment can
# be at most 8 characters long.
#
# com.cyborg.casrexec.app.id={<number>}
#
# Specifies the application ID of the application to
# execute. This is defined in the CAS configuration.
# Application 2 represents the The Solution Series application
(CBSVO),
# while application 3 represents the FILE01 application
# (CYBIO).
#
com.cyborg.casrexec.app.environment=essTest
com.cyborg.casrexec.app.id=2
                                     (complete file not shown)
```

10. Save the new files

Create an environment-specific STAPI

1. Copy the STAPI configuration file

Each environment requires an environment-specific configuration file located in the following directory:

...\\eCyborg\Ess\Stapi\config\STAPI.cfg

2. Paste the copy into the same directory

Environment-specific files must be located in the same directory.

3. Rename the copy with an environment-specific name

In order to distinguish the files, they require names based on the environment name. For example:

StapiTest.cfg

4. Edit the file to reflect the The Solution Series environment

Open each of the new files in a text editor and set the ST_DRIVE and ST_HOME variables to reflect the location of the The Solution Series environment. The following parameters must be configured:

- EnvironmentPathName=*name of the The Solution Series environment as registered with CAS*
- CBSVAppName=*name of environment-specific cbsvo.bat file created above*
- FileOneAppName=*name of environment-specific cybio.bat file created above*

The edited file should look similar to the following example:

```
EnvironmentPathName=45Test
CBSVDirectory=c:\eCyborg\Ess\STAPI\Bin
CBSVAppName=cbsvoTest.bat
FileOneDirectory=c:\eCyborg\Ess\STAPI\Bin
FileOneAppName=cybioTest.bat
(complete text not shown)
```

Note: EnvironmentPathName is only a reference. It is not used as a physical path. The environment name used to register The Solution Series with the CAS Manager is suggested for simplicity and consistency.

5. Save the new file

6. Copy the STAPIServer.bat file

Each environment requires an environment-specific version of this file. It is located in the following directory:

...\eCyborg\Ess\Stapi\bin\

7. Paste the copy into the same directory

This file must be located in the \bin directory.

8. Rename the copy with an environment-specific name

The file must have a unique name. It will be easier to identify what environment the file uses if the name reflects the environment name.

For example:

STAPIServerTest.bat

9. Edit the file to specify the correct configuration file

Edit the file in a text editor and change the configuration file argument to the environment-specific configuration file name. The edited file should look similar to the following example:

```
setlocal
set PATH=%CYBORG_HOME%\Lib;%PATH%
cd %CYBORG_HOME%\Bin
%CYBORG_HOME%\Bin\STAPIServer.exe -v 1 -c
%CYBORG_HOME%\config\StapiTest.cfg
```

10. Save the file

Create an environment-specific Kill STAPI Server file

1. Copy the STAPI configuration file

Each environment requires an environment-specific file to shut down the STAPI instance. The default is located in the following directory:

...\\eCyborg\Ess\Stapi\bin\killStapiServer.bat

2. Paste the copy into the same directory

This file must be located in the \bin directory.

3. Rename the copy with an environment-specific name

The file must have a unique name. It will be easier to identify what environment the file uses if the name reflects the environment name.

For example: killStapiServerTest.bat

4. Edit the file to specify the correct environment

Edit the file by adding the environment name to the argument. The edited file should look similar to the following example:

```
killServer 45Test.STAPIServerObject-STAPIServerObject
```

Note: *EnvironmentPathName is only a reference. It is not used as a physical path. The environment name used to register The Solution Series with the CAS Manager is suggested for simplicity and consistency.*

5. Save the file

Register the STAPI environment with Orbix

The new environment-specific files must now be registered with Orbix so that the ORB will know how to invoke them.

- 1. Open a Command Prompt**
- 2. Execute the Register STAPI environment command**

The RegSTAPIEnv command will register a new environment-specific instance of the STAPI with Orbix. It must be executed at the command line prompt in the following directory:

```
...\\eCyborg\IW\Tools\
```

This command must be executed using two arguments:

- EnvironmentPathName per Step 9 in the previous task (Create an environment-specific STAPI)
- STAPI configuration file name

You must execute the RegSTAPIEnv command using these two arguments, as in the following example:

```
RegSTAPIEnv 451Test StapiTest.cfg
```

Note: The configuration file must be located in ...\\eCyborg\IW\Stapi\Config

- 3. Verify registration using lsit**

To verify, use the lsit (the first letter is a lowercase 'L') command with the environment name as an argument. After entering this command, Orbix displays the information for the STAPI configuration.

For example:

```
> lsit 451Test
[xxx: New Connection <hostname, ...
Subdirectory '50Test'
      STAPIServer
```

- 4. Verify registration using lsns**

To verify, use the lsns (the first letter is a lowercase 'L') command with the environment name as an argument. After entering this command, Orbix displays the information for the STAPI configuration.

For example:

```
> lsns 451Test
[Contents of 50T1est]
      STAPIConnectionManagerId (Object)
      STAPIServerObject (Object)
[2 Objects, 0 Contexts]
```

Note: The RegSTAPIEnv command started the STAPI server in its own window. You can use it to verify the environment configuration. When you want to stop this instance enter Ctrl-C in the command window.

Note: Because of the way the new STAPI is registered with Orbix, it will be automatically started when it is needed.

Enable STAPI suspension during payroll run

The Solution Series payroll jobs suspend the STAPI process at the beginning of a payroll run and resume it at the end of a payroll run. The payroll jobs, as well as the suspend and resume STAPI operations, must be updated to support the new environment.

1. Copy the STAPI suspend and resume files

Each environment requires environment-specific copies of the following files:

- SuspendSTAPI.bat
- ResumeSTAPI.bat
- SuspendSTAPI.properties

These files are located in the directory:

... \eCyborg\IW\Stapi\bin\

2. Paste the copies into the same directory

These environment specific files must be located in the \Stapi\bin directory.

3. Rename the copied files with environment-specific names

In order to distinguish the files, they require names based on the environment name. For example:

- SuspendSTAPITest.bat
- ResumeSTAPITest.bat
- SuspendSTAPITest.properties

4. Specify the environment name in the properties file

Edit the environment-specific suspend STAPI properties file and specify the name of the environment.

For example the SuspendSTAPITest.properties:

```
OrbixWeb.IT_BIND_USING_IOP=true
OrbixWeb.IT_NS_HOSTNAME=localhost
OrbixWeb.IT_NS_IP_ADDR=
OrbixWeb.IT_NS_PORT=1570
OrbixWeb.IT_ORBIXD_IOP_PORT=1570
OrbixWeb.IT_ORBIXD_PORT=1570
STAPI.STAPIConnectionManagerName=STAPIConnectionManagerId
STAPI.STAPIConnectionManagerKind=STAPIConnectionManagerId
STAPI.STEnvironmentName=50Test
```

Note: The default is blank, where you must add the new environment. It must be the same name which you registered The Solution Series environment with the STAPI.

5. Specify the properties file name in each batch file

Edit both of the environment-specific suspend and resume STAPI batch files to specify the name of the environment-specific properties file to the executable.

For example the SuspendSTAPITest.bat file:

```
:.run the SuspendStapi utility
rem In this example, "-a true" are the required switch and value that determine what
mode the program will run in : either true for "suspend STAPI" mode or false for
"resume STAPI" mode.
rem In this example, "-p SuspendStapi.properties" are the optional switch and value
that allow us to designate the property file name. If omitted
SuspendStapi.properties is the default.
%JAVA_DIR%\%JAVA_VM% -
Dorg.omg.CORBA.ORBClass=IE.Iona.OrbixWeb.CORBA.ORB -
Dorg.omg.CORBA.ORBSingletonClass=IE.Iona.OrbixWeb.CORBA.singletonORB
-classpath
%JAVA_DIR%\%JAVA_CLASS%;%CYBORG_HOME%\Jar\SuspendStapi.jar;%
CYBORG_HOME%\Jar\OrbixWeb3.2.jar;%CYBORG_HOME%\Jar.jar
com.cyborg.suspendstapi.SuspendStapi -a true -p SuspendStapiTest.properties
```

You will notice that the suspend and resume files are nearly identical. The only difference is a flag to the executable indicating whether to go into suspend mode or out of suspend mode.

6. Update the payroll extract batch file

The payroll extract file must be updated to suspend the environment-specific STAPI. Go to the Runs directory of the Solution Series environment and edit the jpayxtr.bat file to invoke the new suspend STAPI batch file.

For example,

```
...\ST45Test\Runs\jpayxtr.bat
```

```
ECHO *****
ECHO ** SUSPENDING The Solution SeriesAPI FORInteractive Workforce **
ECHO *****
REM This will temporarily suspend the The Solution SeriesAPI
pushd %CYBORG_HOME%\bin
call %CYBORG_HOME%\bin\SuspendStapiTest.bat
popd
ECHO *****
ECHO ** The Solution SeriesAPI SUSPENDED **
ECHO *****
```

7. Update the payroll merge batch file

The payroll merge file must be updated to resume the environment-specific STAPI. Go to the Runs directory of the Solution Series environment and edit the jpaymrg.bat file to invoke the new suspend STAPI batch file.

For example,

```
...\ST50Test\Runs\jpaymrg.bat
```

```

...
rem set cobanim_2=animate
rem anim2wg ..\prog\cbsvb.int
..\prog\cbsvb
copy ..\data\p20in.mnt ..\data\p20in.mrg
rem ECHO *****
rem ECHO ** RESUMING The Solution SeriesAPI FORInteractive Workforce**
rem ECHO *****
rem REM This will resume the The Solution SeriesAPI
rem pushd %CYBORG_HOME%\bin
rem call %CYBORG_HOME%\bin\ResumeStapiTest.bat
rem popd
rem ECHO *****
rem ECHO ** The Solution SeriesAPI RESUMED **
rem ECHO *****

```

Optional: Configure The Solution Series to support multiple Interactive Workforce environments

A single Solution Series environment may be used to support multiple Interactive Workforce environments. In this case it is important to configure the The Solution Series split value to accommodate the Interactive Workforce environments.



Refer to eCyborg Interactive Workforce: Technical Implementation documentation for details of the split value.

1. **Start the The Solution Series environment.**
2. **Access the Session Number Split Point form**

From the Solution Series desktop, make the following selections:

Tools ► Administrator Tools ► Administrator Tools ► Set Session Maximum

The Session Number Split Point form (SSCTRL) appears.

3. **Verify the Split Point value**

If the Split Point value shown is less than 9999, then the Solution Series environment is ready to support Interactive Workforce. Otherwise, set the Split Point value. Cyborg recommends a value of 9950 for a single production environment.

Be sure that the Split Point Value is at least the sum of the MaxCBSVOConnections configured for each STAPI that provides access to the Solution Series environment.

Phase 4: Creating a New Web Environment

The tasks in this should be performed in the following order:

1. Create the display logic directory
2. Create a web site
3. Configure the SCRIPTS virtual directory for the new web site
4. Test the new web site
5. Create an environment-specific instance of ServletExec
6. Configure the new instance of ServletExec for the new web site
7. Configure Interactive Workforce and the ServletExec executable
8. Configure Interactive Workforce to communicate via STAPI
9. Configure the Interactive Workforce servlets in the new ServletExec instance
10. Test servlet configuration
11. Register the new Servlet Exec instance

Create the display logic directory

Create new directories in \Inetpub

If it does not yet exist, create the \Inetpub\Cyborg subdirectory. After that, environment-specific Business Display Logic Directories need to be located in the \Inetpub\Cyborg directory, as shown:

...\Inetpub\Cyborg\Interactive Wokrforce **environment name**

The name of the new environment will be the name of this new directory, for example:

CyblWTest

Create a web site

1. Access the Internet Server Manager

Make the following selections:

Start ► Programs ► Windows 2000 Options Pack ►
Microsoft Internet Information Server ► Internet Service Manager

The Internet Service Manager appears.

2. Select the hostname of the server

Expand the directories in the navigator until you find the hostname for the server computer. Then click on that name to select it.

3. Access the New Web Site Wizard

Right click on the hostname, then make the following selections:

New ► Web Site

The New Web Site Wizard appears to walk you through the process of creating your new web site.

4. Type a Web Site Description

In the Web Site Description field, enter a description of the environment that the new web site will support. For example:

Cyborg Interactive Workforce Test

Click next to continue.

5. Specify a unique unused port

Note: The only requirement for the port number is that it is not already in use. Cyborg suggests using ports in the range 8000-9000. Refer to your Network Administrator for a port.

Enter a unique port number in the field, TCP Port this Web Site should use. This port will be used to access the web site for the new environment. For example, if you were using port 8080 the new environment would be accessed using the following URL:

http://hostname:8080//CyborgIW/

Click next to continue.

6. Enter the home directory for the web site

The home directory tells IIS where to find files for the web site. Specify the Display Logic Directory as the web site home directory. For example:

d:\eCyborg\CybiWTest

Click next to continue.



7. Click Finish

IIS will now create the new web site. When finished, the new web site will appear in the web site directory navigator.

Configure the SCRIPTS virtual directory for the new web site

The SCRIPTS virtual directory allows you to configure the operating parameters of the web site. It defines the plug-in parameters between ServletExec and the IIS.

Complete the following steps:

1. Expand the Default Web Site

In the navigator of the Internet Service Manager, expand the Default Web icon.

2. Select the SCRIPTS icon

3. Open the Properties dialog

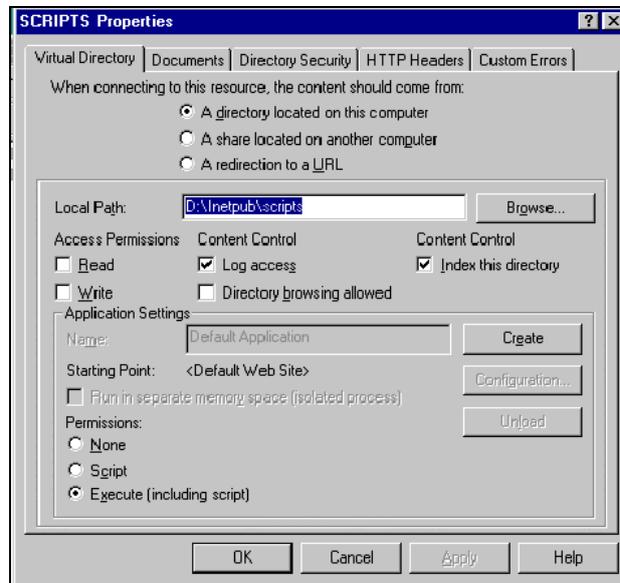
From the menu bar of the Internet Service Manager, make the following selections:

Action ► Properties

The Properties dialog appears.

4. Note the Local Path

Note the Local Path name as you will need it to set the new Web Site.



5. Click Cancel

Click Cancel to close the Properties dialog

6. Select the new web site

In the navigator of the Internet Service Manager, click on the new web site.

7. Open the New Virtual Directory Wizard

From the menu bar of the Internet Service Manager, make the following selections:

Action ► New ► Virtual Directory

The New Virtual Directory Wizard appears.

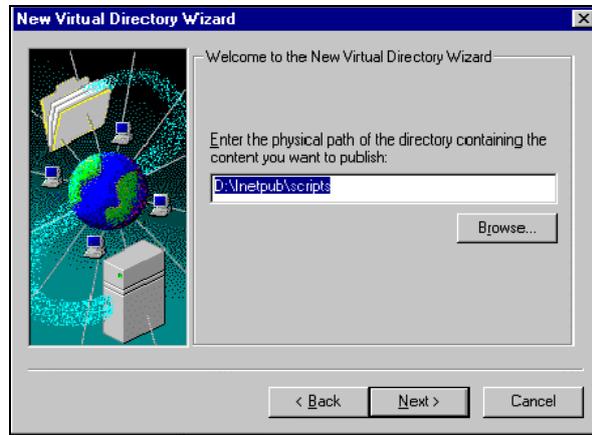
8. Type in the alias 'SCRIPTS'

Enter SCRIPTS, in all capital letters, as the alias for the virtual directory. The Wizard will appear similar to the following example:



9. Click Next
10. Enter the Local Path

The Local Path must be set to the same path as the SCRIPTS directory for the Default Web Site. Once that is entered in the field, the dialog should appear similar to the following:



11. Click Next
12. Set access permissions to Allow Execute Access

Deselect Allow Read Access and Allow Script Access, then select Allow Execute Access.

13. Click Finish

When completed, the SCRIPTS icon will now appear in the Web Site Navigator under the new web site.

14. Select the SCRIPTS icon for the new web site

15. Open the Properties dialog

From the menu bar of the Internet Service Manager, make the following selections:

Action ► Properties

The Properties dialog appears.

16. Disable the Application Settings

To disable the Applications Settings, click Remove next to the Application Settings field.

17. Click OK

18. Save the new web site settings

From the main menu, make the following selections:

Console ► Save

The new web site has now been saved.

Test the new web site

Complete the following steps:

1. Select the new web site

In the navigator of the Internet Service Manager, click on the new web site.

2. Start the new web site

From the menu bar of the Internet Service Manager, make the following selections:

Action ► Start

At this point, you may close the Internet Service Manager.

3. Create a test page for the web site

Using a text editor, create a file named Default.htm in the web site home directory. For multiple environments, the directory will take the following form:

...\inetpub\cyborg\CybIWTTest

In the file, type the text below, substituting the actual Interactive Workforce environment name where indicated below.

```
<html>
```

```
<body>
```

```
This is theInteractive Workforce Test environment!!!!
```

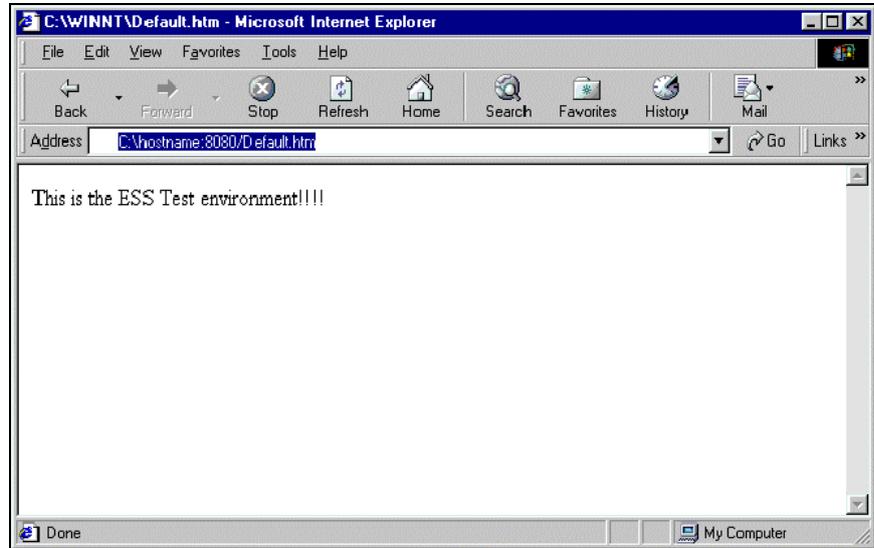
```
</body>
```

```
</html>
```

4. Access the new web site

Open a browser on any client within the network and access the correct URL. For example:
<http://hostname:8080/Default.htm>

The page should appear similar to the following example:



You have now confirmed that the web site is set up correctly and active.

Create an environment-specific instance of ServletExec

Two licenses for ServletExec are included in your license for Interactive Workforce. These licenses are intended for the Test and Production environments. In Production environments, you must use a separate ServletExec license. If there are many users of your environment, you may wish to purchase more licenses to improve performance.

The final task in this phase describes how to register a license for use with a ServletExec instance.

This task is performed on the Web Server.

1. Execute the ServletExec_AS_31.exe

Insert the Installation CD into the CD-ROM drive of the computer which will be the Web Server. From the Windows 2000 desktop, make the following selections:

Start ► Run

In the Run dialog, run the following program from the \ServletExec directory of the CD-ROM drive:

ServletExec_AS_31.exe

2. Click Next to start the Servlet Exec Server Setup

3. Select Setup Type

Select the option 'Install a ServletExec AS Instance', and click Next to continue.

4. Click Yes to accept the License Agreement

5. Enter Servlet Exec Instance Name. Click Next.

Enter the Interactive Workforce **Environment Name** as shown on the Environment Configuration worksheet. For example:

CyblWTest

The dialog should appear similar to the example shown here:

Note: These are suggested names. If you wish to use others, be sure to do so consistently.

6. Enter Loop Back Port. Click Next.

Enter any unused port number. This is the port on which ServletExec and IIS communicate.

Note: You may use the suggested number if it is currently unused.

7. Select setup type. Click Next.

Select 'Microsoft IIS or PWS' setup type and click next to continue.

8. Leave the additional URLs field empty.

Click Next.

9. Confirm the install information.

Click Next.

10. Click Yes

A dialog box asks if you would like to install ServletExec as a Windows 2000 service. Click Yes.

11. Click OK

A dialog box tells you that `servletoexec.properties` was updated and gives you the name of a folder to check for possible errors. Click OK.

12. Click OK

A dialog box gives you instructions for activating ServletExec. Click OK.

13. Click Finish

Click Finish to complete the installation of ServletExec.

14. Click Finish

The new instance of ServletExec has now been installed in the following directory:

...eCyborg\IW\ServletExec\se-CyblWTest

This directory is the Business Logic Directory. Before this instance of ServletExec can be used, you must stop and restart IIS. This will be done at the end of the following task, Configure the new instance of ServletExec for the new web site.

Configure the new instance of ServletExec for the new web site

To complete this task, perform the following steps:

1. Open the ServletExec properties file

This file is located in the following directory:

```
... \inetpub\scripts\servletexec.properties
```

This file is shared by all instances of ServletExec which are installed on the same computer.

2. Specify the new web site port to the ServletExec

To add the port for the new web site, locate the *hosts* parameter for the new web site. Change the hosts value from 'all' to the hostname and port. The hostname must be the Web Server hostname as specified on the Environment Configuration worksheet. The port number is the IIS port configured for the web site.

In our example, the 'servletexec.CybIWTest.hosts' parameter would be changed from 'all' to the new hostname and port, for example:

```
servletexec.CybIWTest.hosts=WebAppServerHostname:8080
```

The file should look similar to the following example:

```
#
# When more than one ServletExec instance is configured, /servlet/admin will return a page
# which contains links to the admin pages for each instance. To disable this page you should
# add the following property: servletexec.admin = disabled

servletexec.CybIW.hosts=all
servletexec.CybIW.applications=
servletexec.CybIW.aliases=/servlet,.jsp,.shtml
servletexec.CybIW.instances=127.0.0.1:8888

servletexec.CybIWTest.hosts=WebAppServerHostname:8080
servletexec.CybIWTest.applications=
servletexec.CybIWTest.aliases=
servletexec.CybIWTest.instances=127.0.0.1:8889

(complete text not shown)
```

3. Move the default web site parameters to the end

At the end of the file, a new set of parameters have been added for the new instance of ServletExec. This properties file maintains a set of parameters for each ServletExec instance. The hosts are scanned in order to determine which ServletExec instance handles which requests. The environment specific instances of ServletExec must precede the default instance.

In order for the ServletExec to find the new web site parameters, they must come before the default CybIW web site parameters in the file. Modify the file as follows: cut the default web site lines and paste them after the new web site parameters:

```
Servletexec.CybIW.hosts=all
Servletexec.CybIW.applications=
Servletexec.CybIW.aliases=/servlet,.jsp,.shtml
Servletexec.CybIW.instances=127.0.0.1:8888

Servletexec.CybIWTest.hosts=all
Servletexec.CybIWTest.applications=
Servletexec.CybIWTest.aliases=
Servletexec.CybIWTest.instances=127.0.0.1:8889

Servletexec.CybIW.hosts=all
Servletexec.CybIW.applications=
Servletexec.CybIW.aliases=/servlet,.jsp,.shtml
Servletexec.CybIW.instances=127.0.0.1:8888
(complete text not shown)
```

4. Add the aliases to the ServletExec

To add the required aliases, locate the aliases parameter for the new web site, and edit the aliases line to match the default web site aliases. In our example, the 'servletexec.CybIWTest.aliases' parameter would have the aliases added on, for example:

```
servletexec.CybIWTest.aliases=/servlet,.jsp,.shtml
```

The file should look similar to the following example:

```
servletexec.CybIWTest.hosts=bldrqaess1:8080
servletexec.CybIWTest.applications=
servletexec.CybIWTest.aliases=/servlet,.jsp,.shtml
servletexec.CybIWTest.instances=127.0.0.1:8889

servletexec.CybIW.hosts=all
servletexec.CybIW.applications=
servletexec.CybIW.aliases=/servlet,.jsp,.shtml
servletexec.CybIW.instances=127.0.0.1:8888

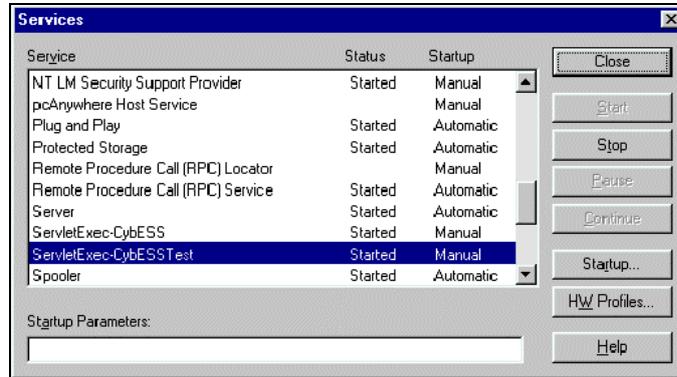
(complete text not shown)
```

5. Save the file

6. Shut down all instances of ServletExec

To shut down an instance of ServletExec, access the Services control panel by making the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Services



Then, in the Service list box, select each instance of ServletExec and click Stop.

7. Shut down and restart IIS

From the Services control panel. Scroll until you find the IIS Admin Service. First, stop IIS by selecting IIS Admin Service, then clicking Stop. The dialog will indicate that the service has been stopped. Next, restart IIS by selecting IIS Admin Service, then clicking Start.

Note: When you shut down the IIS Admin Service, it will also shut down the World Wide Web Publishing Service. If this is not running, the IIS may not find the web site. You will need to restart this service using the IIS Admin Service.

8. Restart each instance of ServletExec

To restart an instance of ServletExec in the Services control panel, select each instance of ServletExec and click Start.

9. Verify the new ServletExec instance

To test the new instance, open a browser and access the following URL:

<http://localhost/servlet/admin>

the Solution Series Application Server Administration page appears. The new instance should appear in the list.

Configure Interactive Workforce and the ServletExec executable

Complete the following steps for the new environment:

1. Backup the StartServletExec.bat file for the new environment.

Go to the Business Logic Directory for the new environment. Rename the file StartServletExec.bat to StartServletExec.bat.backup.

For example, the following file:

eCyborg\IWServletExec\se-CybIWTtest\StartServletExec.bat

is renamed:

eCyborg\IW\ServletExec\se-CybiWTest\StartServletExec.bat.backup

2. Copy the StartServletExec.bat file from the existing source environment

Copy the existing file from the source environment Business Display Logic directory:

...eCyborg\IW\ServletExec\se-CybiW\StartServletExec.bat

to the new environment...

...eCyborg\IW\ServletExec\se-CybESSTest\StartServletExec.bat

3. Edit the copy for the new environment in a text editor

Edit the following:

- **WEB_HOME_DIR** must be the root directory of the environment web site
- The drive must be the drive on which Interactive Workforce is installed
- **CYBIW_HOME** is the location of the environment-specific ServletExec
- **Maps subdirectory** must be in **Business Logic Directory**
- **IW Environment Name**. Change this to the name of the new environment
- **ServletExec directory** is the **Business Logic Directory**
- **ServletExec Loop Back Port**. Refer to the StartServletExec backup file

In the following example, the first line is the WEB_HOME_DIRECTORY, d: is the drive, and the third line is the CYBIW_HOME. Highlighting in the information at the bottom of the example shows the environment name, maps directory, ServletExec directory, and Loop Back Port.

```
set WEB_HOME_DIR=C:\inetpub\wwwroot\CybiW
Echo Starting ServletExec...
d:
cd %CYBIW_HOME%\ServletExec\se-CybiW
"%JAVA_DIR%\%JAVA_VM%" -DPAYROLL=true -
Dorg.omg.CORBA.ORBClass=IE.Iona.OrbixWeb.CORBA.ORB -
Dorg.omg.CORBA.ORBSingletonClass=IE.Iona.OrbixWeb.CORBA.singletonORB -
classpath
"%JAVA_DIR%\%JAVA_CLASS_TOOLS%;%CYBIW_HOME%\ServletExec\lib\ServletExec30.jar;%CYBIW_HOME%\ServletExec\lib\servlet.jar;%CYBIW_HOME%\ServletExec\lib\xml.jar;%CYBORG_HOME%\Jar\OrbixWeb3.2.jar;%CYBORG_HOME%\Jar\orbixnames.jar;%CYBORG_HOME%\Jar\CyborgUtils.jar;%CYBORG_HOME%\Jar\STAPI.jar;%CYBORG_HOME%\Jar\xml4j.jar;%CYBORG_HOME%\Jar\IW_ESSential.jar;%WEB_HOME_DIR%\Resources;%CYBIW_HOME%\ServletExec\se-CybiW\maps"
ServletExec -name "CybiW" -home "%CYBIW_HOME%\ServletExec\se-CybiW" -
root "%WEB_HOME_DIR%" -port 8890
)
```

Using our example, these parameters will be changed accordingly:

- **WEB_HOME_DIR=C:\inetpub\Cyborg\CybiWTest**
- **drive=d:**
- **CYBIW_HOME=\ServletExec\se-CybiWTest**
- **Maps subdirectory=\ServletExec\se-CybiWTest\maps**
- **IW Environment Name=CybiWTest**
- **ServletExec directory=\ServletExec\se-CybiWTest**
- **ServletExec Loop Back Port= 8889**

The edited file should look similar to the following example:

```

set WEB_HOME_DIR=C:\inetpub\Cyborg\CybiWTest
Echo Starting ServletExec...
d:
cd %CYBIW_HOME%\ServletExec\se-CybiWTest
"%JAVA_DIR%\%JAVA_VM%" -DPAYROLL=true -
Dorg.omg.CORBA.ORBClass=IE.Iona.OrbixWeb.CORBA.ORB -
Dorg.omg.CORBA.ORBSingletonClass=IE.Iona.OrbixWeb.CORBA.singletonORB
-classpath
"%JAVA_DIR%\%JAVA_CLASS_TOOLS%;%CYBIW_HOME%\ServletExec\lib
\ServletExec30.jar;%CYBIW_HOME%\ServletExec\lib\servlet.jar;%CYBIW_HO
ME%\ServletExec\lib\xml.jar;%CYBORG_HOME%\Jar\OrbixWeb3.2.jar;%CYBO
RG_HOME%\Jar\orbixnames.jar;%CYBORG_HOME%\Jar\CyborgUtils.jar;%CY
BORG_HOME%\Jar\STAPI.jar;%CYBORG_HOME%\Jar\xml4j.jar;%CYBORG_
HOME%\Jar\IW_IWential.jar;%WEB_HOME_DIR%\Resources;%CYBIW_HOM
E%\ServletExec\se-CybiWTest\maps" ServletExec -name "CybiWTest" -home
"%CYBIW_HOME%\ServletExec\se-CybiWTest" -root
"%WEB_HOME_DIR%" -port 8889
)
    
```

Note: Not all of the directories specified exist yet. These will be created in the following steps.

4. Save the new script

Save the new script under the correct file path, as in the following example:

```
... \eCyborg\IW\ServletExec\se-CybiWTest\StartServletExec.bat
```

5. In Explorer go to the Display Logic Directory of the source environment

Use Windows Explorer to access the root **Display Logic Directory**. For the Default environment, this is:

```
... \inetpub\wwwroot
```

6. Copy the necessary directories

The directories you need to copy from the root directory are as follows:

- CyborgIW
 - Info
 - Resources
- 7. Paste these directories into the Display Logic Directory of the new environment**

For example:

```
...\\netpub\Cyborg
```
 - 8. Go to the Business Logic Directory of the source environment**

For example:

```
...\\eCyborg\IW\ServletExec\se-CybiW
```
 - 9. Copy the \Maps directory and all properties files**

The properties files include:

 - ClientErrors.properties
 - ess.properties
 - essfdf.properties
 - essmdf.properties
 - locale.properties
 - OptionListExtract.properties
 - OrbixWeb.properties
 - ServerErrors.properties
 - 10. Paste these into the Business Logic Directory of the new environment**

For example:

```
eCyborg\IW\ServletExec\se-CybiWTest
```
 - 11. Shut down and restart the environment-specific ServletExec instance**

To shut down an instance of ServletExec, access the Services control panel by making the following selections:

Start ► Settings ► Control Panel ► Services

Then, select the desired instance of ServletExec and click Stop. To restart the instance, click Start.
 - 12. Check the log file**

In Explorer, go to the Business Logic Directory for the new environment, for example:

```
...\\netpub\Cyborg\CybiWTest
```

Open the ServletExec.log file. Verify that no errors were reported and that ServletExec is 'ready to process requests'. If so, then ServletExec has been configured correctly.

Note: Whenever you stop/restart an instance of *ServletExec*, a new and sequentially-numbered log file is created. Make sure that you are looking at the latest log file.

Configure Interactive Workforce to Communicate via STAPI

Complete the following steps:

1. Open the Interactive Workforce properties file

Open the `ess.properties` file in a text editor. The file can be found in the install directory of the new *ServletExec* instance:

```
...\\eCyborg\\lw\\ServletExec\\se-IW Environment Name\\ess.properties
```

For example:

```
...\\eCyborg\\lw\\ServletExec\\se-CybiWTest\\ess.properties
```

2. Edit the file for the new environment

Change the STAPI environment setting to reflect the new environment. For example:

```
STAPI.userPassword=IW1
STAPI.environment=50Test
selfservice.payinfo.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
selfservice.payinfo.uri=jdbc:odbc:CybPayInfoTest
```

(complete text not shown)

Note: By default this setting is blank. It must be the `EnvironmentPathName` set in Step 9 of the task to Create a web site..

3. Save the file

Configure the Interactive Workforce servlets in the new *ServletExec* instance

1. Access the Solution Series Application Server Administration page

To access the Solution Series Application Server Administration page from the Windows 2000 desktop of the Web Server, make the following selections:

Start ► Programs ► New Atlanta ► *ServletExec* 3.1 AS ► *ServletExec* Admin

Or, open a browser and access the following URL:

```
http://localhost/servlet/admin
```

the Solution Series Application Server Administration page appears.

2. Select the new instance of *ServletExec*

Click on the new instance. For example:

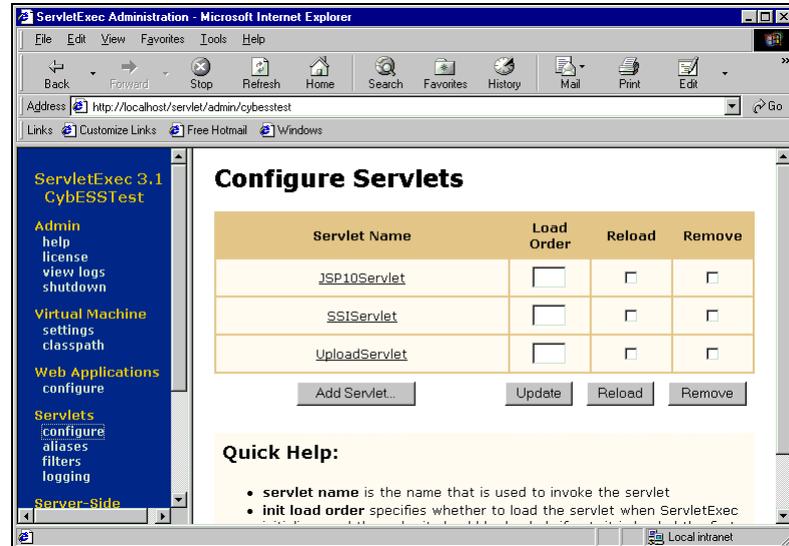
```
cybiwtest
```

3. Access the Servlets Configure page

From the left side menu, make the following selections:

Servlets ► Configure

The Servlets Configure page appears:



4. Click Add Servlet...

The Add Servlet page appears.

5. Type the Servlet Name

In the Servlet Name: field, type the following:

essinit

6. Type the servlet class

In the Servlet Class: field, type the following:

com.cyborg.selfservice.SelfServiceStartupServlet

Note: Class names are case-sensitive.

7. Type the Initialization Parameters name

In the name: field, type the following:

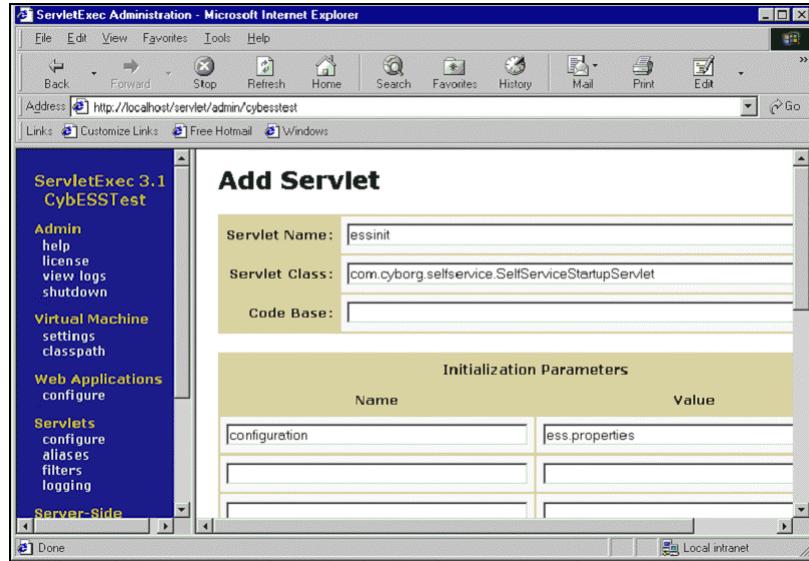
configuration

8. Type the Initialization Parameters value

In the value: field, type the following:

ess.properties

When all the fields are complete, the page should look similar to the following:



9. **Click Submit**
The ServletExec Admin will enter the information. The Admin will return you to the Configure Servlets page, and the essinit servlet will now be included in the list.
10. **Click Add Servlet...**
The Add Servlet page appears.
11. **Type the servlet name**
In the Servlet Name: field, type the following:
controller
12. **Type the servlet class**
In the Servlet Class: field, type the following:
com.cyborg.selfservice.navigation.ControllerServlet
13. **Type the Initialization Parameters name**
In the name: field, type the following:
configuration
14. **Type the Initialization Parameters value**
In the value: field, type the following:

ess.properties

When all the fields are complete, the page should look similar to the following:

15. Click Submit

The ServletExec Admin will enter the information. The Admin will return you to the Configure Servlets page, and the controller servlet will now be included in the list.

16. Set the essinit load order to 1

In the Load Order field for essinit, type '1'.

17. Set the controller load order to 2

In the Load Order field for controller, type '2'.

18. Click Update

Leave the ServletExec Application Server Administration page open at this time, as we will now use it to register the ServletExec instance.

Test servlet configuration

The next few steps describe how to test the servlet configuration to ensure that it has been done correctly.

1. Copy over the \Maps directory

Copy the \Maps directory from the initial installation:

```
... \eCyborg\IW\ServletExec\se-CybiW
```

Paste the copy into the environment-specific ServletExec directory, for example:

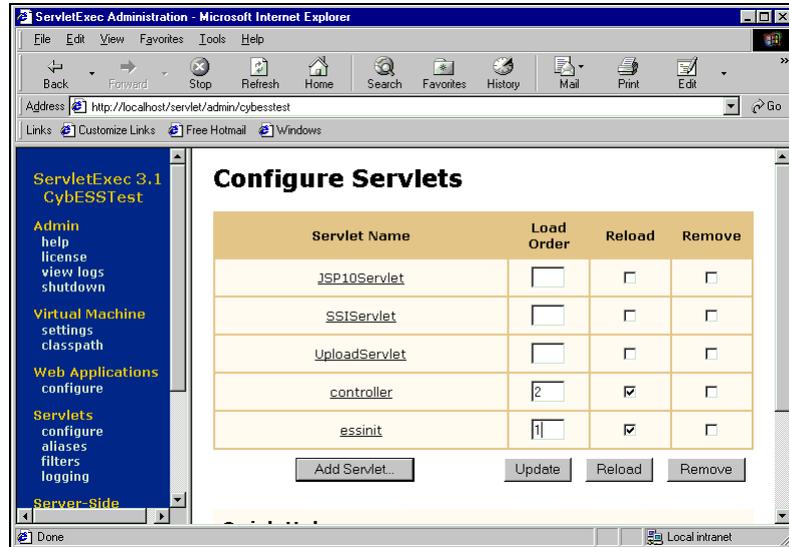
```
... \eCyborg\IW\ServletExec\se-CybiWTest
```

2. Under Configure Servlets, select Reload essinit

When you select Reload essinit, a checkmark will appear. Type a '1' in the Load Order box.

3. Under Configure Servlets, select Reload controller

When you select Reload controller, a checkmark will appear. Type a '2' in the Load Order box. The page should appear as shown here:



4. Click Reload

ServletExec will now reload the servlets. You should receive the message "* Servlets Reloaded successfully" at the top of the page, as shown here:

5. In the Windows Explorer, go to the Business Logic Interface directory of the new instance

For example:

...\\eCyborg\W\ServletExec\se-CybIWT\

6. Open the ServletExec log

Open the following file:

servletoxec.log.1

Verify that no errors were recorded and that the log reads "Cyborg Web Application Infrastructure ready" near the bottom of the page. You may close the log when finished.

7. Open the ess log

Open the following file:

ess.log

Verify that no errors were recorded and that the log reads "Cyborg Self-Service Application Ready". You may close the log when finished.

Register the new ServletExec instance

Perform this task only if you need to use a ServletExec license for the environment you are creating.

- 1. Access the Solution Series Application Server Administration page**

If the ServletExec Admin is still open from the previous task, close it. Then reopen it by opening a browser and accessing the following URL:

```
http://localhost/servlet/admin
```

the Solution Series Application Server Administration page appears.
- 2. Access the desired instance of ServletExec**

To access the desired instance of ServletExec, click on the name of that instance on the Solution Series Application Server Administration. The Register ServletExec page appears.
- 3. Enter the serial number**

Enter the serial number into the Serial Number field, then click Register. Once complete, you may close the Solution Series Application Server Administration page. The serial number can be found on an insert inside the CD jewel case.

Phase 5: Configuring the Pay Information database for the new environment

Each Interactive Workforce environment requires its own Pay Information database. This database stores pay information history for Interactive Workforce employees. In order to create a new Pay Information database we will perform the following steps:

- Create the file structure for the new database
- Create the physical database
- Create ODBC data sources
- Populate the new database

Create the file structure for the new database

In a two-server configuration, this is done on the Solution Series Application Server. Complete the following steps:

1. Create a directory for the new environment

Each database must have a directory under the Interactive Workforce Database directory, for example:

```
...\\eCyborg\IW\PayInfoDatabase\CybPayTest
```

This directory will store all the files used for the environment-specific Interactive Workforce database.

2. Copy required files of the original Pay Information database directory

Go to the original Pay Information database directory and copy the required files. The default folder for the original Pay Information database is:

```
...\\PayInfoDatabase\CybPay
```

Copy the following files:

- createdb.sql.cmd
- createpaydb.bat
- CybPayInfoBasic.fmt
- CybPayInfoEarningsDeductions.fmt
- CybPayInfoEmployee.fmt
- CybPayInfoTaxes.fmt
- imppayinfo.bat
- PayDB.sql
- payinfodb.cfg

Note: There is also a directory which contains the Pay Information database itself. Ensure that you do not copy this directory, as the database will be created by running scripts which you are copying here.

3. Paste the files into the new directory

Once you have copied the contents from the original Pay Information database directory, go to the new directory and paste those files. The files will be edited specifically for the new environment.

4. Modify the Pay Information database configuration file

Using a text editor, open the Pay Information database configuration file of the new directory. The file can be found in the install directory for the environment-specific install directory, for example:

```
...\\eCyborg\\IW\\PayInfoDatabase\\CybPayTest\\payinfodb.cfg
```

Edit the following parameters to reflect the new environment:

- DBNAME=*Pay Info database name*
- DBUSER=*Pay Info database user*
- DBPASS=*Pay Info database password*
- DBPATH=*filepath where the data is stored*

The modified file should look similar to the following example:

```
ISQLPASSWORD=  
DBNAME=CybPayInfoTest  
DBUSER=cybpaytestdba  
DBPASS=cybpaytestdba  
DBPATH=C:\eCyborg\Ess\PayInfoDatabase\CybPayTest\SQLD  
ata  
DBSIZE=75  
DBMAX=150  
(complete text not shown)
```

Note: Edit the DBSIZE, DBMAX, DBGROWTH, LOGSIZE, LOGMAX, and LOGGROWTH parameters at this time as well, if you wish to reserve more or less space for this environment.

5. Save the file

You may also close this file.

Create the Pay Information Database

1. Execute the database creation script

This file controls the process of creating the Pay Information database. Execute the following script to create the pay information database:

```
...\\eCyborg\\IW\\PayInfodatabase\\CybPayTest\\createpaydb.bat
```

Note: You will be prompted for the SQL Server 7 system administrator's password

Note: If you have not already done so, you may want to lower or raise the size of the database, depending on your use of the environment.



Refer to Configuring the Interactive Workforce Environment section of the eCyborg Interactive Workforce: Technical Implementation documentation for information on editable parameters in the database configuration files.

2. Review the database creation logs

Once the Pay Information Database script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Pay Information database as well as verify that the tables were created. In the eCyborg\IW\PayInfoDatabase\CybPay*Environment* directory access the following files:

- createCybPayInfoTestDB.log
- createCybPayInfoTestOBJ.log

Phase 6: Configuring the Interactive Workforce database for the new environment

Each Interactive Workforce environment requires its own Interactive Workforce database. This database stores all Interactive Workforce settings for the environment.

Perform the tasks in this phase in the following order:

1. Create the file structure for the new database
2. Create the Interactive Workforce database
3. Create ODBC data sources for Interactive Workforce and Pay Information databases
4. Configure new Interactive Workforce environment for the new databases
5. Launch Interactive Workforce
6. Access the Interactive Workforce administration utility
7. Load option lists
8. Select organizations for loading
9. Select resulting statuses for loading
10. Set up direct deposit HEDs
11. Load Interactive Workforce users

Create the file structure for the new database

Complete the following steps:

1. Create a directory for the new environment

Each database must have a directory under the Interactive Workforce database directory, for example:

```
...\\eCyborg\IW\ESSDatabase\CybIWTTest
```

This directory will store all the files used for the environment-specific Interactive Workforce database.

2. Copy files from the original Interactive Workforce database directory

Go to the original Interactive Workforce database directory and copy all files with the extensions .bat, .cfg, .cmd, .properties, sql. These files are indicated in the table in the section on the Multiple Environments directory structure. The default folder for the original Interactive Workforce database is:

```
...\\eCyborg\IW\ESSDatabase\CybIW
```

The required files are:

- createdb.sql.cmd
- createessdb.bat
- essdb.cfg
- EssDB.sql
- LoadUsers.bat
- LoadUsers.sql
- PasswordGen.cfg
- PasswordGen.properties
- SetEssInitialValues.sql

Note: There is also a directory which contains the Interactive Workforce database itself. Ensure that you do not copy this directory; the database will be created by running scripts which you are copying here.

3. Paste the files into the new directory

Once you have copied the contents from the original Interactive Workforce database directory, go to the new directory and paste those files. These files will be edited specifically for the new environment.

Note: If you receive sharing violation messages while trying to paste the files, you may need to shut down the instance of `ServletExec` for the environment which you are copying from.

4. Modify the Interactive Workforce database configuration file

Using a text editor, open the Interactive Workforce database configuration file of the new directory. The file can be found in the environment-specific install directory, for example:

...\\eCyborg\Ess\ESSDatabase\CybESSTest\essdb.cfg

Edit the following parameters to reflect the new environment:

- **DBNAME=IW Database Name**
- **DBUSER=IW Database User Name**
- **DBPASS=IW Database User Password**
- **DBPATH=filepath where the data is stored**

The modified file should look similar to the following example:

```
ISQLPASSWORD=  
DBNAME=CybiWTest  
DBUSER=cybiwtestdba  
DBPASS=cybiwtestdba  
DBPATH=C:\eCyborgIWSDatabase\CybiWTest\SQLData  
DBSIZE=75  
DBMAX=150  
(complete text not shown)
```

Note: If you have not already done so, you may want to lower or raise the size of the database, depending on your use of the environment.



Refer to the *Configuring and Interactive Workforce Environment* section of the *eCyborg Interactive Workforce: Technical Implementation* documentation for information on editable parameters in the database configuration files.

5. Save the file

You may also close this file.

6. Modify the Password Generation configuration file

Using a text editor, open the `passwordgen.cfg` file of the new directory. Edit the following parameters to reflect the new environment:

- `selfservice.database.uri=jdbc:odbc:IW Database Name`
- `selfservice.database.userName=IW Database User Name`
- `selfservice.database.userPassword=IW Database User Password`

The modified file will look similar to the example following:

```
log.filename=ess.log
selfservice.database.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
selfservice.database.uri=jdbc:odbc:CybiWTest
selfservice.database.userName=cybiwtestdba
selfservice.database.userPassword=cybiwtestdba
selfservice.database.initialConnectionCount=2
(complete text not shown)
```

Note: The username must be unique. The password does not need to be unique.

7. Save the file

You may also close this file.

Create the Interactive Workforce database

Note: For a three-server configuration, run this script on the Database Application Server.

1. Execute the Interactive Workforce database creation script

Job Used: `createessdb`

This file can be run by double clicking on the filename using the Windows Explorer. The default file path is:

```
...eCyborg\IW\ESSDatabase\CybiW\createessdb.bat
```

When this job runs, you will be prompted for the 'sa' user password. Enter the password.

Note: Depending on the speed of the processor, this script may take some time to execute. Creation of the Interactive Workforce database may take a couple of minutes.

Note: If you have not already done so, you may want to tune the size of the database, depending on your use of the environment.



Refer to *eCyborg Interactive Workforce: Technical Implementation* for information on editable parameters in the database configuration files.

2. Review the database creation logs

Once the Interactive Workforce database script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Interactive Workforce database as well as verify that the tables were created. On the Web Server in the eCyborg\IW\ESSDatabase\CybiIW directory access the following log files:

- setCybiWVal.log
- createIWTBL.log
- createCybiWDBTBL.log

The directories with the log files on the OS/390 and UNIX platforms are:

OS/390: eCyborg\IW\ESSDatabase\CybiIW

UNIX: \$eCyborg\IW\ESSDatabase\CybiIW

Make a note of the database access information; you will need it later.

Create ODBC data sources for Interactive Workforce and Pay Information databases

This task needs to be performed on the Web Server for both the Interactive Workforce and Pay Information databases.



Refer to the task: Add ODBC Data Sources for the Interactive Workforce and Pay Information Databases in Phase 4 of the chapter on Installing the Two-Server Configuration. The data that follows replaces the data in Step 6 of that task.

Enter data in the Create a New Data Source to SQL Server dialog

Fill the following fields with the information listed, specifying information about the specific environment. Examples are listed in the following tables.

For the Interactive Workforce database, fill the fields with the information listed in the following table:

Field	Information
Name:	CybiWTest (case sensitive)
Description:	CyborgInteractive Workforce Database—Test Environment
Server:	(local) or HOSTNAME of Web Application Server

For the Pay Information database, fill the fields with the information in the following table:

Field	Information
Name:	CybPayInfoTest (case sensitive)
Description:	Cyborg Pay Information Database—Test Environment
Server:	HOSTNAME of the Solution Series Application Server

Configure new Interactive Workforce environment for the new databases

This will configure the Interactive Workforce Business Logic for the new Interactive Workforce database. Complete the following steps:

1. Open the Interactive Workforce properties file for the new environment

The `ess.properties` file is found in the ServletExec install directory for the new environment, for instance:

```
...\\eCyborg\IW\ServletExec\se-environment name\ess.properties
```

In our example:

```
...\\eCyborg\IW\ServletExec\se-CybiWTest\ess.properties
```

2. Modify the Interactive Workforce properties file for the new Pay Information database

Edit the following parameters:

- `selfservice.payinfo.uri=jdbc:odbc:Pay Info database name`
- `selfservice.payinfo.userName=Pay Info database user`
- `selfservice.payinfo.userPassword=Pay Info database password`

The modified file should look similar to the following example:

```
STAPI.environment=451Test
selfservice.payinfo.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
selfservice.payinfo.uri=jdbc:odbc:CybPayInfoTest
selfservice.payinfo.userName=cybpaytestdba
selfservice.payinfo.userPassword=cybpaytestdba
selfservice.payinfo.initialConnectionCount=2
(complete text not shown)
```

3. Modify the Interactive Workforce properties file for the new Interactive Workforce database

Edit the following parameters:

- `selfservice.database.uri=jdbc:odbc:IW database name`
- `selfservice.database.userName=IW database user name`
- `selfservice.database.userPassword=IW Database user password`

The modified file should look similar to the following example:

```
log.filename=ess.log
selfservice.database.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
selfservice.database.uri=jdbc:odbc:CybiWTest
selfservice.database.userName=cybiwtestdba
selfservice.database.userPassword=cybiwtestdba
selfservice.database.initialConnectionCount=2
(complete text not shown)
```

4. Save the file

You may now close the text editor.

5. Stop and restart the environment-specific instance of ServletExec

To shut down an instance of ServletExec, access the Services control panel by making the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

Then, select the desired instance of ServletExec and click **Stop**. To restart the instance, click **Start**.

Launch Interactive Workforce

In a two-server configuration use your browser on the Web Server to access the Interactive Workforce Administration utility, and enter the following URL:

<http://localhost/CyborgESS>

When you get to the Start page, click 'Launch Interactive Workforce'. At the log in page, to access the system:

- the initial login and password are both: '**initialadm**'.

Once you access the system you will be prompted to change passwords. Change the password to 'iwadm', or any other password you desire. We recommend the easily remembered 'iwadm' because security is not needed in the initial system, as it contains no live data.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's *HOSTNAME* instead of 'localhost'.

Access the Interactive Workforce Administrator Utility

Once you have accessed Interactive Workforce, click Administrator in the Navigator panel on the left portion of the screen and select Interactive Workforce and then Data Import. The remaining tasks must be performed in the following order:

- Option List Import
- Organization Selection
- Resulting Statuses Selection
- Load Interactive Workforce users

Import option lists

Before performing the remainder of the tasks in this phase of the installation, you must use the Option List Import function. You must perform this task after the system is installed and before you select any statuses or organizations used as selection parameters to load users.

This tab page displays the option lists available in The Solution Series that must be imported into Interactive Workforce. Follow these steps to extract the option lists from The Solution Series and load them into the Interactive Workforce database.

1. Access the Option List Import page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Load Options Lists tab.

Administrator ► Interactive Workforce ► Data Import ► Option List Import

2. Click Perform Extract

The application extracts the option lists and imports the lists into the Interactive Workforce database.

Refer to the eCyborg Interactive Workforce: Technical Implementation documentation for more information on the data import from The Solution Series to Interactive Workforce.

Note: When you click Perform Extract, the system imports the appropriate Solution Series option lists to Interactive Workforce. No message confirming the import displays.

Select organizations for loading

Using the Organization Selection tab page, you select the organizations to include when performing the extract and load process. This page displays the organizations set up in your company's Solution Series and works in conjunction with the Resulting Statuses Selection tab page to create the users IDs for Interactive Workforce.

Follow these steps to select organizations to include in the Interactive Workforce load.

1. Access the Organization Selection tab page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Organization Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Organization Selection

2. Select the appropriate check boxes in the extract column

Click the check boxes for at least the following organization:

999999 ACME MANUFACTURING

Note: If you make no selections on this page, no employee information can be extracted. In an initial environment this may be the only organization you select.

3. Click Save Changes

The system saves your changes.



Refer to Interactive Workforce: The Administrators' Guide for more information on the data import from The Solution Series to Interactive Workforce.

Select resulting statuses for loading

Using the Resulting Statuses Selection tab page to select the groups of employees who will have authority to use the online application. The employee statuses that display are those set up in your organization's application of The Solution Series.

Note: This page works in conjunction with the Organization Selection tab page to create the employee user IDs for Interactive Workforce.

Follow these steps to select statuses for the Interactive Workforce database load.

1. Access the Select Resulting Statuses for Loading page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Resulting Statuses Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Resulting Statuses Selection

2. Select the appropriate radio button for each group status

Note: The default settings will not extract any data. You must, as this time, make these selections in order for the data load to work properly.

This page displays employee statuses set up for your organization. You may have to scroll down the page to see all the available group status information. Three radio buttons appear for each group status.

- All employees in this status
- No employees in this status
- Only those with status selected below

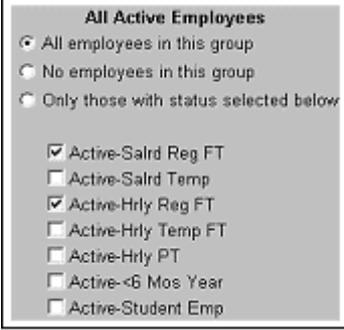
Click one radio button for each group status.

3. Select the appropriate checkboxes in the group statuses

If you clicked 'Only those with status selected below', for the following groups:

- All Active
- Leave of Absence with Pay
- Leave of Absence without Pay
- Retired

Check the 'All employees in the group' box for each of the groups listed above. Check the following options below each group: 'Active-Salrd Reg FT' and 'Active-Hrly Reg FT'. Once completed, each group should look similar to example of the 'All Active Employees' group shown here:



All Active Employees

- All employees in this group
- No employees in this group
- Only those with status selected below

- Active-Salrd Reg FT
- Active-Salrd Temp
- Active-Hrly Reg FT
- Active-Hrly Temp FT
- Active-Hrly PT
- Active-<6 Mos Year
- Active-Student Emp

4. Click Save Changes

The system saves your changes.



Refer to *eCyborg Interactive Workforce: Technical Implementation for more information on the data import from The Solution Series to Interactive Workforce.*

Load Interactive Workforce users

Note: For a three-server configuration copy the *Interactive Workforce Users* file to the database you created on the Database Application Server.

1. Copy the Interactive Workforce Users file

Refer to the configuration worksheet for the location of The Solution Series. From the \Data directory copy 'essusers.txt' to the following directory:

...\\eCyborg\IW\ESSDatabase\CybIW

Note: In two-server configuration, the *essusers.txt* file must be copied from the the Solution Series Application Server to the Web Server.

The text file contains a listing of the Interactive Workforce users that will be bulk loaded into the system during the next step.

2. Execute the Load Users script

Job Used: loadusers

This issues all of the commands necessary to load user data from The Solution Series into the Interactive Workforce database. This script can be found in the following file path:

...\\eCyborg\IW\ESSDatabase\CybIW\loadusers.bat

You can ignore the following text in the log file.

```
Initializing Database Read...
020730 15:48:55.598 main: Maximum number of attempts to replace a bad connectio
n not set. Defaulting to 3
020730 15:48:55.608 main: selfservice database connection wait timeout not set.
Defaulting to 5000ms.
020730 15:48:56.810 main: Database pool created for: jdbc:odbc:CyBIW. Connectio
ns: 2
```

Note: Populating the Interactive Workforce database will take some time, depending on the size of the company and the the processing speed of the computer. For example, a company of 2000 employees may take up to three minutes to load to the database.

Note: If you have changed the default install location while installing the software, you will need to look in that directory for the file.

3. Access Query Analyzer

We are now going to take a ‘short cut’ to get the password of a specific user in the sample data set using the SQL 2000 Query Analyzer.

To access SQL 2000 Query Analyzer enter the following commands:

Start ► Programs ► Microsoft SQL Server 2000 ► Query Analyzer

Important! Remember to log in to the Query Analyzer using the login for the correct database. Use the following login:
CyBIWdba

Note: If you have Interactive Workforce Administrator access, you may also use the Interactive Workforce Administrator functionality to find the user password. Refer to *Interactive Workforce: The Administrators' Guide* for information on using the Interactive Workforce Administrator functionality.

4. Collect the Initial Password to Access Interactive Workforce

In order to access Interactive Workforce you need to collect the initial password for employees ‘4001’ and ‘4002’ from the Cyborg_User table. From the Query Analyzer window enter the following command:

```
select login_name, initial_password
from cyborg_user
where login_name in ('4001', '4002')
```

Then, click the Play button  or type CTRL-E. The initial password for employees ‘4001’ and ‘4002’ will be output to the bottom part of the window. Write these numbers down or highlight and copy them for use in the next step.

Phase 7: Set Up the Pay Information Database

Perform the tasks in Phase 7 in the following order:

1. Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series
2. Process a payroll run
3. Load the Pay Information database

Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series

To set up the Interactive Workforce Payrun (7L) and Payslip (7M) generators, you must log in to The Solution Series with Security Officer access.

Note: Contact your payroll expert before continuing with these steps.

1. Set up the Payrun (7L) Report Generator

On The Solution Series system, access the Report Request form (DD-SCR) to set up the 7L7L report generator. Access the Report Request form by making the following selections:

Tools ► Reporting ► Report Scheduling ► Schedule Payroll Run Reports

To execute a payrun, the 7L7L generator must be loaded into your P20IN file using the desired company(ies). For the initial installation, use the 999999 company.

On the Report Requests form:

- The Report Code field must be set to '7L7L'
- The Report Select field must be set to '1'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your Solution Series system.

The screenshot shows the 'Report Requests' form with the following values:

- Report Code: 7L7L
- Report Select: 1
- User Field: (empty)
- Extra Copy: (dropdown)
- Adjustments: Plus, Minus, Manual (all set to 'Do Not Print')
- Data Types: Company Level, Tax Tables, Labor Record, Other Record (all set to 'Do Not Print')
- To-date Amounts: Current (set to 'Print Every Run'), Month, Quarter, Year (all set to 'Do Not Print')

2. Set up the Payslip (7M) Report Generator

On your Solution Series system, while still on the Report Request form (DD-SCR) set up the 7M7M report generator. To execute a payrun, the 7M7M generator must be loaded into your P20IN file. On the Report Requests form:

- The Report Code field must be set to '7M7M'
- The Report Select field must be set to 'E'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your The Solution Series system.

The screenshot shows the 'Report Requests' form with the following values:

- Report Code: 7M7M
- Report Select: E
- User Field: (empty)
- Extra Copy: (dropdown)
- Adjustments: Plus, Minus, Manual (all set to 'Do Not Print')
- Data Types: Company Level, Tax Tables, Labor Record, Other Record (all set to 'Do Not Print')
- To-date Amounts: Current (set to 'Print Every Run'), Month, Quarter, Year (all set to 'Do Not Print')

3. Refresh the selection list

Refresh the selection list to view the records for the report generators.

Process a payroll run

Processing the payroll run will both verify that the new scripts and report generators are working correctly, and will create the text files used to populate the Pay Information database. This task must be performed while logged in to The Solution Series with Security Officer access.

1. Define the Pay Run Parameters

This task must be performed while logged in to The Solution Series with Security Officer access. On The Solution Series system, access the Payroll Run Process Control form (AE-SCR) by making the following selections:

Payroll ► Payroll Processing ► Payroll Scheduling ► Schedule Payroll Runs

Set up the payroll run parameters, as represented in the graphic, for the following three pay frequencies:

1. Weekly
2. Bi-Weekly
3. Semi-Monthly

Be sure to set all of the fields as shown on the form. The Run Date field is optional and may be left blank. The Payment Date field must be the current or another relevant date.

In the Frequency field, enter one of the following values then press enter:

- '1' to set up a Weekly pay pay run
- '2' for a Bi-Weekly pay run
- '3' for a Semi-Monthly pay run

From this point forward, the tasks and steps include the execution of programs and processes from the normal administration of the system. This is done here both to demonstrate successful component installation and to provide the data needed to confirm that the entire system is working.

2. Execute the Pay Extract script

Job Used: jpayxtr

Execute the following script from the \Runs directory of your *The Solution Series 4.5.1* system:

```
rj jpayxtr.bat
```

Check the output file payxtr.03, in the \List directory, for errors.

Note: If you have already modified *jpayxtr.bat* for Interactive Workforce and run this program now without the STAPI currently running, you will receive CORBA errors that you can ignore.



Refer to the *eCyborg Interactive Workforce: Technical Implementation* documentation for information on modifying *jpayxtr*.

3. Execute the Pay Run script

Job used: jpayrun

Execute the following script from the \Runs directory of your *The Solution Series 4.5.1* system:

```
jpayrun.bat
```

Once you have executed a payrun, check the audit1.pay.lis and checknum.lis files in the \List directory for errors. Also check the \Data directory to ensure that the following files have been created:

- essedr.txt
- esseer.txt
- esstxr.txt

4. Execute the Maintenance script

Job Used: jmntrun

Execute the following script from the \Runs directory of *The Solution Series* system:

```
rj jmntrun.bat
```

After you execute a maintenance run, check the audit2 and tranlod2.lis files in the ... \List directory for errors. Also, check the \Data directory to ensure that the following file has been created:

```
esspsr.txt
```

5. Execute the Pay Merge script

Job Used: jpaymrg

Execute the following script from the \Runs directory of *The Solution Series* system:

```
rj jpaymrg.bat
```

Note: If you run this job without the STAPI currently running, you may receive CORBA errors. You can ignore these errors.

Load the Pay Information database

This task takes the output files created by the 7L and 7M generators during the payroll run and loads them into the Pay Information database.

1. Copy the Pay Run output files

Copy the four output files created during the pay run from the \Data directory to the ...\\eCyborg\IW\PayInfoDatabase\CybPay directory.

- essedr.txt
- esseer.txt
- esstxr.txt
- esspsr.txt

Note: In a three-server configuration, copy these files to the directory for the Pay Information Database created on the Database Application Server.

2. Execute the Load Pay Information script

Job Used: **imppayinfo**

This script issues all the commands necessary to load data from The Solution Series payrun output files into the Pay Information database. The four files listed in Step 1 are bulk loaded into four tables. Once the process is complete, the four files are deleted. To load the pay information data, execute the following script:

```
...\\eCyborg\IW\PayInfoDatabase\CybPay\imppayinfo.bat
```

Verify the data load by ensuring there are no errors in the following files in ...\\CybPay directory:

- LoadPIBasicsData.err
- LoadPIBasicsData.log
- LoadPIEarnDeductData.err
- LoadPIEarnDeductData.log
- LoadPIEmployeeData.err
- LoadPIEmployeeData.log
- LoadPITaxesData.err
- LoadPITaxes.log

The .err files should be blank, indicating that no errors have occurred. Likewise, the log files should contain no errors.

Phase 8: Test the environment

Verify Interactive Employee functions

In this task, you log on as a test user and complete the New User steps in Interactive Workforce. Completing this task ensures that the installation is fully functional.

1. Launch Interactive Workforce

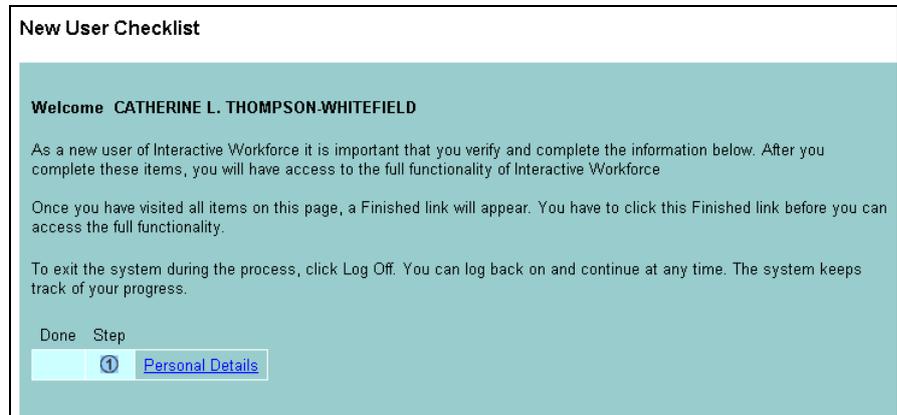
Use your browser to access Interactive Workforce; enter the following URL:

`http://localhost/CyborgESS`

When you access the system, enter the employee ID '4001' in the login box. Next, enter the initial password for employee '4001' which you collected when you loaded Interactive Workforce users. When you access the system, you will be prompted to change passwords. Change the password to be the same as the user identification, in this case, '4001'.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's HOSTNAME instead of 'localhost'.

The Navigator displays New User when you log onto the system and the New User page displays.



2. Access the New User Personal Details

Click Personal Details to access the personal information for user 4001. To demonstrate that the system is fully functional and to be able to test Interactive Manager, click each of the personal details to display the page. Then click Back to return to the checklist. A check mark appears in the done column for each selection.

Personal Details Checklist

To make sure the personal information on file for you is complete and accurate, click on each of the items in the checklist below. Review and update the information as needed. If you review a checklist item and determine that it does not apply to you, click Back to return to this page. Interactive Employee adds a check in the Done column to indicate the items you reviewed.

Done	
<input type="checkbox"/>	Name and Address
<input type="checkbox"/>	Phone, Fax and Email
<input type="checkbox"/>	Marital Status
<input type="checkbox"/>	Family Members
<input type="checkbox"/>	Emergency Contacts
<input type="checkbox"/>	Emergency Doctor
<input type="checkbox"/>	Direct Deposit
<input type="checkbox"/>	Reimbursement Account
<input type="checkbox"/>	Other Personal Details
<input type="checkbox"/>	Tax Forms

 [Back](#)

3. Click Finished on the Personal Details Checklist page

When a check mark appears for all Personal Details pages, click Finished. The system displays the original New User page.

4. Click Finished on the New User page

Click Finished on the initial page. The Navigator now shows the additional functions available to employee 4001.

5. Access the Pay Information options

From the Employee area of the Navigator, select Pay Information and then Pay Advice to verify access to the Pay Information database.

Congratulations! The system is working! Interactive Workforce may be accessed using the following URL:

`http://WebAppServerHostname/CyborgIW`

APPENDIX C

Implementation of SSL Certification

In This Appendix

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Introduction

This appendix details how to activate SSL for Interactive Workforce. Virtually all web servers and browsers, including products from Netscape and Microsoft, are optimized and ready for SSL. To activate SSL sessions for visitors to your site, you must acquire and install a secure certificate for your web site and configure Interactive Workforce and ServletExec to use SSL.

Overview of SSL

The Secure Sockets Layer (SSL) protocol provides secure communication between web browsers and web servers. This is the approach used today in e-commerce to establish encrypted communication for customers to safely submit information such as credit card numbers over the internet.



You can learn more about Secure Socket Layer from the web sites of existing Certification Authorities.

Implementing SSL in applications is an easy process. It requires a Server Certificate available from a Certification Authority which is installed on a web server that supports SSL. The browser of the web sight must recognize SSL.

There are two levels to this concept. The first is the Certification Authority level, which creates a file identifying the Certification Authority as a verifier of trusted sources. The second is the use of that file to sign server-specific certificates (private keys) that are installed on the web server to identify it as a trusted source.

The server certificate identifies the Certification Authority and the customer, in this case yourself if set up as your own Certification Authority. The certificate contains the customer's public key, certificate serial number, identifies the certificate's operational period, and is digitally signed by the Certification Authority. The Certificate Authority is an agency that issues, suspends, or revokes a (server or client) certificate.

Important! Phase 1 of this appendix, and the supporting software described therein is provided as a proof of concept only. It demonstrates how to create credentials for a Certification Authority and allows you to act as your own Certification Authority. This software was adapted from the Open Software Foundation and is not supported by Cyborg.

Cyborg strongly recommends that you use a third party Certification Authority. In this case, once the third party provided certificate has been installed on the web server, you should begin with Phase 2 in order to secure *The Interactive Workforce Solution* using SSL.

It is relatively easy to use SSL. For example, any URL beginning with **https://** (instead of http://) indicates the use of HTTP protected by SSL if the server has enabled SSL.

SSL is provided for Interactive Workforce installation. The purpose of using SSL with Interactive Workforce is to encrypt the data transmissions. Normally, it is not necessary to

prove the trustworthiness of servers on your own Intranet. However, depending on your organization's needs, you may acquire and install a third party Server Certificate.

SSL provides a range of security services for client/server sessions, including:

1. **Server authentication:** This proves to the originator that he or she is actually communicating with the intended Web site and not a site that is posing as that Web site to fraudulently gather confidential or personal information.
2. **Client authentication:** This service authenticates to the server that the client is who he or she claims to be, protecting the business from fraudulent users. This is generally not implemented, because it is difficult to administer. *The Interactive Workforce Solution* does not provide this.
3. **Keep private communications private:** Data transferred between the client and server are encrypted, preventing someone (that is trapping the data as it is being sent) from viewing information that is private.
4. **Prevent tampering:** Data items transferred are protected against attempts to modify data before it reaches its destination.
5. **Assure confidentiality:** Users are assured that no unauthorized entity has access to the information being shared at the Web site. This protects sensitive information such as account numbers or credit card numbers against eavesdroppers.

Process flow

Following is a flowchart of the tasks required in implementing SSL:

Phase 1: SSL Certificate Implementation

Perform the tasks in Phase 1 in the following order:

1. Create credentials for a Certification Authority
2. Create a Certificate Signing Request for the Internet
3. Certificate Authority signs the Certificate Request
4. Create a Certificate from the Signed Request
5. Install the Certificate on the Web server
6. Install the CA's Public Key on a client

Overview of the process

A certification authority is typically a third party company that provides certification for web sites. This section provides an overview of the process of creating credentials for a fictional certification authority and setting up security for a second, fictional internet company. In the examples, AcmeSecure Inc. is the company that acts as the Certification Authority, while GoDotCom Inc. is an Internet company that implements SSL via a signed certificate from AcmeSecure.

This information is provided as a proof of concept. Your company needs to determine what level of security is appropriate for your Interactive Workforce implementation. This will determine whether SSL is required, whether a third party certification authority is necessary, or whether your company can act as its own certification authority.

Cyborg strongly recommends that you use a third party Certification Authority. In this case once the third party provided certificate has been installed on the web server, you should begin with Phase 2 in order to secure Interactive Workforce using SSL.

Create credentials for a Certification Authority

The first step in this example is to create the credentials for the fictional Certification Authority, AcmeSecure Inc. You may either use this fictional example, or create credentials for your own company, thus acting as your own Certification Authority. When this task is complete, the credentials authorizing the Certification Authority will be created. These credentials consist of the following files:

- *AuthorizingCompanyNameCAKey.pem* : private key
- *AuthorizingCompanNameCACert.pem* : public certificate
- *AuthorizingCompanNameCACert.der* : public certificate (alternate format for Windows platforms)

Cyborg provides a public-domain software suite called OpenSSL, which you can use to create Certification Authority credentials.

1. Run OpenSSL for the Authorizing Company

Using a command prompt, go to the following directory:

```
...\inetpub\wwwroot\OpenSSL\certs
```

Run the Certification Authority script using the following format:

ca openssl.cfg *AuthorizingCompanyNameCA*

Where *AuthorizingCompanyName* is a name which designates a Certification Authority for your implementation. In this example we use the fictional company name, AcmeSecure.

For example:

AcmeSecureCA

From here, you will be prompted to enter information defining the authorizing company.

2. Enter the pass phrase for the Authorizing Company

You will be prompted for the 'PEM pass phrase', which will be the password for the authorizing company. Be sure to secure this password, and remember it for future request signing. When prompted, verify the pass phrase.

3. Enter the Country Name

Use the two-digit code designating the correct country. For example:

US

4. Enter the State or Province

Use the name of the State or Province of your company. For example:

Illinois

5. Enter the Locality

Use the name of the city or town where your company is located. For example:

Chicago

6. Enter the Organization Name

Use the name of your company. For example:

AcmeSecure Corporation

7. Enter the Organization Unit

Use the name of your division or department. For example:

Security Services

8. Enter the Common Name

The Common Name is a fully-qualified domain name used for DNS lookups. Use the name of the web site. In this case, it is the company acting as the Certification Authority:

www.acmesecure.com

9. Enter an email address

This is an email address created for use with the CA. For example:

support@acmesecure.com

Once all of this information has been entered, OpenSSL will create the following three files:

- AcmeSecureCAKey.pem
This is the Certification Authority's private key file. This file must be kept in a secure environment.
- AcmeSecureCACert.pem
This is the CA's public certificate, which can be distributed freely to browsers for enabling secure communication.
- AcmeSecureCACert.der

This is the CA's public certificate in the DER format. This file is recommended for distribution in an MS Windows environment, because the certification information is readily displayed when this file is double-clicked in Windows Explorer. This file may also be distributed freely to browsers for enabling secure communication.

10. **Close the command console window**
11. **Make a backup copy, Keep track of the filenames, their purpose, and the passwords**

You may wish to keep track of this information by creating a 'ReadMe' file. A good way to do this is to create a AcmeSecureCA Readme.txt file, enter the data and save it in the same directory.

Create a Certificate Signing Request for the Internet Company

A web site that wishes to be secure on the internet, creates a request for a certificate. This request is then sent to the third party Certification Authority along with a fee. For this proof of concept a fictional example is used. You can either follow the example or create a request for your own company. The request text file is:

InternetCompanyNameRqst.txt

1. **Access the Internet Server Manager**

Make the following selections:

Start ► Programs ► Windows 2000 Option Pack ► Microsoft Internet Information Server ► Internet Service Manager

2. **Open the Key Manager**

Select the Key Manager button on the toolbar:



3. **Create a New Key**

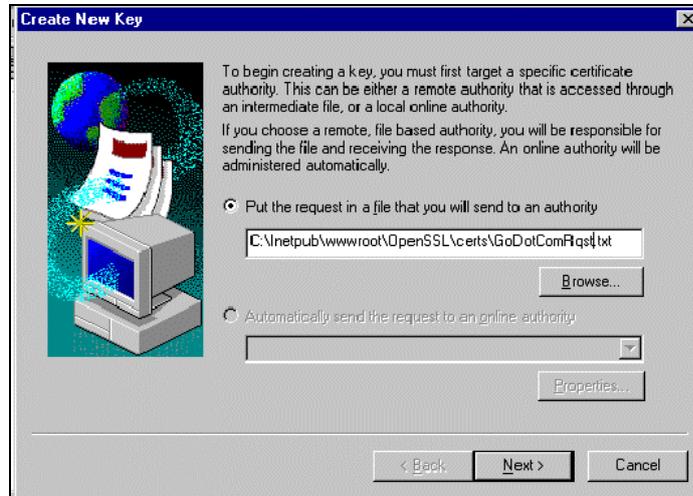
In the navigator of the Key Manager dialog, select 'WWW', then make the following selections:

Key ► Create New Key

4. **Create the Certificate Signing Request**

In this example, we show a request for the fictional company GoDotCom. Select 'Put the request in a file that you will send to an authority'. Enter a filename for the request. For example:

C:\inetpub\wwwroot\OpenSSL\certs\GoDotComRqst.txt



5. Click Next

6. Enter a Key Name, Password, and Bit Length

Enter any name, for example, 'Go-Dot-Com Key'. Then enter a valid password for this private key. Last, enter the bit length 1024.

Note: Be sure to remember the password because you will need it during the next task.

7. Enter an Organization, Organization Unit, and Common Name

Enter your legal company name, followed by your division, and common name. The common name is the fully qualified name used for DNS lookups of your server. For intranet access, the common name would be the network *hostname* of your web server in your domain. For internet access the name must resolve to the world wide web DNS. For example, www.godotcom.com.

Note: You are generating a request for the server where The Interactive Workforce Solution is installed. While the company name and other data may be fictitious, the Common Name used here **must** be the name of the server hosting The Interactive Workforce Solution.

8. Click Next

9. Enter your Country/Regi, State/Province, and City/Locality

For your country enter the two letter country code, followed by the two-letter state code. Last, enter the name of the city or locality, for example, Chicago.

10. Click Next

11. Enter Your Name, E-mail address, and Phone number

Enter your full name followed by your e-mail address, and work phone number. This data is not placed in the key, it is simply used to allow the certificate authority to contact you in case there are any questions. We recommend entering the data, even though you are acting as your own CA.

- 12. Click Next**
- 13. Click Finish**

Once you have completed all of the dialogs, click Finish to generate the new key.
- 14. Click OK**

A dialog box displays the file location for the key. Click OK.
- 15. Close the Key Manager and commit changes**

When you close the Key Manager, you will be prompted to commit the changes. Click Yes, and the Key Manager will save the changes. You may close the IIS Service Manager at this point.

Certificate Authority Signs the Certificate Request

The certification authority verifies the requesting company's information provided in the certificate signing request. Once the information is verified, the certificate authority signs the certificate signing request. In this example, the fictional certification authority signs the request of the fictional internet company. The following signed request file is produced:

InternetCompanyNameSnRq.pem

- 1. Modify the openssl.cfg file**

Before modifying the openssl.cfg file, you should make and save a copy of it under a different name, such as openssl.cfg.backup.

In the Inetpub\wwwroot\OpenSSL\certs directory open the openssl.cfg file. Ensure the following parameter settings:

```
dir           =drive:/Inetpub/wwwroot/OpenSSL/certs
certificate= $dir/AuthorizingCompanyNameCACert.pem
private_key= $dir/AuthorizingCompanyNameCAKey.pem
```
- 2. Execute the Signing Script**

In the Inetpub\wwwroot\OpenSSL\certs directory execute the sign.bat script. The first argument is the configuration file, the second is the certificate signing request, the final argument is the name of the output file which holds the signed request. For example:

```
sign openssl.cfg GoDotComRqst.txt GoDotComSnRq.pem
```
- 3. Enter the Certificate Authority Password**

When prompted 'Enter PEM pass phrase:', enter the password for the Authorizing Company created in Task 1.
- 4. Review and Sign the Request**

When prompted 'Sign the certificate? [y/n]:', review the information displayed. If you are satisfied that the certificate signing request information is correct, enter 'y' to sign it.

Note: The signed request is valid for one year.
- 5. Create the Signed Request file**

When prompted '1 out of 1 certificate requests certified, commit? [y/n]', enter 'y' to commit. The signed request is now created.

Create a Certificate from the Signed Request

The signed request contains a valid certificate. The certificate must be extracted from the signed request.

- 1. Create a copy of the Signed Request file to a Certificate File**
Copy the *InternetCompanyNameSnRq.pem* file and rename the copy to *InternetCompanyNameCert.txt*. Notice the file extension is changed to *.txt*.
- 2. Extract the Certificate**
Open the new certificate file and delete all text before heading '*-----BEGIN CERTIFICATE-----*'.
- 3. Save the Certificate file**

Install the Certificate on the Web Server

Finally, the certificate is installed on the internet company's web server. The certificate is used to verify security for specified web sites on the web server.

- 1. Access the Internet Server Manager**
Make the following selections:
Start ► Programs ► Windows 2000 Option Pack ►
Microsoft Internet Information Server ► Internet Service Manager
- 2. Open the Key Manager**
Select the Key Manager button on the toolbar:

- 3. Select the Key for installation**
Select the key, then make the following selections:
Key ► Install Key Certificate
- 4. Access the updated Certificate file**
Use the browse button to locate and open the certificate '*InternetCompanyNameCert.txt*' file.
- 5. Enter the Password**
A Confirm Password window pops up; enter the password for the *InternetCompany* key request (Task 2, Step 6). If you have given the correct password, the Server Bindings window appears.
- 6. Click Ok**
This installs the certificate as the Default for the key. Phase 2 provides instructions for binding the key to a specific port, then cross-referencing a web-site to that port.

7. Complete Certificate Installation

From the menu, select Computers and click Commit Changes Now. Click Yes to confirm committing the changes.

The public certificate installation process is completed.

Install the CA's Public Key on a Client

Each time a client logs in to a web-application that uses Secure Socket Layer, she or he will receive a security alert if the corresponding CA's public key is not installed locally.

If you are using Netscape, the browser will prompt for the public key. Should you accept the prompt, Netscape will automatically download and install the public key. Be sure to select 'Accept this certificate forever' during the process.

If you are using Internet Explorer, you need to complete the following steps:

1. Copy the public key to the client machine

In order to copy the public key to the client machine, you may email or otherwise download the file. Copy the following file to any directory on the client:

AuthorizingCompanyNameCACert.der

2. Install the public key on the client machine

Once the public key has been copied to the client machine, it must be installed. You can install the file by running it. Double click on the file:

AuthorizingCompanyNameCACert.der

The Certificate dialog appears:



3. Select Install Certificate

Once you select **Install Certificate**, the Certificate Manager Import Wizard appears:



- 4. Click Next**

The wizard prompts you to select a certificate store, which is the directory where the certification will be saved:
- 5. Select 'Place all certificates into the following store'**
- 6. Click Browse**

The Browse dialog appears.
- 7. Select 'Trusted Root Certification Authorities'**
- 8. Click Next**

The wizard prompts you to complete the certification import.
- 9. Click Finish**

The wizard prompts you to add the certificate to the store.
- 10. Click Yes**

The certificate is imported to the browser, thus allowing the browser to recognize the CA as a trusted source. Afterwards, a prompt appears informing you that the import has been successful. The public key is now installed on the client.
- 11. Click OK**

Now the task is complete, and you may close the Certificate dialog.

Phase 2: Configure SSL for The Interactive Workforce Solution

A prerequisite for this phase is the installation of a complete usable key in the IIS Key Manager of the web server. This key may have been created as a proof of concept as described in Phase 1 above or through arrangements with a third party Certification Authority.

There are several important steps in configuring SSL for Interactive Workforce. As described elsewhere in this document, each Interactive Workforce environment is supported by its own web site configured in IIS. A web site for a secure Interactive Workforce environment must be configured with an SSL port. The SSL port must be mapped to a security key in the IIS Key Manager. This same SSL port must also be configured for both the environment-specific instance of ServletExec and the Interactive Workforce software. These tasks are described below.

It is *imperative* that you keep track of the SSL port and maintain consistency across the configuration for each web component comprising a secure Interactive Workforce environment.

Perform the tasks in Phase 2 in the following order:

1. Map the SSL Port to the Security Key
2. Configure the SSL Port for the Interactive Workforce Web site
3. Specify the SSL Port to Interactive Workforce
4. Verify the SSL Connection

Map the SSL Port to the Security Key

1. **Open the IIS Internet Service Manager**

Make the following selection:

Start ► Programs ► Windows 2000 Option Pack ►
Microsoft Internet Information Server ► Internet Service Manager

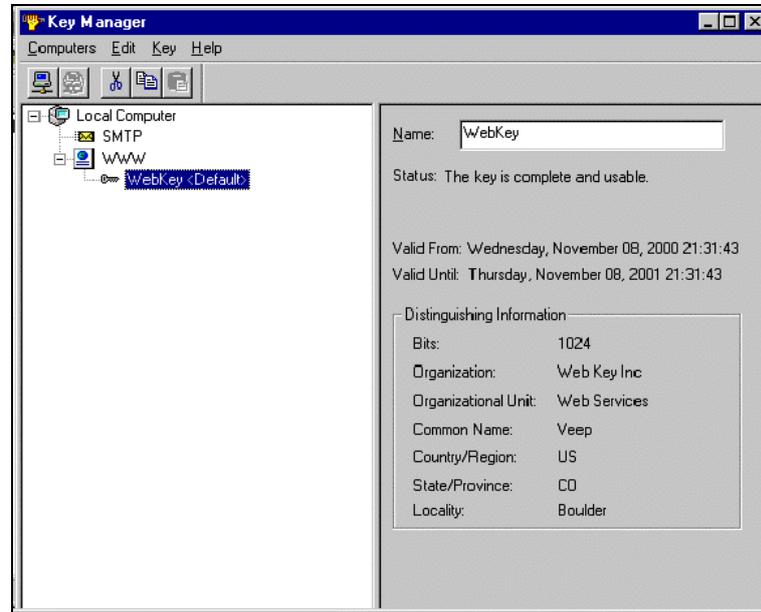
2. **Open the Key Manager**

From the Internet Service Manager, select the Key Manager icon from the tool bar.



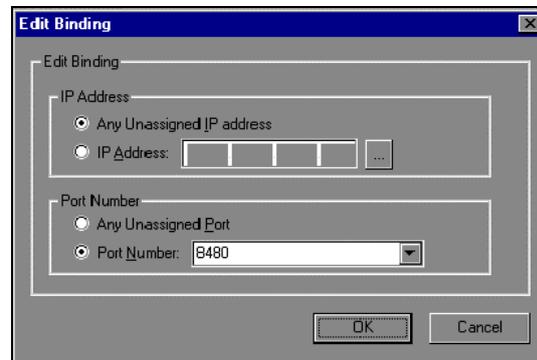
3. Open the Key properties

Locate the key under the WWW icon on the left. Right click on the key and select Properties. This opens up the Server Bindings dialog.



4. Edit the Port Number

Select the first line in the bindings list and then select the Edit button. Leave the IP Address setting to Any Unassigned. Change the Port Number to the SSL port. If you wish to secure more than one web site with key, then repeat this step. For example, in the Key Manager navigator you see KeyName<8480> for a single port, or KeyName<Multiple Bindings> if there are more than one.



4. Save settings

Select the following menu option in the Key Manager to save your changes.

Computer Commit Changes Now

5. Exit the Key Manager

Select the following menu option to exit the Key Manager:

Computer ► Exit

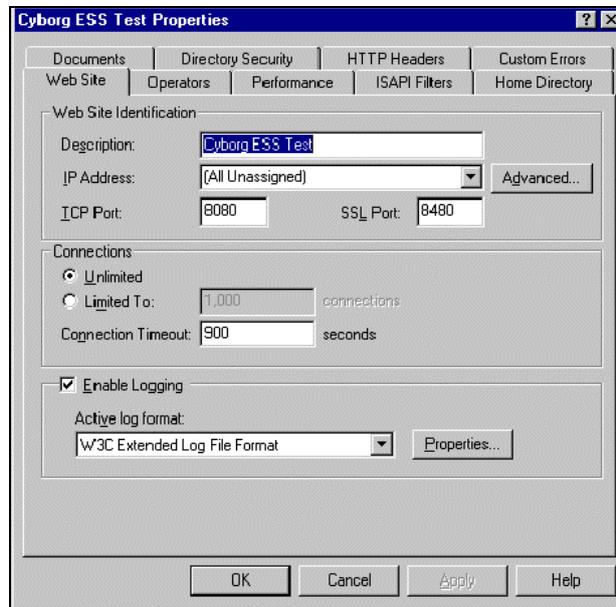
Configure the SSL Port for the Interactive Workforce Web Site

1. Stop the web site, then open the properties dialog

Right-click on the web site and select Stop. Then, right-click on the web site and open the Properties dialog.

2. Enter an SSL Port

On the Web Site tab enter an unused port number in the SSL Port field. If this is the default web site, you must use 443 for the SSL Port. Other web sites may use any unused port number. We suggest a number in the range 8400–8500.



3. Close the Properties dialog

4. Restart the web-site

Right-click on the web site and select Start

5. Exit the Service Manager

Specify the SSL Port to Interactive Workforce

1. Edit the StartServletExec.bat File

For each Interactive Workforce environment that is secured with SSL, it is necessary to specify the SSL port to the ServletExec executable. This is set in the StartServletExec.bat file.

Go to the ServletExec install directory for the Interactive Workforce environment. Add the SSL_PORT switch as described in the comments.

The following example shows the setting for the default web site. The StartServletExec.bat file for the default Interactive Workforce environment will be in the directory:

drive:\eCyborg\ESS\ServletExec\se-CybESS

```
rem To use secure communication (https), specify the SSL port with -DSSL_PORT=xxx.  
rem Example: -DSSL_PORT=443  
rem To use non-secured communications (http), do not specify -DSSL_PORT=xxx  
"%JAVA_DIR%\%JAVA_VM%" -DSSL_PORT=443 -D...
```

2. Edit the ServletExec.properties file

Go to the Inetpub\scripts directory and edit the servletexec.properties file. Find the set of entries for the environment-specific instance of ServletExec. On the hosts line add the network *hostname* and SSL port number as shown below for the test environment with SSL port 8480.

```
servletexec.CybESSTest.hosts=hostname:8080,hostname:8480  
servletexec.CybESSTest.applications=  
servletexec.CybESSTest.aliases=/servlet,.jsp,.shtml  
servletexec.CybESSTest.instances=127.0.0.1:8889
```

3. Initiate the SSL settings

Stop each ServletExec instance. Stop the IIS Admin Server. Restart everything.

Verify the SSL Connection

1. Access your Browser

2. Enter the URL for *Interactive Workforce*

Start your web browser and enter the URL for Interactive Workforce.

3. Click Yes to bypass Alert

If you have not completed the task, Install the CA's Public Key on a client in Phase 1, (not applicable if using a third party CA), a Security Alert window will pop up, claiming that the security certificate was issued by a company you have not chosen to trust. Click 'Yes' to proceed.

You may also get the standard dialog warning of the transition to secure mode. Select the check box if you do not wish to see this dialog with each login.

In IE, notice a yellow lock displayed at the status bar in the browser. In Netscape, you notice that the lock on the left of the status bar closes. This means that communication in Interactive Workforce is now secured.

eCyborg

Installing and Configuring Interactive Workforce 5.0 (Windows 2000)

Document Issue 1.0

CYBORG
SYSTEMS®

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PART 1

Part 1 - Introduction

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CHAPTER 1

Introduction

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Introduction

This document provides detailed installation instructions for installing Interactive Workforce on a Windows 2000 environment.

When installing Interactive Workforce you are provided a number of configuration options such as specifying the number of servers used as hosts. Cyborg Systems supports multiple configurations of Interactive Workforce. They are:

- Two-Server
- Three-Server (with a database server)
- Single-Server

We recommend the two-server configuration, but instructions are also included for the single server configuration.

This guide also shows how to set up Interactive Workforce as a service, so it runs in the background of the host computers, with no need for a user to be continually logged in. In addition, the hosts can be set to start Interactive Workforce automatically when the computers are first turned on. This guide describes how to set up Orbix and ServletExec as Windows 2000 services, thus creating an implementation of Interactive Workforce which runs as a service.

Multiple Environments

During the installation of Interactive Workforce several environments may be created. The initial installation will create an initial version of Interactive Workforce against your unmodified (default) installation of The Solution Series (version 5.0 or higher). This installation will be fully tested to ensure that all components are correctly installed and working. Included in the test are a payrun that populates the Pay Information database and steps to verify communication between Interactive Workforce and The Solution Series.

Once the initial installation is complete, two additional environments may be created: a Test and a Production environment. The ability to complete these two additional installations is dependant on customizations you may have made to your production version of The Solution Series. Your Cyborg representative can advise you on which programs to look for in a MAINTO report that affect your production and test environment installations.

Multiple environments may be set up in one of two ways: on the same computers, or on separate computers per environment. Cyborg recommends using separate computers per environment, so installing each environment is a matter of performing the basic installation instructions on each machine. If you wish to have all environments on the same computer, there is a series of tasks requiring you to create environment-specific directories and copies of certain files detailed in Appendix B: Multiple Environments on the Same Server.

At the completion of this installation the following environments may be configured:

- Initial Interactive Workforce environment connected to an unmodified Solution Series.
- Test environment connected to a copy of your test or production Solution Series. We recommend using your test environment.
- Production environment connected to a copy of your production Solution Series.

Secure Socket Layer (SSL)

This installation guide provides the steps necessary to configure Secure Socket Layers for each Interactive Workforce environment. The Secure Sockets Layer (SSL) is a protocol that provides secure communication between web browsers and web servers. This feature enables Interactive Workforce to encrypt data that is transmitted over your intranet. Cyborg does not support SSL, but Appendix C: Implementation of SSL Certification explains how you can set yourself up as a Certification Authority for your own implementation.

Who should read this Installation Guide?

This Installation Guide is intended for IT Specialists, System Administrators, and Installers who already have a working knowledge of The Solution Series.

Important: Please ensure you review 'Section 2: Preparation and prerequisite software' prior to the installation.

Read this section	For
1. Introduction	An overview and description of the prerequisites required for successful installation.
2. Preparation and prerequisite software	The first phase of the processes in which all software prerequisites are verified and/or configured prior to the installation of Interactive Workforce.
3. Installing the Two-Server Configuration	A detailed explanation of the tasks and steps performed to install Interactive Workforce on a two server configuration.
4. Installing the Single-Server Configuration	A detailed explanation of the tasks and steps performed to enable the installer to install Interactive Workforce on a single server.
A. Installation Checklists	A step-by-step checklist of the installation process.
B. Multiple Environments on the Same Server	A detailed explanation of creating multiple environments on the same server(s) from the initial installation.
C. Implementation of SSL Certification	A detailed explanation of the tasks and steps to implement Secure Socket Layers for Interactive Workforce.
D. Installation scripts and Files	A detailed layout of some of the key processes and files within Interactive Workforce.
E. Uninstalling Interactive Workforce	A detailed explanation of uninstalling Interactive Workforce software.

Hardware Prerequisites

The following are the hardware prerequisites you must satisfy before installing Interactive Workforce.

Minimum Server System Requirements - Windows 2000

Unless otherwise stated assume the server requirements apply to each server.

Operating system	Windows 2000
RAM	<p><i>Single-Server Configuration</i></p> <p>1 GB RAM in addition to operating system and The Solution Series requirements</p> <p><i>Two-Server Configuration</i></p> <p>Web Application Server: 1 GB RAM in addition to operating system requirements</p> <p><i>Three-Server Configuration</i></p> <p>Database Server: 1 GB RAM in addition to operating system requirements</p> <p>The Solution Series Application Server: 1 GB RAM in addition to operating system and The Solution Series requirements</p>
Disk space	<p><i>Single-Server Configuration</i></p> <p>1 GB disk space in addition to operating system and The Solution Series requirements</p> <p><i>Two-Server Configuration</i></p> <p>Web Application Server: 1 GB disk space in addition to the operating system requirements</p> <p>The Solution Series Application Server: 1 GB disk space in addition to the operating system and The Solution Series requirements</p>
Processceor speed	800 MHz dual
Media access	Access to a CD-ROM drive (either locally or on a network)
Monitor	SVGA (1024 x 768) screen resolution, 16-bit (High Color) color resolution

Minimum Client System Requirements

The client requires the following:

Operating system	Windows 95, Windows 98, or Windows 2000 Workstation
RAM	128 MB RAM in addition to operating system requirements
Processor	Intel Pentium 500 or higher (recommended)
Monitor	Monitor with SVGA (1024x768) screen resolution, 16-bit (High Color) color resolution

Prerequisite Software

Each server must have the following software installed prior to a Cyborg installer arriving to install Interactive Workforce.

Web Server (Windows 2000)

the Web Server requires the following software. Place a checkmark on the table below for each environment, as you verify it is installed:

Microsoft Windows 2000	
Microsoft SQL Server delivered with Windows 2000	
ODBC delivered with Windows 2000 (v3.51 or higher	
Microsoft Internet Explorer v6.0 or higher -OR- Netscape v6.2.1 or higher	

The Solution Series Application Server (Windows 2000)

The Solution Series Application Server for Windows 2000 requires the following software:

The Solution Series v5.0 (initial, test and production systems, if desired)	
Microsoft Windows 2000	
Microsoft SQL Server 2000	

Note: *SQL Server 2000 must be installed so the sort order of object names is case-insensitive for Interactive Workforce to work as documented. In SQL Server 2000, object names can be case-sensitive depending on the character sort order chosen during installation of the system. The case-sensitive choices are 'Binary Order' and 'Dictionary order, case-sensitive'. **The default sort order in SQL Server is dictionary order, case-insensitive—you must accept this default.** Interactive Workforce will not work as documented with a case-sensitive SQL Server 2000 installation.*

Client (Windows 95, 98, 2000, NT)

The Client requires the following software. Place a checkmark on the table below for each client:

Microsoft Internet Explorer v6.0 or higher -OR- Netscape v6.2.1 or higher	
Adobe Acrobat Reader 5.0	

Delivered Server Software

Interactive Workforce delivers the following:

Recommended Server Configuration

	Web Application Server	The Solution Series Application Server
ServletExec v4.1.1 with Service Pack 7	*	
Orbix v3.3.3		*
OrbixWeb v3.2	*	
Sun Java Development Kit v1.3.1_03	*	
STAPI		*
The Interactive Workforce database	*	
The Pay Information database		*
Interactive Workforce	*	

Server Configuration Options

There are three different types of installations supported for Interactive Workforce:

- Single-Server
- Two-Server
- Three-Server

Single-Server Configuration

The single-server configuration allows for the entire system to be run on a single computer. This configuration is recommended for testing and training purposes, since all of the components are on the same machine.

Two-Server Configuration

We recommend using the two-server configuration for the full production environment. This configuration minimizes the amount of processing each server must perform by separating the intranet-related software from the application-related software.

Note The STAPIServer must reside on the same machine as The Solution Series.

Three-Server Configuration

In the three-server configuration you install the Interactive Workforce and Pay Information Databases on a separate database server. The remaining instructions are similar to those for the two-server configuration.

Note *The STAPIServer must reside on the same machine as The Solution Series.*

Multiple Environments

Interactive Workforce can support multiple environments. They are used in moving from an initial installation to full production as part of the implementation process. There are two methods of running Multiple Environments:

- Multiple environments on separate servers
- Multiple environments on the same servers

For multiple environments on separate servers, install the software according to the directions in Section 3: Installing the Two-Server Configuration, or Section 4: Installing the Single-Server Configuration (depending on the desired configuration).

For multiple environments on the same servers, follow the instructions in Appendix B: Multiple Environments on the Same Servers. These instructions are intended to maximize the use of your hardware by creating all the environments on the same machine(s).

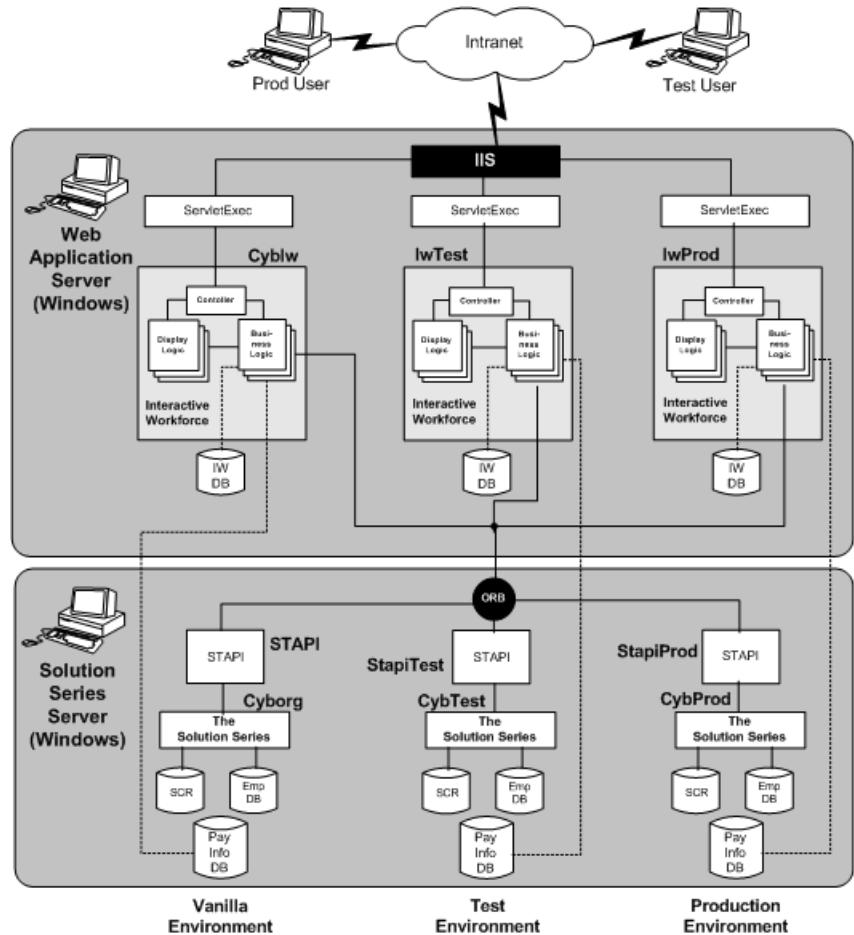
Which you choose depends on your available hardware and the level of risk you perceive by combining environments. Experience has demonstrated that the latter risk level is low, but you may want your staff to become familiar with the custom first. An installation of The Solution Series can support multiple environments on the same server configuration. These separate environments are used for parallel development and testing outside of your production environment. Multiple environments may also be used to support multiple production systems, for example, each supports a different organization within a company.

Multiple environments on the same servers

Multiple environments can also be installed on the same computer setup, as shown in the illustration that follows. To achieve this setup requires the copying and renaming of installed default files and modifying them for the new environment.



Refer to Appendix B: Multiple Environments on the Same Servers for more information.



Overview of the installation process

Three environments may be configured during the installation of Interactive Workforce. The first Interactive Workforce environment will be configured against the initial installation of The Solution Series. Once installed this environment may be copied to create a test and/or Production environment that may be pointed to a copy of your Test and/or Production environment of The Solution Series system.

Installing the system

There are three ways Interactive Workforce may be installed:

- The Two-Server Configuration
- The Three-Server Configuration
- The Single-Server Configuration

The process for each is similar, but the Two-Server Configuration and the Three Server-Configuration require that some of the Tasks be performed on different computers.

Installing the Single-Server Configuration

The following phases and steps need to be completed in order to successfully install a Single-Server Configuration of Interactive Workforce:

- Preparation Phase: Preparation and prerequisite software
- Phase 1: Install the Single-Server Configuration
- Phase 2: Create and Populate the Pay Information database
- Phase 3: Create and Populate the Interactive Workforce database
- Phase 4: Update the Solution Series data
- Phase 5: Test the installation

Installing the Two-Server Configuration

The following phases and steps need to be completed in order to successfully install a Two-Server Configuration of Interactive Workforce:

- Preparation Phase: Preparation and prerequisite software
- Phase 1: Install the The Solution Series Application Server
- Phase 2: Create and Populate the Pay Information database
- Phase 3: Install of the Web Server
- Phase 4: Create and Populate the Interactive Workforce database
- Phase 5: Update the Solution Series data
- Phase 6: Test the installation

Installing the Three-Server Configuration

The installation of the three-server configuration is similar to the two-server configuration with the following changes:

- Install the Java Development Kit (JDK) on both the Web Server and the Database Application Server
- Execute the Interactive Workforce and Pay Information Database creation scripts on the Database Application Server
- The ODBC settings for the Interactive Workforce and Pay Information Databases on the Web Application server point the Server Name to the Database Application Server.
- Transfer the ESS Users and Pay Information extract data files to the Database Application Server.

Phases of the installation

This section gives a general description of each phase of the installation, explaining the differences between Two- and Single-Server Configurations where appropriate.

Preparation and prerequisite software

Before starting the installation it is imperative that you verify that all prerequisites exist and have been configured correctly. This installation guide provides detailed steps that enable the installer to verify that the system is configured and ready for installation of Interactive Workforce.

Included in these steps is a configuration worksheet designed to help the installer keep track of important information such as user names, passwords, and directories. Certain provided prerequisite software is also installed in this phase.

Install the Solution Series Application Server (Two-Server)

In a Two-Server Configuration, the components of Interactive Workforce which interface directly with The Solution Series are installed on a separate computer called the Solution Series Application Server. During this phase of the installation the installer will use the media to install all components of the Solution Series Application Server. This phase also includes installing the JDK and ServletExec.

Install the Single-Server Configuration (Single-Server)

In a Single-Server Configuration, the software which makes up both the Solution Series Application Server and the Web Server is installed on the same machine. This phase also includes installing the JDK and ServletExec.

Install the Web Server (Two-Server)

In a Two-Server Configuration, the components of Interactive Workforce which interface with the Intranet are installed on a separate computer called the Web Server. During this phase of the installation the installer will use the media to install all components of the Web Server.

Create and Populate the Pay Information database

During this phase of the installation the installer will execute the Pay Information database creation script to create the Pay Information tables.

Create and Populate the Interactive Workforce database

During this phase of the installation the installer will execute the Interactive Workforce database creation script to create the Interactive Workforce tables. Once the tables exist, the installer will use the ODBC interface to enable access to both the Interactive Workforce and Pay Information databases.

Test the installation

After completing the installation of the servers and databases, the installer accesses Interactive Workforce and uses the administration tool to perform the tasks necessary to test the install. Once the initial administration tasks are completed, users will be loaded into the system, and the installer will access the system as a user to verify that the user data exists.

Installing the Test and Production environments

The remaining steps of the installation of the Test and Production environments consist of copying certain components of the initial environment, then reconfiguring them.



Refer to Appendix B: Multiple Environments on the Same Servers for detailed step-by-step instructions.

Please note that it may not be immediately possible to install the Test and Production environments if you have customized any programs within The Solution Series with which Interactive Workforce communicates. Analysis of your MAINTO file will help you determine if your customizations will affect the Interactive Workforce installation.

Implementation of SSL Certificate

This is an optional step. The Secure Sockets Layer (SSL) is a protocol that provides secure communication between web browsers and web servers. This feature enables Interactive Workforce to encrypt data that is transmitted over your intranet.

Cyborg does not support SSL but provides a Certificate that you can administer yourself. If you wish to implement this you can. Alternatively Interactive Workforce will work with any SSL certificate from a third-party.



Refer to the appendix on Implementation of SSL Certification for more details on SSL Certificates.

How to get additional help

If you cannot find the answers to your questions in this manual, the following resource is available:

Contact	For
Customer Support	Answers to specific questions and general advice on training

Training is available on the subject covered in this manual and many related subjects. Please visit our web site www.Cyborg.com for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

CHAPTER 2

Preparation and Prerequisite Software

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Introduction

This section provides detailed instructions for verifying that all system prerequisites have been installed and configured properly prior to the installation of Interactive Workforce.

Deliverables

You will receive the following installation deliverables:

1	CD-ROM labeled 'Interactive Workforce 5.0'
1	Installing and Configuring eCyborg Interactive Workforce 5.0 (Windows 2000) (this manual)

Pre installation Requirements

Before starting the installation, be sure to verify that each of the servers is able to connect to the other over the network. Also, make sure that all prerequisite software has been installed and configured for any of the environments that are going to be installed.

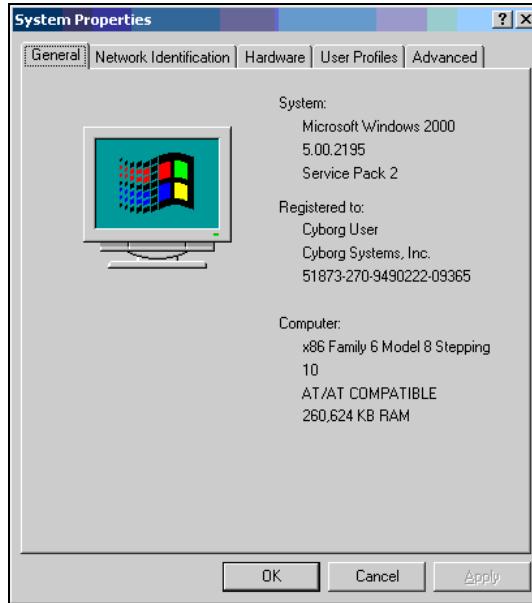
Verifying the existence and correct version of all prerequisite software will enable the Interactive Workforce installation to run seamlessly and without errors. These steps should be completed in preparation for the installer's visit.

Note: If you previously installed The ESS Solution, do not install Interactive Workforce on the same Web Server. The new version of ServletExec installed with Interactive Workforce cannot co-exist on the same Web Server as the previous version of ServletExec.

The following tests should be completed to verify that the pre-installation requirements are installed and working.

Verify Service Pack 2 for Windows 2000

On the Web Application and the Solution Series Application Servers access Windows 2000 to verify the service pack version applied to your system. From your desktop, right click the icon for My Computer, and select Properties. Be sure the General tab is selected. Windows displays the following screen showing the system information.



Verify Microsoft SQL

On the Web Application and the Solution Series Application Servers, access SQL Server 2000 Query Analyzer and verify the software. To begin the process enter the following commands:

Start ► Programs ► Microsoft SQL Server ► Query Analyzer

You will be prompted for the system administrator's username and password to access the system. At the prompt, enter username and password then click OK to connect.

Note: You may have to verify this username and password with the system administrator in case the default SQL Server username and password were changed. Refer to the configuration worksheet for the username and password.

Verify Microsoft SQL Server Character Sort Order

On the Web Application and the Solution Series Application Servers access SQL Server Query Analyzer and verify the character sort order. To begin the process enter the following commands:

Start ► Programs ► Microsoft SQL Server ► Query Analyzer

Enter the command: `sp_helpsort`

The output at the bottom of the screen will enable you to verify that the system is set up as case insensitive. In SQL, Server object names can be case-sensitive depending on the character sort order chosen during installation of the system. Among the case-sensitive choices are 'Binary Order' and 'Dictionary order, case-sensitive'. Your system may offer

other choices. Be sure you choose a sort order that is not case sensitive. Interactive Workforce will not work properly with a case-sensitive SQL server installation.

Note: *SQL Server 2000 must be installed so the sort order of object names is case-insensitive for Interactive Workforce to work as documented.*

Verify Microsoft Internet Explorer or Netscape Communicator versions

On the Web Application and the Solution Series Application Servers access your browser to verify the existing version. From the main menu select the following options:

Help ► About Internet Explorer

OR

Help ► About Communicator

Make sure that the correct version of your browser is installed and configured or you will not be able to access Interactive Workforce at the end of the installation. Currently supported are the following versions:

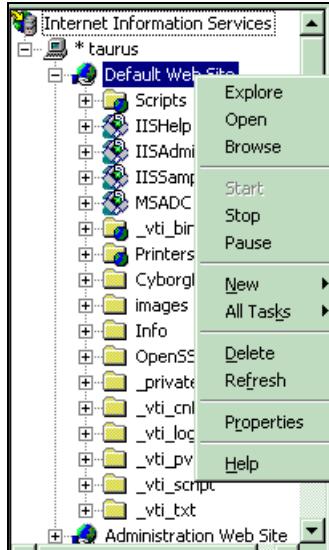
- Internet Explorer 6.0 or higher
- Netscape 5.2.1 or higher

Verify IIS Web Server V5.0 for Windows 2000

On the Web Server, verify that IIS V5.0 is installed on your system by entering the following commands:

Start ► Settings ► Control Panel ► Administrative Tools ► Internet Service Manager

Double click on Internet Service Manager; right mouse click on Default Web Site to ensure IIS is running. If the start option is greyed out, IIS is running.



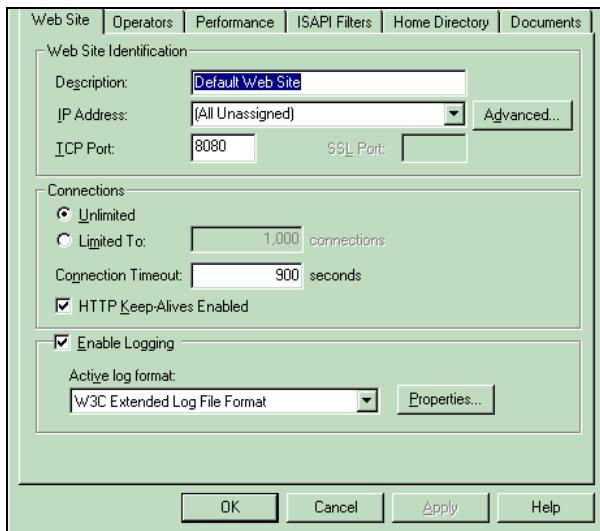
The default port for Internet Service Manager (IIS) is port 80. If IIS is not running, please check to see if port 80 is already in use. Use the following path

`\winnt\system32\drivers\etc\services` file

to view the current port allocation. If port 80 is already in use, please choose another port for IIS by accessing the default site properties file:

Start ► Settings ► Control Panel ► Administrative Tools ► Internet Service Manager

Double click on Internet Service Manager; right mouse click on Default Web Site. Choose properties, and update the TCP port.



Verify version of ODBC

On the Web Server access the ODBC Data Application to verify the correct version. Select the System DSN tab on the ODBC Data Source Administrator dialog and click the Add button.

Start ► Settings ► Control Panel ► Administrative Tools ► Data Sources (ODBC) ► System DSN

The dialog shows the ODBC drivers and should look similar to the following. Use the horizontal slide bar to view the SQL Server and Client Access version. The following chart shows the ODBC drivers for each platform.

	Win2000	UNIX
Data Server including ODBC Driver	SQL 2000 Oracle 8i (8.1.7)	Oracle 8i (8.1.7)

Verify that WinZip is installed

Software installed on the web server is down loaded as a .jar file. WinZip is required to unzip these files.

Verify the Client Prerequisites

Access the servers

Ensure that the client machine is able to access the Web Server and the Solution Series Application Server over the network by using the 'ping' command. From the command line enter the command 'ping' followed by a space and the name of the server.

C:\ping *servername*

Shared .dll or .ocx files

Based on your employees' individual client workstation setups, shared .dll or .ox files that the Cyborg product uses and that are non-distributable Microsoft shared system files may be missing. If this occurs, your IT staff must locate and download (usually from the Microsoft website) the required file for inclusion on your PCs.

Verify Microsoft Internet Explorer OR Netscape Communicator versions

On the client access your browser to verify the existing version. From the main menu select the following options:

Help ► About Internet Explorer

OR

Help ► About Communicator

Make sure that the correct version of your browser is installed and configured or you will not be able to access Interactive Workforce at the end of the installation. Currently supported are the following versions:

- Internet Explorer 6.0 or higher
- Netscape 6.2.1 or higher

Configuration Worksheet

During the installation, you will be prompted to supply client and server information. Complete the configuration worksheet below **in advance** preparation for these entries.

Your Configuration

Name	Description	Initial	Test	Production
Type of Installation	Determine whether you want a single-server or two-server configuration. If you choose a two-server configuration, determine if you have an indexed or relational version of The Solution Series.			
Location of The Solution Series	The installation program needs to know the location of The Solution Series. Default: C:\Cyborg			
Hostname	If you choose a two-server configuration, identify the system name of the host server, as identified in the HOSTS file on the server. (To find the hostname, you can use the 'hostname' command at the command line.)	Web Server hostname: App Server hostname:	Web server hostname: App Server hostname:	Web server hostname: App Server hostname:
SQL Server password	In order to create the Interactive Workforce and Pay Information databases, the installation program needs to know the SQL Server username and password. Default SQL Server Username: 'sa' Default SQL Server Password: 'sa' Contact the System Administrator for the SQL Server username and password which may have been changed from the defaults listed above.	SQL Server Login ID: SQL Server Password:	SQL Server Login ID: SQL Server Password:	SQL Server Login ID: SQL Server Password:
IIS location	If the installation program cannot find IIS, it will prompt you for the filepath of the Inetpub directory. Default: C:\inetpub			

Next Steps

Once you have completed all of the following you can begin the installation of Interactive Workforce itself:

- verified and/or configured all of the prerequisite software
- completed the Configuration worksheet



For a Windows 2000 installation if you are installing a two-server set up go to [Installing the Two-Server Configuration](#).



For a Windows 2000 installation if you are installing a single server set up go to [Installing the Single-Server Configuration](#).



For a Windows 2000 installation if you are installing a three-server set up follow the instructions for the two-server configuration.

PART 2

Part 2 - Installing Interactive Workforce

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CHAPTER 3

Installing the Two-Server Configuration

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Introduction

This section provides detailed instructions for installing the Solution Series Application Server needed for Interactive Workforce on a Windows 2000 server system. Installing the two-server configuration falls into 5 phases:

- Phase 1: Install the Solution Series Application Server
- Phase 2: Create and Populate the Pay Information database
- Phase 3: Install the Web Server
- Phase 4: Create and Populate the Interactive Workforce database
- Phase 5: Test the installation

This section is designed so that you complete all the tasks necessary in a single sitting at each machine. Therefore, some of the steps you perform on the Solution Series Application Server will actually apply to the Web Server, and vice versa.

Throughout this document, an ellipsis (...) is used to represent the install drive. This drive should be consistent with the drive you are using throughout the installation.

Phase 1: Install the Web Server

Place the installation media in the Web Server and start the installation.

The tasks in this phase must be performed in the following order:

1. Install the Java Development Kit (JDK)
2. Install ServletExec and the ServletExec patch if not already installed
3. Install the Interactive Workforce Web Application Server software

Install the Java Development Kit (JDK)

If you do not already have the JDK or ServletExec installed on the machine, the Installation CD-ROM provides these. This Phase shows you how to install the JDK and ServletExec from the install CD.

The Java Development Kit must be installed once on the web server. It does not have to be installed for each Interactive Workforce environment. Cyborg provides this software. The following instructions explain how to find these on the installation CD and install them.

Note: For a three-server configuration, install JDK on the Database Application Server if JDK is not already installed.

1. Start the Installation

Insert the Installation CD into the CD-ROM drive of the computer that will be the Web Server. Read through the page of instructions that displays.

2. Click 'Install Java Development Kit (JDK)'

On the instructions that display, click 'Install Java Development Kit (JDK).' The Welcome window is the first dialog box that appears during the installation process.

Click Next to display the license agreement.

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

3. Accept the license agreement

Click OK or Next to accept the license agreement.

4. Choose the Destination folder

Install into the Cyborg recommended default directory:

...eCyborg\IW\jdk1.3.1_03

You can select this directory by clicking **Browse** and typing the file path into the Browse dialog. When you click Next, the install program prompts you to create the directories—click **Yes**.

Note The drive you select here must be used consistently throughout the installation of the Solution Series Application Server.

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'For this installation...' column.

Prompt	Use the following...
JDK Destination	..\eCyborg\IW\jdk1.3.1_03

5. Click Next

When the browser dialog box appears, choose the browser for the application. Cyborg recommends you select both browsers.

6. Click Next

When the components dialog box appears, accept the default selection of the components and click next.

7. Click Finish

Install ServletExec

Important: The Interactive Workforce application works only with ServletExec as the servlet engine. If you have another servlet engine installed on the Web server you are using for Interactive Workforce, you must first uninstall that servlet engine and then install ServletExec. If you have ServletExec installed, do not install another instance of the program.

Two licenses for ServletExec are included in your license for Interactive Workforce. These licenses are for the Test and Production environments. The initial installation will be installed with an unlicensed version of ServletExec. As this environment is used just for testing the installation there is no need to allocate a license.

Note: For the initial installation, ServletExec may be installed in 'Unregistered' mode. While in Unregistered mode, ServletExec is limited to processing three (3) concurrent client requests. Cyborg recommends using the two supplied ServletExec licenses for the Test and Production environments. Contact your account manager regarding the number of ServletExec licenses needed for your installation.

In a typical two-server configuration, ServletExec is installed on the Web server.

1. Click 'Install ServletExec'

On the Installation CD instructions that display, click 'Install ServletExec.'

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

2. Select Setup Type

Select the option 'Install a ServletExec AS Instance' and click Next to continue.

3. Click Yes to accept the License Agreement

4. Click Next to continue

5. Choose the destination folder

We suggest you install the application in the eCyborg\IW that matches the directory of the Interactive Workforce installation. For the Initial environment, use the directory created in Step 1 of this task:

...eCyborg\IW\ServletExec

6. Enter Servlet Exec Instance Name

Enter a name to uniquely identify the ServletExec Application Server instance for the Initial environment, for example:

CybIW

Click Next to continue.

Note: These are suggested names. If you wish to use others, be sure to do so consistently.

Note: If you have an instance of ServletExec on the Web Client, the setup program asks you to enter a port and a URL (comma-separated list of application URLs to be processed by the Web Server adapter). Enter a port number that differs from the port number of the existing instance. ServletExec license agreements are per instance per port.

7. Select setup type

Select 'Microsoft IIS or PWS' setup type and click Next to continue.

8. Click Next to confirm installation

9. Click Yes

In the dialog box that asks if you want to install ServletExec as an NT service, click Yes.

10. Click OK

In the dialog box that lists the file that you must check for errors and for the location of the backed up version of servletexec.properties, click OK.

11. Click OK

In the dialog box that reminds you to restart the web server, click OK.

12. Click Finish

Click Finish to complete the installation of ServletExec.

Install Patch for ServletExec

1. Execute the ServletExec Patch software

On the instructions that displayed when you inserted the CD Rom, click 'Install patch for ServletExec.'

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

2. Extract the ServletExec41.jar file to the folder that contains the ServletExec software.

Extract the ServletExec 41.jar file to the folder where you installed the ServletExec software in the previous task.

3. Copy the file to ServletExec Lib directory

If the system displays a message asking if you want to replace the existing file with the new file, click Yes.

Install the Interactive Workforce Web Server software

This task should be performed on the Web Server.

1. Click 'Install Interactive Workforce'

On the instructions that display from the CD Rom, click 'Install Interactive Workforce.' Click Next to view the license agreement.

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

2. Enter your license key for Interactive Workforce

The dialog box displays requesting you to enter the license number. Enter your Interactive Workforce license number, and click Next to continue. Cyborg delivers license key information in an e-mail to your organization.

3. Choose your operating system/platform

The dialog box displays the operating systems/platforms on which you can install Interactive Workforce. Click the Windows, and click Next to continue.

4. Select Two Server Configuration

When the dialog box displays requesting you to select the type of server configuration, select Two Server Configuration. Click Next to continue.

5. Select the Web Server

When the dialog box displays asking you which application you would like to install, select the Web Server. Click Next to continue.

6. Enter the HOSTNAME of The Solution Series Application Server

 *Refer to the configuration worksheet for the hostname.*

When you click Next, the installation program prompts you to confirm the HOSTNAME. Enter the name of the machine where the The Solution Series Application Server resides, and click Next to continue.

7. Click Yes to confirm the HOSTNAME

8. Enter the location of ServletExec

Enter the path for your installation of ServletExec. You can select this directory by clicking Browse to locate ServletExec. Click Next to continue

9. Choose a Destination drive

The default is the C: drive. You can select another drive at this time, but it must be used consistently through the installation. The installation program will install the files on the selected drive in the following file path:

...eCyborg\IW

Note: Specify the drive only. This drive must be the same drive on which you installed ServletExec. Do not enter a directory name.

Click Next to continue.

10. Select Components

This dialog box allows for the installation of individual components, should the need arise. However, the installation defaults to installing all the required software for the Interactive Workforce Web Application Server. Do not alter the selection of the items in the option list for the initial installation.

The following should be selected:

- Java Env Cfg
- Interactive Workforce Database
- The Interactive Workforce

On the Confirmation dialog, click OK or Next.

11. Setup Complete

Note: If the setup cannot locate Inetpub, the program prompts you to enter its location. If you are prompted for the location of Inetpub, refer to the configuration worksheet.

The installation program has installed all the software required on the Web Server, and the Setup Complete window indicates that the installation is complete. In order to activate the Web Server components, reboot the computer.

Phase 2: Install the Solution Series Application Server

This procedure leads you through a series of tasks that constitute the steps necessary to install all of the components on the Solution Series Application Server needed for Interactive Workforce.

The tasks in this phase must be performed in the following order:

1. Install the Interactive Workforce components of The Solution Series application server software
2. Update The Solution Series for Interactive Workforce test data
3. Update The Solution Series report generators for Interactive Workforce

Install the Interactive Workforce components of the Solution Series application server software

Perform this task on the Solution Series Application Server.

1. Start the Installation

Insert the Installation CD into the CD-ROM drive of the Solution Series Application Server computer. From the Windows 2000 desktop, make the following selections:

Start ► Run

In the Run dialog, run the following program from the root directory of the CD-ROM drive:

Setup.exe

The Welcome window is the first dialog box that appears during the installation process. Click Next to continue or Cancel to abort the process.

2. Enter your license key for Interactive Workforce

The dialog box displays requesting you to enter the license number. Enter your Interactive Workforce license number, and click Next to continue.

3. Choose your operating system/platform

The dialog box displays the operating systems/platforms on which you can install Interactive Workforce. Click Windows 2000, and click Next to continue.

4. Select Two Server Configuration

When the dialog box displays requesting you to select the type of server configuration, select Two Server Configuration. Click Next to continue.

5. Select The Solution Series Application Server

When the dialog box displays asking you which applications you would like to install, select the Solution Series Application server. Click Next to continue.

6. Enter the location of The Solution Series

For the Solution Series Application Server components of Interactive Workforce to install correctly, you need to know the directory where The Solution Series resides.

The default is:

C:\Cyborg

However, most installations of The Solution Series have been configured differently, so this location will be different from system to system. You may need to change the file path to indicate the correct drive and directory where The Solution Series is located. Enter the correct location, and click Next to continue.

Note: Refer to the configuration worksheet, completed during the pre-installation phase, for the location of The Solution Series.

When you click Next, the installation program begins installing The Solution Series Application Server components. Once completed, you will be prompted to complete the installation setup.

7. Choose a Destination drive

The default is the C: drive. You can select another drive at this time, but it must be used consistently through the installation. The installation program will install the files on the selected drive in the following file path:

...\eCyborg\IW

Click Next to continue.

Note: Be sure you use the same drive through the install process. Do not install the software as a subdirectory.

8. Select Components

This dialog box allows for installation of individual components, should the need arise. However, the installation defaults to installing all the software required for the The Solution Series Application Server. Do not alter the selection of the items in the options list for the initial installation.

The following should be selected:

- /STAPI
- Orbix 3.3.3 Runtime
- ESS Tools
- Pay Information Database
- Java Env Cfg

7. Reboot the computer



If setup cannot locate Inetpub the program prompts you to enter its location. If you are prompted for the location of Inetpub, refer to the configuration worksheet.

After the last step, the Setup Complete window indicates that the installation is complete. To activate The Solution Series Application Server components you must reboot the computer. In the Setup Complete window, verify that 'Yes, I want to restart my computer now' is selected, then click Finish. The computer will reboot.

Note: Once the computer has been rebooted, the Solution Series Application Server will automatically register the STAPI Server with Orbix. You will see a couple Command

consoles—one with a series of Orbix statements, and one running STAPIServer. You may close these windows.

Update The Solution Series for Interactive Workforce test data

Note This step is necessary to later test the installation.

Note: By preceding the batch job with 'rj' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.

1. Apply Interactive Workforce test data to The Solution Series application server

Interactive Workforce provides new employee test data to the standard test company (999999). The data contained in these new test employees will allow you to thoroughly test your installation of Interactive Workforce. Open a command prompt and apply the Interactive Workforce test data by running the following script from the \Runs directory:

```
rj Jessdemo.bat
```

This will merge the new test data with the standard test data prior to loading it into the Interactive Workforce database. Review the log to determine if there were any errors.

Update The Solution Series report generators for Interactive Workforce

Important! All users must be logged off The Solution Series to perform this task.
--

1. Execute the Pay Extract script Job Used: jpayxtr

From the \Runs directory of your The Solution Series system execute the following script:

```
rj jpayxtr.bat
```

This script will create a new P20IN file in the \Data directory. Review the log to determine if there were any errors.

Note: By preceding the batch job with 'rj' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.

2. Extract the Interactive Workforce Report Generators Job Used: jxessrptgen

From the \Runs directory of your The Solution Series system execute the following script:

```
rj jxessrptgen.bat
```

Review the log to determine if there were any errors. Check the output file ESSRptGen.03 in the \List directory for errors.

3. Load the Interactive Workforce Generators Job Used: jloadessgen

From the \Runs directory of your The Solution Series system execute the following script:

`rj jloadessgen.bat`

Review the log file to determine if there were any errors. Then, check the `transload.pay` file in the `\list` directory. Verify, at the bottom, of the output file that there were no errors. Next, check the `audit.lis.pay` file to verify that the 7L and 7M generators were loaded.

4. **Execute the System Maintenance script**

Job Used: jmntrun

From the `\Runs` directory of your The Solution Series system execute the following script:

`rj jmntrun.bat`

Review the log to determine if there were any errors.

5. **Execute the Pay Merge script**

Job Used: jpaymrg

From the `\Runs` directory of your The Solution Series system execute the following script:

`rj jpaymrg.bat`

Review the log to determine if there were any errors. This script will apply the 7L and 7M changes to the system.

Phase 3: Prepare the Pay Information database

The tasks in this phase must be performed in the following order:

1. Create the Pay Information database
2. Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series
3. Configure the Organization Options form (AF-SCR) in The Solution Series
4. Process a payroll run
5. Load the Pay Information database
6. Run the user extract program
7. Configure the Orbix Daemon as a service

Create the Pay Information database

Note: You must create the Pay Information database for Interactive Workforce to operate even if your implementation will not use the Pay functionality. If you are not using the Pay functionality, after this task is complete you may skip to Task 5: Run the User extract program.

Note: For a three-server configuration, run this script on the Database Application Server.

1. Execute the database creation script

Job Used: createpaydb

This file controls the process of creating the Pay Information database. Execute the following script to create the pay information database:

```
C:\eCyborg\IW\PayInfodatabase\CybPay\createpaydb.bat
```

When this job runs, you will be prompted for the 'sa' user password. Enter the password.

Note: If you did not accept the default 'C:\' directory for your installations, substitute your choice of drive wherever 'C:\' appears.

Note: Depending on the speed of the processor, this script may take some time to execute. On the recommended configuration, creation of the Pay Information database may take a couple of minutes.

2. Review the database creation logs

Once the Pay Information database script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Pay Information database as well as verify that the tables were created. On the The Solution Series Application server in the eCyborg\ESS\PayInfoDatabase\CybPay directory access the following files:

- createCybPayInfoDB.log
- createCybPayInfoOBJ.log

Now, the Pay Information database has been created. However, additional tasks must be performed before the database can be populated.

Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series

To set up the Interactive Workforce Payrun (7L) and Payslip (7M) generators, you must log in to The Solution Series with Security Officer access.

Note: Contact your payroll expert before continuing with these steps.

1. Set up the Payrun (7L) Report Generator

On The Solution Series system, access the Report Request form (DD-SCR) to set up the 7L7L report generator. Access the Report Request form by making the following selections:

Tools ► Reporting ► Report Scheduling ► Schedule Payroll Run Reports

To execute a payrun, the 7L7L generator must be loaded into your P20IN file using the desired company(ies). For the initial installation, use the 999999 company.

On the Report Requests form:

- The Report Code field must be set to '7L7L'
- The Report Select field must be set to '1'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your Solution Series system.

The screenshot shows the 'Report Requests' form with the following fields and values:

- Report Code:** 7L7L
- Report Select:** 1
- User Field:** (empty)
- Extra Copy:** (dropdown menu)
- Adjustments:**
 - Plus: Do Not Print
 - Minus: Do Not Print
 - Manual: Do Not Print
- Data Types:**
 - Company Level: Do Not Print
 - Tax Tables: Do Not Print
 - Labor Record: Do Not Print
 - Other Record: Do Not Print
- To-date Amounts:**
 - Current: Print Every Run
 - Month: Do Not Print
 - Quarter: Do Not Print
 - Year: Do Not Print

2. Set up the Payslip (7M) Report Generator

On your Solution Series system, while still on the Report Request form (DD-SCR) set up the 7M7M report generator. To execute a payrun, the 7M7M generator must be loaded into your P20IN file. On the Report Requests form:

- The Report Code field must be set to '7M7M'
- The Report Select field must be set to 'E'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your The Solution Series system.

The screenshot shows the 'Report Requests' form with the following fields and values:

- Report Code:** 7M7M
- Report Select:** E
- User Field:** (empty)
- Extra Copy:** (dropdown menu)
- Adjustments:**
 - Plus: Do Not Print
 - Minus: Do Not Print
 - Manual: Do Not Print
- Data Types:**
 - Company Level: Do Not Print
 - Tax Tables: Do Not Print
 - Labor Record: Do Not Print
 - Other Record: Do Not Print
- To-date Amounts:**
 - Current: Print Every Run
 - Month: Do Not Print
 - Quarter: Do Not Print
 - Year: Do Not Print

3. Refresh the selection list

Refresh the selection list to view the records for the report generators.

Configure the Organization Options form (AF-SCR) in The Solution Series

To ensure that the system is set up correctly for the payroll run, you must configure the Months Retained settings on the Organization Options form (AF-SCR) in The Solution Series. These settings must be configured so the payroll run does *not* purge the Payment History and Labor Records. To do this you must have entered anything other than zero (0) on the 'Months Retained' field of the second Organization Options form (AF-SCR).

Important! In addition to changing the AF-SCR options, do not use the batch purge option in the same run as the Report Generator extract.

1. Access the Organization Options form (AF-SCR)

While still in The Solution Series, access the Company Options form (AF-SCR) by making the following selections:

Payroll ► Payroll Setup Processing ► Organization Setup ► Organization Options

The Organization Options form appears.

2. Click on More Options

The second half of the form appears.

3. Set the Months Retained fields

The Months Retained fields define the number of months the Payment History and Labor Records are stored on the Employee Database in The Solution Series before they are dropped. Enter anything other than zero (0) in the "Months Retained" fields. Failing to do so will result in mismatched Pay Information records in the database tables and the inability to view Pay Information in Interactive Workforce.

The defaults are 88.

The form should appear similar to the one shown here:

4. Press Enter

This completes the changes to the form.

Process a payroll run

Processing the payroll run will both verify that the new scripts and report generators are working correctly, and will create the text files used to populate the Pay Information database. This task must be performed while logged in to The Solution Series with Security Officer access.

1. Define the Pay Run Parameters

This task must be performed while logged in to The Solution Series with Security Officer access. On The Solution Series system, access the Payroll Run Process Control form (AE-SCR) by making the following selections:

Payroll ► Payroll Processing ► Payroll Scheduling ► Schedule Payroll Runs

Set up the payroll run parameters, as represented in the graphic, for the following three pay frequencies:

1. Weekly
2. Bi-Weekly
3. Semi-Monthly

Be sure to set all of the fields as shown on the form. The Run Date field is optional and may be left blank. The Payment Date field must be the current or another relevant date.

In the Frequency field, enter one of the following values then press enter:

- '1' to set up a Weekly pay pay run
- '2' for a Bi-Weekly pay run
- '3' for a Semi-Monthly pay run

Payroll Run Process Control

Clear To-date: Clear No Fields (dropdown) Run Type: Maintenance/ Pay Run (dropdown)

Reporting Type: End of Pay Per Run (dropdown) Run Date: (text box)

Purge Rule: No Purge or Delete (dropdown) Report Select: 000000000000

Print Update: Print Entire Report (dropdown) User Date: (text box)

Version Number: 0 (spin box) User Field: 0000

Define Frequencies to be Paid

Frequency: 1 WEEKLY New Period: Yes No

Payment Date: 02-15-2001 Pay Cycle: 1 Deduction Cycle: 1

From this point forward, the tasks and steps include the execution of programs and processes from the normal administration of the system. This is done here both to demonstrate successful component installation and to provide the data needed to confirm that the entire system is working.

2. Execute the Pay Extract script

Job Used: jpayxr

Execute the following script from the \Runs directory of your *The Solution Series 4.5.1* system:

```
rj jpayxr.bat
```

Check the output file payxr.03, in the \List directory, for errors.

Note: If you have already modified *jpayxr.bat* for *Interactive Workforce* and run this program now without the *STAPI* currently running, you will receive *CORBA* errors that you can ignore.



Refer to the *eCyborg Interactive Workforce: Technical Implementation* documentation for information on modifying *jpayxr*.

3. Execute the Pay Run script

Job used: jpayrun

Execute the following script from the \Runs directory of your *The Solution Series 4.5.1* system:

jpayrun.bat

Once you have executed a payrun, check the audit1.pay.lis and checknum.lis files in the \List directory for errors. Also check the \Data directory to ensure that the following files have been created:

- essedr.txt
- esseer.txt
- esstxr.txt

4. Execute the Maintenance script

Job Used: jmntrun

Execute the following script from the \Runs directory of The Solution Series system:

rj jmntrun.bat

After you execute a maintenance run, check the audit2 and tranlod2.lis files in the ... \List directory for errors. Also, check the \Data directory to ensure that the following file has been created:

esspsr.txt

5. Execute the Pay Merge script

Job Used: jpaymrg

Execute the following script from the \Runs directory of The Solution Series system:

rj jpaymrg.bat

Note: If you run this job without the STAPI currently running, you may receive CORBA errors. You can ignore these errors.

Load the Pay Information database

This task takes the output files created by the 7L and 7M generators during the payroll run and loads them into the Pay Information database.

1. Copy the Pay Run output files

Copy the four output files created during the pay run from the \Data directory to the ... \eCyborg\IW\PayInfoDatabase\CybPay directory.

- essedr.txt
- esseer.txt
- esstxr.txt
- esspsr.txt

Note: In a three-server configuration, copy these files to the directory for the Pay Information Database created on the Database Application Server.

2. Execute the Load Pay Information script

Job Used: imppayinfo

This script issues all the commands necessary to load data from The Solution Series payrun output files into the Pay Information database. The four files listed in Step 1 are bulk

loaded into four tables. Once the process is complete, the four files are deleted. To load the pay information data, execute the following script:

```
...\\eCyborg\IWM\PayInfoDatabase\CybPay\imppayinfo.bat
```

Verify the data load by ensuring there are no errors in the following files in ...\\CybPay directory:

- LoadPIBasicsData.err
- LoadPIBasicsData.log
- LoadPIEarnDeductData.err
- LoadPIEarnDeductData.log
- LoadPIEmployeeData.err
- LoadPIEmployeeData.log
- LoadPITaxesData.err
- LoadPITaxes.log

The .err files should be blank, indicating that no errors have occurred. Likewise, the log files should contain no errors.

Run the User extract program

This task will create the text file which will be used to populate the Interactive Workforce database with users. The Interactive Workforce database has not yet been created but will be during Phase 3: Install the Web Server, at which time you will need this file.

Note: By preceding the batch job with 'rj' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.

1. Execute the Interactive Workforce User extract script

From the \Runs directory of The Solution Series system execute the following script:

```
rj jessxpt
```

The user extract program creates the following export file in the \Data directory:

```
essusers.txt
```

This file will be copied over to the Web Server and loaded into the Interactive Workforce database. This database will be created during Phase 3: Install the Web Server.

Note The jessxpt.bat script takes some time to extract employee information and create the text file, depending on the size of the company and the processor speed of the computer. For example, a company of 2000 employees may take up to two minutes to extract from the The Solution Series Employee database.

Configure the Orbix Daemon as a service

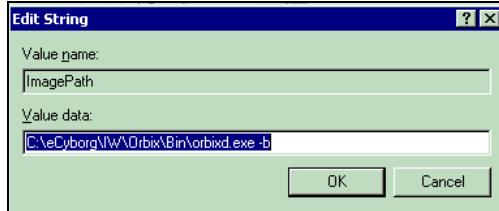
In a two-server configuration, this task is performed on the Solution Series Application Server. Before performing the task, do the following:

Edit your registry for the Orbix Daemon Image Path

On the Solution Series Application Server, edit the Orbix Daemon Image Path. Access the registry by making the following selections:

Start ► Run ► regedit ► HKEY_LOCAL_MACHINE ► SYSTEM ►
CurrentControlSet ► Services ► Orbix Daemon

In the 'Image Path' entry change the Orbix.exe** to orbixd.exe -b.



After editing the registry, configure the Orbix Daemon as a service using the following steps:

- 1. Access the Services Control Panel**

To access the Services Control Panel, make the following selections from the windows 2000 desktop:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

- 2. Open the Orbix Daemon Service dialog**

In the Service list box, double-click on the following entry:

Orbix Daemon

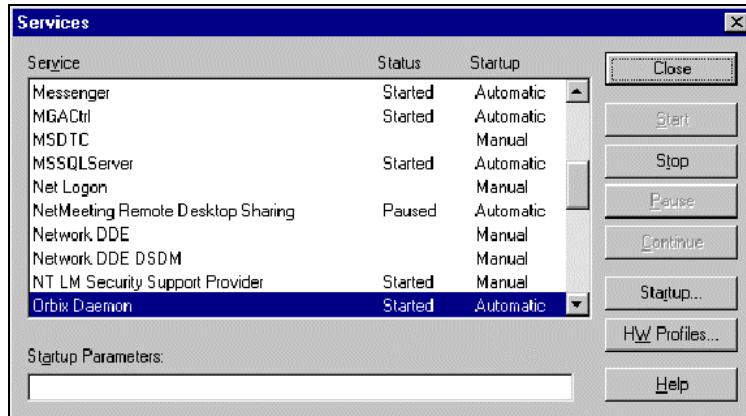
This will open the Orbix Daemon Service dialog.

- 3. Select the Start Up Type: Automatic**

Click the arrow in the Start Up Type field and select Automatic from the drop-down list.

4. **Click OK**
5. **Start the Orbix Daemon service**

Select the Orbix Daemon entry in the Service list box, then click Start. The Services dialog should appear as shown here:



7. **Confirm that Orbix is running**

Phase 4: Prepare the Interactive Workforce database

The tasks in this phase must be performed in Web server in the following order:

1. Create the Interactive Workforce database
2. Add ODBC Data Sources for the Interactive Workforce and Pay Information databases
3. Configure ServletExec as a Service
4. Launch Interactive Workforce
5. Access the Interactive Workforce Administration Utility
6. Load option lists
7. Select organizations for loading
8. Select resulting statuses for loading
9. Set up direct deposit HEDs
10. Modify payxtr and paymrg scripts for SuspendStapi
11. Load Interactive Workforce users

Create the Interactive Workforce database

Note: For a three-server configuration, run this script on the Database Application Server.

1. Execute the Interactive Workforce database creation script

Job Used: createessdb

This file can be run by double clicking on the filename using the Windows Explorer. The default file path is:

```
...eCyborg\IW\ESSDatabase\CybiW\createessdb.bat
```

When this job runs, you will be prompted for the 'sa' user password. Enter the password.

Note: Depending on the speed of the processor, this script may take some time to execute. Creation of the Interactive Workforce database may take a couple of minutes.

Note: If you have not already done so, you may want to tune the size of the database, depending on your use of the environment.



Refer to *eCyborg Interactive Workforce: Technical Implementation* for information on editable parameters in the database configuration files.

2. Review the database creation logs

Once the Interactive Workforce database creation script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Interactive Workforce database as well as verify that the tables were created. On the Web Server in the eCyborg\IW\ESSDatabase\CybiW directory access the following log files:

- setCybiWVal.log
- createIWTBL.log
- createCybiWDBTBL.log

The directories with the log files on the OS/390 and UNIX platforms are:

OS/390: eCyborg\IW\ESSDatabase\CybIW

UNIX: \$eCyborg\IW\ESSDatabase\CybIW

Make a note of the database access information; you will need it later.

Add ODBC Data Sources for the Interactive Workforcer and Pay Information databases

Note: For implementations that are not using the Pay functionality, this task must still be completed for the Pay Information database in order for Interactive Workforce to work properly.

For a two-server configuration, this task should be performed on the Web Server computer.

ODBC is a programming interface that enables *Interactive Workforce* to access data from SQL Server.

Important! You will need to perform this task twice: once for the Pay Information database, and again for the Interactive Workforce database.

For a two-server configuration, although the Pay Information database physically resides on another computer, this task performed on the Web Server will connect ODBC to that database.

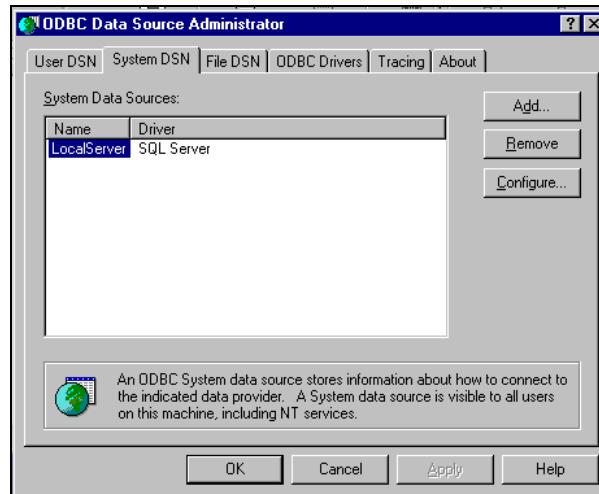
1. Run ODBC

Make the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► ODBC Data Sources

2. Select the System DSN tab

The following dialog displays:

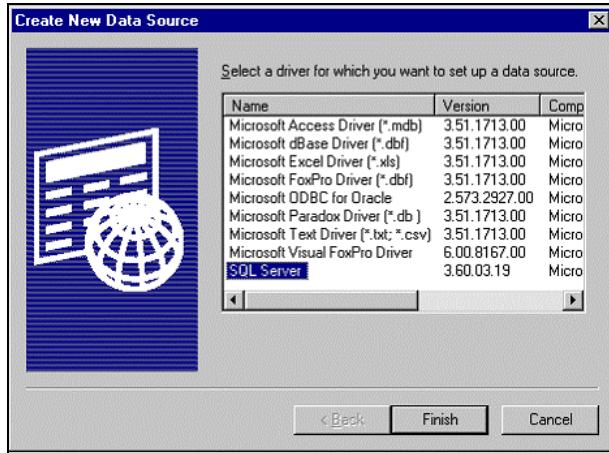


3. Click Add

In the ODBC Datasource Administration dialog box, click Add.

4. Select SQL Server

The following dialog displays:



5. Click Finish

6. Enter data in the Create a New Data Source to SQL Server dialog

Note: In a three-server configuration, the server name for both the Pay Information Database and the Interactive Workforce Database is the Database Application Server where you created the databases.

For the Interactive Workforce database, fill the fields with the information listed in the following table:

Field	Information
Name:	CybIW (case sensitive)
Description:	Cyborg Interactive Workforce Database
Server:	Name of the server where you created the Interactive Workforce database

For the Pay Information database, fill the fields with the information in the following table:

Field	Information
Name:	CybPayInfo (case sensitive)
Description:	Cyborg Pay Information Database

Field	Information
Server:	Name of the server where you created the Pay Information database

Note If you are installing multiple environments on the same machines, Cyborg recommends using Names and Descriptions fitting the environment, for example: 'Cyborg Interactive Workforce Database—Test Environment'.

A dialog box displays showing your entries.

- 7. Click Next**
- 8. Select 'With SQL Server authentication using a login ID and password entered by the user' option**
- 9. Verify that 'Connect to SQL Server to obtain default settings for the additional configuration options' is selected**
- 10. Enter the Login ID and the Password**

For the **Interactive Workforce database**, use the following for the Login ID and Password:

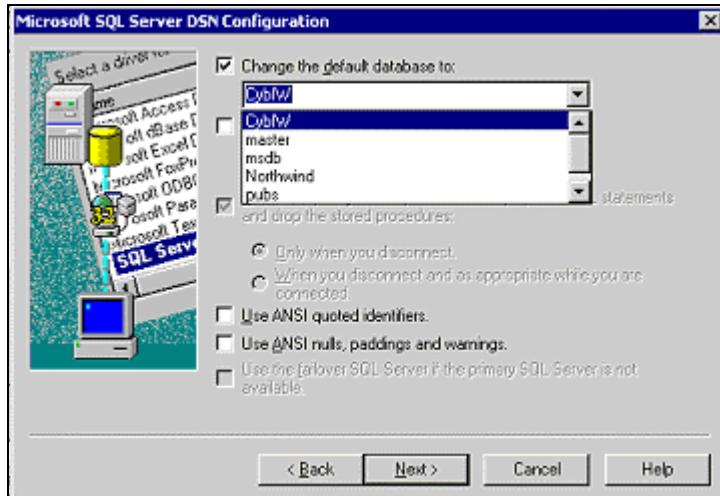
cybiwdba

For the **Pay Information database**, use the following for the Login ID and Password:

cybpaydba

If you are not using the defaults, type the password listed on the configuration worksheet.

11. **Click Next**
12. **Select 'Change the default database to'**
Be sure the 'Change the default database to' is checked.



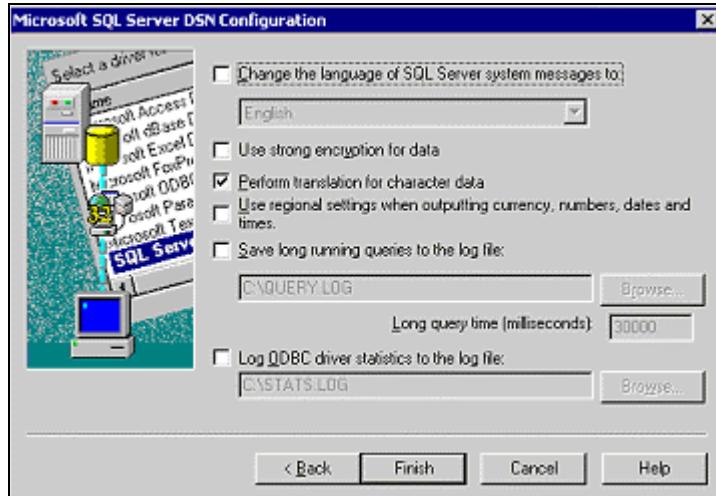
13. **Select the database**
Select either of the following:
 - CybIW (the Interactive Workforce database)
 - CybPayInfo (the Pay Information database)
14. **Deselect ANSI options**
Deselect the following options by removing the checkmark from the select box:
 - Use ANSI quoted identifiers
 - Use ANSI nulls, paddings, and warnings

These options are defaults for the ODBC SQL driver, and result in the addition of extra characters to data that is retrieved through the ODBC/JDBC bridge. These defaults must be turned off during the setup of the database to ensure data integrity.

15. **Click Next**
The confirmation dialog displays.

16. Click Finish

The system displays a dialog box showing the configuration you set.



17. Click Test Data Source

The system displays a dialog box with the message, 'TESTS COMPLETED SUCCESSFULLY!'

18. Click OK

The window returns to the configurations display.

19. Click OK

The database will now appear in the System Data Sources option list of the ODBC Data Source Administrator Window. The ODBC is now connected to the Interactive Workforce database. Once you have performed this task for either the Interactive Workforce or Pay Information database, you must repeat it for the other.

Configure ServletExec as a Service

In a two-server configuration, this task is performed on the Web Server.

1. Shut down Interactive Workforce

Ensure that ServletExec is shut down.



Refer to eCyborg Interactive Workforce: Technical Implementation for details on shutting down Interactive Workforce.

2. Verify that the ServletExec service has been installed

To verify that ServletExec has been installed as a service, access the Services Control Panel and make the following selections from the windows 2000 desktop:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

If ServletExec has been installed, you will see the following entry:

ServletExec-CybiW.

If it has been installed, skip to step 6. If not, continue with step 3.

3. Open a command prompt

4. Go to the ServletExec\Bin directory

From the command prompt, access the following directory **or use the path that represents your ServletExec installation**:

... \eCyborg\IW\ServletExec\Bin

5. Install ServletExec as a service

Install the ServletExec as a service by executing the following command:

```
InstallNTService -n "ServletExec-CybiW" -start "D:\eCyborg\IW\ServletExec\se-CybiW\StartServletExec.bat" -stop "D:\eCyborg\IW\ServletExec\se-CybiW\StopServletExec.bat"
```

Note: *Substitute the path that represents your ServletExec installation for the above. The values that follow will also reflect your path.*

When the ServletExec service is successfully installed, you will receive the following prompt:

Successfully created the service(ServletExec-CybiW) with the values:

```
name = ServletExec-CybiW
exe = D:\eCyborg\IW\ServletExec\bin\ServletExec.exe
start = D:\eCyborg\IW\ServletExec\se-CybiW.bat
stop = D:\eCyborg\IW\ServletExec\se-CybiW\StopServletExec.bat
```

Note: *ServletExec can be removed as a service by issuing the following command:*

```
DeleteNTService -n "ServletExec-CybiW"
```

The StartServletExec executable must now be configured to locate the Interactive Workforce properties file. In a two-server configuration, this task must be performed on the Web Server.

Once the ServletExec has been installed as a service, you must configure it to start automatically when the system reboots.

6. Open the ServletExec Service dialog

While still in the Services dialog, double-click on the following entry in the Services list box:

ServletExec-CybiW

This will open the ServletExec Service dialog.

7. Select Automatic

Click the arrow for Start Up Type, and select Automatic from the drop-down list.

8. **Click OK**
9. **Start the ServletExec service**

Select the ServletExec entry in the Service list box, then click Start.

Launch Interactive Workforce

In a two-server configuration use your browser on the Web Server to access the Interactive Workforce Administration utility, and enter the following URL:

`http://localhost/CyborgESS`

OR

In a single server configuration use your browser to access Interactive Workforce utility, and enter the following URL:

`http://localhost/CyborgESS`

When you get to the Start page, click 'Launch Interactive Workforce'. At the log in page, to access the system:

- the initial login and password are both: '**initialadm**'.

Once you access the system you will be prompted to change passwords. Change the password to 'iwadm', or any other password you desire. We recommend the easily remembered 'iwadm' because security is not needed in the initial system, as it contains no live data.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's *HOSTNAME* instead of 'localhost'.

Access the Interactive Workforce Administrator Utility

Once you have accessed Interactive Workforce, click Administrator in the Navigator panel on the left portion of the screen and select Interactive Workforce and then Data Import. The remaining tasks must be performed in the following order:

- Option List Import
- Organization Selection
- Resulting Statuses Selection
- Load Interactive Workforce users

Import option lists

Before performing the remainder of the tasks in this phase of the installation, you must use the Option List Import function. You must perform this task after the system is installed and before you select any statuses or organizations used as selection parameters to load users.

This tab page displays the option lists available in The Solution Series that must be imported into Interactive Workforce. Follow these steps to extract the option lists from The Solution Series and load them into the Interactive Workforce database.

1. Access the Option List Import page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Load Options Lists tab.

Administrator ► Interactive Workforce ► Data Import ► Option List Import

2. Click Perform Extract

The application extracts the option lists and imports the lists into the Interactive Workforce database.

Refer to the eCyborg Interactive Workforce: Technical Implementation documentation for more information on the data import from The Solution Series to Interactive Workforce.

Note: When you click Perform Extract, the system imports the appropriate Solution Series option lists to Interactive Workforce. No message confirming the import displays.

Select organizations for loading

Using the Organization Selection tab page, you select the organizations to include when performing the extract and load process. This page displays the organizations set up in your company's Solution Series and works in conjunction with the Resulting Statuses Selection tab page to create the users IDs for Interactive Workforce.

Follow these steps to select organizations to include in the Interactive Workforce load.

1. Access the Organization Selection tab page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Organization Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Organization Selection

2. Select the appropriate check boxes in the extract column

Click the check boxes for at least the following organization:

999999 ACME MANUFACTURING

Note: If you make no selections on this page, no employee information can be extracted. In an initial environment this may be the only organization you select.

3. Click Save Changes

The system saves your changes.



Refer to *Interactive Workforce: The Administrators' Guide* for more information on the data import from The Solution Series to Interactive Workforce.

Select resulting statuses for loading

Using the Resulting Statuses Selection tab page to select the groups of employees who will have authority to use the online application. The employee statuses that display are those set up in your organization's application of The Solution Series.

Note: This page works in conjunction with the Organization Selection tab page to create the employee user IDs for Interactive Workforce.

Follow these steps to select statuses for the Interactive Workforce database load.

1. Access the Select Resulting Statuses for Loading page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Resulting Statuses Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Resulting Statuses Selection

2. Select the appropriate radio button for each group status

Note: The default settings will not extract any data. You must, as this time, make these selections in order for the data load to work properly.

This page displays employee statuses set up for your organization. You may have to scroll down the page to see all the available group status information. Three radio buttons appear for each group status.

- All employees in this status
- No employees in this status
- Only those with status selected below

Click one radio button for each group status.

3. Select the appropriate checkboxes in the group statuses

If you clicked 'Only those with status selected below', for the following groups:

- All Active
- Leave of Absence with Pay
- Leave of Absence without Pay
- Retired

You must check at least one checkbox for each of the groups listed above. Click the following options for each of the above groups.

- Salary Reg FT
- Hourly Reg FT

4. Click Save Changes

The system saves your changes.



Refer to eCyborg Interactive Workforce: Technical Implementation for more information on the data import from The Solution Series to Interactive Workforce.

Set up direct deposit HEDs

To set up direct deposit HEDs for organizations, follow these steps.

1. Access the Set Up Direct Deposit Organizations page

On the Administrator area of the Navigator, select Payroll. Then select Direct Deposit HED Setup. The system displays the page for the first step of the Direct Deposit HED Setup process. On this page you select the organizations for which you want to set up direct deposit HEDs. All organizations are listed on the page.

Administrator ► Payroll ► Direct Deposit HED Setup

2. Select an organization

The system displays all organizations whose information has been loaded into Interactive Workforce. Click the name of the organization for which you want to set up direct deposit HEDs. Select (at least) the following organization:

999999 ACME MANUFACTURING

3. Select the direct deposit categories for the organization

The page displays the Category 53 HEDs set up in Payroll Administration for the organization you selected. Check the appropriate account type for the HED. The chart that follows shows the account types you can select and the constraints for each.

	Primary Account used for Remaining Net Pay	Expense Reimbursement Account	Secondary Accounts
Allowable HEDs	999 or 998	999	998 if 999 is used as Primary Account and HEDs 501 to 997

4. Check the Remaining Net Pay Account

Click the Remaining Net Pay Account checkbox to set up the account as the account that receives the net pay remaining after all deductions and deposits to other accounts.

Note: If you do not check this checkbox, users will not be able to view their pay information online using Interactive Workforce.

5. Change the name of the HED

If you want to change the name of the HED to something more appropriate for your organization, delete the existing name and enter the new name. The name should be descriptive of your use of the HED. The new name displays only in Interactive Payroll and does not affect Payroll Administration. If you do not want to change the name of the HED, go to the next step.

6. Click the appropriate radio button to indicate whether your organization allows employees to receive paychecks

At the bottom of the page click Yes if your organization allows employees to receive a check. Click No if employees must have their pay deposited into an account at a financial institution.

7. Click Save Changes

Click Save Changes to save the parameters you set. Employees of the organization you selected will be able to view and maintain their deposit information based on the choices set on this page.

8. Log off Interactive Workforce

Now that you have completed the necessary functional administration tasks, you may log off Interactive Workforce.



Refer to Interactive Workforce: The Administrators' Guide for more information on the data import from The Solution Series to Interactive Workforce.

Modify payxtr and paymrg scripts with SuspendStapi (Windows only)

The Solution Series comes with jobs for running pay extracts and pay merges during a payroll run. These two jobs contain a modification for Interactive Workforce. To activate these modifications you must open the jobs and remove the remark statements from the modified lines.

If you have customized the pay extract and merge files, you can modify your existing scripts to add the suspend and resume STAPI modifications and the revised path name.

To modify the jpayxtr and jpaymrg files, complete the following:

1. Open the pay extract script

Job used: jpayxtr

You can edit the jpayxtr script in any standard text editor.

```
..\Runs\jpayxtr.bat
```

2. Remove the Remark statements from the modified lines

Because the STAPI must be suspended before the pay extract begins, the command lines that execute SuspendStapi have been placed at the beginning of the file.

```
rem ECHO *****
rem ECHO ** SUSPENDING /STAPI FOR ESS **
rem ECHO *****
rem REM This will temporarily suspend the /STAPI
rem pushd %CYBORG_HOME%\bin
rem call %CYBORG_HOME%\bin\Suspendstapi.bat
rem popd
rem ECHO *****
rem ECHO ** /STAPI SUSPENDED **
rem ECHO *****

call mfsetup.bat
set COBSW=+55
echo P PAYXTRJ09500 999999PAYXTR ALL > ..\work\payxtr.04
cd ..\data
ECHO *****
ECHO JPAYXTR IN PROGRESS
ECHO CHECKING FOR FILES
ECHO *****
dir p20in.mrg
dir ..\prog\cbsvb.exe
ECHO *****
copy p20in.mrg p20inmrg.sav
set FILE03=..\list\payxtr.03
set FILE04=..\work\payxtr.04
set FILE10=..\data\payxtr10
```

To activate the modifications, remove the 'rem' statements at the beginning of the lines.

3. Change the 'pushd' statement and program call

Make the following changes to the 'pushd' statement and program call in the script:

```
pushd c:\Cyborg\IW\stapi\bin
```

call SuspendStapi.bat

The script should look like the following example.

```

rem ECHO *****
rem ECHO ** SUSPENDING /STAPI FOR ESS **
rem ECHO *****
rem REM This will temporarily suspend the /STAPI
pushd c:\eCyborg\IW\stapi\bin
call SuspendStapi.bat
popd
rem ECHO *****
rem ECHO ** /STAPI SUSPENDED **
rem ECHO *****

call mfsetup.bat
set COBSW+=S5
echo P PAYXTRJ09500 999999PAYXTR ALL > ..\work\payxtr.04
cd ..\data
ECHO *****
ECHO JPAYXTR IN PROGRESS
ECHO CHECKING FOR FILES
ECHO *****
dir p20in.mrg
dir ..\prog\cbsvb.exe
ECHO *****
copy p20in.mrg p20inmrg.sav
set FILE03=..\list\payxtr.03
set FILE04=..\work\payxtr.04
set FILE10=..\data\payxtr10
    
```

4. **Save the pay extract script and close the file**

5. **Open the pay merge script**

Job used: jpaymrg

You can edit the jpaymrg script in any text editor.

..\Runs\jpayxtr.bat

6. **Remove the Remark statements from the modified lines**

Because the STAPI must not be resumed until the pay merge has finished, the command lines that execute ResumeStapi have been placed near the end of the pay merge script. To activate the modifications, remove the 'rem' statements at the beginning of the lines.

7. **Change the 'pushd' statement and program call**

pushd c:\eCyborg\IW\stapi\bin

call SuspendStapi.bat

8. **Save the pay merge script and close the file**

The modifications will now be activated for the next payroll run.

Load Interactive Workforce users

Note: For a three-server configuration copy the Interactive Workforce Users file to the database you created on the Database Application Server.

1. **Copy the Interactive Workforce Users file**

Refer to the configuration worksheet for the location of The Solution Series. From the \Data directory copy 'essusers.txt' to the following directory:

..\eCyborg\IW\ESSDatabase\CyBIW

Note: In two-server configuration, the `essusers.txt` file must be copied from the the Solution Series Application Server to the Web Server.

The text file contains a listing of the Interactive Workforce users that will be bulk loaded into the system during the next step.

2. Execute the Load Users script

Job Used: loadusers

This issues all of the commands necessary to load user data from The Solution Series into the Interactive Workforce database. This script can be found in the following file path:

```
...\\eCyborg\IW\ESSDatabase\CybIW\loadusers.bat
```

You can ignore the following text in the log file.

```
Initializing Database Read...
020730 15:48:55.598 main: Maximum number of attempts to replace a bad connection
n not set. Defaulting to 3
020730 15:48:55.608 main: selfservice database connection wait timeout not set.
Defaulting to 5000ms.
020730 15:48:56.810 main: Database pool created for: jdbc:odbc:CybIW. Connection
s: 2
```

Note: Populating the Interactive Workforce database will take some time, depending on the size of the company and the the processing speed of the computer. For example, a company of 2000 employees may take up to three minutes to load to the database.

Note: If you have changed the default install location while installing the software, you will need to look in that directory for the file.

3. Access Query Analyzer

We are now going to take a 'short cut' to get the password of a specific user in the sample data set using the SQL 2000 Query Analyzer.

To access SQL 2000 Query Analyzer enter the following commands:

Start ► Programs ► Microsoft SQL Server 2000 ► Query Analyzer

Important! Remember to log in to the Query Analyzer using the login for the correct database. Use the following login:

CybIWdba

Note: If you have Interactive Workforce Administrator access, you may also use the Interactive Workforce Administrator functionality to find the user password. Refer to *Interactive Workforce: The Administrators' Guide* for information on using the Interactive Workforce Administrator functionality.

4. Collect the Initial Password to Access Interactive Workforce

In order to access Interactive Workforce you need to collect the initial password for employees '4001' and '4002' from the `Cyborg_User` table. From the Query Analyzer window enter the following command:

```
select login_name, initial_password
from cyborg_user
where login_name in ('4001', '4002')
```

Then, click the Play button  or type CTRL-E. The initial password for employees '4001' and '4002' will be output to the bottom part of the window. Write these numbers down or highlight and copy them for use in the next step.

Phase 5: Update The Solution Series Data

To test Interactive Benefits and Interactive Manager, complete the tasks in this phase.

1. Update Benefits information
2. Create workflow routing for Vacation Regular
3. Set up boundaries for Time Away Balances
4. Set up Position Administration for Interactive Manager

Update Benefits Information

To display next year's benefits information in Interactive Benefits, you must make the following changes to The Solution Series.

1. Access the Benefit Plan Rules form (TK-SCR)

On The Solution Series system, access the Benefit Plan Rules form (TK-SCR) by making the following selections:

Benefits ► Benefit Plan Setup ► Flex Plans ► Plan Name and Basic Rules

2. Clear fields and enter the Plan ID

Clear all the fields on the form and enter Plan ID 100.

3. Enter the effective date for Plan 100

To display benefits information for the 'next plan year' in Interactive Workforce, enter the Effective Date of 01-01-2003.

4. Enter the Plan Name

Enter 10000 Flex Master for the Plan Name.

5. Select a Plan Type

Select Flex Benefit Master as the Plan Type.

Benefit Plan Rules Control Number > 9999

Plan ID > 100

Effective Date > 01-01-2003

Year End: 12-31

Plan Name: 10000 Flex Master

Plan Type: Flex Benefit Master

Service Date: Original Hire Date

Class: Mandatory

Flex Master:

Group Master:

Accum Name:

Ins Carrier:

Default Enrollment

Option:

Pre-tax Post-tax

HEDs

Basic Pre-tax:

Basic Post-tax:

Company:

Supplemental Pre-tax:

Supplemental Post-tax:

Continue Plan Rules

6. Click Continue Plan Rules

When asked whether to Save Changes, click Yes. The system displays the next panel

7. Press Enter or Click Save

8. Access the Flex Benefits Master Plan Rules form (TKFSCR)

On The Solution Series system, access the Flex Benefits Master Plan Rules form (TKFSCR) by making the following selections:

Benefits ► Benefit Plan Setup ► Flex Plans ► Flex Benefits Master Plan Rules

9. Clear fields and enter the Plan ID and effective date

Clear all the fields on the form and enter Plan ID 100 and Effective Date is 01-01-2003.

10. Use Net Credits Meth

Click the radio button for Use Net Credits Meth.

11. Select Total Credits

Click the radio button for Before Enrollment.

12. Press Enter or Click Save

13. Access the Flex Master/Group Plan Components form (TP-SCR)

Benefits ► Benefit Plan Setup ► Flex Plans ► Flex Master/Group Plan Components

14. Clear fields and enter the Plan ID and effective date

Clear all the fields on the form and enter Plan ID 100 and Effective Date is 01-01-2003.

15. Enter Component Plans

Enter Component Plans 700, 701, 708, 712, 723, and 726.

Flex Master/Group Plan Components Control Number> 9999

Plan ID> 100

Effective Date> 01-01-2003

Plan Type: Flex Benefit Master

Component Plans

<input type="checkbox"/> 700 BC/BS Indemnity	<input type="checkbox"/> Metlife Health Plan	<input type="checkbox"/> EyeMed Vision
<input type="checkbox"/> 701 Cigna PPO	<input type="checkbox"/> Ameritas Dental-PPO	<input type="checkbox"/> Eye Care Intl
<input type="checkbox"/> 708 Ameritas Dental-Ind	<input type="checkbox"/> Ameritas Dental-Ind	<input type="checkbox"/> BC/BS Vision
<input type="checkbox"/> 712 EyeMed Vision	<input type="checkbox"/> Delta USA-Dental	<input type="checkbox"/> BeneScript
<input type="checkbox"/> 723 Hartford Basic Life	<input type="checkbox"/> Cigna Dental	<input type="checkbox"/> Rx America PDP
<input type="checkbox"/> 726 Medical FSA	<input type="checkbox"/> WSP-Vision Plan	

More Plans

16. Press Enter or Click Save

Create workflow routing for Vacation Regular

In Interactive Manager an employee's time away from work requests can be routed to the employee's manager and/or the HR department. This routing must be set up for each request type. In this task you set up the routing for the request type Vacation Regular so you can verify that the function works. A time away request for Vacation Regular will be routed to the employees' manager.

Note: To limit the types of time-away requests an employee can make, edit the TA05, Request Type, option list to include only the request types available in your organization.

1. Access the Workflow Routing Control Table form (T93SCR)

On The Solution Series system, access the Workflow Routing Control Table form (T93SCR) by making the following selections:

HR ► Employee Resourcing ► Manage Employee Attendance ► Time Away Workflow Setup

2. Select a Request Type

Select Vacation Regular from the drop down menu for Request Type.

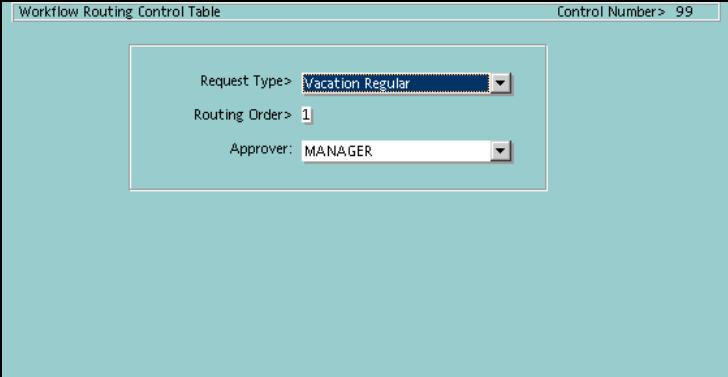
3. Enter a Routing Order

In the Routing Order text box, enter 1. This is the sequence for the routing of time away requests for Vacation Regular.

4. Select an Approver

Select Manager from the drop down menu for Approver. When an employee requests time away for regular vacation, Interactive Manager routes the request to the employee's manager.

The form should look similar to the following:



5. **Press Enter or Click Save**

Set up boundaries for Time Away Balances

Interactive Manager updates employees available time away from work balances based on the time away requests approved and time away entitlements earned during the year. To determine new time away entitlements earned and apply them to the employee balances, Interactive Manager sets a Time Away Boundary to indicate to the system the start of the year for calculating balances. Follow these steps to set boundaries.

1. **Access the Time Away Boundary Control Table form (T93JCR)**

On The Solution Series system, access the Time Away Boundary Control Table form (T93JCR).

HR ► Employee Resourcing ► Manage Employee Attendance ► Time Away Boundary Control Table

2. **Enter the date from which to calculate time away balances**

Enter the Month and Date when you want the system to start calculating balances. If your organization uses a calendar year for calculating time away from work, for example, vacation entitlement, enter 01 (January) for the month and 01 for the day. If your organization uses a fiscal year that differs from the calendar year to calculate time away entitlement, enter that month and day. To set up data to test Interactive Manager, use 01 for the month and 01 for the day.

Your completed form should look similar to the following:



Time Away Boundary Control Table Control Number > 99

Time Away Boundary: Month 01 Day 01

3. **Press Enter or Click Save**

Set up Position Administration for Interactive Manager

To use Interactive Manager, users must use Position Administration. Follow the steps below to set up information for Interactive Manager.

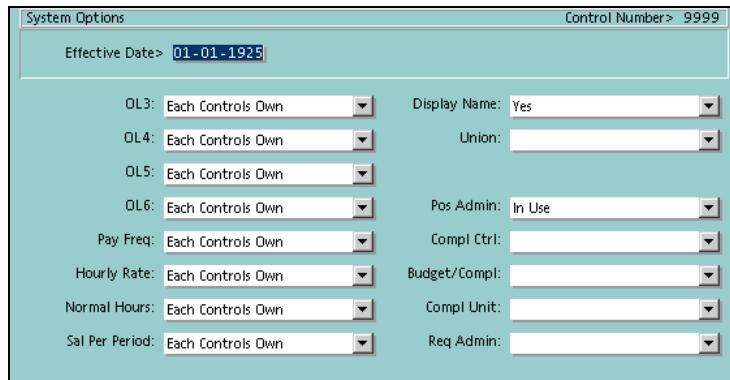
1. **Access the System Options form (TG-SCR)**

On The Solution Series system, access the System Options form (TG-SCR) by making the following selections:

HR ► HR Setup ► Setup HR Rules ► System Options

2. **Turn Position Administration on**

To use Interactive Manager, users must be using Position Administration. In the Position Admin drop down menu select In Use.



System Options Control Number > 9999

Effective Date > 01-01-1925

DL3:	Each Controls Own	Display Name:	Yes
DL4:	Each Controls Own	Union:	
DL5:	Each Controls Own	Pos Admin:	In Use
DL6:	Each Controls Own	Compl Ctrl:	
Pay Freq:	Each Controls Own	Budget/Compl:	
Hourly Rate:	Each Controls Own	Compl Unit:	
Normal Hours:	Each Controls Own	Req Admin:	
Sal Per Period:	Each Controls Own		

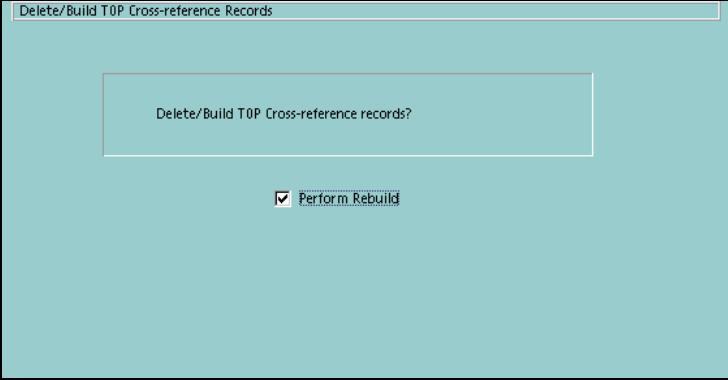
3. **Press Enter or Click Save**

4. Access the Delete/Build T0P Cross-Reference Records form (ME5SCR)

Interactive Manager uses organization information in Position Administration to build records that relate managers to their staff members (direct reports). You must build these records any time an organization change is made that affects employees.

5. Select Perform Rebuild

Click the Perform Rebuild checkbox. When you save the information, the system rebuilds the records used by Interactive Manager.



The screenshot shows a web form with a title bar that reads "Delete/Build T0P Cross-reference Records". The main content area is light blue and contains a white-bordered text box with the text "Delete/Build T0P Cross-reference records?". Below this text box is a checkbox labeled "Perform Rebuild" which is checked with a small square icon.

6. Press Enter or Click Save

Phase 6: Test the installation

Once the installation is complete, you should test Interactive Workforce to ensure that it is working properly by logging in as an employee user to check functionality. Perform the tasks in the following order:

1. Verify Employee functionality
2. Verify Interactive Benefits functionality (Benefits installations only)
3. Verify Interactive Manager

Verify Interactive Employee functions

In this task, you log on as a test user and complete the New User steps in Interactive Workforce. Completing this task ensures that the installation is fully functional.

1. Launch Interactive Workforce

Use your browser to access Interactive Workforce; enter the following URL:

`http://localhost/CyborgESS`

When you access the system, enter the employee ID '4001' in the login box. Next, enter the initial password for employee '4001' which you collected when you loaded Interactive Workforce users. When you access the system, you will be prompted to change passwords. Change the password to be the same as the user identification, in this case, '4001'.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's *HOSTNAME* instead of 'localhost'.

The Navigator displays New User when you log onto the system and the New User page displays.

New User Checklist

Welcome CATHERINE L. THOMPSON-WHITEFIELD

As a new user of Interactive Workforce it is important that you verify and complete the information below. After you complete these items, you will have access to the full functionality of Interactive Workforce

Once you have visited all items on this page, a Finished link will appear. You have to click this Finished link before you can access the full functionality.

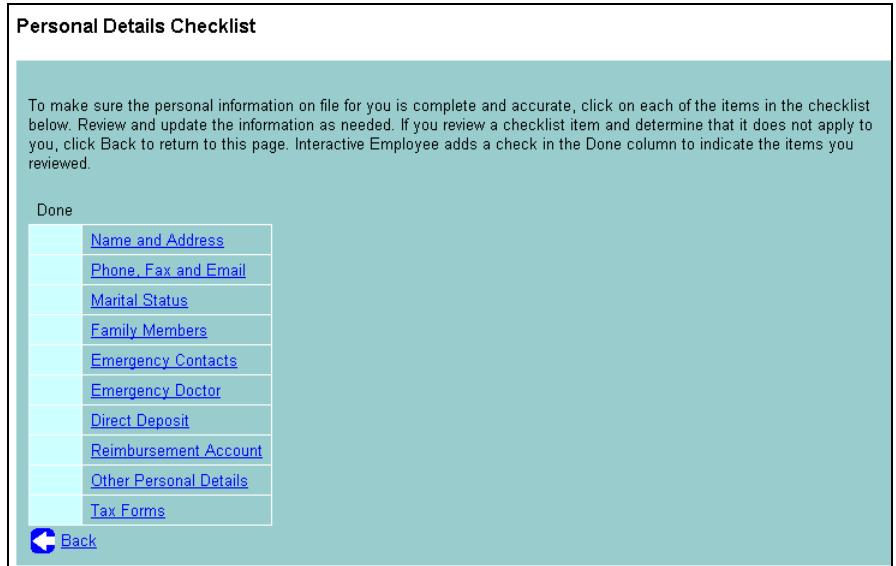
To exit the system during the process, click Log Off. You can log back on and continue at any time. The system keeps track of your progress.

Done Step

1	Personal Details
---	----------------------------------

2. Access the New User Personal Details

Click Personal Details to access the personal information for user 4001. To demonstrate that the system is fully functional and to be able to test Interactive Manager, click each of the personal details to display the page. Then click Back to return to the checklist. A check mark appears in the done column for each selection.



3. Click Finished on the Personal Details Checklist page

When a check mark appears for all Personal Details pages, click Finished. The system displays the original New User page.

4. Click Finished on the New User page

Click Finished on the initial page. The Navigator now shows the additional functions available to employee 4001.

5. Access the Pay Information options

From the Employee area of the Navigator, select Pay Information and then Pay Advice to verify access to the Pay Information database.

Congratulations! The system is working! Interactive Workforce may be accessed using the following URL:

`http://WebAppServerHostname/CyborgIW`

Verify Benefits functionality (Benefits installations only)

This task updates the benefits information for the next year and verifies that the Benefits pages are working properly. Pages that display should look similar to the graphics that follow.

1. Log in to Interactive Workforce as the Initial Administrator

Log in as the Initial Administrator using the password you entered when you launched Interactive Workforce in Phase 4 of the installation.

Administrator ► Benefits ► Benefit Plan Management ► Select Flex Master Plan

2. Verify the Next Year Flex Master Plan

On the Select Flex Master Plan page verify that Flex Master 100 is selected for the next plan year. If Flex Master 100 is not selected, click the radio button to select the plan.

It is of the utmost importance that Interactive Benefits use the correct Flex Master Plan when it displays benefit plan information to your employees. Select the correct Flex Master Plan for each organization. "Current year" should reflect the Flex Master Plan you are currently using for mid-year enrollments. "Next year" should reflect the Flex Master Plan you are using for this year's open enrollment period which will be the next benefit plan year. The dates displayed in the first column include all Flex Master Plans with effective dates within the past year including today's date. The dates displayed in the second column are all Flex Master Plans with an effective date that is greater than today's date.

Org ID	Organization	Select Your Current Year Flex Master Plan		Select Your Next Year Flex Master Plan	
		Number	Effective Date	Number	Effective Date
999999	ACME MANUFACTURING	<input checked="" type="radio"/> 100	January 1, 2002	<input checked="" type="radio"/> 100	January 1, 2003
		<input type="radio"/> 800	January 1, 2002		

[Save Changes](#)

3. Verify 'Maintain Flex Master Plan Information' page

On the Navigator, click Flex Master Plan Maintenance. The page for the first step of the Maintain Flex Master Plan Information displays.

Interactive Benefits requires additional information that is not in The Solution Series before your employees can start viewing and enrolling in benefits. For each Flex Master Plan you need to specify dates for open enrollment and initial enrollment. You also need to specify how excess flex credits will be handled. Select a Flex Master Plan below to view or update this information.

Current Year Plans

Done	Flex Master Plan	Participating Organizations
<input checked="" type="checkbox"/>	100	995555, 999999

Next Year Plans

Done	Flex Master Plan	Participating Organizations
<input checked="" type="checkbox"/>	100	995555, 999999

4. Select Next Year's Flex Master Plan

The system displays the Maintain Flex Master Plan Step 2 page. Enter a Beginning Date of January 1, 2002 and an Ending Date of January 1, 2003.

5. Enter the number of days for the Initial Enrollment Window

Enter 365 as the number of days for initial enrollment.

6. Display a message for Excess Flex Credits

Click the radio button to display a message for excess flex credits. Enter a short message in the message box, for example, Unused flex credits will be added to your wages.

Interactive Benefits requires some additional information that is not stored in The Solution Series that relates to eligible enrollment periods. If this Flex Master has flex credits, you may display a message to employees explaining how excess flex credits are handled.

Flex Master Plan ID: 100 Plan Year Effective Date: January 1, 2003

Open Enrollment Period

Beginning Date : * January 1 2002

Ending Date : * January 1 2003

Initial Enrollment Window

Specify the number of days from hire date that the employee is eligible to enroll in plans specific to this flex master plan

Number of Days : * 365

Excess Flex Credit Designation

Not applicable for this flex master.

Display following message to employees:

Unused flex credits will be added to your wages.

[Back](#) [Save Changes](#)

7. Save Changes

8. Verify 'Maintain Benefit Plan Information' page

On the Navigator, click Benefit Plan Maintenance. The page for the first step of the Benefit Plan Maintenance displays:

Interactive Benefits requires additional information that is not in The Solution Series before your employees can start viewing and enrolling in benefits. For each Flex Master Plan you need to specify dates for open enrollment and initial enrollment. You also need to specify how excess flex credits will be handled. Select a Flex Master Plan below to view or update this information.

Current Year Plans

Done Flex Master Plan Participating Organizations

100 999999

Next Year Plans

Done Flex Master Plan Participating Organizations

100 999999

9. Select Next Year Plan

The system displays the 'Maintain Benefit Plan Information, Step 2 of 3' page. Select Plan 100 in the Next Year Plans.

10. Update the plan information

Select each of the plans (700, 701, 708, 712, 723, and 726) on the 'Maintain Benefit Plan Information, Step 3 of 3' page and use the following chart to update the information for each plan.

Plan	Subgroup	Company Contribution Checked?	Beneficiaries Checked?
700: BC/BS Indemnity	Medical Insurance	Yes	No
701: Cigna PPO	Medical Insurance	Yes	No
708: Ameritas Dental-Ind	Dental Insurance	Yes	No
723: Hartford Basic Life	Basic Life Insurance	Yes	Yes
726: Medical FSA	Medical Spending Account	No	No

Plan 726: Medical FSA also requires a maximum amount representing the maximum contribution or coverage amount for the plan and, if an FSA account, the latest date on which claims can be submitted. Enter 10000 for the Maximum Amount and select January 1, 2004 for the FSA date. The bottom portion of the following page displays only for plans that require a maximum contribution or coverage amount.

Interactive Benefits allows you to control the information that is displayed to your employees on a plan by plan basis. Update or review the information for the current plan.

Plan ID : 726 Flex Master Plan : 100 Effective Date : January 1, 2003

Plan Name : *

Subgroup : *

Place a check in the check box if the answer to the following questions is yes :

Do you wish to display a Company Contribution? Yes

Does this Plan have associated beneficiaries? Yes

ONLY FOR PLANS THAT REQUIRE A VARIABLE ENTRY

This box is being displayed because this plan requires the employee to enter a variable amount. Enter the maximum contribution or coverage amount allowed for this plan below.

Maximum Amount : *

Flexible Spending Accounts Only

If the plan you selected is eligible against a Flexible Spending Account, enter the FSA Submissions deadline below. Otherwise leave the entry box blank.

Deadline :

[Back](#) [Save Changes](#)

11. Verify 'Maintain Dependent Coverage Options' page

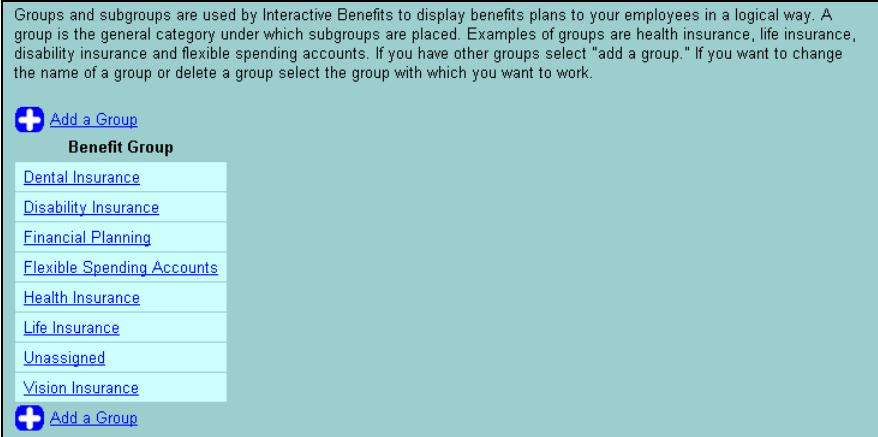
On the Navigator, click Dependents and Beneficiaries, and select the Dependent Coverage tab. Verify that the options below are selected:

- Employee & Spouse
- Employee & One Child
- Family/EE & Some Dep
- Family/EE & All Deps
- Employee & Sponsored
- Family/EE & Sponsored
- Emplye&spse/one 65+
- Emplye&spse/both 65+
- Emplye Only/65+
- LTC-Emp & Spouse
- LTC-Emp & Family

12. Verify the 'Benefit Plan Groups' page

On the Navigator, click Groups and Subgroups and then Benefit Plan Groups. Verify that the page for the first step of the Manage Benefit Plan Groups displays.

Groups and subgroups are used by Interactive Benefits to display benefits plans to your employees in a logical way. A group is the general category under which subgroups are placed. Examples of groups are health insurance, life insurance, disability insurance and flexible spending accounts. If you have other groups select "add a group." If you want to change the name of a group or delete a group select the group with which you want to work.



The screenshot shows a web interface with a teal background. At the top, there is a blue plus icon followed by the text "Add a Group". Below this is the heading "Benefit Group". A list of seven benefit groups is displayed, each on a light blue background with a thin border: "Dental Insurance", "Disability Insurance", "Financial Planning", "Flexible Spending Accounts", "Health Insurance", "Life Insurance", and "Unassigned". Below the list is another "Unassigned" entry, followed by "Vision Insurance". At the bottom, there is another blue plus icon followed by the text "Add a Group".

13. Verify 'Benefit Plan Subgroups' page

On the Navigator select 'Benefit Plan Subgroups.' The page for step 1 of the Manage Benefit Plan Subgroups process displays.

Interactive Benefits makes use of benefit groups and subgroups to display benefits to your employees in a logical way. Subgroups also perform an important function in Interactive Benefits as only one plan can be selected by an employee from each subgroup. Use the drop down lists to assign each subgroup to its appropriate group. You can add a new subgroup by selecting "Add a Subgroup." You can modify a subgroup's name or delete it by selecting the name of the subgroup.

[+ Add a Subgroup](#)

Benefit Subgroup	Group
Basic Life Insurance	Life Insurance
Dental Insurance	Dental Insurance
Dependent Care Spending Account	Flexible Spending Accounts
Dependent Life Insurance	Life Insurance
Financial Planning	Financial Planning
Legal Spending Account	Flexible Spending Accounts
Long Term Disability	Disability Insurance
Medical Insurance	Health Insurance
Medical Spending Account	Flexible Spending Accounts
Prescription Drug	Health Insurance
Short Term Disability	Disability Insurance
Supplemental Life Insurance	Life Insurance
Travel Spending Account	Flexible Spending Accounts
Vision Insurance	Vision Insurance

14. Verify the Display Order of benefit plan information

On the Navigator select 'Display Order.' The numbers for the Group Display Order shows the sequence in which groups of benefits display. The numbers in the Subgroup Display Order boxes show the sequence in which the subgroups display under the groups.

Group Display Order		Subgroup Display Order	
<input type="text" value="1"/>	Dental Insurance	<input type="text" value="1"/>	Dental Insurance
<input type="text" value="5"/>	Disability Insurance	<input type="text" value="1"/>	Long Term Disability
		<input type="text" value="2"/>	Short Term Disability
<input type="text" value="7"/>	Financial Planning	<input type="text" value="1"/>	Financial Planning
<input type="text" value="6"/>	Flexible Spending Accounts	<input type="text" value="2"/>	Dependent Care Spending Account
		<input type="text" value="3"/>	Legal Spending Account
		<input type="text" value="1"/>	Medical Spending Account
		<input type="text" value="4"/>	Travel Spending Account
<input type="text" value="2"/>	Health Insurance	<input type="text" value="2"/>	Medical Insurance
		<input type="text" value="1"/>	Prescription Drug
<input type="text" value="4"/>	Life Insurance	<input type="text" value="1"/>	Basic Life Insurance
		<input type="text" value="3"/>	Dependent Life Insurance
		<input type="text" value="2"/>	Supplemental Life Insurance
<input type="text" value="9999"/>	Unassigned		
<input type="text" value="3"/>	Vision Insurance	<input type="text" value="1"/>	Vision Insurance

Benefits Functionality has now been updated and verified.

Verify Interactive Manager (if installed)

Interactive Manager provides employees with the ability to request time away from work online. Interactive Manager then routes the request to the manager and/or the HR department based on the routing set up for the request type on the Workflow Routing Control Table form (T93SCR). Interactive Manager also allows managers to view personal and work information for their staff members (direct reports). To test this functionality in Interactive Manager, follow these steps.

1. Log in to Interactive Workforce as employee 4002

Log in as employee 4002 using the password you collected when you loaded Interactive Workforce users in Phase 4. When requested, change the password to 4002.

2. Access the Time Away Request page

From the Employee area of the Navigator select Time Away.

Employee ► Time Away

3. Complete the time away request

Complete the time away request by entering the following information:

Start Date	Enter the date for any weekday in the near future, for example, 09-09-2002
Request Type	From the drop down menu select Vacation Regular
Number of Days	2
Include Weekends	Leave this checkbox empty.
Hours per Day	8

The page should look similar to the page that follows.

Complete the fields below and click Submit to create a new request. Check the box labeled Include Weekends only if your normal work schedule includes weekends AND you want to take weekends off.

You may also select a previous request from the list below to view or withdraw the request. The Status indicates where your time away request is in the approval process.

Start Date: * 

Request Type: *

Number of Days: *

Include Weekends:

Hours Per Day: *

[Submit](#) [Cancel](#)

4. Submit the request

Click Submit to submit the request. The new request appears on the list of time away requests at the bottom of the page with a status of 'Pending Mgr Approval.'

5. Log off the system

6. Log on to the system as employee 4001

Log in as employee 4001 using the password you reset when you verified Interactive Employee.

- 7. Access the Inbox**

From the Manager area of the Navigator click Inbox. Be sure the time away request for employee 4002 appears in the inbox.
- 8. Access the Staff Members page**

On the Manager area of the Navigator click Staff Members. This manager, employee 4001, should have one staff member, employee 4002.
- 9. Click Employee 4002 to display additional information**

Click the employee's name to display the tab page with Contact, Work, and Personal information.
- 10. Verify information for employee 4001**

Click each tab (Contact, Work, and Personal Information) to verify that information for employee 4001 displays.
- 11. Log off the system**

Congratulations - Interactive Manager is installed and functioning correctly.

CHAPTER 4

Installing the Single-Server Configuration

In This Chapter

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Introduction to Installing the Single-Server Configuration

This section provides detailed instructions for installing the single-server configuration of Interactive Workforce on a Windows 2000 server system. Installing the Single-Server Configuration Server falls into 4 phases:

- Phase 1: Install the Single-Server Configuration
- Phase 2: Create and Populate the Pay Information database
- Phase 3: Create and Populate the Interactive Workforce database
- Phase 4: Test the installation.

This section is designed so that you complete all the tasks necessary in a single sitting.

Throughout this document, an ellipsis (...) is used to represent the install drive. This drive should be consistent with the drive you are using throughout the installation.

Phase 1: Install the Single-Server Configuration

This procedure leads you through a series of tasks that constitute the steps necessary to install all components on the Single Server Configuration. Perform the tasks in the following order:

1. Install the Java Development Kit (JDK)
2. Install Servlet Exec and the ServletExec patch if not already installed
3. Install the Single-Server Configuration software
4. Update The Solution Series for Interactive Workforce test data
5. Update The Solution Series report generators for Interactive Workforce

Install the Java Development Kit (JDK)

If you do not already have the JDK or ServletExec installed on the machine, the Installation CD-ROM provides these. This Phase shows you how to install the JDK and ServletExec from the install CD.

The Java Development Kit must be installed once on the web server. It does not have to be installed for each Interactive Workforce environment. Cyborg provides this software. The following instructions explain how to find these on the installation CD and install them.

Note: For a three-server configuration, install JDK on the Database Application Server if JDK is not already installed.

1. Start the Installation

Insert the Installation CD into the CD-ROM drive of the computer that will be the Web Server. Read through the page of instructions that displays.

2. Click 'Install Java Development Kit (JDK)'

On the instructions that display, click 'Install Java Development Kit (JDK).' The Welcome window is the first dialog box that appears during the installation process.

Click Next to display the license agreement.

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

3. Accept the license agreement

Click OK or Next to accept the license agreement.

4. Choose the Destination folder

Install into the Cyborg recommended default directory:

...eCyborg\IW\jdk1.3.1_03

You can select this directory by clicking Browse and typing the file path into the Browse dialog. When you click Next, the install program prompts you to create the directories—click Yes.

Note The drive you select here must be used consistently throughout the installation of the Solution Series Application Server.

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'For this installation...' column.

Prompt	Use the following...
JDK Destination	..\eCyborg\IW\jdk1.3.1_03

5. Click Next

When the browser dialog box appears, choose the browser for the application. Cyborg recommends you select both browsers.

6. Click Next

When the components dialog box appears, accept the default selection of the components and click next.

7. Click Finish

Install ServletExec

Important: The Interactive Workforce application works only with ServletExec as the servlet engine. If you have another servlet engine installed on the Web server you are using for Interactive Workforce, you must first uninstall that servlet engine and then install ServletExec. If you have ServletExec installed, do not install another instance of the program.

Two licenses for ServletExec are included in your license for Interactive Workforce. These licenses are for the Test and Production environments. The initial installation will be installed with an unlicensed version of ServletExec. As this environment is used just for testing the installation there is no need to allocate a license.

Note: For the initial installation, ServletExec may be installed in 'Unregistered' mode. While in Unregistered mode, ServletExec is limited to processing three (3) concurrent client requests. Cyborg recommends using the two supplied ServletExec licenses for the Test and Production environments. Contact your account manager regarding the number of ServletExec licenses needed for your installation.

In a typical two-server configuration, ServletExec is installed on the Web server.

1. Click 'Install ServletExec'

On the Installation CD instructions that display, click 'Install ServletExec.'

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

2. Select Setup Type

Select the option 'Install a ServletExec AS Instance' and click Next to continue.

3. Click Yes to accept the License Agreement

4. Click Next to continue

5. Choose the destination folder

We suggest you install the application in the eCyborg\IW that matches the directory of the Interactive Workforce installation. For the Initial environment, use the directory created in Step 1 of this task:

...\eCyborg\IW\ServletExec

6. Enter Servlet Exec Instance Name

Enter a name to uniquely identify the ServletExec Application Server instance for the Initial environment, for example:

CybIW

Click Next to continue.

Note: These are suggested names. If you wish to use others, be sure to do so consistently.

Note: If you have an instance of ServletExec on the Web Client, the setup program asks you to enter a port and a URL (comma-separated list of application URLs to be processed by the Web Server adapter). Enter a port number that differs from the port number of the existing instance. ServletExec license agreements are per instance per port.

7. Select setup type

Select 'Microsoft IIS or PWS' setup type and click Next to continue.

8. Click Next to confirm installation

9. Click Yes

In the dialog box that asks if you want to install ServletExec as an NT service, click Yes.

10. Click OK

In the dialog box that lists the file that you must check for errors and for the location of the backed up version of servletexec.properties, click OK.

11. Click OK

In the dialog box that reminds you to restart the web server, click OK.

12. Click Finish

Click Finish to complete the installation of ServletExec.

Install Patch for ServletExec

1. Execute the ServletExec Patch software

On the instructions that displayed when you inserted the CD Rom, click 'Install patch for ServletExec.'

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

2. Extract the ServletExec41.jar file to the folder that contains the ServletExec software.

Extract the ServletExec 41.jar file to the folder where you installed the ServletExec software in the previous task.

3. Copy the file to ServletExec Lib directory

If the system displays a message asking if you want to replace the existing file with the new file, click Yes.

Install the Single-Server Configuration software

1. Click 'Install Interactive Workforce'

On the instructions that display from the CD Rom, click 'Install Interactive Workforce.' Click Next to view the license agreement.

Note: If you are installing the media using Terminal Server, the instruction page will not display. Access the CD Rom drive to view the instruction page.

2. Enter your license key for Interactive Workforce

The dialog box displays requesting you to enter the license number. Enter your Interactive Workforce license number, and click Next to continue. Cyborg delivers license key information in an e-mail to your organization.

Click Next to continue or Cancel to abort the process.

3. Choose your operating system/platform

The dialog box displays the operating systems/platforms on which you can install Interactive Workforce. Click Windows, and click Next to continue.

4. Select Single Server Configuration

When the dialog box displays requesting you to select the type of server configuration, select the Single Server Configuration option. Click Next to continue.

5. Enter the location of The Solution Series

For Interactive Workforce to be installed correctly, you must direct it to the directory where The Solution Series resides.

The default is:

C:\Cyborg

However, most installations of The Solution Series have been configured differently, so this location is going to be different from system to system. You must change the file path to indicate the correct drive and directory where The Solution Series is located. Once the correct location is entered click Next to continue.

When you click Next the installation program begins installing the server components. Once completed, you will be prompted to complete the installation setup.

6. Where is ServletExec Instance Installed?

Enter the path for ServletExec. This is the instance directory where StartServletExec.bat resides.

Click Next to continue.

7. **Choose a Destination drive**

The default is the C: drive. You can select another drive at this time, but it must be used consistently through the installation. The installation program will install the files on the selected drive in the following file path:

...\\eCyborg\IW

Note: Specify the drive only. This drive must be the same drive on which you installed ServletExec. Do not enter a directory name.

Click Next to continue.

8. **Select Components**

The following form will be displayed:

This window allows for installation of individual components, should the need arise. However, the installation defaults to installing all the software required for the system. Do not alter the selection of the items in the options list for the initial installation.

The following components should be selected:

- Stapi
- Orbix 3.3.3 Runtime
- ESS Tools
- Interactive Workforce
- Interactive Workforce Database
- Pay Database
- CasRexec

Click Next to continue or Cancel to abort the process.

9. **Reboot the computer**

Note: If the setup cannot locate Inetpub, the program prompts you to enter its location. If you are prompted for the location of Inetpub, refer to the configuration worksheet.

After the last step, the Setup Complete window indicates that the installation is complete. In order to activate the components you need to reboot the computer. In the Setup Complete window, verify that 'Yes, I want to restart my computer now' is selected, then click Finish. The computer will reboot.

Note: Once the computer has been rebooted, the Solution Series Application Server will automatically register the STAPI Server with Orbix. You will see a couple Command consoles—one with a series of Orbix statements, and one running STAPIServer. You may close these windows.

Update The Solution Series for Interactive Workforce test data

Note This step is necessary to later test the installation.

Note: By preceding the batch job with 'rj' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.

1. **Apply Interactive Workforce test data to The Solution Series application server**

Interactive Workforce provides new employee test data to the standard test company (999999). The data contained in these new test employees will allow you to thoroughly test your installation of Interactive Workforce. Open a command prompt and apply the Interactive Workforce test data by running the following script from the \Runs directory:

```
ry Jessdemo.bat
```

This will merge the new test data with the standard test data prior to loading it into the Interactive Workforce database. Review the log to determine if there were any errors.

Update The Solution Series report generators for Interactive Workforce

Important! All users must be logged off The Solution Series to perform this task.
--

1. **Execute the Pay Extract script**

Job Used: jpayxtr

From the \Runs directory of your The Solution Series system execute the following script:

```
ry jpayxtr.bat
```

This script will create a new P20IN file in the \Data directory. Review the log to determine if there were any errors.

Note: By preceding the batch job with 'ry' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.

2. **Extract the Interactive Workforce Report Generators**

Job Used: jxessrptgen

From the \Runs directory of your The Solution Series system execute the following script:

```
ry jxessrptgen.bat
```

Review the log to determine if there were any errors. Check the output file ESSRptGen.03 in the \List directory for errors.

3. **Load the Interactive Workforce Generators**

Job Used: jloadessgen

From the \Runs directory of your The Solution Series system execute the following script:

```
ry jloadessgen.bat
```

Review the log file to determine if there were any errors. Then, check the transload.pay file in the \list directory. Verify, at the bottom, of the output file that there were no errors. Next, check the audit.lis.pay file to verify that the 7L and 7M generators were loaded.

4. **Execute the System Maintenance script**

Job Used: jmntrun

From the \Runs directory of your The Solution Series system execute the following script:

```
ry jmntrun.bat
```

Review the log to determine if there were any errors.

5. Execute the Pay Merge script

Job Used: jpaymrg

From the \Runs directory of your The Solution Series system execute the following script:

```
rj jpaymrg.bat
```

Review the log to determine if there were any errors. This script will apply the 7L and 7M changes to the system.

Phase 2: Create and Populate the Pay Information database

Perform the tasks in Phase 2 in the following order:

1. Create the Pay Information database
2. Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series
3. Configure the Organization Options form (AF-SCR) in The Solution Series
4. Process a payroll run
5. Load the Pay Information database
6. Run the user extract program for a single server

Create the Pay Information database

Note: You must create the Pay Information database for Interactive Workforce to operate even if your implementation will not use the Pay functionality. If you are not using the Pay functionality, after this task is complete you may skip to Task 5: Run the User extract program.

Note: For a three-server configuration, run this script on the Database Application Server.

1. Execute the database creation script

Job Used: createpaydb

This file controls the process of creating the Pay Information database. Execute the following script to create the pay information database:

```
C:\eCyborg\IWPayInfodatabase\CybPay\createpaydb.bat
```

When this job runs, you will be prompted for the 'sa' user password. Enter the password.

Note: If you did not accept the default 'C:\' directory for your installations, substitute your choice of drive wherever 'C:\' appears.

Note: Depending on the speed of the processor, this script may take some time to execute. On the recommended configuration, creation of the Pay Information database may take a couple of minutes.

2. Review the database creation logs

Once the Pay Information database script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Pay Information database as well as verify that the tables were created. On the The Solution Series Application server in the eCyborg\ESS\PayInfoDatabase\CybPay directory access the following files:

- createCybPayInfoDB.log
- createCybPayInfoOBJ.log

Now, the Pay Information database has been created. However, additional tasks must be performed before the database can be populated.

Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series

To set up the Interactive Workforce Payrun (7L) and Payslip (7M) generators, you must log in to The Solution Series with Security Officer access.

Note: Contact your payroll expert before continuing with these steps.

1. Set up the Payrun (7L) Report Generator

On The Solution Series system, access the Report Request form (DD-SCR) to set up the 7L7L report generator. Access the Report Request form by making the following selections:

Tools ► Reporting ► Report Scheduling ► Schedule Payroll Run Reports

To execute a payrun, the 7L7L generator must be loaded into your P20IN file using the desired company(ies). For the initial installation, use the 999999 company.

On the Report Requests form:

- The Report Code field must be set to '7L7L'
- The Report Select field must be set to '1'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your Solution Series system.

The screenshot shows the 'Report Requests' form with the following settings:

- Report Code:** 7L7L
- Report Select:** 1
- User Field:** (empty)
- Extra Copy:** (dropdown menu)
- Adjustments:**
 - Plus: Do Not Print
 - Minus: Do Not Print
 - Manual: Do Not Print
- Data Types:**
 - Company Level: Do Not Print
 - Tax Tables: Do Not Print
 - Labor Record: Do Not Print
 - Other Record: Do Not Print
- To-date Amounts:**
 - Current: Print Every Run
 - Month: Do Not Print
 - Quarter: Do Not Print
 - Year: Do Not Print

2. Set up the Payslip (7M) Report Generator

On your Solution Series system, while still on the Report Request form (DD-SCR) set up the 7M7M report generator. To execute a payrun, the 7M7M generator must be loaded into your P20IN file. On the Report Requests form:

- The Report Code field must be set to '7M7M'
- The Report Select field must be set to 'E'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your The Solution Series system.

The screenshot shows the 'Report Requests' form with the following fields and values:

- Report Code:** 7M7M
- Report Select:** E
- User Field:** (empty)
- Extra Copy:** (dropdown menu)
- Adjustments:**
 - Plus: Do Not Print
 - Minus: Do Not Print
 - Manual: Do Not Print
- Data Types:**
 - Company Level: Do Not Print
 - Tax Tables: Do Not Print
 - Labor Record: Do Not Print
 - Other Record: Do Not Print
- To-date Amounts:**
 - Current: Print Every Run
 - Month: Do Not Print
 - Quarter: Do Not Print
 - Year: Do Not Print

3. Refresh the selection list

Refresh the selection list to view the records for the report generators.

Configure the Organization Options form (AF-SCR) in The Solution Series

To ensure that the system is set up correctly for the payroll run, you must configure the Months Retained settings on the Organization Options form (AF-SCR) in The Solution Series. These settings must be configured so the payroll run does *not* purge the Payment History and Labor Records. To do this you must have entered anything other than zero (0) on the 'Months Retained' field of the second Organization Options form (AF-SCR).

Important! In addition to changing the AF-SCR options, do not use the batch purge option in the same run as the Report Generator extract.

1. Access the Organization Options form (AF-SCR)

While still in The Solution Series, access the Company Options form (AF-SCR) by making the following selections:

Payroll ► Payroll Setup Processing ► Organization Setup ► Organization Options

The Organization Options form appears.

2. Click on More Options

The second half of the form appears.

3. Set the Months Retained fields

The Months Retained fields define the number of months the Payment History and Labor Records are stored on the Employee Database in The Solution Series before they are dropped. Enter anything other than zero (0) in the "Months Retained" fields. Failing to do so will result in mismatched Pay Information records in the database tables and the inability to view Pay Information in Interactive Workforce.

The defaults are 88.

The form should appear similar to the one shown here:

4. Press Enter

This completes the changes to the form.

Process a payroll run

Processing the payroll run will both verify that the new scripts and report generators are working correctly, and will create the text files used to populate the Pay Information database. This task must be performed while logged in to The Solution Series with Security Officer access.

1. Define the Pay Run Parameters

This task must be performed while logged in to The Solution Series with Security Officer access. On The Solution Series system, access the Payroll Run Process Control form (AE-SCR) by making the following selections:

Payroll ► Payroll Processing ► Payroll Scheduling ► Schedule Payroll Runs

Set up the payroll run parameters, as represented in the graphic, for the following three pay frequencies:

1. Weekly
2. Bi-Weekly
3. Semi-Monthly

Be sure to set all of the fields as shown on the form. The Run Date field is optional and may be left blank. The Payment Date field must be the current or another relevant date.

In the Frequency field, enter one of the following values then press enter:

- '1' to set up a Weekly pay pay run
- '2' for a Bi-Weekly pay run
- '3' for a Semi-Monthly pay run

The screenshot shows a window titled "Payroll Run Process Control" with a light green background. It contains several dropdown menus and text input fields. The "Clear To-date" dropdown is set to "Clear No Fields". The "Reporting Type" dropdown is set to "End of Pay Per Run". The "Purge Rule" dropdown is set to "No Purge or Delete". The "Print Update" dropdown is set to "Print Entire Report". The "Version Number" is a spin box set to "0". The "Run Type" dropdown is set to "Maintenance/ Pay Run". The "Run Date" is an empty text box. The "Report Select" is a text box containing "000000000000". The "User Date" is an empty text box. The "User Field" is a text box containing "0000". Below these fields is a section titled "Define Frequencies to be Paid" which contains: "Frequency: 1 WEEKLY", "New Period: Yes" (selected radio button), "No" (radio button), "Payment Date: 02-15-2001", "Pay Cycle: 1", and "Deduction Cycle: 1".

From this point forward, the tasks and steps include the execution of programs and processes from the normal administration of the system. This is done here both to demonstrate successful component installation and to provide the data needed to confirm that the entire system is working.

2. Execute the Pay Extract script

Job Used: jpayxtr

Execute the following script from the \Runs directory of your *The Solution Series 4.5.1* system:

```
rj jpayxtr.bat
```

Check the output file payxtr.03, in the \List directory, for errors.

Note: If you have already modified *jpayxtr.bat* for *Interactive Workforce* and run this program now without the *STAPI* currently running, you will receive *CORBA* errors that you can ignore.



Refer to the *eCyborg Interactive Workforce: Technical Implementation* documentation for information on modifying *jpayxtr*.

3. Execute the Pay Run script

Job used: jpayrun

Execute the following script from the \Runs directory of your *The Solution Series 4.5.1* system:

`jpayrun.bat`

Once you have executed a payrun, check the `auditrl.pay.lis` and `checknum.lis` files in the `\List` directory for errors. Also check the `\Data` directory to ensure that the following files have been created:

- `essedr.txt`
- `esseer.txt`
- `esstxr.txt`

4. Execute the Maintenance script

Job Used: `jmntrun`

Execute the following script from the `\Runs` directory of The Solution Series system:

`rj jmntrun.bat`

After you execute a maintenance run, check the `audit2` and `tranlod2.lis` files in the `...\List` directory for errors. Also, check the `\Data` directory to ensure that the following file has been created:

`esspsr.txt`

5. Execute the Pay Merge script

Job Used: `jpaymrg`

Execute the following script from the `\Runs` directory of The Solution Series system:

`rj jpaymrg.bat`

Note: If you run this job without the STAPI currently running, you may receive CORBA errors. You can ignore these errors.

Load the Pay Information database

This task takes the output files created by the 7L and 7M generators during the payroll run and loads them into the Pay Information database.

1. Copy the Pay Run output files

Copy the four output files created during the pay run from the `\Data` directory to the `...\eCyborg\IW\PayInfoDatabase\CybPay` directory.

- `essedr.txt`
- `esseer.txt`
- `esstxr.txt`
- `esspsr.txt`

Note: In a three-server configuration, copy these files to the directory for the Pay Information Database created on the Database Application Server.

2. Execute the Load Pay Information script

Job Used: `imppayinfo`

This script issues all the commands necessary to load data from The Solution Series payrun output files into the Pay Information database. The four files listed in Step 1 are bulk

loaded into four tables. Once the process is complete, the four files are deleted. To load the pay information data, execute the following script:

```
...\\eCyborg\IW\PayInfoDatabase\CybPay\imppayinfo.bat
```

Verify the data load by ensuring there are no errors in the following files in ...\\CybPay directory:

- LoadPIBasicsData.err
- LoadPIBasicsData.log
- LoadPIEarnDeductData.err
- LoadPIEarnDeductData.log
- LoadPIEmployeeData.err
- LoadPIEmployeeData.log
- LoadPITaxesData.err
- LoadPITaxes.log

The .err files should be blank, indicating that no errors have occurred. Likewise, the log files should contain no errors.

Run the User extract program

This task will create the text file which will be used to populate the Interactive Workforce database with users. The Interactive Workforce database has not yet been created, but will be later in this section, at which time you will need this file.

1. Execute the Interactive Workforce User extract script

From the \Runs directory of your The Solution Series system execute the following script:

```
jessxpt
```

The user extract program creates the following export file in the \Data directory:

```
essusers.txt
```

This file will be copied over to the Interactive Workforce database directory and will be loaded into the Interactive Workforce database.

Note The *jessxpt.bat* script will take some time to extract employee information and create the text file, depending on the size of the company and the processing speed of the computer. For example, a company of 2000 employees may take up to two minutes to extract from the The Solution Series Employee database.

Phase 3: Create and Populate the Interactive Workforce database

Perform the tasks in Phase 2 in the following order:

1. Configure the Orbix Daemon as a service
2. Create the Interactive Workforce database
3. Add ODBC Data Sources for the Interactive Workforce
4. Configure ServletExec as a Service
5. Launch Interactive Workforce
6. Access the Interactive Workforce Administrator Utility
7. Import option lists
8. Select organizations for loading
9. Select resulting statuses for loading
10. Set up direct deposit HEDs
11. Modify payxtr and paymrg scripts with Suspend Stapi
12. Load Interactive Workforce users

Configure the Orbix Daemon as a service

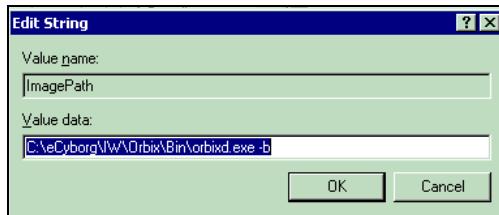
In a two-server configuration, this task is performed on the Solution Series Application Server. Before performing the task, do the following:

Edit your registry for the Orbix Daemon Image Path

On the Solution Series Application Server, edit the Orbix Daemon Image Path. Access the registry by making the following selections:

Start ► Run ► regedit ► HKEY_LOCAL_MACHINE ► SYSTEM ►
CurrentControlSet ► Services ► Orbix Daemon

In the 'Image Path' entry change the Orbix.exe** to orbixd.exe -b.



After editing the registry, configure the Orbix Daemon as a service using the following steps:

1. Access the Services Control Panel

To access the Services Control Panel, make the following selections from the windows 2000 desktop:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

2. Open the Orbix Daemon Service dialog

In the Service list box, double-click on the following entry:

Orbix Daemon

This will open the Orbix Daemon Service dialog.

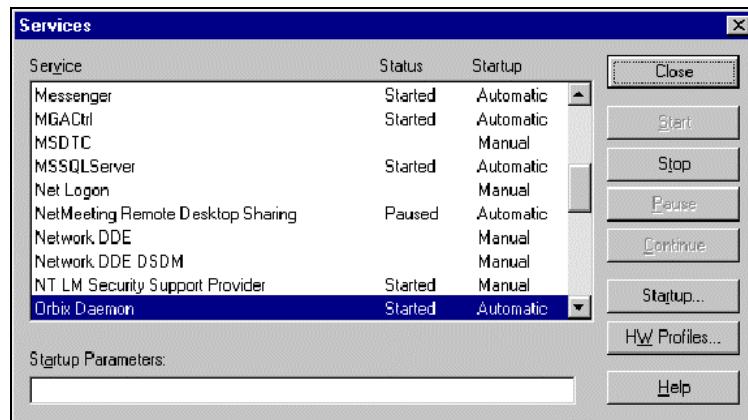
3. Select the Start Up Type: Automatic

Click the arrow in the Start Up Type field and select Automatic from the drop-down list.

4. Click OK

5. Start the Orbix Daemon service

Select the Orbix Daemon entry in the Service list box, then click Start. The Services dialog should appear as shown here:



7. Confirm that Orbix is running

Create the Interactive Workforce database

Note: For a three-server configuration, run this script on the Database Application Server.

1. Execute the Interactive Workforce database creation script

Job Used: createessdb

This file can be run by double clicking on the filename using the Windows Explorer. The default file path is:

...\\eCyborg\\IW\\ESSDatabase\\CybIW\\createessdb.bat

When this job runs, you will be prompted for the 'sa' user password. Enter the password.

Note: Depending on the speed of the processor, this script may take some time to execute. Creation of the Interactive Workforce database may take a couple of minutes.

Note: If you have not already done so, you may want to tune the size of the database, depending on your use of the environment.



Refer to *eCyborg Interactive Workforce: Technical Implementation* for information on editable parameters in the database configuration files.

2. Review the database creation logs

Once the Interactive Workforce database script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Interactive Workforce database as well as verify that the tables were created. On the Web Server in the eCyborg\IW\ESSDatabase\CybiW directory access the following log files:

- setCybiWVal.log
- createIWTBL.log
- createCybiWDBTBL.log

The directories with the log files on the OS/390 and UNIX platforms are:

OS/390: eCyborg\IW\ESSDatabase\CybiW

UNIX: \$eCyborg\IW\ESSDatabase\CybiW

Make a note of the database access information; you will need it later.

Add ODBC Data Sources for the Interactive Workforcer and Pay Information databases

Note: For implementations that are not using the Pay functionality, this task must still be completed for the Pay Information database in order for Interactive Workforce to work properly.

For a two-server configuration, this task should be performed on the Web Server computer.

ODBC is a programming interface that enables *Interactive Workforce* to access data from SQL Server.

Important! You will need to perform this task twice: once for the Pay Information database, and again for the Interactive Workforce database.

For a two-server configuration, although the Pay Information database physically resides on another computer, this task performed on the Web Server will connect ODBC to that database.

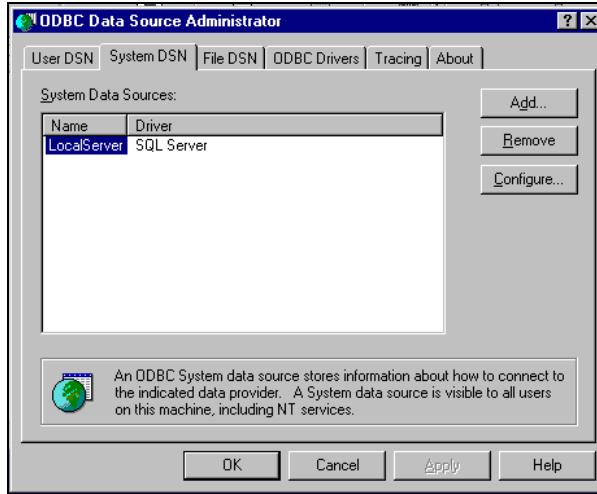
1. Run ODBC

Make the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► ODBC Data Sources

2. Select the System DSN tab

The following dialog displays:

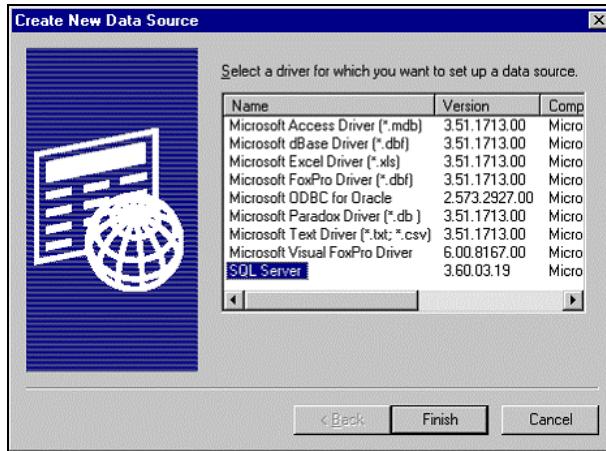


3. Click Add

In the ODBC Datasource Administration dialog box, click Add.

4. Select SQL Server

The following dialog displays:



5. **Click Finish**
6. **Enter data in the Create a New Data Source to SQL Server dialog**

Note: In a three-server configuration, the server name for both the Pay Information Database and the Interactive Workforce Database is the Database Application Server where you created the databases.

For the Interactive Workforce database, fill the fields with the information listed in the following table:

Field	Information
Name:	CybiW (case sensitive)
Description:	Cyborg Interactive Workforce Database
Server:	Name of the server where you created the Interactive Workforce database

For the Pay Information database, fill the fields with the information in the following table:

Field	Information
Name:	CybPayInfo (case sensitive)
Description:	Cyborg Pay Information Database
Server:	Name of the server where you created the Pay Information database

Note If you are installing multiple environments on the same machines, Cyborg recommends using Names and Descriptions fitting the environment, for example: 'Cyborg Interactive Workforce Database—Test Environment'.

A dialog box displays showing your entries.

7. **Click Next**
8. **Select 'With SQL Server authentication using a login ID and password entered by the user' option**
9. **Verify that 'Connect to SQL Server to obtain default settings for the additional configuration options' is selected**
10. **Enter the Login ID and the Password**

For the Interactive Workforce database, use the following for the Login ID and Password:

cybiwdba

For the Pay Information database, use the following for the Login ID and Password:

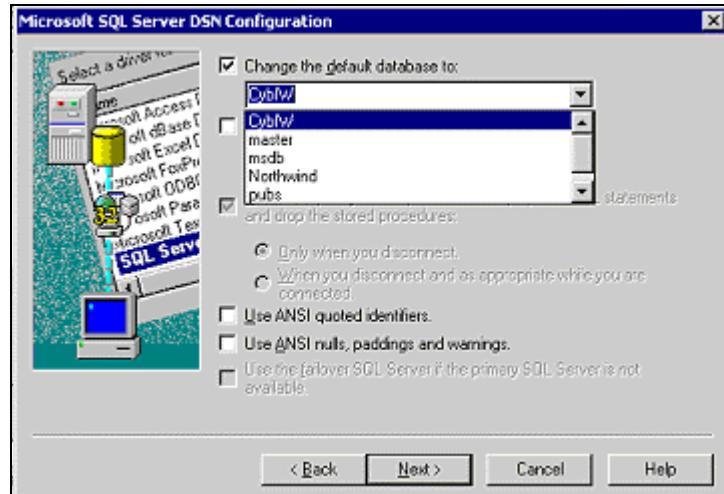
cybpaydba

If you are not using the defaults, type the password listed on the configuration worksheet.

11. Click Next

12. Select 'Change the default database to'

Be sure the 'Change the default database to' is checked.



13. Select the database

Select either of the following:

- CybIW (the Interactive Workforce database)
- CybPayInfo (the Pay Information database)

14. Deselect ANSI options

Deselect the following options by removing the checkmark from the select box:

- Use ANSI quoted identifiers
- Use ANSI nulls, paddings, and warnings

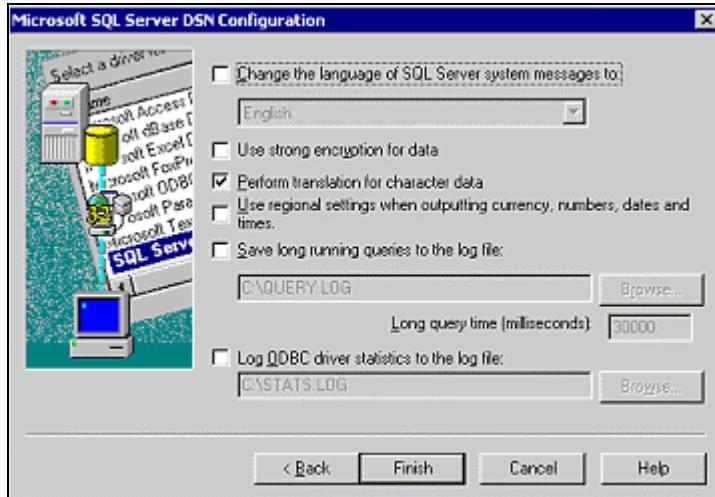
These options are defaults for the ODBC SQL driver, and result in the addition of extra characters to data that is retrieved through the ODBC/JDBC bridge. These defaults must be turned off during the setup of the database to ensure data integrity.

15. Click Next

The confirmation dialog displays.

16. Click Finish

The system displays a dialog box showing the configuration you set.



17. Click Test Data Source

The system displays a dialog box with the message, 'TESTS COMPLETED SUCCESSFULLY!'

18. Click OK

The window returns to the configurations display.

19. Click OK

The database will now appear in the System Data Sources option list of the ODBC Data Source Administrator Window. The ODBC is now connected to the Interactive Workforce database. Once you have performed this task for either the Interactive Workforce or Pay Information database, you must repeat it for the other.

Configure ServletExec as a Service

In a two-server configuration, this task is performed on the Web Server.

1. Shut down Interactive Workforce

Ensure that ServletExec is shut down.



Refer to eCyborg Interactive Workforce: Technical Implementation for details on shutting down Interactive Workforce.

2. Verify that the ServletExec service has been installed

To verify that ServletExec has been installed as a service, access the Services Control Panel and make the following selections from the windows 2000 desktop:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

If ServletExec has been installed, you will see the following entry:

ServletExec-CybiW.

If it has been installed, skip to step 6. If not, continue with step 3.

3. Open a command prompt

4. Go to the ServletExec\Bin directory

From the command prompt, access the following directory **or use the path that represents your ServletExec installation**:

```
... \eCyborg\IW\ServletExec\Bin
```

5. Install ServletExec as a service

Install the ServletExec as a service by executing the following command:

```
InstallNTService -n "ServletExec-CybiW" -start "D:\eCyborg\IW\ServletExec\se-CybiW\StartServletExec.bat" -stop "D:\eCyborg\IW\ServletExec\se-CybiW\StopServletExec.bat"
```

Note: *Substitute the path that represents your ServletExec installation for the above. The values that follow will also reflect your path.*

When the ServletExec service is successfully installed, you will receive the following prompt:

Successfully created the service(ServletExec-CybiW) with the values:

```
name = ServletExec-CybiW
exe = D:\eCyborg\IW\ServletExec\bin\ServletExec.exe
start = D:\eCyborg\IW\ServletExec\se-CybiW.bat
stop = D:\eCyborg\IW\ServletExec\se-CybiW\StopServletExec.bat
```

Note: *ServletExec can be removed as a service by issuing the following command:*

```
DeleteNTService -n "ServletExec-CybiW"
```

The StartServletExec executable must now be configured to locate the Interactive Workforce properties file. In a two-server configuration, this task must be performed on the Web Server.

Once the ServletExec has been installed as a service, you must configure it to start automatically when the system reboots.

6. Open the ServletExec Service dialog

While still in the Services dialog, double-click on the following entry in the Services list box:

ServletExec-CybiW

This will open the ServletExec Service dialog.

7. Select Automatic

Click the arrow for Start Up Type, and select Automatic from the drop-down list.

8. **Click OK**
9. **Start the ServletExec service**

Select the ServletExec entry in the Service list box, then click Start.

Launch Interactive Workforce

In a two-server configuration use your browser on the Web Server to access the Interactive Workforce Administration utility, and enter the following URL:

`http://localhost/CyborgESS`

OR

In a single server configuration use your browser to access Interactive Workforce utility, and enter the following URL:

`http://localhost/CyborgESS`

When you get to the Start page, click 'Launch Interactive Workforce'. At the log in page, to access the system:

- the initial login and password are both: **'initialadm'**.

Once you access the system you will be prompted to change passwords. Change the password to 'iwadm', or any other password you desire. We recommend the easily remembered 'iwadm' because security is not needed in the initial system, as it contains no live data.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's *HOSTNAME* instead of 'localhost'.

Access the Interactive Workforce Administrator Utility

Once you have accessed Interactive Workforce, click Administrator in the Navigator panel on the left portion of the screen and select Interactive Workforce and then Data Import. The remaining tasks must be performed in the following order:

- Option List Import
- Organization Selection
- Resulting Statuses Selection
- Load Interactive Workforce users

Import option lists

Before performing the remainder of the tasks in this phase of the installation, you must use the Option List Import function. You must perform this task after the system is installed and before you select any statuses or organizations used as selection parameters to load users.

This tab page displays the option lists available in The Solution Series that must be imported into Interactive Workforce. Follow these steps to extract the option lists from The Solution Series and load them into the Interactive Workforce database.

1. Access the Option List Import page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Load Options Lists tab.

Administrator ► Interactive Workforce ► Data Import ► Option List Import

2. Click Perform Extract

The application extracts the option lists and imports the lists into the Interactive Workforce database.

Refer to the eCyborg Interactive Workforce: Technical Implementation documentation for more information on the data import from The Solution Series to Interactive Workforce.

Note: When you click Perform Extract, the system imports the appropriate Solution Series option lists to Interactive Workforce. No message confirming the import displays.

Select organizations for loading

Using the Organization Selection tab page, you select the organizations to include when performing the extract and load process. This page displays the organizations set up in your company's Solution Series and works in conjunction with the Resulting Statuses Selection tab page to create the users IDs for Interactive Workforce.

Follow these steps to select organizations to include in the Interactive Workforce load.

1. Access the Organization Selection tab page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Organization Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Organization Selection

2. Select the appropriate check boxes in the extract column

Click the check box for at least the following organization:

999999 ACME MANUFACTURING

Note: If you make no selections on this page, no employee information can be extracted. In an initial environment this may be the only organization you select.

3. Click Save Changes

The system saves your changes.



Refer to *Interactive Workforce: The Administrators' Guide* for more information on the data import from The Solution Series to Interactive Workforce.

Select resulting statuses for loading

Using the Resulting Statuses Selection tab page to select the groups of employees who will have authority to use the online application. The employee statuses that display are those set up in your organization's application of The Solution Series.

Note: This page works in conjunction with the Organization Selection tab page to create the employee user IDs for Interactive Workforce.

Follow these steps to select statuses for the Interactive Workforce database load.

1. Access the Select Resulting Statuses for Loading page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Resulting Statuses Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Resulting Statuses Selection

2. Select the appropriate radio button for each group status

Note: The default settings will not extract any data. You must, as this time, make these selections in order for the data load to work properly.

This page displays employee statuses set up for your organization. You may have to scroll down the page to see all the available group status information. Three radio buttons appear for each group status.

- All employees in this status
- No employees in this status
- Only those with status selected below

Click one radio button for each group status.

3. Select the appropriate checkboxes in the group statuses

If you clicked 'Only those with status selected below', for the following groups:

- All Active
- Leave of Absence with Pay
- Leave of Absence without Pay
- Retired

You must check at least one checkbox for each of the groups listed above. Click the following options for each of the above groups.

- Salary Reg FT
- Hourly Reg FT

4. Click Save Changes

The system saves your changes.



Refer to eCyborg Interactive Workforce: Technical Implementation for more information on the data import from The Solution Series to Interactive Workforce.

Set up direct deposit HEDs

To set up direct deposit HEDs for organizations, follow these steps.

1. Access the Set Up Direct Deposit Organizations page

On the Administrator area of the Navigator, select Payroll. Then select Direct Deposit HED Setup. The system displays the page for the first step of the Direct Deposit HED Setup process. On this page you select the organizations for which you want to set up direct deposit HEDs. All organizations are listed on the page.

Administrator ► Payroll ► Direct Deposit HED Setup

2. Select an organization

The system displays all organizations whose information has been loaded into Interactive Workforce. Click the name of the organization for which you want to set up direct deposit HEDs. Select (at least) the following organization:

999999 ACME MANUFACTURING

3. Select the direct deposit categories for the organization

The page displays the Category 53 HEDs set up in Payroll Administration for the organization you selected. Check the appropriate account type for the HED. The chart that follows shows the account types you can select and the constraints for each.

	Primary Account used for Remaining Net Pay	Expense Reimbursement Account	Secondary Accounts
Allowable HEDs	999 or 998	999	998 if 999 is used as Primary Account and HEDs 501 to 997

4. Check the Remaining Net Pay Account

Click the Remaining Net Pay Account checkbox to set up the account as the account that receives the net pay remaining after all deductions and deposits to other accounts.

Note: If you do not check this checkbox, users will not be able to view their pay information online using Interactive Workforce.

5. Change the name of the HED

If you want to change the name of the HED to something more appropriate for your organization, delete the existing name and enter the new name. The name should be descriptive of your use of the HED. The new name displays only in Interactive Payroll and does not affect Payroll Administration. If you do not want to change the name of the HED, go to the next step.

6. Click the appropriate radio button to indicate whether your organization allows employees to receive paychecks

At the bottom of the page click Yes if your organization allows employees to receive a check. Click No if employees must have their pay deposited into an account at a financial institution.

7. Click Save Changes

Click Save Changes to save the parameters you set. Employees of the organization you selected will be able to view and maintain their deposit information based on the choices set on this page.

8. Log off Interactive Workforce

Now that you have completed the necessary functional administration tasks, you may log off Interactive Workforce.



Refer to Interactive Workforce: The Administrators' Guide for more information on the data import from The Solution Series to Interactive Workforce.

Modify payxtr and paymrg scripts with SuspendStapi (Windows only)

The Solution Series comes with jobs for running pay extracts and pay merges during a payroll run. These two jobs contain a modification for Interactive Workforce. To activate these modifications you must open the jobs and remove the remark statements from the modified lines.

If you have customized the pay extract and merge files, you can modify your existing scripts to add the suspend and resume STAPI modifications and the revised path name.

To modify the jpayxtr and jpaymrg files, complete the following:

1. Open the pay extract script

Job used: jpayxtr

You can edit the jpayxtr script in any standard text editor.

```
..\Runs\jpayxtr.bat
```

2. Remove the Remark statements from the modified lines

Because the STAPI must be suspended before the pay extract begins, the command lines that execute SuspendStapi have been placed at the beginning of the file.

```
rem ECHO *****
rem ECHO ** SUSPENDING /STAPI FOR ESS **
rem ECHO *****
rem REM This will temporarily suspend the /STAPI
rem pushd %CYBORG_HOME%\bin
rem call %CYBORG_HOME%\bin\suspendstapi.bat
rem popd
rem ECHO *****
rem ECHO ** /STAPI SUSPENDED **
rem ECHO *****

call mfsetup.bat
set COBSW=+S5
echo P PAYXTRJ09500 999999PAYXTR ALL > ..\work\payxtr.04
cd ..\data
ECHO *****
ECHO JPAYXTR IN PROGRESS
ECHO CHECKING FOR FILES
ECHO *****
dir p20in.mrg
dir ..\prog\cbsvb.exe
ECHO *****
copy p20in.mrg p20inmrg.sav
set FILE03=..\list\payxtr.03
set FILE04=..\work\payxtr.04
set FILE10=..\data\payxtr10
```

To activate the modifications, remove the 'rem' statements at the beginning of the lines.

3. Change the 'pushd' statement and program call

Make the following changes to the 'pushd' statement and program call in the script:

```
pushd c:\eCyborg\IW\stapi\bin
```

call SuspendStapi.bat

The script should look like the following example.

```
rem ECHO *****
rem ECHO ** SUSPENDING /STAPI FOR ESS **
rem ECHO *****
rem REM This will temporarily suspend the /STAPI
pushd c:\ecyborg\IW\stapi\bin
call suspendstapi.bat
popd
rem ECHO *****
rem ECHO ** /STAPI SUSPENDED **
rem ECHO *****

call mfsetup.bat
set COBSW=+S5
echo P PAYXTRJ09500 999999PAYXTR ALL > ..\work\payxtr.04
cd ..\data
ECHO *****
ECHO JPAYXTR IN PROGRESS
ECHO CHECKING FOR FILES
ECHO *****
dir p20in.mrg
dir ..\prog\cbsvb.exe
ECHO *****
copy p20in.mrg p20inmrg.sav
set FILE03=..\1st\payxtr.03
set FILE04=..\work\payxtr.04
set FILE10=..\data\payxtr10
```

4. **Save the pay extract script and close the file**
5. **Open the pay merge script**

Job used: jpaymrg

You can edit the jpaymrg script in any text editor.

```
..\Runs\jpayxtr.bat
```

6. **Remove the Remark statements from the modified lines**

Because the STAPI must not be resumed until the pay merge has finished, the command lines that execute ResumeStapi have been placed near the end of the pay merge script. To activate the modifications, remove the 'rem' statements at the beginning of the lines.

7. **Change the 'pushd' statement and program call**

```
pushd c:\eCyborg\IW\stapi\bin
```

```
call SuspendStapi.bat
```

8. **Save the pay merge script and close the file**

The modifications will now be activated for the next payroll run.

Load Interactive Workforce users

Note: For a three-server configuration copy the Interactive Workforce Users file to the database you created on the Database Application Server.

1. **Copy the Interactive Workforce Users file**

Refer to the configuration worksheet for the location of The Solution Series. From the \Data directory copy 'essusers.txt' to the following directory:

```
...\eCyborg\IW\ESSDatabase\CybIW
```

Note: In two-server configuration, the `essusers.txt` file must be copied from the the Solution Series Application Server to the Web Server.

The text file contains a listing of the Interactive Workforce users that will be bulk loaded into the system during the next step.

2. Execute the Load Users script

Job Used: loadusers

This issues all of the commands necessary to load user data from The Solution Series into the Interactive Workforce database. This script can be found in the following file path:

```
...\\eCyborg\IW\ESSDatabase\CybiW\loadusers.bat
```

You can ignore the following text in the log file.

```
Initializing Database Read...
020730 15:48:55.598 main: Maximum number of attempts to replace a bad connectio
n not set. Defaulting to 3
020730 15:48:55.608 main: selfservice database connection wait timeout not set.
Defaulting to 5000ms.
020730 15:48:56.810 main: Database pool created for: jdbc:odbc:CybiW. Connectio
ns: 2
```

Note: Populating the Interactive Workforce database will take some time, depending on the size of the company and the the processing speed of the computer. For example, a company of 2000 employees may take up to three minutes to load to the database.

Note: If you have changed the default install location while installing the software, you will need to look in that directory for the file.

3. Access Query Analyzer

We are now going to take a ‘short cut’ to get the password of a specific user in the sample data set using the SQL 2000 Query Analyzer.

To access SQL 2000 Query Analyzer enter the following commands:

Start ► Programs ► Microsoft SQL Server 2000 ► Query Analyzer

Important! Remember to log in to the Query Analyzer using the login for the correct database. Use the following login:
CybiWdba

Note: If you have Interactive Workforce Administrator access, you may also use the Interactive Workforce Administrator functionality to find the user password. Refer to *Interactive Workforce: The Administrators' Guide* for information on using the Interactive Workforce Administrator functionality.

4. Collect the Initial Password to Access Interactive Workforce

In order to access Interactive Workforce you need to collect the initial password for employees '4001' and '4002' from the Cyborg_User table. From the Query Analyzer window enter the following command:

```
select login_name, initial_password
from cyborg_user
where login_name in ('4001', '4002')
```

Then, click the Play button  or type CTRL-E. The initial password for employees '4001' and '4002' will be output to the bottom part of the window. Write these numbers down or highlight and copy them for use in the next step.

Phase 4: Update The Solution Series Data

To test Interactive Benefits and Interactive Manager, complete the tasks in this phase.

1. Update Benefits information
2. Create workflow routing for Vacation Regular
3. Set up boundaries for Time Away Balances
4. Set up Position Administration for Intractive Manager

Update Benefits Information

To display next year's benefits information in Interactive Benefits, you must make the following changes to The Solution Series.

1. **Access the Benefit Plan Rules form (TK-SCR)**

On The Solution Series system, access the Benefit Plan Rules form (TK-SCR) by making the following selections:

Benefits ► Benefit Plan Setup ► Flex Plans ► Plan Name and Basic Rules

2. **Clear fields and enter the Plan ID**

Clear all the fields on the form and enter Plan ID 100.

3. **Enter the effective date for Plan 100**

To display benefits information for the 'next plan year' in Interactive Workforce, enter the Effective Date of 01-01-2003.

4. **Enter the Plan Name**

Enter 10000 Flex Master for the Plan Name.

5. **Select a Plan Type**

Select Flex Benefit Master as the Plan Type.

The screenshot shows the 'Benefit Plan Rules' form with the following data entered:

- Plan ID: 100
- Effective Date: 01-01-2003
- Year End: 12-31
- Plan Name: 10000 Flex Master
- Plan Type: Flex Benefit Master
- Service Date: Original Hire Date
- Class: Mandatory
- Flex Master: (empty)
- Group Master: (empty)
- Accum Name: (empty)
- Ins Carrier: (empty)
- Default Enrollment: Option: (dropdown menu)
- Pre-tax: (radio button)
- Post-tax: (radio button)
- HEDs:
 - Basic Pre-tax: (input field)
 - Basic Post-tax: (input field)
 - Company: (input field)
 - Supplemental Pre-tax: (input field)
 - Supplemental Post-tax: (input field)

A 'Continue Plan Rules' button is located at the bottom right of the form.

6. Click Continue Plan Rules

When asked whether to Save Changes, click Yes. The system displays the next panel

7. Press Enter or Click Save

8. Access the Flex Benefits Master Plan Rules form (TKFSCR)

On The Solution Series system, access the Flex Benefits Master Plan Rules form (TKFSCR) by making the following selections:

Benefits ► Benefit Plan Setup ► Flex Plans ► Flex Benefits Master Plan Rules

9. Clear fields and enter the Plan ID and effective date

Clear all the fields on the form and enter Plan ID 100 and Effective Date is 01-01-2003.

10. Use Net Credits Meth

Click the radio button for Use Net Credits Meth.

11. Select Total Credits

Click the radio button for Before Enrollment.

Flex Benefits Master Plan Rules Control Number> 9999

Plan ID> 100

Effective Date> 01-01-2003 Plan Name: Flex Master W/Cr

Credits Information

Plan Has No Credits

Ded Credits By Plan HED:

Use Net Credits Meth Earnings HED: 060 Deduction HED: 624

Processing Defaults

Create Year-end Shut-off

Create Waived Option

Default Current Enroll Option

Show Per-Pay-Period Amounts

Total Credits

Before Enrollment None

During Enrollment

Deferred Plan HEDs

Plan 1: 510 Plan 2: Plan 3:
HED: 777 HED: HED:

12. Press Enter of Click Save

13. Access the Flex Master/Group Plan Components form (TP-SCR)

Benefits ► Benefit Plan Setup ► Flex Plans ► Flex Master/Group Plan Components

14. Clear fields and enter the Plan ID and effective date

Clear all the fields on the form and enter Plan ID 100 and Effective Date is 01-01-2003.

15. Enter Component Plans

Enter Component Plans 700, 701, 708, 712, 723, and 726.

Flex Master/Group Plan Components Control Number> 9999

Plan ID> 100

Effective Date> 01-01-2003

Plan Type: Flex Benefit Master

Component Plans

<input type="checkbox"/> 700 BC/BS Indemnity	<input type="checkbox"/> Metlife Health Plan	<input type="checkbox"/> EyeMed Vision
<input type="checkbox"/> 701 Cigna PPO	<input type="checkbox"/> Ameritas Dental-PPO	<input type="checkbox"/> Eye Care Intl
<input type="checkbox"/> 708 Ameritas Dental-Ind	<input type="checkbox"/> Ameritas Dental-Ind	<input type="checkbox"/> BC/BS Vision
<input type="checkbox"/> 712 EyeMed Vision	<input type="checkbox"/> Delta USA-Dental	<input type="checkbox"/> BeneScript
<input type="checkbox"/> 723 Hartford Basic Life	<input type="checkbox"/> Cigna Dental	<input type="checkbox"/> Rx: America PDP
<input type="checkbox"/> 726 Medical FSA	<input type="checkbox"/> VSP-Vision Plan	

More Plans

16. Press Enter or Click Save

Create workflow routing for Vacation Regular

In Interactive Manager an employee's time away from work requests can be routed to the employee's manager and/or the HR department. This routing must be set up for each request type. In this task you set up the routing for the request type Vacation Regular so you can verify that the function works. A time away request for Vacation Regular will be routed to the employees' manager.

Note: To limit the types of time-away requests an employee can make, edit the TA05, Request Type, option list to include only the request types available in your organization.

1. Access the Workflow Routing Control Table form (T93SCR)

On The Solution Series system, access the Workflow Routing Control Table form (T93SCR) by making the following selections:

HR ► Employee Resourcing ► Manage Employee Attendance ► Time Away Workflow Setup

2. Select a Request Type

Select Vacation Regular from the drop down menu for Request Type.

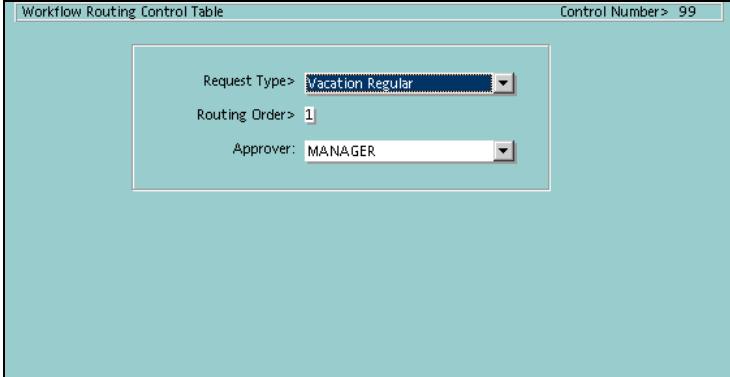
3. Enter a Routing Order

In the Routing Order text box, enter 1. This is the sequence for the routing of time away requests for Vacation Regular.

4. Select an Approver

Select Manager from the drop down menu for Approver. When an employee requests time away for regular vacation, Interactive Manager routes the request to the employee's manager.

The form should look similar to the following:



Workflow Routing Control Table Control Number > 99

Request Type > Vacation Regular

Routing Order > 1

Approver: MANAGER

5. **Press Enter or Click Save**

Set up boundaries for Time Away Balances

Interactive Manager updates employees available time away from work balances based on the time away requests approved and time away entitlements earned during the year. To determine new time away entitlements earned and apply them to the employee balances, Interactive Manager sets a Time Away Boundary to indicate to the system the start of the year for calculating balances. Follow these steps to set boundaries.

1. **Access the Time Away Boundary Control Table form (T93JCR)**

On The Solution Series system, access the Time Away Boundary Control Table form (T93JCR).

HR ► Employee Resourcing ► Manage Employee Attendance ► Time Away Boundary Control Table

2. **Enter the date from which to calculate time away balances**

Enter the Month and Date when you want the system to start calculating balances. If your organization uses a calendar year for calculating time away from work, for example, vacation entitlement, enter 01 (January) for the month and 01 for the day. If your organization uses a fiscal year that differs from the calendar year to calculate time away entitlement, enter that month and day. To set up data to test Interactive Manager, use 01 for the month and 01 for the day.

Your completed form should look similar to the following:

3. **Press Enter or Click Save**

Set up Position Administration for Interactive Manager

To use Interactive Manager, users must use Position Administration. Follow the steps below to set up information for Interactive Manager.

1. **Access the System Options form (TG-SCR)**

On The Solution Series system, access the System Options form (TG-SCR) by making the following selections:

HR ► HR Setup ► Setup HR Rules ► System Options

2. **Turn Position Administration on**

To use Interactive Manager, users must be using Position Administration. In the Position Admin drop down menu select In Use.

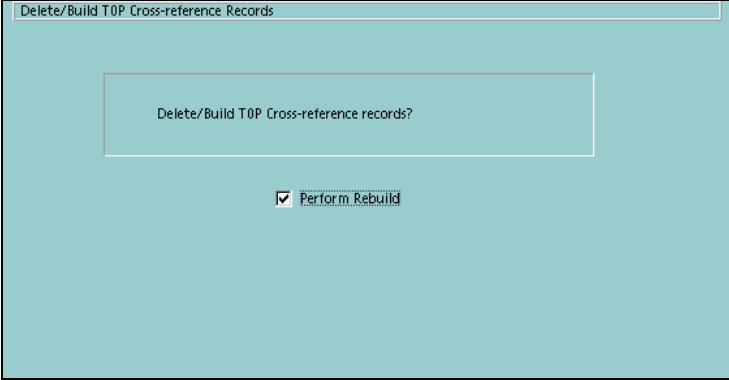
3. **Press Enter or Click Save**

4. Access the Delete/Build T0P Cross-Reference Records form (ME5SCR)

Interactive Manager uses organization information in Position Administration to build records that relate managers to their staff members (direct reports). You must build these records any time an organization change is made that affects employees.

5. Select Perform Rebuild

Click the Perform Rebuild checkbox. When you save the information, the system rebuilds the records used by Interactive Manager.



The screenshot shows a window titled "Delete/Build T0P Cross-reference Records". Inside the window, there is a text box with the text "Delete/Build T0P Cross-reference records?". Below the text box, there is a checkbox labeled "Perform Rebuild" which is checked.

6. Press Enter or Click Save

Phase 5: Test the installation

Once the installation is complete, you should test Interactive Workforce to ensure that it is working properly by logging in as an employee user to check functionality. Perform the tasks in the following order:

1. Verify Interactive Employee functionality
2. Verify Interactive Benefits functionality (Benefits installations only)
3. Verify Interactive Manager

Verify Interactive Employee functions

In this task, you log on as a test user and complete the New User steps in Interactive Workforce. Completing this task ensures that the installation is fully functional.

1. Launch Interactive Workforce

Use your browser to access Interactive Workforce; enter the following URL:

`http://localhost/CyborgESS`

When you access the system, enter the employee ID '4001' in the login box. Next, enter the initial password for employee '4001' which you collected when you loaded Interactive Workforce users. When you access the system, you will be prompted to change passwords. Change the password to be the same as the user identification, in this case, '4001'.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's `HOSTNAME` instead of 'localhost'.

The Navigator displays New User when you log onto the system and the New User page displays.

New User Checklist

Welcome CATHERINE L. THOMPSON-WHITEFIELD

As a new user of Interactive Workforce it is important that you verify and complete the information below. After you complete these items, you will have access to the full functionality of Interactive Workforce

Once you have visited all items on this page, a Finished link will appear. You have to click this Finished link before you can access the full functionality.

To exit the system during the process, click Log Off. You can log back on and continue at any time. The system keeps track of your progress.

Done Step

1 Personal Details

2. Access the New User Personal Details

Click Personal Details to access the personal information for user 4001. To demonstrate that the system is fully functional and to be able to test Interactive Manager, click each of

the personal details to display the page. Then click Back to return to the checklist. A check mark appears in the done column for each selection.

Personal Details Checklist

To make sure the personal information on file for you is complete and accurate, click on each of the items in the checklist below. Review and update the information as needed. If you review a checklist item and determine that it does not apply to you, click Back to return to this page. Interactive Employee adds a check in the Done column to indicate the items you reviewed.

Done	
<input type="checkbox"/>	Name and Address
<input type="checkbox"/>	Phone, Fax and Email
<input type="checkbox"/>	Marital Status
<input type="checkbox"/>	Family Members
<input type="checkbox"/>	Emergency Contacts
<input type="checkbox"/>	Emergency Doctor
<input type="checkbox"/>	Direct Deposit
<input type="checkbox"/>	Reimbursement Account
<input type="checkbox"/>	Other Personal Details
<input type="checkbox"/>	Tax Forms

 [Back](#)

3. Click Finished on the Personal Details Checklist page

When a check mark appears for all Personal Details pages, click Finished. The system displays the original New User page.

4. Click Finished on the New User page

Click Finished on the initial page. The Navigator now shows the additional functions available to employee 4001.

5. Access the Pay Information options

From the Employee area of the Navigator, select Pay Information and then Pay Advice to verify access to the Pay Information database.

Congratulations! The system is working! Interactive Workforce may be accessed using the following URL:

`http://WebAppServerHostname/CyborgIW`

Verify Benefits functionality (Benefits installations only)

This task updates the benefits information for the next year and verifies that the Benefits pages are working properly. Pages that display should look similar to the graphics that follow.

1. Log in to Interactive Workforce as the Initial Administrator

Log in as the Initial Administrator using the password you entered when you launched Interactive Workforce in Phase 4 of the installation.

Administrator ► Benefits ► Benefit Plan Management ► Select Flex Master Plan

2. Verify the Next Year Flex Master Plan

On the Select Flex Master Plan page verify that Flex Master 100 is selected for the next plan year. If Flex Master 100 is not selected, click the radio button to select the plan.

It is of the utmost importance that Interactive Benefits use the correct Flex Master Plan when it displays benefit plan information to your employees. Select the correct Flex Master Plan for each organization. "Current year" should reflect the Flex Master Plan you are currently using for mid-year enrollments. "Next year" should reflect the Flex Master Plan you are using for this year's open enrollment period which will be the next benefit plan year. The dates displayed in the first column include all Flex Master Plans with effective dates within the past year including today's date. The dates displayed in the second column are all Flex Master Plans with an effective date that is greater than today's date.

Org ID	Organization	Select Your Current Year Flex Master Plan		Select Your Next Year Flex Master Plan	
		Number	Effective Date	Number	Effective Date
999999	ACME MANUFACTURING	<input checked="" type="radio"/> 100	January 1, 2002	<input checked="" type="radio"/> 100	January 1, 2003
		<input type="radio"/> 800	January 1, 2002		

[Save Changes](#)

3. Verify 'Maintain Flex Master Plan Information' page

On the Navigator, click Flex Master Plan Maintenance. The page for the first step of the Maintain Flex Master Plan Information displays.

Interactive Benefits requires additional information that is not in The Solution Series before your employees can start viewing and enrolling in benefits. For each Flex Master Plan you need to specify dates for open enrollment and initial enrollment. You also need to specify how excess flex credits will be handled. Select a Flex Master Plan below to view or update this information.

Current Year Plans

Done	Flex Master Plan	Participating Organizations
<input checked="" type="checkbox"/>	100	995555, 999999

Next Year Plans

Done	Flex Master Plan	Participating Organizations
<input checked="" type="checkbox"/>	100	995555, 999999

4. Select Next Year's Flex Master Plan

The system displays the Maintain Flex Master Plan Step 2 page. Enter a Beginning Date of January 1, 2002 and an Ending Date of January 1, 2003.

5. Enter the number of days for the Initial Enrollment Window

Enter 365 as the number of days for initial enrollment.

6. Display a message for Excess Flex Credits

Click the radio button to display a message for excess flex credits. Enter a short message in the message box, for example, Unused flex credits will be added to your wages.

Interactive Benefits requires some additional information that is not stored in The Solution Series that relates to eligible enrollment periods. If this Flex Master has flex credits, you may display a message to employees explaining how excess flex credits are handled.

Flex Master Plan ID: 100 Plan Year Effective Date: January 1, 2003

Open Enrollment Period

Beginning Date : *

Ending Date : *

Initial Enrollment Window

Specify the number of days from hire date that the employee is eligible to enroll in plans specific to this flex master plan

Number of Days : *

Excess Flex Credit Designation

Not applicable for this flex master.

Display following message to employees:

[← Back](#) [✓ Save Changes](#)

7. Save Changes

8. Verify 'Maintain Benefit Plan Information' page

On the Navigator, click Benefit Plan Maintenance. The page for the first step of the Benefit Plan Maintenance displays:

Interactive Benefits requires additional information that is not in The Solution Series before your employees can start viewing and enrolling in benefits. For each Flex Master Plan you need to specify dates for open enrollment and initial enrollment. You also need to specify how excess flex credits will be handled. Select a Flex Master Plan below to view or update this information.

Current Year Plans

Done Flex Master Plan Participating Organizations

100 999999

Next Year Plans

Done Flex Master Plan Participating Organizations

100 999999

9. Select Next Year Plan

The system displays the 'Maintain Benefit Plan Information, Step 2 of 3' page. Select Plan 100 in the Next Year Plans.

10. Update the plan information

Select each of the plans (700, 701, 708, 712, 723, and 726) on the 'Maintain Benefit Plan Information, Step 3 of 3' page and use the following chart to update the information for each plan.

Plan	Subgroup	Company Contribution Checked?	Beneficiaries Checked?
700: BC/BS Indemnity	Medical Insurance	Yes	No
701: Cigna PPO	Medical Insurance	Yes	No
708: Ameritas Dental-Ind	Dental Insurance	Yes	No
723: Hartford Basic Life	Basic Life Insurance	Yes	Yes
726: Medical FSA	Medical Spending Account	No	No

Plan 726: Medical FSA also requires a maximum amount representing the maximum contribution or coverage amount for the plan and, if an FSA account, the latest date on which claims can be submitted. Enter 10000 for the Maximum Amount and select January 1, 2004 for the FSA date. The bottom portion of the following page displays only for plans that require a maximum contribution or coverage amount.

Interactive Benefits allows you to control the information that is displayed to your employees on a plan by plan basis. Update or review the information for the current plan.

Plan ID : 726 Flex Master Plan : 100 Effective Date : January 1, 2003

Plan Name : *

Subgroup : *

Place a check in the check box if the answer to the following questions is yes :

Do you wish to display a Company Contribution? Yes

Does this Plan have associated beneficiaries? Yes

ONLY FOR PLANS THAT REQUIRE A VARIABLE ENTRY

This box is being displayed because this plan requires the employee to enter a variable amount. Enter the maximum contribution or coverage amount allowed for this plan below.

Flexible Spending Accounts Only

If the plan you selected is eligible against a Flexible Spending Account, enter the FSA Submissions deadline below. Otherwise leave the entry box blank.

Maximum Amount : *

Deadline :

[← Back](#) [Save Changes](#)

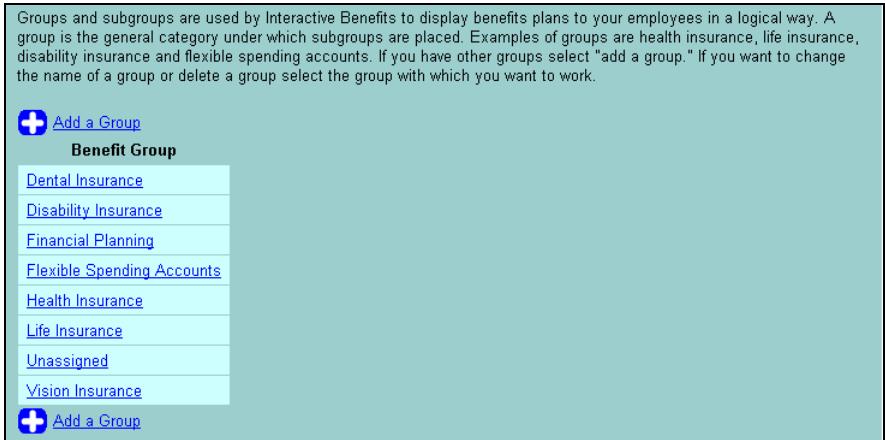
11. Verify 'Maintain Dependent Coverage Options' page

On the Navigator, click Dependents and Beneficiaries, and select the Dependent Coverage tab. Verify that the options below are selected:

- Employee & Spouse
- Employee & One Child
- Family/EE & Some Dep
- Family/EE & All Deps
- Employee & Sponsored
- Family/EE & Sponsored
- Emplýe&spse/one 65+
- Emplýe&spse/both 65+
- Emplýe Only/65+
- LTC-Emp & Spouse
- LTC-Emp & Family

12. Verify the 'Benefit Plan Groups' page

On the Navigator, click Groups and Subgroups and then Benefit Plan Groups. Verify that the page for the first step of the Manage Benefit Plan Groups displays.



13. Verify 'Benefit Plan Subgroups' page

On the Navigator select 'Benefit Plan Subgroups.' The page for step 1 of the Manage Benefit Plan Subgroups process displays.

Interactive Benefits makes use of benefit groups and subgroups to display benefits to your employees in a logical way. Subgroups also perform an important function in Interactive Benefits as only one plan can be selected by an employee from each subgroup. Use the drop down lists to assign each subgroup to its appropriate group. You can add a new subgroup by selecting "Add a Subgroup." You can modify a subgroup's name or delete it by selecting the name of the subgroup.

 [Add a Subgroup](#)

Benefit Subgroup	Group
Basic Life Insurance	Life Insurance
Dental Insurance	Dental Insurance
Dependent Care Spending Account	Flexible Spending Accounts
Dependent Life Insurance	Life Insurance
Financial Planning	Financial Planning
Legal Spending Account	Flexible Spending Accounts
Long Term Disability	Disability Insurance
Medical Insurance	Health Insurance
Medical Spending Account	Flexible Spending Accounts
Prescription Drug	Health Insurance
Short Term Disability	Disability Insurance
Supplemental Life Insurance	Life Insurance
Travel Spending Account	Flexible Spending Accounts
Vision Insurance	Vision Insurance

14. Verify the Display Order of benefit plan information

On the Navigator select 'Display Order.' The numbers for the Group Display Order shows the sequence in which groups of benefits display. The numbers in the Subgroup Display Order boxes show the sequence in which the subgroups display under the groups.

Group Display Order		Subgroup Display Order	
<input type="text" value="1"/>	Dental Insurance	<input type="text" value="1"/>	Dental Insurance
<input type="text" value="5"/>	Disability Insurance	<input type="text" value="1"/>	Long Term Disability
		<input type="text" value="2"/>	Short Term Disability
<input type="text" value="7"/>	Financial Planning	<input type="text" value="1"/>	Financial Planning
<input type="text" value="6"/>	Flexible Spending Accounts	<input type="text" value="2"/>	Dependent Care Spending Account
		<input type="text" value="3"/>	Legal Spending Account
		<input type="text" value="1"/>	Medical Spending Account
		<input type="text" value="4"/>	Travel Spending Account
<input type="text" value="2"/>	Health Insurance	<input type="text" value="2"/>	Medical Insurance
		<input type="text" value="1"/>	Prescription Drug
<input type="text" value="4"/>	Life Insurance	<input type="text" value="1"/>	Basic Life Insurance
		<input type="text" value="3"/>	Dependent Life Insurance
		<input type="text" value="2"/>	Supplemental Life Insurance
<input type="text" value="9999"/>	Unassigned		
<input type="text" value="3"/>	Vision Insurance	<input type="text" value="1"/>	Vision Insurance

Benefits Functionality has now been updated and verified.

Verify Interactive Manager (if installed)

Interactive Manager provides employees with the ability to request time away from work online. Interactive Manager then routes the request to the manager and/or the HR department based on the routing set up for the request type on the Workflow Routing Control Table form (T93SCR). Interactive Manager also allows managers to view personal and work information for their staff members (direct reports). To test this functionality in Interactive Manager, follow these steps.

1. Log in to Interactive Workforce as employee 4002

Log in as employee 4002 using the password you collected when you loaded Interactive Workforce users in Phase 4. When requested, change the password to 4002.

2. Access the Time Away Request page

From the Employee area of the Navigator select Time Away.

Employee ► Time Away

3. Complete the time away request

Complete the time away request by entering the following information:

Start Date	Enter the date for any weekday in the near future, for example, 09-09-2002
Request Type	From the drop down menu select Vacation Regular
Number of Days	2
Include Weekends	Leave this checkbox empty.
Hours per Day	8

The page should look similar to the page that follows.

Complete the fields below and click Submit to create a new request. Check the box labeled Include Weekends only if your normal work schedule includes weekends AND you want to take weekends off.

You may also select a previous request from the list below to view or withdraw the request. The Status indicates where your time away request is in the approval process.

Start Date: * 07-22-02 

Request Type: * Vacation Regular 

Number of Days: * 2

Include Weekends:

Hours Per Day: * 8

4. Submit the request

Click Submit to submit the request. The new request appears on the list of time away requests at the bottom of the page with a status of 'Pending Mgr Approval.'

5. Log off the system

6. Log on to the system as employee 4001

Log in as employee 4001 using the password you reset when you verified Interactive Employee.

- 7. Access the Inbox**

From the Manager area of the Navigator click Inbox. Be sure the time away request for employee 4002 appears in the inbox.
- 8. Access the Staff Members page**

On the Manager area of the Navigator click Staff Members. This manager, employee 4001, should have one staff member, employee 4002.
- 9. Click Employee 4002 to display additional information**

Click the employee's name to display the tab page with Contact, Work, and Personal information.
- 10. Verify information for employee 4001**

Click each tab (Contact, Work, and Personal Information) to verify that information for employee 4001 displays.
- 11. Log off the system**

Congratulations - Interactive Manager is installed and functioning correctly.

PART 3

Part 3 - Appendices

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APPENDIX A

Installation Checklists

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Two-Server Installation Checklist

Pre-Installation activities

The following activities are to be completed by the installer:

- Verify that the following people are available during the installation:
 - Database Administrator
 - System Administrator
 - Payroll Administrator
- Verify that the minimum system requirements are met.
- Verify that the minimum software requirements are met.

Installation

The following activities are to be completed by the client prior to the installer's arrival:

- Preparation Phase: Preparation and prerequisite software
 - Pre installation Requirements
 - Verify the Server Prerequisites
 - Verify the Client Prerequisites
 - Configuration Worksheet
 - Install the prerequisite software

The following activities are to be completed by the installer:

- Phase 1: Install the Web Server
 - Install the Java Development Kit (JDK)
 - Install ServletExec and the patch if applicable
 - Install the Interactive Workforce Web Server software
- Phase 2: Install the The Solution Series Application Server
 - Install the Interactive Workforce components of The Solution Series Application Server software
 - Reboot the system. Orbix will register STAPI Server.
 - Update The Solution Series for Interactive Workforce test data
 - Execute Jessdemo
 - Update The Solution Series Report Generators for Interactive Workforce
 - Execute Jpayxtr
 - Execute Jxessrptgen
 - Execute Jloadessgen
 - Execute Jmnrtrun
 - Execute Jpaymr
- Phase 3: Prepare the Pay Information database
 - Create the Pay Information database

- Createpaydb
- Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series
- Configure the Organization Options form (AF-SCR) in The Solution Series
- Process a payroll run
 - Modify AE-SCR for autopay
 - Execute Jpayxtr
 - Execute Jpayrun
 - Execute Jmnrtrn
 - Execute Jpaymrg
- Load the Pay Information database
 - Copy files to Cybpayinfo directory: essedr.txt, esseer.txt, esstxr.txt, esspsr.txt
 - Execute ImpPayInfo
- Run the User extract program
 - Execute JEssxpt
- Configure the Orbix Daemon as a service

- Phase 4: Prepare the Interactive Workforce database
 - Create the Interactive Workforce database
 - Add ODBC Data Sources for the Interactive Workforce and Pay Information databases
 - Configure ServletExec as a Service
 - Launch Interactive Workforce
 - Access the Interactive Workforce Administrator Utility
 - Import Option Lists from The Solution Series
 - Select organizations for Interactive Workforce
 - Select 999999
 - Select resulting statuses for Interactive Workforce
 - Set up direct deposit HEDs
 - Load Interactive Workforce Users
 - Copy file to Interactive Workforce database directory
 - Execute Load Users

- Phase 5: Update The Solution Series data
 - Update Benefits information
 - Create workflow routing for Vacation Regular
 - Set up boundaries for Time Away Balances
 - Set up Position Administration for Interactive Manager

- Phase 6: Test the installation
 - Verify Interactive Employee functions
 - Verify Interactive Benefits (if installed)
 - Verify Interactive Manager (if installed)

Single-Server Installation Checklist

Installation

The following activities are to be completed by the client prior to the installer's arrival:

- ❑ Preparation Phase: Preparation and prerequisite software
 - Pre installation Requirements
 - Verify the Server Prerequisites
 - Verify the Client Prerequisites
 - Configuration Worksheet
 - Install the prerequisite software

The following activities are to be completed by the installer:

- ❑ Phase 1: Install the Single-Server Configuration
 - Install the Java Development Kit (JDK)
 - Install ServletExec and the patch if applicable
 - Install the Single-Server Configuration software
 - Reboot the system. Orbix will register STAPI Server.
 - Update The Solution Series System for Interactive Workforce test data
 - Execute Jessdemo.bat
 - Update The Solution Series Report Generators for Interactive Workforce
 - Execute Jpayxtr
 - Execute Jxessrptgen
 - Execute Jloadessgen
 - Execute Jmnrtrun
 - Execute Jpaymrg
- ❑ Phase 2: Create and Populate the Pay Information database
 - Create the Pay Information database
 - Createpaydb
 - Set up the Interactive Workforce Payrun (7L) and Payslip (7M) generators in The Solution Series
 - Configure the Organization Options form (AF-SCR) in The Solution Series
 - Process a payroll run
 - Modify AE-SCR for autopay
 - Execute Jpayxtr
 - Execute Jpayrun
 - Execute Jmnrtrun
 - Execute Jpaymrg
 - Load the Pay Information database
 - Copy files to Cybpayinfo directory: essedr.txt, esseer.txt, esstxr.txt, esspsr.txt
 - Execute ImpPayInfo
 - Run the User extract program
 - Execute Jessxpt

- Phase 3: Create and Populate the Interactive Workforce database
 - Configure the Orbix Daemon as a service
 - Create the Interactive Workforce database
 - Execute Createessdb
 - Add ODBC Data Sources for the Interactive Workforce and Pay Information databases
 - Configure ServletExec as a Service
 - Launch Interactive Workforce
 - Access the Interactive Workforce Administrator Utility
 - Import Option Lists from The Solution Series
 - Select organizations for Interactive Workforce
 - Select 999999
 - Select resulting statuses for Interactive Workforce
 - Set up direct deposit HEDs
 - Load Interactive Workforce Users
 - Copy file to Interactive Workforce database directory
 - Execute Load Users

- Phase 4: Update The Solution Series data
 - Update Benefits information
 - Create workflow routing for Vacation Regular
 - Set up boundaries for Time Away Balances
 - Set up Position Administration for Interactive Manager

- Phase 5: Test the installation
 - Verify Interactive Employee functions
 - Verify Interactive Benefits (if installed)
 - Verify Interactive Manager (if installed)

APPENDIX B

Multiple Environments on the Same Servers

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Multiple Environments on the Same Servers

This appendix addresses important topics related to configuring Interactive Workforce for multiple environments of The Solution Series with all environments installed on the same server(s).

Interactive Workforce is an extension of The Solution Series, and it also supports multiple environments. Cyborg recommends a two-server configuration for Interactive Workforce. In the two-server configuration, multiple Interactive Workforce environments run on the web server and communicate with one or more of The Solution Series environments on the Solution Series Application Server.

At the completion of the installation, the following environments may be established:

- Default
- Test
- Production

The Interactive Workforce auto-install program creates the Default environment. The Default environment provides verification of a full Interactive Workforce system. It is strongly recommended that the Default environment be maintained to provide a base on which to install and verify later software releases.

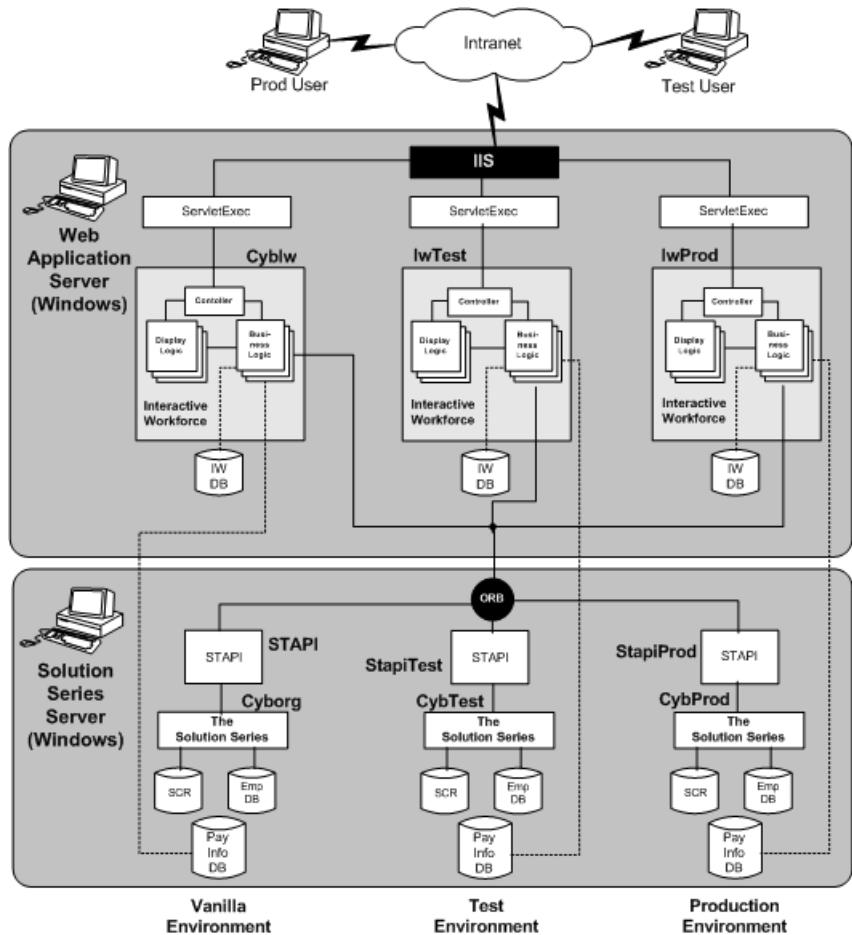
The Default environment also provides a source from which the Test and Production environments are created. The Test and Production environments are created manually by following the directions in this appendix.

Interactive Workforce utilizes a software package, ServletExec from Unify, which requires separate licensing. Each Interactive Workforce environment requires a separate instance of ServletExec to run. For each Interactive Workforce environment that is intended to be used widely with reasonable performance, a separate ServletExec license is required. Cyborg provides two ServletExec licenses, one for the Test environment and one for the Production environment. The Default environment is usable, but with a limit of 5 concurrent users. Contact your Cyborg representative if you need additional ServletExec licenses.

Multiple environments on the same servers

With multiple environments installed on the same two-server configuration, they all can share the same IIS and Orbix. Within this setup, each one requires some environment-specific file and directory names. Each environment would be accessed through a different web site on the Web Server.

This appendix shows how to set up multiple environments in this manner.



Internet Information Server (IIS)

The IIS is the web server software for the Windows 2000 Server. It handles requests from browsers Internet Explorer and Netscape Navigator.

A single instance of the IIS supports any number of Interactive Workforce environments. Each environment requires a separate web site that is configured in IIS. Each web site must be configured with a unique port and/or hostname by which it is accessed, as well as a unique home directory which stores the Display Logic.

ServletExec

The ServletExec software plugs into IIS. It performs preprocessing for all Interactive Workforce requests, then forwards them on to Interactive Workforce. A separate instance of ServletExec is required to support each Interactive Workforce environment. This is done to ensure isolation between the environments—for example, if you want to reconfigure the

ServletExec for the test environment and need to restart, then it will not affect the production environment. Each instance of ServletExec is installed into its own directory.

Interactive Workforce

Interactive Workforce consists of many components. The components can be grouped into two types: Display Logic and Business Logic. For each environment, these two groups must be installed in two different areas on the Web Server. The Display Logic directory is the home directory of the web site and stores all of the Interactive Workforce Display Logic files. The Business Logic directory is the install directory of the ServletExec instance and stores all of the Interactive Workforce Business Logic files.

Interactive Workforce and Pay Information databases

The Interactive Workforce database primarily contains Interactive Workforce administration data. The Pay Information database stores pay history information for Interactive Workforce users. Each Interactive Workforce environment requires unique Interactive Workforce and Pay Information databases. Each environment-specific database is stored in its own directory and is maintained by a set of scripts, configuration files, and log files stored in the directory.

The STAPI and CORBA

The STAPI provides access to The Solution Series. Each Solution Series environment that underlies an Interactive Workforce environment must be a separate instance of the STAPI. Each instance of the STAPI is configured to connect to a Solution Series environment.

Interactive Workforce in turn is configured to communicate with an instance of STAPI

All STAPI instances are supported by a single directory structure, whereas most components require a separate directory structure for each environment.

The Solution Series Environment

The Solution Series provides the backend for Interactive Workforce. It is simplest to maintain a one-to-one relationship between Interactive Workforce and corresponding Solution Series backends. However, it is possible to configure multiple Interactive Workforce environments against a single Solution Series backend. In this case Cyborg strongly recommends that there is no overlap in the set of employees that use each Interactive Workforce environment.

In order for a Solution Series environment to support Interactive Workforce, some updates must be applied to the Solution Series environment. These updates are applied by running the Interactive Workforce install software as described in this document.

Multiple Environments directory structure

The process of creating multiple environments on the same servers is primarily one of duplication of directories and configuration of the files in those directories. In the process, some directory and file names must be changed to become environment-specific.

The following table details the directory structure of the Default, Test, and Production environments, and how any subsequent new environments need to be modeled. It shows which directories must have environment-specific names and the files they contain. It also shows which files must have environment-specific names.

Web Application Server Installation with Three Interactive Workforce Environments

Default Environment	Test Environment	New Environment
Inetpub/wwwroot/ CyborgIW/ Info/ OpenSSL/ Resources/	Inetpub/eCyborg/CybiWTest/ CyborgIW/ Info/ Resources/	Inetpub/eCyborg/CybiWProd/ CyborgIW/ Info/ Resources/
eCyborg/IW/ESSDatabase/CybiW/ SQLData/ createdb.sql.cmd createessdb.bat essdb.cfg EssDB.sql LoadUsers.fmt LoadUsers.bat LoadUsers.sql PasswordGen.cfg PassswordGen.properties SetIWInitialValues.sql	eCyborg/IWS/ESSDatabase/CybIWT est/ SQLData/ createdb.sql.cmd createessdb.bat essdb.cfg EssDB.sql LoadUsers.fmt LoadUsers.bat LoadUsers.sql LoadUsers.sql PasswordGen.cfg PassswordGen.properties SetIWInitialValues.sql	eCyborg/IW/ESSDatabase/CybIW Prod/ SQLData/ createdb.sql.cmd createessdb.bat essdb.cfg EssDB.sql LoadUsers.fmt LoadUsers.bat LoadUsers.sql PasswordGen.cfg PassswordGen.properties SetIWInitialValues.sql

Default Environment	Test Environment	New Environment
eCyborg/IW/ServletExec/se-CybIW/ Maps/ ClientErrors.properties ess.properties essfdf.properties essmdf.properties locale.properties OptionListExtract.properties OrbixWeb.properties ServerErrors.properties startServletExec.bat stopServletExec.bat	eCyborg/IW/ServletExec/se- CybIWTest/ Maps/ ClientErrors.properties ess.properties essfdf.properties essmdf.properties locale.properties OptionListExtract.properties OrbixWeb.properties ServerErrors.properties startServletExec.bat stopServletExec.bat	eCyborg/IW/ServletExec/se- CybIWProd/ Maps/ ClientErrors.properties ess.properties essfdf.properties essmdf.properties locale.properties OptionListExtract.properties OrbixWeb.properties ServerErrors.properties startServletExec.bat stopServletExec.bat
The Solution Series Application Server Installation with Three Environments		
eCyborg/IW/PayInfoDatabase/CybPa y/ SQLData/ createdbssl.cmd createpaydb.bat imppayinfo.bat PayDB.sql payinfodb.cfg CybPayInfoTaxes.fmt CybPayInfoEarningsDeductions.fmt CybPayInfoEmployee.fmt CybPayInfoBasic.fmt	eCyborg/IW/PayInfoDatabase/CybPa yTest/ SQLData/ createdbssl.cmd createpaydb.bat imppayinfo.bat PayDB.sql payinfodb.cfg CybPayInfoTaxes.fmt CybPayInfoEarningsDeductions.fmt CybPayInfoEmployee.fmt CybPayInfoBasic.fmt	eCyborg/IW/PayInfoDatabase/Cyb PayProd/ SQLData/ createdbssl.cmd createpaydb.bat imppayinfo.bat PayDB.sql payinfodb.cfg CybPayInfoTaxes.fmt CybPayInfoEarningsDeductions.fm t CybPayInfoEmployee.fmt CybPayInfoBasic.fmt
eCyborg/IW/Stapi/Bin/ Cbsvo.bat Cybio.bat ResumeStapi.bat StapiServer.bat SuspendStapi.bat SuspendStapi.properties	eCyborg/IW/Stapi/Bin/ CbsvoTest.bat CybioTest.bat ResumeStapiTest.bat StapiServerTest.bat SuspendStapiTest.bat SuspendStapiTest.properties	eCyborg/IW/Stapi/Bin/ CbsvoProd.bat CybioProd.bat ResumeStapiProd.bat StapiServerProd.bat SuspendStapiProd.bat SuspendStapiProd.properties
eCyborg/IW/Stapi/Config/ Stapi.cfg	eCyborg/IW/Stapi/Config/ StapiTest.cfg	eCyborg/IW/Stapi/Config/ StapiProd.cfg

Process flow

Following is a flowchart of the tasks required in setting up another environment in a Same Server setup.

Phase 1: Preparation

These tasks, performed in advance, help you determine the configurations, directory names, and file names. They also give you a reference tool to use while setting up the environment and for future maintenance of the system.

Perform the tasks in the following order:

1. Plan for the new environment
2. Complete the environment worksheet

Plan for the new environment

1. Ensure there is enough disk space



Refer to Hardware Requirements in the beginning of this Guide.

Note: If you are creating an environment other than the full production system, you may wish to lower the amount of disk space required by the database. You may do so by lowering the DBSIZE parameter in the database configuration file. Refer to Technical Administration of Interactive Workforce for more information on the database configuration files.

2. Decide on a new, unique name for the new Interactive Workforce environment

This name is used to retain consistency throughout the directory structure while naming directories and renaming files. When you have multiple environments set up, it is important that the files and directories for each environment are named appropriately to help you distinguish which files and directories belong with each corresponding environment as you configure and maintain the system. The following naming convention is used in examples in this guide:

CybESSTest

3. Choose an Interactive Workforce source environment

An existing Interactive Workforce environment provides a source from which to create the new Interactive Workforce environment. Locate all of the directories that support the source environment.



Refer to the Multiple Environments directory structure for a detailed listing of directories and files.

4. Determine The Solution Series environment that the new Interactive Workforce environment will access

The following information about the The Solution Series environment is necessary:

- The hostname of the server on which The Solution Series resides
- The path of The Solution Series environment that will be accessed by the new Interactive Workforce environment.

Complete the environment worksheet

The following worksheet helps you keep track of the environment-dependent configurations, to serve as a reference as you configure and maintain an environment. You should fill this out as you review this appendix prior to implementing multiple environments.

Environment Configuration
Web Application Server

Environment Parameter	Environment Setting
Interactive Workforce Environment Name	Default: CybIW Test: CybIWTest (suggested)
Web Application Server hostname The name of the machine where IIS is installed.	Mars (example)
Display Logic Directory The home directory of the IIS configured web site for the environment and the location of all Interactive Workspace display logic files. <i>Note: This directory is created by ServletExec; you do not need to manually create the directory.</i>	Default: Inetpub\wwwroot Test: Inetpub\ecyborg\CybIWTest (suggested)
Business Logic Directory ServletExec install directory and the location of Interactive Workforce business logic files	Default: eCyborg\IW\ServletExec\se-CybESS Test: eCyborg\IW\ServletExec\se-CybIWTest (suggested)
IIS Port Unique TCP Port for the IIS configured web site.	Default: 80 (default) Test: 8080 (example)
SSL Port Unique SSL Port for the IIS configured web site.	Default: 443 (default) Test: 8480 (example)
URL Universal Resource Locator for Interactive Workforce	Default: http://hostname/CyborgIW/ Test: http://hostname:IISport/CyborgIW/ (suggested) http://mars:8080/CyborgIW (example)
ServletExec Loop Back Port Port on which IIS and ServletExec communicate. This is determined in the ServletExec install. <i>Note: ServletExec will choose the port for you.</i>	Default: 8888 Test: 889 (example)
Interactive Workforce Database Name	Default: CybIW Test: CybIWTest (example)
Interactive Workforce Database User Name	Default: cybessdba Test: cybesstestdba (example)
Pay Info Database Name	Default: CybPayInfo Test: CybPay InfoTest (example)
Pay Info Database User Name	Default: cybpaydba Test: cybpayinfotestdba (example)
Pay Info Database User Password	Default: cybpayinfodba Test: cybpayinfotestdba (example)

Solution Series Application Server

Environment Parameter	Environment Setting
the Solution Series Application Server hostname	Default: jupiter (example) Test: jupiter (example)
The Solution Series Environment Name The name of The Solution Series environment as it appears in the drop-down list on The Solution Series login dialog.	Default: st50 (example) Test: st50test (example)
The Solution Series Environment Location	Default: d:\Cyborg\st500\ (example) UNIX: /u01/cyborg/prod/st50 (example) Test: d:\Cyborg\500test\ (example) UNIX: /u01/cyborg/test/st50 (example)

Phase 2: Prepare The Solution Series for Interactive Workforce

The following tasks must be performed on the desired environment of The Solution Series in order to prepare it for Interactive Workforce. Perform the tasks in the following order:

1. Update The Solution Series for Interactive Workforce
2. Update The Solution Series for Interactive Workforce test data
3. Update The Solution Series report generators for Interactive Workforce
4. Run the user extract program

Update The Solution Series for Interactive Workforce

Ensure that Interactive Workforce updates have been applied to The Solution Series environment

The Solution Series environment must have Interactive Workforce updates applied to it. When the Interactive Workforce updates are applied to The Solution Series several Interactive Workforce files are added to the Solution Series file structure. One of these is the file JESSXPT.bat. Go to the Runs directory for the new Solution Series environment and verify that JESSXPT is present. Remember the following:

- Ensure that you are in the home directory for the new Solution Series environment
- Both environments are installed on the same drive

If the JESSXPT.bat file is not present, apply the Interactive Workforce updates by running the Interactive Workforce install program and selecting only the "Solution Series Update Programs."

Note *Be sure that you deselect ALL selections but the "Solution Series Update Programs", including those not shown on the example here.*

After the Solution Series updates for Interactive Workforce have been installed, you must apply these changes. The following two tasks will perform this.

Update The Solution Series for Interactive Workforce test data

Note *This step is necessary to later test the installation.*

Note: *By preceding the batch job with 'rj' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.*

1. Apply Interactive Workforce test data to The Solution Series application server

Interactive Workforce provides new employee test data to the standard test company (999999). The data contained in these new test employees will allow you to thoroughly test your installation of Interactive Workforce. Open a command prompt and apply the Interactive Workforce test data by running the following script from the \Runs directory:

```
rj Jessdemo.bat
```

This will merge the new test data with the standard test data prior to loading it into the Interactive Workforce database. Review the log to determine if there were any errors.

Update The Solution Series report generators for Interactive Workforce

Important! All users must be logged off The Solution Series to perform this task.
--

1. Execute the Pay Extract script

Job Used: jpayxtr

From the \Runs directory of your The Solution Series system execute the following script:

```
rj jpayxtr.bat
```

This script will create a new P20IN file in the \Data directory. Review the log to determine if there were any errors.

Note: By preceding the batch job with 'rj' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.

2. Extract the Interactive Workforce Report Generators

Job Used: jxessrptgen

From the \Runs directory of your The Solution Series system execute the following script:

```
rj jxessrptgen.bat
```

Review the log to determine if there were any errors. Check the output file ESSRptGen.03 in the \List directory for errors.

3. Load the Interactive Workforce Generators

Job Used: jloadessgen

From the \Runs directory of your The Solution Series system execute the following script:

```
rj jloadessgen.bat
```

Review the log file to determine if there were any errors. Then, check the transload.pay file in the \list directory. Verify, at the bottom, of the output file that there were no errors. Next, check the audit.lis.pay file to verify that the 7L and 7M generators were loaded.

4. Execute the System Maintenance script

Job Used: jmntrun

From the \Runs directory of your The Solution Series system execute the following script:

```
rj jmntrun.bat
```

Review the log to determine if there were any errors.

5. Execute the Pay Merge script

Job Used: jpaymrg

From the \Runs directory of your The Solution Series system execute the following script:

```
rj jpaymrg.bat
```

Review the log to determine if there were any errors. This script will apply the 7L and 7M changes to the system.

Phase 3: Configuring the New Interactive Workforce Environment with the Solution Series Environment

As described above, Interactive Workforce communicates with The Solution Series via the STAPI. This section describes how to configure an instance of STAPI for The Solution Series environment and how to configure Interactive Workforce to communicate with STAPI.

This section also contains optional instructions for those customers that want to configure multiple Interactive Workforce environments to a single Solution Series environment.

The following tasks must be performed on the Solution Series Application Server. Perform the tasks in the following order:

1. Determine whether an instance of STAPI has been configured
2. Create an environment-specific STAPI
3. Register the STAPI environment with Orbix
4. Enable STAPI suspension during payroll run
5. Optional: Configure The Solution Series to support multiple Interactive Workforce environments

Determine whether an instance of STAPI has been configured

1. Open the Orbix Server Manager

To open the Orbix Server, make the following selections from the desktop:

Start Programs ► Interactive Workforce ► Orbix Tools ► Server Manager

2. Access the Connect to Host dialog

From the menu bar of the Server Manager, make the following selections:

Connect ► Connect

The Connect to Host dialog appears indicating the localhost and port number.

3. Click Connect

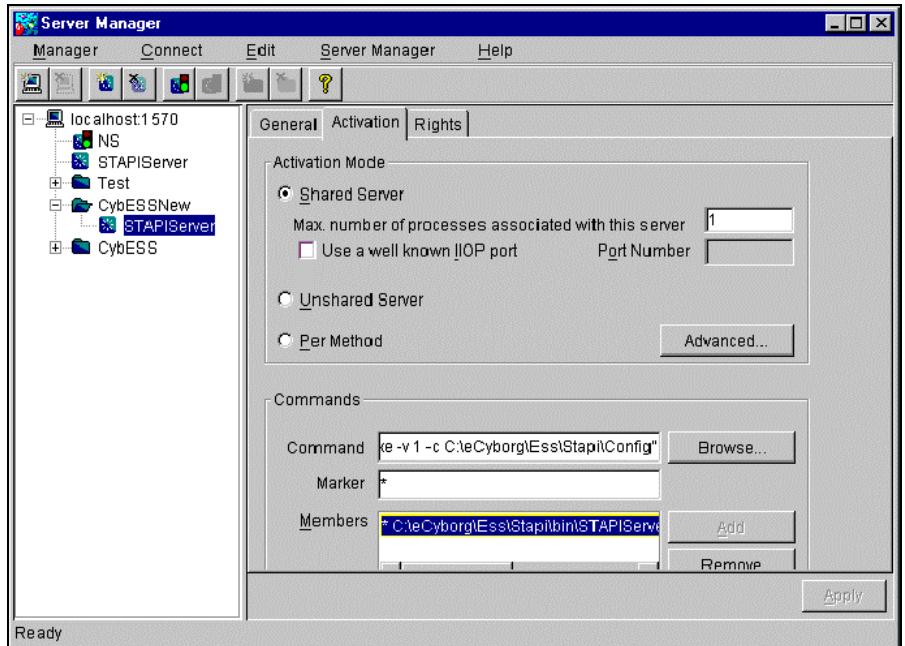
The Server Manager will connect to the localhost.

4. Review registered STAPIs

The left side of the navigator lists registered servers and folders. It should show at least two registered servers: NS and STAPIServer. The NS server is the CORBA Naming Service. The STAPIServer is the instance of STAPI that supports the Default environment.

Other STAPI servers are registered under folders bearing the name of an environment. It is recommended that each STAPI be registered under the name of The Solution Series environment and not the Interactive Workforce environment. This standard is consistent with the fact that there is a one-one relationship between STAPI and The Solution Series and potentially a many to one relationship between Interactive Workforce and The Solution Series.

Determine whether a folder appears with the name of the targeted The Solution Series environment. Expand the folder to verify that a STAPIServer is registered there. The STAPI configuration file for the environment-specific instance of STAPI should be listed in the command line arguments. If the STAPI is registered for the The Solution Series environment skip to Task 5: Modify Interactive Workforce Configuration.



Create an environment-specific STAPI

Create environment-specific cbsvo and cybio files

1. Copy the cbsvo.bat and cybio.bat files

Each environment requires environment-specific copies of these two files. They are located in the following directory:

...\.e\Cyborg\I\W\Stapi\bin\

2. Paste the copies into the same directory

Environment-specific files must be located in the same directory.

3. Rename the copies with environment-specific names

In order to distinguish the files, they require names based on the environment name. For example:

CbsvoTest.bat
CybioTest.bat

4. **Edit the files to set the location of the The Solution Series environment**

Open each of the new files in a text editor and set the ST_DRIVE and ST_HOME variables to reflect the location of The Solution Series environment. The edited files should look similar to the following example:

```
Rem *** Set the following variables to the location of Solution Series
Rem *** ST_DRIVE= The drive letter where Solution Series is installed. Example E:
Rem *** ST_HOME= The full PATH to the Solution Series main directory. Example E:\Apps\Cy
set ST_DRIVE=D:
set ST_HOME=D:\451Test
(complete text not shown)
```

5. **Save the new files**

Create an environment-specific STAPI

6. **Copy the STAPI configuration file**

Each environment requires an environment-specific configuration file located in the following directory:

```
... \eCyborg\IW\Stapi\config\STAPI.cfg
```

7. **Paste the copy into the same directory**

Environment-specific files must be located in the same directory.

8. **Rename the copy with an environment-specific name**

In order to distinguish the files, they require names based on the environment name. For example:

```
StapiTest.cfg
```

9. **Edit the file to reflect the The Solution Series environment**

Open each of the new files in a text editor and set the ST_DRIVE and ST_HOME variables to reflect the location of the Solution Series environment. The following parameters must be configured:

- EnvironmentPathName=*name of The Solution Series environment as registered with CAS*
- CBSVAppName=*name of environment-specific cbsvo.bat file created above*
- FileOneAppName=*name of environment-specific cybio.bat file created above*

The edited file should look similar to the following example:

```
EnvironmentPathName=451Test  
CBSVDirectory=c:\eCyborg\IW\STAPI\Bin  
CBSVAppName=cbsvoTest.bat  
FileOneDirectory=c:\eCyborg\IW\STAPI\Bin  
FileOneAppName=cybioTest.bat  
(complete text not shown)
```

Note: *EnvironmentPathName* is only a reference. It is not used as a physical path. The environment name used to register The Solution Series with the CAS Manager is suggested for simplicity and consistency.

10. Save the new file

11. Copy the STAPIServer.bat file

Each environment requires an environment-specific version of this file. It is located in the following directory:

```
...\eCyborg\IW\Stapi\bin\
```

12. Paste the copy into the same directory

This file must be located in the \bin directory.

13. Rename the copy with an environment-specific name

The file must have a unique name. It will be easier to identify what environment the file uses if the name reflects the environment name.

For example:

```
STAPIServerTest.bat
```

14. Edit the file to specify the correct configuration file

Edit the file in a text editor and change the configuration file argument to the environment-specific configuration file name. The edited file should look similar to the following example:

```
setlocal  
set PATH=%CYBORG_HOME%\Lib;%PATH%  
cd %CYBORG_HOME%\Bin  
%CYBORG_HOME%\Bin\STAPIServer.exe -v 1 -c  
%CYBORG_HOME%\config\StapiTest.cfg
```

15. Save the file

Create an environment-specific Kill STAPI Server file

16. Copy the STAPI configuration file

Each environment requires an environment-specific file to shut down the STAPI instance. The default is located in the following directory:

- ...\\eCyborg\IW\Stapi\bin\killStapiServer.bat
- 17. Paste the copy into the same directory**
This file must be located in the \bin directory.
- 18. Rename the copy with an environment-specific name**
The file must have a unique name. It will be easier to identify what environment the file uses if the name reflects the environment name.

For example:
killStapiServerTest.bat
- 19. Edit the file to specify the correct environment**
Edit the file by adding the environment name to the argument. The edited file should look similar to the following example:

```
killServer 451Test.STAPIServerObject-STAPIServerObject
```

Note: EnvironmentPathName is only a reference. It is not used as a physical path. The environment name used to register The Solution Series with the CAS Manager is suggested for simplicity and consistency.

- 20. Save the file**

Register the STAPI environment with Orbix

The new environment-specific files must now be registered with Orbix so that the ORB will know how to invoke them.

- 1. Open a Command Prompt**
- 2. Execute the Register STAPI environment command**

The RegSTAPIEnv command will register a new environment-specific instance of the STAPI with Orbix. It must be executed at the command line prompt in the following directory:

```
...\\eCyborg\IW\Tools\
```

This command must be executed using two arguments:

- EnvironmentPathName per Step 9 in the previous task (Create an environment-specific STAPI)
- STAPI configuration file name

You must execute the RegSTAPIEnv command using these two arguments, as in the following example:

```
RegSTAPIEnv 451Test StapiTest.cfg
```

Note: The configuration file must be located in ...\\eCyborg\IW\Stapi\Config

3. **Verify registration using Isit**

To verify, use the Isit (the first letter is a lowercase 'L') command with the environment name as an argument. After entering this command, Orbix displays the information for the STAPI configuration.

For example:

```
> Isit 451Test
[xxx: New Connection <hostname, ...
Subdirectory '50Test'
      STAPIServer
```

4. **Verify registration using Isns**

To verify, use the Isns (the first letter is a lowercase 'L') command with the environment name as an argument. After entering this command, Orbix displays the information for the STAPI configuration.

For example:

```
> Isns 451Test
[Contents of 50T1est]
      STAPIConnectionManagerId (Object)
      STAPIServerObject (Object)
[2 Objects, 0 Contexts]
```

Note: The `RegSTAPIEnv` command started the STAPI server in its own window. You can use it to verify the environment configuration. When you want to stop this instance enter `Ctrl-C` in the command window.

Note: Because of the way the new STAPI is registered with Orbix, it will be automatically started when it is needed.

Enable STAPI suspension during payroll run

The Solution Series payroll jobs suspend the STAPI process at the beginning of a payrun and resume it at the end of a payrun. The payroll jobs, as well as the suspend and resume STAPI operations, must be updated to support the new environment.

1. **Copy the STAPI suspend and resume files**

Each environment requires environment-specific copies of the following files:

- SuspendSTAPI.bat
- ResumeSTAPI.bat
- SuspendSTAPI.properties

These files are located in the directory:

```
...\\eCyborg\IW\Stapi\bin\
```

2. **Paste the copies into the same directory**

These environment specific files must be located in the `\Stapi\bin` directory.

3. Rename the copied files with environment-specific names

In order to distinguish the files, they require names based on the environment name. For example:

- SuspendSTAPITest.bat
- ResumeSTAPITest.bat
- SuspendSTAPITest.properties

4. Specify the environment name in the properties file

Edit the environment-specific suspend STAPI properties file and specify the name of the environment.

For example the SuspendSTAPITest.properties:

```
OrbixWeb.IT_BIND_USING_IIOp=true
OrbixWeb.IT_NS_HOSTNAME=localhost
OrbixWeb.IT_NS_IP_ADDR=
OrbixWeb.IT_NS_PORT=1570
OrbixWeb.IT_ORBIXD_IIOp_PORT=1570
OrbixWeb.IT_ORBIXD_PORT=1570
STAPI.STAPIConnectionManagerName=STAPIConnectionManagerId
STAPI.STAPIConnectionManagerKind=STAPIConnectionManagerId
STAPI.STEnvironmentName=50Test
```

Note: The default is blank, where you must add the new environment. It must be the same name which you registered The Solution Series environment with the STAPI.

5. Specify the properties file name in each batch file

Edit both of the environment-specific suspend and resume STAPI batch files to specify the name of the environment-specific properties file to the executable.

For example the SuspendSTAPITest.bat file:

```
::run the SuspendStapi utility
rem In this example, "-a true" are the required switch and value that determine what
rem mode the program will run in : either true for "suspend STAPI" mode or false for
rem "resume STAPI" mode.
rem In this example, "-p SuspendStapi.properties" are the optional switch and value
rem that allow us to designate the property file name. If omitted
rem SuspendStapi.properties is the default.
%JAVA_DIR%%\%JAVA_VM% -
Dorg.omg.CORBA.ORBClass=IE.Iona.OrbixWeb.CORBA.ORB -
Dorg.omg.CORBA.ORBSingletonClass=IE.Iona.OrbixWeb.CORBA.singletonORB
-classpath
%JAVA_DIR%%\%JAVA_CLASS%;%CYBORG_HOME%\Jar\SuspendStapi.jar;%
CYBORG_HOME%\Jar\OrbixWeb3.2.jar;%CYBORG_HOME%\Jar.jar
com.cyborg.suspendstapi.SuspendStapi -a true -p SuspendStapiTest.properties
```

You will notice that the suspend and resume files are nearly identical. The only difference is a flag to the executable indicating whether to go into suspend mode or out of suspend mode.

6. Update the payroll extract batch file

The payroll extract file must be updated to suspend the environment-specific STAPI. Go to the Runs directory of the Solution Series environment and edit the jpayxtr.bat file to invoke the new suspend STAPI batch file.

For example,

```
..\ST45Test\Runs\jpayxtr.bat
```

```
ECHO *****
ECHO ** SUSPENDING The Solution SeriesAPI FORInteractive Workforce **
ECHO *****
REM This will temporarily suspend the The Solution SeriesAPI
pushd %CYBORG_HOME%\bin
call %CYBORG_HOME%\bin\SuspendStapiTest.bat
popd
ECHO *****
ECHO ** The Solution SeriesAPI SUSPENDEDED **
ECHO *****
```

7. Update the payroll merge batch file

The payroll merge file must be updated to resume the environment-specific STAPI. Go to the Runs directory of the Solution Series environment and edit the jpaymrg.bat file to invoke the new suspend STAPI batch file.

For example,

```
..\ST50Test\Runs\jpaymrg.bat
```

```
...
rem set cobanim_2=animate
rem anim2wg ..\prog\cbsvb.int
..\prog\cbsvb
copy ..\data\p20in.mnt ..\data\p20in.mrg
rem ECHO *****
rem ECHO ** RESUMING The Solution SeriesAPI FORInteractive Workforce**
rem ECHO *****
rem REM This will resume the The Solution SeriesAPI
rem pushd %CYBORG_HOME%\bin
rem call %CYBORG_HOME%\bin\ResumeStapiTest.bat
rem popd
rem ECHO *****
rem ECHO ** The Solution SeriesAPI RESUMED **
rem ECHO *****
```

Optional: Configure The Solution Series to support multiple Interactive Workforce environments

A single Solution Series environment may be used to support multiple Interactive Workforce environments. In this case it is important to configure the The Solution Series split value to accommodate the Interactive Workforce environments.



Refer to eCyborg Interactive Workforce: Technical Implementation documentation for details of the split value.

- 1. Start the The Solution Series environment.**
- 2. Access the Session Number Split Point form**

From the Solution Series desktop, make the following selections:

Tools ► Administrator Tools ► Administrator Tools ► Set Session Maximum

The Session Number Split Point form (SSCTRL) appears.

- 3. Verify the Split Point value**

If the Split Point value shown is less than 9999, then the Solution Series environment is ready to support Interactive Workforce. Otherwise, set the Split Point value. Cyborg recommends a value of 9950 for a single production environment.

Be sure that the Split Point Value is at least the sum of the MaxCBSVOCconnections configured for each STAPI that provides access to the Solution Series environment.

Phase 4: Creating a New Web Environment

The tasks in this should be performed in the following order:

1. Create the display logic directory
2. Create a web site
3. Configure the SCRIPTS virtual directory for the new web site
4. Test the new web site
5. Create an environment-specific instance of ServletExec
6. Configure the new instance of ServletExec for the new web site
7. Configure Interactive Workforce and the ServletExec executable
8. Configure Interactive Workforce to communicate via STAPI
9. Configure the Interactive Workforce servlets in the new ServletExec instance
10. Test servlet configuration
11. Register the new Servlet Exec instance

Create the display logic directory

Create new directories in \inetpub

If it does not yet exist, create the \inetpub\cyborg subdirectory. After that, environment-specific Business Display Logic Directories need to be located in the \inetpub\cyborg directory, as shown:

...\inetpub\cyborg\Interactive Wokrforce **environment name**

The name of the new environment will be the name of this new directory, for example:

CyblWTest

Create a web site

1. **Access the Internet Server Manager**

Make the following selections:

Start ► Programs ► Windows 2000 Options Pack ►
Microsoft Internet Information Server ► Internet Service Manager

The Internet Service Manager appears.

2. **Select the hostname of the server**

Expand the directories in the navigator until you find the hostname for the server computer. Then click on that name to select it.

3. **Access the New Web Site Wizard**

Right click on the hostname, then make the following selections:

New ► Web Site

The New Web Site Wizard appears to walk you through the process of creating your new web site.

4. Type a Web Site Description

In the Web Site Description field, enter a description of the environment that the new web site will support. For example:

Cyborg Interactive Workforce Test

Click next to continue.

5. Specify a unique unused port

Note: The only requirement for the port number is that it is not already in use. Cyborg suggests using ports in the range 8000-9000. Refer to your Network Administrator for a port.

Enter a unique port number in the field, TCP Port this Web Site should use. This port will be used to access the web site for the new environment. For example, if you were using port 8080 the new environment would be accessed using the following URL:

http://hostname:8080//CyborgIW/

Click next to continue.

6. Enter the home directory for the web site

The home directory tells IIS where to find files for the web site. Specify the Display Logic Directory as the web site home directory. For example:

d:\eCyborg\CybiWTest

Click next to continue.



7. Click Finish

IIS will now create the new web site. When finished, the new web site will appear in the web site directory navigator.

Configure the SCRIPTS virtual directory for the new web site

The SCRIPTS virtual directory allows you to configure the operating parameters of the web site. It defines the plug-in parameters between ServletExec and the IIS.

Complete the following steps:

1. Expand the Default Web Site

In the navigator of the Internet Service Manager, expand the Default Web icon.

2. Select the SCRIPTS icon

3. Open the Properties dialog

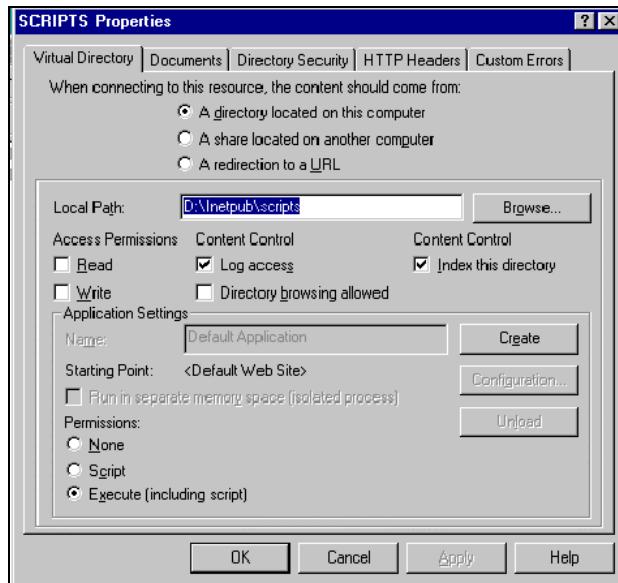
From the menu bar of the Internet Service Manager, make the following selections:

Action ► Properties

The Properties dialog appears.

4. Note the Local Path

Note the Local Path name as you will need it to set the new Web Site.



5. Click Cancel

Click Cancel to close the Properties dialog

6. Select the new web site

In the navigator of the Internet Service Manager, click on the new web site.

7. Open the New Virtual Directory Wizard

From the menu bar of the Internet Service Manager, make the following selections:

Action ► New ► Virtual Directory

The New Virtual Directory Wizard appears.

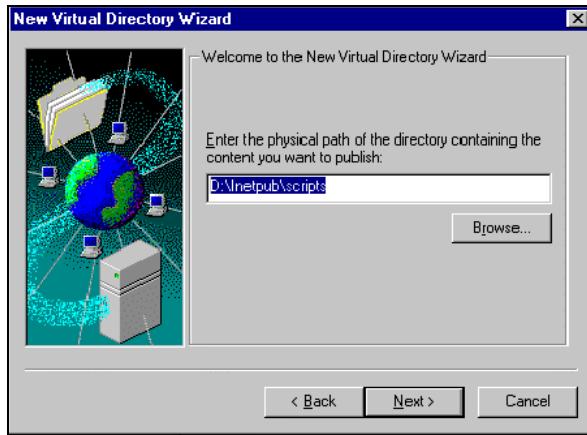
8. Type in the alias 'SCRIPTS'

Enter SCRIPTS, in all capital letters, as the alias for the virtual directory. The Wizard will appear similar to the following example:



9. Click Next
10. Enter the Local Path

The Local Path must be set to the same path as the SCRIPTS directory for the Default Web Site. Once that is entered in the field, the dialog should appear similar to the following:



11. Click Next
12. Set access permissions to Allow Execute Access

Deselect Allow Read Access and Allow Script Access, then select Allow Execute Access.

13. Click Finish

When completed, the SCRIPTS icon will now appear in the Web Site Navigator under the new web site.

14. Select the SCRIPTS icon for the new web site

15. Open the Properties dialog

From the menu bar of the Internet Service Manager, make the following selections:

Action ► Properties

The Properties dialog appears.

16. Disable the Application Settings

To disable the Applications Settings, click Remove next to the Application Settings field.

17. Click OK

18. Save the new web site settings

From the main menu, make the following selections:

Console ► Save

The new web site has now been saved.

Test the new web site

Complete the following steps:

1. Select the new web site

In the navigator of the Internet Service Manager, click on the new web site.

2. Start the new web site

From the menu bar of the Internet Service Manager, make the following selections:

Action ► Start

At this point, you may close the Internet Service Manager.

3. Create a test page for the web site

Using a text editor, create a file named Default.htm in the web site home directory. For multiple environments, the directory will take the following form:

...\inetpub\cyborg\CyBIWTest

In the file, type the text below, substituting the actual Interactive Workforce environment name where indicated below.

```
<html>
```

```
<body>
```

```
This is theInteractive Workforce Test environment!!!!
```

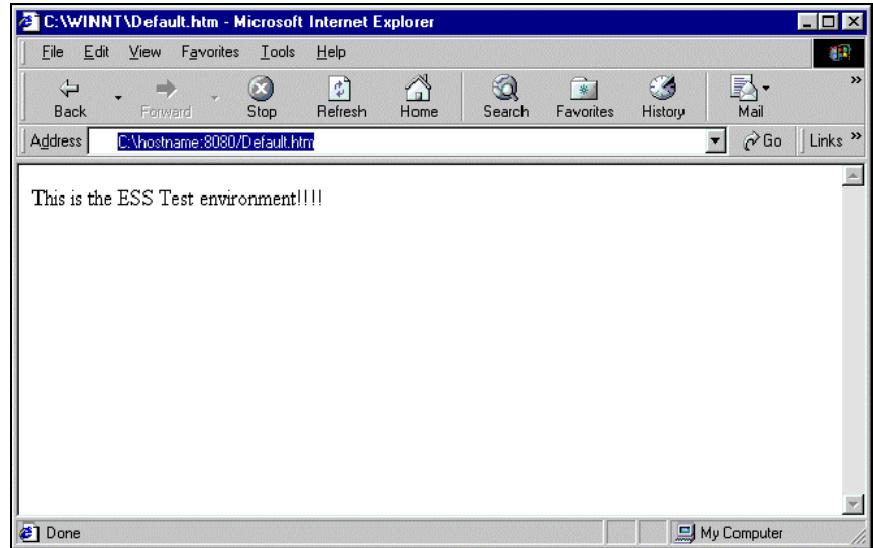
```
</body>
```

```
</html>
```

4. Access the new web site

Open a browser on any client within the network and access the correct URL. For example:
`http://hostname:8080/Default.htm`

The page should appear similar to the following example:



You have now confirmed that the web site is set up correctly and active.

Create an environment-specific instance of ServletExec

Two licenses for ServletExec are included in your license for Interactive Workforce. These licenses are intended for the Test and Production environments. In Production environments, you must use a separate ServletExec license. If there are many users of your environment, you may wish to purchase more licenses to improve performance.

The final task in this phase describes how to register a license for use with a ServletExec instance.

This task is performed on the Web Server.

1. Execute the ServletExec_AS_31.exe

Insert the Installation CD into the CD-ROM drive of the computer which will be the Web Server. From the Windows 2000 desktop, make the following selections:

Start ► Run

In the Run dialog, run the following program from the \ServletExec directory of the CD-ROM drive:

ServletExec_AS_31.exe

2. Click Next to start the Servlet Exec Server Setup

3. Select Setup Type

Select the option 'Install a ServletExec AS Instance', and click Next to continue.

4. Click Yes to accept the License Agreement

5. Enter Servlet Exec Instance Name. Click Next.

Enter the Interactive Workforce **Environment Name** as shown on the Environment Configuration worksheet. For example:

CyblWTest

The dialog should appear similar to the example shown here:

Note: These are suggested names. If you wish to use others, be sure to do so consistently.

6. Enter Loop Back Port. Click Next.

Enter any unused port number. This is the port on which ServletExec and IIS communicate.

Note: You may use the suggested number if it is currently unused.

7. Select setup type. Click Next.

Select 'Microsoft IIS or PWS' setup type and click next to continue.

8. Leave the additional URLs field empty.

Click Next.

9. Confirm the install information.

Click Next.

10. Click Yes

A dialog box asks if you would like to install ServletExec as a Windows 2000 service. Click Yes.

11. Click OK

A dialog box tells you that `servletoec.properties` was updated and gives you the name of a folder to check for possible errors. Click OK.

12. Click OK

A dialog box gives you instructions for activating ServletExec. Click OK.

13. Click Finish

Click Finish to complete the installation of ServletExec.

14. Click Finish

The new instance of ServletExec has now been installed in the following directory:

...eCyborg\IW\ServletExec\se-CyblWTest

This directory is the Business Logic Directory. Before this instance of ServletExec can be used, you must stop and restart IIS. This will be done at the end of the following task, Configure the new instance of ServletExec for the new web site.

Configure the new instance of ServletExec for the new web site

To complete this task, perform the following steps:

1. Open the ServletExec properties file

This file is located in the following directory:

...\\inetpub\\scripts\\servletexec.properties

This file is shared by all instances of ServletExec which are installed on the same computer.

2. Specify the new web site port to the ServletExec

To add the port for the new web site, locate the *hosts* parameter for the new web site. Change the hosts value from 'all' to the hostname and port. The hostname must be the Web Server hostname as specified on the Environment Configuration worksheet. The port number is the IIS port configured for the web site.

In our example, the 'servletexec.CybIWTest.hosts' parameter would be changed from 'all' to the new hostname and port, for example:

```
servletexec.CybIWTest.hosts=WebAppServerHostname:8080
```

The file should look similar to the following example:

```
#
# When more than one ServletExec instance is configured, /servlet/admin will return a page
# which contains links to the admin pages for each instance. To disable this page you should
# add the following property: servletexec.admin = disabled

servletexec.CybIW.hosts=all
servletexec.CybIW.applications=
servletexec.CybIW.aliases=/servlet,.jsp,.shtml
servletexec.CybIW.instances=127.0.0.1:8888

servletexec.CybIWTest.hosts=WebAppServerHostname:8080
servletexec.CybIWTest.applications=
servletexec.CybIWTest.aliases=
servletexec.CybIWTest.instances=127.0.0.1:8889

(complete text not shown)
```

3. Move the default web site parameters to the end

At the end of the file, a new set of parameters have has been added for the new instance of ServletExec. This properties file maintains a set of parameters for each ServletExec instance. The hosts are scanned in order to determine which ServletExec instance handles which requests. The environment specific instances of ServletExec must precede the default instance.

In order for the ServletExec to find the new web site parameters, they must come before the default CybiW web site parameters in the file. Modify the file as follows: cut the default web site lines and paste them after the new web site parameters:

```
Servletexec.CybiW.hosts=all
Servletexec.CybiW.applications=
Servletexec.CybiW.aliases=/servlet,.jsp,.shtml
Servletexec.CybiW.instances=127.0.0.1:8888

Servletexec.CybiWTest.hosts=all
Servletexec.CybiWTest.applications=
Servletexec.CybiWTest.aliases=
Servletexec.CybiWTest.instances=127.0.0.1:8889

Servletexec.CybiW.hosts=all
Servletexec.CybiW.applications=
Servletexec.CybiW.aliases=/servlet,.jsp,.shtml
Servletexec.CybiW.instances=127.0.0.1:8888
(complete text not shown)
```

4. Add the aliases to the ServletExec

To add the required aliases, locate the aliases parameter for the new web site, and edit the aliases line to match the default web site aliases. In our example, the 'servletexec.CybiWTest.aliases' parameter would have the aliases added on, for example:

```
servletexec.CybiWTest.aliases=/servlet,.jsp,.shtml
```

The file should look similar to the following example:

```
servletexec.CybiWTest.hosts=bldrqaess1:8080
servletexec.CybiWTest.applications=
servletexec.CybiWTest.aliases=/servlet,.jsp,.shtml
servletexec.CybiWTest.instances=127.0.0.1:8889

servletexec.CybiW.hosts=all
servletexec.CybiW.applications=
servletexec.CybiW.aliases=/servlet,.jsp,.shtml
servletexec.CybiW.instances=127.0.0.1:8888

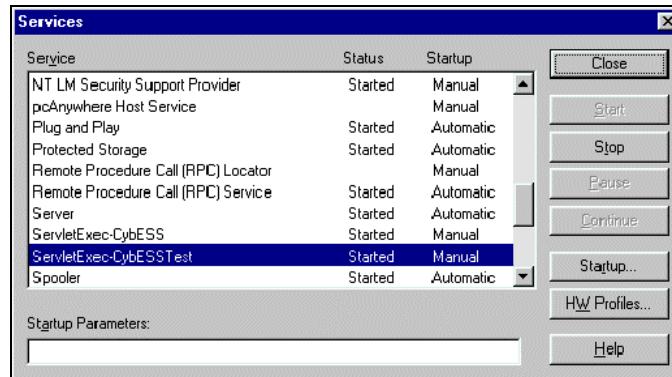
(complete text not shown)
```

5. Save the file

6. Shut down all instances of ServletExec

To shut down an instance of ServletExec, access the Services control panel by making the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Services



Then, in the Service list box, select each instance of ServletExec and click Stop.

7. Shut down and restart IIS

From the Services control panel. Scroll until you find the IIS Admin Service. First, stop IIS by selecting IIS Admin Service, then clicking Stop. The dialog will indicate that the service has been stopped. Next, restart IIS by selecting IIS Admin Service, then clicking Start.

Note: When you shut down the IIS Admin Service, it will also shut down the World Wide Web Publishing Service. If this is not running, the IIS may not find the web site. You will need to restart this service using the IIS Admin Service.

8. Restart each instance of ServletExec

To restart an instance of ServletExec in the Services control panel, select each instance of ServletExec and click Start.

9. Verify the new ServletExec instance

To test the new instance, open a browser and access the following URL:

<http://localhost/servlet/admin>

the Solution Series Application Server Administration page appears. The new instance should appear in the list.

Configure Interactive Workforce and the ServletExec executable

Complete the following steps for the new environment:

1. Backup the StartServletExec.bat file for the new environment.

Go to the Business Logic Directory for the new environment. Rename the file StartServletExec.bat to StartServletExec.bat.backup.

For example, the following file:

eCyborg\IW\ServletExec\se-CybiWTest\StartServletExec.bat

is renamed:

eCyborg\IW\ServletExec\se-CybIWTest\StartServletExec.bat.backup

2. Copy the StartServletExec.bat file from the existing source environment

Copy the existing file from the source environment Business Display Logic directory:

...eCyborg\IW\ServletExec\se-CybIW\StartServletExec.bat

to the new environment...

...eCyborg\IW\ServletExec\se-CybESSTest\StartServletExec.bat

3. Edit the copy for the new environment in a text editor

Edit the following:

- **WEB_HOME_DIR** must be the root directory of the environment web site
- The drive must be the drive on which Interactive Workforce is installed
- **CYBIW_HOME** is the location of the environment-specific ServletExec
- **Maps subdirectory** must be in **Business Logic Directory**
- **IW Environment Name**. Change this to the name of the new environment
- **ServletExec directory** is the **Business Logic Directory**
- **ServletExec Loop Back Port**. Refer to the StartServletExec backup file

In the following example, the first line is the WEB_HOME_DIRECTORY, d: is the drive, and the third line is the CYBIW_HOME. Highlighting in the information at the bottom of the example shows the environment name, ServletExec directory, and Loop Back Port.

```
set WEB_HOME_DIR=C:\inetpub\wwwroot\CybIW
Echo Starting ServletExec...
d:
cd %CYBIW_HOME%\ServletExec\se-CybIW
"%JAVA_DIR%\%JAVA_VM%" -DPAYROLL=true -
Dorg.omg.CORBA.ORBClass=IE.Iona.OrbixWeb.CORBA.ORB -
Dorg.omg.CORBA.ORBSingletonClass=IE.Iona.OrbixWeb.CORBA.singletonORB -
classpath
"%JAVA_DIR%\%JAVA_CLASS_TOOLS%;%CYBIW_HOME%\ServletExec\lib\ServletExec30.jar;%CYBIW_HOME%\ServletExec\lib\Servlet.jar;%CYBIW_HOME%\ServletExec\lib\xml.jar;%CYBORG_HOME%\Jar\OrbixWeb3.2.jar;%CYBORG_HOME%\Jar\orbixnames.jar;%CYBORG_HOME%\Jar\CyborgUtils.jar;%CYBORG_HOME%\Jar\STAPI.jar;%CYBORG_HOME%\Jar\xml4j.jar;%CYBORG_HOME%\Jar\IW_ESSential.jar;%WEB_HOME_DIR%\Resources;%CYBIW_HOME%\ServletExec\se-CybIW\maps"
ServletExec -name "CybIW" -home "%CYBIW_HOME%\ServletExec\se-CybIW" -root "%WEB_HOME_DIR%" -port 8890
)
```

Using our example, these parameters will be changed accordingly:

- **WEB_HOME_DIR=C:\inetpub\wwwroot\CybiWTest**
- **drive=d:**
- **CYBIW_HOME=\ServletExec\se-CybiWTest**
- **Maps subdirectory=\ServletExec\se-CybiWTest\maps**
- **IW Environment Name=CybiWTest**
- **ServletExec directory=\ServletExec\se-CybiWTest**
- **ServletExec Loop Back Port= 8889**

The edited file should look similar to the following example:

```
set WEB_HOME_DIR=C:\inetpub\wwwroot\CybiWTest
Echo Starting ServletExec...
d:
cd %CYBIW_HOME%\ServletExec\se-CybiWTest
"%JAVA_DIR%\%JAVA_VM%" -DPAYROLL=true -
Dorg.omg.CORBA.ORBClass=IE.Iona.OrbixWeb.CORBA.ORB -
Dorg.omg.CORBA.ORBSingletonClass=IE.Iona.OrbixWeb.CORBA.singletonORB
-classpath
"%JAVA_DIR%\%JAVA_CLASS_TOOLS%;%CYBIW_HOME%\ServletExec\lib
\ServletExec30.jar;%CYBIW_HOME%\ServletExec\lib\servlet.jar;%CYBIW_HO
ME%\ServletExec\lib\xml.jar;%CYBORG_HOME%\Jar\OrbixWeb3.2.jar;%CYBO
RG_HOME%\Jar\orbixnames.jar;%CYBORG_HOME%\Jar\CyborgUtils.jar;%CY
BORG_HOME%\Jar\STAPL.jar;%CYBORG_HOME%\Jar\xml4j.jar;%CYBORG_
HOME%\Jar\IW_IWential.jar;%WEB_HOME_DIR%\Resources;%CYBIW_HOM
E%\ServletExec\se-CybiWTest\maps" ServletExec -name "CybiWTest" -home
"%CYBIW_HOME%\ServletExec\se-CybiWTest" -root
"%WEB_HOME_DIR%" -port 8889
)
```

Note: Not all of the directories specified exist yet. These will be created in the following steps.

4. Save the new script

Save the new script under the correct file path, as in the following example:

```
...\\eCyborg\IW\ServletExec\se-CybiWTest\StartServletExec.bat
```

5. In Explorer go to the Display Logic Directory of the source environment

Use Windows Explorer to access the root **Display Logic Directory**. For the Default environment, this is:

```
...\\inetpub\wwwroot
```

6. Copy the necessary directories

The directories you need to copy from the root directory are as follows:

- CyborgIW
- Info
- Resources

7. Paste these directories into the Display Logic Directory of the new environment

For example:

...\Inetpub\Cyborg

8. Go to the Business Logic Directory of the source environment

For example:

...\eCyborg\IW\ServletExec\se-CybiW

9. Copy the \Maps directory and all properties files

The properties files include:

- ClientErrors.properties
- ess.properties
- essfdf.properties
- essmdf.properties
- locale.properties
- OptionListExtract.properties
- OrbixWeb.properties
- ServerErrors.properties

10. Paste these into the Business Logic Directory of the new environment

For example:

eCyborg\IW\ServletExec\se-CybiWTest

11. Shut down and restart the environment-specific ServletExec instance

To shut down an instance of ServletExec, access the Services control panel by making the following selections:

Start ► Settings ► Control Panel ► Services

Then, select the desired instance of ServletExec and click **Stop**. To restart the instance, click **Start**.

12. Check the log file

In Explorer, go to the Business Logic Directory for the new environment, for example:

...\Inetpub\Cyborg\CybiWTest

Open the ServletExec.log file. Verify that no errors were reported and that ServletExec is 'ready to process requests'. If so, then ServletExec has been configured correctly.

Note: Whenever you stop/restart an instance of ServletExec, a new and sequentially-numbered log file is created. Make sure that you are looking at the latest log file.

Configure Interactive Workforce to Communicate via STAPI

Complete the following steps:

1. Open the Interactive Workforce properties file

Open the `ess.properties` file in a text editor. The file can be found in the install directory of the new ServletExec instance:

```
...\\eCyborg\\IW\\ServletExec\\se-IW Environment Name\\ess.properties
```

For example:

```
...\\eCyborg\\IW\\ServletExec\\se-CybIWTest\\ess.properties
```

2. Edit the file for the new environment

Change the STAPI environment setting to reflect the new environment. For example:

```
STAPI.userPassword=IW1
STAPI.environment=50Test
selfservice.payinfo.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
selfservice.payinfo.uri=jdbc:odbc:CybPayInfoTest
```

(complete text not shown)

Note: By default this setting is blank. It must be the `EnvironmentPathName` set in Step 9 of the task to Create a web site..

3. Save the file

Configure the Interactive Workforce servlets in the new ServletExec instance

1. Access the Solution Series Application Server Administration page

To access the Solution Series Application Server Administration page from the Windows 2000 desktop of the Web Server, make the following selections:

Start ► Programs ► New Atlanta ► ServletExec 3.1 AS ► ServletExec Admin

Or, open a browser and access the following URL:

```
http://localhost/servlet/admin
```

the Solution Series Application Server Administration page appears.

2. Select the new instance of ServletExec

Click on the new instance. For example:

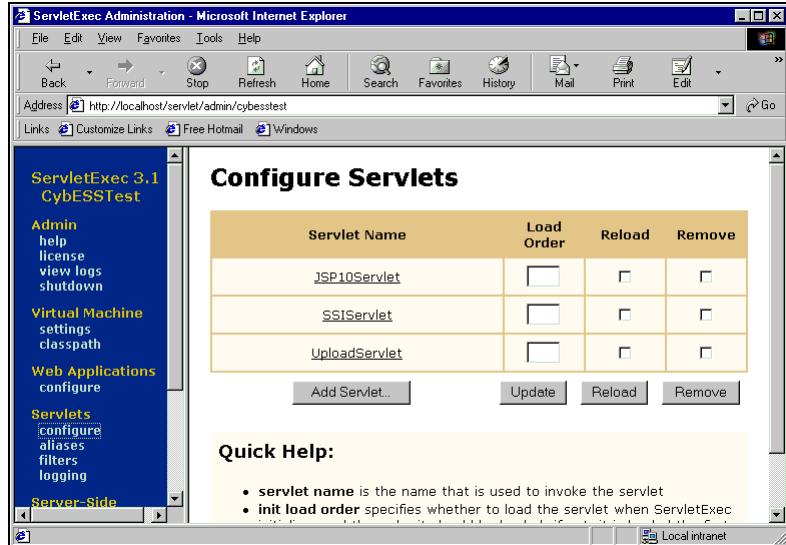
```
cybiwtest
```

3. Access the Servlets Configure page

From the left side menu, make the following selections:

Servlets ► Configure

The Servlets Configure page appears:



4. Click Add Servlet...

The Add Servlet page appears.

5. Type the Servlet Name

In the Servlet Name: field, type the following:

essinit

6. Type the servlet class

In the Servlet Class: field, type the following:

com.cyborg.selfservice.SelfServiceStartupServlet

Note: Class names are case-sensitive.

7. Type the Initialization Parameters name

In the name: field, type the following:

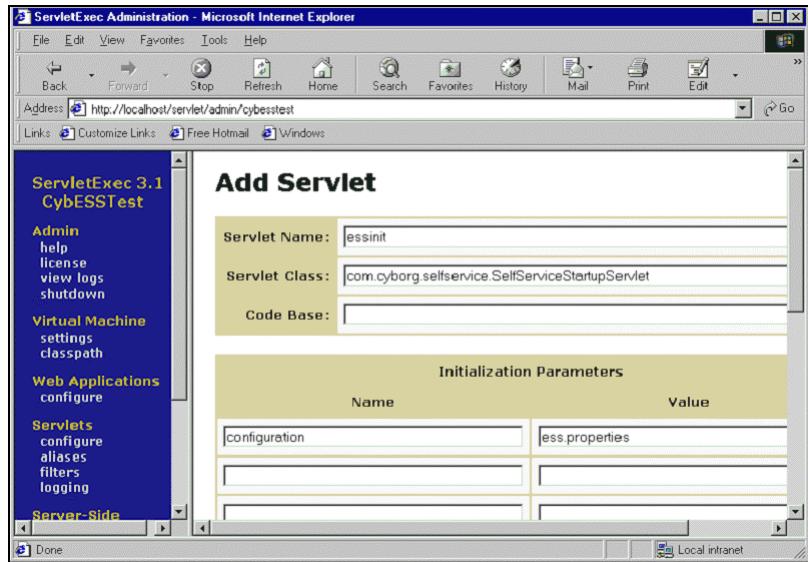
configuration

8. Type the Initialization Parameters value

In the value: field, type the following:

ess.properties

When all the fields are complete, the page should look similar to the following:



9. Click Submit

The ServletExec Admin will enter the information. The Admin will return you to the Configure Servlets page, and the essinit servlet will now be included in the list.

10. Click Add Servlet...

The Add Servlet page appears.

11. Type the servlet name

In the Servlet Name: field, type the following:
controller

12. Type the servlet class

In the Servlet Class: field, type the following:
com.cyborg.selfservice.navigation.ControllerServlet

13. Type the Initialization Parameters name

In the name: field, type the following:
configuration

14. Type the Initialization Parameters value

In the value: field, type the following:

ess.properties

When all the fields are complete, the page should look similar to the following:

15. Click Submit

The ServletExec Admin will enter the information. The Admin will return you to the Configure Servlets page, and the controller servlet will now be included in the list.

16. Set the essinit load order to 1

In the Load Order field for essinit, type '1'.

17. Set the controller load order to 2

In the Load Order field for controller, type '2'.

18. Click Update

Leave the ServletExec Application Server Administration page open at this time, as we will now use it to register the ServletExec instance.

Test servlet configuration

The next few steps describe how to test the servlet configuration to ensure that it has been done correctly.

1. Copy over the \Maps directory

Copy the \Maps directory from the initial installation:

```
...\.eCyborg\IW\ServletExec\se-CybiW
```

Paste the copy into the environment-specific ServletExec directory, for example:

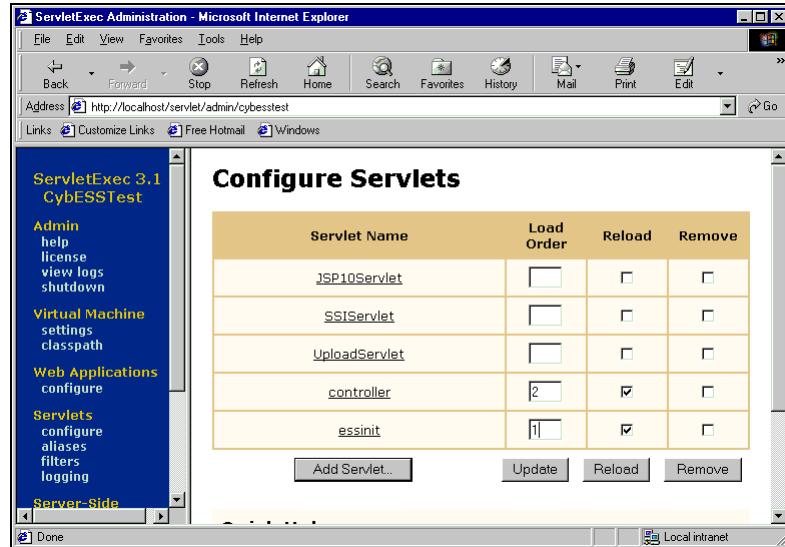
```
...\.eCyborg\IW\ServletExec\se-CybiWTest
```

2. Under Configure Servlets, select Reload essinit

When you select Reload essinit, a checkmark will appear. Type a '1' in the Load Order box.

3. Under Configure Servlets, select Reload controller

When you select Reload controller, a checkmark will appear. Type a '2' in the Load Order box. The page should appear as shown here:



4. Click Reload

ServletExec will now reload the servlets. You should receive the message "** Servlets Reloaded successfully" at the top of the page, as shown here:

5. In the Windows Explorer, go to the Business Logic Interface directory of the new instance

For example:

```
...\\eCyborg\IWM\ServletExec\se-CybiWTest\
```

6. Open the ServletExec log

Open the following file:

```
servlethec.log.1
```

Verify that no errors were recorded and that the log reads "Cyborg Web Application Infrastructure ready" near the bottom of the page. You may close the log when finished.

7. Open the ess log

Open the following file:

```
ess.log
```

Verify that no errors were recorded and that the log reads "Cyborg Self-Service Application Ready". You may close the log when finished.

Register the new ServletExec instance

Perform this task only if you need to use a ServletExec license for the environment you are creating.

- 1. Access the Solution Series Application Server Administration page**

If the ServletExec Admin is still open from the previous task, close it. Then reopen it by opening a browser and accessing the following URL:

`http://localhost/servlet/admin`

the Solution Series Application Server Administration page appears.

- 2. Access the desired instance of ServletExec**

To access the desired instance of ServletExec, click on the name of that instance on the Solution Series Application Server Administration. The Register ServletExec page appears.

- 3. Enter the serial number**

Enter the serial number into the Serial Number field, then click Register. Once complete, you may close the Solution Series Application Server Administration page. The serial number can be found on an insert inside the CD jewel case.

Phase 5: Configuring the Pay Information database for the new environment

Each Interactive Workforce environment requires its own Pay Information database. This database stores pay information history for Interactive Workforce employees. In order to create a new Pay Information database we will perform the following steps:

- Create the file structure for the new database
- Create the physical database
- Create ODBC data sources
- Populate the new database

Create the file structure for the new database

In a two-server configuration, this is done on the Solution Series Application Server. Complete the following steps:

1. Create a directory for the new environment

Each database must have a directory under the Interactive Workforce Database directory, for example:

```
...\\eCyborg\IW\PayInfoDatabase\CybPayTest
```

This directory will store all the files used for the environment-specific Interactive Workforce database.

2. Copy required files of the original Pay Information database directory

Go to the original Pay Information database directory and copy the required files. The default folder for the original Pay Information database is:

```
...\\PayInfoDatabase\CybPay
```

Copy the following files:

- createdb.sql.cmd
- createpaydb.bat
- CybPayInfoBasic.fmt
- CybPayInfoEarningsDeductions.fmt
- CybPayInfoEmployee.fmt
- CybPayInfoTaxes.fmt
- imppayinfo.bat
- PayDB.sql
- payinfodb.cfg

Note: There is also a directory which contains the Pay Information database itself. Ensure that you do not copy this directory, as the database will be created by running scripts which you are copying here.

3. Paste the files into the new directory

Once you have copied the contents from the original Pay Information database directory, go to the new directory and paste those files. The files will be edited specifically for the new environment.

4. Modify the Pay Information database configuration file

Using a text editor, open the Pay Information database configuration file of the new directory. The file can be found in the install directory for the environment-specific install directory, for example:

```
...\\eCyborg\I\W\PayInfoDatabase\CybPayTest\payinfodb.cfg
```

Edit the following parameters to reflect the new environment:

- DBNAME=*Pay Info database name*
- DBUSER=*Pay Info database user*
- DBPASS=*Pay Info database password*
- DBPATH=*filepath where the data is stored*

The modified file should look similar to the following example:

```
ISQLPASSWORD=  
DBNAME=CybPayInfoTest  
DBUSER=cybpaytestdba  
DBPASS=cybpaytestdba  
DBPATH=C:\eCyborg\Ess\PayInfoDatabase\CybPayTest\SQLD  
ata  
DBSIZE=75  
DBMAX=150  
(complete text not shown)
```

Note: Edit the DBSIZE, DBMAX, DBGROWTH, LOGSIZE, LOGMAX, and LOGGROWTH parameters at this time as well, if you wish to reserve more or less space for this environment.

5. Save the file

You may also close this file.

Create the Pay Information Database

1. Execute the database creation script

This file controls the process of creating the Pay Information database. Execute the following script to create the pay information database:

```
...\\eCyborg\I\W\PayInfodatabase\CybPayTest\createpaydb.bat
```

Note: You will be prompted for the SQL Server 7 system administrator's password

Note: If you have not already done so, you may want to lower or raise the size of the database, depending on your use of the environment.



Refer to Configuring the Interactive Workforce Environment section of the eCyborg Interactive Workforce: Technical Implementation documentation for information on editable parameters in the database configuration files.

2. Review the database creation logs

Once the Pay Information Database script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Pay Information database as well as verify that the tables were created. In the eCyborg\IW\PayInfoDatabase\CybPayEnvironment directory access the following files:

- createCybPayInfoTestDB.log
- createCybPayInfoTestOBJ.log

Phase 6: Configuring the Interactive Workforce database for the new environment

Each Interactive Workforce environment requires its own Interactive Workforce database. This database stores all Interactive Workforce settings for the environment.

Perform the tasks in this phase in the following order:

1. Create the file structure for the new database
2. Create the Interactive Workforce database
3. Create ODBC data sources for Interactive Workforce and Pay Information databases
4. Configure new Interactive Workforce environment for the new databases
5. Launch Interactive Workforce
6. Access the Interactive Workforce administration utility
7. Load option lists
8. Select organizations for loading
9. Select resulting statuses for loading
10. Set up direct deposit HEDs
11. Load Interactive Workforce users

Create the file structure for the new database

Complete the following steps:

1. Create a directory for the new environment

Each database must have a directory under the Interactive Workforce database directory, for example:

```
...\\eCyborg\IW\ESSDatabase\CybiWTest
```

This directory will store all the files used for the environment-specific Interactive Workforce database.

2. Copy files from the original Interactive Workforce database directory

Go to the original Interactive Workforce database directory and copy all files with the extensions .bat, .cfg, .cmd, .properties, sql. These files are indicated in the table in the section on the Multiple Environments directory structure. The default folder for the original Interactive Workforce database is:

```
...\\eCyborg\IW\ESSDatabase\CybiW
```

The required files are:

- createdb.sql.cmd
- createessdb.bat
- essdb.cfg
- EssDB.sql
- LoadUsers.bat
- LoadUsers.sql
- PasswordGen.cfg
- PasswordGen.properties
- SetEssInitialValues.sql

Note: There is also a directory which contains the Interactive Workforce database itself. Ensure that you do not copy this directory; the database will be created by running scripts which you are copying here.

3. Paste the files into the new directory

Once you have copied the contents from the original Interactive Workforce database directory, go to the new directory and paste those files. These files will be edited specifically for the new environment.

Note: If you receive sharing violation messages while trying to paste the files, you may need to shut down the instance of *ServletExec* for the environment which you are copying from.

4. Modify the Interactive Workforce database configuration file

Using a text editor, open the Interactive Workforce database configuration file of the new directory. The file can be found in the environment-specific install directory, for example:

...\\eCyborg\Ess\ESSDatabase\CybESSTest\essdb.cfg

Edit the following parameters to reflect the new environment:

- DBNAME=**IW Database Name**
- DBUSER=**IW Database User Name**
- DBPASS=**IW Database User Password**
- DBPATH=**filepath where the data is stored**

The modified file should look similar to the following example:

```
ISQLPASSWORD=  
DBNAME=CybiWTest  
DBUSER=cybiwtestdba  
DBPASS=cybiwtestdba  
DBPATH=C:\eCyborgIWSDatabase\CybiWTest\SQLData  
DBSIZE=75  
DBMAX=150  
(complete text not shown)
```

Note: If you have not already done so, you may want to lower or raise the size of the database, depending on your use of the environment.

☞ Refer to the *Configuring and Interactive Workforce Environment* section of the *eCyborg Interactive Workforce: Technical Implementation* documentation for information on editable parameters in the database configuration files.

5. Save the file

You may also close this file.

6. Modify the Password Generation configuration file

Using a text editor, open the `passwordgen.cfg` file of the new directory. Edit the following parameters to reflect the new environment:

- `selfservice.database.uri=jdbc:odbc:IW Database Name`
- `selfservice.database.userName=IW Database User Name`
- `selfservice.database.userPassword=IW Database User Password`

The modified file will look similar to the example following:

```
log.filename=ess.log
selfservice.database.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
selfservice.database.uri=jdbc:odbc:CybiWTest
selfservice.database.userName=cybiwtestdba
selfservice.database.userPassword=cybiwtestdba
selfservice.database.initialConnectionCount=2
(complete text not shown)
```

Note: The username must be unique. The password does not need to be unique.

7. Save the file

You may also close this file.

Create the Interactive Workforce database

Note: For a three-server configuration, run this script on the Database Application Server.

1. Execute the Interactive Workforce database creation script

Job Used: createessdb

This file can be run by double clicking on the filename using the Windows Explorer. The default file path is:

```
...eCyborg\IWESSDatabase\CybiW\createessdb.bat
```

When this job runs, you will be prompted for the 'sa' user password. Enter the password.

Note: Depending on the speed of the processor, this script may take some time to execute. Creation of the Interactive Workforce database may take a couple of minutes.

Note: If you have not already done so, you may want to tune the size of the database, depending on your use of the environment.

☞ Refer to *eCyborg Interactive Workforce: Technical Implementation* for information on editable parameters in the database configuration files.

2. Review the database creation logs

Once the Interactive Workforce database script has been executed, verify its creation by checking the log files. The log files allow you to verify that you have access to the Interactive Workforce database as well as verify that the tables were created. On the Web Server in the eCyborg\IW\ESSDatabase\CybIW directory access the following log files:

- setCybIWVal.log
- createIWTBL.log
- createCybIWDDBTBL.log

The directories with the log files on the OS/390 and UNIX platforms are:

OS/390: eCyborg\IW\ESSDatabase\CybIW

UNIX: \$eCyborg\IW\ESSDatabase\CybIW

Make a note of the database access information; you will need it later.

Create ODBC data sources for Interactive Workforce and Pay Information databases

This task needs to be performed on the Web Server for both the Interactive Workforce and Pay Information databases.



Refer to the task: Add ODBC Data Sources for the Interactive Workforce and Pay Information Databases in Phase 4 of the chapter on Installing the Two-Server Configuration. The data that follows replaces the data in Step 6 of that task.

Enter data in the Create a New Data Source to SQL Server dialog

Fill the following fields with the information listed, specifying information about the specific environment. Examples are listed in the following tables.

For the Interactive Workforce database, fill the fields with the information listed in the following table:

Field	Information
Name:	CybIWTest (case sensitive)
Description:	CyborgInteractive Workforce Database—Test Environment
Server:	(local) or HOSTNAME of Web Application Server

For the Pay Information database, fill the fields with the information in the following table:

Field	Information
Name:	CybPayInfoTest (case sensitive)
Description:	Cyborg Pay Information Database—Test Environment
Server:	HOSTNAME of the Solution Series Application Server

Configure new Interactive Workforce environment for the new databases

This will configure the Interactive Workforce Business Logic for the new Interactive Workforce database. Complete the following steps:

1. Open the Interactive Workforce properties file for the new environment

The `ess.properties` file is found in the `ServletExec` install directory for the new environment, for instance:

```
...\.eCyborg\IW\ServletExec\se-environment name\ess.properties
```

In our example:

```
...\.eCyborg\IW\ServletExec\se-CybIWTest\ess.properties
```

2. Modify the Interactive Workforce properties file for the new Pay Information database

Edit the following parameters:

- `selfservice.payinfo.uri=jdbc:odbc:Pay Info database name`
- `selfservice.payinfo.userName=Pay Info database user`
- `selfservice.payinfo.userPassword=Pay Info database password`

The modified file should look similar to the following example:

```
STAPI.environment=451Test
selfservice.payinfo.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
selfservice.payinfo.uri=jdbc:odbc:CybPayInfoTest
selfservice.payinfo.userName=cybpaytestdba
selfservice.payinfo.userPassword=cybpaytestdba
selfservice.payinfo.initialConnectionCount=2
(complete text not shown)
```

3. Modify the Interactive Workforce properties file for the new Interactive Workforce database

Edit the following parameters:

- `selfservice.database.uri=jdbc:odbc:IW database name`
- `selfservice.database.userName=IW database user name`
- `selfservice.database.userPassword=IW Database user password`

The modified file should look similar to the following example:

```
log.filename=ess.log
selfservice.database.driverClassName=sun.jdbc.odbc.JdbcOdbcDriver
selfservice.database.uri=jdbc:odbc:CybiWTest
selfservice.database.userName=cybiwtestdba
selfservice.database.userPassword=cybiwtestdba
selfservice.database.initialConnectionCount=2
(complete text not shown)
```

4. **Save the file**

You may now close the text editor.

5. **Stop and restart the environment-specific instance of ServletExec**

To shut down an instance of ServletExec, access the Services control panel by making the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

Then, select the desired instance of ServletExec and click Stop. To restart the instance, click Start.

Launch Interactive Workforce

In a two-server configuration use your browser on the Web Server to access the Interactive Workforce Administration utility, and enter the following URL:

<http://localhost/CyborgESS>

OR

In a single server configuration use your browser to access Interactive Workforce utility, and enter the following URL:

<http://localhost/CyborgESS>

When you get to the Start page, click 'Launch Interactive Workforce'. At the log in page, to access the system:

- the initial login and password are both: '**initialadm**'.

Once you access the system you will be prompted to change passwords. Change the password to 'iwadm', or any other password you desire. We recommend the easily remembered 'iwadm' because security is not needed in the initial system, as it contains no live data.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's **HOSTNAME** instead of 'localhost'.

Access the Interactive Workforce Administrator Utility

Once you have accessed Interactive Workforce, click Administrator in the Navigator panel on the left portion of the screen and select Interactive Workforce and then Data Import. The remaining tasks must be performed in the following order:

- Option List Import
- Organization Selection
- Resulting Statuses Selection
- Load Interactive Workforce users

Import option lists

Before performing the remainder of the tasks in this phase of the installation, you must use the Option List Import function. You must perform this task after the system is installed and before you select any statuses or organizations used as selection parameters to load users.

This tab page displays the option lists available in The Solution Series that must be imported into Interactive Workforce. Follow these steps to extract the option lists from The Solution Series and load them into the Interactive Workforce database.

1. Access the Option List Import page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Load Options Lists tab.

Administrator ► Interactive Workforce ► Data Import ► Option List Import

2. Click Perform Extract

The application extracts the option lists and imports the lists into the Interactive Workforce database.

Refer to the eCyborg Interactive Workforce: Technical Implementation documentation for more information on the data import from The Solution Series to Interactive Workforce.

Note: When you click Perform Extract, the system imports the appropriate Solution Series option lists to Interactive Workforce. No message confirming the import displays.

Select organizations for loading

Using the Organization Selection tab page, you select the organizations to include when performing the extract and load process. This page displays the organizations set up in your company's Solution Series and works in conjunction with the Resulting Statuses Selection tab page to create the users IDs for Interactive Workforce.

Follow these steps to select organizations to include in the Interactive Workforce load.

1. Access the Organization Selection tab page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Organization Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Organization Selection

2. Select the appropriate check boxes in the extract column

Click the check boxes for at least the following organization:

999999 ACME MANUFACTURING

Note: If you make no selections on this page, no employee information can be extracted. In an initial environment this may be the only organization you select.

3. Click Save Changes

The system saves your changes.



Refer to *Interactive Workforce: The Administrators' Guide* for more information on the data import from *The Solution Series* to *Interactive Workforce*.

Select resulting statuses for loading

Using the Resulting Statuses Selection tab page to select the groups of employees who will have authority to use the online application. The employee statuses that display are those set up in your organization's application of The Solution Series.

Note: This page works in conjunction with the Organization Selection tab page to create the employee user IDs for *Interactive Workforce*.

Follow these steps to select statuses for the Interactive Workforce database load.

1. Access the Select Resulting Statuses for Loading page

In the Administrator area of the Navigator, click Interactive Workforce then click Data Import. On the Data Import page select the Resulting Statuses Selection tab.

Administrator ► Interactive Workforce ► Data Import ► Resulting Statuses Selection

2. Select the appropriate radio button for each group status

Note: The default settings will not extract any data. You must, as this time, make these selections in order for the data load to work properly.

This page displays employee statuses set up for your organization. You may have to scroll down the page to see all the available group status information. Three radio buttons appear for each group status.

- All employees in this status
- No employees in this status
- Only those with status selected below

Click one radio button for each group status.

3. Select the appropriate checkboxes in the group statuses

If you clicked 'Only those with status selected below', for the following groups:

- All Active
- Leave of Absence with Pay
- Leave of Absence without Pay
- Retired

You must check at least one checkbox for each of the groups listed above. Click the following options for each of the above groups.

- Salary Reg FT
- Hourly Reg FT

4. Click Save Changes

The system saves your changes.



Refer to eCyborg Interactive Workforce: Technical Implementation for more information on the data import from The Solution Series to Interactive Workforce.

Load Interactive Workforce users

Note: For a three-server configuration copy the Interactive Workforce Users file to the database you created on the Database Application Server.

1. Copy the Interactive Workforce Users file

Refer to the configuration worksheet for the location of The Solution Series. From the \Data directory copy 'essusers.txt' to the following directory:

```
...\eCyborg\IW\ESSDatabase\CyBIW
```

Note: In two-server configuration, the *essusers.txt* file must be copied from the the Solution Series Application Server to the Web Server.

The text file contains a listing of the Interactive Workforce users that will be bulk loaded into the system during the next step.

2. Execute the Load Users script

Job Used: loadusers

This issues all of the commands necessary to load user data from The Solution Series into the Interactive Workforce database. This script can be found in the following file path:

```
...\eCyborg\IW\ESSDatabase\CyBIW\loadusers.bat
```

You can ignore the following text in the log file.

```
Initializing Database Read...
020730 15:48:55.598 main: Maximum number of attempts to replace a bad connectio
n not set. Defaulting to 3
020730 15:48:55.608 main: selfservice database connection wait timeout not set.
Defaulting to 5000ms
020730 15:48:56.810 main: Database pool created for: jdbc:odbc:CyBIW. Connectio
ns: 2
```

Note: Populating the Interactive Workforce database will take some time, depending on the size of the company and the the processing speed of the computer. For example, a company of 2000 employees may take up to three minutes to load to the database.

Note: If you have changed the default install location while installing the software, you will need to look in that directory for the file.

3. Access Query Analyzer

We are now going to take a 'short cut' to get the password of a specific user in the sample data set using the SQL 2000 Query Analyzer.

To access SQL 2000 Query Analyzer enter the following commands:

Start ► Programs ► Microsoft SQL Server 2000 ► Query Analyzer

Important! Remember to log in to the Query Analyzer using the login for the correct database. Use the following login:

CyblWdba

Note: If you have Interactive Workforce Administrator access, you may also use the Interactive Workforce Administrator functionality to find the user password. Refer to Interactive Workforce: The Administrators' Guide for information on using the Interactive Workforce Administrator functionality.

4. Collect the Initial Password to Access Interactive Workforce

In order to access Interactive Workforce you need to collect the initial password for employees '4001' and '4002' from the Cyborg_User table. From the Query Analyzer window enter the following command:

```
select login_name, initial_password
from cyborg_user
where login_name in ('4001', '4002')
```

Then, click the Play button  or type CTRL-E. The initial password for employees '4001' and '4002' will be output to the bottom part of the window. Write these numbers down or highlight and copy them for use in the next step.

Phase 7: Set Up the Pay Information Database

Perform the tasks in Phase 7 in the following order:

1. Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series
2. Process a payroll run
3. Load the Pay Information database

Set up the Interactive Workforce Payrun (7L) and Payslip (7M) report generators in The Solution Series

To set up the Interactive Workforce Payrun (7L) and Payslip (7M) generators, you must log in to The Solution Series with Security Officer access.

Note: Contact your payroll expert before continuing with these steps.

1. Set up the Payrun (7L) Report Generator

On The Solution Series system, access the Report Request form (DD-SCR) to set up the 7L7L report generator. Access the Report Request form by making the following selections:

Tools ► Reporting ► Report Scheduling ► Schedule Payroll Run Reports

To execute a payrun, the 7L7L generator must be loaded into your P20IN file using the desired company(ies). For the initial installation, use the 999999 company.

On the Report Requests form:

- The Report Code field must be set to '7L7L'
- The Report Select field must be set to '1'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your Solution Series system.

The screenshot shows the 'Report Requests' form with the following settings:

- Report Code: 7L7L
- Report Select: 1
- User Field: (empty)
- Extra Copy: (empty)
- Adjustments: Plus: Do Not Print, Minus: Do Not Print, Manual: Do Not Print
- Data Types: Company Level: Do Not Print, Tax Tables: Do Not Print, Labor Record: Do Not Print, Other Record: Do Not Print
- To-date Amounts: Current: Print Every Run, Month: Do Not Print, Quarter: Do Not Print, Year: Do Not Print

2. Set up the Payslip (7M) Report Generator

On your Solution Series system, while still on the Report Request form (DD-SCR) set up the 7M7M report generator. To execute a payrun, the 7M7M generator must be loaded into your P20IN file. On the Report Requests form:

- The Report Code field must be set to '7M7M'
- The Report Select field must be set to 'E'
- All of the Data Types fields must be set to 'Do Not Print'
- All of the Adjustments fields must be set to 'Do Not Print'
- The Current field, in the To-Date Amount box, must be set to 'Print Every Run'
- The To-Date Amount fields Month, Quarter, and Year must be set to 'Do Not Print'

After you enter the above values into the Report Requests form (DD-SCR) press enter to load the values into your The Solution Series system.

The screenshot shows the 'Report Requests' form with the following settings:

- Report Code: 7M7M
- Report Select: E
- User Field: (empty)
- Extra Copy: (empty)
- Adjustments: Plus: Do Not Print, Minus: Do Not Print, Manual: Do Not Print
- Data Types: Company Level: Do Not Print, Tax Tables: Do Not Print, Labor Record: Do Not Print, Other Record: Do Not Print
- To-date Amounts: Current: Print Every Run, Month: Do Not Print, Quarter: Do Not Print, Year: Do Not Print

3. Refresh the selection list

Refresh the selection list to view the records for the report generators.

Process a payroll run

Processing the payroll run will both verify that the new scripts and report generators are working correctly, and will create the text files used to populate the Pay Information database. This task must be performed while logged in to The Solution Series with Security Officer access.

1. Define the Pay Run Parameters

This task must be performed while logged in to The Solution Series with Security Officer access. On The Solution Series system, access the Payroll Run Process Control form (AE-SCR) by making the following selections:

Payroll ► Payroll Processing ► Payroll Scheduling ► Schedule Payroll Runs

Set up the payroll run parameters, as represented in the graphic, for the following three pay frequencies:

1. Weekly
2. Bi-Weekly
3. Semi-Monthly

Be sure to set all of the fields as shown on the form. The Run Date field is optional and may be left blank. The Payment Date field must be the current or another relevant date.

In the Frequency field, enter one of the following values then press enter:

- '1' to set up a Weekly pay pay run
- '2' for a Bi-Weekly pay run
- '3' for a Semi-Monthly pay run

Payroll Run Process Control

Clear To-date: Clear No Fields Run Type: Maintenance/Pay Run

Reporting Type: End of Pay Per Run Run Date:

Purge Rule: No Purge or Delete Report Select: 000000000000

Print Update: Print Entire Report User Date:

Version Number: 0 User Field: 0000

Define Frequencies to be Paid

Frequency: 1 WEEKLY New Period: Yes No

Payment Date: 02-15-2001 Pay Cycle: 1 Deduction Cycle: 1

From this point forward, the tasks and steps include the execution of programs and processes from the normal administration of the system. This is done here both to demonstrate successful component installation and to provide the data needed to confirm that the entire system is working.

2. Execute the Pay Extract script

Job Used: jpayxtr

Execute the following script from the \Runs directory of your *The Solution Series 4.5.1* system:

```
rj jpayxtr.bat
```

Check the output file payxtr.03, in the \List directory, for errors.

Note: If you have already modified jpayxtr.bat for Interactive Workforce and run this program now without the STAPI currently running, you will receive CORBA errors that you can ignore.



Refer to the *eCyborg Interactive Workforce: Technical Implementation* documentation for information on modifying jpayxtr.

3. Execute the Pay Run script

Job used: jpayrun

Execute the following script from the \Runs directory of your *The Solution Series 4.5.1* system:

```
jpayrun.bat
```

Once you have executed a payrun, check the auditrl.pay.lis and checknum.lis files in the \List directory for errors. Also check the \Data directory to ensure that the following files have been created:

- essedr.txt
- esseer.txt
- esstxr.txt

4. Execute the Maintenance script

Job Used: jmntrun

Execute the following script from the \Runs directory of *The Solution Series* system:

```
rj jmntrun.bat
```

After you execute a maintenance run, check the audit2 and tranlod2.lis files in the ... \List directory for errors. Also, check the \Data directory to ensure that the following file has been created:

```
esspsr.txt
```

5. Execute the Pay Merge script

Job Used: jpaymrg

Execute the following script from the \Runs directory of *The Solution Series* system:

```
rj jpaymrg.bat
```

Note: If you run this job without the STAPI currently running, you may receive CORBA errors. You can ignore these errors.

Load the Pay Information database

This task takes the output files created by the 7L and 7M generators during the payroll run and loads them into the Pay Information database.

1. Copy the Pay Run output files

Copy the four output files created during the pay run from the \Data directory to the ...eCyborg\IW\PayInfoDatabase\CybPay directory.

- essedr.txt
- esseer.txt
- esstxr.txt
- esspsr.txt

Note: In a three-server configuration, copy these files to the directory for the Pay Information Database created on the Database Application Server.

2. Execute the Load Pay Information script

Job Used: imppayinfo

This script issues all the commands necessary to load data from The Solution Series payroll output files into the Pay Information database. The four files listed in Step 1 are bulk loaded into four tables. Once the process is complete, the four files are deleted. To load the pay information data, execute the following script:

```
...eCyborg\IW\PayInfoDatabase\CybPay\imppayinfo.bat
```

Verify the data load by ensuring there are no errors in the following files in ...CybPay directory:

- LoadPIBasicsData.err
- LoadPIBasicsData.log
- LoadPIEarnDeductData.err
- LoadPIEarnDeductData.log
- LoadPIEmployeeData.err
- LoadPIEmployeeData.log
- LoadPITaxesData.err
- LoadPITaxes.log

The .err files should be blank, indicating that no errors have occurred. Likewise, the log files should contain no errors.

Phase 8: Test the environment

Verify Interactive Employee functions

In this task, you log on as a test user and complete the New User steps in Interactive Workforce. Completing this task ensures that the installation is fully functional.

1. Launch Interactive Workforce

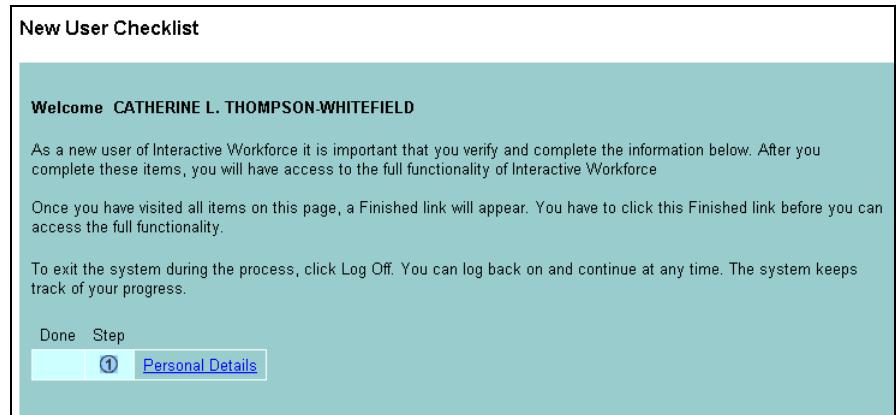
Use your browser to access Interactive Workforce; enter the following URL:

<http://localhost/CyborgESS>

When you access the system, enter the employee ID '4001' in the login box. Next, enter the initial password for employee '4001' which you collected when you loaded Interactive Workforce users. When you access the system, you will be prompted to change passwords. Change the password to be the same as the user identification, in this case, '4001'.

Note: You can do this from a client workstation, as well. However, you would need to use the Web Server's *HOSTNAME* instead of 'localhost'.

The Navigator displays New User when you log onto the system and the New User page displays.



2. Access the New User Personal Details

Click Personal Details to access the personal information for user 4001. To demonstrate that the system is fully functional and to be able to test Interactive Manager, click each of the personal details to display the page. Then click Back to return to the checklist. A check mark appears in the done column for each selection.

Personal Details Checklist

To make sure the personal information on file for you is complete and accurate, click on each of the items in the checklist below. Review and update the information as needed. If you review a checklist item and determine that it does not apply to you, click Back to return to this page. Interactive Employee adds a check in the Done column to indicate the items you reviewed.

Done

<input type="checkbox"/>	Name and Address
<input type="checkbox"/>	Phone, Fax and Email
<input type="checkbox"/>	Marital Status
<input type="checkbox"/>	Family Members
<input type="checkbox"/>	Emergency Contacts
<input type="checkbox"/>	Emergency Doctor
<input type="checkbox"/>	Direct Deposit
<input type="checkbox"/>	Reimbursement Account
<input type="checkbox"/>	Other Personal Details
<input type="checkbox"/>	Tax Forms

 [Back](#)

3. Click Finished on the Personal Details Checklist page

When a check mark appears for all Personal Details pages, click Finished. The system displays the original New User page.

4. Click Finished on the New User page

Click Finished on the initial page. The Navigator now shows the additional functions available to employee 4001.

5. Access the Pay Information options

From the Employee area of the Navigator, select Pay Information and then Pay Advice to verify access to the Pay Information database.

Congratulations! The system is working! Interactive Workforce may be accessed using the following URL:

<http://WebAppServerHostname/CyborgIW>

APPENDIX C

Implementation of SSL Certification

In This Appendix

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Introduction

This appendix details how to activate SSL for Interactive Workforce. Virtually all web servers and browsers, including products from Netscape and Microsoft, are optimized and ready for SSL. To activate SSL sessions for visitors to your site, you must acquire and install a secure certificate for your web site and configure Interactive Workforce and ServletExec to use SSL.

Overview of SSL

The Secure Sockets Layer (SSL) protocol provides secure communication between web browsers and web servers. This is the approach used today in e-commerce to establish encrypted communication for customers to safely submit information such as credit card numbers over the internet.



You can learn more about Secure Socket Layer from the web sites of existing Certification Authorities.

Implementing SSL in applications is an easy process. It requires a Server Certificate available from a Certification Authority which is installed on a web server that supports SSL. The browser of the web sight must recognize SSL.

There are two levels to this concept. The first is the Certification Authority level, which creates a file identifying the Certification Authority as a verifier of trusted sources. The second is the use of that file to sign server-specific certificates (private keys) that are installed on the web server to identify it as a trusted source.

The server certificate identifies the Certification Authority and the customer, in this case yourself if set up as your own Certification Authority. The certificate contains the customer's public key, certificate serial number, identifies the certificate's operational period, and is digitally signed by the Certification Authority. The Certificate Authority is an agency that issues, suspends, or revokes a (server or client) certificate.

Important! Phase 1 of this appendix, and the supporting software described therein is provided as a proof of concept only. It demonstrates how to create credentials for a Certification Authority and allows you to act as your own Certification Authority. This software was adapted from the Open Software Foundation and is not supported by Cyborg.

Cyborg strongly recommends that you use a third party Certification Authority. In this case, once the third party provided certificate has been installed on the web server, you should begin with Phase 2 in order to secure *The Interactive Workforce Solution* using SSL.

It is relatively easy to use SSL. For example, any URL beginning with **https://** (instead of **http://**) indicates the use of HTTP protected by SSL if the server has enabled SSL.

SSL is provided for Interactive Workforce installation. The purpose of using SSL with Interactive Workforce is to encrypt the data transmissions. Normally, it is not necessary to

prove the trustworthiness of servers on your own Intranet. However, depending on your organization's needs, you may acquire and install a third party Server Certificate.

SSL provides a range of security services for client/server sessions, including:

1. **Server authentication:** This proves to the originator that he or she is actually communicating with the intended Web site and not a site that is posing as that Web site to fraudulently gather confidential or personal information.
2. **Client authentication:** This service authenticates to the server that the client is who he or she claims to be, protecting the business from fraudulent users. This is generally not implemented, because it is difficult to administer. *The Interactive Workforce Solution* does not provide this.
3. **Keep private communications private:** Data transferred between the client and server are encrypted, preventing someone (that is trapping the data as it is being sent) from viewing information that is private.
4. **Prevent tampering:** Data items transferred are protected against attempts to modify data before it reaches its destination.
5. **Assure confidentiality:** Users are assured that no unauthorized entity has access to the information being shared at the Web site. This protects sensitive information such as account numbers or credit card numbers against eavesdroppers.

Process flow

Following is a flowchart of the tasks required in implementing SSL:

Phase 1: SSL Certificate Implementation

Perform the tasks in Phase 1 in the following order:

1. Create credentials for a Certification Authority
2. Create a Certificate Signing Request for the Internet
3. Certificate Authority signs the Certificate Request
4. Create a Certificate from the Signed Request
5. Install the Certificate on the Web server
6. Install the CA's Public Key on a client

Overview of the process

A certification authority is typically a third party company that provides certification for web sites. This section provides an overview of the process of creating credentials for a fictional certification authority and setting up security for a second, fictional internet company. In the examples, AcmeSecure Inc. is the company that acts as the Certification Authority, while GoDotCom Inc. is an Internet company that implements SSL via a signed certificate from AcmeSecure.

This information is provided as a proof of concept. Your company needs to determine what level of security is appropriate for your Interactive Workforce implementation. This will determine whether SSL is required, whether a third party certification authority is necessary, or whether your company can act as its own certification authority.

Cyborg strongly recommends that you use a third party Certification Authority. In this case once the third party provided certificate has been installed on the web server, you should begin with Phase 2 in order to secure Interactive Workforce using SSL.

Create credentials for a Certification Authority

The first step in this example is to create the credentials for the fictional Certification Authority, AcmeSecure Inc. You may either use this fictional example, or create credentials for your own company, thus acting as your own Certification Authority. When this task is complete, the credentials authorizing the Certification Authority will be created. These credentials consist of the following files:

- *AuthorizingCompanyNameCAKey.pem* : private key
- *AuthorizingCompanNameCACert.pem* : public certificate
- *AuthorizingCompanNameCACert.der* : public certificate (alternate format for Windows platforms)

Cyborg provides a public-domain software suite called OpenSSL, which you can use to create Certification Authority credentials.

1. Run OpenSSL for the Authorizing Company

Using a command prompt, go to the following directory:

```
...\\inetpub\\wwwroot\\OpenSSL\\certs
```

Run the Certification Authority script using the following format:

`ca openssl.cfg` *AuthorizingCompanyNameCA*

Where *AuthorizingCompanyName* is a name which designates a Certification Authority for your implementation. In this example we use the fictional company name, AcmeSecure.

For example:

AcmeSecureCA

From here, you will be prompted to enter information defining the authorizing company.

2. Enter the pass phrase for the Authorizing Company

You will be prompted for the 'PEM pass phrase', which will be the password for the authorizing company. Be sure to secure this password, and remember it for future request signing. When prompted, verify the pass phrase.

3. Enter the Country Name

Use the two-digit code designating the correct country. For example:

US

4. Enter the State or Province

Use the name of the State or Province of your company. For example:

Illinois

5. Enter the Locality

Use the name of the city or town where your company is located. For example:

Chicago

6. Enter the Organization Name

Use the name of your company. For example:

AcmeSecure Corporation

7. Enter the Organization Unit

Use the name of your division or department. For example:

Security Services

8. Enter the Common Name

The Common Name is a fully-qualified domain name used for DNS lookups. Use the name of the web site. In this case, it is the company acting as the Certification Authority:

`www.acmesecure.com`

9. Enter an email address

This is an email address created for use with the CA. For example:

`support@acmesecure.com`

Once all of this information has been entered, OpenSSL will create the following three files:

- AcmeSecureCAKey.pem
This is the Certification Authority's private key file. This file must be kept in a secure environment.
- AcmeSecureCACert.pem
This is the CA's public certificate, which can be distributed freely to browsers for enabling secure communication.
- AcmeSecureCACert.der

This is the CA's public certificate in the DER format. This file is recommended for distribution in an MS Windows environment, because the certification information is readily displayed when this file is double-clicked in Windows Explorer. This file may also be distributed freely to browsers for enabling secure communication.

10. Close the command console window

11. Make a backup copy, Keep track of the filenames, their purpose, and the passwords

You may wish to keep track of this information by creating a 'ReadMe' file. A good way to do this is to create a AcmeSecureCA Readme.txt file, enter the data and save it in the same directory.

Create a Certificate Signing Request for the Internet Company

A web site that wishes to be secure on the internet, creates a request for a certificate. This request is then sent to the third party Certification Authority along with a fee. For this proof of concept a fictional example is used. You can either follow the example or create a request for your own company. The request text file is:

InternetCompanyNameRqst.txt

1. Access the Internet Server Manager

Make the following selections:

Start ► Programs ► Windows 2000 Option Pack ► Microsoft Internet Information Server ► Internet Service Manager

2. Open the Key Manager

Select the Key Manager button on the toolbar:



3. Create a New Key

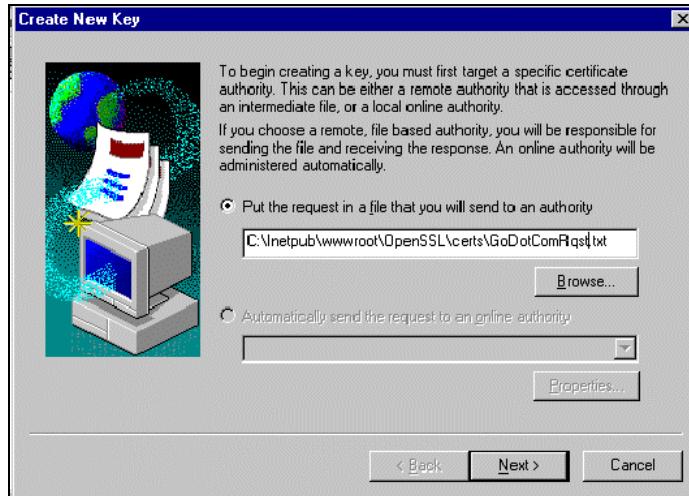
In the navigator of the Key Manager dialog, select 'WWW', then make the following selections:

Key ► Create New Key

4. Create the Certificate Signing Request

In this example, we show a request for the fictional company GoDotCom. Select 'Put the request in a file that you will send to an authority'. Enter a filename for the request. For example:

C:\inetpub\wwwroot\OpenSSL\certs\GoDotComRqst.txt



5. Click Next

6. Enter a Key Name, Password, and Bit Length

Enter any name, for example, 'Go-Dot-Com Key'. Then enter a valid password for this private key. Last, enter the bit length 1024.

Note: Be sure to remember the password because you will need it during the next task.

7. Enter an Organization, Organization Unit, and Common Name

Enter your legal company name, followed by your division, and common name. The common name is the fully qualified name used for DNS lookups of your server. For intranet access, the common name would be the network *hostname* of your web server in your domain. For internet access the name must resolve to the world wide web DNS. For example, www.godotcom.com.

Note: You are generating a request for the server where The Interactive Workforce Solution is installed. While the company name and other data may be fictitious, the Common Name used here **must** be the name of the server hosting The Interactive Workforce Solution.

8. Click Next

9. Enter your Country/Regi, State/Province, and City/Locality

For your country enter the two letter country code, followed by the two-letter state code. Last, enter the name of the city or locality, for example, Chicago.

10. Click Next

11. Enter Your Name, E-mail address, and Phone number

Enter your full name followed by your e-mail address, and work phone number. This data is not placed in the key, it is simply used to allow the certificate authority to contact you in case there are any questions. We recommend entering the data, even though you are acting as your own CA.

12. Click Next

13. Click Finish

Once you have completed all of the dialogs, click Finish to generate the new key.

14. Click OK

A dialog box displays the file location for the key. Click OK.

15. Close the Key Manager and commit changes

When you close the Key Manager, you will be prompted to commit the changes. Click Yes, and the Key Manager will save the changes. You may close the IIS Service Manager at this point.

Certificate Authority Signs the Certificate Request

The certification authority verifies the requesting company's information provided in the certificate signing request. Once the information is verified, the certificate authority signs the certificate signing request. In this example, the fictional certification authority signs the request of the fictional internet company. The following signed request file is produced:

InternetCompanyNameSnRq.pem

1. Modify the openssl.cfg file

Before modifying the openssl.cfg file, you should make and save a copy of it under a different name, such as openssl.cfg.backup.

In the Inetpub\wwwroot\OpenSSL\certs directory open the openssl.cfg file. Ensure the following parameter settings:

```
dir      =drive:/Inetpub/wwwroot/OpenSSL/certs
certificate= $dir/AuthorizingCompanyNameCACert.pem
private_key= $dir/AuthorizingCompanyNameCAKey.pem
```

2. Execute the Signing Script

In the Inetpub\wwwroot\OpenSSL\certs directory execute the sign.bat script. The first argument is the configuration file, the second is the certificate signing request, the final argument is the name of the output file which holds the signed request. For example:

```
sign openssl.cfg GoDotComRqst.txt GoDotComSnRq.pem
```

3. Enter the Certificate Authority Password

When prompted 'Enter PEM pass phrase:', enter the password for the Authorizing Company created in Task 1.

4. Review and Sign the Request

When prompted 'Sign the certificate? [y/n]:', review the information displayed. If you are satisfied that the certificate signing request information is correct, enter 'y' to sign it.

Note: The signed request is valid for one year.

5. Create the Signed Request file

When prompted '1 out of 1 certificate requests certified, commit? [y/n]', enter 'y' to commit. The signed request is now created.

Create a Certificate from the Signed Request

The signed request contains a valid certificate. The certificate must be extracted from the signed request.

1. **Create a copy of the Signed Request file to a Certificate File**
Copy the *InternetCompanyNameSnRq.pem* file and rename the copy to *InternetCompanyNameCert.txt*. Notice the file extension is changed to .txt.
2. **Extract the Certificate**
Open the new certificate file and delete all text before heading '-----BEGIN CERTIFICATE-----'.
3. **Save the Certificate file**

Install the Certificate on the Web Server

Finally, the certificate is installed on the internet company's web server. The certificate is used to verify security for specified web sites on the web server.

1. **Access the Internet Server Manager**
Make the following selections:
Start ► Programs ► Windows 2000 Option Pack ►
Microsoft Internet Information Server ► Internet Service Manager
2. **Open the Key Manager**
Select the Key Manager button on the toolbar:

3. **Select the Key for installation**
Select the key, then make the following selections:
Key ► Install Key Certificate
4. **Access the updated Certificate file**
Use the browse button to locate and open the certificate '*InternetCompanyNameCert.txt*' file.
5. **Enter the Password**
A Confirm Password window pops up; enter the password for the *InternetCompany* key request (Task 2, Step 6). If you have given the correct password, the Server Bindings window appears.
6. **Click Ok**
This installs the certificate as the Default for the key. Phase 2 provides instructions for binding the key to a specific port, then cross-referencing a web-site to that port.

7. Complete Certificate Installation

From the menu, select Computers and click Commit Changes Now. Click Yes to confirm committing the changes.

The public certificate installation process is completed.

Install the CA's Public Key on a Client

Each time a client logs in to a web-application that uses Secure Socket Layer, she or he will receive a security alert if the corresponding CA's public key is not installed locally.

If you are using Netscape, the browser will prompt for the public key. Should you accept the prompt, Netscape will automatically download and install the public key. Be sure to select 'Accept this certificate forever' during the process.

If you are using Internet Explorer, you need to complete the following steps:

1. Copy the public key to the client machine

In order to copy the public key to the client machine, you may email or otherwise download the file. Copy the following file to any directory on the client:

AuthorizingCompanyNameCACert.der

2. Install the public key on the client machine

Once the public key has been copied to the client machine, it must be installed. You can install the file by running it. Double click on the file:

AuthorizingCompanyNameCACert.der

The Certificate dialog appears:



3. **Select Install Certificate**

Once you select **Install Certificate**, the Certificate Manager Import Wizard appears:



- 4. Click Next**

The wizard prompts you to select a certificate store, which is the directory where the certification will be saved:
- 5. Select 'Place all certificates into the following store'**
- 6. Click Browse**

The Browse dialog appears.
- 7. Select 'Trusted Root Certification Authorities'**
- 8. Click Next**

The wizard prompts you to complete the certification import.
- 9. Click Finish**

The wizard prompts you to add the certificate to the store.
- 10. Click Yes**

The certificate is imported to the browser, thus allowing the browser to recognize the CA as a trusted source. Afterwards, a prompt appears informing you that the import has been successful. The public key is now installed on the client.
- 11. Click OK**

Now the task is complete, and you may close the Certificate dialog.

Phase 2: Configure SSL for The Interactive Workforce Solution

A prerequisite for this phase is the installation of a complete usable key in the IIS Key Manager of the web server. This key may have been created as a proof of concept as described in Phase 1 above or through arrangements with a third party Certification Authority.

There are several important steps in configuring SSL for Interactive Workforce. As described elsewhere in this document, each Interactive Workforce environment is supported by its own web site configured in IIS. A web site for a secure Interactive Workforce environment must be configured with an SSL port. The SSL port must be mapped to a security key in the IIS Key Manager. This same SSL port must also be configured for both the environment-specific instance of ServletExec and the Interactive Workforce software. These tasks are described below.

It is *imperative* that you keep track of the SSL port and maintain consistency across the configuration for each web component comprising a secure Interactive Workforce environment.

Perform the tasks in Phase 2 in the following order:

1. Map the SSL Port to the Security Key
2. Configure the SSL Port for the Interactive Workforce Web site
3. Specify the SSL Port to Interactive Workforce
4. Verify the SSL Connection

Map the SSL Port to the Security Key

1. **Open the IIS Internet Service Manager**

Make the following selection:

Start ► Programs ► Windows 2000 Option Pack ►
Microsoft Internet Information Server ► Internet Service Manager

2. **Open the Key Manager**

From the Internet Service Manager, select the Key Manager icon from the tool bar.



4. Save settings

Select the following menu option in the Key Manager to save your changes.

Computer Commit Changes Now

5. Exit the Key Manager

Select the following menu option to exit the Key Manager:

Computer ► Exit

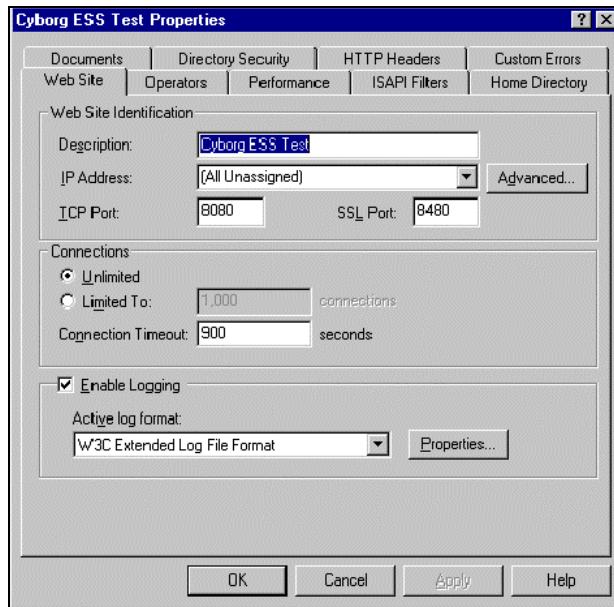
Configure the SSL Port for the Interactive Workforce Web Site

1. Stop the web site, then open the properties dialog

Right-click on the web site and select Stop. Then, right-click on the web site and open the Properties dialog.

2. Enter an SSL Port

On the Web Site tab enter an unused port number in the SSL Port field. If this is the default web site, you must use 443 for the SSL Port. Other web sites may use any unused port number. We suggest a number in the range 8400–8500.



3. Close the Properties dialog

4. Restart the web-site

Right-click on the web site and select Start

5. Exit the Service Manager

Specify the SSL Port to Interactive Workforce

1. Edit the StartServletExec.bat File

For each Interactive Workforce environment that is secured with SSL, it is necessary to specify the SSL port to the ServletExec executable. This is set in the StartServletExec.bat file.

Go to the ServletExec install directory for the Interactive Workforce environment. Add the SSL_PORT switch as described in the comments.

The following example shows the setting for the default web site. The StartServletExec.bat file for the default Interactive Workforce environment will be in the directory:

drive:\eCyborg\ESS\ServletExec\se-CybESS

```
rem To use secure communication (https), specify the SSL port with -DSSL_PORT=xxx.  
rem Example: -DSSL_PORT=443  
rem To use non-secured communications (http), do not specify -DSSL_PORT=xxx  
"%JAVA_DIR%\%JAVA_VM%" -DSSL_PORT=443 -D...
```

2. Edit the ServletExec.properties file

Go to the Inetpub\scripts directory and edit the servletexec.properties file. Find the set of entries for the environment-specific instance of ServletExec. On the hosts line add the network *hostname* and SSL port number as shown below for the test environment with SSL port 8480.

```
servletexec.CybESSTest.hosts=hostname:8080,hostname:8480  
servletexec.CybESSTest.applications=  
servletexec.CybESSTest.aliases=/servlet,.jsp,.shtml  
servletexec.CybESSTest.instances=127.0.0.1:8889
```

3. Initiate the SSL settings

Stop each ServletExec instance. Stop the IIS Admin Server. Restart everything.

Verify the SSL Connection

1. Access your Browser

2. Enter the URL for *Interactive Workforce*

Start your web browser and enter the URL for Interactive Workforce.

3. Click Yes to bypass Alert

If you have not completed the task, Install the CA's Public Key on a client in Phase 1, (not applicable if using a third party CA), a Security Alert window will pop up, claiming that the security certificate was issued by a company you have not chosen to trust. Click 'Yes' to proceed.

You may also get the standard dialog warning of the transition to secure mode. Select the check box if you do not wish to see this dialog with each login.

In IE, notice a yellow lock displayed at the status bar in the browser. In Netscape, you notice that the lock on the left of the status bar closes. This means that communication in Interactive Workforce is now secured.

APPENDIX D

Installation Scripts and Files

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Introduction

This appendix is intended to provide you with additional detail to help you understand the data transfer processes used by Interactive Workforce. It begins with more detail on the creation of the databases, then concludes with detail on the data maintenance processes. Both of these concepts were executed as part of installation, while the ongoing maintenance is part of normal system administration.

The process summary includes the files, applications, and outputs involved during the creation and maintenance of these databases. The processes are presented from the server perspective. For example, first it discusses processes on the Solution Series Application Server, then those executed on the Web Server.

The file types .bat, .cfg, and .cmd all have lowercase names in order to facilitate portability. Each of the servers contains one batch creation and initialization process and one batch maintenance process.

The Solution Series Application Server Initialization Process

This flow begins with no database existing, and ends with the completion of all steps needed to be 'ready to run'.

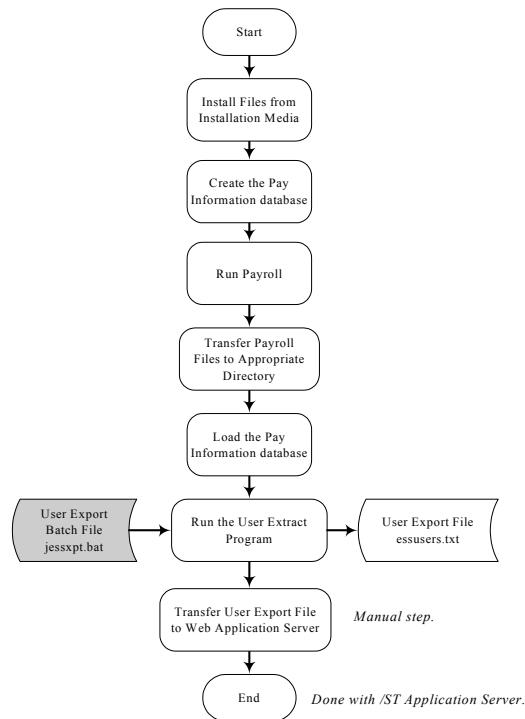


Figure A-1

The Solution Series Application Server

The following processes are done on Solution Series Application Server to create and maintain the Pay Information database.

Creating the Pay Information database

This process takes place just once and is done during the installation process. This database resides only on the Solution Series Application Server. Everything needed to get the system initially up and running is done during the installation process. The following scripts and files are contained within the process:

- createpaydb.bat
- payinfodb.cfg
- createdb.sql.cmd
- create%DBNAME%.sql
- PayDB.sql
- Create%DBNAME%DB.log and Create%DBNAME%TBL.log

The Pay Information database Scripts and Files

Populating the Pay Information database

This file is not run as part of The Solution Series payrun process. This is avoided, in fact, because users often make multiple payruns in order to ensure a good one. Once a final payrun creates the four output files, they are transferred to the directory containing the batch file listed below so that the process can be executed. The following scripts and files are contained within the process:

- imppayinfo.bat
- payinfodb.cfg
- %ESSPSRDAT%, %ESSEDRDAT%, %ESSEERDAT%, and %ESSTXRDAT%
- CybPayInfoBasics.fmt, CybPayInfoEarningsDeductions.fmt, CybPayInfoEmployee.fmt, and CybPayInfoTaxes.fmt
- LoadPIBasicsData.log, LoadPIEarnDeductData.log LoadPIEmployeeData.log, and LoadPITaxesData.log
- LoadPIBasicsData.err, LoadPIEarnDeductData.err LoadPIEmployeeData.err, and LoadPITaxesData.err

createpaydb.bat

After the media installation process is complete, this file is run from a command line in the directory where it resides. When running this file, the user is prompted for the system administrator's password of the RDBMS on the installation server.

The 'createpaydb.bat' file controls the process of creating the Pay Information database. Before creating the database, this batch file removes any existing database with the same name. This file is the engine that runs the process and invokes the files and variables listed below.

payinfodb.cfg

The Pay Information Configuration file, invoked by 'createpaydb.bat', contains the parameters needed to create the Pay Information database and to load data.

This file contains the username and password for the user that owns the Pay Information database and other configuration settings that must be manually edited to add or change these values.

createdbsql.cmd

This file, invoked by 'createpaydb.bat', uses the environment variables set via the configuration file to create the SQL statements that, in turn, create the database.

create%DBNAME%.sql

This is the file created by 'createdbsql.cmd'. In this example, '%DBNAME%' equates to the name of the database found in the configuration file. The actual name varies by customer. It is deleted when the createpaydb.bat process completes.

PayDB.sql

This file, invoked by 'createpaydb.bat', contains the Data Definition Language (DDL) created by ERStudio that is used to create the tables, attributes, keys, and so forth.

Create%DBNAME%DB.log and Create%DBNAME%TBL.log

The log files are created as part of the database table creation process. These files are referenced to verify that the tables have been created and that there is access to the tables. The files, when created, reside in the eCyborg\IW\PayInfoDatabase\CybPay directory. In this example, '%DBNAME%' equates to the name (CybPayInfo) of the database found in the configuration file. The file remains at the end of the process but will be rewritten with subsequent runs.

The Load Pay Information Scripts and Files

imppayinfo.bat

After the media installation process is complete the 'imppayinfo.bat' script is used to issue all of the commands necessary to load data from The Solution Series payruns into the Pay Information database. In this process, there are four input files bulk loaded into the four tables that exist once you complete the process of creating the Pay Information database.

payinfodb.cfg

The Pay Information Configuration file contains all of the parameters necessary to create the Pay Information database and to load data.

This file, invoked by 'imppayinfo.bat', contains the username and password for the user that owns the Pay Information database as well as other configuration settings and variables. This file must be manually edited to make any additions or updates to these values.

**%ESSPSRDAT%, %ESSEDRDAT%, %ESSEERDAT%, and
%ESSTXRDAT%**

These variables represent the four input files created by a Solution Series payrun. The environment variables here map to the actual file names in the configuration file.

**CybPayInfoBasics.fmt, CybPayInfoEarningsDeductions.fmt,
CybPayInfoEmployee.fmt, and CybPayInfoTaxes.fmt**

These four format files, invoked by 'imppayinfo.bat', are used by the bulk loader to map the contents of the input files to the database tables Basics, Earning_Deductions, Employee and Taxes respectively.

**LoadPIBasicsData.log, LoadPIEarnDeductData.log
LoadPIEmployeeData.log, and LoadPITaxesData.log**

These files invoked by 'imppayinfo.bat', are created if logging messages occur during the process of bulk loading the Basics, Earnings_Deductions, Employee and Taxes tables respectively.

**LoadPIBasicsData.err, LoadPIEarnDeductData.err
LoadPIEmployeeData.err, and LoadPITaxesData.err**

These files invoked by 'imppayinfo.bat', are created if errors occur during the process of bulk loading the Basics, Earnings_Deductions, Employee and Taxes tables respectively.

Create Pay Information Database flow

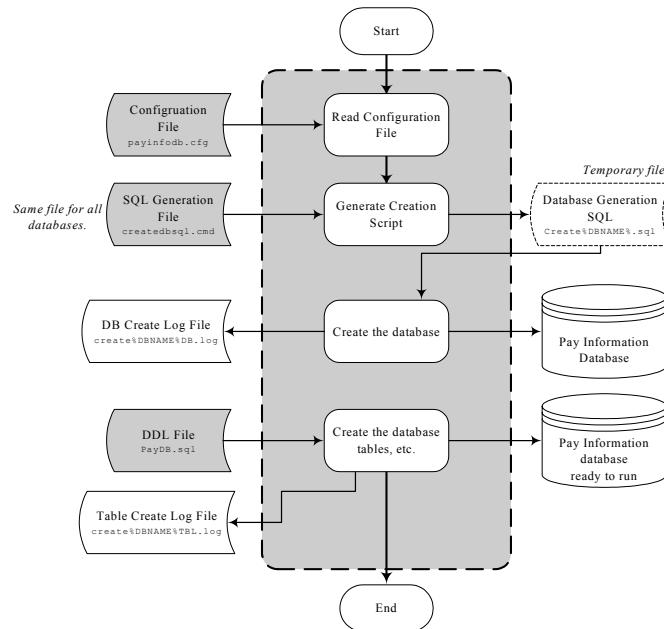


Figure A-2

Load Pay Information

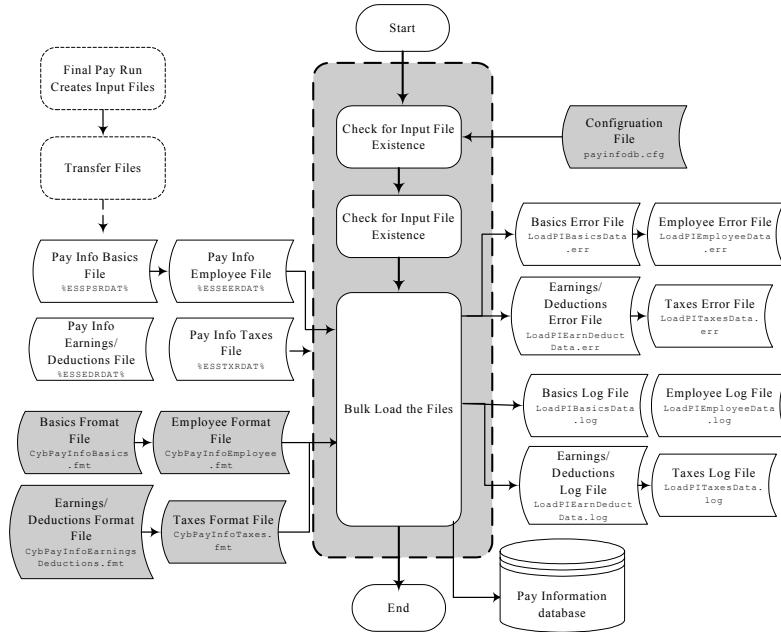


Figure A-3

Web Application Server Initialization Process

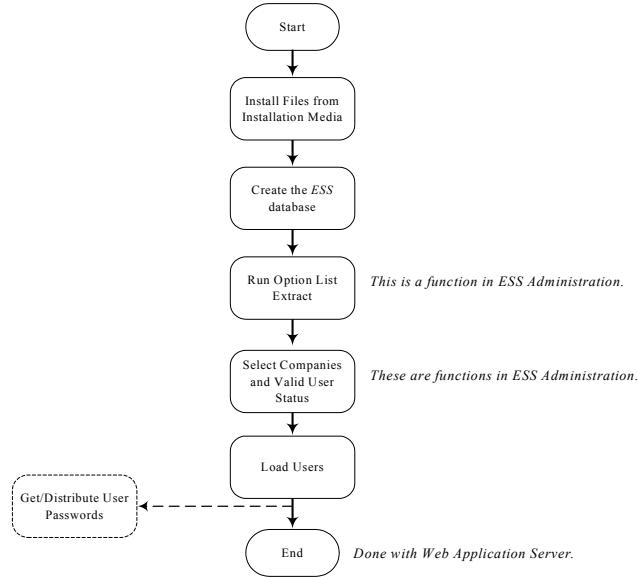


Figure A-4

The Web Application Server

The following processes are done on the Web Server to create and maintain the Interactive Workforce database.

Creating The ESS Database

This process takes place just once on the Web Server. This database resides only on the Web Server. Everything needed to get the system initially up and running is done during the installation process. The following scripts and files are contained within the process:

- createessdb.bat
- essdb.cfg
- createdb.sql.cmd
- Create%DBNAME%.sql
- EssDB.sql
- Create%DBNAME%DB.log and Create%DBNAME%TBL.log

The Interactive Workforce database Scripts and Files

createessdb.bat

After the media installation process is complete, this file is run from a command line in the directory where this file resides. When running this file, the user will be prompted for the system administrator's password of the RDBMS on the installation server.

The 'createessdb.bat' file controls the process of creating the Interactive Workforce database. Before creating the database, this batch file removes any existing database with the same name. This file is the engine that runs the process and invokes the files and variables listed below.

essdb.cfg

The Interactive Workforce configuration file contains the parameters needed to create the database and to load user data.

This file, invoked by 'createessdb.bat', contains the username and password for the Interactive Workforce database as well as other configuration settings and variables. This file must be manually edited to make any additions or updates to these values.

createdb.sql.cmd

This file uses the environment variables set via the configuration file to create the SQL statements that, in turn, create the database.

Create%DBNAME%.sql

This is the file created by 'createdb.sql.cmd'. In this example, '%DBNAME%' equates to the name (CybIW) of the database found in the configuration file. The actual name varies by customer. It is deleted when the 'createessdb.bat' process completes.

EssDB.sql

This file contains the Data Definition Language (DDL) created by ERStudio that is used to create the tables, attributes, keys, and so forth.

Create%DBNAME%DB.log and Create%DBNAME%TBL.log

The log files are created as part of the database table creation process. These files are referenced to verify that the tables have been created and that there is access to the tables. The files, when created, reside in the eCyborg\IW\Interactive Workforce Database\CybIW directory. In this example, '%DBNAME%' equates to the name (CybIW) of the database found in the configuration file. The file remains at the end of the process but will be rewritten with subsequent runs.

The Load Users Scripts and Files

Loading The ESS Users

This is done each time users have been added or deleted from the system or certain user data has changed. The following scripts and files are contained within the process:

- loadusers.bat
- essdb.cfg, and javaenv.cfg
- %USRTEXT%
- LoadUsers.fmt
- LoadUsers.sql
- bcpusers.log, bcpusers.err, and LoadUsers.log
- passwordgen.properties, and passwordgen.cfg
- Passwordgen.log

loadusers.bat

After the media installation process is complete, this script is used to issue all of the commands necessary to load user data from The Solution Series into the Interactive Workforce database. There is one input file which is bulk loaded into a staging table, then processed into the database.

essdb.cfg

The Interactive Workforce configuration file contains the parameters needed to create the database and to load user data.

This file, invoked by 'loadusers.bat', contains the username and password for the Interactive Workforce database as well as other configuration settings and variables. This file must be manually edited to make any additions or updates to these values.

%USRTXT%

This variable, invoked by 'loadusers.bat', represents the input file created by The Solution Series user extract process 'jessxpt.bat'. The environment variable here maps to the actual file name in the configuration file.

LoadUsers.fmt

This format file, invoked by 'loadusers.bat', is used by the bulk loader to map the contents of the input file to the database staging table `Intermediate_Cybor_User`.

LoadUsers.sql

This file, invoked by 'loadusers.bat', contains the SQL commands necessary for processing users from the staging table into the Interactive Workforce database.

bcpusers.log, bcpusers.err, and LoadUsers.log

These logging and error files, invoked by 'loadusers.bat', are created if logging messages occur during the process of bulk loading the database.

passwordgen.properties, and passwordgen.cfg

These configuration and property files are needed by the password generation application.

Passwordgen.log

This log file is created if logging messages occur during the process of generating passwords for new users.

A P P E N D I X E

Uninstalling The Interactive Workforce Solution

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Uninstalling The Interactive Workforce Solution

This appendix details how to uninstall Interactive Workforce. If you wish to remove Interactive Workforce, carefully follow these steps:

1. Stop the system

Stop ServletExec, then stop Orbix.



Refer to the eCyborg Interactive Workforce: Technical Implementation documentation for details on shutting down Interactive Workforce.

2. Delete the Interactive Workforce and Pay Information databases

On the Web server delete the Interactive Workforce and Pay Information databases. This should be done in the SQL Server Enterprise Manager. In a two-server configuration, this would involve both servers.

Access the SQL Server Enterprise Manager by making the following selections:

Start ► Programs ► Microsoft SQL Server 7.0 ► Enterprise Manager

Delete the following databases:

- CybIW
- CybPayInfo

For multiple environments, delete the corresponding databases as well.

3. Delete the Interactive Workforce and Pay Information database users

On the Application Server delete the Interactive Workforce and Pay Information database users. For this step, keep SQL Server Enterprise Manager open. In a two-server configuration, this would involve both servers. In Enterprise Manager, make the following selections:

Security ► Logins

Delete the following users:

- cybiwdba
- cybpaydba (not applicable to the AS/400)

For multiple environments, delete the corresponding database users as well.

4. Delete the Interactive Workforce and Pay Information ODBC entries

This should be done in the Services dialog. In a two-server configuration, this would involve both servers.

Access the Service dialog by making the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► ODBC Data Sources ► System DSN

Then, remove the names of the ODBC entries for the Interactive Workforce and Pay Information databases.

For multiple environments, delete the corresponding ODBC entries as well.

5. Stop the IIS Service

Make the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Services
Select the IIS Admin service and stop it.

Note This stops all other IIS services.

6. Uninstall Interactive Workforce

Make the following selections:

Start ► Settings ► Control Panel ► Administrative Tools ► Add/Remove Programs

Then, uninstall Interactive Workforce. In a two-server configuration, this would be done on each server.

For multiple environments, do this only if you intend to remove all environments. If not, you must selectively delete files by carefully reversing the steps presented in Appendix B.

 Refer to Appendix B: Multiple Environments on the Same Server(s).

7. Uninstall ServletExec

Make the following selections:

Start ► Settings ► Control Panel ► Add/Remove Programs

From the uninstall wizard select 'Uninstall ServletExec Completely'. This is done on the web-application server.

Click OK when asked if you want to delete ServletExec. The message includes the directory where ServletExec is installed.

For multiple environments, do this for each environment you wish to remove.

8. Uninstall the Java Development Kit

Make the following selections:

Start ► Settings ► Control Panel ► Add/Remove Programs

Then, uninstall the Java Development Kit. In a two-server configuration, this would be done on each server.

For multiple environments, do not do this unless you wish to remove all environments.

9. Delete the eCyborg/IW directory

In a two-server configuration, this would involve both servers.

For multiple environments, do this only if you intend to remove all of them. If not, you must selectively delete files by carefully reversing the steps presented in Appendix B.

 Refer to Appendix B: Multiple Environments on the Same Server(s).

10. Delete Interactive Workforce System variables

Make the following selections:

Start ► Settings ► Control Panel ► System ► Advanced ► Environment Variables ► Advanced ► Environment Variables

Then, delete any of the following that exist for your installation:

- CybIW_HOME variable (Web server)
- Cyborg_HOME variable
- %Cyborg\IW\Orbix\Include from the INCLUDE variable
- IT_CONFIG_PATH variable
- %Cyborg\IW\Orbix\Lib from the LIB variable
- ORBIX_HOME variable
- %Cyborg\IW\Orbix\Bin from the PATH
- %Cyborg\IW\Stapi\Lib from the PATH

For multiple environments, do not do this unless you are removing all environments.

Installing and Configuring Reporting Administration 5.0 (Windows)

Document Issue: 1.0



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CHAPTER 1

Introduction

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Introduction

This document provides detailed instructions for installing and configuring the server and client components of Reporting Administration.

Scope

This guide applies only to users who have a fully configured and operational version of The Solution Series on a Windows 2000 Server environment.

Prerequisites

In addition to The Solution Series, you must have installed and configured the following software before installing Reporting Administration.

Minimum Server Hardware Requirements

As a general rule, server requires the following:

Operating system	Microsoft Windows 2000 (Service Pack 2)
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB (minimum per Cyborg environment), in addition to operating system requirements, for up to 2,000 employees. Allow an another 60 MB for every additional 1,000 employees. Allow additional space for temporary files.
Processor	800 MHz or better
Media access	CD-ROM

Minimum Server Software Requirements

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Note: Cyborg supports a Windows 2000 server with SQL Server 2000 database management software OR a Windows 2000 server with SQL 2000 database management software.

SQL Server

Operating System	Windows 2000 (Service Pack 2)
Database Server	SQL Server 2000
ODBC Driver	SQL Server ODBC driver 2000.80.194.00 or higher
Cobol Compiler	NetExpress 3.1
Other	TCP/IP

Oracle Server

Operating System	Windows 2000 (Service Pack 2)
Database Server	ORACLE8i Enterprise Edition (8.1.7)
Cobol Compiler	NetExpress 3.1
Other	TCP/IP

Minimum Client Hardware Requirements

As a general rule, the client requires the following:

Operating system	Windows 2000 Professional (Service Pack 2) Windows XP Professional Windows NT Workstation (Service Pack 6a)
RAM	128 MB, in addition to operating system requirements
Disk space	80 MB for full installation of Cognos Impromptu and 153 MB for typical installation of PowerPlay in addition to operating system requirements
Processor	500 MHz Pentium 500 or higher
Media access	Access to a CD-ROM drive (either locally or on a network)
Monitor	SVGA 800x600

Minimum Client Software Requirements

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details. Please use the following table as a checklist in verifying the prerequisite software:

Reporting Administration Client Software Requirements
Microsoft Windows 2000 -or- Windows XP Professional Edition -or- Windows NT Professional Edition
TCP/IP
ISQL 32-bit version ¹
Cognos Impromptu (User and Administrator) version 7.0
PowerPlay User and Administrator version 7.0

¹ For clients in SQL Server environments only. ISQL accompanies SQL Server on the SQL Server software CD-ROM.

² When installing the User version of PowerPlay, you must also install the Personal Server for Windows (available on the PowerPlay User CD-ROM). This ensures the user will be able to access cubes installed locally and/or accessed from a network.

Companion products

This reporting option combines the power of the business intelligence tools from Cognos Corporation, a Cyborg strategic partner, with a value-added relational database (data mart) package from Cyborg.

Reporting Administration includes the following companion products from Cognos Corporation:

- Impromptu User
- Impromptu Administrator

Who should read this installation guide

This guide is intended for a technical audience (ideally a Cyborg installation specialist), but the information may also be used by the technical/system administrator at the customer site.

A = Anyone who wishes to have an overview of Reporting Administration or who needs to know how to prepare for an installation.

I = Cyborg installation specialist or customer performing the installation.

Who	Read this chapter/appendix	For
A	1. Introduction	An explanation of this installation, its scope, and prerequisites.
A	2. Overview of Reporting Administration	An explanation of the new functionality being delivered.
I	3. Installing Server Components of Reporting administration with the Data mart as an Windows 2000/SQL Component for Reporting Administration	Detailed instructions for installing and configuring the server components of Reporting Administration on an Indexed system in an Windows 2000/SQL Server environment.
I	4. Configuring Reporting Administration and Setting Up the Data Mart with The Solution Series	Detailed instructions for installing and configuring the server components of Reporting Administration for Windows 2000, installing Reporting Administration Generators, and setting up the data mart.
I	5. Installing and Configuring Client Components of Reporting Administration for The Solution Series	Detailed instructions for installing and configuring the client components of Reporting Administration for Windows 2000.
I	6. Setting Up the Workforce Planning Cubes	Detailed instructions for setting up the delivered PowerPlay cubes with your new data mart.
I	A. Installation Checklists for Reporting Administration with The Solution Series	A brief listing of the steps required to install Reporting Administration for The Solution Series
I	B. Reporting Administration Delivered Files	Detailed list of file names and locations of the installed Reporting Administration.

How to get additional help

If you can not find the answers to your questions in this manual, contact Customer Support, who will be able to answer specific questions and give you general advice on training.

Please visit our web site *www.Cyborg.com* (see "Cyborg Home - <http://www.Cyborg.com>") for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

CHAPTER 2

Overview of Reporting Administration

In This Chapter

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Third party database reporting process	16
Features of Reporting Administration.....	17
Reporting Administration client/server requirements	27
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Introduction

The Solution Series provides a great deal of flexibility when you want to report on data in the system. This section first provides a brief overview of all your reporting options provided by The Solution Series, then concentrates on introducing the functionality provided by Reporting Administration.

Cyborg provides several tools within The Solution Series to help you analyze and report on information about your organization, employees, and payroll. These tools are suited for different reporting purposes, and you will achieve the best results by using the tool that best suits your reporting requirement.

Options for reporting on information in The Solution Series include:

- Packaged reports
- Solution View (online queries and batch reports)
- Reporting Administration

Reporting options available

Packaged reports

Cyborg delivers hundreds of packaged reports developed using Cyborg's Fourth Generation scripting language, Cyborg Scripting Language (CSL—formerly known as English Language). You can schedule the reports to be run using the Report Group Activities form (RGMSTR). These reports are available for use as delivered, or for customization. You can also use CSL to create your own reports.

Note: You can locate the reports provided by Cyborg by launching the Report Group Activities form (RGMSTR) in *The Solution Series* and adding a report group.



Refer to either the *eCyborg: Using the Web Client* or *Using The Solution Series: Administrative Solutions* documentation for more information about using *The Report Group Activities* form.



Refer to the *Cyborg Scripting Language* training materials for details on how to customize and create *Cyborg Scripting Language* packaged batch reports.

Solution View

Solution View is a delivered user tool for developing forms, fields, on request queries, extracts, and reports. Solution View consists of two main components:

- Query Writer is used to write programs that are run online by the QUERY program.
- Report Writer is used to write programs that are run in batch processing.



Refer to the *Using Solution View* training material for comprehensive information about this facility.

Reporting Administration

This reporting option combines the power of the business intelligence tools from Cognos Corporation, a Cyborg strategic partner, with a value-added relational database (data mart) package from Cyborg. Reporting Administration includes the following:

- Cyborg-specific Impromptu catalogs for the delivered data mart, which promote intuitive user access to the data extracted from the core Solution Series system and placed in the data mart.
- Cognos reporting tools (Impromptu, PowerPlay).
- Support for Cognos' PowerPlay Online Analytical Processing (OLAP) package and the delivered Workforce Planning models.

Impromptu

The Impromptu tool is an integrated part of Reporting Administration. It simplifies on-request reporting for data extracted from *The Solution Series*.

Impromptu uses catalogs, LAN-based repositories of business knowledge and data-access rules, to allow an end user to capture and report on information without having to know

DB2 syntax or understand cryptic field names. The data in the catalog is organized for business use, as well as for system efficiency.

PowerPlay

The PowerPlay tool is a layer removed from Reporting Administration. It allows you to perform multidimensional analysis of your data. This is called Online Analytical Processing (OLAP), and provides a means to view data in terms of business trends. You can automatically build structures that summarize data for use in PowerPlay. The delivered Cyborg data mart can be accessed and utilized by this tool.

When using PowerPlay, you examine compiled data that is presented in PowerPlay 'cubes'. To support the cube presentation of data, you must have an appropriate catalog, Impromptu reports, and additional parameters (dimension maps, measurements, and banding definitions), in a compilation 'template' known as a PowerPlay model.

Each PowerPlay model must be designed to support data analysis for a specific area of interest, such as workforce planning.

Cyborg delivers two PowerPlay models: one Workforce Planning model for organizations using Position Administration, and one Workforce Planning model for organizations that do not use Position Administration.

Selecting the reporting tool

The following shows examples of when a user would use which reporting tool:

Type of report	Batch Reports	Solution View	Impromptu	PowerPlay
Monthly summary report of current data in The Solution Series.	X			
Quick query for current data in The Solution Series.		X		
Quick data reports.			X	
Statutory reporting.	X		X	
Summary reporting.	X			X
Subject matter expert (such as HR manager) reports to define up-to-date activity.	X			
Subject matter expert (such as HR manager) reports to define and report on activities during a defined time frame.			X	
Subject matter expert (such as HR manager) reports to help plan future activities.				X
Trend data on defined subject matter.				X

Type of report	Batch Reports	Solution View	Impromptu	PowerPlay
New form.		X		
Create form field.		X		
On request query.		X		
Create data extract.		X		

Note: Reports created using Impromptu and PowerPlay use data which is only as current as the last data mart extract.

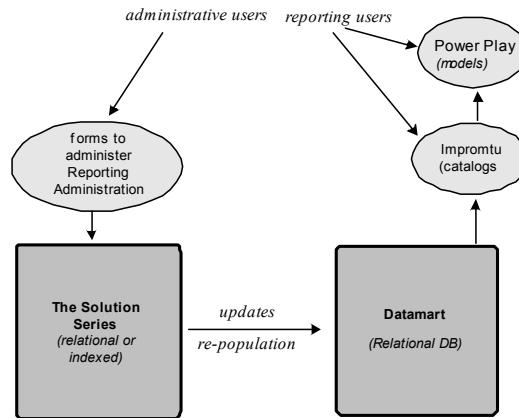
Third party database reporting process

Reporting Administration is primarily concerned with providing a refreshable, off-line copy of The Solution Series data in a relational database format for user reporting purposes.

The major components in Reporting Administration are:

- Extracts—the entities and activities associated with (re)populating the data mart with Reporting Administration data.
- Data model—the layout of Reporting Administration data within data mart tables.
- Cognos Tools—the third-party applications that support user reporting purposes.

The basic inter-relationship of Reporting Administration components is shown in the following figure:



Extracts, represented by the left side of the figure, include forms to administer and control updates to Reporting Administration, Cyborg Scripting Language extensions, and other entities that support (re)population of the data mart.

The data mart (and database) is shown in the lower right. Value added components are shown in the upper right of the figure and include the use of the Cognos applications Impromptu and PowerPlay.

Features of Reporting Administration

Reporting Administration provides everything you need to perform easy and meaningful reporting on your organization's data. Cyborg has successfully integrated all the pieces necessary to deliver a full-featured reporting solution. It is easy to use and incredibly powerful.

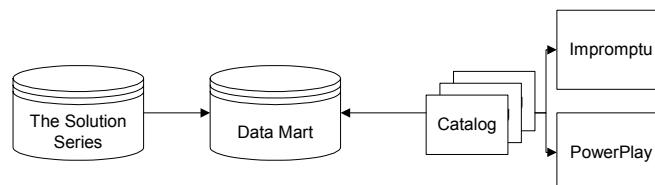
Features of Reporting Administration include:

- Extraction routines
 - CSL data extraction routines
 - RG data extraction routine
- The data model
- Cognos reporting tools
- As-of reporting
- Cyborg catalogs
- Delivered PowerPlay models
- Enhanced data

Reporting Administration combines the power of the business intelligence tools from Cognos Corporation, a Cyborg strategic partner, with a value-added relational database (data mart) package from Cyborg. Reporting Administration includes the following:

- Additional functionality in The Solution Series so you can launch the Cognos reporting tools directly from within it.
- Cognos reporting tools (Impromptu, PowerPlay).
- Cyborg-specific Impromptu catalogs for the delivered data mart, which promote intuitive user access to the data extracted from The Solution Series and placed in the data mart.
- Support for Cognos' PowerPlay Online Analytical Processing (OLAP) package and the delivered Workforce Planning Models.

The basic interrelationship of Reporting Administration components is shown in the following figure:



Extraction process

The system administrator for your organization decides how frequently to run an extract. You should note that the data in the data mart is only as current as the last extract.

Data from The Solution Series is extracted and then loaded into the Reporting Administration data mart. The data is then available for access by the Cognos tools, Impromptu and PowerPlay, through the catalogs and cubes.

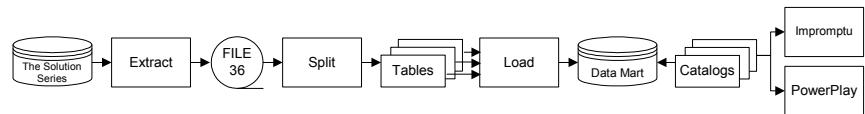
The baseline of activities necessary to (re)populate the data mart can be logically divided into three stages:

- Extracting all necessary data from the core system
- Splitting the extracted data into per-table groupings (files)
- Loading the data for each table individually into the data mart

There are two extract/import processes performed, depending on the type of data wanted—core system or Labor and History.

The core system extraction copies data from the System Control Repository and Employee Database and places the copied data in the Data Mart Extract File (FILE36), a temporary system file. A COBOL program, the Data Mart Extract File Splitter (RSPLIT), creates separate files for every representative table, with the Data Mart Extract File as input. A script generated by the extract process truncates (empties) the target data mart table via a platform-specific interpreter. A bulk loader then loads the data from the tables created by the splitter program into the data mart table.

The following figure depicts the extraction process:



The Labor and History extraction is a payroll-related process. It employs an incremental extraction strategy by accessing the Batch Master File (P20) twice. The first time to extract records into the Data Mart Extract File, and the second time to mark the extracted records so they will not be extracted again. The Data Mart Extract File Splitter creates separate files for every representative table, with the Data Mart Extract File as input. A bulk loader then loads the data from these tables into the data mart table.

CSL data extraction routines

The extract process is based on the standard system functionality of the Report batch process. The Reporting Admin Table Properties (RSXSCR) and Report Parameters For Reporting Admin Extract Report (RSXRPT) forms are used to maintain the predetermined extract task list for the data mart.

The Reporting Admin Table Properties form (RSXSCR) allows you to choose modules for which data will be extracted and to choose a cut-off date to help limit the amount of data extracted. The table created by this form is primarily used as a task list for the extract process. In this capacity, any entry on this table that is enabled for extract is marked as 'turned on to run', enabling the associated CSL extraction routine to be executed. The CSL

routines are designed to extract all the data necessary to populate target Reporting Administration tables, and write it to the Data Mart Extract File.

For Windows 2000 server installations, you will need to launch The Solution Series and set the data mart Database to Microsoft SQL Server before performing the extracts using the Report Parameters For Reporting Administration Extract Report (RSXRPT). This tells The Solution Series to create Microsoft SQL Server code. This is a one-time only activity that should occur during installation.

Note: The Reporting Admin Table Properties form (RSXSCR) is intended for use by the data mart administrator only. Detailed knowledge of the architecture of The Solution Series and the data model is required to use this form. Attendance of the Customizing Reporting Administration class is recommended before using this form.

Report Generator data extraction routine

Rather than extracting Labor and History data from the Employee Database, it is extracted from the Batch Master File (P20) file using the Report Generator (RG) routine: The data mart Labor and History Extract (7E7E).

The Data Mart

The extract process automatically (re)populates the data mart. The data mart is a relational database on the server that contains tables populated by the enhanced data. The Reporting Administration data mart tables contain the following data:

- Company Information
- Employee Information
- Position Management Information
- Earnings and Deductions
- Labor and History
- Training Administration
- Employee Skills, Competencies, and Abilities
- Benefits Administration

When the data is pulled from The Solution Series core system during the extract process, Reporting Administration is able to automatically populate its tables, making the data available for users to report upon.



Refer to the Reporting Administration Data Mart Data Model for detailed information on the data mart.

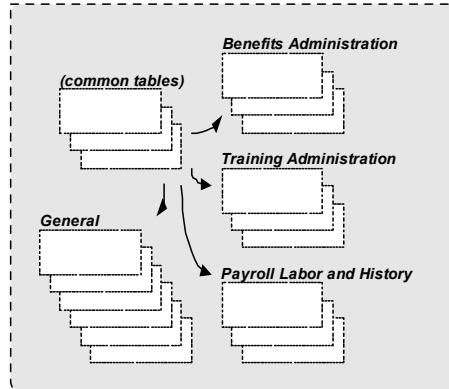
The Data Model

The Reporting Administration Data Model is a metadata representation of the data mart. It consists of approximately 172 tables organized into four subject areas and a collection of common areas.

The four subject areas are:

- General
- Payroll Labor and History
- Training Administration
- Benefits Administration

The following figure shows the Data Model organization:



Cyborg Catalog Cross-Reference spreadsheet

A spreadsheet is delivered with Reporting Administration (the Cyborg Catalog Cross-Reference spreadsheet), showing the data elements of the data mart and catalogs.

This tool is delivered in an electronic format so data elements can be added or it can be re-sorted to meet your needs. The spreadsheet can be found on CUBBS.

Cognos reporting tools

Cognos provides a suite of tools that support your business reporting needs. These tools include:

- Impromptu for on request and standard reporting
- PowerPlay for Online Analytical Processing (OLAP)

You may license a variety of these tools when you purchase The Solution Series, but an administrator's version of the Impromptu tool will always be licensed to you. The added functionality of the administrator tool (security configuration and catalog create/update authority) allows you to control user access to information.



*Cognos provides extensive documentation and customer training programs for all of their tools. If you have a question about these products, contact **Cognos Corporation** (see "<http://www.cognos.com> - <http://www.cognos.com>").*

Cyborg catalogs

Cognos Impromptu users write reports that include both database and formatting data for a pleasing, informative presentation.

An Impromptu catalog (one or more) is required before reports can be written. The catalog presents a filtering of the raw database organization that allows easy, quick report generation.

The Cyborg catalogs delivered with Reporting Administration are essential for Cognos Impromptu use. The following catalogs are delivered:

- General catalog (contains information most commonly used by the HR generalist)
- Payroll catalog (includes Labor and History)
- Training Administration catalog
- Benefits Administration catalog

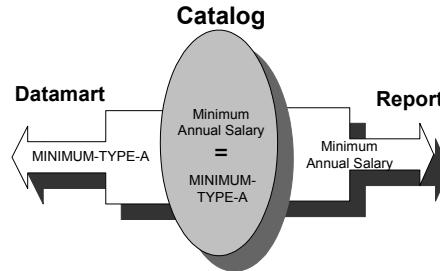
Each catalog is a file containing the information Impromptu needs to present data logically, in a way that makes sense to users creating and running reports. In short, the catalogs provide logical views of the data.

For example, if one relational table contains employee and salary data and a second table contains employee and department data, the catalog presents the logical view: employee data, salary data, and department data. Because the data is presented logically, the Impromptu user running a report does not need to know that the employee data is actually available from two sources (tables).

A catalog consists of LAN-based repositories of business knowledge and data-access rules (for example, table joins) that allow an end user to capture and report on information without having to know DB2 syntax or understand cryptic field names. By delivering the catalogs as part of Reporting Administration, Cyborg has eliminated the time-consuming task of interpreting and organizing the vast amount of data extracted from The Solution Series.

The catalogs provide a gateway between the user and the database, providing data links from the database standpoint, and providing meaningful field and table aliases from the user point of view. The Impromptu user can simply point and click to add information to a report, rather than search for database table joins and segment records.

For example, if you want to include minimum annual salary information on a report, you do not need to know that the correct information is accessed from the MINIMUM-TYPE-A field in The Solution Series; you need only access the information by selecting it from the relevant catalog. The catalog locates the correct data for your report from the data mart.



Each Cyborg catalog consists of one file that contains several folders, within which the fields reside. Each of these folders may also have additional folders nested within it.

Distributed catalogs

The Cyborg-delivered catalogs may be configured as distributed catalogs. When users connect to the catalog for the first time, they will be prompted to create their own local copy of that catalog. They can then set up any number of catalog-level conditions, calculations, prompts, and so on, or re-label the data elements to suit their needs without affecting the original master catalogs.

Keep in mind, however, that the catalogs point to data tables. New sub-catalogs would have to point to certain columns of data and the tables and joins would have to be created.

Folder structure

Each Cyborg catalog consists of one file that contains several folders, within which the fields reside. Each of these folders may also have subfolders nested in it.

The information has been designed to be organized logically so that the information can be found easily and intuitively.

A number of filters, prompts, and calculations are delivered as part of the catalogs.

General catalog

Folders in the General catalog include:

Folder Name	Contains
Company Information	Organization information fields used in your reports.
Job Table Information	Job-level and salary-level fields used in your reports.
Employee Personal Information	Personal employee-level fields used in your reports.
Employment Information	Employment-level fields used in your reports.

Folder Name	Contains
Compensation & Salary Administration	Compensation and salary administration fields used in your reports.
Employee Attendance Information	Employee attendance fields used in your reports.
Employee Skills and Training	Employee skills and training fields used in your reports.
PM-Org Unit Information	Position Administration organization unit information fields used in your reports.
PM-Job Information	Position Administration job information fields used in your reports.
PM Position Information	Position Administration position information fields used in your reports.
PM Incumbencies	Position Administration incumbency-level fields used in your reports.
Requisition/Applicant Tracking	Requisition and applicant tracking fields used in your reports.
EEO/AAP Reporting Data	Equal Employment Opportunity and Affirmative Action Program reporting data fields used in your reports.

Payroll catalog

Folders in the Payroll catalog include:

Folder Name	Contains
Company Information	Organization information fields used in your reports.
Employee Personal Information	Personal employee-level fields used in your reports.
Compensation and Salary Administration	Compensation and salary administration fields used in your reports.
Employee Payroll Information	Employee payroll information fields used in your reports.
Employee HED and Tax Summary Data	Hours, Earnings, and Deductions (HEDs) and tax summary data fields used in your reports.

Training Administration catalog

Folders in the Training Administration catalog include:

Folder Name	Contains
Course Administration	Course administration-level fields used in your reports.

Folder Name	Contains
Class Administration	Class administration-level fields used in your reports.
Program Administration	Program administration-level fields used in your reports.
Employee Personal Information	Personal employee-level fields used in your reports.
Employment Information	Employment information-level fields used in your reports.
Employee Training Administration	Employee training administration fields used in your reports.
Employee Skills, Education and Certs	Employee skills, education and certification fields used in your reports.

Benefits Administration catalog

Folders in the Benefits Administration catalog include:

Folder Name	Contains
Company Information	Organization information fields used in your reports.
Employee Personal Information	Personal employee-level fields used in your reports.
Employment Information	Employment-level fields used in your reports.
EE Benefits Eligibility	Employee benefits eligibility fields used in your reports.
EE Benefits Enrollment, Coverage & Cost	Employee benefits enrollment, coverage, and cost fields used in your reports.
Employee Plan Details	Employee plan detail fields used in your reports.
Non-Discrimination Test Info	Non-discrimination test information fields used in your reports.
Dependents, Beneficiaries & Bond Holders	Dependant, beneficiary, and bond holder fields used in your reports.
Plan Name and Basic Rules	Plan name and basic rule fields used in your reports.
Plan Coverage & Contribution Rules	Plan coverage and contribution rule fields used in your reports.
Plan Contribution HED Set Up	Plan contribution-level fields used in your reports.
Plan Eligibility Rules	Plan eligibility rule fields used in your reports.
Plan Activity and Option Rules	Plan activity and option rule fields used in your reports.

Folder Name	Contains
Plan Flex Rules, Definitions & Formulas	Plan flex rule, definition, and formula fields used in your reports.
Deferred Plan Rules	Deferred plan rule fields used in your reports.
Plan Search Arguments & Co to Bene X Ref	Plan search argument and company to benefit cross-reference fields used in your reports.

Delivered PowerPlay models

PowerPlay users examine compiled data in PowerPlay cubes that have been 'transformed' using a PowerPlay model (template). Users must have an appropriate catalog, specialized 'extraction-only' reports, and additional parameters (dimension maps, measurements, and banding definitions).

Two models are delivered by Cyborg, the Workforce Planning Model with Position Administration and the Workforce Planning Model without Position Administration.

Cognos PowerPlay tools are used to compile cubes that can then be used for OLAP.

Enhanced data

Derived data

Reporting Administration allows you to report on derived data. A straight extract from the core Solution Series system does not give you easy access to all the employee information you may need for reporting. Derived data would not be in the extract.

For example, there are fields for employee age in the data mart that can be used in reports to show the employee age in years, in years and months, or in years, months, and days. These fields are derived from the employee's birth date data stored in The Solution Series.

A derived data field avoids repeated calculations and simplifies reporting, giving you direct and easy access to employee information.

Effective dating

In order to perform as-of reporting on your data, the database must know the time period when the data in a table was effective (or if it still is effective).

Each dated data record in The Solution Series is extracted into the data mart with an effective begin date and an effective end date. The effective begin date is the effective date of the record in The Solution Series and the effective end date is derived during the extract process. These dates are then stored along with the data in the data mart so that it is date stamped for any kind of as-of reporting you may want to perform.

Note: This does not apply to Position Administration data.

As-of reporting

When using or creating reports you may be presented with a prompt asking for the 'As Of Date'. This means that the data used in this report will be valid 'as of' this date.

Users can change the date in the 'As Of Date' field to view data 'as of' another date. They may want to change the 'As Of Date' to a date prior to the date shown to view data 'as of' that date. Future dates can also be entered in this field to view data 'as of' a future date.

Because effective start and end dates are captured during the extract/import process for all dated data in the data mart, as-of reporting can be performed on all the information extracted from The Solution Series. For instance, reports can be generated to show last year's total salary increase amounts, this year's salary totals, or the salary amounts the organization paid five years ago.

Filtering data

The Cyborg-delivered catalogs contain some commonly used pre-defined filters.

Filters select information by some single or multiple criteria. For instance, if you want to display a list of active employees, you want to enter a condition statement in a filter to more specifically request employees with an active status.

In addition, filters can be used to restrict access to sensitive data. Filters can also help improve performance as the number of retrieved records are limited.

Reporting Administration client/server requirements

Before you can perform reporting tasks, you must have a client and a server. Clients and servers are not mutually exclusive; you can install both on the same machine.

Reporting Administration requires that:

- The Solution Series be installed with the server on a supported relational environment.
- Cognos Impromptu be installed with the client on an environment compatible with the relational server environment.

In order to support the full functionality of Reporting Administration, your installation of The Solution Series may be either relational or indexed.

Security issues

The Solution Series

The Solution Series provides multilevel security. Your Security Officer should be aware of some additional security issues raised because of Reporting Administration.



Refer to Setting Up and Maintaining The Solution Series Security for suggestions on mapping Cognos security with The Solution Series security.

File level and operating system level security

Additionally, you need to use your standard operating system security to make sure only those authorized to do so can move or copy the files resulting from the extract process.

For example, you may decide that for your implementation, you only want an assigned database administrator to have edit authority over the Data Mart Extract File and only a system administrator to have the authority to move or copy files from the server.

Datamart security

The security facilities provided by Impromptu do not protect the database. If a user can access the database through Impromptu, that user can also send straight commands to the database. You should therefore consider setting up database security on your information, as well as through Impromptu user classes.

You may wish to ensure the security of the data mart resulting from the extract process. These tables are located on the server after the extract/import operation is complete. Once created, you can move these tables anywhere. If they remain in the server at the location they were extracted to, they will be overwritten each time an extract is performed, which means these files (if not moved) always contain the most current extract data.

Note: Discuss the implications of moving the data mart from the default location on the server with your database administrator.

Note: If you move the data mart from the default location on the server, be sure the catalog on the client computer accesses the database in its new location.

Cognos Impromptu

Cognos Impromptu provides a security scheme that allows the Security Officer to assign different information access privileges to different user classes. Security within Impromptu is handled by Impromptu.

Cognos PowerPlay

The power cube can be compiled in such a way as to allow different user classes to view different levels of information.

To begin your installation of Reporting Administration, go to Part 2—Installing and Configuring Reporting Administration in a SQL Server Environment.

PART 2

Installing and Configuring Reporting Administration in a Windows 2000 Server Environment

In This Section

Installing Server Components of Reporting Administration.....	31
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Configuring Reporting Administration and Setting Up the data mart for an Oracle Database.....	49

CHAPTER 3

Installing Server Components of Reporting Administration

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Phase 1: Install Reporting Administration files	33
Phase 2: Update the batch system	35

Introduction

This section provides detailed instructions for installing Reporting Administration software on a Windows 2000 computer, then configuring it to work seamlessly with client computers.

These installation instructions assume you have:

- an indexed or relational server implementation of The Solution Series in production, as well as a Windows server environment
- created a new test environment containing your production version
- backed up the new test environment
- installed and configured all required software

This is a technical section. The reader should be knowledgeable of the technical side of the server environment, as well as The Solution Series.



Refer to [Installing and Configuring Client Components of Reporting Administration for The Solution Series](#) for instructions on installing and configuring components of Reporting Administration on a client computer.

Deliverables

The following is included:

1	CD-ROM titled 'Installation Media for Reporting Administration' which contains this installation guide
---	--

Overview of the installation

Phase 1: Install Reporting Administration files

Phase 2: Update the batch system

Phase 1: Install Reporting Administration files

1. **Insert the delivered CD-ROM titled 'Reporting Administration 5.0 for Windows' into drive**

The Getting Started page displays.

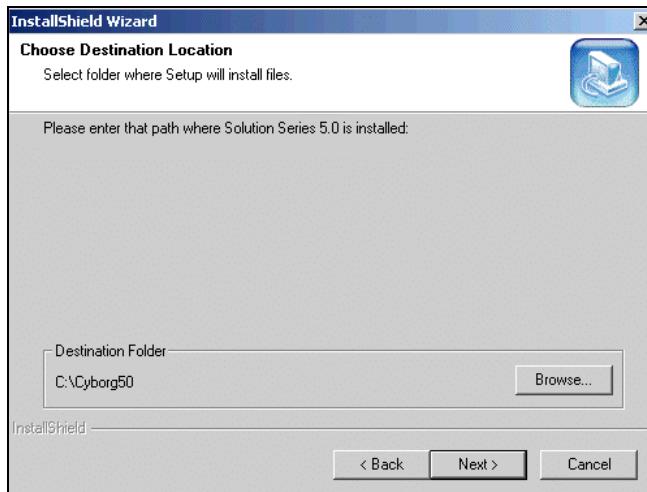
2. **Navigate and then click on the 'Install Reporting Administration server' link**

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. **Click Next**

4. **Enter the Destination, then click Next**

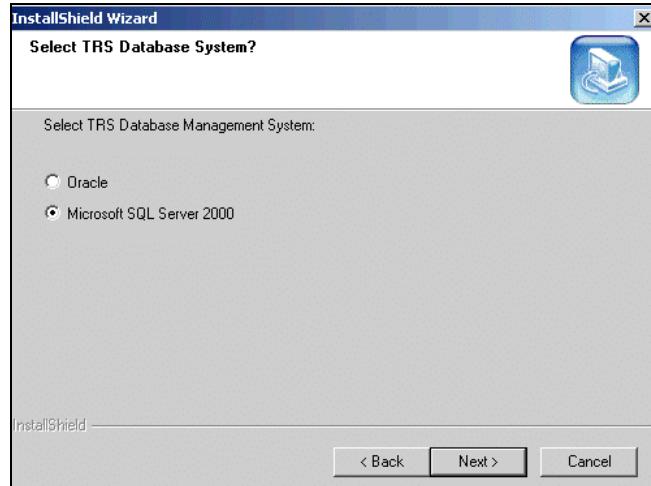
This is the drive where the files should be installed.



Once you click Next, the program will install the files.

5. Select the appropriate Reporting Administration database system

Select the Microsoft SQL Server 2000 button.



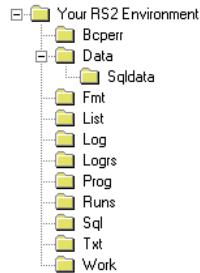
6. Click Next

7. Click Finish

The server installation of Reporting Administration is complete.

8. Review the directory structure

Your directory structure should look similar to the illustration below:



Phase 2: Update the batch system

Pull and Compile RSPLIT

Job Used: JPULLRSP

This script is used to pull and compile the RSPLIT program for Reporting Administration. Execute the JPULLRSP.BAT jobstream from the \Runs subdirectory.

For example:

```
jpullrsp > ..\log\jpullrsp.log
```

Review the `rsplit.03` file in \List and the `jpullrsp log` in \log to determine if there were any errors.

Your installation of Reporting Administration server components is now complete. Go to Configuring Reporting Administration and Setting Up the data mart with The Solution Series.

C H A P T E R 4

Configuring Reporting Administration and Setting Up the data mart for a SQL Database

In This Chapter

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Introduction

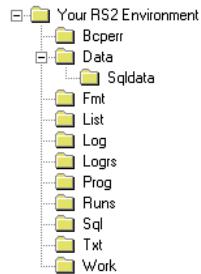
This section provides detailed instructions for configuring Reporting Administration software to work seamlessly between the server and the client.

This is a technical section. The installer should be knowledgeable of the technical side of the server environment, as well as The Solution Series.

Server Configuration

These installation instructions assume you have:

- an indexed or relational server (Windows 2000/SQL Server environment) implementation of The Solution Series in production with the following directory structure:



- created a new test environment containing your production version of The Solution Series
- backed up the new test environment
- installed and configured all required software (such as MS SQL 2000) on the server

Phase 1: Create the data mart

There are three SQL scripts delivered as components of Reporting Administration. These scripts, located in the \Sql directory, must be run to create the data mart.

Delivered script	Description
r2_container_sql.sql	This script creates the data container files for the data mart.
r2_datamart_sql.sql	This script creates the data mart.
r2_roles_sql.sql	This script creates the SQL Server user roles for the data mart.

1. Review and revise your database, data device, log, and size

Script used: R2_CONTAINER_SQL.SQL

Note See 'Minimum Server System Requirements' in Chapter 1: Introduction to be sure that you have sufficient resources to create the data mart.

This script is used to create the table container for the data mart. 'R2_Test' is the default database and log name in the delivered SQL scripts.

- Set **name** to indicate the name of your database and log if you do not want to keep the delivered 'R2_Test' name.
- Set both **filename** parameters to indicate directory where the Reporting Administration environment exists. For Example:

```
C:\MyRS2Environment\MSSQL\Data\
```

Review the script and make changes according to your specifications. For example, if you decide to rename your database name from the delivered 'R2_Test' to 'My_Database_Name' replace any strings in the SQL scripts that contain the delivered database name with your own. Before continuing make sure to:

- rename the database name 'R2_Test' (optional)
- rename the log name 'R2_Test' (optional)
- check the drive and path of the filename parameter
- determine the amount of space required and allocate the space, using the size parameter

2. Review and revise your data mart table allocations

Script used: R2_DATAMART_SQL.SQL

This script is used to create the data mart tables for Reporting Administration. Review the script and make changes according to your specifications. For example, if you renamed your database in the container script, make sure to change delivered 'r2_test' string in this script with your database name.

If you changed your database name in R2_Container_Sql, replace 'R2_Test' in the use statement with your database name.

3. Review and revise Reporting Administration Role allocations Script used: R2_ROLES_SQL.SQL

This script is used to create five roles for the corresponding Cognos catalogs:

- All
- General
- Benefits
- Training
- Payroll

One role is created for each catalog and one role, 'All', is created with user access to all catalogs. Once created, the user roles allow 'select' permission to all or some of the data mart tables. The catalogs will be installed as part of the client components.



*Refer to **Configuring Reporting Administration and Setting Up the data mart for an Oracle database** (on page 49) for more information.*

If you changed your database name in R2_Container_Sql, replace 'R2_Test' in the use statement with your database name.

4. Review JCREATEDM.BAT

Modify this batch file located in the \Runs directory to reflect your own database information. Also, verify the paths for ISQL and BCP (SQL Server) are correct for your system configuration and modify if necessary.

```
set DB-USER=your system administration user ID
```

```
set DB-PASSWORD=your system administration password
```

```
set ISQL-PATH=x:\program files\microsoft sql server\80\tools\binn\
```

```
set BCP-PATH=x:\program files\microsoft sql server\80\tools\binn\
```

```
set DB-NAME=your database name
```

```
set DB-OWNER=your database owner
```

Note The 'SET SQLSRVR=%COMPUTERNAME%' reference will capture the name of the computer where the job is being run from. If you are not running the job from the server where the data mart will reside, type the name of the computer where it will reside, rather than relying on the dynamic naming of '%COMPUTERNAME%'.

5. Run the data mart creation job Job used: JCREATEDM

Note JCREATEDM.BAT cannot be run from a Windows 95/98 client system.

Execute the JCREATEDM.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jcreatedm > ..\log\jcreatedm.log
```

6. **Review the logs**

Review the logs to be sure the operation was completely successfully. Review the following logs:

- jcreatedm_sql.log in the \Log directory
- r2_container_sql.log, r2_datamart_sql.log, and r2_roles_sql.log in the \List directory
- C_DATE.LOG in the \Logrs directory

The log r2_datamart_sql.log will be empty. This is expected.

7. **Assign table permissions for individual users**

Users must have 'Select' permission assigned to their logins (user ID and password) for the tables. This is accomplished by adding user logins to Reporting Administration user roles.

Phase 2: Data mart Extract and Load

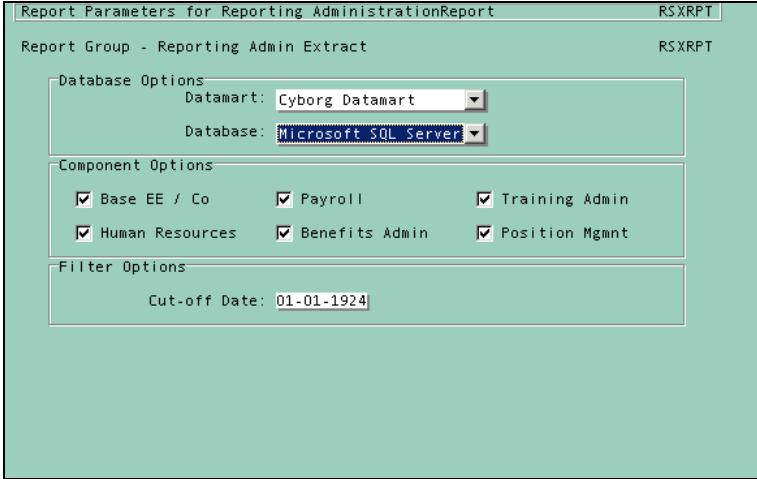
Before performing the data mart extract and load, you will need to launch The Solution Series and set the Data Mart Database to Microsoft SQL Server before performing the extracts. This tells The Solution Series to create Microsoft SQL Server code. To perform this task, please do the following:

1. Launch The Solution Series.
2. Select the Report Group Activities form (RGMSTR), by making the following selection:

Component:  Reporting
Process: Report Scheduling
Task:  Schedule Report Groups

3. Select Reporting Administration Extract (RSXRPT) in the Report Group Activities list.
4. Click Parameter.
5. Click Set Parameters.

The Report Parameters for *Reporting Solution* Extract form (RSXRPT) will appear as shown here:



Report Parameters for Reporting AdministrationReport RSXRPT

Report Group - Reporting Admin Extract RSXRPT

Database Options

Datamart: Cyborg Datamart

Database: Microsoft SQL Server

Component Options

Base EE / Co Payroll Training Admin

Human Resources Benefits Admin Position Mgmt

Filter Options

Cut-off Date: 01-01-1924

6. Under Database Options, change the Database field to Microsoft SQL Server.
7. Press Enter.

1. Modify JRSXRPT.BAT

Modify this batch file to reflect your own database information. Also, verify the paths for ISQL, BCP (SQL Server), and mfsort (NetExpress) are correct for your system configuration and modify if necessary.

```
set DB-NAME=your database name
set DB-OWNER=your database owner
set DB-USER=your system administration user ID
set DB-PASSWORD=your system administration password
set ISQL-PATH=x:\program files\microsoft sql server\80\tools\binn\
set BCP-PATH=x:\program files\microsoft sql server\80\tools\binn\
```

2. **Run the report extract and bulk copy the files** **Job used: JRSXRPT**

Note *JRSXRPT.BAT cannot be run from a Windows 2000 client system.*
Execute the JRSXRPT.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jrsxrpt > ..\log\jrsxrpt.log
```

Review the log to determine if there were any errors.

3. **Review directories and logs**

Before continuing the extract and load, it is important to check the existing environment directories for any signs of errors. Make sure to verify that:

- \Logrs and \Txt are not empty
- in \Bcperr, any files with an extension of '.BAD' have a size of '0'

Note *If any files contained in \Logrs contain the string 'Msg' that is an indication of an error.*

4. **Run a Query to check if the Database is populated**

From ISQL run a query to indicate if your database has been populated. To do this type the command:

```
select * from DM2_COMPANY
select * from DM2_EMPLOYEE
```

The SQL commands above will verify that the basic company and employee data has been populated.

Phase 3: Update the Labor and History records

1. Extract Report Generator 7E7E

Job Used: JXRPTGENRS

This job will extract report generator 7E7E into file P05T80RS in the \Work directory.

To extract the report generator, execute the JXRPTGENRS.BAT jobstream in the \RUNS directory.

For example:

```
jxrptgens > ..\log\jxrptgens.log
```

Review the log and rptgens.03 in the \LIST directory to determine if there were any errors.

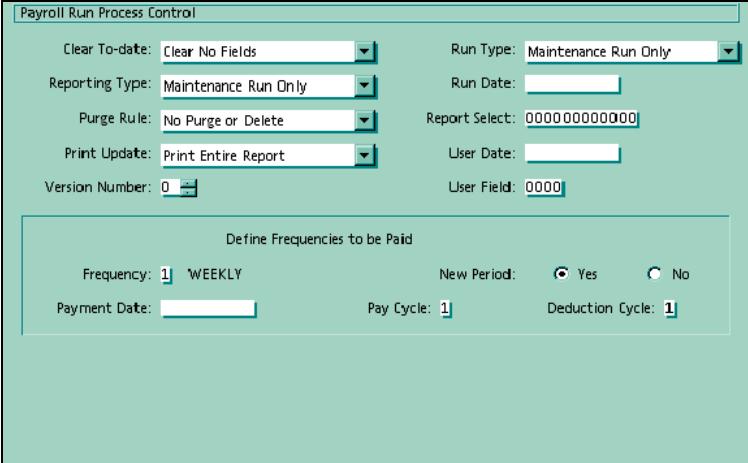
Note The RPTGENRS.04 file in the \Data directory contains a P9CNVT Extract Control Record with 'BB' in columns 27–28. These values are essential for pulling the proper version of Generator 7E7E.

2. Verify no companies setup for a payrun

Access the Payroll Run Process Control form (AE-SCR) by selecting:

- Component:**  Payroll Setup Processing
- Process:** Payroll Processing Setup
- Task:**  Schedule Payroll Runs

The resulting display should look like the sample below:



Click the Refresh Selection List button to show the selection list.



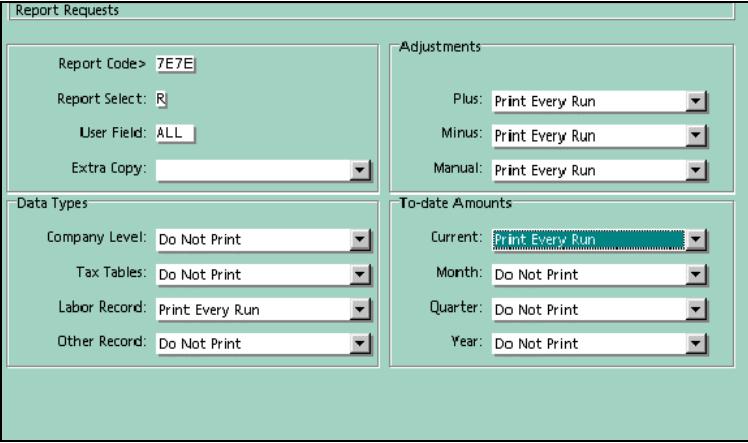
Select each of the frequency options listed. No payment dates should be entered.

3. Enter 7E7E Generator Data on the Report Request form

In order to add the 7E7E generator to the system, submit the Report Requests form (DD-SCR) in The Solution Series by selecting:

- Component:**  Payroll Setup Processing
- Process:** Payroll Processing Setup
- Task:**  Schedule Payroll Batch Reports

Once the screen activates, type '7E7E' in the Report Code field, 'R' in the Report Select field, and 'ALL' in the User field. Before continuing, make sure to set the Labor Record, Plus, Minus, Manual, and Current fields to Print Every Run. The resulting display should look like the sample below. Process this screen for each organization (Control 1-2).



The screenshot shows the 'Report Requests' form with the following values:

- Report Code: 7E7E
- Report Select: R
- User Field: ALL
- Extra Copy: (empty dropdown)
- Adjustments:
 - Plus: Print Every Run
 - Minus: Print Every Run
 - Manual: Print Every Run
- Data Types:
 - Company Level: Do Not Print
 - Tax Tables: Do Not Print
 - Labor Record: Print Every Run
 - Other Record: Do Not Print
- To-date Amounts:
 - Current: Print Every Run
 - Month: Do Not Print
 - Quarter: Do Not Print
 - Year: Do Not Print

Press Enter to add the changes to the system.

Note Generator 7E7E must be activated for each company for which Labor and History is to be exported to the data mart.

4. Run a Pay Extract

Job used: JPAYXTR

Execute the JPAYXTR.BAT (using the 'ALL' control record parameter) jobstream from the \RUNS subdirectory.

For example:

```
jpayxtr > ..\log\jpayxtr.log
```

Review the jpayxtr log in the \log directory and payxtr.03 in the \list directory to determine if there were any errors.

5. Perform Reporting Administration Maintenance Run Job used: JMNTRUNRS

Execute the JMNTRUNRS.BAT jobstream from the \RUNS subdirectory. This job uses the p20in.xtr file from JPAYXTR and P05T80RS from JXRPTGENRS as input.

For example:

```
jmnrtrunrs > ..\log\jmnrtrunrs.log
```

Verify that rg7e7e.36 exists in the \Txt directory, review the audit2 file in \List, and check the log to verify that the changes to RPT24 and generator 7E7E were properly processed.

6. Run a Pay Merge Job used: JPAYMRG

Execute the JPAYMRG.BAT jobstream (using the 'ALL' control record parameter) from the \RUNS subdirectory.

For example:

```
jpaymrg > ..\log\jpaymrg.log
```

Review the jpaymrg log in the \log to determine if there were any errors.

7. Review JRSXPAY.BAT

Modify this batch file to reflect your own database information. Also, verify the paths for ISQL and BCP (SQL Server) are correct for your system configuration and modify if necessary.

```
set DB-NAME=your database name
```

```
set DB-OWNER=your database owner
```

```
set DB-USER=your system administration user ID
```

```
set DB-PASSWORD=your system administration password
```

```
set ISQL-PATH=x:\program files\microsoft sql server\80\tools\binn\
```

```
set BCP-PATH=x:\program files\microsoft sql server\80\tools\binn\
```

8. Load the Labor/History records to the data mart Job used: JRSXPAY

Note JRSXPAY.BAT cannot be run from a Windows 2000 client system.

Execute the JRSXPAY.BAT jobstream from the \RUNS subdirectory.

For example:

```
jrsxpay > ..\log\jrsxpay.log
```

Review the log to determine if there were any errors.

9. Review directories and logs

Before continuing the extract and load, it is important to check the existing environment directories for any signs of errors. Make sure to verify that:

- \Logrs and \Txt are not empty
- in \Bcperr, any files with an extension of '.BAD' have a size of '0'

Note If any files contained in \Logrst contain the string 'Msg' that is an indication of an error.

10. Run a Query to check if the Database is populated

From ISQL, run a query to indicate if your database has been populated. To do this type the command:

```
select * from DM2_HIS_EMPLOYEE
```

```
select * from DM2_LBR_EMPLOYEE
```

The SQL commands above will verify that the basic company and employee data has been populated.

Configuring Reporting Administration and Setting Up the data mart with The Solution Series is now complete. Go to Installing and Configuring Client Components of Reporting Administration for The Solution Series (SQL Server).

CHAPTER 5

Configuring Reporting Administration and Setting Up the data mart for an Oracle Database

In This Chapter

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Phase 3: Update the Labor and History records.....	57

Introduction

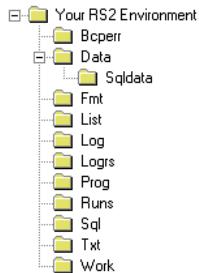
This section provides detailed instructions for configuring Reporting Administration software to work seamlessly between the server and the client.

This is a technical section. The installer should be knowledgeable of the technical side of the server environment, as well as The Solution Series.

Server Configuration

These installation instructions assume you have:

- an indexed or relational server (Windows 2000 Server environment) implementation of The Solution Series in production with the following directory structure:



- created a new test environment containing your production version of The Solution Series
- backed up the new test environment
- installed and configured all required software on the server

Phase 1: Create the data mart

There are three SQL scripts delivered as components of Reporting Administration. These scripts, located in the \Sql directory, must be run to create the data mart.

Delivered script	Description
r2_owner_ora.sql	This script creates the owner of Reporting Administration data mart.
r2_container_ora.sql	This script creates the data tablespace files for the data mart.
r2_datamart_ora.sql	This script creates the data mart tables.
r2_role_ora.sql	This script creates the user roles for the data mart.
r2_synonyms_ora.sql	This assigns each data mart data table to a public synonym.

1. Review and revise the Oracle database owner

Script used: r2_owner_ora.sql

This script is used to create the Oracle database owner for Reporting Administration data mart. The default owner is dm2_test. If you wish to change the owner name, you will need to edit the r2_owner_ora.sql script. If you wish to change the name of the database owner from the default setting, you will need to edit all instances of the owner name in the r2_owner_ora.sql script.

```
/*
Create Table Owner for the Cyborg Reporting Administration Data Mart
*/
create user dm2_test identified by dm2_test
;
grant resource to dm2_test
;
grant create tablespace to dm2_test
;
grant create public synonym to dm2_test
;
grant drop public synonym to dm2_test
;
grant create role to dm2_test
;
grant create session to dm2_test
;
```

2. Review and revise your database's tablespace data/index location and size

Script used: r2_container_ora.sql



Refer to **Minimum Server System Requirements** (see "Minimum Server Hardware Requirements" on page 5) in the introductory chapter to be sure that you have sufficient resources to create the data mart.

This script is used to create the table container for Reporting Administration data mart. 'dm2_test' is the default tablespace name in the delivered SQL scripts. If you wish to change the name of the database or the location of the data and index files from the default setting, you will need to edit the create tablespace lines in the r2_container_ora.sql script.

```
/*
Create Table Container for the Cyborg Data mart
*/

create tablespace DM2_TEST_DATA
datafile '/u04/oradata/repso1/dm2_test_data.dbf'
size 500M reuse
default storage (initial 001M next 001M pctincrease 0)
;
create tablespace DM2_TEST_INDEX
datafile '/u04/oradata/repso1/dm2_test_index.dbf'
size 100M reuse
default storage (initial 256K next 256K pctincrease 0)
;
```

Also modify the paths of the data and index data files to conform to your environment.

Review the script and make changes according to your specifications. For example, if you decide to rename your data mart owner from the delivered 'dm2_test' to 'My_Datamart_Name' replace any strings in the SQL scripts that contain the delivered database name with your own. Before continuing make sure to:

- rename the tablespace names 'dm2_test_data' and 'dm2_test_index' (optional)
- check the path of the data and index datafile parameter
- determine the amount of space required and allocate the space, using the size parameter

3. Review and revise your data mart table allocations

Script used: r2_datamart_ora.sql

This script is used to create the data mart tables for Reporting Administration. Review the script and make changes according to your specifications. For example, if you renamed your data mart owner in the container script, make sure to change delivered 'dm2_test' string in this script with your data mart owner. If you changed your database name in r2_container_ora.sql, you will need to replace the defaults in the tablespace statements for each table.

```
/******
table DM2_EMP_PLAN_VEST
******/
create table DM2_EMP_PLAN_VEST (
CONTROL_1 char(002) not null,
CONTROL_2 char(004) not null,
EMPLOYEE_NUMBER char(010) not null,
PLAN_ID char(003) not null,
VESTING_CALC_DATE date not null,
VESTING_CALC_UNTIL date not null,
CURRENT_VEST_PCT number(03,2) null,
FIRST_VESTED date null,
FULLY_VESTED date null,
CURRENT_VESTED date null,
constraint PK_DM2_EMP_PLAN_VEST primary key (CONTROL_1,CONTROL_2,
EMPLOYEE_NUMBER, PLAN_ID, VESTING_CALC_DATE,VESTING_CALC_UNTIL))
tablespace DM2_TEST_DATA
pctfree 0
```

```
storage (initial 1178K next 1178K pctincrease 0)
enable primary key using index tablespace DM2_TEST_INDEX
storage (initial 1168K next 1168K pctincrease 0)
;
```

4. Review and revise Reporting Administration Role allocations
Script used: r2_role_ora.sql

This script is used to create five groups for the corresponding Cognos catalogs:

- REPSOL2_ALL
- REPSOL2_GENERAL
- REPSOL2_BENEFITS
- REPSOL2_TRAINING
- REPSOL2_PAYROLL

One group is created for each catalog and one group, 'All', is created with user access to all catalogs. Once created, the user groups allow 'select' permission to all or some of the data mart tables. The catalogs will be installed as part of the client components (see Chapter 6).

```
/* All Catalog role */
CREATE ROLE REPSOL2_ALL IDENTIFIED BY SOL2_ALL
;
GRANT SELECT ON DM2_ABSENCES TO REPSOL2_ALL
;
```

In the above example 'SOL2_ALL' is the role password and 'REPSOL2_ALL' is the role name. If you wish to change the name of a role, you can edit the role name in the 'grant select' and 'create role' lines for that role in the rs_role_ora.sql script.

You can change the password in the 'create role' line.

5. Create public access for the database
Script used: r2_synonyms_ora.sql

This script sets up synonyms for use with the Oracle database. Synonyms allow public access to the tables in the database without requiring a user log on with the database owner name.

6. Review jcreatedm_ora

Modify this batch file to reflect your own data mart database information. You may need to edit the following parameters to match those set up in the r2_owner_ora.sql file.

DB_USER=database owner name
DB_PASSWORD=database owner name password

7. Run the data mart creation job
Job used: jcreatedm_ora

Execute the jcreatedm_ora jobstream from the /runs subdirectory.

For example:

```
jcreatedm_ora | tee ../log/jcreatedm_ora.log
```

Note: This script will require entry of a DBA user name and password. The password will not be echoed back to the screen.

8. Review the logs

Review the logs to be sure the operation was completely successfully. Review the following logs:

- jcreatedm_ora.log in the /log directory
- r2_owner-ora.log, r2_role-ora.log, and r2_synonyms-ora.log, r2_container-ora.log, and r2_datamart-ora.log files in the /logrs directory
- c_date.log in the /logrs directory

9. Assign table permissions for individual users

Use SQLPlus to set up each Impromptu user's rights. Users must have 'Select' permission assigned to their logins (user ID and password) for the tables. This is accomplished by adding user logins to Reporting Administration user groups.

Phase 2: Data mart Extract and Load

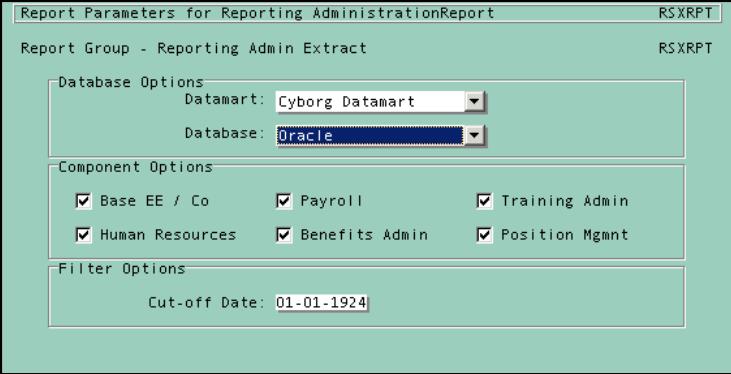
Before performing the data mart extract and load, you will need to launch The Solution Series and set the Data Mart Database to Microsoft SQL Server before performing the extracts. This tells The Solution Series to create Microsoft SQL Server code. To perform this task, please do the following:

1. Launch The Solution Series.
2. Select the Report Group Activities form (RGMSTR), by making the following selection:

Component:  Reporting
Process: Report Scheduling
Task:  Schedule Report Groups

3. Select Reporting Solution Extract (RSXRPT) in the Report Group Activities list.
4. Click Parameter.
5. Click Set Parameters.

The Report Parameters for *Reporting Solution* Extract form (RSXRPT) will appear as shown here:



6. Under Database Options, change the Database field to Microsoft SQL Server.
7. Press Enter.

1. Review jrsxrpt_ora

Modify this batch file to reflect your own data mart database information.

DB-USER=your database name

DB-PASSWORD=your database password

2. **Run the report extract and bulk copy the files**

Job used: jrsxrpt_ora

Execute the jrsxrpt jobstream from the /runs subdirectory.

For example:

```
nohup jrsxrpt > ../log/jrsxrpt.log &
```

Review the log to determine if there were any errors.

3. **Review directories and logs**

Before continuing the extract and load, it is important to check the existing environment directories for any signs of errors. Make sure to verify that:

- /logrs and /txt are not empty. If any files contained in/logrs contain the string 'ORA-' that is an indication of an error.
- In /lderr, any files with an extension of '.bad' that do exist should not have a size greater than '0'.

4. **Run a Query to check if the Database is populated**

From SQLPlus run a query to indicate if your database has been populated. To do this type the command:

```
select * from DM2_COMPANY  
select * from DM2_EMPLOYEE
```

The SQL commands above will verify that the basic company and employee data has been populated.

Phase 3: Update the Labor and History records

1. Extract Report Generator 7E7E

Job Used: JXRPTGENRS

This job will extract report generator 7E7E into file P05T80RS in the \Work directory.

To extract the report generator, execute the JXRPTGENRS.BAT jobstream in the \RUNS directory.

For example:

```
nohup jxrptgenrs > ..\log\jxrptgenrs.log
```

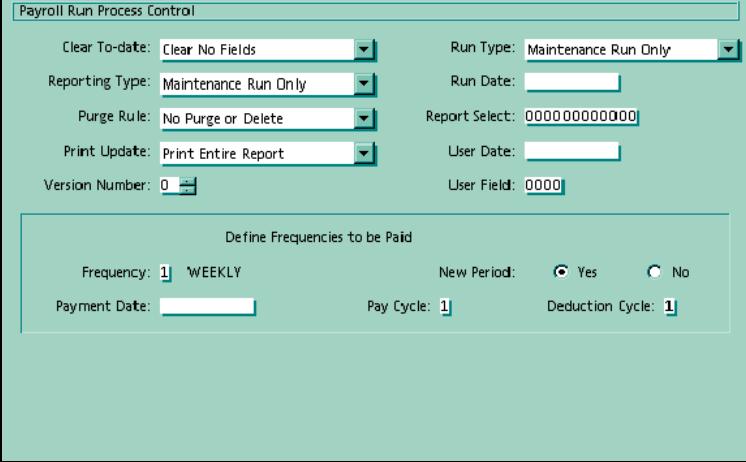
Review the log and rptgenrs.03 in the \LIST directory to determine if there were any errors.

2. Verify no companies setup for a payrun

Access the Payroll Run Process Control form (AE-SCR) by selecting:

- Component:**  Payroll Setup Processing
- Process:** Payroll Processing Setup
- Task:**  Schedule Payroll Runs

The resulting display should look like the sample below:



Click the Refresh Selection List button to show the selection list.



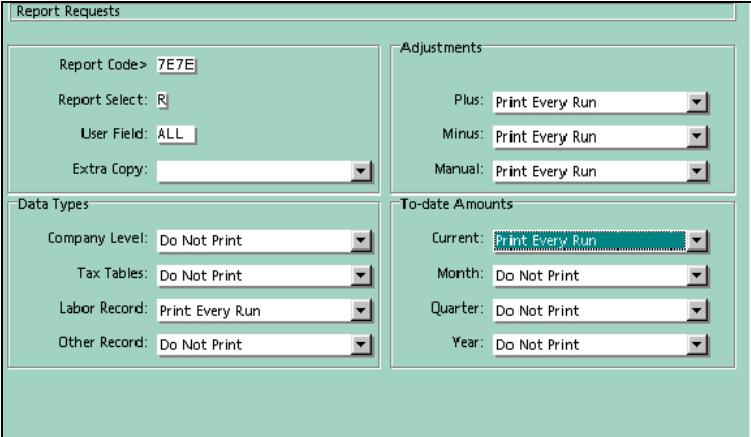
Select each of the frequency options listed. No payment dates should be entered.

3. Enter 7E7E Generator Data on the Report Request form

In order to add the 7E7E generator to the system, submit the Report Requests form (DD-SCR) in The Solution Series by selecting:

Component:  Payroll Setup Processing
Process: Payroll Processing Setup
Task:  Schedule Payroll Batch Reports

Once the screen activates, type '7E7E' in the Report Code field, 'R' in the Report Select field, and 'ALL' in the User field. Before continuing, make sure to set the Labor Record, Plus, Minus, Manual, and Current fields to Print Every Run. The resulting display should look like the sample below. Process this screen for each organization (Control 1-2).



The screenshot shows the 'Report Requests' form with the following fields and values:

- Report Code: 7E7E
- Report Select: R
- User Field: ALL
- Extra Copy: (empty dropdown)
- Adjustments:
 - Plus: Print Every Run
 - Minus: Print Every Run
 - Manual: Print Every Run
- Data Types:
 - Company Level: Do Not Print
 - Tax Tables: Do Not Print
 - Labor Record: Print Every Run
 - Other Record: Do Not Print
- To-date Amounts:
 - Current: Print Every Run
 - Month: Do Not Print
 - Quarter: Do Not Print
 - Year: Do Not Print

Press Enter to add the changes to the system.

Note Generator 7E7E must be activated for each company for which Labor and History is to be exported to the data mart.

4. Run a Pay Extract Job used: JPAYXTR

Execute the JPAYXTR.BAT (using the 'ALL' control record parameter) jobstream from the \RUNS subdirectory.

For example:

```
nohup jpayxtr > ..\log\jpayxtr.log
```

Review the jpayxtr log in the \log directory and payxtr.03 in the \list directory to determine if there were any errors.

5. Perform Reporting Administration Maintenance Run

Job used: JMNTRUNRS

Execute the JMNTRUNRS.BAT jobstream from the \RUNS subdirectory. This job uses the p20in.txt file from JPAYXTR and P05T80RS from JXRPTGENRS as input.

For example:

```
nohup jmntrunrs > ..\log\jmntrunrs.log
```

Verify that rg7e7e.36 exists in the \Txt directory, review the audit2 file in \List, and check the log to verify that the changes to RPT24 and generator 7E7E were properly processed.

6. Run a Pay Merge

Job used: JPAYMRG

Execute the JPAYMRG.BAT jobstream (using the 'ALL' control record parameter) from the \RUNS subdirectory.

For example:

```
nohup jpaymrg > ..\log\jpaymrg.log
```

Review the jpaymrg log in the \log to determine if there were any errors.

7. Review JRSXPAY_ORA.BAT

Modify this batch file to reflect your own database information.

```
set DB-USER=your system administration user ID
```

```
set DB-PASSWORD=your system administration password
```

8. Load the Labor/History records to the data mart

Job used: JRSXPAY_ora

Execute the JRSXPAY_ORA.BAT jobstream from the \RUNS subdirectory.

For example:

```
nohup jrsexpay_ora > ..\log\jrsexpay_ora.log
```

Review the log to determine if there were any errors.

9. Review directories and logs

Before continuing the extract and load, it is important to check the existing environment directories for any signs of errors. Make sure to verify that:

- \Logrs and \Txt are not empty. Any files in /txt containing the string 'ORA-' indicate there is an error.
- in \lderr, any files with an extension of '.BAD' have a size of '0'.

10. Run a Query to check if the Database is populated

From SQLPlus, run a query to indicate if your database has been populated. To do this type the command:

```
select * from DM2_HIS_EMPLOYEE  
select * from DM2_LBR_EMPLOYEE
```

The SQL commands above will verify that the basic company and employee data has been populated.

Setting up the data mart is now complete.

PART 3

Installing and Configuring Reporting Administration for the Client - AS400

In This Section

Installing and Configuring Client Components of Reporting Administration (SQL Server)	63
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C H A P T E R 6

Installing and Configuring Client Components of Reporting Administration (SQL Server)

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Phase 2: Install client files	66
Phase 3: Configure the catalogs (Impromptu Administrators only).....	67
Phase 4: Configure Impromptu.....	71
Phase 5: Test the catalogs.....	72

Introduction

This section provides detailed instructions for installing Reporting Administration software on your client machine, then configuring it to work seamlessly with the server on which you installed and configured the relevant server components of Reporting Administration.

This is a technical section. The reader should be knowledgeable of the technical side of Windows 2000 and be an experienced Impromptu user.



Refer to previous sections for detailed instructions on installing server components of Reporting Administration.

Space required on the Client

Pick Reports always install in C:\Pick Reports. If needed, contact Cyborg Professional Services to change the installation for the Pick Reports and the Catalog pointers for these reports.

Pick Reports	2.056 MB
Help/Support System	7.29 MB
Catalogs - SQL Server	1.894 MB
PowerPlay Models	904 KB

Overview of the installation

Phase 1: Install Impromptu and PowerPlay

Phase 2: Install client files

Phase 3: Configure the catalogs (Impromptu Administrators only)

Phase 4: Configure Impromptu

Phase 5: Test the catalogs

Phase 1: Install Impromptu and PowerPlay

Impromptu and PowerPlay are client software components. In order for the installation and configuration of Reporting Administration on the client to be successful, we assume the following is true:

- you have The Solution Series installed and functioning with the server where the data mart resides.
- you have installed and configured Reporting Administration on the server.
- you have installed and configured required client software such as ISQL and Personal Server for Windows on the client.
- you have installed and configured Impromptu and PowerPlay (either the administrator or the user version) on your client machine.

Note: PowerPlay is optional, but Impromptu is necessary for the basics of Reporting Administration to function.

If these statements are not true, do not continue with this installation. If all statements are true, continue to the next phase of the client installation.

Phase 2: Install client files

The client components of Reporting Administration are installed on the machine through an autoinstall process.

1. Insert the delivered CD-ROM titled 'Reporting Administration 5.0 for Windows' into drive

The Getting Started page displays.

2. Navigate and then click on the 'Install Reporting Administration client link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

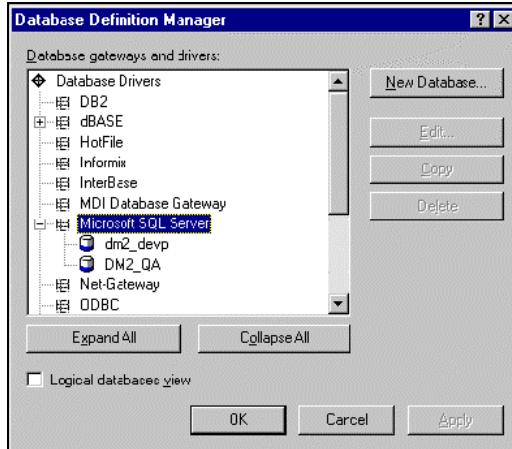
The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...!' column.

Prompt	Options/Defaults	Select the following...
Select RA Database Management System	<input type="checkbox"/> SQL Server <input type="checkbox"/> AS/400 DB2 <input type="checkbox"/> Oracle <input type="checkbox"/> OS390 DB2	Select your server platform
Destination	C:\Program Files\Cognos\Cyborg	use default, or... Other:

The installation program will prompt you when it is complete.

Phase 3: Configure the catalogs (Impromptu Administrators only)

1. **Launch Impromptu Administrator**
2. **Select a database**
Catalog Databases...



3. **Highlight the Microsoft SQL Server icon**
4. **Click New Database**
5. **Give the database a logical name**

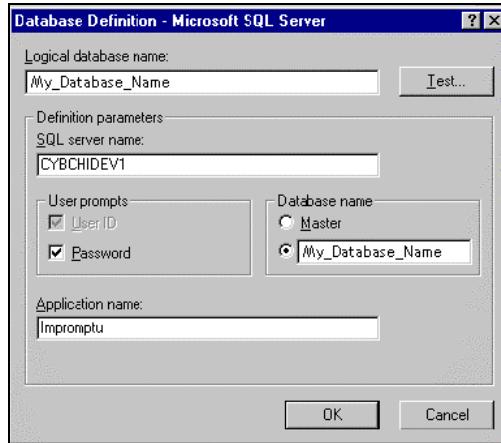
Provide a logical name for the database (for example, 'My_Datamart_Name'). Use the name of the database that you specified earlier on the 'R2_Container_Sql.sql' script. This will be the name the Impromptu Administrator uses to identify the data mart on the server. You must enter the administrator User ID and Password before you are able to continue.



This	Is
User ID	sa
Password	master

6. **Click OK**
7. **Select database type and configuration**

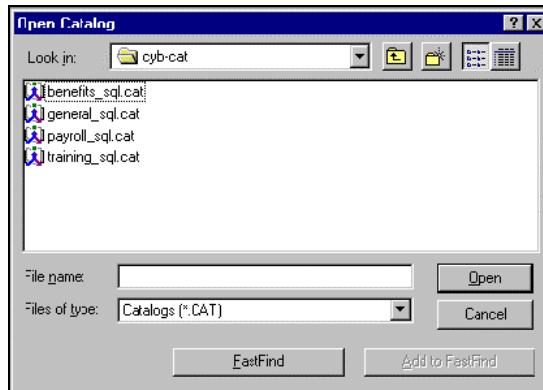
Enter your database name in the field Logical database name and in the Database name field. Enter the network node name in the SQL server name field. The server name should be where your Reporting Solution files are located.



8. **Click Test**
9. **Open the delivered catalog**

Select:

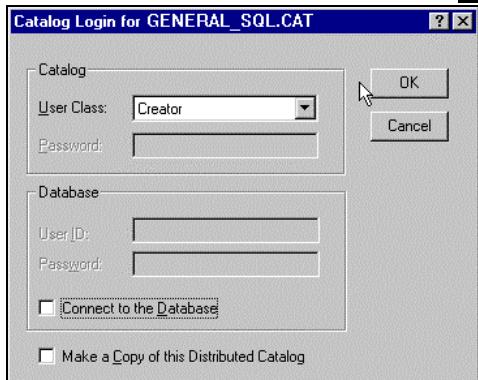
Catalog ► Open



Browse to the directory where you installed the catalogs (example: C:\Program Files\Cognos\Cognos\Catalogs-XX) and open one of the delivered catalogs (BENEFITS_SQL.CAT, GENERAL_SQL.CAT, PAYROLL_SQL.CAT, TRAINING_SQL.CAT).

Note Remember that you need to open each of the catalogs listed above.

10. Clear the checkbox 'Connect to the Database'

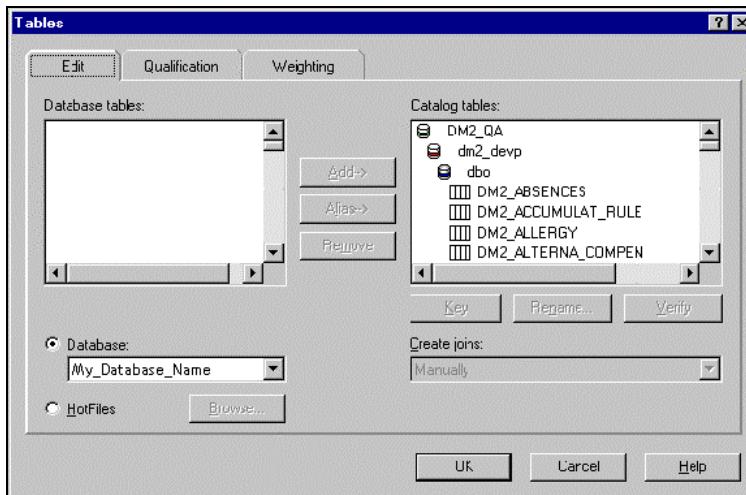


11. Click OK

12. Set up the catalog tables

Select:

Catalog ► Tables

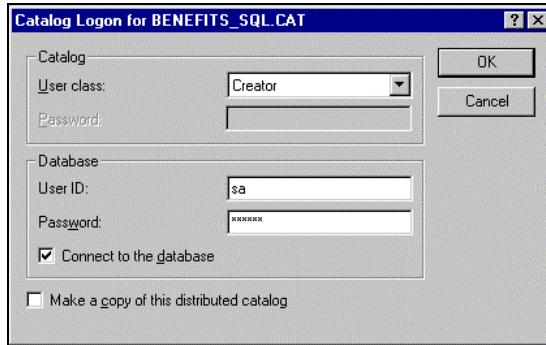


13. Select the database name

Select the database name that matches the logical name you assigned to your database (for example, 'My_Database_Name').

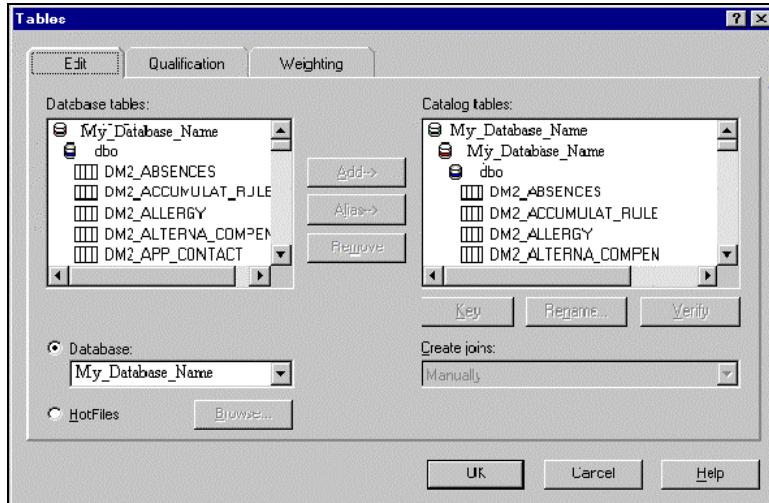
- 14. **Click OK**
- 15. **Logon to the catalog**

Make sure to enter the User ID and Password to logon to the catalog.



This	Is
User ID	sa
Password	master

- 16. **Click OK**
- 17. **The database is connected**



- 18. **If the Catalog table name is not the same as the Database name, then highlight and click the corresponding Catalog table name**
- 19. **Close the catalog**
- 20. **Repeat steps 9–19 for the remaining catalogs**

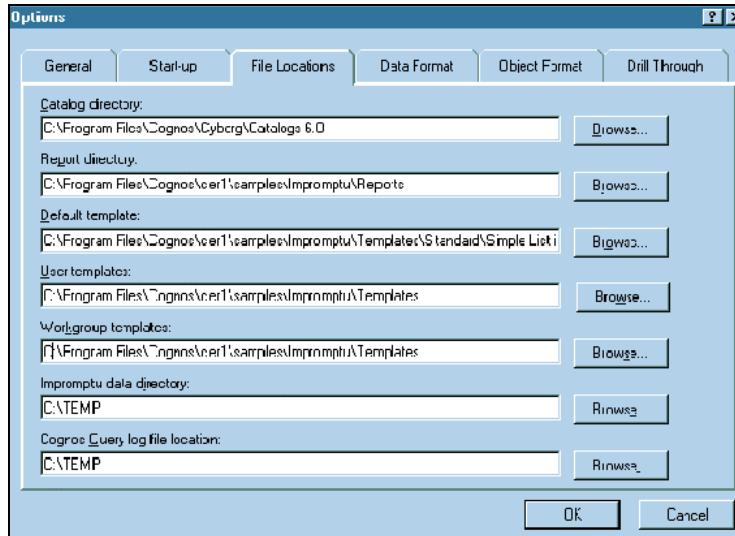
Phase 4: Configure Impromptu

1. Configure file locations

Select:

Tools ► Options

2. Click the File Locations tab



3. Set the path to the Catalog directory

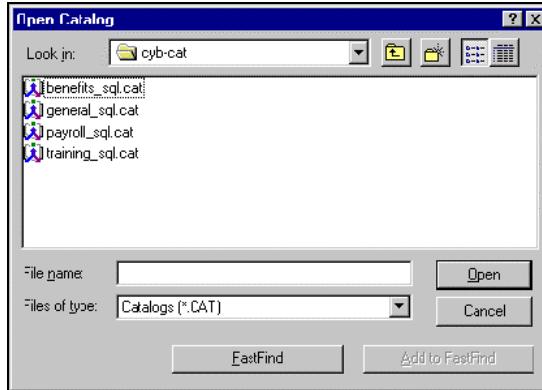
Click Browse and locate the catalogs. The exact location of the catalogs may vary depending on the path selected during installation. An example is the C:\Program Files\Cognos\ImpromptuXX\cyb_cat directory.

4. Click OK

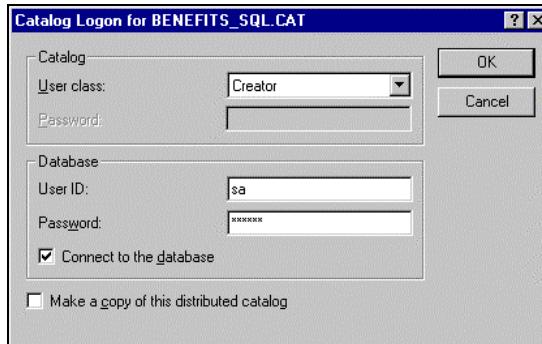
5. Exit Impromptu Administrator

Phase 5: Test the catalogs

1. **Launch Impromptu Administrator**
2. **Open one of the catalogs**
Make sure to open one of the four catalogs. Select:
Catalog ► Open



3. **Log on to the catalog**
Make sure to enter the User ID and Password to log on to the catalog.

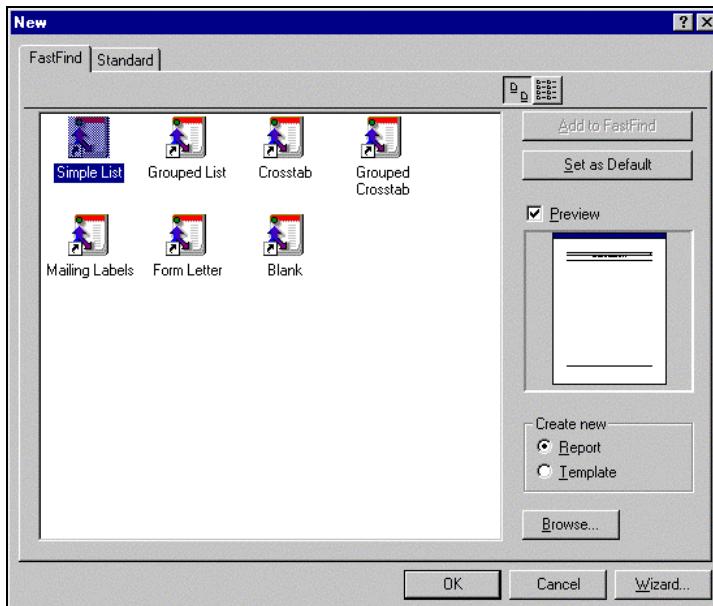


This	Is
User ID	sa
Password	master

4. **Click OK**
5. **Create a Simple List**
Select:

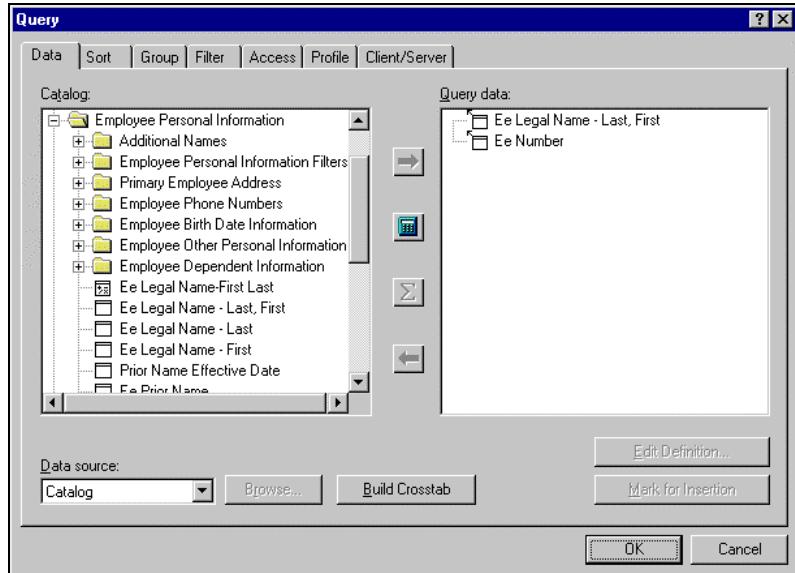
File ► New

Then select the Simple List icon.



6. **Click OK**
7. **Query Report Data**

Click the Data tab and search the folders for information to query. Once found, double click the required item to display it in the Query data window.



- 8. Click OK**
- 9. Review the query results**

A query that displays data such as the example below indicates a successful installation. If no results are displayed, double check the catalog opened in Step 1 to make sure that you selected the correct database.

Date: 10/30/00

<Type here to customize title>

EE Legal Name-Last, First	EE Number
PATTERSON, DOROTHY	3035
NEWMAN, RUBIN	3036
HOWARD, THOMAS	3037
LARKIN, LIBBY	3038
JAROFF, GLEN	3039
REID, ALAN	3040
MEYER, JUNE	1001
MOORE, SAMUEL	1002
MUIR, LINDA	1003
MORSE, GORDAN	1004
MORRIS, ROBERT	1005
MERTZ, LYNNE	1006
MORRIS, KATHERINE	1007

You have now completed your installation and configuration of Reporting Administration on the client computer with The Solution Series.

CHAPTER 7

Installing and Configuring Client Components of Reporting Administration (Oracle)

In This Chapter

Introduction	64
Phase 1: Install Impromptu and PowerPlay	65
Phase 2: Install client files	66
Phase 3: Configure the catalogs (Impromptu Administrators only).....	81
Phase 4: Configure Impromptu.....	71
Phase 5: Test the catalogs.....	87

Introduction

This section provides detailed instructions for installing Reporting Administration software on your client machine, then configuring it to work seamlessly with the server on which you installed and configured the relevant server components of Reporting Administration.

This is a technical section. The reader should be knowledgeable of the technical side of Windows 2000 and be an experienced Impromptu user.



Refer to previous sections for detailed instructions on installing server components of Reporting Administration.

Space required on the Client

The client software files require the following amounts of free space on the drive:

Pick Reports ¹	1.362 MB
Client GUI Update	275 KB
Help/Support System ²	12.4 MB
Catalogs	2.758 MB
PowerPlay models	904 KB

¹Pick Reports are always installed in the C:\Pick Reports directory. If you wish to change the installation directory for Pick Reports and the Catalog pointers for these reports, please contact Customer Support.

² These are updates of files already installed in The Solution Series system, so increases in overall space requirements are minimal.

Deliverables

The following is included:

1	CD-ROM titled 'Installation Media for Reporting Administration' which contains this installation guide
1	Set of Impromptu Administrator or Impromptu User software and documentation

Overview of the installation

Phase 1: Install Impromptu and PowerPlay

Phase 2: Install client files

Phase 3: Configure the catalogs (Impromptu Administrators only)

Phase 4: Configure Impromptu

Phase 5: Test the catalogs

Phase 1: Install Impromptu and PowerPlay

Impromptu and PowerPlay are client software components. In order for the installation and configuration of Reporting Administration on the client to be successful, we assume the following is true:

- you have The Solution Series installed and functioning with the server where the data mart resides.
- you have installed and configured Reporting Administration on the server.
- you have installed and configured required client software such as ISQL and Personal Server for Windows on the client.
- you have installed and configured Impromptu and PowerPlay (either the administrator or the user version) on your client machine.

Note: PowerPlay is optional, but Impromptu is necessary for the basics of Reporting Administration to function.

If these statements are not true, do not continue with this installation. If all statements are true, continue to the next phase of the client installation.

Phase 2: Install client files

The client components of Reporting Administration are installed on the machine through an autoinstall process.

1. Insert the delivered CD-ROM titled 'Reporting Administration 5.0 for Windows' into drive

The Getting Started page displays.

2. Navigate and then click on the 'Install Reporting Administration client link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

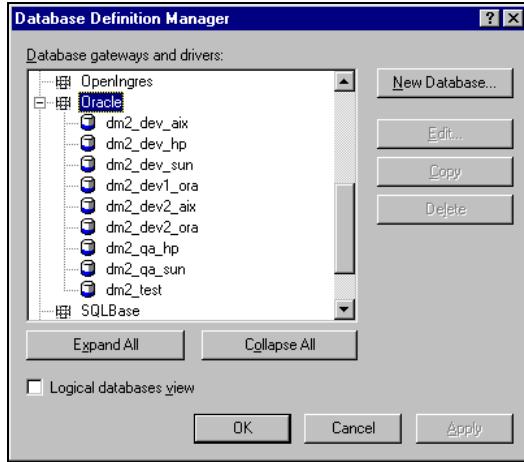
The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...!' column.

Prompt	Options/Defaults	Select the following...
Select RA Database Management System	<input type="checkbox"/> SQL Server <input type="checkbox"/> AS/400 DB2 <input type="checkbox"/> Oracle <input type="checkbox"/> OS390 DB2	Select your server platform
Destination	C:\Program Files\Cognos\Cyborg	use default, or... Other:

The installation program will prompt you when it is complete.

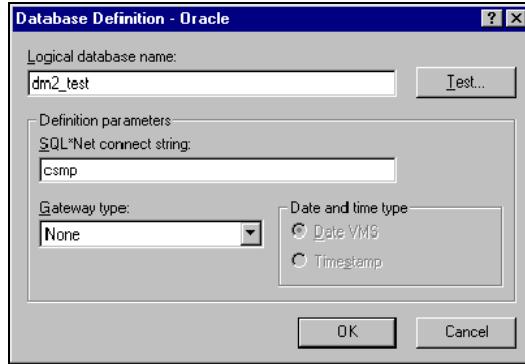
Phase 3: Configure the catalogs (Impromptu Administrators only)

1. **Launch Impromptu Administrator**
2. **Select a database**
Catalog Databases...



3. **Highlight the Oracle Server icon**
4. **Click New Database**
5. **Give the database a logical name**
Provide a logical name for the database (for example, 'My_Datamart_Name'). Use the name of the database that you specified earlier on the 'R2_owner_ora.sql' script. This will be the name the Impromptu Administrator uses to identify the data mart on the server.
6. **Select database type and configuration**
Enter your database name in the Logical database name field.

Enter the name defined in your TNSNAMES.ORA file, that refers to the Oracle instance containing the data mart, in the 'SQL *Net connect' string field.



Database Definition - Oracle

Logical database name: dm2_test Test...

Definition parameters

SQL*Net connect string: csmip

Gateway type: None

Date and time type: Date VMS Timestamp

OK Cancel

7. Click Test

You must enter the administrator User ID and Password before you are able to continue.



Test Attach to Database

User ID: dm2_test OK

Password: ***** Cancel

This	Is
User ID	dm2_test
Password	dm2_test

Once you have attached to the database, a dialog will appear with the prompt: 'Successfully attached to database'.

8. Click OK

This will close the 'Successfully attached to database' dialog.

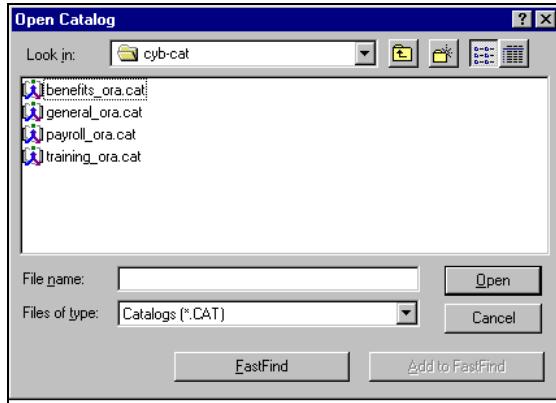
9. Click OK

This will close the Database Definition dialog.

10. Open the delivered catalog

Select:

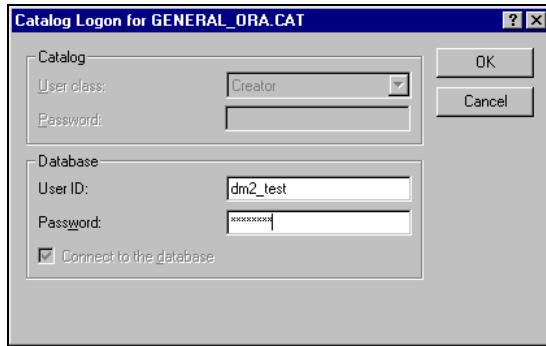
Catalog ► Open



Browse to the directory where you installed the catalogs (example: C:\Program Files\Cognos\Cognos\Catalogs-XX) and open one of the delivered catalogs (BENEFITS_ORA.CAT, GENERAL_ORA.CAT, PAYROLL_ORA.CAT, TRAINING_ORA.CAT).

Note Remember that you need to open each of the catalogs listed above.

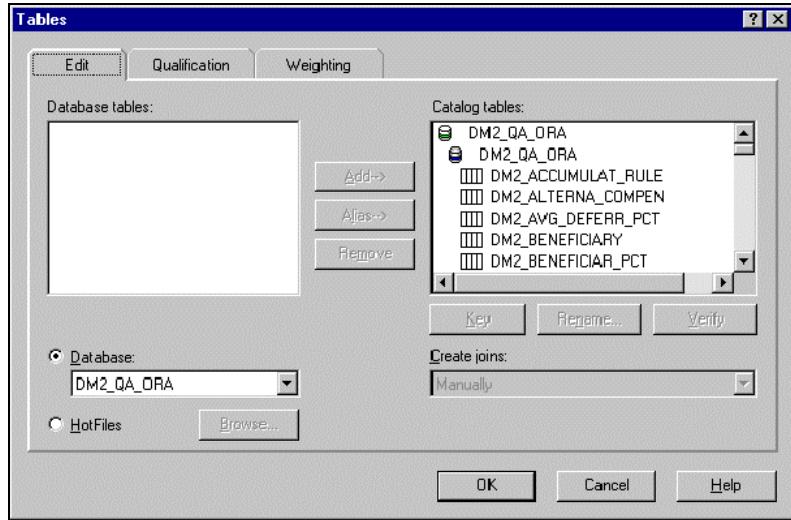
11. Clear the checkbox 'Connect to the Database'



12. Click OK
This will close the Catalog Logon dialog.

13. Set up the catalog tables
Select:

Catalog ► Tables



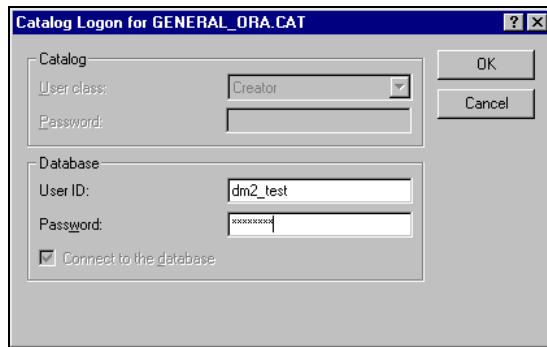
14. Select the database name

Select the database name that matches the logical name you assigned to your database (for example, 'My_Database_Name').

15. Click OK

16. Logon to the catalog

Make sure to enter the User ID and Password to logon to the catalog.



This	Is
User ID	dm2_test
Password	dm2_test

- 17. Click OK**
- 18. The database is connected**
- 19. Close the catalog**
- 20. Repeat steps 10–19 for the remaining catalogs**

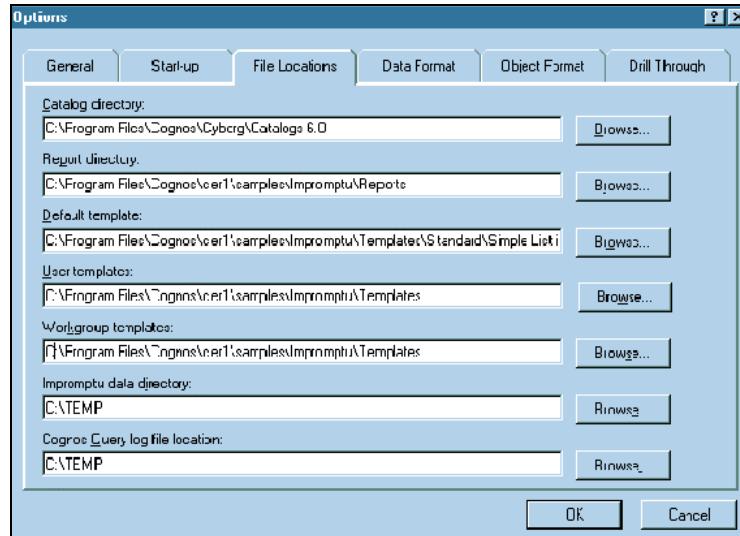
Phase 4: Configure Impromptu

1. Configure file locations

Select:

Tools ► Options

2. Click the File Locations tab



3. Set the path to the Catalog directory

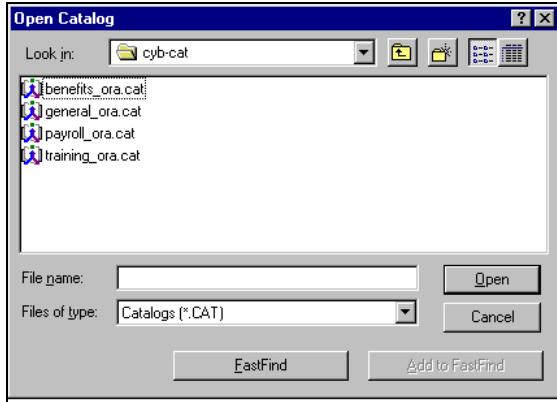
Click Browse and locate the catalogs. The exact location of the catalogs may vary depending on the path selected during installation. An example is the C:\Program Files\Cognos\ ImpromptuXX\cyb_cat directory.

4. Click OK

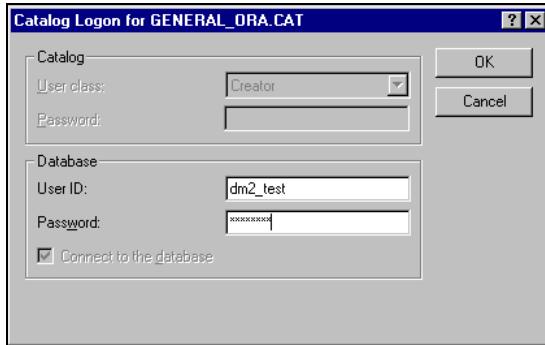
5. Exit Impromptu Administrator

Phase 5: Test the catalogs

1. **Launch Impromptu Administrator**
2. **Open one of the catalogs**
 Make sure to open one of the four catalogs. Select:
 Catalog ► Open



3. **Log on to the catalog**
 Make sure to enter the User ID and Password to log on to the catalog.

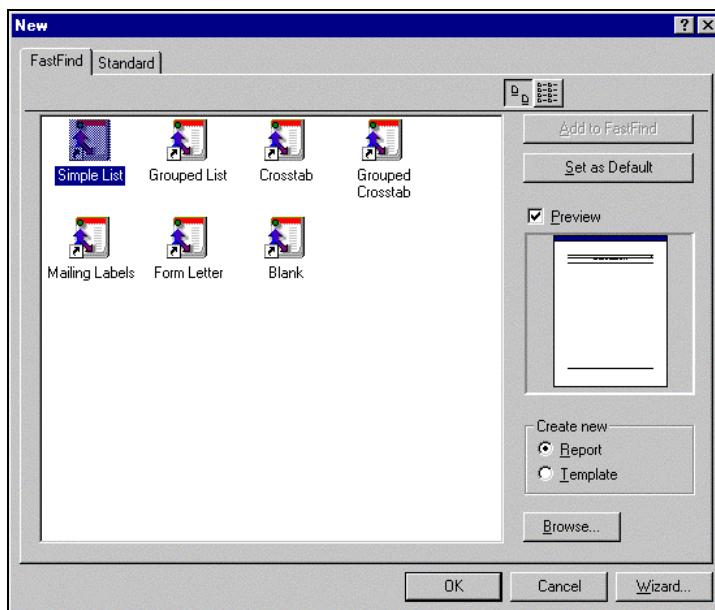


This	Is
User ID	dm2_test
Password	dm2_test

4. **Click OK**
5. **Create a Simple List**

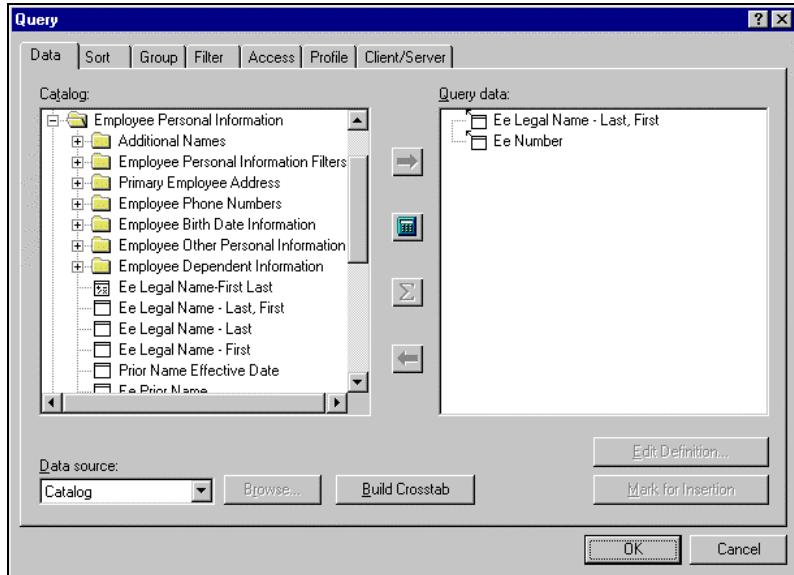
Select:
File ► **New**

Then select the Simple List icon.



- 6. **Click OK**
- 7. **Query Report Data**

Click the Data tab and search the folders for information to query. Once found, double click the required item to display it in the Query data window.



8. **Click OK**
9. **Review the query results**

A query that displays data such as the example below indicates a successful installation. If no results are displayed, double check the catalog opened in Step 1 to make sure that you selected the correct database.

Date: 10/30/00

<Type here to customize title>

EE Legal Name-Last, First	EE Number
PATTERSON, DOROTHY	3035
NEWMAN, RUBIN	3036
HOWARD, THOMAS	3037
LARKIN, LIBBY	3038
JAROFF, GLEN	3039
REID, ALAN	3040
MEYER, JUNE	1001
MOORE, SAMUEL	1002
MUIR, LINDA	1003
MORSE, GORDAN	1004
MORRIS, ROBERT	1005
MERTZ, LYNNE	1006
MERTZ, KATHERINE	1007

You have now completed your installation and configuration of Reporting Administration on the client computer with The Solution Series.

PART 4

Setting Up the Workforce Planning Cubes

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CHAPTER 8

Setting Up the Workforce Planning Cubes

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Introduction

This section provides detailed instructions for setting up the delivered PowerPlay cubes to work with your data mart.

Reporting Administration includes one of two Workforce Planning models—one for a Solution Series implementation with Position Administration and one for a Solution Series implementation without Position Administration. In either case, you must complete these operations in order for the appropriate model for your installation to compile correctly to build cubes.

This is a technical section. The reader should be knowledgeable of the technical side of Microsoft Windows and be an experienced Impromptu and/or PowerPlay user.



Refer to [Installing and Configuring Client Components of Reporting Administration](#).

Building cubes

In order to build the cubes the following steps must be performed.

1. Position Administration and Non-Position Administration models

After installing Impromptu and setting up the database connection, you must open each of the reports for Non-Position Administration and Position Administration models using the general_sql catalog. Perform the following steps for each report.

Note: For *Workplan.imr* and *Workplan_pm.imr*, a prompt displays, asking you to enter the Start date and End Date. Enter '1998-01-31' for Start and '1999-12-31' for End (US and Canada) or enter '1998-31-01' for Start and '1999-31-12' for End (elsewhere).

Report Name
Employee Status.imr
Job Detail.imr
Organization.imr
Race.imr
Sex.imr
Workplan.imr
Employee Status_pm.imr
Organization_pm.imr
PM Reason Descriptions_pm.imr
PM Status Descriptions_pm.imr
Race_pm.imr
Sex_pm.imr
Incumbency Type_pm.imr
Workplan_pm.imr
Job Grade Drill_pm.imr
Occupation Drill_pm.imr
Organization Drill_pm.imr
PM Reason Descriptions Drill_pm.imr
PM Status Descriptions Drill_pm.imr
Incumbency Type Drill_pm.imr

1. Save each report as an *.imr type file.
2. Save each of the non-drill reports as an *.iqd type file. This ensures that the model will use your data mart.
3. Launch Transformer and load the Model (*.mdl).
4. Double-click any query in the Queries window. The Properties window displays.
5. Under the Source tab in the Query file, click Browse and point the query to the proper location (the 'iqd' file you have just saved).

6. Click OK. Another window displays, stating that the data source location for the query has changed and if you would like the same to be done for other queries.
7. Click OK.

2. Position Administration model only

1. Double-click the Incumbency FTE Hours measure. The Properties window displays.
2. Under the Drill-Through tab, select Queries.
3. Highlight the first query and click Modify.
4. Point the query to its corresponding location.
5. Repeat the steps for all six Drill queries.

3. Position Administration and Non-Position Administration models

1. Make sure that correct data mart name is in the Signons dialog.
2. Right click the cube icon in the Power Cube window and select Properties.
3. Under the Output tab, click Browse and point the Power Cube file name to the location you prefer.
4. Click the cube icon on the toolbar to build the cube.
5. The Database Access window displays and prompts you to log into the database.
6. Log in and click OK.

Test Results

The following are the results of building PM and Non-PM cubes. The cubes were built on Pentium II 300 MHz machine that has 164 MB of RAM and is on Windows 2000. While every installation is different, these results can be used to estimate the size and performance of the cubes.

# of Years	# of Employees	Time to build	Cube Size	Model
3	1472	00:05:33	960 KB	Non-PM
3	590	00:02:28	1,184 KB	PM
100	1472	00:13:34	11,168 KB	Non-PM
100	590	00:05:20	8,256 KB	PM

PART 5

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APPENDIX A

Installation Checklists

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Introduction

This section contains some quick reference checklists to help you proceed through your installation of Reporting Administration.



Refer to the respective sections for more detailed instructions.

Installing Server Components of Reporting Administration

Phase 1: Install Reporting Administration files

1. Insert the delivered CD-ROM titled 'Reporting Administration 5.0 for Windows' into drive
2. Navigate and then click on the 'Install Reporting Administration server' link
3. Click Next
4. Enter the Destination,
5. Click Next
6. Select the appropriate Reporting Administration database system,
7. Click Next
8. Click Finish
9. Review the directory structure

Phase 2: Update the batch system

Pull and Compile RSPLIT

Configuring Reporting Administration and Setting Up the Data Mart for a SQL Database

- ❑ Phase 1: Create the data mart
 1. Review and revise your database, data device, log, and size
 2. Review and revise your data mart table allocations
 3. Review and revise Role allocations
 4. Review JCREATEDM.BAT
 5. Run the data mart creation job
 6. Review the logs
 7. Assign table permissions for individual users

- ❑ Phase 2: Data mart Extract and Load
 1. Modify JRSXRPT.BAT
 2. Run the report extract and bulk copy the files
 3. Review directories and logs
 4. Run a Query to check if the Database is populated

- ❑ Phase 3: Update the Labor and History records
 1. Extract Report Generator 7E7E
 2. Verify no companies setup for a payrun
 3. Enter 7E7E Generator Data on the Report Request form
 4. Run a Pay Extract
 5. Perform a Reporting Administration Maintenance Run
 6. Run a Pay Merge
 7. Review JRSXPAY.BAT
 8. Load the Labor/History records to the data mart
 9. Review directories and logs
 10. Run a Query to check if the Database is populated

Configuring Reporting Administration and Setting Up the Data Mart for an Oracle Database

- ❑ Phase 1: Create the data mart
 1. Review and revise the Oracle database owner
 2. Review and revise your database's tablespace data/index location and size
 3. Review and revise your data mart table allocations
 4. Review and revise Reporting Administration Role allocations
 5. Create public access for the database
 6. Review jcreatedm_ora
 7. Run the data mart creation job
 8. Review the logs
 9. Assign table permissions for individual users

- ❑ Phase 2: Data mart Extract and Load
 1. Review jrsexprt_ora
 2. Run the report extract and bulk copy the files
 3. Review directories and logs
 4. Run a Query to check if the Database is populated

- ❑ Phase 3: Update the Labor and History records
 1. Extract Report Generator 7E7E
 2. Verify no companies setup for a payrun
 3. Enter 7E7E Generator Data on the Report Request form
 4. Run a Pay Extract
 5. Perform a Reporting Administration Maintenance Run
 6. Run a Pay Merge
 7. Review JRSXPAY_ORA.BAT
 8. Load the Labor/History records to the data mart
 9. Review directories and logs
 10. Run a Query to check if the Database is populated

Installing and Configuring Client Components of Reporting Administration (SQL Server)

- Phase 1: Install Impromptu and PowerPlay

- Phase 2: Install client files
 1. Insert the delivered CD-ROM titled 'Reporting Administration 5.0 for Windows' into drive
 2. Navigate and then click on the 'Install Reporting Administration client link
 3. Follow the installation prompts

- Phase 3: Configure the catalogs (Impromptu Administrators only)
 1. Launch Impromptu Administrator
 2. Select a database
 3. Highlight the Microsoft SQL Server icon
 4. Click New Database
 5. Give the database a logical name
 6. Click OK
 7. Select database type and configuration
 8. Click Test
 9. Open the delivered catalog
 10. Clear the checkbox 'Connect to the Database'
 11. Click OK
 12. Set up the catalog tables
 13. Select the database name
 14. Click OK
 15. Logon to the catalog
 16. Click OK
 17. The database is connected
 18. If the Catalog table name is not the same as the Database name, then highlight and click the corresponding Catalog table name

19. Close the catalog
20. Repeat steps 9–19 for the remaining catalogs

Phase 4: Configure Impromptu

1. Configure file locations
2. Click the File Locations tab
3. Set the path to the Catalog directory

4. Click OK
5. Exit Impromptu Administrator

Phase 5: Test the catalogs

1. Launch Impromptu Administrator
2. Open one of the catalogs
3. Log on to the catalog
4. Click OK
5. Create a Simple List
6. Click OK
7. Query Report Data
8. Click OK
9. Review the query results

Installing and Configuring Client Components of Reporting Administration (Oracle Server)

- ❑ Phase 1: Install Impromptu and PowerPlay

- ❑ Phase 2: Install client files
 1. Insert the delivered CD-ROM titled 'Reporting Administration 5.0 for Windows' into drive
 2. Navigate and then click on the 'Install Reporting Administration client link
 3. Follow the installation prompts

- ❑ Phase 3: Configure the catalogs (Impromptu Administrators only)
 1. Launch Impromptu Administrator
 2. Select a database
 3. Highlight the Oracle Server icon
 4. Click New Database
 5. Give the database a logical name
 6. Select database type and configuration
 7. Click Test
 8. Click OK
 9. Click OK
 10. Open the delivered catalog
 11. Clear the checkbox 'Connect to the Database'
 12. Click OK
 13. Set up the catalog tables
 14. Select the database name
 15. Click OK
 16. Logon to the catalog
 17. Click OK
 18. The database is connected
 19. Close the catalog

20. Repeat steps 10–19 for the remaining catalogs

Phase 4: Configure Impromptu

1. Configure file locations
2. Click the File Locations tab
3. Set the path to the Catalog directory
4. Click OK
5. Exit Impromptu Administrator

Phase 5: Test the catalogs

1. Launch Impromptu Administrator
2. Open one of the catalogs
3. Log on to the catalog
4. Click OK
5. Create a Simple List
6. Click OK
7. Query Report Data
8. Click OK
9. Review the query results

A P P E N D I X B

Reporting Administration Delivered Files

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Delivered Server Files

Runs

SQL Server

JCREATEDM.BAT	JRSXVPT.BAT
Jrsxpay.bat	JMntRunRS.bat
JXRPTGENRS.BAT	Jrsxrpt.bat
JPULLRSP.BAT	

Oracle Server

JCREATEDM_ORA.BAT	JRSXVPT.BAT
Jrsxpay_ora.bat	JMntRunRS.bat
JXRPTGENRS.BAT	Jrsxrpt_ora.bat
JPULLRSP.BAT	

FMT (for SQL Server only)

CFCE_00.FMT	CFCE_01.FMT	CFT_A00.FMT	CFT_C00.FMT	CFT_C01.FMT
CFT_D00.FMT	CFT_D01.FMT	CFT_D02.FMT	CFT_D03.FMT	CFT_D04.FMT
CFT_N00.FMT	CFT_N01.FMT	CFT_P00.FMT	CFT_P01.FMT	CFT_S00.FMT
CFT_S01.FMT	CFT_S02.FMT	CFT_Y00.FMT	CFT_Z00.FMT	CFT0B01.FMT
CFT0B02.FMT	CFT0B03.FMT	CFT0B10.FMT	CFT0D00.FMT	CFT0E01.FMT
CFT0E02.FMT	CFT0E03.FMT	CFT0E04.FMT	CFT0E05.FMT	CFT0E06.FMT
CFT0E07.FMT	CFT0E08.FMT	CFT0E09.FMT	CFT0E10.FMT	CFT0E11.FMT
CFT0E12.FMT	CFT0E13.FMT	CFT0E50.FMT	CFT0E51.FMT	CFT0E52.FMT
CFT0E53.FMT	CFT0E54.FMT	CFT0E55.FMT	CFT0E56.FMT	CFT0X00.FMT
CFT0Y00.FMT	CFTA_00.FMT	CFTB_00.FMT	CFTC_00.FMT	CFTC_01.FMT
CFTE_00.FMT	CFTG_00.FMT	CFTJ_00.FMT	CFTK_00.FMT	CFTK_01.FMT
CFTK_02.FMT	CFTL_00.FMT	CFTL_01.FMT	CFTM_00.FMT	CFTN_00.FMT
CFTN_01.FMT	CFTO_00.FMT	CFTP_00.FMT	CFTS_00.FMT	CFTT_00.FMT
CFTT_01.FMT	CFTU_00.FMT	CFTV_00.FMT	CFTV_01.FMT	CFTW_00.FMT
CFTW_01.FMT	CFTX_00.FMT	CFTY_00.FMT	CFTY_01.FMT	CFTZX00.FMT
CFTZY00.FMT	CFU1_00.FMT	CFU2_00.FMT	CFU2_01.FMT	CFURT00.FMT
CFURT10.FMT	D_AA_00.FMT	D_B_00.FMT	D_CAF00.FMT	D_CAJ00.FMT
DFH_00.FMT	DFH_01.FMT	M_EE_00.FMT	M_F_00.FMT	M_G_00.FMT
M_H_00.FMT	M_H_01.FMT	M_H_02.FMT	M_JCA00.FMT	M_JCA01.FMT

M_JUS00.FMT	M_JUS01.FMT	M_LO100.FMT	M_LO400.FMT	M_LOA00.FMT
M_LOD00.FMT	M_LOF00.FMT	M_LPI00.FMT	M_LPM00.FMT	M_LPR00.FMT
M_LQ000.FMT	m_lq100.fmt	M_LQ200.FMT	M_LQ300.FMT	M_LQ400.FMT
M_LQ500.FMT	M_LQ600.FMT	M_LQ800.FMT	M_LQ900.FMT	M_LQA00.FMT
M_LQA01.FMT	M_LQC00.FMT	M_LQD00.FMT	M_LQE00.FMT	M_LQO00.FMT
M_LQR00.FMT	M_LQS00.FMT	M_LQT00.FMT	M_LQU00.FMT	M_LQV00.FMT
M_LQY00.FMT	M_LR400.FMT	M_LR500.FMT	M_LRA00.FMT	M_LRD00.FMT
M_LRT00.FMT	M_LRU00.FMT	M_LT100.FMT	M_LT200.FMT	M_LT300.FMT
M_LT500.FMT	M_LVA00.FMT	M_LVG00.FMT	M_LWF00.FMT	M_LZ100.FMT
M_LZ200.FMT	M_LZ300.FMT	M_LZ400.FMT	M_LZ700.FMT	M_LZ800.FMT
M_LZA00.FMT	M_LZB00.FMT	M_LZC00.FMT	M_LZD00.FMT	M_LZE00.FMT
M_LZF00.FMT	M_LZG00.FMT	M_LZH00.FMT	M_LZM00.FMT	M_LZM01.FMT
M_LZN00.FMT	M_LZO00.FMT	M_LZP00.FMT	M_LZQ00.FMT	M_LZR00.FMT
M_LZS00.FMT	M_LZT00.FMT	M_PE_00.FMT	MHEE_00.FMT	MHEEA00.FMT
MHH_00.FMT	MHJCA00.FMT	MHJUS00.FMT	MLEE_00.FMT	MLEEA00.FMT
MLG1_00.FMT	MLG2_00.FMT	MLG3_00.FMT	C_DATE.FMT	CFCHR09.FMT
CFOUJ00.FMT	CFOUK00.FMT			

DATA

c_date.dat
RPTGENRS.04
RSPLIT

SQL (for SQL Server only)

r2_container_sql.sql
r2_datamart_sql.sql
r2_roles_sql.sql
r2_purge_sql.sql
r2_working_sql.sql
r2_lh_trunc_sql.sql

Delivered Client Files

Catalogs

SQL

benefits_sql.cat
general_sql.cat
payroll_sql.cat
training_sql.cat

SQL Impromptu Pick Reports

ben company.imr	pr_job assignment.imr
ben job assignment.imr	pr_job basic.imr
ben job basic.imr	pr_location.imr
ben location.imr	pr_org unit basic.imr
ben org unit basic.imr	pr_role basic.imr
ben role basic.imr	role basic.imr
gen company.imr	train company.imr
gen job assignment.imr	train job assignment.imr
gen job basic.imr	train job basic.imr
gen location.imr	train location.imr
gen org unit basic.imr	train org unit basic.imr
gen role basic.imr	train role basic.imr
pr_company.imr	

All Pick Reports are loaded into C:\Pick Reports. To change the location, refer to the Customization Guide or contact Customer Support.

PowerPlay Models

Position Administration

Employee Status_pm.imr	PM Descriptions_PM.imr
Incumbency Descriptions_PM.imr	PM Status Descriptions Drill_PM.imr
Incumbency Type Drill_PM.imr	PM Status Descriptions_PM.imr
Job Grade Drill_PM.imr	PM Workforce Planning Model.mdl
Occupation Drill_PM.imr	Race_PM.imr
Organization Drill_PM.imr	Sex_PM.imr
Organization_PM.imr	Workplan_PM.imr

Position Administration

PM Reason Descriptions Drill_PM.imr

Non Position Administration

EmployeeStatus.ime

JobDetails.imr

Non-PM Workforce Planning Model.mdl

Organization.imr

Race.imr

Sex.imr

Workplan.imr

Installing and Configuring Reporting Administration 5.0 (UNIX)

1.0



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PART 1

Introduction

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CHAPTER 1

Introduction

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Introduction

This document provides detailed instructions for installing and configuring the server and client components of Reporting Administration.

Scope

This guide applies only to users who have a fully configured and operational version of The Solution Series on a UNIX Server environment.

Prerequisites

In addition to The Solution Series, you must have installed and configured the following software before installing Reporting Administration.

HP-UX hardware and software requirements

HP-UX Minimum Hardware Requirements

Operating system	HP-UX 11 or later
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB plus 500 MB per Cyborg environment, in addition to operating system requirements
Processor	650 MHz dual
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor
File partition	Dedicated file partition to install the Cyborg server software
User account	Cyborg installation user account that has full access to above partition

The operating system must support the following Open Group standards:

- Internationalized System Calls and Libraries Extended (formerly known as XPG4 Internationalized System Calls and Libraries Extended Component)
- Sockets (formerly known as XPG4 Sockets Component)

Solaris hardware and software requirements

Solaris Minimum Hardware Requirements - The Solution Series Application Server

Operating system	Solaris 8 or later
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB plus 500 MB per Cyborg environment, in addition to operating system requirements
Processor	650 MHz dual
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor
File partition	Dedicated file partition to install the Cyborg server software
User account	Cyborg installation user account that has full access to above partition

The operating system must support the following Open Group standards:

- Internationalized System Calls and Libraries Extended (formerly known as XPG4 Internationalized System Calls and Libraries Extended Component)
- Sockets (formerly known as XPG4 Sockets Component)

AIX hardware and software requirements

AIX Minimum Hardware Requirements

Operating system	AIX 4.3.3 or later
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB plus 500 MB per Cyborg environment, in addition to operating system requirements
Processor	950 CPW
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor
File partition	Dedicated file partition to install the Cyborg server software
User account	Cyborg installation user account that has full access to above partition

The operating system must support the following Open Group standards:

- Internationalized System Calls and Libraries Extended (formerly known as XPG4 Internationalized System Calls and Libraries Extended Component)
- Sockets (formerly known as XPG4 Sockets Component)

UNIX software requirements - all platforms

	Indexed	Relational
C++ Compiler, POSIX compliant, supplied by the vendor for the current version of your operating system ¹	X	X
Merant Object COBOL Developers Suite Workbench, at minimum version of 4.1	X	X
ORACLE PRO*COBOL, version compatible with Database Server version ²		X
ORACLE Database Server, at minimum version of 7.3		X
ORACLE Client, version compatible with Database Server version ²		
Dedicated ORACLE Instance ³		X
Cognos Impromptu (User and Administrator), at minimum version of 6.05.02		

	Indexed	Relational
ORACLE SQL *NET, version compatible with Database Server version	X?	XX?
PowerPlay 6.5		
TCP/IP	X	X

The Sun Solaris operating system needs an additional PRO*C++ Compiler.

1 Sun Solaris:

Vendor: Sun Microsystems

Version: 4.1 or later

Compiler Name: WorkShop Compilers

IBM AIX:

Vendor: IBM

Version: 4 or later

Compiler Name: VisualAge C++ Professional for AIX

HP-UX:

Vendor: Hewlett-Packard

Version: A.01.15 (this version is for HP-UX B.10.20)

Compiler Name: aC++

2 ORACLE PRO*COBOL is delivered on the Oracle server CD-ROM.

Minimum Client Hardware Requirements

As a general rule, the client requires the following:

Operating system	Windows 2000 Professional (Service Pack 2) Windows XP Professional Windows NT Workstation (Service Pack 6a)
RAM	128 MB, in addition to operating system requirements
Disk space	80 MB for full installation of Cognos Impromptu and 153 MB for typical installation of PowerPlay in addition to operating system requirements
Processor	500 MHz Pentium 500 or higher
Media access	Access to a CD-ROM drive (either locally or on a network)
Monitor	SVGA 800x600

Minimum Client Software Requirements

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details. Please use the following table as a checklist in verifying the prerequisite software:

Reporting Administration Client Software Requirements
Microsoft Windows 2000 -or- Windows XP Professional Edition -or- Windows NT Professional Edition
TCP/IP
ISQL 32-bit version ¹
Cognos Impromptu (User and Administrator) version 7.0
PowerPlay User and Administrator version 7.0

¹ For clients in SQL Server environments only. ISQL accompanies SQL Server on the SQL Server software CD-ROM.

² When installing the User version of PowerPlay, you must also install the Personal Server for Windows (available on the PowerPlay User CD-ROM). This ensures the user will be able to access cubes installed locally and/or accessed from a network.

Companion products

This reporting option combines the power of the business intelligence tools from Cognos Corporation, a Cyborg strategic partner, with a value-added relational database (data mart) package from Cyborg.

Reporting Administration includes the following companion products from Cognos Corporation:

- Impromptu User
- Impromptu Administrator

Who should read this installation guide

This guide is intended for a technical audience (ideally a Cyborg installation specialist), but the information may also be used by the technical/system administrator at the customer site.

A = Anyone who wishes to have an overview of Reporting Administration or who needs to know how to prepare for an installation.

I = Cyborg installation specialist or customer performing the installation.

Who	Read this chapter	For
A	1. Introduction	An explanation of this installation, its scope, and prerequisites.
A	2. Overview of Reporting Administration	An explanation of the new functionality being delivered.
I	3. Preparations for Installing Server Components of Reporting Administration	Detailed instructions for installing and configuring the server components of Reporting Administration on an Indexed system in a SQL Server environment.
I	4. Installing Server Components of Reporting Administration Data Mart	Detailed instructions for installing and configuring the server components of Reporting Administration on an existing Relational environment and adding the data mart.
I	5. Setting Up the Data Mart	Detailed instructions for installing and configuring the server components of Reporting Administration for UNIX, installing Reporting Administration Generators, and setting up the data mart.
I	6. Installing and Configuring Client Components of Reporting Administration	Detailed instructions for installing and configuring the client components of Reporting Administration for UNIX.
I	7. Setting Up the Workforce Planning Cubes	Detailed instructions for setting up the delivered PowerPlay cubes with your new data mart.
I	A. Installation Checklist	A brief listing of the steps required to install Reporting Administration.

Who	Read this chapter	For
I	B. Reporting Administration Delivered Files	Detailed list of file names and locations of the installed Reporting Administration.
I	C. Impromptu Configurations	Tasks for configuring Impromptu catalogs for use with data marts.

How to get additional help

If you cannot find the answers to your questions in this manual, contact Customer Support, who will be able to answer specific questions and give you general advice on training.

Please visit our web site *www.Cyborg.com* (see "Cyborg Home - <http://www.Cyborg.com>") for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

CHAPTER 2

Overview of Reporting Administration

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Introduction

The Solution Series provides a great deal of flexibility when you want to report on data in the system. This section first provides a brief overview of all your reporting options provided by The Solution Series and then concentrates on introducing the functionality provided by Reporting Administration.

Cyborg provides several tools within The Solution Series to help you analyze and report on information about your organization, employees, and payroll. These tools are suited for different reporting purposes, and you will achieve the best results by using the tool that best suits your reporting requirement.

Options for reporting on information in The Solution Series include:

- Packaged reports
- Solution View (online queries and batch reports)
- Reporting Administration

Reporting options available

Packaged reports

Cyborg delivers hundreds of packaged reports developed using Cyborg's Fourth Generation scripting language, Cyborg Scripting Language (CSL—formerly known as English Language). You can schedule the reports to be run using the Report Group Activities form (RGMSTR). These reports are available for use as delivered, or for customization. You can also use CSL to create your own reports.

Note: You can locate the reports provided by Cyborg by launching the Report Group Activities form (RGMSTR) in *The Solution Series* and adding a report group.



Refer to either the *eCyborg: Using the Web Client* or *Using The Solution Series: Administrative Solutions* documentation for more information about using *The Report Group Activities* form.



Refer to the *Cyborg Scripting Language* training materials for details on how to customize and create *Cyborg Scripting Language* packaged batch reports.

Solution View

Solution View is a delivered user tool for developing forms, fields, on request queries, extracts, and reports. Solution View consists of two main components:

- Query Writer is used to write programs that are run online by the QUERY program.
- Report Writer is used to write programs that are run in batch processing.



Refer to the *Using Solution View* training material for comprehensive information about this facility.

Reporting Administration

This reporting option combines the power of the business intelligence tools from Cognos Corporation, a Cyborg strategic partner, with a value-added relational database (data mart) package from Cyborg. Reporting Administration includes the following:

- Cyborg-specific Impromptu catalogs for the delivered data mart, which promote intuitive user access to the data extracted from the core Solution Series system and placed in the data mart.
- Cognos reporting tools (Impromptu, PowerPlay).
- Support for Cognos' PowerPlay Online Analytical Processing (OLAP) package and the delivered Workforce Planning models.

Impromptu

The Impromptu tool is an integrated part of Reporting Administration. It simplifies on-request reporting for data extracted from *The Solution Series*.

Impromptu uses catalogs, LAN-based repositories of business knowledge and data-access rules, to allow an end user to capture and report on information without having to know

DB2 syntax or understand cryptic field names. The data in the catalog is organized for business use, as well as for system efficiency.

PowerPlay

The PowerPlay tool is a layer removed from Reporting Administration. It allows you to perform multidimensional analysis of your data. This is called Online Analytical Processing (OLAP), and provides a means to view data in terms of business trends. You can automatically build structures that summarize data for use in PowerPlay. The delivered Cyborg data mart can be accessed and utilized by this tool.

When using PowerPlay, you examine compiled data that is presented in PowerPlay 'cubes'. To support the cube presentation of data, you must have an appropriate catalog, Impromptu reports, and additional parameters (dimension maps, measurements, and banding definitions), in a compilation 'template' known as a PowerPlay model.

Each PowerPlay model must be designed to support data analysis for a specific area of interest, such as workforce planning.

Cyborg delivers two PowerPlay models: one Workforce Planning model for organizations using Position Administration, and one Workforce Planning model for organizations that do not use Position Administration.

Selecting the reporting tool

The following shows examples of when a user would use which reporting tool:

Type of report	Batch Reports	Solution View	Impromptu	PowerPlay
Monthly summary report of current data in The Solution Series.	X			
Quick query for current data in The Solution Series.		X		
Quick data reports.			X	
Statutory reporting.	X		X	
Summary reporting.	X			X
Subject matter expert (such as HR manager) reports to define up-to-date activity.	X			
Subject matter expert (such as HR manager) reports to define and report on activities during a defined time frame.			X	
Subject matter expert (such as HR manager) reports to help plan future activities.				X
Trend data on defined subject matter.				X

Type of report	Batch Reports	Solution View	Impromptu	PowerPlay
New form.		X		
Create form field.		X		
On request query.		X		
Create data extract.		X		

Note: Reports created using Impromptu and PowerPlay use data which is only as current as the last data mart extract.

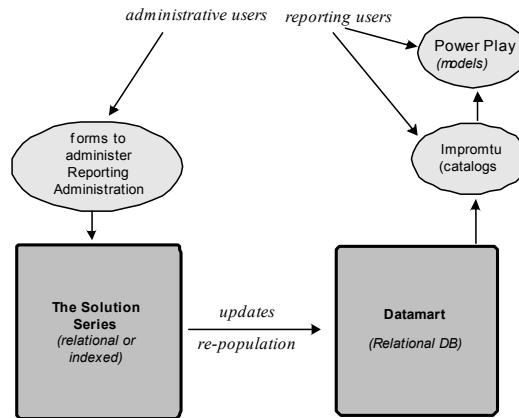
Third party database reporting process

Reporting Administration is primarily concerned with providing a refreshable, off-line copy of The Solution Series data in a relational database format for user reporting purposes.

The major components in Reporting Administration are:

- Extracts—the entities and activities associated with (re)populating the data mart with Reporting Administration data.
- Data model—the layout of Reporting Administration data within data mart tables.
- Cognos Tools—the third-party applications that support user reporting purposes.

The basic inter-relationship of Reporting Administration components is shown in the following figure:



Extracts, represented by the left side of the figure, include forms to administer and control updates to Reporting Administration, Cyborg Scripting Language extensions, and other entities that support (re)population of the data mart.

The data mart (and database) is shown in the lower right. Value added components are shown in the upper right of the figure and include the use of the Cognos applications Impromptu and PowerPlay.

Features of Reporting Administration

Reporting Administration provides everything you need to perform easy and meaningful reporting on your organization's data. Cyborg has successfully integrated all the pieces necessary to deliver a full-featured reporting solution. It is easy to use and incredibly powerful.

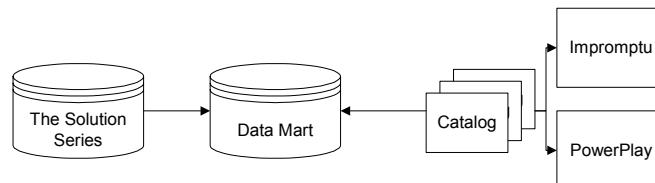
Features of Reporting Administration include:

- Extraction routines
 - CSL data extraction routines
 - RG data extraction routine
- The data model
- Cognos reporting tools
- As-of reporting
- Cyborg catalogs
- Delivered PowerPlay models
- Enhanced data

Reporting Administration combines the power of the business intelligence tools from Cognos Corporation, a Cyborg strategic partner, with a value-added relational database (data mart) package from Cyborg. Reporting Administration includes the following:

- Additional functionality in The Solution Series so you can launch the Cognos reporting tools directly from within it.
- Cognos reporting tools (Impromptu, PowerPlay).
- Cyborg-specific Impromptu catalogs for the delivered data mart, which promote intuitive user access to the data extracted from The Solution Series and placed in the data mart.
- Support for Cognos' PowerPlay Online Analytical Processing (OLAP) package and the delivered Workforce Planning Models.

The basic interrelationship of Reporting Administration components is shown in the following figure:



Extraction process

The system administrator for your organization decides how frequently to run an extract. You should note that the data in the data mart is only as current as the last extract.

Data from The Solution Series is extracted and then loaded into the Reporting Administration data mart. The data is then available for access by the Cognos tools, Impromptu and PowerPlay, through the catalogs and cubes.

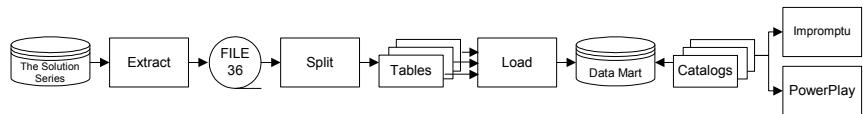
The baseline of activities necessary to (re)populate the data mart can be logically divided into three stages:

- Extracting all necessary data from the core system
- Splitting the extracted data into per-table groupings (files)
- Loading the data for each table individually into the data mart

There are two extract/import processes performed, depending on the type of data wanted—core system or Labor and History.

The core system extraction copies data from the System Control Repository and Employee Database and places the copied data in the Data Mart Extract File (FILE36), a temporary system file. A COBOL program, the Data Mart Extract File Splitter (RSPLIT), creates separate files for every representative table, with the Data Mart Extract File as input. A script generated by the extract process truncates (empties) the target data mart table via a platform-specific interpreter. A bulk loader then loads the data from the tables created by the splitter program into the data mart table.

The following figure depicts the extraction process:



The Labor and History extraction is a payroll-related process. It employs an incremental extraction strategy by accessing the Batch Master File (P20) twice. The first time to extract records into the Data Mart Extract File, and the second time to mark the extracted records so they will not be extracted again. The Data Mart Extract File Splitter creates separate files for every representative table, with the Data Mart Extract File as input. A bulk loader then loads the data from these tables into the data mart table.

CSL data extraction routines

The extract process is based on the standard system functionality of the Report batch process. The Reporting Admin Table Properties (RSXSCR) and Report Parameters For Reporting Admin Extract Report (RSXRPT) forms are used to maintain the predetermined extract task list for the data mart.

The Reporting Admin Table Properties form (RSXSCR) allows you to choose modules for which data will be extracted and to choose a cut-off date to help limit the amount of data extracted. The table created by this form is primarily used as a task list for the extract process. In this capacity, any entry on this table that is enabled for extract is marked as 'turned on to run', enabling the associated CSL extraction routine to be executed. The CSL

routines are designed to extract all the data necessary to populate target Reporting Administration tables, and write it to the Data Mart Extract File.

For UNIX server installations, you will need to launch The Solution Series and set the data mart Database to Oracle before performing the extracts using the Report Parameters For Reporting Administration Extract Report (RSXRPT). This tells The Solution Series to create Oracle code. This is a one-time only activity that should occur during installation.

Report Parameters for Reporting AdministrationReport RSXRPT

Report Group - Reporting Admin Extract RSXRPT

Database Options

Datamart: Cyborg Datamart

Database: Oracle

Component Options

Base EE / Co Payroll Training Admin

Human Resources Benefits Admin Position Mgmt

Filter Options

Cut-off Date: 01-01-1924

Note: The Reporting Admin Table Properties form (RSXSCR) is intended for use by the data mart administrator only. Detailed knowledge of the architecture of The Solution Series and the data model is required to use this form. Attendance of the Customizing Reporting Administration class is recommended before using this form.

Report Generator data extraction routine

Rather than extracting Labor and History data from the Employee Database, it is extracted from the Batch Master File (P20) file using the Report Generator (RG) routine: The data mart Labor and History Extract (7E7E).

The Data Mart

The extract process automatically (re)populates the data mart. The data mart is a relational database on the server that contains tables populated by the enhanced data. The Reporting Administration data mart tables contain the following data:

- Company Information
- Employee Information
- Position Management Information
- Earnings and Deductions
- Labor and History
- Training Administration
- Employee Skills, Competencies, and Abilities
- Benefits Administration

When the data is pulled from The Solution Series core system during the extract process, Reporting Administration is able to automatically populate its tables, making the data available for users to report upon.



Refer to the *Reporting Administration Data Mart Data Model* for detailed information on the data mart.

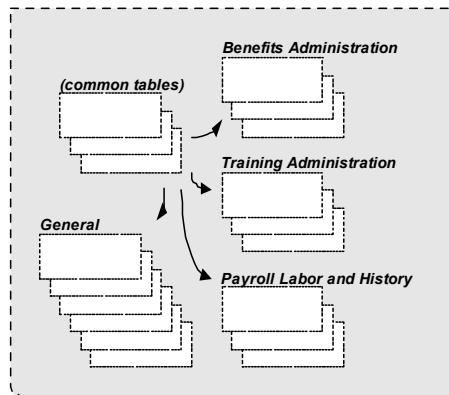
The Data Model

The Reporting Administration Data Model is a metadata representation of the data mart. It consists of approximately 172 tables organized into four subject areas and a collection of common areas.

The four subject areas are:

- General
- Payroll Labor and History
- Training Administration
- Benefits Administration

The following figure shows the Data Model organization:



Cyborg Catalog Cross-Reference spreadsheet

A spreadsheet is delivered with Reporting Administration (the Cyborg Catalog Cross-Reference spreadsheet), showing the data elements of the data mart and catalogs.

This tool is delivered in an electronic format so data elements can be added or it can be re-sorted to meet your needs. The spreadsheet can be found on CUBBS.

Cognos reporting tools

Cognos provides a suite of tools that support your business reporting needs. These tools include:

- Impromptu for on request and standard reporting
- PowerPlay for Online Analytical Processing (OLAP)

You may license a variety of these tools when you purchase The Solution Series, but an administrator's version of the Impromptu tool will always be licensed to you. The added functionality of the administrator tool (security configuration and catalog create/update authority) allows you to control user access to information.



*Cognos provides extensive documentation and customer training programs for all of their tools. If you have a question about these products, contact **Cognos Corporation** (see "<http://www.cognos.com> - <http://www.cognos.com>").*

Cyborg catalogs

Cognos Impromptu users write reports that include both database and formatting data for a pleasing, informative presentation.

An Impromptu catalog (one or more) is required before reports can be written. The catalog presents a filtering of the raw database organization that allows easy, quick report generation.

The Cyborg catalogs delivered with Reporting Administration are essential for Cognos Impromptu use. The following catalogs are delivered:

- General catalog (contains information most commonly used by the HR generalist)
- Payroll catalog (includes Labor and History)
- Training Administration catalog
- Benefits Administration catalog

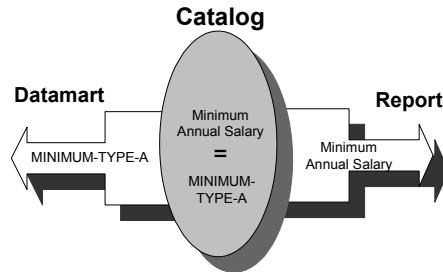
Each catalog is a file containing the information Impromptu needs to present data logically, in a way that makes sense to users creating and running reports. In short, the catalogs provide logical views of the data.

For example, if one relational table contains employee and salary data and a second table contains employee and department data, the catalog presents the logical view: employee data, salary data, and department data. Because the data is presented logically, the Impromptu user running a report does not need to know that the employee data is actually available from two sources (tables).

A catalog consists of LAN-based repositories of business knowledge and data-access rules (for example, table joins) that allow an end user to capture and report on information without having to know DB2 syntax or understand cryptic field names. By delivering the catalogs as part of Reporting Administration, Cyborg has eliminated the time-consuming task of interpreting and organizing the vast amount of data extracted from The Solution Series.

The catalogs provide a gateway between the user and the database, providing data links from the database standpoint, and providing meaningful field and table aliases from the user point of view. The Impromptu user can simply point and click to add information to a report, rather than search for database table joins and segment records.

For example, if you want to include minimum annual salary information on a report, you do not need to know that the correct information is accessed from the MINIMUM-TYPE-A field in The Solution Series; you need only access the information by selecting it from the relevant catalog. The catalog locates the correct data for your report from the data mart.



Each Cyborg catalog consists of one file that contains several folders, within which the fields reside. Each of these folders may also have additional folders nested within it.

Distributed catalogs

The Cyborg-delivered catalogs may be configured as distributed catalogs. When users connect to the catalog for the first time, they will be prompted to create their own local copy of that catalog. They can then set up any number of catalog-level conditions, calculations, prompts, and so on, or re-label the data elements to suit their needs without affecting the original master catalogs.

Keep in mind, however, that the catalogs point to data tables. New sub-catalogs would have to point to certain columns of data and the tables and joins would have to be created.

Folder structure

Each Cyborg catalog consists of one file that contains several folders, within which the fields reside. Each of these folders may also have subfolders nested in it.

The information has been designed to be organized logically so that the information can be found easily and intuitively.

A number of filters, prompts, and calculations are delivered as part of the catalogs.

General catalog

Folders in the General catalog include:

Folder Name	Contains
Company Information	Organization information fields used in your reports.
Job Table Information	Job-level and salary-level fields used in your reports.
Employee Personal Information	Personal employee-level fields used in your reports.
Employment Information	Employment-level fields used in your reports.

Folder Name	Contains
Compensation & Salary Administration	Compensation and salary administration fields used in your reports.
Employee Attendance Information	Employee attendance fields used in your reports.
Employee Skills and Training	Employee skills and training fields used in your reports.
PM-Org Unit Information	Position Administration organization unit information fields used in your reports.
PM-Job Information	Position Administration job information fields used in your reports.
PM Position Information	Position Administration position information fields used in your reports.
PM Incumbencies	Position Administration incumbency-level fields used in your reports.
Requisition/Applicant Tracking	Requisition and applicant tracking fields used in your reports.
EEO/AAP Reporting Data	Equal Employment Opportunity and Affirmative Action Program reporting data fields used in your reports.

Payroll catalog

Folders in the Payroll catalog include:

Folder Name	Contains
Company Information	Organization information fields used in your reports.
Employee Personal Information	Personal employee-level fields used in your reports.
Compensation and Salary Administration	Compensation and salary administration fields used in your reports.
Employee Payroll Information	Employee payroll information fields used in your reports.
Employee HED and Tax Summary Data	Hours, Earnings, and Deductions (HEDs) and tax summary data fields used in your reports.

Training Administration catalog

Folders in the Training Administration catalog include:

Folder Name	Contains
Course Administration	Course administration-level fields used in your reports.

Folder Name	Contains
Class Administration	Class administration-level fields used in your reports.
Program Administration	Program administration-level fields used in your reports.
Employee Personal Information	Personal employee-level fields used in your reports.
Employment Information	Employment information-level fields used in your reports.
Employee Training Administration	Employee training administration fields used in your reports.
Employee Skills, Education and Certs	Employee skills, education and certification fields used in your reports.

Benefits Administration catalog

Folders in the Benefits Administration catalog include:

Folder Name	Contains
Company Information	Organization information fields used in your reports.
Employee Personal Information	Personal employee-level fields used in your reports.
Employment Information	Employment-level fields used in your reports.
EE Benefits Eligibility	Employee benefits eligibility fields used in your reports.
EE Benefits Enrollment, Coverage & Cost	Employee benefits enrollment, coverage, and cost fields used in your reports.
Employee Plan Details	Employee plan detail fields used in your reports.
Non-Discrimination Test Info	Non-discrimination test information fields used in your reports.
Dependents, Beneficiaries & Bond Holders	Dependant, beneficiary, and bond holder fields used in your reports.
Plan Name and Basic Rules	Plan name and basic rule fields used in your reports.
Plan Coverage & Contribution Rules	Plan coverage and contribution rule fields used in your reports.
Plan Contribution HED Set Up	Plan contribution-level fields used in your reports.
Plan Eligibility Rules	Plan eligibility rule fields used in your reports.
Plan Activity and Option Rules	Plan activity and option rule fields used in your reports.

Folder Name	Contains
Plan Flex Rules, Definitions & Formulas	Plan flex rule, definition, and formula fields used in your reports.
Deferred Plan Rules	Deferred plan rule fields used in your reports.
Plan Search Arguments & Co to Bene X Ref	Plan search argument and company to benefit cross-reference fields used in your reports.

Delivered PowerPlay models

PowerPlay users examine compiled data in PowerPlay cubes that have been 'transformed' using a PowerPlay model (template). Users must have an appropriate catalog, specialized 'extraction-only' reports, and additional parameters (dimension maps, measurements, and banding definitions).

Two models are delivered by Cyborg, the Workforce Planning Model with Position Administration and the Workforce Planning Model without Position Administration.

Cognos PowerPlay tools are used to compile cubes that can then be used for OLAP.

Enhanced data

Derived data

Reporting Administration allows you to report on derived data. A straight extract from the core Solution Series system does not give you easy access to all the employee information you may need for reporting. Derived data would not be in the extract.

For example, there are fields for employee age in the data mart that can be used in reports to show the employee age in years, in years and months, or in years, months, and days. These fields are derived from the employee's birth date data stored in The Solution Series.

A derived data field avoids repeated calculations and simplifies reporting, giving you direct and easy access to employee information.

Effective dating

In order to perform as-of reporting on your data, the database must know the time period when the data in a table was effective (or if it still is effective).

Each dated data record in The Solution Series is extracted into the data mart with an effective begin date and an effective end date. The effective begin date is the effective date of the record in The Solution Series and the effective end date is derived during the extract process. These dates are then stored along with the data in the data mart so that it is date stamped for any kind of as-of reporting you may want to perform.

Note: This does not apply to Position Administration data.

As-of reporting

When using or creating reports you may be presented with a prompt asking for the 'As Of Date'. This means that the data used in this report will be valid 'as of' this date.

Users can change the date in the 'As Of Date' field to view data 'as of' another date. They may want to change the 'As Of Date' to a date prior to the date shown to view data 'as of' that date. Future dates can also be entered in this field to view data 'as of' a future date.

Because effective start and end dates are captured during the extract/import process for all dated data in the data mart, as-of reporting can be performed on all the information extracted from The Solution Series. For instance, reports can be generated to show last year's total salary increase amounts, this year's salary totals, or the salary amounts the organization paid five years ago.

Filtering data

The Cyborg-delivered catalogs contain some commonly used pre-defined filters.

Filters select information by some single or multiple criteria. For instance, if you want to display a list of active employees, you want to enter a condition statement in a filter to more specifically request employees with an active status.

In addition, filters can be used to restrict access to sensitive data. Filters can also help improve performance as the number of retrieved records is limited.

Reporting Administration client/server requirements

Before you can perform reporting tasks, you must have a client and a server. Clients and servers are not mutually exclusive; you can install both on the same machine.

Reporting Administration requires that:

- The Solution Series be installed with the server on a supported relational environment.
- Cognos Impromptu be installed with the client on an environment compatible with the relational server environment.

In order to support the full functionality of Reporting Administration, your installation of The Solution Series may be either relational or indexed.

Security issues

The Solution Series

The Solution Series provides multilevel security. Your Security Officer should be aware of some additional security issues raised because of Reporting Administration.



Refer to [Setting Up and Maintaining The Solution Series Security](#) for suggestions on mapping Cognos security with The Solution Series security.

File level and operating system level security

Additionally, you need to use your standard operating system security to make sure only those authorized to do so can move or copy the files resulting from the extract process.

For example, you may decide that for your implementation, you only want an assigned database administrator to have edit authority over the Data Mart Extract File and only a system administrator to have the authority to move or copy files from the server.

Datamart security

The security facilities provided by Impromptu do not protect the database. If a user can access the database through Impromptu, that user can also send straight commands to the database. You should therefore consider setting up database security on your information, as well as through Impromptu user classes.

You may wish to ensure the security of the data mart resulting from the extract process. These tables are located on the server after the extract/import operation is complete. Once created, you can move these tables anywhere. If they remain in the server at the location they were extracted to, they will be overwritten each time an extract is performed, which means these files (if not moved) always contain the most current extract data.

Note: *Discuss the implications of moving the data mart from the default location on the server with your database administrator.*

Note: *If you move the data mart from the default location on the server, be sure the catalog on the client computer accesses the database in its new location.*

Cognos Impromptu

Cognos Impromptu provides a security scheme that allows the Security Officer to assign different information access privileges to different user classes. Security within Impromptu is handled by Impromptu.

Cognos PowerPlay

The power cube can be compiled in such a way as to allow different user classes to view different levels of information.

To begin your installation of Reporting Administration, go to [Part 2—Installing and Configuring Reporting Administration in a UNIX Server Environment](#).

PART 2

Preparation for Reporting Administration in a Unix Server Environment

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CHAPTER 3

Preparations for Installing Server Components of Reporting Administration

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Introduction

This section provides detailed instructions for installing Reporting Administration software on a UNIX computer and then configuring it to work seamlessly with client computers.

These installation instructions assume you have:

- an indexed server implementation of The Solution Series in production, as well as a Windows server environment
- created a new test environment containing your production version
- backed up the new test environment
- installed and configured all required software

This is a technical section. The reader should be knowledgeable of the technical side of the server environment, as well as The Solution Series.

 *Refer to [Installing and Configuring Client Components of Reporting Administration for The Solution Series](#) for instructions on installing and configuring components of Reporting Administration on a client computer.*

Note: *If you wish to convert from an Indexed to a Relational version of The Solution Series, you will need to do a complete installation of the system, then install Reporting Administration for a Relational Version.*

 *Refer to [Installing The Solution Series and Configuring and Administering CAS \(v5.0 on UNIX\)](#) for information on installing the Relational version.*

Deliverables

The following is included:

1	CD-ROM titled 'Installation Media for Reporting Administration' which contains this installation guide
---	--

Install Reporting Administration files

Installing Reporting Administration is a process of first installing the files on a PC, then transferring the server files to the UNIX machine.

Install files on a PC and transfer to the server

1. **Insert the delivered CD-ROM titled 'Reporting Administration 5.0 for Windows' into drive**

The Getting Started page displays.

2. **Navigate and then click on the 'Install Reporting Administration server' link**

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. **Follow the installation prompts.**

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...!' column.

Prompt	Options/Defaults	Select the following...
Destination	C:\Program Files\Cyborg Systems\	use default, or... Other:
Server HOSTNAME	HOSTNAME	HOSTNAME of UNIX Server:
Environment	/CYBORG/	use default, or... Other:

The installation program will prompt you when it is complete.

2. **Verify the variables in the JFTP.BAT program**

Open JFTP.BAT in a text editor and verify the Hostname or IP address of the system to which the file will be loaded.

3. **Verify the FTP commands in the FTP command file**

Verify the FTP commands in the following file:

FTPCMDS_xxx_XXX.UNX

4. Run the file transfer program

Job Used: JFTP.BAT

Run the file transfer job from a command prompt on the PC. This will load the files from the PC to the server.

Note: You will need to have the FTP capability enabled on both systems.

For example:

```
JFTP USERNAME PASSWD
```

Set up the files on the server

Once the JFTP.BAT job has transferred the files to the server, perform the following steps on the server.

1. Enable Reporting Administration scripts for execution

In the \$runs directory of The Solution Series environment, change the permissions for the following scripts to 'executable':

```
chmod 777 jrsplit  
chmod 777 jrsexpay  
chmod 777 jrsexrpt  
chmod 777 jrsexvpt
```

Note: The script jrsexvpt will not be executed during this installation. It is used in Reporting Administration administration to list tables.

2. Pull and compile rsplit

Job Used: jrsplit

To pull and compile the rsplit Cobol program, execute the jrsplit jobstream from the \$runs directory.

For example:

```
nohup jrsplit > ../log/jrsplit.log &
```

Review the log to determine if there were any errors.

The copying of Reporting Administration server components is now complete.

CHAPTER 4

Configuring Reporting Administration and Setting Up the data mart for an Oracle Database

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Introduction

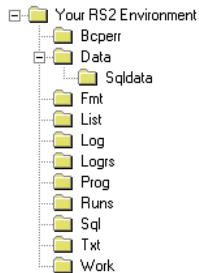
This section provides detailed instructions for configuring Reporting Administration software to work seamlessly between the server and the client.

This is a technical section. The installer should be knowledgeable of the technical side of the server environment, as well as The Solution Series.

Server Configuration

These installation instructions assume you have:

- an indexed or relational server (UNIX Server environment) implementation of The Solution Series in production with the following directory structure:



- created a new test environment containing your production version of The Solution Series
- backed up the new test environment
- installed and configured all required software on the server

Note: There must be a *PATH* statement with an entry pointing to the Oracle */bin* directory in the profile file of the installation environment.

Phase 1: Create the data mart

There are three SQL scripts delivered as components of Reporting Administration. These scripts, located in the \Sql directory, must be run to create the data mart.

Delivered script	Description
r2_owner_ora.sql	This script creates the owner of Reporting Administration data mart.
r2_container_ora.sql	This script creates the data tablespace files for the data mart.
r2_datamart_ora.sql	This script creates the data mart tables.
r2_role_ora.sql	This script creates the user roles for the data mart.
r2_synonyms_ora.sql	This assigns each data mart data table to a public synonym.

1. Review and revise the Oracle database owner

Script used: r2_owner_ora.sql

This script is used to create the Oracle database owner for Reporting Administration data mart. The default owner is dm2_test. If you wish to change the owner name, you will need to edit the r2_owner_ora.sql script. If you wish to change the name of the database owner from the default setting, you will need to edit all instances of the owner name in the r2_owner_ora.sql script.

```
/*  
Create Table Owner for the Cyborg Reporting Administration Data Mart  
*/  
create user dm2_test identified by dm2_test  
;  
grant resource to dm2_test  
;  
grant create tablespace to dm2_test  
;  
grant create public synonym to dm2_test  
;  
grant drop public synonym to dm2_test  
;  
grant create role to dm2_test  
;  
grant create session to dm2_test  
;
```

2. Review and revise your database's tablespace data/index location and size

Script used: r2_container_ora.sql



Refer to Minimum Server System Requirements in the introductory chapter to be sure that you have sufficient resources to create the data mart.

This script is used to create the table container for Reporting Administration data mart. 'dm2_test' is the default tablespace name in the delivered SQL scripts. If you wish to

change the name of the database or the location of the data and index files from the default setting, you will need to edit the create tablespace lines in the `r2_container_ora.sql` script.

```
/*
Create Table Container for the Cyborg Data mart
*/

create tablespace DM2_TEST_DATA
datafile '/u04/oradata/repso1/dm2_test_data.dbf'
size 500M reuse
default storage (initial 001M next 001M pctincrease 0)
;
create tablespace DM2_TEST_INDEX
datafile '/u04/oradata/repso1/dm2_test_index.dbf'
size 100M reuse
default storage (initial 256K next 256K pctincrease 0)
;
```

Also modify the paths of the data and index data files to conform to your environment.

Review the script and make changes according to your specifications. For example, if you decide to rename your data mart owner from the delivered 'dm2_test' to 'My_Datamart_Name' replace any strings in the SQL scripts that contain the delivered database name with your own. Before continuing make sure to:

- rename the tablespace names 'dm2_test_data' and 'dm2_test_index' (optional)
- check the path of the data and index datafile parameter
- determine the amount of space required and allocate the space, using the size parameter

3. Review and revise your data mart table allocations

Script used: `r2_datamart_ora.sql`

This script is used to create the data mart tables for Reporting Administration. Review the script and make changes according to your specifications. For example, if you renamed your data mart owner in the container script, make sure to change delivered 'dm2_test' string in this script with your data mart owner. If you changed your database name in `r2_container_ora.sql`, you will need to replace the defaults in the tablespace statements for each table.

```
/*
*****
table DM2_EMP_PLAN_VEST
*****
create table DM2_EMP_PLAN_VEST (
CONTROL_1 char(002) not null,
CONTROL_2 char(004) not null,
EMPLOYEE_NUMBER char(010) not null,
PLAN_ID char(003) not null,
VESTING_CALC_DATE date not null,
VESTING_CALC_UNTIL date not null,
CURRENT_VEST_PCT number(03,2) null,
FIRST_VESTED date null,
FULLY_VESTED date null,
CURRENT_VESTED date null,
constraint PK_DM2_EMP_PLAN_VEST primary key (CONTROL_1,CONTROL_2,
EMPLOYEE_NUMBER, PLAN_ID, VESTING_CALC_DATE,VESTING_CALC_UNTIL)
tablespace DM2_TEST_DATA
pctfree 0
storage (initial 1178K next 1178K pctincrease 0)
enable primary key using index tablespace DM2_TEST_INDEX

```

```
storage (initial 1168K next 1168K pctincrease 0)
;
```

4. Review and revise Reporting Administration Role allocations
Script used: r2_role_ora.sql

This script is used to create five groups for the corresponding Cognos catalogs:

- REPSOL2_ALL
- REPSOL2_GENERAL
- REPSOL2_BENEFITS
- REPSOL2_TRAINING
- REPSOL2_PAYROLL

One group is created for each catalog and one group, 'All', is created with user access to all catalogs. Once created, the user groups allow 'select' permission to all or some of the data mart tables. The catalogs will be installed as part of the client components (see Chapter 6).

```
/* All Catalog role */
CREATE ROLE REPSOL2_ALL IDENTIFIED BY SOL2_ALL
;
GRANT SELECT ON DM2_ABSENCES TO REPSOL2_ALL
;
```

In the above example 'SOL2_ALL' is the role password and 'REPSOL2_ALL' is the role name. If you wish to change the name of a role, you can edit the role name in the 'grant select' and 'create role' lines for that role in the rs_role_ora.sql script.

You can change the password in the 'create role' line.

5. Create public access for the database
Script used: r2_synonyms_ora.sql

This script sets up synonyms for use with the Oracle database. Synonyms allow public access to the tables in the database without requiring a user log on with the database owner name.

6. Review jcreatedm_ora

Modify this batch file to reflect your own data mart database information. You may need to edit the following parameters to match those set up in the r2_owner_ora.sql file.

```
DB_USER=database owner name
DB_PASSWORD=database owner name password
```

7. Run the data mart creation job
Job used: jcreatedm_ora

Execute the jcreatedm_ora jobstream from the /runs subdirectory.

For example:

```
jcreatedm_ora | tee ../log/jcreatedm_ora.log
```

Note: This script will require entry of a DBA user name and password. The password will not be echoed back to the screen.

8. Review the logs

Review the logs to be sure the operation was completely successfully. Review the following logs:

- jcreatedm_ora.log in the /log directory
- r2_owner-ora.log, r2_role-ora.log, and r2_synonyms-ora.log, r2_container-ora.log, and r2_datamart-ora.log files in the /logrs directory
- c_date.log in the /logrs directory

9. Assign table permissions for individual users

Use SQLPlus to set up each Impromptu user's rights. Users must have 'Select' permission assigned to their logins (user ID and password) for the tables. This is accomplished by adding user logins to Reporting Administration user groups.

Phase 2: Data mart Extract and Load

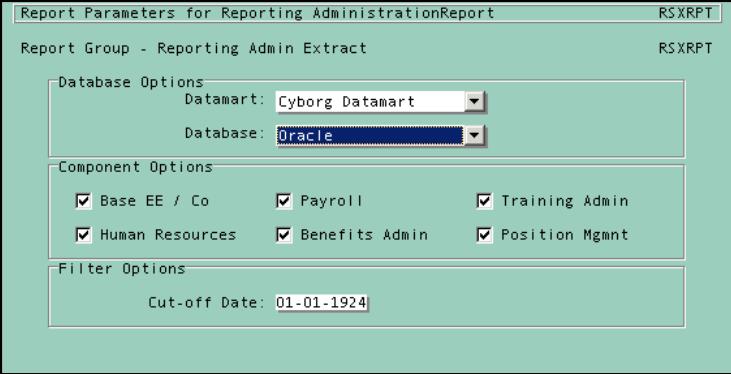
Before performing the data mart extract and load, you will need to launch The Solution Series and set the Data Mart Database to Microsoft SQL Server before performing the extracts. This tells The Solution Series to create Microsoft SQL Server code. To perform this task, please do the following:

1. Launch The Solution Series.
2. Select the Report Group Activities form (RGMSTR), by making the following selection:

Component:  Reporting
Process: Report Scheduling
Task:  Schedule Report Groups

3. Select Reporting Solution Extract (RSXRPT) in the Report Group Activities list.
4. Click Parameter.
5. Click Set Parameters.

The Report Parameters for *Reporting Solution* Extract form (RSXRPT) will appear as shown here:



6. Under Database Options, change the Database field to Microsoft SQL Server.
7. Press Enter.

1. Review jrsxrpt_ora

Modify this batch file to reflect your own data mart database information.

DB-USER=your database name

DB-PASSWORD=your database password

2. **Run the report extract and bulk copy the files**

Job used: jrsxrpt_ora

Execute the jrsxrpt jobstream from the /runs subdirectory.

For example:

```
nohup jrsxrpt > ../log/jrsxrpt.log &
```

Review the log to determine if there were any errors.

3. **Review directories and logs**

Before continuing the extract and load, it is important to check the existing environment directories for any signs of errors. Make sure to verify that:

- /logrs and /txt are not empty. If any files contained in/logrs contain the string 'ORA-' that is an indication of an error.
- In /lderr, any files with an extension of '.bad' that do exist should not have a size greater than '0'.

4. **Run a Query to check if the Database is populated**

From SQLPlus run a query to indicate if your database has been populated. To do this type the command:

```
select * from DM2_COMPANY  
select * from DM2_EMPLOYEE
```

The SQL commands above will verify that the basic company and employee data has been populated.

Phase 3: Update the Labor and History records

1. Extract Report Generator 7E7E

Job Used: JXRPTGENRS

This job will extract report generator 7E7E into file P05T80RS in the \Work directory.

To extract the report generator, execute the JXRPTGENRS.BAT jobstream in the \RUNS directory.

For example:

```
nohup jxrptgenrs > ..\log\jxrptgenrs.log
```

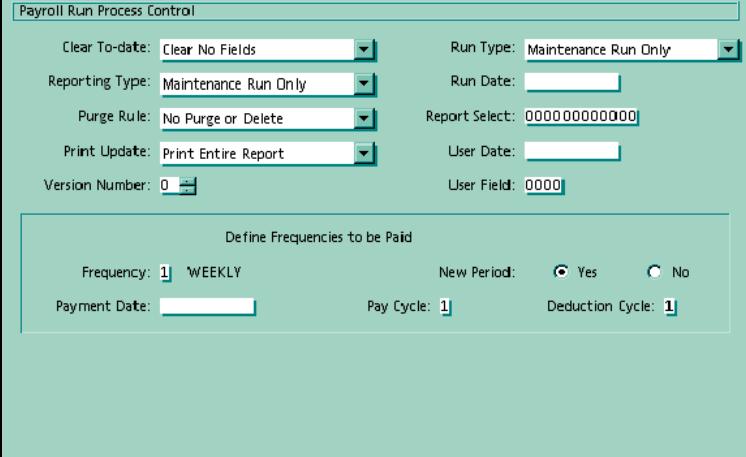
Review the log and rptgenrs.03 in the \LIST directory to determine if there were any errors.

2. Verify no companies setup for a payrun

Access the Payroll Run Process Control form (AE-SCR) by selecting:

- Component:**  Payroll Setup Processing
- Process:** Payroll Processing Setup
- Task:**  Schedule Payroll Runs

The resulting display should look like the sample below:



Click the Refresh Selection List button to show the selection list.



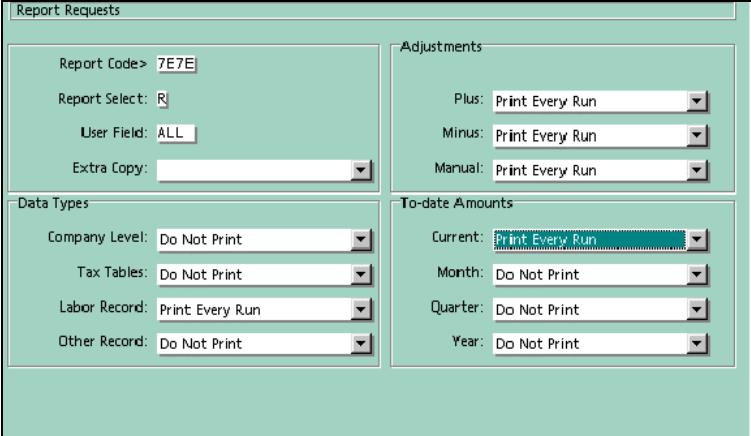
Select each of the frequency options listed. No payment dates should be entered.

3. Enter 7E7E Generator Data on the Report Request form

In order to add the 7E7E generator to the system, submit the Report Requests form (DD-SCR) in The Solution Series by selecting:

Component:  Payroll Setup Processing
Process: Payroll Processing Setup
Task:  Schedule Payroll Batch Reports

Once the screen activates, type '7E7E' in the Report Code field, 'R' in the Report Select field, and 'ALL' in the User field. Before continuing, make sure to set the Labor Record, Plus, Minus, Manual, and Current fields to Print Every Run. The resulting display should look like the sample below. Process this screen for each organization (Control 1-2).



The screenshot shows the 'Report Requests' form with the following fields and values:

- Report Code:** 7E7E
- Report Select:** R
- User Field:** ALL
- Extra Copy:** (empty dropdown)
- Adjustments:**
 - Plus:** Print Every Run
 - Minus:** Print Every Run
 - Manual:** Print Every Run
- Data Types:**
 - Company Level:** Do Not Print
 - Tax Tables:** Do Not Print
 - Labor Record:** Print Every Run
 - Other Record:** Do Not Print
- To-date Amounts:**
 - Current:** Print Every Run
 - Month:** Do Not Print
 - Quarter:** Do Not Print
 - Year:** Do Not Print

Press Enter to add the changes to the system.

Note Generator 7E7E must be activated for each company for which Labor and History is to be exported to the data mart.

4. Run a Pay Extract Job used: JPAYXTR

Execute the JPAYXTR.BAT (using the 'ALL' control record parameter) jobstream from the \RUNS subdirectory.

For example:

```
nohup jpayxtr > ..\log\jpayxtr.log
```

Review the jpayxtr log in the \log directory and payxtr.03 in the \list directory to determine if there were any errors.

5. Perform Reporting Administration Maintenance Run

Job used: JMNTRUNRS

Execute the JMNTRUNRS.BAT jobstream from the \RUNS subdirectory. This job uses the p20in.xtr file from JPAYXTR and P05T80RS from JXRPTGENRS as input.

For example:

```
nohup jmntrunrs > ..\log\jmntrunrs.log
```

Verify that rg7e7e.36 exists in the \Txt directory, review the audit2 file in \List, and check the log to verify that the changes to RPT24 and generator 7E7E were properly processed.

6. Run a Pay Merge

Job used: JPAYMRG

Execute the JPAYMRG.BAT jobstream (using the 'ALL' control record parameter) from the \RUNS subdirectory.

For example:

```
nohup jpaymrg > ..\log\jpaymrg.log
```

Review the jpaymrg log in the \log to determine if there were any errors.

7. Review JRSXPAY_ORA.BAT

Modify this batch file to reflect your own database information.

```
set DB-USER=your system administration user ID
```

```
set DB-PASSWORD=your system administration password
```

8. Load the Labor/History records to the data mart

Job used: JRSXPAY_ora

Execute the JRSXPAY_ORA.BAT jobstream from the \RUNS subdirectory.

For example:

```
nohup jrsexpay_ora > ..\log\jrsexpay_ora.log
```

Review the log to determine if there were any errors.

9. Review directories and logs

Before continuing the extract and load, it is important to check the existing environment directories for any signs of errors. Make sure to verify that:

- \Logrs and \Txt are not empty. Any files in /txt containing the string 'ORA-' indicate there is an error.
- in \lderr, any files with an extension of '.BAD' have a size of '0'.

10. Run a Query to check if the Database is populated

From SQLPlus, run a query to indicate if your database has been populated. To do this type the command:

```
select * from DM2_HIS_EMPLOYEE  
select * from DM2_LBR_EMPLOYEE
```

The SQL commands above will verify that the basic company and employee data has been populated.

Setting up the data mart is now complete.

PART 3

Installing and Configuring Reporting Administration for the Client - AS400

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CHAPTER 5

Installing and Configuring Client Components of Reporting Administration (Oracle)

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Phase 2: Install client files	56
Phase 3: Configure the catalogs (Impromptu Administrators only).....	57
Phase 4: Configure Impromptu.....	62
Phase 5: Test the catalogs.....	63

Introduction

This section provides detailed instructions for installing Reporting Administration software on your client machine and then configuring it to work seamlessly with the server on which you installed and configured the relevant server components of Reporting Administration.

This is a technical section. The reader should be knowledgeable of the technical side of UNIX and be an experienced Impromptu user.



Refer to previous sections for detailed instructions on installing server components of Reporting Administration.

Space required on the Client

The client software files require the following amounts of free space on the drive:

Pick Reports ¹	1.362 MB
Client GUI Update	275 KB
Help/Support System ²	12.4 MB
Catalogs	2.758 MB
PowerPlay models	904 KB

¹Pick Reports are always installed in the C:\Pick Reports directory. If you wish to change the installation directory for Pick Reports and the Catalog pointers for these reports, please contact Customer Support.

² These are updates of files already installed in The Solution Series system, so increases in overall space requirements are minimal.

Deliverables

The following is included:

1	CD-ROM titled 'Installation Media for Reporting Administration' which contains this installation guide
1	Set of Impromptu Administrator or Impromptu User software and documentation

Overview of the installation

Phase 1: Install Impromptu and PowerPlay

Phase 2: Install client files

Phase 3: Configure the catalogs (Impromptu Administrators only)

Phase 4: Configure Impromptu

Phase 5: Test the catalogs

Phase 1: Install Impromptu and PowerPlay

Impromptu and PowerPlay are client software components. In order for the installation and configuration of Reporting Administration on the client to be successful, we assume the following is true:

- you have The Solution Series installed and functioning with the server where the data mart resides.
- you have installed and configured Reporting Administration on the server.
- you have installed and configured required client software such as ISQL and Personal Server for Windows on the client.
- you have installed and configured Impromptu and PowerPlay (either the administrator or the user version) on your client machine.

Note: PowerPlay is optional, but Impromptu is necessary for the basics of Reporting Administration to function.

If these statements are not true, do not continue with this installation. If all statements are true, continue to the next phase of the client installation.

Phase 2: Install client files

The client components of Reporting Administration are installed on the machine through an autoinstall process.

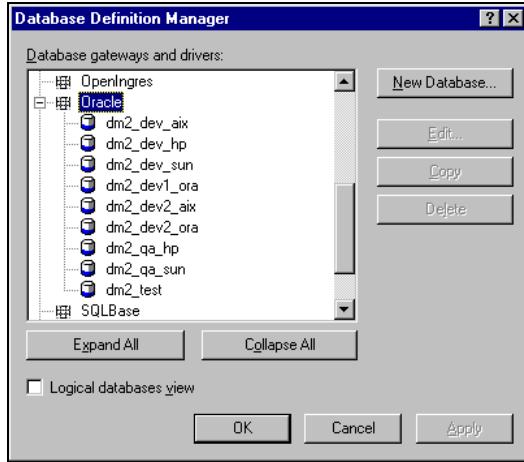
- 1. Insert the delivered CD-ROM titled 'Reporting Administration 5.0 for Windows' into drive**
The Getting Started page displays.
- 2. Navigate and then click on the 'Install Reporting Administration client link**
Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.
- 3. Follow the installation prompts**
The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...'
column.

Prompt	Options/Defaults	Select the following...
Select RA Database Management System	<ul style="list-style-type: none">■ SQL Server■ AS/400 DB2■ Oracle■ OS390 DB2	Select your server platform
Destination	C:\Program Files\Cognos\Cyborg	use default, or... Other:

The installation program will prompt you when it is complete.

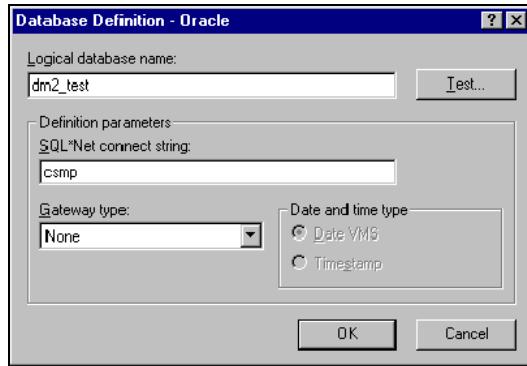
Phase 3: Configure the catalogs (Impromptu Administrators only)

1. **Launch Impromptu Administrator**
2. **Select a database**
Catalog Databases...



3. **Highlight the Oracle Server icon**
4. **Click New Database**
5. **Give the database a logical name**
Provide a logical name for the database (for example, 'My_Datamart_Name'). Use the name of the database that you specified earlier on the 'R2_owner_ora.sql' script. This will be the name the Impromptu Administrator uses to identify the data mart on the server.
6. **Select database type and configuration**
Enter your database name in the Logical database name field.

Enter the name defined in your TNSNAMES.ORA file, that refers to the Oracle instance containing the data mart, in the 'SQL *Net connect' string field.



Database Definition - Oracle

Logical database name: dm2_test [Test...]

Definition parameters

SQL*Net connect string: csmip

Gateway type: None

Date and time type: Date VMS Timestamp

[OK] [Cancel]

7. Click Test

You must enter the administrator User ID and Password before you are able to continue.



Test Attach to Database

User ID: dm2_test [OK]

Password: ***** [Cancel]

This	Is
User ID	dm2_test
Password	dm2_test

Once you have attached to the database, a dialog will appear with the prompt: 'Successfully attached to database!'

8. Click OK

This will close the 'Successfully attached to database' dialog.

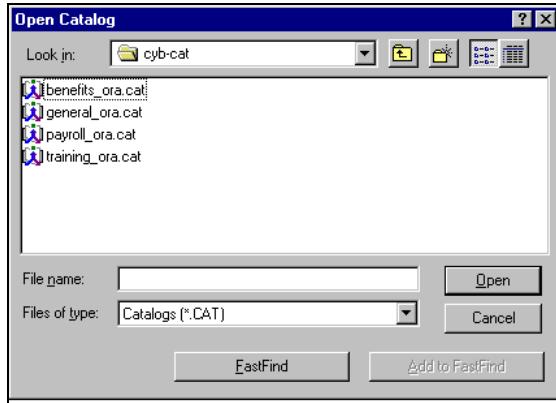
9. Click OK

This will close the Database Definition dialog.

10. Open the delivered catalog

Select:

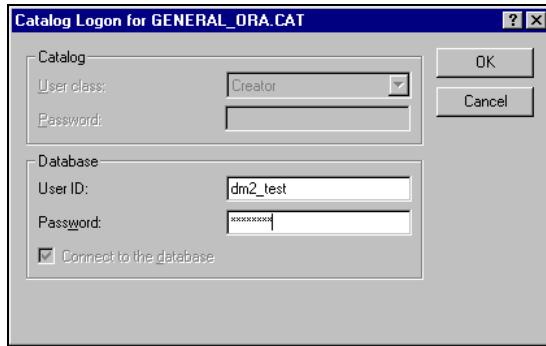
Catalog ► Open



Browse to the directory where you installed the catalogs (example: C:\Program Files\Cognos\Cognos\Catalogs-XX) and open one of the delivered catalogs (BENEFITS_ORA.CAT, GENERAL_ORA.CAT, PAYROLL_ORA.CAT, TRAINING_ORA.CAT).

Note Remember that you need to open each of the catalogs listed above.

11. Clear the checkbox 'Connect to the Database'



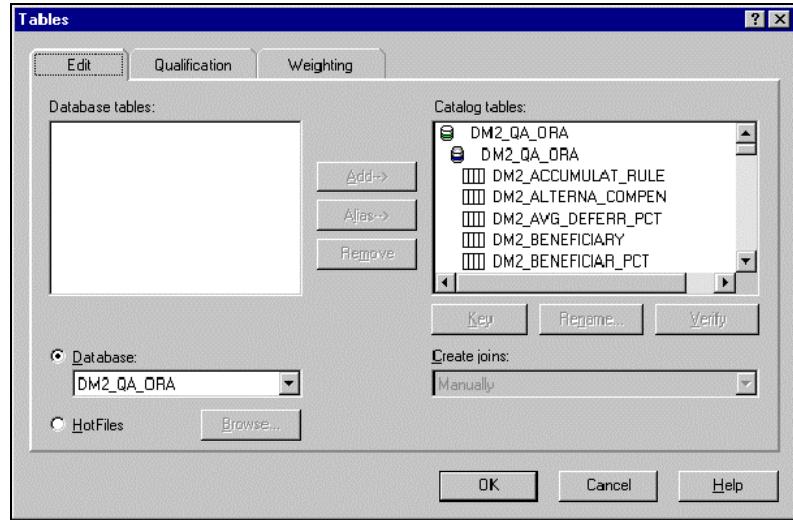
12. Click OK

This will close the Catalog Logon dialog.

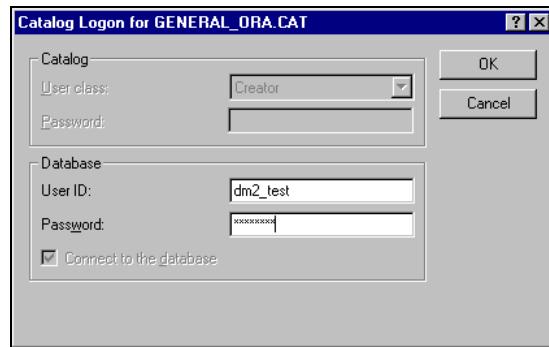
13. Set up the catalog tables

Select:

Catalog ► Tables



14. **Select the database name**
Select the database name that matches the logical name you assigned to your database (for example, 'My_Database_Name').
15. **Click OK**
16. **Logon to the catalog**
Make sure to enter the User ID and Password to logon to the catalog.



This	Is
User ID	dm2_test
Password	dm2_test

- 17. Click OK**
- 18. The database is connected**
- 19. Close the catalog**
- 20. Repeat steps 10–19 for the remaining catalogs**

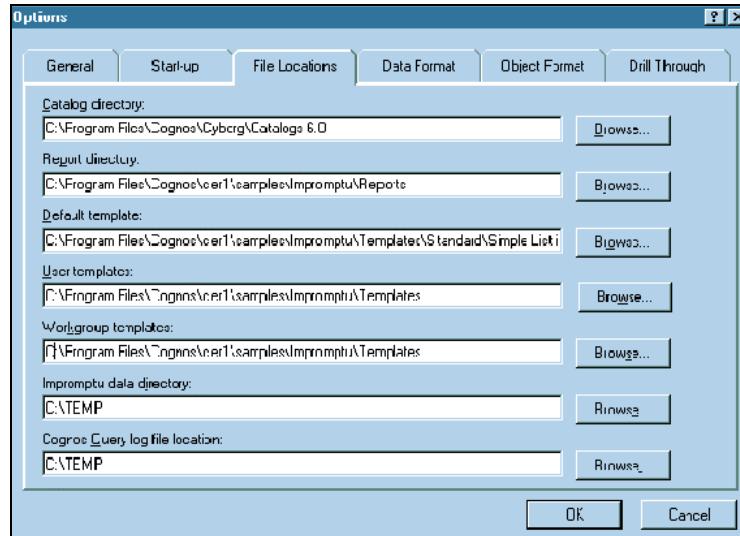
Phase 4: Configure Impromptu

1. Configure file locations

Select:

Tools ► Options

2. Click the File Locations tab



3. Set the path to the Catalog directory

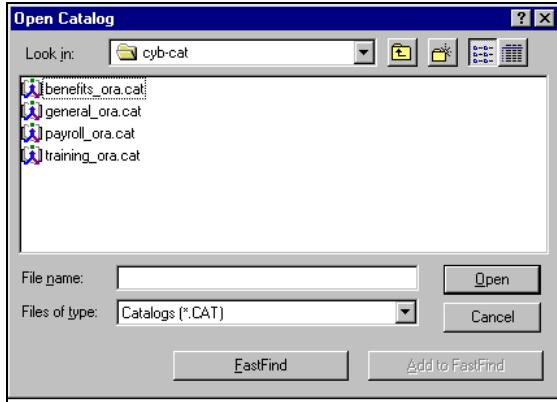
Click Browse and locate the catalogs. The exact location of the catalogs may vary depending on the path selected during installation. An example is the C:\Program Files\Cognos\ ImpromptuXX\cyb_cat directory.

4. Click OK

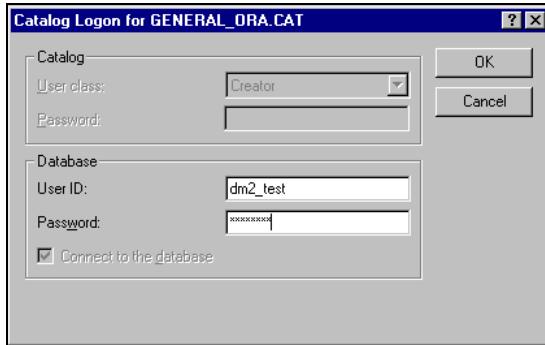
5. Exit Impromptu Administrator

Phase 5: Test the catalogs

1. **Launch Impromptu Administrator**
2. **Open one of the catalogs**
 Make sure to open one of the four catalogs. Select:
 Catalog ► Open



3. **Log on to the catalog**
 Make sure to enter the User ID and Password to log on to the catalog.

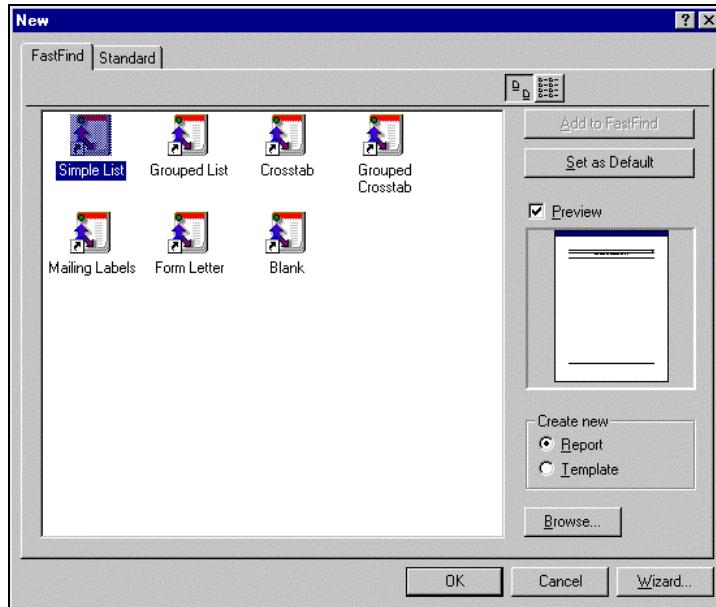


This	Is
User ID	dm2_test
Password	dm2_test

4. Click OK
5. Create a Simple List

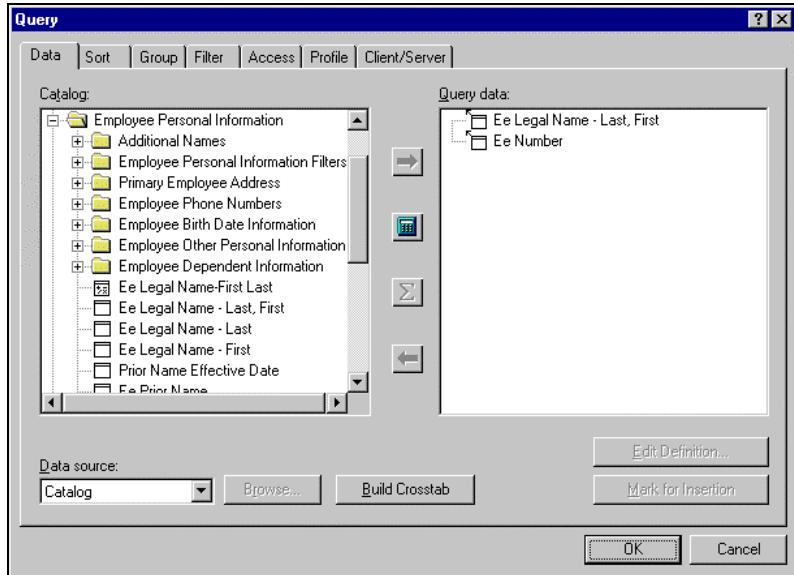
Select:
File ► New

Then select the Simple List icon.



- 6. **Click OK**
- 7. **Query Report Data**

Click the Data tab and search the folders for information to query. Once found, double click the required item to display it in the Query data window.



8. **Click OK**
9. **Review the query results**

A query that displays data such as the example below indicates a successful installation. If no results are displayed, double check the catalog opened in Step 1 to make sure that you selected the correct database.

Date: 10/30/00

<Type here to customize title>

EE Legal Name-Last, First	EE Number
PATTERSON, DOROTHY	3035
NEWMAN, RUBIN	3036
HOWARD, THOMAS	3037
LARKIN, LIBBY	3038
JAROFF, GLEN	3039
REID, ALAN	3040
MEYER, JUNE	1001
MOORE, SAMUEL	1002
MUIR, LINDA	1003
MORSE, GORDAN	1004
MORRIS, ROBERT	1005
MERTZ, LYNNE	1006
MORITZ, KATHERINE	1007

***You have now completed your installation and configuration of
Reporting Administration on the client computer with The Solution
Series.***

PART 4

Setting Up the Workforce Planning Cubes

In This Section

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CHAPTER 6

Setting Up the Workforce Planning Cubes

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Introduction

This section provides detailed instructions for setting up the delivered PowerPlay cubes to work with your data mart.

Reporting Administration includes one of two Workforce Planning models—one for a Solution Series implementation with Position Administration and one for a Solution Series implementation without Position Administration. In either case, you must complete these operations in order for the appropriate model for your installation to compile correctly to build cubes.

This is a technical section. The reader should be knowledgeable of the technical side of Microsoft Windows and be an experienced Impromptu and/or PowerPlay user.



Refer to [Installing and Configuring Client Components of Reporting Administration](#).

Building cubes

In order to build the cubes the following steps must be performed.

1. Position Administration and Non-Position Administration models

After installing Impromptu and setting up the database connection, you must open each of the reports for Non-Position Administration and Position Administration models using the general_sql catalog. Perform the following steps for each report.

Note: For *Workplan.imr* and *Workplan_pm.imr*, a prompt displays, asking you to enter the Start date and End Date. Enter '1998-01-31' for Start and '1999-12-31' for End (US and Canada) or enter '1998-31-01' for Start and '1999-31-12' for End (elsewhere).

Report Name
Employee Status.imr
Job Detail.imr
Organization.imr
Race.imr
Sex.imr
Workplan.imr
Employee Status_pm.imr
Organization_pm.imr
PM Reason Descriptions_pm.imr
PM Status Descriptions_pm.imr
Race_pm.imr
Sex_pm.imr
Incumbency Type_pm.imr
Workplan_pm.imr
Job Grade Drill_pm.imr
Occupation Drill_pm.imr
Organization Drill_pm.imr
PM Reason Descriptions Drill_pm.imr
PM Status Descriptions Drill_pm.imr
Incumbency Type Drill_pm.imr

1. Save each report as an *.imr type file.
2. Save each of the non-drill reports as an *.iqd type file. This ensures that the model will use your data mart.
3. Launch Transformer and load the Model (*.mdl).
4. Double-click any query in the Queries window. The Properties window displays.
5. Under the Source tab in the Query file, click Browse and point the query to the proper location (the 'iqd' file you have just saved).

6. Click OK. Another window displays, stating that the data source location for the query has changed and if you would like the same to be done for other queries.
7. Click OK.

2. Position Administration model only

1. Double-click the Incumbency FTE Hours measure. The Properties window displays.
2. Under the Drill-Through tab, select Queries.
3. Highlight the first query and click Modify.
4. Point the query to its corresponding location.
5. Repeat the steps for all six Drill queries.

3. Position Administration and Non-Position Administration models

1. Make sure that correct data mart name is in the Signons dialog.
2. Right click the cube icon in the Power Cube window and select Properties.
3. Under the Output tab, click Browse and point the Power Cube file name to the location you prefer.
4. Click the cube icon on the toolbar to build the cube.
5. The Database Access window displays and prompts you to log into the database.
6. Log in and click OK.

Test Results

The following are the results of building PM and Non-PM cubes. The cubes were built on Pentium II 300 MHz machine that has 164 MB of RAM and is on Windows 2000. While every installation is different, these results can be used to estimate the size and performance of the cubes.

# of Years	# of Employees	Time to build	Cube Size	Model
3	1472	00:05:33	960 KB	Non-PM
3	590	00:02:28	1,184 KB	PM
100	1472	00:13:34	11,168 KB	Non-PM
100	590	00:05:20	8,256 KB	PM

PART 5

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APPENDIX A

Installation Checklists

In This Appendix

Introduction78

Introduction

This section contains some quick reference checklists to help you proceed through your installation of Reporting Administration.



Refer to the respective sections for more detailed instructions.

Preparations for Installing Server Components of Reporting Administration (Chapter 3)

- Install Reporting Administration files
Install files on a PC and transfer to the UNIX Server
Set up the files on the UNIX Server

Setting Up the Datamart (Chapter 4)

- Phase 1: Create the Data Mart
 1. Review and revise the Oracle database owner
 2. Review and revise your database's tablespace data/index location and size
 3. Review and revise your data mart table allocations
 4. Review and revise Reporting Administration Role allocations
 5. Create public access for the database
 6. Review jcreatedm
 7. Run the data mart creation job
 8. Review the logs
 9. Assign table permissions for individual users

- Phase 2: Data Mart Extract and Load

1. Review jrsxrpt_ora
2. Run jrsxrpt_ora
3. Review directories and logs
4. Run a Query to check if the Database is populated

- Phase 3: Update the Labor and History records

1. Extract Report Generator 7E7E
2. Verify no companies set up for a payrun
3. Enter 7E7E Generator Data on the Report Request form

4. Run a Pay Extract
5. Perform Reporting Administration Maintenance Run (JMNTRUNRS)
6. Run a Pay Merge (JPAYMRG)
7. Review JRSXPAY_ORA.BAT
8. Load the Labor/History records to the data mart (JRSXPAY_ORA)
9. Review directories and logs
10. Run a Query to check if Database is populated

Installing and Configuring Client Components of The Reporting Solution (Chapter 5)

Phase 1: Install Impromptu and PowerPlay

Phase 2: Install client files

1. Insert the delivered CD-ROM titled 'Reporting Administration 5.0 for Windows' into drive
2. Navigate and then click on the 'Install Reporting Administration client link
3. Follow the installation prompts

Phase 3: Configure the catalogs (Impromptu Administrators only)

1. Launch Impromptu Administrator
2. Select a database
3. Highlight the Oracle Server icon
4. Click New Database
5. Give the database a logical name
6. Select database type and configuration
7. Click Test
8. Click OK
9. Click OK
10. Open the delivered catalog
11. Clear the checkbox 'Connect to the database'
12. Click OK
13. Set up the catalog tables
14. Select the database name

15. Click OK
16. Logon to the catalog
17. Click OK
18. The database is connected
19. Close the catalog
20. Repeat steps 10–19 for the remaining catalogs

Phase 4: Configure Impromptu

1. Configure file locations
2. Click on the File Locations tab
3. Set the path to the Catalog directory
4. Click OK
5. Exit Impromptu Administrator

Phase 5: Test the catalogs

1. Launch Impromptu Administrator
2. Open one of the catalogs
3. Log on to the catalog
4. Click OK
5. Create a Simple List
6. Click OK
7. Query Report Data
8. Click OK
9. Review the query results

A P P E N D I X B

Reporting Administration Delivered Files

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Delivered Server Files

Runs

jcreatedm_ora	jrsxrpt_ora
jmnrtrunrs	jrsxvpt
jrsplit	jxrptgenrs
jrsxpay_ora	

CTL

c_date.ctl	cfce_00.ctl	cfce_01.ctl	cfchr09.ctl
cfouj00.ctl	cfouk00.ctl	cft0b01.ctl	cft0b02.ctl
cft0b03.ctl	cft0b10.ctl	cft0d00.ctl	cft0e01.ctl
cft0e02.ctl	cft0e03.ctl	cft0e04.ctl	cft0e05.ctl
cft0e06.ctl	cft0e07.ctl	cft0e08.ctl	cft0e09.ctl
cft0e10.ctl	cft0e11.ctl	cft0e12.ctl	cft0e13.ctl
cft0e50.ctl	cft0e51.ctl	cft0e52.ctl	cft0e53.ctl
cft0e54.ctl	cft0e55.ctl	cft0e56.ctl	cft0x00.ctl
cft0y00.ctl	cft_a00.ctl	cft_c00.ctl	cft_c01.ctl
cft_d00.ctl	cft_d01.ctl	cft_d02.ctl	cft_d03.ctl
cft_d04.ctl	cft_n00.ctl	cft_n01.ctl	cft_p00.ctl
cft_p01.ctl	cft_s00.ctl	cft_s01.ctl	cft_s02.ctl
cft_y00.ctl	cft_z00.ctl	cfta_00.ctl	cftb_00.ctl
cfic_00.ctl	cfic_01.ctl	cfte_00.ctl	cftg_00.ctl
cfij_00.ctl	cfik_00.ctl	cfik_01.ctl	cfik_02.ctl
cfil_00.ctl	cfil_01.ctl	cftm_00.ctl	cftn_00.ctl
cftn_01.ctl	cfio_00.ctl	cftp_00.ctl	cfts_00.ctl
cftt_00.ctl	cftt_01.ctl	cftu_00.ctl	cftv_00.ctl
cftv_01.ctl	cftw_00.ctl	cftw_01.ctl	cftx_00.ctl
cfty_00.ctl	cfty_01.ctl	cftzx00.ctl	cftzy00.ctl
cfu1_00.ctl	cfu2_00.ctl	cfu2_01.ctl	cfurt00.ctl
cfurt10.ctl	control.txt	d_aa_00.ctl	d_b_00.ctl
d_caf00.ctl	d_caj00.ctl	dfh_00.ctl	dfh_01.ctl
m_ee_00.ctl	m_f_00.ctl	m_g_00.ctl	m_h_00.ctl
m_h_01.ctl	m_h_02.ctl	m_jca00.ctl	m_jca01.ctl
m_jus00.ctl	m_jus01.ctl	m_lo100.ctl	m_lo400.ctl

m_loa00.ctl	m_lod00.ctl	m_lof00.ctl	m_lpi00.ctl
m_lpm00.ctl	m_lpr00.ctl	m_lq000.ctl	m_lq100.ctl
m_lq200.ctl	m_lq300.ctl	m_lq400.ctl	m_lq500.ctl
m_lq600.ctl	m_lq800.ctl	m_lq900.ctl	m_lqa00.ctl
m_lqa01.ctl	m_lqc00.ctl	m_lqd00.ctl	m_lqe00.ctl
m_lqo00.ctl	m_lqr00.ctl	m_lqs00.ctl	m_lqt00.ctl
m_lqu00.ctl	m_lqv00.ctl	m_lqy00.ctl	m_lr400.ctl
m_lr500.ctl	m_lra00.ctl	m_lrd00.ctl	m_lrt00.ctl
m_lru00.ctl	m_lt100.ctl	m_lt200.ctl	m_lt300.ctl
m_lt500.ctl	m_lva00.ctl	m_lvg00.ctl	m_lwf00.ctl
m_lz100.ctl	m_lz200.ctl	m_lz300.ctl	m_lz400.ctl
m_lz700.ctl	m_lz800.ctl	m_lza00.ctl	m_lzb00.ctl
m_lzc00.ctl	m_lzd00.ctl	m_lze00.ctl	m_lzf00.ctl
m_lzg00.ctl	m_lzh00.ctl	m_lzm00.ctl	m_lzm01.ctl
m_lzn00.ctl	m_lzo00.ctl	m_lzp00.ctl	m_lzq00.ctl
m_lzr00.ctl	m_lzs00.ctl	m_lzt00.ctl	m_pe_00.ctl
mhee_00.ctl	mhee_50.ctl	mheea00.ctl	mheea50.ctl
mhh_00.ctl	mhh_50.ctl	mhhca00.ctl	mhhjus00.ctl
mlee_00.ctl	mlee_50.ctl	mleea00.ctl	mleea50.ctl
mllg1_00.ctl	mllg2_00.ctl	mllg3_00.ctl	

Data

c_date.dat
rptgenrs.04
rsplit

SQL

r2_container_ora.sql	r2_datamart_ora.sql	r2_droptabls_ora.sql
r2_lh_trunc_ora.sql	r2_owner_ora.sql	r2_purge_ora.sql
r2_role_ora.sql	r2_synonyms_ora.sql	r2_working_tables_ora.sql

Delivered Client Files

Catalogs

benefits_ora.cat
general_ora.cat
payroll_ora.cat
training_ora.cat

Oracle Impromptu Pick Reports

Pick reports are loaded into the following directory:

ben company_ora.imr	ben job assignment_ora.imr	ben job basic_ora.imr
ben location_ora.imr	ben org unit basic_ora.imr	company_ora.imr
job assignment_ora.imr	job basic_ora.imr	location_ora.imr
org unit basic_ora.imr	pr_company_ora.imr	pr_job assignment_ora.imr
pr_job basic_ora.imr	pr_location_ora.imr	pr_org unit basic_ora.imr
pr_role basic_ora.imr	role basic_ora.imr	train company_ora.imr
train job assignment_ora.imr	train job basic_ora.imr	train location_ora.imr
train org unit basic_ora.imr	train role basic_ora.imr	

 Refer to *Customizing Reporting Administration* for information on changing the file path location of the Pick reports if you wish to change this location.

PowerPlay Models

Position Management	
Employee Status_pm.imr	PM Descriptions_PM.imr
Incumbency Descriptions_PM.imr	PM Status Descriptions Drill_PM.imr
Incumbency Type Drill_PM.imr	PM Status Descriptions_PM.imr
Job Grade Drill_PM.imr	PM Workforce Planning Model.mdl
Occupation Drill_PM.imr	Race_PM.imr
Organization Drill_PM.imr	Sex_PM.imr
Organization_PM.imr	Workplan_PM.imr
PM Reason Descriptions Drill_PM.imr	
Non Position Management	

Position Management	
EmployeeStatus.ime	
JobDetails.imr	
Non-PM Workforce Planning Model.mdl	
Organization.imr	
Race.imr	
Sex.imr	
Workplan.imr	

APPENDIX C

Impromptu Configurations

In This Appendix

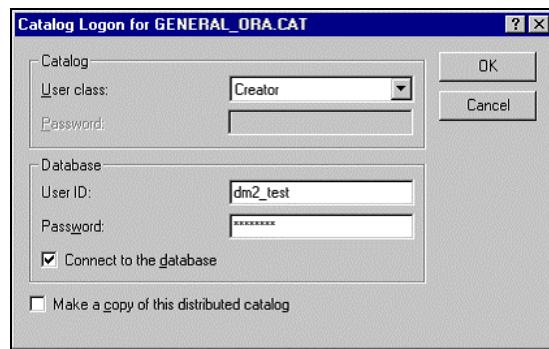
- Setting up a catalog for a data mart that uses public table synonyms88
- Setting up a catalog for a data mart that does not use public table synonyms.91

Setting up a catalog for a data mart that uses public table synonyms

Synonyms allow an Oracle database table, such as the data mart table, to be used directly by users other than the database owner. This procedure connects the Catalog to the desired database, allowing Impromptu to access a data mart that is set up for using synonyms.

1. **Launch Impromptu Administrator**
2. **Log onto the desired Catalog under the Creator class using the Owner ID**

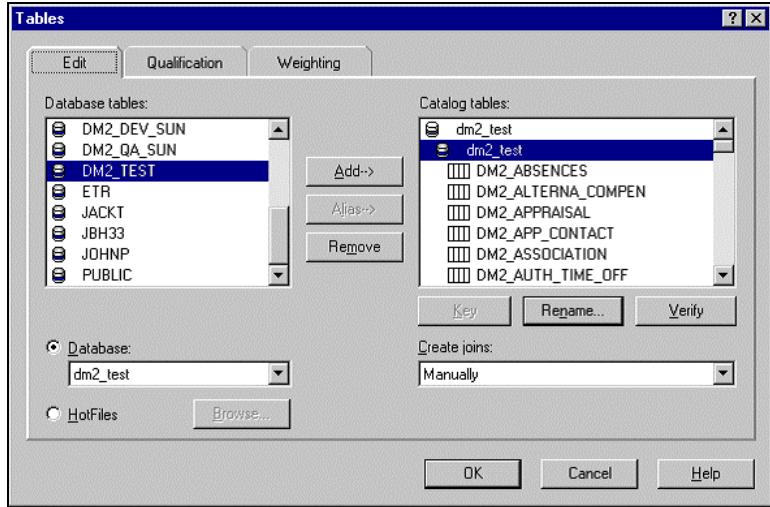
The window will appear as shown here:



3. **Open the Tables window**
Make the following selections:
Catalog ► Tables...
4. **Select the Edit tab**
5. **Select the desired database and verify database and table names**

To select the desired database in the Tables window, the database name must be showing in four places: in the Database select box (1), the Database tables list (2), and twice in the Catalog table list (3 and 4).

All four of these entries should be the same. However, if the on of these database names is incorrect, you will need to Rename it with the correct name.

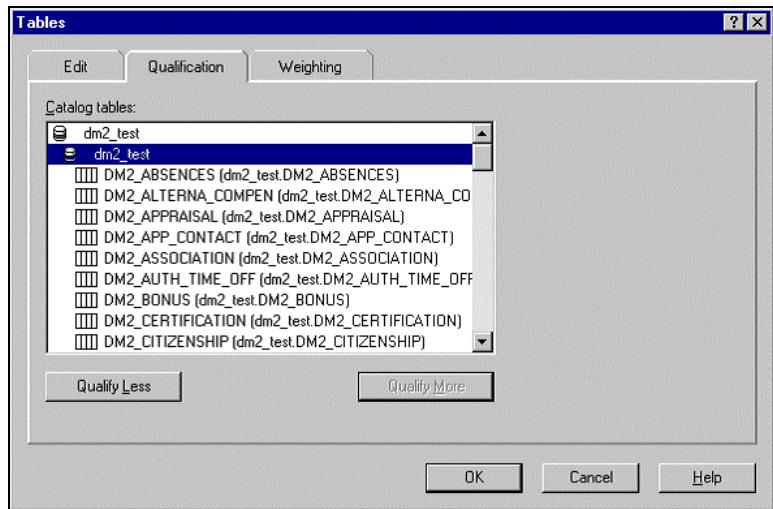
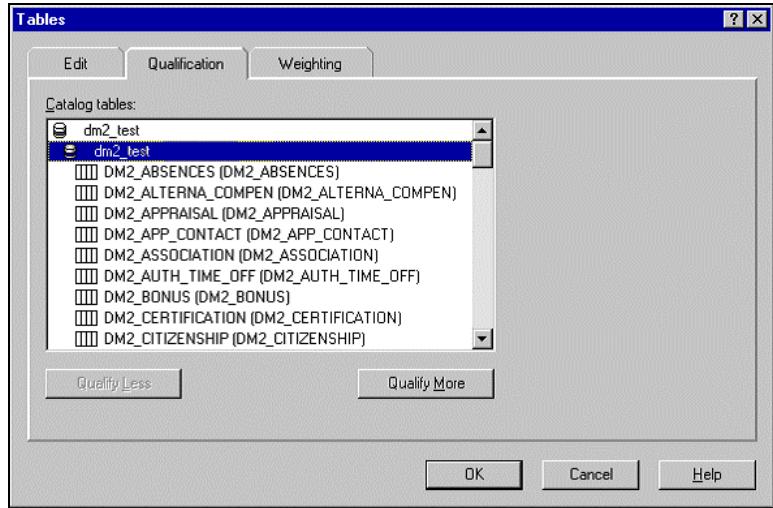


6. Click on the Qualifications tab

7. Verify that the owner name does *not* appear on any of the lines

In the Catalog tables list box, each table name appears with its name doubled in parentheses next to it. To perform this task properly, the owner name should *not* appear within the parentheses.

If the owner name does appear, select that database and click Qualify Less in order to remove it. See the examples shown here. The left example does not have an owner; the right example does show an owner.



8. Click OK

Setting up a catalog for a data mart that does not use public table synonyms

In an instance which has multiple data marts, only one data mart may use public table synonyms, and so the catalogs will need to be set up a little differently.

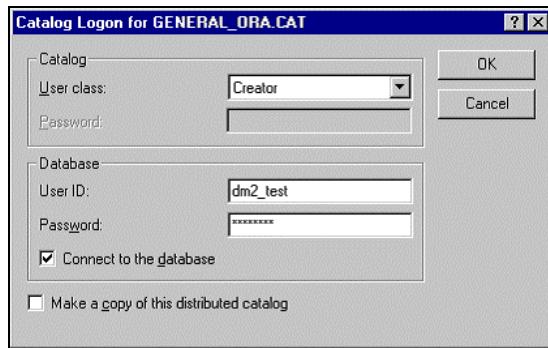
In order to perform this procedure, you must complete two tasks.

Set up the catalog for the database owner

This first task is performed by the owner of the database.

1. **Launch Impromptu Administrator**
2. **Log onto the desired Catalog under the Creator class using the Owner ID**

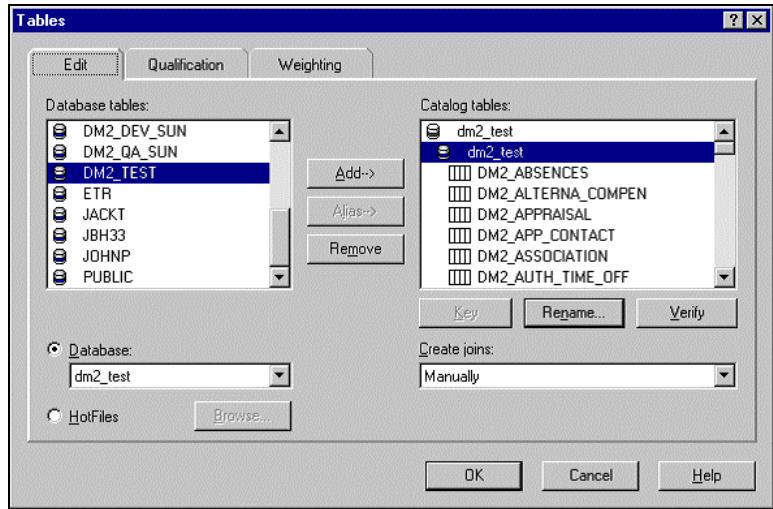
The window will appear as shown here:



3. **Open the Tables window**
Catalog ► Tables...
4. **Select the Edit tab**
5. **Select the desired database and verify database and table names**

To select the desired database in the Tables window, the database name must be showing in four places: in the Database select box (1), the Database tables list (2), and twice in the Catalog table list (3 and 4).

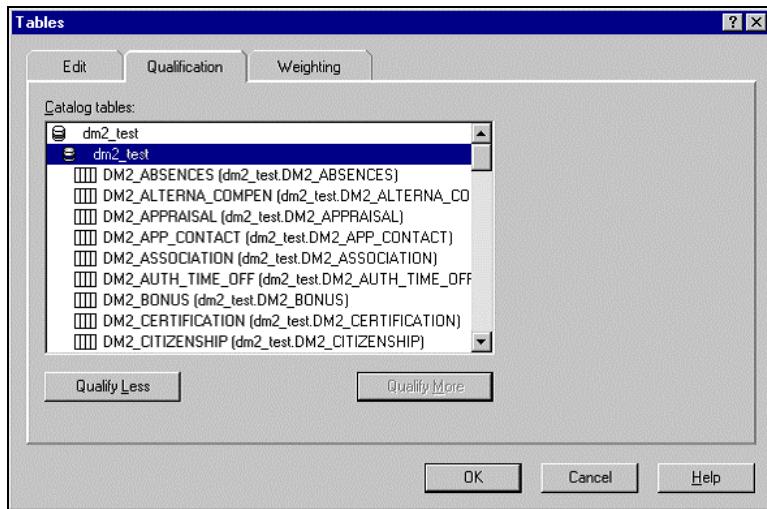
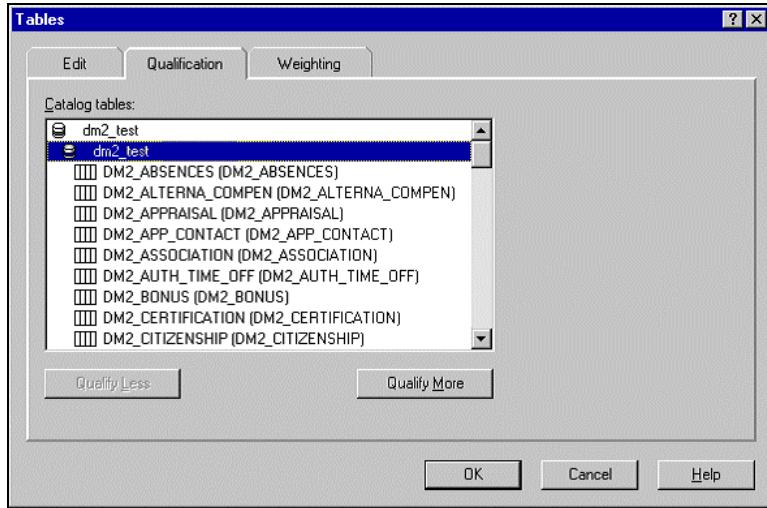
All four of these entries should be the same. However, if the one of these database names is incorrect, you will need to Rename it with the correct name.



6. **Click on the Qualifications tab**
7. **Verify that the owner name does *not* appear on any of the lines**

In the Catalog tables list box, each table name appears with its name doubled in parentheses next to it. To perform this task properly, the owner name should *not* appear within the parentheses.

If the owner name does appear, select that database and click Qualify Less in order to remove it. See the examples shown here. The first example does not have an owner; the second example does show an owner.



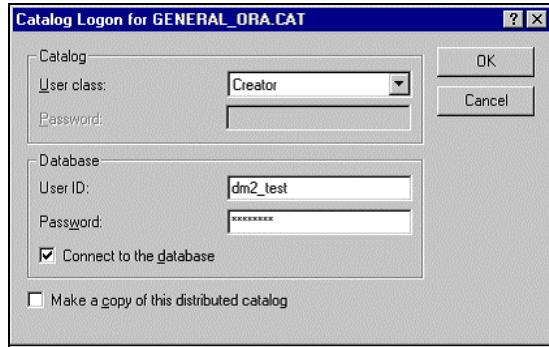
8. Click OK

Set up the catalog for a user

This second task must be performed to allow other data mart users access to other data marts.

1. **Launch Impromptu Administrator**
2. **Log onto the desired Catalog under the Creator class using the Owner ID**

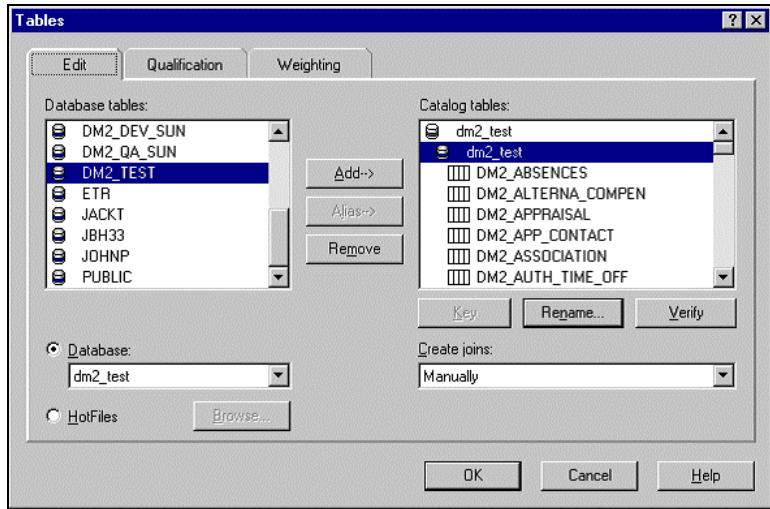
The window will appear as shown here:



3. **Open the Tables window**
Catalog ► Tables...
4. **Select the Edit tab**
5. **Select the desired database and verify database and table names**

To select the desired database in the Tables window, the database name must be showing in four places: in the Database select box (1), the Database tables list (2), and twice in the Catalog table list (3 and 4).

All four of these entries should be the same. However, if the on of these database names is incorrect, you will need to Rename it with the correct name.

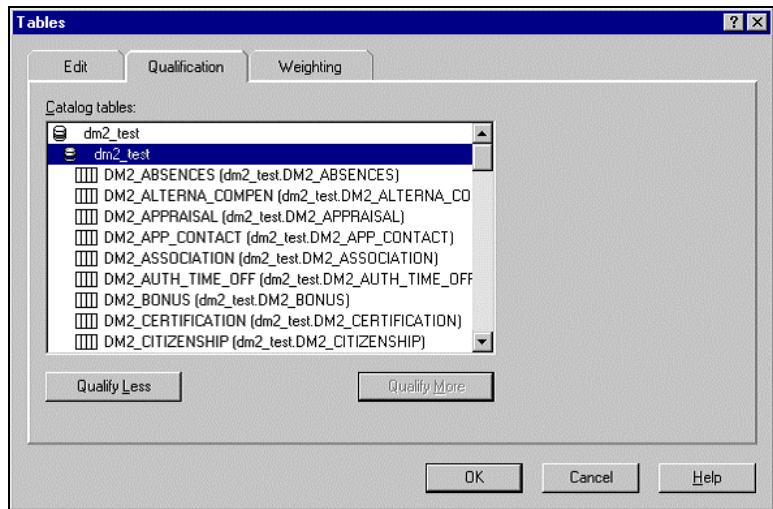
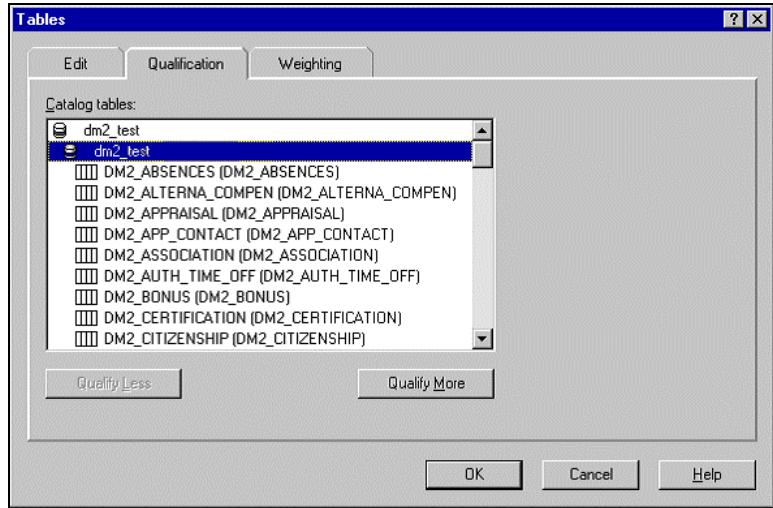


6. Click on the Qualifications tab

7. Verify that the owner name *does* appear on the lines

In the Catalog tables list box, each table name appears with it's name doubled in parentheses next to it. To perform this task properly, the owner name *should* appear within the parentheses.

If the owner name does not appear, select that database and click Qualify More in order to add it. See the examples shown here. The first example does not have an owner; the second example does show an owner.



8. Click OK

Installing and Configuring The Solution Series 5.0 (UNIX)

1.1



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Document Issue Level: 1.1
Document Issue Date: August 2002
Software Version: 5.0

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PART 1

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CHAPTER 1

Introduction

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Welcome

This document provides detailed installation instructions for eCyborg Version 5.0 on a UNIX environment.

Overview of this Installation Guide

This Installation Guide is divided into the following chapters and appendices:

Read this chapter	For
1. Introduction	An overview and description of the prerequisites required for successful installation
2. Indexed Solution Series Installation and Configuration	Detailed instructions for installing the indexed version of The Solution Series on a UNIX server
3. Relational Solution Series Installation and Configuration	Detailed instructions for installing the indexed version of The Solution Series on a UNIX server
4. Cyborg Application Service (CAS) Installation and Configuration	Detailed instructions for installing the CAS on the server
5. Installing and Configuring the Web Client on the Web Application Server	Detailed instructions for installing the Web Client server components on the Web Application Server
6. Client Installation and Configuration	Details of the prerequisite Administrative client configuration for use with the UNIX server
A. Directory Contents	Detailed information on the files used and programs installed during the course of the installation and the purposes they serve
B. Installation Checklists	Detailed checklists ideal for use when installing this implementation of The Solution Series on your UNIX server
C. Creating Separate Environments on the Server for the Client	Basic instructions for creating separate environments of The Solution Series
D. Database Considerations	Detailed instructions to properly create the database and minimize any 'rework' in the future or troubleshoot database problems

Read this chapter	For
E. Administering the Cyborg Application Server (CAS) Daemon	Instructions on how to perform administrative tasks on the CAS daemon, including how to use the CAS Administration Utility
F. Disk Requirements Worksheets	Guidance in calculating the disk space your company will need

How to get additional help

If you can not find the answers to your questions in this manual, contact Customer Support, who will be able to answer specific questions and give you general advice on training.

Please visit our web site www.Cyborg.com for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

Prerequisites

This Installation Guide will be most beneficial if you are familiar with the terminology used throughout. You should be familiar with The Solution Series and UNIX and ORACLE Database Server concepts. Other prerequisites are detailed below.

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Server disk requirements

The server contains both the System Control Repository—containing system objects and data dictionary (F and RFM records)—and the Employee Database. The disk space requirements on the server can vary depending on the access method used. These access methods include the following:

- Indexed
- Relational

The following table shows the approximate disk requirements for the server files in these environments. Note that these figures only reflect the amount of disk space required for the data on the System Control Repository and the Employee Database as delivered. Additional space may be needed to support your data:

	Indexed	Relational
System Control Repository	75MB	75MB
Employee Database	Typical: 12,500 bytes/employee	Typical: 27,500 bytes/employee

Additional disk space may be required based upon the amount of payroll and labor distribution history retained online.

The storage requirements of the The Solution Series are efficient and expandable based on data content to accommodate the data retention requirements of customers. There is no system constraint on the amount of data retained or the length of time for which it is retained.



*Refer to **ORACLE Disk Requirements Worksheets** for guidance in calculating the disk space your company will need.*

The Solution Series Application Server

HP-UX hardware and software requirements

HP-UX Minimum Hardware Requirements

Operating system	HP-UX 11 or later
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB plus 500 MB per Cyborg environment, in addition to operating system requirements
Processor	650 MHz dual
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor
File partition	Dedicated file partition to install the Cyborg server software
User account	Cyborg installation user account that has full access to above partition

The operating system must support the following Open Group standards:

- Internationalized System Calls and Libraries Extended (formerly known as XPG4 Internationalized System Calls and Libraries Extended Component)
- Sockets (formerly known as XPG4 Sockets Component)

HP-UX Software Requirements - The Solution Series Application Server

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Indexed

Operating System	HP-UX 11 or later
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit)
C Compiler	HPa C v.B.11.01.20
Suggested Maintenance	HP aC++ runtime, with library patches PHSS 21906 or later
Other	■ NFS (for ERP)

Relational (Oracle)

Operating System	HP-UX 11 or later
Database Server	ORACLE8i Enterprise Edition (8.1.7) Dedicated Oracle Instance ¹
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit) -and- Pro*Cobol 1.8
C Compiler	HPa C v.B.11.01.20
Suggested Maintenance	HP aC++ runtime, with library patches PHSS 21906 or later
Other	■ NFS (for ERP)

1. The Cyborg application uses eight ORACLE tablespaces to store information. For optimal performance, it is recommended spanning these tablespaces through three partitions. These partitions have to be owned by the ORACLE DBA account.

Solaris hardware and software requirements**Solaris Minimum Hardware Requirements - The Solution Series Application Server**

Operating system	Solaris 8 or later
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB plus 500 MB per Cyborg environment, in addition to operating system requirements
Processor	650 MHz dual
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor
File partition	Dedicated file partition to install the Cyborg server software
User account	Cyborg installation user account that has full access to above partition

The operating system must support the following Open Group standards:

- Internationalized System Calls and Libraries Extended (formerly known as XPG4 Internationalized System Calls and Libraries Extended Component)
- Sockets (formerly known as XPG4 Sockets Component)

Solaris Software Requirements - The Solution Series Application Server

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Indexed

Operating System	Solaris 8
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit)
C Compiler	Forte Developer 6 C compiler
Other	■ NFS (for ERP)

Relational (Oracle)

Operating System	Solaris 8
Database Server	ORACLE8i Enterprise Edition (8.1.7) Dedicated Oracle Instance ¹
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit) -and- Pro*Cobol 1.8
C Compiler	Forte Developer 6 C compiler
Other	■ NFS (for ERP)

1. The Cyborg application uses eight ORACLE tablespaces to store information. For optimal performance, it is recommended spanning these tablespaces through three partitions. These partitions have to be owned by the ORACLE DBA account.

AIX hardware and software requirements

AIX Minimum Hardware Requirements

Operating system	AIX 4.3.3 or later
RAM	1 GB, in addition to operating system requirements
Disk space	1 GB plus 500 MB per Cyborg environment, in addition to operating system requirements
Processor	950 CPW
Media access	CD-ROM drive (either locally or on a network)
Monitor	VT100/220 compatible monitor
File partition	Dedicated file partition to install the Cyborg server software
User account	Cyborg installation user account that has full access to above partition

The operating system must support the following Open Group standards:

- Internationalized System Calls and Libraries Extended (formerly known as XPG4 Internationalized System Calls and Libraries Extended Component)
- Sockets (formerly known as XPG4 Sockets Component)

AIX Software Requirements

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Indexed

Operating System	AIX 4.3.3
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit)
C Compiler	C for AIX v6.0
Recommended Maintenance	Visual Age C++ runtime, with PTF 5.0.2.1 or later
Other	■ NFS (for ERP)

Relational (Oracle)

Operating System	AIX 4.3.3
Database Server	ORACLE8i Enterprise Edition (8.1.7) Dedicated Oracle Instance ¹
Cobol Compiler	Server Express 2.0.11 SP1 (32-bit) -and- Pro*Cobol 1.8
C Compiler	C for AIX v6.0
Suggested Maintenance	Visual Age C++ runtime, with PTF 5.0.2.1 or later
Other	■ NFS (for ERP)

1. The Cyborg application uses eight ORACLE tablespaces to store information. For optimal performance, it is recommended spanning these tablespaces through three partitions. These partitions have to be owned by the ORACLE DBA account.

The Administrative Client hardware and software requirements

Minimum Hardware Requirements

The Administrative Client requires the following:

Operating system	Windows 2000 Professional (Service Pack 2) Windows XP Professional Edition Windows NT Workstation Professional Edition
RAM	128 MB
Disk space	250 MB
Processor	500 MHz Pentium 500 or higher
Media access	Access to a CD-ROM drive (either locally or on a network)
Monitor	SVGA 800x600

Software Requirements

The Administrative Client requires the following software:

Administrative Client Software Requirements
Microsoft Windows 2000 -or- Windows XP Professional Edition -or- Windows NT Professional Edition
Microfocus runtime license
Windows messaging
TCP/IP

Note: Based upon your employees' individual client workstation setups, there may be missing shared .dll or .ocx files that the Cyborg product uses that are non-distributable Microsoft shared system files. If this occurs, your IT staff will need to locate and download (usually on the Microsoft website) the required file for inclusion on your PCs.

P A R T 2

Installing and Configuring The Solution Series Application Server

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CHAPTER 2

Indexed Solution Series Installation and Configuration

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Indexed Server Installation and Configuration

This section provides detailed instructions for installing The Solution Series Application Server on a UNIX system.

This is a technical section aimed at system administrators.

Note: Throughout this section, we have suggested a naming convention for log files created when you run the batch job. By entering a command such as:

```
rlj jpayxtr
```

you run the script and create the log. You may name the log any way you wish, but be sure to review all output after each script is run to identify and address any errors that may have occurred.

Deliverables

The following is included:

1	CD-ROM labeled 'The Solution Series 5.0 for UNIX'
1	Installing and Configuring The Solution Series 5.0 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Prepare for installation

Phase 2: Extract and Transfer Install

Phase 3: Compile Batch and Build FILE01

Phase 4: Compile CBSVO and CYBIO

Phase 5: Create Test p20in Batch Master

Phase 6: Create Employee Database with pay history

Phase 7: Extract HR reports

Phase 8: Apply System Control Repository Menu Additions



Refer to Appendix B: Installation Checklists for detailed checklists to use when installing The Solution Series on your UNIX server.

Phase 1: Prepare for installation

Install and configure prerequisite software

It is assumed that you have already installed and configured the prerequisite software on the server. These must be in place before beginning the installation.

Create user and file system

To create the user and file system for your installation, perform the following steps:

1. Check for or create a file system

Set a file system for CYBORG with at least 500 MB of free space.

2. Create the installation user account

A user ID of 'cyborg' is required for the installation of the Cyborg Application Server (CAS) daemon. You must set up the permissions for this new account (for example '777' for the app directory and the files within it).

Note If you already have an existing 'cyborg' account from a previous installation, re-use the existing 'cyborg' user account.

3. Log into the system

Log into the system using the given installation user account.

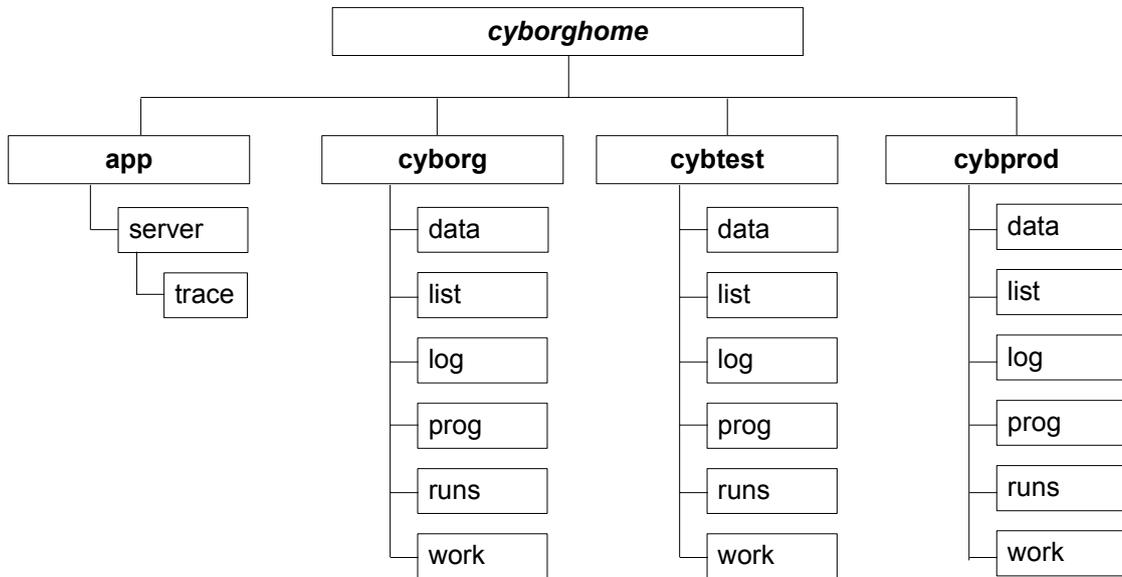
Phase 2: Extract and Transfer Install Files

The Solution Series directory structure

The Cyborg server software is delivered in two main directories: `/cyborghome/app` and `/cyborghome/Cyborg`. The name of the directory `/cyborghome` and subdirectory `Cyborg` is customizable during media installation.

Follow the appropriate steps listed below to copy the installation files and directory structure to your server.

Note As shown in the diagram below, the `/cyborghome/app` directory must exist only **once**—no matter how many Cyborg environments you have installed.



Extract install files to a PC

Be sure to have at hand the configuration worksheet completed as part of the project planning phase as you may need to refer to it as you load programs on the PC.

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page starts automatically. Scroll through the page, then click on the following link to start the autoinstall:

Install The Solution Series Application Server

Follow the installation prompts. The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Setup Type	*Typical (default) *Compact *Custom	
UNIX	*AIX RS6000 (default) *HP-UX *Solaris	
Destination	C:\Cyborg50-UNIX\	Other:
Select Index or Relational	*Indexed (default) *Relational (Oracle)	
UNIX Server HOSTNAME or IP Address	HOSTNAME	Enter IP Address or Hostname of UNIX Server:
File System	/cyborghome/CYBORG50	Other:

The installation program will prompt you when it is complete.

Transfer install files from the PC to the server

1. Verify system name and variables

FTP Command Script: `ftpcmds_xx_idx.unx`

The information that was entered during the copying of programs from the CD to the PC has been inserted into this file.

2. Run the file transfer program

Script used: `jftp`

Run the file transfer script from a command prompt on the Windows client. This will load the The Solution Series files from the PC to the UNIX machine.

Note You will need to have the FTP capability enabled on both systems.

Example of command line to run this job:

JFTP USERNAME

You will be prompted for the password. You can verify the ftp by checking the `ftpupload.log` file which will be generated in the same directory with the ftp job.

Note The following command is included in the ftp script:

```
quote site chmod 755 jinstallst
```

If the following error "*SITE command not implemented*" is present in your `ftpupload.log` file, you must manually enable the access modifier to '755' on the `jinstallst` script before running it.

Extract server install files

Script used: `jinstallst`

This script should be run while logged in as 'CYBORG' user, and it extracts and installs the UNIX files onto the server.

Follow the installation prompts. The table following tells you what information the install script will require. If you need anything other than the defaults, use the information in the 'Enter the following...' column.

Prompt	Options/ Defaults	Enter the following...
Enter the directory where the installation files were uploaded.	/installfiles/ CYB50_Install	Other:
Enter the top-level directory where the software will be installed.	/cyborghome	Other:
Please indicate whether you would like to install the base The Solution Series product.	—	yes
Enter the name of the directory where The Solution Series will be installed	CYB50	Other:
Please indicate whether you would like to install the Cyborg Application Server (CAS)	—	yes

The installation script will prompt you to verify that the information entered is correct and if you wish to proceed with the installation. Once the files have been successfully installed,

you may delete the The CYB50_Install directory and all its files created by the FTP process.

Note: The install program pipes error messages sent to the screen through user parameter \$PAGER to control error messages from scrolling off the screen. Press a key when you see the -MORE- prompt.

Set up user profile

The 'Cyborg' user needs its profile to include the updated values for the MicroFocus environment variables and \$PATH.

To set up the user profile, perform the following steps:

1. Modify Cyborg environment variable lines in the .profile

You need to modify the .profile identifying necessary variables for the Cyborg environment. Include the following lines in the .profile:

```
data=/cyborghome/CYBORG50/data      ; export data
work=/cyborghome/CYBORG50/work      ; export work
list=/cyborghome/CYBORG50/list      ; export list
prog=/cyborghome/CYBORG50/prog      ; export prog
runs=/cyborghome/CYBORG50/runs      ; export runs
TERM=vt100                          ; export TERM
PATH=$PATH:/cyborghomeThe Solution Series45/runs ; export PATH
```

Note The directory /cyborghome/CYBORG50 is the default directory for the Cyborg product.

2. Include Micro Focus environment variable lines in the .profile

You need to modify the .profile identifying necessary variables for the Micro Focus COBOL Compiler. Include the following lines in the .profile:

```
COBDIR=/usr/lib/cobol                ; export COBDIR
LD_LIBRARY_PATH=/usr/lib/cobol/coblib ; export LD_LIBRARY_PATH
SHLIB_PATH=/usr/lib/cobol/coblib     ; export SHLIB_PATH
```

Note Please refer to the Micro Focus installation guide for the settings for these Mvariables.

3. Include location of C compiler in the PATH

You need to add the file path of the C compiler to the .profile. For example:

HP-UX example:

```
PATH=/opt/ansic/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

AIX example:

```
PATH=/usr/vac/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

Solaris example:

```
PATH=/opt/SUNWepro/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

4. Refresh environment variables

Refresh the environment so the logical names take effect by executing the following:

```
././profile (dot-space-dot-slash-dot-profile)
```

Verify compiler versions

The delivered binary programs were compiled on the certified platform versions, and are not guaranteed to run on earlier versions. To verify that MicroFocus variables are set correctly, perform the following steps:

1. Execute the cob command

To verify that Micro Focus variables are set correctly, execute the following command:

```
cob
```

The response should be:

```
I see no work
```

Note If you do not receive this response, verify that your Micro Focus environment variables are set correctly.

2. Verify the version of the installed compilers

To verify what version of Micro Focus is installed, execute the following command:

```
cat $COBDIR/etc/cobver
```

This will show you the version and revision level of the COBOL compiler installed.

To obtain the C version, perform the following command for your operating system:

Sun Solaris

```
$ cc -V 2>&1 |head -1
```

AIX

```
$ lslpp -L|grep ibmcxx.cmp|cut -c30-34|head-
```

HP-UX

```
$ what /usr/bin/cc|head -2|tail -1
```

Note These examples are case-sensitive.

Check special requirements

Perform the following steps to check special requirements each time a script is run:

1. Check output

Each time a script is run, check all output before another one is executed. For example, verify the output of the compiles and/or audit reports.

2. For HP9000 machines, compile all COBOL programs with the 'hptoptimize' compiler directive off

Set the hptoptimize compiler directive to off in your existing HP9000 compile jobs. The following is a sample of how you set this compiler directive:

```
cob -xv -C "align(4) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt  
hptoptimize=0" $prog/(program).cob -o $prog/(program)
```

3. If your operating system is 64-bit, compile all COBOL programs with the 'align(8)' compiler directive

Insert the `align(8)` compiler directive into your existing compile jobs. The following is a sample of how you include this compiler directive:

```
cob -xv -C "align(8) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt"  
$prog/{program}.cob -o $prog/{program}
```

4. If you have more than one HP PA-RISC platform, insert the '+DAportable' native code generator

Beginning with the HP-UX 10.20 release, the default object code generated by HP compilers is determined automatically as that of the machine on which you compile. (Previously the default code generation was PA-RISC 1.0 on all Series 700 and 800 systems.)

To avoid PA-RISC platform conflicts, set the `+DAportable` native code generator in your existing HP compile jobs. The following is a sample of how you set this native code generator:

```
cob -xv -C "align(8) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt  
hptoptimize=0 +DAportable" $prog/{program}.cob -o $prog/{program}
```

Phase 3: Compile Batch and Build FILE01

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (or logs) to determine success or failure before another script is executed.

Pull all cybmst programs

Script used: jxcybmst

To extract and compile all cybmst COBOL programs (p9cnvt, p2edit, p4calc, p5prnt, o4calc), execute the jxcybmst script from the \$runs subdirectory.

For example:

```
rj jxcybmst
```

Review the log, then the cybmst.03 list file in the \$list subdirectory to determine if there were any errors.

Compile and link the delivered cbsvb and cbsvrft

Script used: jcmpcvbn

To compile the non-relational batch program cbsvb as delivered by Cyborg, execute the jcmpcvbn b script from the \$runs subdirectory. The 'b' parameter is passed onto the script in order to specifically compile the batch program (that is, cbsvb).

For example:

```
rj jcmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Script used: jcmpsort

To compile p10sort.cob, p45sort.cob, p80sort.cob, p80copy.cob, and pfssort.cob, execute the jcmpsort script from the \$runs subdirectory.

For example:

```
rj jcmpsort
```

Review the log to determine if there were any errors.

Create System Control Repository

Script used: jdemo01

This procedure creates a random System Control Repository. Execute the jdemo01 job.

For example:

rj jdemo01

Review the log, then the `demo.03` list file in the `$list` subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages. For example:

```
DEMO01 V001 07-17-2002 15:09:14 RECORD COUNT=567,062
-----
CSSS <UTIL( (999999(DISPLY( ( ( )15:57:33 07-25 XXXX
ZZTEST 99999E RELOAD IS OK. Ver-5.0 LENGTH 531 07-25-02 15:55:09
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P RDEMRQ ***** RELOAD NOT FOUND *****
P RDTBPL ***** RELOAD NOT FOUND *****
P RTCTRL ***** RELOAD NOT FOUND *****
P TBLENT ***** RELOAD NOT FOUND *****
P TBLINQ ***** RELOAD NOT FOUND *****
P TBLUPD ***** RELOAD NOT FOUND *****
P TBLVER ***** RELOAD NOT FOUND *****
P V-NAME ***** RELOAD NOT FOUND *****
P WPTM ***** RELOAD NOT FOUND *****
```

Phase 4: Compile CBSV and CYBIO

Pull all cbsv programs - jpulcvn

Script used: jpulcvn

For example:

```
rl jpulcvn
```

Review the log, then the pulcvn.03 list file in the \$list subdirectory to determine if there were any errors.

Compile and link all cbsv programs

Script used: jcmpcvn

For example:

```
rl jcmpcvn
```

Review the log, to determine if there were any errors.

Compile and link cybio

Script used: jcmpcbio

To compile and link the scybio.c, logging.c, and cybio.cob programs, execute the jcmpcbio script from the \$runs subdirectory. For example:

```
rl jcmpcbio
```

Review the log, to determine if there were any errors.

Phase 5: Create Test p20in Batch Master

Create test p20in Batch Master

Script used: **jp20strt (U.S.)**
 jp20strc (Canada)

To extract the report generators from `cybmst` and create the `p20in` Batch Master File, execute the `jp20strt` script from the `$runs` subdirectory with `p9strt` and `p9cbstv` as input.

Input files

<code>p05t80</code>	<code>p9strt</code>
<code>p05t81</code>	<code>p9cbstv (U.S.)</code>
	<code>p9cbvsc (Canada)</code>

The `p2edit`, `p4calc`, and `p5prnt` programs are processed.

For example:

```
rj jp20strt
```

Review the log, then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

```
audit2.trl  
p20strt.03  
translod
```

Phase 6: Create Employee Database with pay history

Create test Employee Database

Script used: jpaymrg

To create a test Employee Database, execute the `jpaymrg` script from the `$runs` subdirectory.

For example:

```
rl jpaymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Populate database with test data

To populate the database with test data, perform the following steps:

1. Apply demo test data

**Script used: jprdemo (U.S.)
 jprdemoc (Canada)**

To pull test data from the System Control Repository and populate fields in the online Employee Database, execute the `jprdemo` script from the `$runs` subdirectory.

For example:

```
rl jprdemo
```

Review the log, then the `prdemo.03` list file in the `$list` subdirectory to determine if there were any errors.

2. Apply remaining demo test data

**Script used: jhrdemo (U.S.)
 jhrdemoc (Canada)**

To pull the remaining test data from the System Control Repository and populate fields in the online Employee Database, execute the `jhrdemo` script from the `$runs` subdirectory.

For example:

```
rl jhrdemo
```

Review the log, then the `hrdemo.03` list file in the `$list` subdirectory to determine if there were any errors.

3. Build alternate keys

Script used: jbldaky

To build or rebuild the Employee Name Alternate Key, run the `jbldaky` script located in the `$runs` directory.

Note This job may be altered to accommodate your build of the alternate keys once your data has been added to the system.

For example:

```
rj jbdaky
```

Review the log, then the bldaky.03 list file in the \$list subdirectory to determine if there were any errors.

Update p20in Batch Master File

Script used: jpayxtr

To update the p20in Batch Master File with the demo test data, execute the jpayxtr script from the \$runs subdirectory.

The timecards and adjustments will be pulled from the online Employee Database and placed in FILE12. This will be the new p20in master file.

FILE10 (payxtr10), which contains time cards and adjustments, is also created. payxtr10 becomes input to the jpayrun as p05t81.

For example:

```
rj jpayxtr
```

Review the log, then the payxtr.03 list file in the \$list subdirectory to determine if there were any errors.

Apply taxes, timecards, and adjustments

Script used: jpayrun

To apply taxes (taxfile) and the timecards and adjustments (payxtr10) to the p20in file, execute the jpayrun script from the \$runs subdirectory with p05t80 and p05t81 as input. The p2edit, p4calc, and p5prnt programs will be processed.

Note Verify that the taxfile being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).

Input files

p05t80	taxfile (US)
	taxfilec (Canada)
p05t81	payxtr10

Note If you are a Canadian customer, modify the job to pull tacfilec instead of the taxfile.

For example:

```
rj jpayrun
```

Review the log, then all the output listings in the \$list subdirectory to determine if there were any errors.

Output listings

auditrl1.lis
checknum.lis
checksu.lis
checksv.lis
combreg.lis
translod.lis

Create pay history

Script used: jmntrun

To create pay history and labor records and apply check numbers to the newly created history records on the `p20in` Batch Master File, execute the `jmntrun` script from the `$runs` subdirectory. The `p2edit`, `p4calc`, and `p5prnt` programs will be processed.

For example:

```
rj jmntrun
```

Review the log, then the `transload2.lis` and `audit2` list files in the `$list` subdirectory to determine if there were any errors.

Update the Employee Database

Script used: jpaymrg

To create a new random Employee Database, execute the `jpaymrg` script from the `$runs` subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 7: Extract HR reports

Script Used: jreport

To extract Human Resource batch reports, execute the `jreport` script from the `$runs` subdirectory. For example:

```
rj jreport
```

Review the log, then the `rtprnt.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 8: Apply System Control Repository Menu Additions

If you plan on implementing the Report Launcher, Process Monitor, and Desktop Document Interface facilities on the client, the you must apply additional menu items to the System Control Repository (FILE01).

Build report menus

Script used: jrptmnu

To build a menu containing the delivered report groups, run `jrptmnu` located in the `$runs` directory.

For example:

```
rl jrptmnu
```

Review the log, then the `rptmnu.03` list file in the `$list` subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

To apply menu items for online user access to batch processes, run the `jmainti` script from the `$runs` directory, using the `epRDDI05` file as FILE05 input:

For example:

```
rl jmainti
```

Review the log, then the `mainti.03` list file in the `$data` subdirectory to determine if there were any errors.

CHAPTER 3

Relational Solution Series Installation and Configuration

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Indexed Server Installation and Configuration

This section provides detailed instructions for installing The Administrative Server on a UNIX system.

This is a technical section aimed at system administrators.

Note: Throughout this section, we have suggested a naming convention for log files created when you run the batch job. By entering a command such as:

```
rj jpayxtr
```

you run the script and create the log. You may name the log any way you wish, but be sure to review all output after each script is run to identify and address any errors that may have occurred.

Deliverables

The following is included:

1	CD-ROM labeled 'The Solution Series 5.0 for UNIX'
1	Installing and Configuring The Solution Series 5.0 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Prepare for installation

Phase 2: Extract and Transfer Install

Phase 3: Compile Batch and Build FILE01

Phase 4: Create Cyborg Relational Databases

Phase 5: Compile CBSVO and CYBIO

Phase 6: Create Test p20in Batch Master

Phase 7: Create Employee Database with pay history

Phase 8: Extract HR reports

Phase 9: Apply System Control Repository Menu Additions



Refer to Appendix B: Installation Checklists for detailed checklists to use when installing The Solution Series on your UNIX server.

Phase 1: Prepare for installation

Install and configure prerequisite software

It is assumed that you have already installed and configured the prerequisite software on the server. These must be in place before beginning the installation.

Create user and file system

To create the user and file system for your installation, perform the following steps:

1. Check for or create a file system

Set a file system for CYBORG with at least 500 MB of free space.

2. Create the installation user account

A user ID of 'cyborg' is required for the installation of the Cyborg Application Server (CAS) daemon. You must set up the permissions for this new account (for example '777' for the app directory and the files within it).

Note If you already have an existing 'cyborg' account from a previous installation, re-use the existing 'cyborg' user account.

3. Log into the system

Log into the system using the given installation user account.

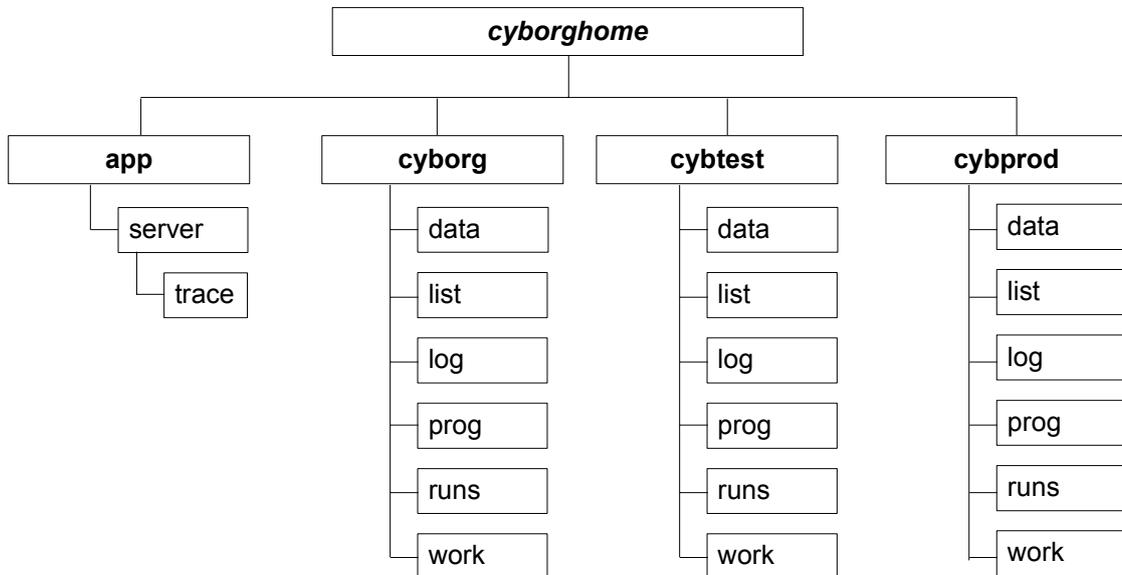
Phase 2: Extract and Transfer Install Files

The Solution Series directory structure

The Cyborg server software is delivered in two main directories: `/cyborghome/app` and `/cyborghome/Cyborg`. The name of the directory `/cyborghome` and subdirectory `Cyborg` is customizable during media installation.

Follow the appropriate steps listed below to copy the installation files and directory structure to your server.

Note As shown in the diagram below, the `/cyborghome/app` directory must exist only **once**—no matter how many Cyborg environments you have installed.



Extract install files to a PC

Be sure to have at hand the configuration worksheet completed as part of the project planning phase as you may need to refer to it as you load programs on the PC.

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page starts automatically. Scroll through the page, then click on the following link to start the autoinstall:

Install The Solution Series Application Server

Follow the installation prompts. The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Setup Type	*Typical (default) *Compact *Custom	
UNIX	*AIX RS6000 (default) *HP-UX *Solaris	
Destination	C:\Cyborg50-UNIX\	Other:
Select Index or Relational	*Indexed (default) *Relational (Oracle)	
UNIX Server HOSTNAME or IP Address	HOSTNAME	Enter IP Address or Hostname of UNIX Server:
File System	/cyborghome/CYBORG50	Other:

The installation program will prompt you when it is complete.

Transfer install files from the PC to the server

1. Verify system name and variables

FTP Command Script: `ftpcmds_xx_idx.unx`

The information that was entered during the copying of programs from the CD to the PC has been inserted into this file.

2. Run the file transfer program

Script used: `jftp`

Run the file transfer script from a command prompt on the Windows client. This will load the The Solution Series files from the PC to the UNIX machine.

Note You will need to have the FTP capability enabled on both systems.

Example of command line to run this job:

JFTP USERNAME

You will be prompted for the password. You can verify the ftp by checking the `ftpupload.log` file which will be generated in the same directory with the ftp job.

Note The following command is included in the ftp script:

```
quote site chmod 755 jinstallst
```

If the following error "SITE command not implemented" is present in your `ftpupload.log` file, you must manually enable the access modifier to '755' on the `jinstallst` script before running it.

Extract server install files

Script used: jinstallst

This script should be run while logged in as 'CYBORG' user, and it extracts and installs the UNIX files onto the server.

Follow the installation prompts. The table following tells you what information the install script will require. If you need anything other than the defaults, use the information in the 'Enter the following...' column.

Prompt	Options/ Defaults	Enter the following...
Enter the directory where the installation files were uploaded.	/installfiles/ CYB50_Install	Other:
Enter the top-level directory where the software will be installed.	/cyborghome	Other:
Please indicate whether you would like to install the base The Solution Series product.	—	yes
Enter the name of the directory where The Solution Series will be installed	CYB50	Other:
Please indicate whether you would like to install the Cyborg Application Server (CAS)	—	yes

The installation script will prompt you to verify that the information entered is correct and if you wish to proceed with the installation. Once the files have been successfully installed,

you may delete the The CYB50_Install directory and all its files created by the FTP process.

Note: The install program pipes error messages sent to the screen through user parameter \$PAGER to control error messages from scrolling off the screen. Press a key when you see the -MORE- prompt.

Set up user profile

The 'Cyborg' user needs its profile to include the updated values for the MicroFocus environment variables and \$PATH.

To set up the user profile, perform the following steps:

1. Modify Cyborg environment variable lines in the .profile

You need to modify the .profile identifying necessary variables for the Cyborg environment. Include the following lines in the .profile:

```
data=/cyborghome/CYBORG50/data      ; export data
work=/cyborghome/CYBORG50/work      ; export work
list=/cyborghome/CYBORG50/list      ; export list
prog=/cyborghome/CYBORG50/prog      ; export prog
runs=/cyborghome/CYBORG50/runs      ; export runs
TERM=vt100                          ; export TERM
PATH=$PATH:/cyborghomeThe Solution Series45/runs ; export PATH
```

Note The directory /cyborghome/CYBORG50 is the default directory for the Cyborg product.

2. Include Micro Focus environment variable lines in the .profile

You need to modify the .profile identifying necessary variables for the Micro Focus COBOL Compiler. Include the following lines in the .profile:

```
COBDIR=/usr/lib/cobol                ; export COBDIR
LD_LIBRARY_PATH=/usr/lib/cobol/coblib ; export LD_LIBRARY_PATH
SHLIB_PATH=/usr/lib/cobol/coblib     ; export SHLIB_PATH
```

Note Please refer to the Micro Focus installation guide for the settings for these Mvariables.

3. Include location of C compiler in the PATH

You need to add the file path of the C compiler to the .profile. For example:

HP-UX example:

```
PATH=/opt/ansic/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

AIX example:

```
PATH=/usr/vac/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

Solaris example:

```
PATH=/opt/SUNWepro/bin:$COBDIR/bin:$COBDIR/coblib:$PATH ; export PATH
```

4. Refresh environment variables

Refresh the environment so the logical names take effect by executing the following:

```
././profile (dot-space-dot-slash-dot-profile)
```

Verify compiler versions

The delivered binary programs were compiled on the certified platform versions, and are not guaranteed to run on earlier versions. To verify that MicroFocus variables are set correctly, perform the following steps:

- 1. Execute the cob command**

To verify that Micro Focus variables are set correctly, execute the following command:

```
cob
```

The response should be:

```
I see no work
```

Note If you do not receive this response, verify that your Micro Focus environment variables are set correctly.

- 2. Verify the version of the installed compilers**

To verify what version of Micro Focus is installed, execute the following command:

```
cat $COBDIR/etc/cobver
```

This will show you the version and revision level of the COBOL compiler installed.

To obtain the C version, perform the following command for your operating system:

Sun Solaris

```
$ cc -V 2>&1 |head -1
```

AIX

```
$ lslpp -L|grep ibmcxx.cmp|cut -c30-34|head-
```

HP-UX

```
$ what /usr/bin/cc|head -2|tail -1
```

Note These examples are case-sensitive.

Check special requirements

Perform the following steps to check special requirements each time a script is run:

- 1. Check output**

Each time a script is run, check all output before another one is executed. For example, verify the output of the compiles and/or audit reports.

- 2. For HP9000 machines, compile all COBOL programs with the 'hptoptimize' compiler directive off**

Set the `hptoptimize` compiler directive to off in your existing HP9000 compile jobs. The following is a sample of how you set this compiler directive:

```
cob -xv -C "align(4) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt  
hptoptimize=0" $prog/(program).cob -o $prog/(program)
```

3. If your operating system is 64-bit, compile all COBOL programs with the 'align(8)' compiler directive

Insert the `align(8)` compiler directive into your existing compile jobs. The following is a sample of how you include this compiler directive:

```
cob -xv -C "align(8) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt"  
$prog/{program}.cob -o $prog/{program}
```

4. If you have more than one HP PA-RISC platform, insert the '+DAportable' native code generator

Beginning with the HP-UX 10.20 release, the default object code generated by HP compilers is determined automatically as that of the machine on which you compile. (Previously the default code generation was PA-RISC 1.0 on all Series 700 and 800 systems.)

To avoid PA-RISC platform conflicts, set the `+DAportable` native code generator in your existing HP compile jobs. The following is a sample of how you set this native code generator:

```
cob -xv -C "align(8) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt  
hpoptimize=0 +DAportable" $prog/{program}.cob -o $prog/{program}
```

Phase 3: Compile Batch and Build FILE01

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (or logs) to determine success or failure before another script is executed.

Pull all cybmst programs

Script used: jxcybmst

To extract and compile all cybmst COBOL programs (p9cnvt, p2edit, p4calc, p5prnt, o4calc), execute the jxcybmst script from the \$runs subdirectory.

For example:

```
rj jxcybmst
```

Review the log, then the cybmst.03 list file in the \$list subdirectory to determine if there were any errors.

Compile and link the delivered cbsvb and cbsvrft

Script used: jcmpcvbn

To compile the non-relational batch program cbsvb as delivered by Cyborg, execute the jcmpcvbn b script from the \$runs subdirectory. The 'b' parameter is passed onto the script in order to specifically compile the batch program (that is, cbsvb).

For example:

```
rj jcmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Script used: jcmpsort

To compile p10sort.cob, p45sort.cob, p80sort.cob, p80copy.cob, and pfssort.cob, execute the jcmpsort script from the \$runs subdirectory.

For example:

```
rj jcmpsort
```

Review the log to determine if there were any errors.

Create System Control Repository

Script used: jdemo01

This procedure creates a random System Control Repository. Execute the `jdemo01` job.

For example:

`ry jdemo01`

Review the log, then the `demo.03` list file in the `$list` subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages. For example:

```

DEMO01 V001 07-17-2002 15:09:14  RECORD COUNT=567,062
-----
CSSS <UTIL( (999999(DISPLY( ( ( )15:57:33 07-25 XXXX
  ZZTEST 99999E  RELOAD IS OK.  Ver-5.0 LENGTH  531 07-25-02 15:55:09
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL  ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL  ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P RDEMRQ ***** RELOAD NOT FOUND *****
P RDTBPL ***** RELOAD NOT FOUND *****
P RTCTRL ***** RELOAD NOT FOUND *****
P TBLENT ***** RELOAD NOT FOUND *****
P TBLINQ ***** RELOAD NOT FOUND *****
P TBLUPD ***** RELOAD NOT FOUND *****
P TBLVER ***** RELOAD NOT FOUND *****
P V-NAME ***** RELOAD NOT FOUND *****
P WPTM   ***** RELOAD NOT FOUND *****

```

Phase 4: Compile CBSV and CYBIO

Extract the CASE tool

Your installation may have custom overrides which need to be extracted. rdbpgm0.cob, rdbpgm2, rdbpgm3 and rdbpgm4 are delivered with the media. However, you can extract the CASE tool if you want to create overrides to module rdbpgm to change the delivered CASE tool.

Script Used: jpul_rdb

To extract rdbpgm0, execute the jpul_rdb job. This script will extract rdbpgm0, rdbpgm2, rdbpgm3 and rdbpgm4.

To execute this job, type:		rj jpul_rdb platform
where:		platform = MF2

Review the log, then pul_rdb.03 in the \$list subdirectory to determine if there were any errors.

Compile rdbpgm0.cob

Script Used: jcmprdb0

To compile the rdbpgm0.cob program, execute the jcmprdb0 script from the \$runs subdirectory.

For example:

```
rj jcmprdb0
```

Review the log to determine if there were any errors.

Export F1 and FTM records

Script Used: jexport

To export the F1 and FTM (RFT and RFM) records from the System Control Repository, execute the jexport script from the \$runs subdirectory.

For example:

```
rj jexport
```

Review the log, then the export.03 list file in the \$list subdirectory to determine if there were any errors.

Execute the make command

To be able to precompile, compile, and link The Solution Series relational programs, execute the make command and test the sample1 program delivered by ORACLE.



Please refer to the ORACLE installation guide for information on the name and location of the make file.

Log in as the ORACLE administrator and execute the make command as in the following example (actual commands may differ according to compiler):

```
cd $ORACLE_HOME/precomp/demo/procob2
make -f demo_procob18.mk sample1
```

If the above program was linked without any error, run the make command again. This time create a model script for the precompile, compile, and link steps using the command below:

```
make -f precomp.mk -n sample2 > $runs/cyborg.mk
```

Note If the program above generate a "Undefined symbol: pthread_yield" error, this is due to the fact that pthread_yield() was removed from the Posix (XOpen Version 5) standard. IBM provides a compatibility library for vendors who still use pthread_yield(). You will still need to create the cyborg.mk file, however you will need to modify the cyborg.mk file to include a reference to "-lpthreads_compat" near the start of the file.

ORACLE linkage

The ORACLE linkage step (cyborg.mk) created by the make command will be needed for the relational jobs. A sample is shown here:

```
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqintf.o -
lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o /u01/app/oracle/804/lib/nautab.o
/u01/app/oracle/804/lib/naect.o /u01/app/oracle/804/lib/naect.o
/u01/app/oracle/804/lib/naedhs.o `cat /u01/app/oracle/804/lib/naldflgs` -
lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -
lcommon -lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -
lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -
lgeneric -lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -
lcommon -lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread
```

Please copy and paste the linkage step generated by the cyborg.mk to replace the sample linkage step as delivered in the following jobs:

```
jcmpsubr
jcmprdb1
jxo4calr
jcmpcvr
```

Execute the CASE tool

Script Used: jcrtpgms

1. Modify the control record in jcrtpgms

Modify the control record in jcrtpgms to include the datafile path, database connect string, and the tablespace indicator to uniquely identify this environment.

<p>IMPORTANT: The Cyborg Database must be created by the Database Administrator. In addition to the rdbpgm1 program created in this step, all csv programs will contain the connect clause for the database.</p>

2. Execute the jcrtpgms job

Execute the jcrtpgms script from the \$runs subdirectory. For example:

```
rl jcrtpgms
```

Review the log to determine if there were any errors.

Pre-compile, compile, and link rdbpgm1

Script Used: jcmprdb1

To pre-compile, compile, and link the program rdbpgm1, execute the jcmprdb1 script from the \$runs subdirectory. rdbpgm1 creates the tablespaces, tables, indexes, and views needed to support the relational version of The Solution Series.

For example:

```
rl jcmprdb1
```

<p>Add Oracle linkage before running this job: This delivered script includes a sample ORACLE linkage step (highlighted in the example below). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in <i>Execute the make command</i> (on page 47).</p>
--

The following is the jcmprdb1 job, with highlights on the lines which should be replaced with the Oracle linkage step:

```

echo "\n\n\t JCMRDB1 IN PROGRESS \n"
echo "\n\n\t CHECKING FOR FILES \n"
test -f $prog/rdbpgm1.pco || echo "\n\t rdbpgm1.pco does not exist"
cd $prog

procob ireclen=132 oreclen=132 select_error=no litdelim=apost mode=ansi
iname=rdbpgm1.pco oname=rdbpgm1.cob
cob -xv -C "IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8)" -N
"nocheck noboundopt" -o rdbpgm1 rdbpgm1.cob \
\
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlintf.o -
lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o /u01/app/oracle/804/lib/nautab.o
/u01/app/oracle/804/lib/naet.o /u01/app/oracle/804/lib/naet.o
/u01/app/oracle/804/lib/naedhs.o `cat /u01/app/oracle/804/lib/naldflgs` -
lnetv2 -lnttcp -lnetwork -lnetv2 -lnttcp -lnetwork -lclient -lvsn -
lcommon -lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -
lnttcp -lnetwork -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -
lgeneric -lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -
lcommon -lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread
cd $runs
echo "\n\n\t JCMRDB1 COMPLETE "

```

Remove the slashes (as shown in the box below) and join the newly replaced linkage with the previous line.

```
noboundopt" -o rdbpgm1 rdbpgm1.cob -L/u01/app/oracle/804/lib...
```

Review the log to determine if there were any errors.

Create the tablespaces, tables, indexes, and views in the Cyborg database

Script Used: jrcrcyb

To execute the SQL statements defined in rdbpgm1 and create the tablespaces, tables, indexes, and views, execute the jrcrcyb script from the \$runs subdirectory. There is no output from this run, but you or your database administrator can execute the SQL statements to verify the tablespaces, tables, indexes, and views have been created.

For example:

```
rl jrcrcyb
```

Review the log to determine if there were any errors.

Create the tablespaces, tables, indexes, and views in the Cyborg database Pre-compile, compile, and link rdbpgma through rdbpgmh

Script Used: jcmpsubr

To pre-compile, compile, and link the programs rdbpgma through rdbpgmh, execute the jcmpsubr script from the \$runs subdirectory.

For example:

```
rl jcmpsubr
```

Add Oracle linkage before running this job: This delivered script includes a sample ORACLE linkage step (highlighted in the job). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in .

The following is the jcmpsubr job, with highlights on the lines which should be replaced with the Oracle linkage step:

```

echo "\n\n\t JCMPSUBR IN PROGRESS \n"
echo "\n\n\t CHECKING FOR FILES \n"
test -f $prog/rdbpgma.pco || echo "\n\t rdbpgma.pco does not exist"
test -f $prog/rdbpgmb.pco || echo "\n\t rdbpgmb.pco does not exist"
test -f $prog/rdbpgmc.pco || echo "\n\t rdbpgmc.pco does not exist"
test -f $prog/rdbpgmd.pco || echo "\nrdbpgmd.pco does not exist"
test -f $prog/rdbpgme.pco || echo "\n\t rdbpgme.pco does not exist"
test -f $prog/rdbpgmf.pco || echo "\n\t rdbpgmf.pco does not exist"
test -f $prog/rdbpgmg.pco || echo "\n\t rdbpgmg.pco does not exist"
test -f $prog/rdbpgmh.cob || echo "\n\t rdbpgmh.cob does not exist"
cd $prog

for file in rdbpgma rdbpgmb rdbpgmc rdbpgmd rdbpgme rdbpgmf rdbpgmg
do
echo "\n\n\t COMPILATION OF '${file}' IN PROGRESS \n"
procb iname=${file}.pco oname=${file}.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C "ibmcomp noosvs nobound notrunc align(8)" -N "nocheck
noboundopt" -o ${file} ${file}.cob \
\
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlntf.o
-lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o
/u01/app/oracle/804/lib/nautab.o /u01/app/oracle/804/lib/naect.o
/u01/app/oracle/804/lib/naect.o /u01/app/oracle/804/lib/naedhs.o `cat
/u01/app/oracle/804/lib/naldflgs` -lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -
lnttcp -lnetwork -lclient -lvsn -lcommon -lgeneric -lmm -lnlsrtl3 -lcore4
-lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp -
lnetwork -lclient -lvsn -lcommon -lgeneric -lepc -lnlsrtl3 -lcore4 -
lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -lcommon -lgeneric -lnlsrtl3 -
lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat /u01/app/oracle/804/lib/sysliblist` -
lc -laio -lm -lthread
echo "\n\n\t COMPILATION OF '${file}' COMPLETE \n"
done

echo "\n\n\t COMPILATION OF RDBPGMH IN PROGRESS \n"
cob -xv -C "ibmcomp noosvs nobound notrunc align(8)" -N "nocheck
noboundopt" $prog/rdbpgmh.cob -o $prog/rdbpgmh
echo "\n\n\t COMPILATION OF RDBPGMH COMPLETE \n"
cd $runs
echo "\n\n\t JCMPSUBR COMPLETE "

```

Review the log to determine if there were any errors.

Remove the slashes (as shown in the example below) and join the newly replaced linkage with the previous line.

```
noboundopt" -o ${file} ${file}.cob -L/u01/app/oracle/804/lib...
```

The following table lists and describes each program generated by the CASE tool.

Program	Description
rdbpdma	The subroutine that handles inserting a new row in a table.
rdbpdmb	The subroutine that handles selecting data from a row in a table and passing it to csv.
rdpdgmc	The subroutine that handles updating values in an existing row.
rdpdgmd	The subroutine that handles deleting an existing row from a table.
rdpdgme	The subroutine called when a PAYMRG 171 process is run. It removes all rows from all tables in preparation for reinsertion of data from the P20 file. It also disables then re-enables all indexes (where applicable).
rdpdgmf	The subroutine called when a PAYMRG 222 process is run. It deletes all rows from the appropriate tables that belong to the Organizations being paid.
rdpdgmg	The subroutine that cursors through the database and rebuilds the IDX records on the database, recreating Control 1, Control 2, and Employee Number pointers on the Employee Database (Master File; FILE02).
rdpdgmh	The subroutine that provides segment and segment key length for each segment and location of date and date type within each segment.

Extract, compile, and link o4calc

Script Used: jxo4calr

To extract COBOL program o4calc from cybmst, compile the program, and link the machine-specific subroutines, execute the jxo4calr script from the \$runs subdirectory. For example:

```
rl jxo4calr
```

Add Oracle linkage before running this job: This delivered script includes a sample ORACLE linkage step (highlighted in the job). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in .

The following is the jxo4calr job, with highlights on the lines which should be replaced with the Oracle linkage step:

```

echo '\n\n\t JXO4CALR IN PROGRESS '
echo '\n\n\t CHECKING FOR FILES \n'
test -f $prog/p9cnvt    || echo '\n\t p9cnvt does not exist'
test -f $data/cybmst    || echo '\n\t cybmst does not exist'
test -f $data/vers80.ovr || echo '\n\t vers80.ovr does not exist'
test -f $prog/rdbpgma.o || echo '\n\t rdbpgma.o does not exist'
test -f $prog/rdbpgmb.o || echo '\n\t rdbpgmb.o does not exist'
test -f $prog/rdbpgmc.o || echo '\n\t rdbpgmc.o does not exist'
test -f $prog/rdbpgmd.o || echo '\n\t rdbpgmd.o does not exist'
test -f $prog/rdbpgmh.o || echo '\n\t rdbpgmh.o does not exist'

echo '\n\n\t CREATION OF O4CALC (RELATIONAL) IN PROGRESS \n'
echo 'O4CALC |ISEV@PCYd& 24 MICRO-FOCUS.'> $work/o4calc.04
cat $data/vers80.ovr >> $work/o4calc.04
FILE1=$prog/o4calc.pco ; export FILE1
PRINT1=$list/o4calc.03 ; export PRINT1
P05RDR=$work/o4calc.04 ; export P05RDR
CYBMST=$data/cybmst ; export CYBMST
$prog/p9cnvt

cd $prog
echo '\n\n\t COMPILATION OF O4CALC IN PROGRESS \n'
procob iname=o4calc.pco oname=o4calc.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C "IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8)" -N
"NOCHECK NOBOUND OPT" -o o4calc o4calc.cob rdbpgma.o rdbpgmb.o
rdbpgmc.o rdbpgmd.o rdbpgmh.o \
\
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlintf.o -lclntsh
-lclient /u01/app/oracle/804/lib/libsql.a /u01/app/oracle/804/lib/scorept.o
/u01/app/oracle/804/lib/sscoreed.o /u01/app/oracle/804/rdbms/lib/kpudfo.o
/u01/app/oracle/804/lib/naetab.o /u01/app/oracle/804/lib/naect.o
/u01/app/oracle/804/lib/naect.o /u01/app/oracle/804/lib/naedhs.o `cat
/u01/app/oracle/804/lib/naldflgs` -lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp
-lnetwork -lclient -lvsn -lcommon -lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -
lcore4 -lnlsrtl3 -lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -
lvsn -lcommon -lgeneric -lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient
-lvsn -lcommon -lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread
cd $runs
echo '\n\n\t JXO4CALR COMPLETE '

```

Remove the slashes (as shown in the example below) and join the newly replaced linkage with the previous line.

```
rdbpgmh.o -L/u01/app/oracle/804/lib...
```

Review the log, then the o4calc.03 list file in the \$list subdirectory to determine if there were any errors.

Edit cbsv.ovr

Edit the cbsv.ovr file located in the \$data directory to include your database connect string, as in the example shown here:

```
C141250+R -E 01 USERID          PIC X(08) VALUE 'CYBORG50'.
C141300+R -E 01 PASSWD         PIC X(08) VALUE 'CYBDBA'.
C142100+R 01 DB-NAME           PIC X(8)  VALUE 'CYBORG50'
```

Phase 5: Compile CBSV and CYBIO

Pull all csv programs - jpulcvr

Script used: jpulcvr

For example:

```
rj jpulcvr
```

Review the log, then the `pulcvr.03` list file in the `$list` subdirectory to determine if there were any errors.

Add Oracle link to jcmpcvr

Before running `jcmpcvr`, you must first add Oracle link. This delivered script (note that there are two areas in the script where this must be changed) includes a sample ORACLE linkage step (highlighted in the job). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in Execute the make command.

The following is the `jcmpcvr` job:

```
echo "\n\n\t JCMPCVR IN PROGRESS \n"
echo "\n\n\t CHECKING FOR FILES \n"
test -f $prog/cbsvb.pco || echo "\n\t cbsvb.pco does not exist"
test -f $prog/cbsvbt.pco || echo "\n\t cbsvbt.pco does not exist"
test -f $prog/cbsvo.pco || echo "\n\t cbsvo.pco does not exist"
test -f $prog/cbsvot.pco || echo "\n\t cbsvot.pco does not exist"
cd $prog
for file in cbsvb cbsvbt
do
echo "\n\n\t COMPILATION OF '${file}' IN PROGRESS \n"
procob iname=${file}.pco oname=${file}.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C "IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8)" -N
"NOCHECK NOBOUNDOPT" -o ${file} ${file}.cob rdbpgma.o rdbpgmb.o
rdbpgmc.o rdbpgmd.o rdbpgme.o rdbpgmf.o rdbpgmg.o rdbpgmh.o \
\
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlintf.o -
lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o /u01/app/oracle/804/lib/nautab.o
/u01/app/oracle/804/lib/naect.o /u01/app/oracle/804/lib/naect.o
/u01/app/oracle/804/lib/naedhs.o `cat /u01/app/oracle/804/lib/naldflgs` -
lnetv2 -lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -
lcommon -lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -
lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -
lgeneric -lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -
lcommon -lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread
echo "\n\t COMPILATION OF '${file}' COMPLETE \n"
done
```

(continued following)

(continued from previous)

```

for file in cbsvo cbsvot
do
echo "\n\n\t COMPILATION OF '${file}' IN PROGRESS \n"
proccob_iname=${file}.pco oname=${file}.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C "IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8)" -N
"NOCHECK NOBOUND OPT" -o ${file} ${file}.cob o4calc.o rdbpgma.o
rdbpgmb.o rdbpgmc.o rdbpgmd.o rdbpgme.o rdbpgmf.o rdbpgmg.o rdbpgmh.o \
\
-L/u01/app/oracle/804/lib/ /u01/app/oracle/804/precomp/lib/cobsqlntf.o -
lclntsh -lclient /u01/app/oracle/804/lib/libsql.a
/u01/app/oracle/804/lib/scorept.o /u01/app/oracle/804/lib/sscoreed.o
/u01/app/oracle/804/rdbms/lib/kpudfo.o /u01/app/oracle/804/lib/nautab.o
/u01/app/oracle/804/lib/naect.o /u01/app/oracle/804/lib/naect.o
/u01/app/oracle/804/lib/naedhs.o `cat /u01/app/oracle/804/lib/naldflgs` -lnetv2
-lnttcp -lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -
lgeneric -lmm -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lnetv2 -lnttcp -
lnetwork -lncr -lnetv2 -lnttcp -lnetwork -lclient -lvsn -lcommon -lgeneric -
lepc -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 -lclient -lvsn -lcommon -
lgeneric -lnlsrtl3 -lcore4 -lnlsrtl3 -lcore4 -lnlsrtl3 `cat
/u01/app/oracle/804/lib/sysliblist` -lc -laio -lm -lthread
echo "\n\n\t COMPILATION OF '${file}' COMPLETE \n"
done
cd $runs
echo "\n\n\t JCMPCVR COMPLETE "

```

Remove the slashes (as shown in the example below) and join the newly replaced linkage with the previous line.

```
rdbpgmc.o rdbpgmd.o rdbpgme.o rdbpgmf.o rdbpgmg.o rdbpgmh.o -L/u01/app/...
```

Review the log to determine if there were any errors.

Compile and link all csv programs - Solution Series Install UNIX

Script used: `jcmpcvr`

For example:

```
./jcmpcvr
```

Review the log, to determine if there were any errors.

Compile and link cybio

Script used: `jcmpcbio`

To compile and link the `sckcybio.c`, `logging.c`, and `cybio.cob` programs, execute the `jcmpcbio` script from the `$runs` subdirectory. For example:

```
./jcmpcbio
```

Review the log, to determine if there were any errors.

Phase 6: Create test p20in Batch Master

Create test p20in Batch Master

Script used: **jp20strt (U.S.)**
 jp20strc (Canada)

To extract the report generators from `cybmst` and create the `p20in` Batch Master File, execute the `jp20strt` script from the `$runs` subdirectory with `p9strt` and `p9cbstv` as input.

Input files

<code>p05t80</code>	<code>p9strt</code>
<code>p05t81</code>	<code>p9cbstv (U.S.)</code>
	<code>p9cbvsc (Canada)</code>

The `p2edit`, `p4calc`, and `p5prnt` programs are processed.

For example:

```
rj jp20strt
```

Review the log, then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

```
audit2.trl  
p20strt.03  
translod
```

Phase 7: Create Employee Database with Pay History

Create test Employee Database

Script used: jpaymrg

To create a test Employee Database, execute the `jpaymrg` script from the `$runs` subdirectory.

For example:

```
rl jpaymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Populate option list and application tables

Script Used: jpopf01

To synchronize the System Control Repository and relational tables for option lists and specific application tables (Cx through Xx), execute the `jpopf01` script from the `$runs` subdirectory. For example:

```
rl jpopf01
```

Populate database with test data

To populate the database with test data, perform the following steps:

1. Apply demo test data

**Script used: jprdemo (U.S.)
 jprdemoc (Canada)**

To pull test data from the System Control Repository and populate fields in the online Employee Database, execute the `jprdemo` script from the `$runs` subdirectory.

For example:

```
rl jprdemo
```

Review the log, then the `prdemo.03` list file in the `$list` subdirectory to determine if there were any errors.

2. Apply remaining demo test data

**Script used: jhrdemo (U.S.)
 jhrdemoc (Canada)**

To pull the remaining test data from the System Control Repository and populate fields in the online Employee Database, execute the `jhrdemo` script from the `$runs` subdirectory.

For example:

```
rl jhrdemo
```

Review the log, then the `hrdemo.03` list file in the `$list` subdirectory to determine if there were any errors.

3. Build alternate keys

Script used: `jbldaky`

To build or rebuild the Employee Name Alternate Key, run the `jbldaky` script located in the `$runs` directory.

Note This job may be altered to accommodate your build of the alternate keys once your data has been added to the system.

For example:

```
rj jbldaky
```

Review the log, then the `bldaky.03` list file in the `$list` subdirectory to determine if there were any errors.

Update p20in Batch Master File

Script used: `jpaxtr`

To update the `p20in` Batch Master File with the demo test data, execute the `jpaxtr` script from the `$runs` subdirectory.

The timecards and adjustments will be pulled from the online Employee Database and placed in `FILE12`. This will be the new `p20in` master file.

`FILE10` (`payxtr10`), which contains time cards and adjustments, is also created. `payxtr10` becomes input to the `jpaxrun` as `p05t81`.

For example:

```
rj jpaxtr
```

Review the log, then the `payxtr.03` list file in the `$list` subdirectory to determine if there were any errors.

Apply taxes, timecards, and adjustments

Script used: `jpaxrun`

To apply taxes (`taxfile`) and the timecards and adjustments (`payxtr10`) to the `p20in` file, execute the `jpaxrun` script from the `$runs` subdirectory with `p05t80` and `p05t81` as input. The `p2edit`, `p4calc`, and `p5prnt` programs will be processed.

Note Verify that the `taxfile` being applied is the current tax related regulatory bulletin from *CUBBS* (Cyborg Users Bulletin Board).

Input files

<code>p05t80</code>	<code>taxfile</code> (US)
	<code>taxfilec</code> (Canada)
<code>p05t81</code>	<code>payxtr10</code>

Note If you are a Canadian customer, modify the job to pull `taxfilec` instead of the `taxfile`.

For example:

```
rj jpayrun
```

Review the log, then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

```
auditrl1.lis  
checknum.lis  
checks_u.lis  
checks_v.lis  
combreg.lis  
translod.lis
```

Create pay history

Script used: jmntrun

To create pay history and labor records and apply check numbers to the newly created history records on the `p20in` Batch Master File, execute the `jmntrun` script from the `$runs` subdirectory. The `p2edit`, `p4calc`, and `p5prnt` programs will be processed.

For example:

```
rj jmntrun
```

Review the log, then the `transload2.lis` and `audit2` list files in the `$list` subdirectory to determine if there were any errors.

Update the Employee Database

Script used: jpaymrg

To create a new random Employee Database, execute the `jpaymrg` script from the `$runs` subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 8: Extract HR Reports

Script Used: `jreport`

To extract Human Resource batch reports, execute the `jreport` script from the `$runs` subdirectory. For example:

```
rj jreport
```

Review the log, then the `rtprnt.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 9: Apply System Control Repository Menu Additions

Build report menus

Script used: jrptmnu

To build a menu containing the delivered report groups, run `jrptmnu` located in the `$runs` directory.

For example:

```
rl jrptmnu
```

Review the log, then the `rptmnu.03` list file in the `$list` subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

To apply menu items for online user access to batch processes, run the `jmainti` script from the `$runs` directory, using the `eprddi05` file as `FILE05` input:

For example:

```
rl jmainti
```

Review the log, then the `mainti.03` list file in the `$data` subdirectory to determine if there were any errors.

CHAPTER 4

Cyborg Application Server (CAS) Installation and Configuration

In This Chapter

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Installing and Configuring CAS

This section provides detailed instructions for installing the Cyborg Application Server (CAS) on The Solution Series Application Server on a UNIX system.

This is a technical section aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled 'The Solution Series 5.0 for UNIX'
1	Installing and Configuring The Solution Series 5.0 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Install and Configure the Cyborg Application Server (CAS)

The 'Cyborg' user needs its profile to include the updated values for the MicroFocus environment variables and \$PATH.

As a CBSV user, CAS (as a CYBORG user) needs a copy of the same profile except for data, work, list, prog, and runs.

Install CAS

Perform the following steps to install the CAS daemon:

1. Verify that CAS can execute on the system

Execute the following command from the `/cyborghome/app/server` directory:

```
./cybservd -v
```

CAS should respond with:

```
Cyborg Application Server for <system name> version x.xx
```

Note: *Operating system names are Solaris for Solaris (from Sun Microsystems), AIX for AIX (from IBM), and HP-UX for HP-UX (from Hewlett-Packard).*

If a message such as 'Exec format error' appears, then CAS will not run on the system and CAS needs to be compiled specially for that particular UNIX server.

If an error appears and CAS will not run, please contact the Help Desk.

2. Add CAS environment variables to CAS (first CAS install only)

The 'Cyborg' user needs its profile to include the updated values for the MicroFocus environment variables and \$PATH.

If you are installing another CAS, skip to the next step.

3. Add the Cyborg port to the network services file

Because CAS is a TCP/IP server, it uses a system resource called a *port number*. A port number is simply a number at which a server program can be located. Cyborg obtained the international recognition that port number 9888 is reserved for Cyborg's own use. (In particular, Cyborg will use it for CAS.) The port will be configured in a system-wide file called `/etc/services`.

1. Edit the file `/etc/services` to add the Cyborg port to the network services file. The entries in the file are usually given in numeric order, so find the location where 9888 should appear, then add the following line to the file:

```
cyborg 9888/tcp # Assigned by IANA to Cyborg Systems
```

Note: *You also need to enter the 9888 port number on the Cyborg Connection Editor during client installation, as described in **Installing and Configuring the Administrative Client** (on page 71).*

2. Save the file and exit the editor.

☞ *If you have any problems with CAS installation, see the Troubleshooting section in **Administering the Cyborg Application Server (CAS) Daemon** (on page 165).*

4. **Add CAS to the list of programs to launch at system startup**

This step should be performed by the administrator. Add the script `/cyborghome/app/server/cas` to the list of programs to launch at system startup. This ensures that clients will be able to access The Solution Series even if the machine is rebooted.

Start cas

CAS can only be started by the administrator or a similarly privileged process. To launch CAS, log in as `root` and execute the script `cas`. The following output should be displayed:

```
CAS version x.xx for <system name> started successfully (process ID xxxx)
```

where `xxxx` is the process ID of the daemon.

Note *Operating system names are `Solaris` for Solaris (from Sun Microsystems), `AIX` for AIX (from IBM), and `HP-UX` for HP-UX (from Hewlett-Packard).*

The command prompt is returned to the user, as CAS has placed itself into the background and will continue to run in the background. This script encapsulates the settings that are used by this installation.

☞ *For information on the `cas` script, see the Explanation of the `cas` script section in Appendix E: Administering the Cyborg Application Server (CAS) Daemon.*

☞ *If you are unable to start CAS or have any other problems with CAS installation, see the Troubleshooting section in Appendix E: Administering the Cyborg Application Server (CAS) Daemon.*

Configure the environment

Follow the directions in the 'Configuring a new environment on the server' section in Appendix E: Administering the Cyborg Application Server (CAS) Daemon, to configure the environment for this installation.

PART 3

Installing and Configuring the Administrative Client

CHAPTER 5

Installing and Configuring the Administrative Client

In This Chapter

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Introduction

This chapter provides detailed instructions for configuring clients of the UNIX server running The Solution Series.

This is a technical chapter aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled 'eCyborg 5.0 for UNIX'
1	Installing and Configuring eCyborg 5.0 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Prepare for installation

Phase 2: Install the software

Phase 3: Configure the software

Phase 4: Test the installation

Phase 1: Prepare for installation

It is important to appropriately prepare for the client installation of The Solution Series. Because the client and server will work together, you must ensure that they are both synchronized in communication.

Before successful operations may be carried on between the server running The Solution Series and the client, you are required to install and configure the prerequisite software. This software must be in place before beginning the installation.

Note: Based upon your employees' individual client workstation setups, there may be missing shared .dll or .ocx files that the Cyborg product uses that are non-distributable Microsoft shared system files. If this occurs, your IT staff will need to locate and download (usually on the Microsoft website) the required file for inclusion on your PCs.

Ensure Cyborg Application Service is active

The Cyborg Application Server daemon must be running on the server.

To verify that you have an active CAS daemon running on your server, type the following Administration Utility command at the command prompt:

```
casmgr -isrunning
```

where:

- casmgr is the command that invokes the CAS Administration utility
- -isrunning is the switch that determines whether CAS is running

Note: If you did not use the expected 'cyborg' directory, you must add a location reference (for example, '/cyborghome/app.server/casmgr -isrunning').

This command will determine whether there is a CAS process on the specified machine at the specified port. If the daemon is active, the following message is displayed:

```
CAS is running on machine, port nnnn.
```

Otherwise, the following message is displayed:

```
CAS is NOT running on machine, port nnnn.
```



Refer to *Administering the Cyborg Application Server (CAS) Daemon* for more information on using the Administration Utility.

Complete a configuration worksheet

During the installation, you will be prompted to supply client and server information. Complete the table below in advance preparation for these entries:

	Description	Your Configuration
Installation Location	Identify where you want the client files installed. If you accept the default location, the files will be placed at C:\Program Files\Cyborg Systems\Clientxx(where 'xx' indicates the release level of the installation).	
Type of Installation	Determine if you want to perform a Typical (recommended), Compact, or Custom installation.	
Connection Type	The only connection type available at this time is the Cyborg Application Service (CAS).	
Connection Name	Identify a title for the connection you will configure between the client and the server. For the initial installation, accept the 'default' connection name (Defaultxx, where 'xx' indicates the release level of The Solution Series installation). If a user requires multi-environment access, additional environments can be set up later. This label must not contain the characters "\:*?\"<_'. If you name the connection by another name, additional steps must be performed.  Refer to the appendices for more information on creating multiple environments (see "Creating Separate Environments on the Server for the Client" on page 125).	
Host	Host name or IP address of the server to which you want the client to connect.	
Port	Identify the port address of the server. Cyborg has registered the port address of 9888 for the Cyborg Application Service (CAS). This address must be the same as was specified during the installation and configuration of Cyborg Application Service (CAS).	9888
Environment	Identify the environment name (up to 8 characters) that was established during the Cyborg Application Service (CAS) installation, for example, CYBORG, CYBPROD, CYBTEST, or CYBDEV.	

Phase 2: Install the software

Install client files

Be sure to have at hand the configuration worksheet completed as preparation as you may need to refer to it as you load programs on the PC.

1. Insert the CD-ROM into the Administrative client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Administrative client' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files	use default, or ... Other:
Setup Type	*Typical (default) *Compact *Custom	use default, or ... select one of the other options
Are you running The Solution Series on an OS/390 Server?	--	No
Launch the Connection Editor?	Deselected (No)	Do not select this option if you are installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR) (Windows and Unix only). Select this option if you are not installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR).

The installation program will prompt you when it is complete.

Install Enhanced Payroll and Reporting (EPR)---optional

If you wish to use the Enhanced Payroll and Reporting, you must first install the EPR client files.

1. Insert the CD-ROM into the Administrative Client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Enhanced Payroll and Reporting' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...'
column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files\Cyborg Systems\Clientxx	use default, or... Other:

The installation program will prompt you when it is complete.

Note: Prior to using the Process Monitor, you must specify the correct environment and user folder. The Specify Environment Folder and Specify User Folder dialogs will display the first time the Process Monitor utility is run.

Install Document Data Interface (DDI)---optional

If you wish to use the Document Data Interface, you must first install the DDI client files.

1. Insert the CD-ROM into the Administrative Client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Document Management Facility' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...'
column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files\Cyborg Systems\Clientxx	use default, or... Other:

The installation program will prompt you when it is complete.

Phase 3: Configure the software

Set Up Your Environment

To set up your environment, perform the following steps:

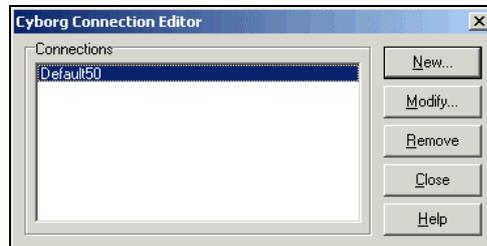
1. Access the dialog box

Access this dialog box at the end of the installation or by selecting:

Start ► Programs ► The Solution Series xxx ► Connection Editor

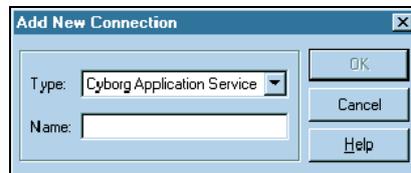
2. Click New

Click on the New button to set up a new configuration.



3. Type the name of your new connection

Leave Cyborg Application Service selected in the Type drop-down list box. Type the name of the connection you are creating in the Name text box.



4. Click OK

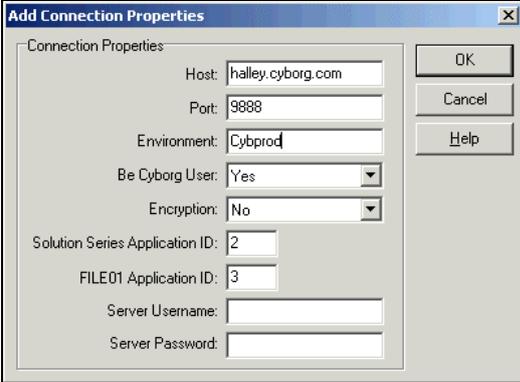
The Add Connection Properties dialog displays.

5. Type the configuration details

Type the configuration details under Connection Properties on the Connection Editor dialog box:

Item	Description
Host	Identify the system name of the server.
Port	Identify the port address of the server. For the Cyborg Application Server (CAS), Cyborg has registered the port address of 9888.
Environment	Identify the environment name (up to 8 characters) on the server. Examples are: CYBPROD, CYBTEST, and so on.
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
Solution Series Application ID	The application name and ID number for The Solution Series application. This application ID is configured to 2.
FILE01 Application ID	The application name and ID number for the CYBIO application. This application ID is configured to 3.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

After you have made these entries on the Cyborg Connection Editor, it should look similar to the following example:



The screenshot shows a dialog box titled "Add Connection Properties" with a close button (X) in the top right corner. The dialog is divided into a main area labeled "Connection Properties" and a control area on the right. The main area contains the following fields:

- Host: halley.cyborg.com
- Port: 9888
- Environment: Cybprod
- Be Cyborg User: Yes (dropdown menu)
- Encryption: No (dropdown menu)
- Solution Series Application ID: 2
- FILE01 Application ID: 3
- Server Username: (empty text box)
- Server Password: (empty text box)

The control area on the right contains three buttons: "OK", "Cancel", and "Help".

- 6. Click OK**
The connection properties are specified.
- 7. Click Close**
The connection has been configured between the server and the client.

Phase 4: Test the installation

Run the Messaging Test Tool

The Messaging Test Tool is used to ensure that the Address Book dialog can be properly accessed and that an email can be sent. This is a separate program packaged with The Solution Series. Messaging is essential in order for email integration to work properly.

To run the Messaging Test Tool, complete the following steps:

1. Launch the Messaging Test Tool

Run the Messaging Test Tool by starting the executable located in the following file path:

..\Program Files\Cyborg Systems\Clientxx\MessagingTestTool.exe

2. Click Next

The Messaging button appears:



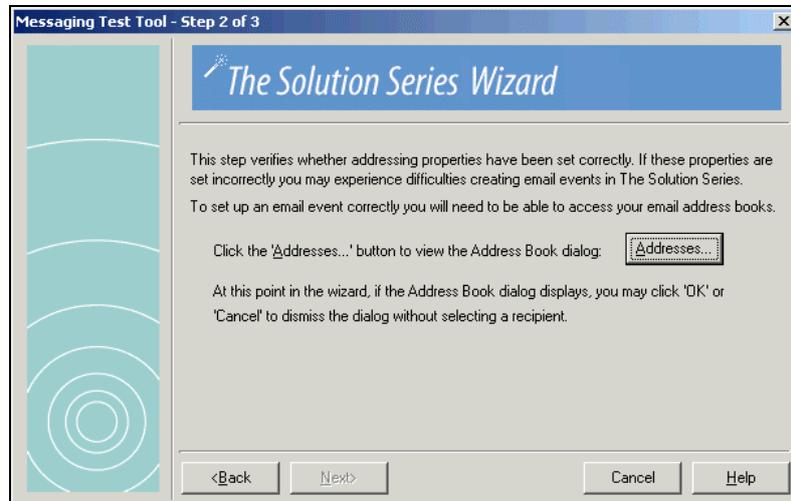
3. Click Messaging

Messaging is required to provide the system files used by MAPI-compliant email packages.

If your default email application is MAPI compliant, then the Tool will allow you to proceed. If not, contact your IT department.

4. Click **N**ext

The Address button appears:



5. Click **A**ddresses

At this point, you may get a prompt asking for your email password, depending on your email system and if you are already logged on to email.

The dialog will list the email addresses in your system. Check them to verify that this is the correct listing.

6. Click **O**K

Clicking OK will return you to Step 2 of 3 in the Messaging Test Tool dialog.

7. Click **N**ext

The dialog will now prompt you to send an email. This is to test that an email can be sent. The Subject and Message fields are editable on this dialog. If you wish to change either of these, you may do so.

8. Click **T**o

The Address Book dialog will appear, allowing you to select an email address.

9. Select an address

This is the address where the test email will be sent. It is suggested that you use either your own or another easily accessed address—this will make it easier to confirm that the email has been properly sent and received.

10. Click **O**K

This will accept the address selection.

11. Click **S**end

The Messaging Diagnostics Tools will now send the test email.

12. Click OK

This will close the dialog.

13. Click Next

The dialog will display all three steps, indicating whether or not they were completed successfully.

14. Click Finish

This will close the Messaging Test Tool.

When you are finished with this task, you should check the In Box at the address the email has been sent to in order to verify that it has been received. It is recommended that you use an email address you can easily access.

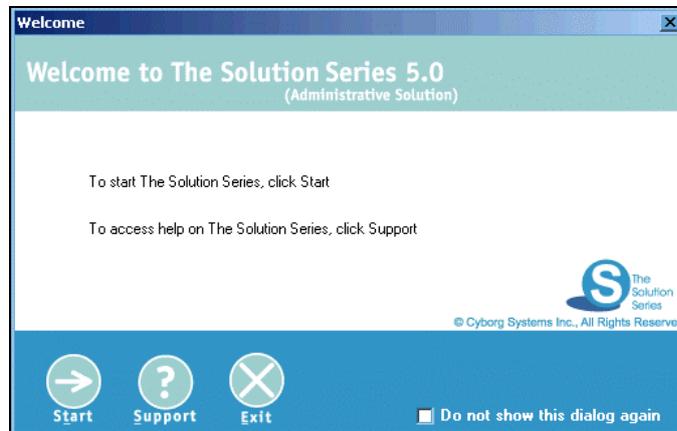
Test the connection to the server

To test the connection to the server, perform the following steps:

1. Launch The Solution Series

Select:

Start ► Programs ► The Solution Series ► The Solution Series

**2. Click Start on the Welcome screen**

The Login dialog box appears.

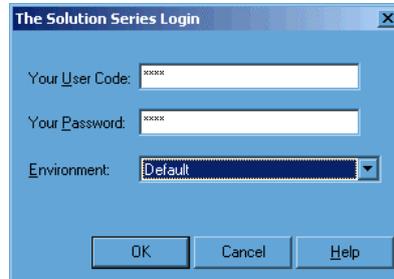
Note: If you see an error message instead of this Welcome screen, refer to the error listing in *Optional SQL Server Procedures* or *Optional ORACLE Procedures* for further information.

Test the GUI

To test the GUI, perform the following steps:

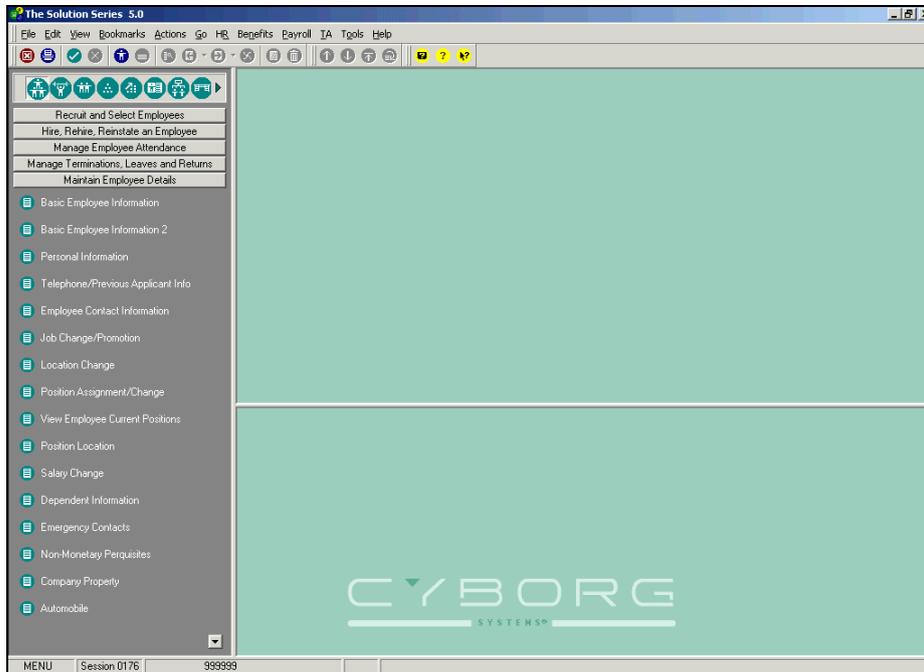
1. Log on as Security Officer

Select the environment you want to access from the option list, then type your user name and password:



2. Click OK

The work area for The Solution Series displays:

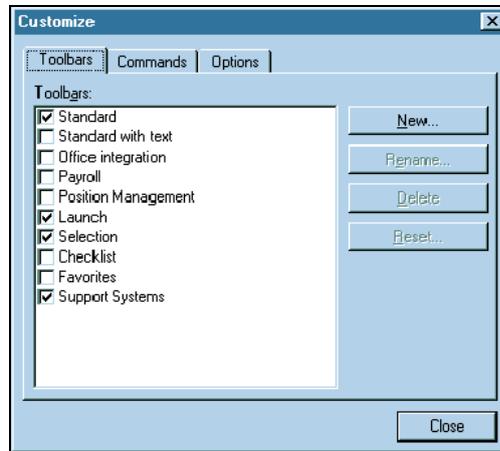




Refer to *Creating Separate Environments* for information on creating additional environments.

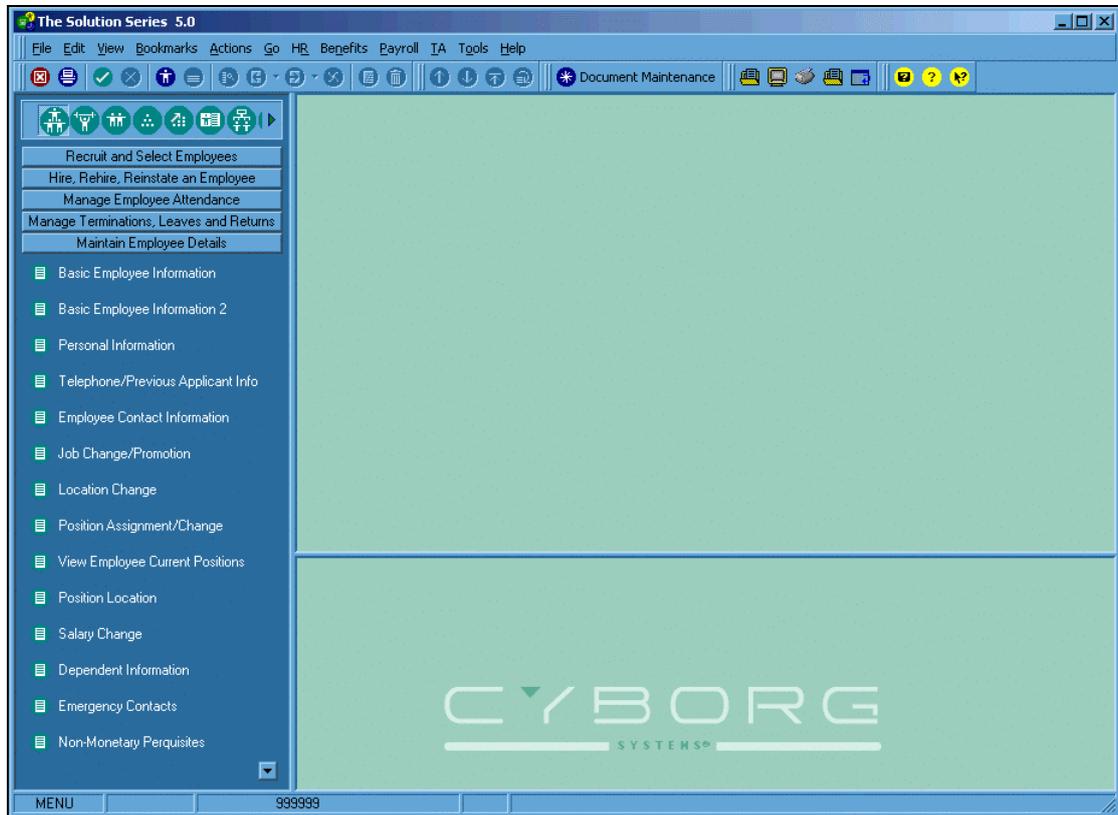
View the Favorites Toolbar

1. **Logon**
2. **To add the Launch Bar to the Menu Bar, customize the toolbar**
View ► **Customize Toolbars**
On the Toolbars tab, click beside 'Launch'.



3. Click Close

The Launch toolbar will appear:



Define the email and letter template folder

Document templates are created when a letter or email communication event is set up. These templates contain the body of the letter or email. Where the templates are stored is important. The location is specified by the 'Main Document Path' text box on the System Options form (SCOPTS).

Before setting the Main Document Path, you will need to create or determine which folder will be used for storing the templates. Communication events that will be used by multiple users should be stored on a network drive. This allows any user who might trigger the event, either manually or automatically through an action or condition, access to the templates.

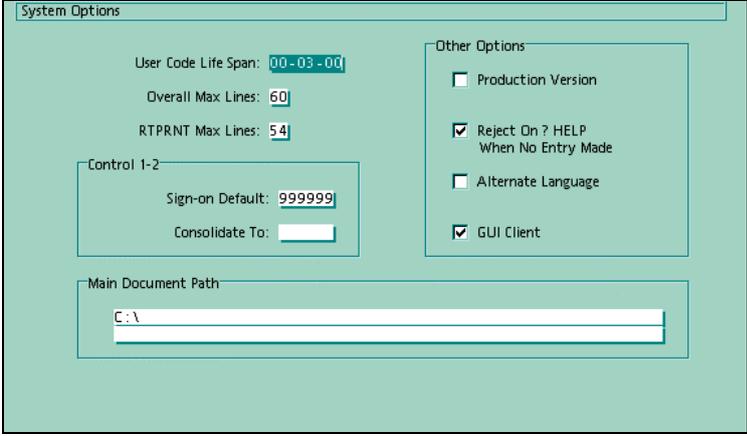
To set the Main Document Path, complete the following steps:

1. Access the System Options form (SCOPTS)

Access this form by selecting the following:

- Component:**  Security Tools
Process: Security Tools
Task:  Specify System Options

The System Options form (SCOPTS) appears:



2. Enter the Main Document Path

In the Main Document Path box, type in the path of the folder which contains the email and letter templates which the Office Integration will utilize. For general use, it is required that this path be accessible to all Administrative Clients.

3. Press Enter

The Main Document Path has now been set, allowing the system will to find the path where the templates are stored.

4. Exit The Solution Series

Before the Main Document Path will take effect, you need to log off and log back onto The Solution Series.

Test Word integration

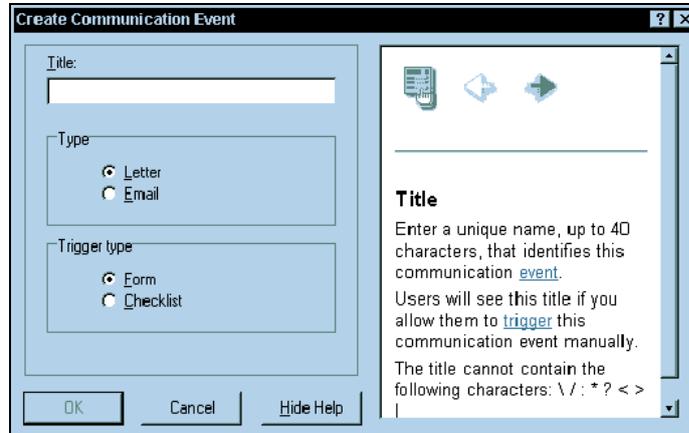
1. Access the Communication Event dialog

Access this dialog by making the following selections from the Navigator:

- Component:**  Administrator Tools
Process: Administrator Tools
Task:  Manage Events

2. Click **Create**

The Create Communication Event dialog appears:



3. Enter a **Title**

Type a unique title, up to 40 characters, for this communication event. For the test letter, type the following:

Test Letter

4. Select **Letter**

By default, Letter is the communication event Type selected when the dialog is first displayed. Verify that Letter is selected.

5. Select **Form**

By default, Form is the communication event Trigger type selected when the dialog is first displayed. Verify that Form is selected.

6. Click OK

Click OK to create the communication event. The Modify Communication Event dialog appears:

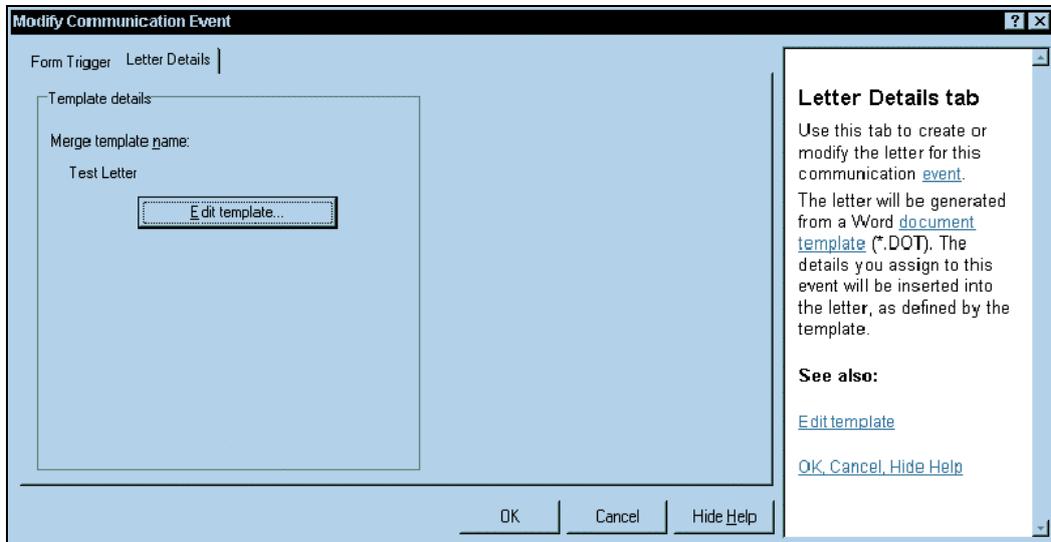
7. Select the Form name

Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus.

For the test letter, select:

Employee Payroll ► Hire, Rehire, Reinstatement an Employee ► Name and Address

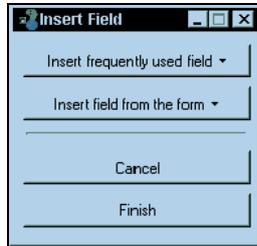
8. **Click OK**
This will select the form.
9. **Select the automatic trigger conditions**
Select 'Trigger automatically'. This will activate the trigger options.
10. **Select 'When information is amended'**
'When information is added' is the default selection – change this.
11. **Click on the 'Letter Details' tab**
The 'Letter Details' tab appears:



12. **Click 'Edit Template'**
This will open Word and the New dialog. The New dialog allows you to select existing templates on which to base the new one.
13. **Select 'Blank Document'**
This is the default.

14. Click OK

Word creates a new blank document, and the Insert Field dialog appears:



The Insert Field dialog allows you to include information directly from The Solution Series in the template.

15. Add the 'First_Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'First_Name' from the drop-down list.

This selection and the next couple will test if The Solution Series information is being pulled into the Word template properly.

16. Type a space

17. Add the 'Last_Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Last_Name' from the drop-down list.

18. Press Enter

This will start a new line on the Word document.

19. Type in a line

For the test letter, type the following line:

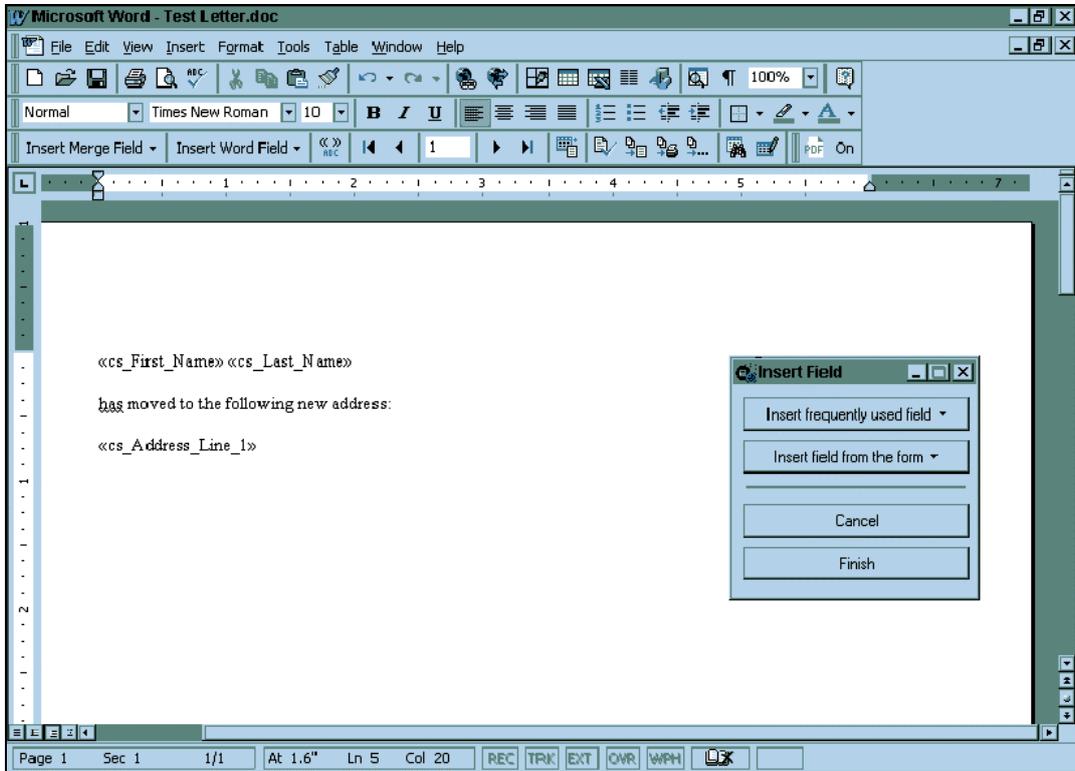
has moved to the following address:

20. Press Enter

This will start a new line on the Word document.

21. Add the 'Address_Line_1' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Address_Line_1' from the drop-down list. The display should appear like this:



22. Click Finish

Word will save the letter.

23. Click OK

This will close the Modify Communication Event dialog.

24. Click OK

This will close the Communication Event Manager dialog.

25. Access the Name and Address form

Make the following selections:

- Component:**  Employee Resourcing
- Process:** Hire, Rehire, Reinstatement of an Employee
- Task:**  Name and Address

26. Select an employee

In the Number field, type:

1234

27. Click OK

The Employee Name and Address form (FF-SCR) appears with the employee information:

Employee Name And Address AUSTIN, STEVEN

Name Code> 001

Title: Mr

First: STEVEN

Middle:

Last: AUSTIN

Suffix:

Address: 2314 W MILWAUKEE AV
APT 8

City/State: CHICAGO IL 60614

Country: USA

28. Type a new address

In the Address field, type the following:

1523 W. Axel Road

29. Press Enter

This will enter the new address. At this point, the Confirmation dialog appears:

Confirmation

The following letter is ready to be printed

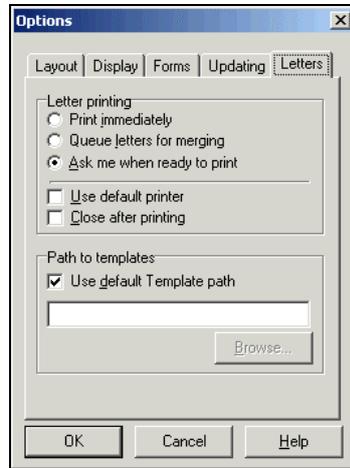
Test Letter

View Letter Print Now Add to Queue Cancel

Note: In order for this dialog to appear, you must have the 'Ask me when ready to print' option selected. This option can be found by going into The Solution Series and selecting the following:

View ► Change Options

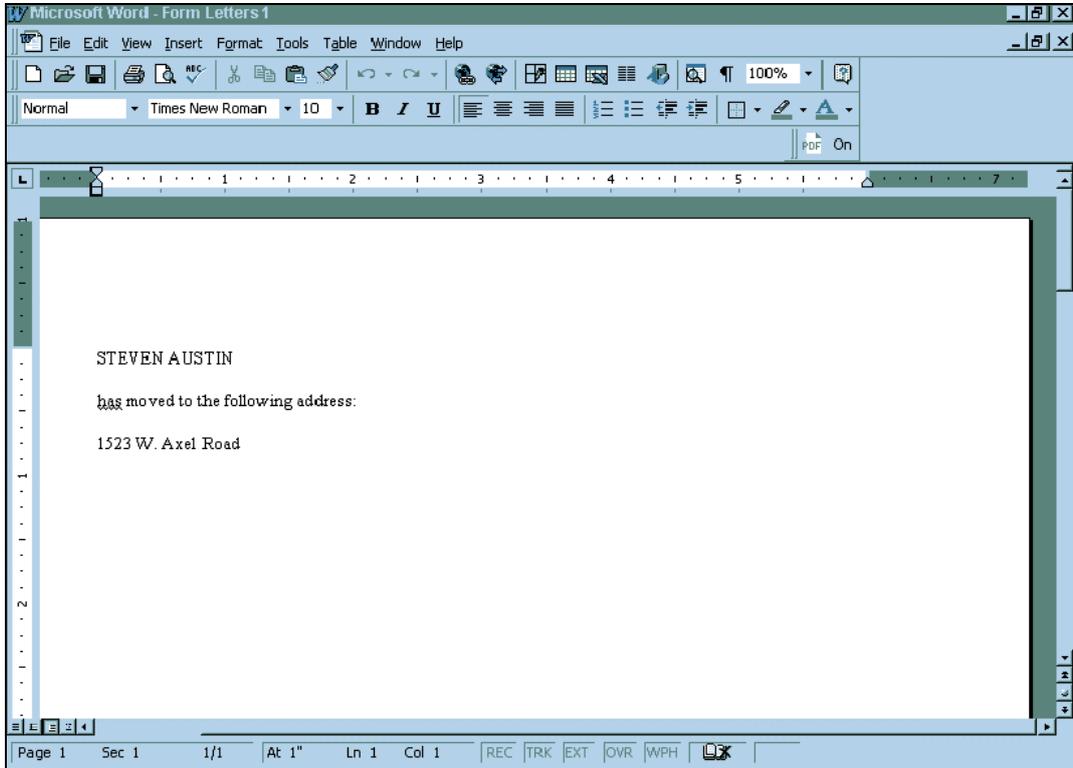
The Options dialog appears. View the Letters tab.



Select the 'Ask me when ready to print' option, then click OK.

30. **Click View Letter**

The system opens up the letter in Word and it includes the employee information. The display should appear as shown here:



Test email integration

1. Access the Communication Event dialog

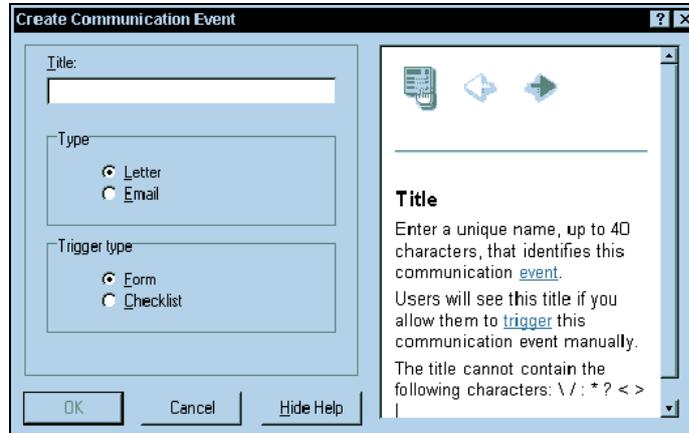
Access this dialog by making the following selections from the Navigator:

- Component:**  Administrator Tools
Process: Administrator Tools
Task:  Manage Events

Note: At this point, you may want to delete the Test Letter created in the task 'Test Word integration'. This can be done on the Communication Event dialog by selecting Test Letter in the Event list, then clicking Remove.

2. Click **Create**

The Create Communication Event dialog appears:



3. Enter a **Title**

Type a unique title, up to 40 characters, for this communication event. For the test letter, type the following:

Test Email

4. Select **Email**

By default, Letter is the communication event Type selected when the dialog is first displayed. Change the selection to Email.

5. Select **Form**

By default, Form is the communication event Trigger type selected when the dialog is first displayed. Verify that Form is selected.

6. Click OK

The Modify Communication Event dialog appears:

Modify Communication Event

Form Trigger | Letter Details

Form name: [Text Box] ...

Trigger automatically

- When information is added
- When information is amended
- When a record is deleted

Trigger when selected from toolbar

Suppress if a form is in a Checklist

Communication event title: [Text Box]

Only trigger for specific Organization [Dropdown]

Conditions

Further conditions

Can satisfy any of the conditions below [Dropdown]

Field	Condition	Value
Profile	Do not produce a letter if user has profile below	[Dropdown]

OK Cancel Hide Help

Form Trigger tab

Use this tab to create or modify the form parameters that trigger this communication event.

See also:

- [Form name](#)
- [Trigger automatically](#)
- [Trigger when selected from toolbar](#)
- [Suppress if a form is in a Checklist](#)
- [Communication event title](#)

7. Select the Form name

Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus.

For the test email, select:

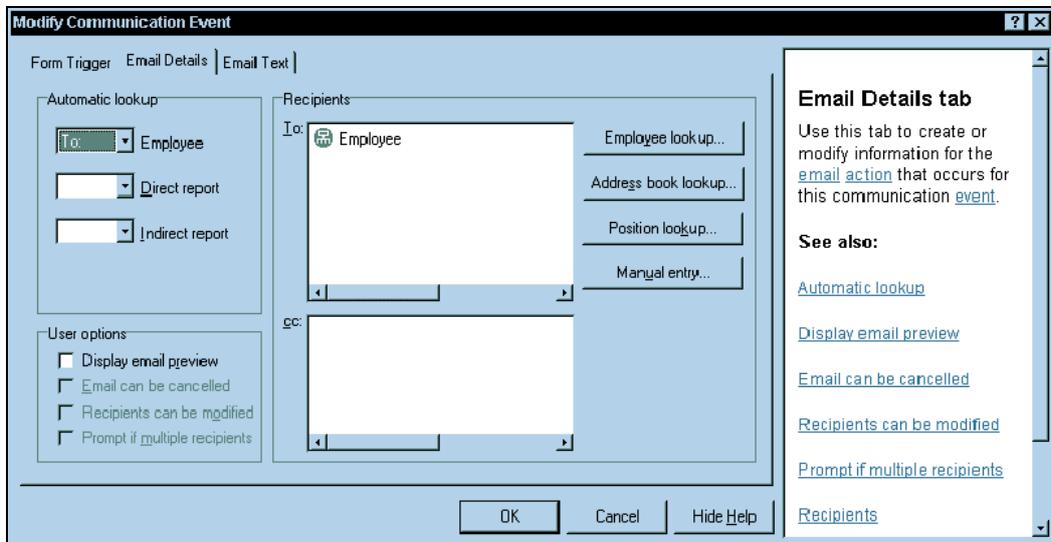
Employee Payroll ► Hire, Rehire, Reinstatement an Employee ► Name and Address

Browse Forms

- Flex Plan Enrollment/Processing
- Benefit Plan Setup and Maintenance
- Employee Payroll
 - Hire, Rehire, Reinstatement an Employee
 - Transfer an Employee in Batch
 - Add Basic Employee Information
 - Basic Employee Information 2
 - Name and Address**
 - Record Status for New Hire
 - Assign Job
 - Assign Location
 - Assign Salary
 - Rehire/Reinstatement

OK Cancel Help

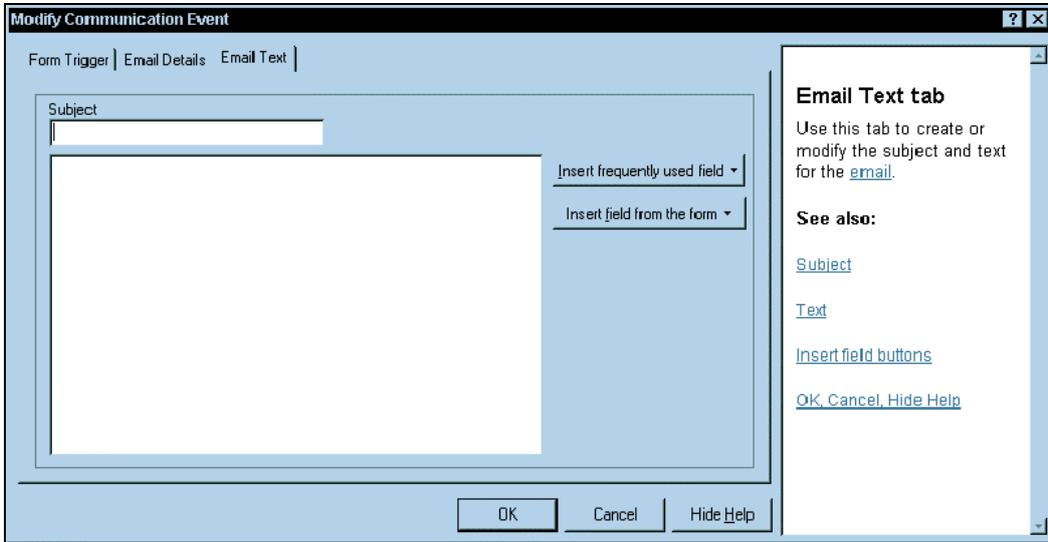
8. **Click OK**
9. **Select the automatic trigger conditions**
Select 'Trigger automatically'. This will activate the trigger options.
10. **Select 'When information is amended'**
'When information is added' is the default selection—change this.
11. **Click the Email Details tab**
The Email Details tab will appear:
12. **In the Employee field, select 'To'**
Click on the down arrow, and a drop-down list will appear—select 'To' from this list. Once you select 'To', the system will automatically include the Employee field, in order to pull the email address of the required employee.



13. **Select another email address**
Click 'Address book lookup' and select the desired email address. This will send the email to another address, which you can use to check that the email has been received—you may want to use your own or another easily accessible address.
14. **Click OK**
This will select the email address and return you to the Modify Communication Event dialog.
15. **Click on the 'Display email preview' option**
This is located in the lower left corner of the Email Details tab. Once this option is selected, the system will automatically generate a dialog which prompts you when it is generating the email.

16. Click on the Email Text tab

The Email Text tab appears:



This is where you create the email.

17. Type the Subject

In the subject field, type the following:

Test Email

18. Add the 'First Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'First Name' from the drop-down list.

This selection and the next couple will test if The Solution Series information is being pulled into the Word template properly.

19. Type a space**20. Add the 'Last Name' field**

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Last Name' from the drop-down list.

21. Press Enter

This will start a new line in the email.

22. Type in a line

For the test letter, type the following line:

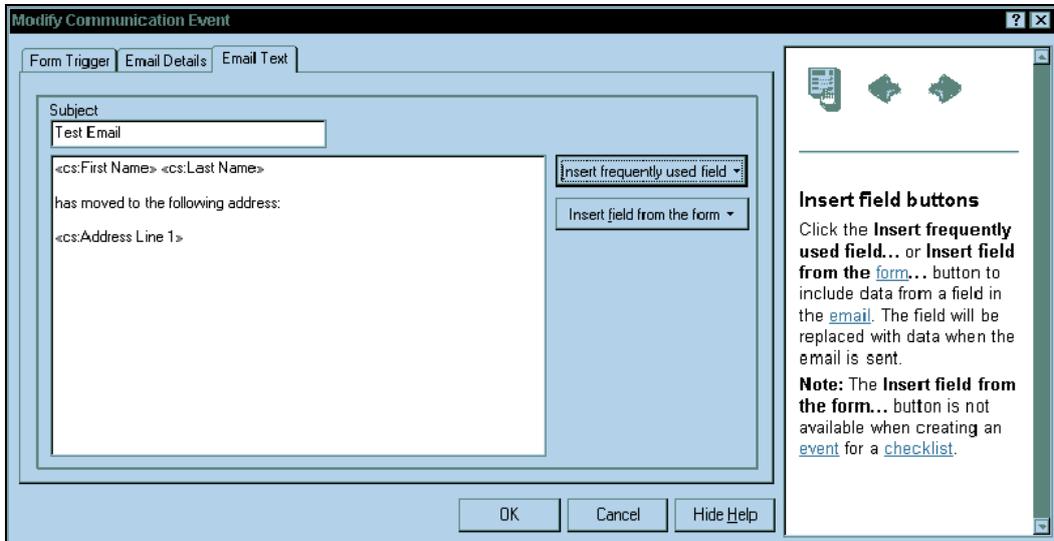
has moved to the following address:

23. Press Enter

This will start a new line in the email.

24. Add the 'Address Line 1' field

Click 'Insert Frequently used field', then select 'Address Line 1' from the drop-down list. The display should appear like this:



25. Click OK

This will enter the data and return you to the Communication Event Manager dialog.

26. Click OK

This will close the Event Manager dialog.

27. Access the Name and Address form

Make the following selections:

- Component:**  Employee Resourcing
Process: Hire, Rehire, Reinstate an Employee
Task:  Name and Address

28. Select an employee

In the Number field, type:

- 1234
29. Click OK

The Employee Name and Address form (FF-SCR) appears with the employee information:

The form displays the following information:

- Name Code: 001
- Title: Mr
- First: STEVEN
- Middle:
- Last: AUSTIN
- Suffix:
- Address: 1523 Axel Road
- City/State: CHICAGO IL 60614
- Country: USA

- 30. Type a new address**

In the Address field, type the following:

1523 W. Rocky Road

- 31. Press Enter**

This will enter the new address. At this point, the Email Preview dialog appears:

The dialog box shows the following details:

- Recipients:**
 - To: AUSTIN, STEVEN
 - cc:
- Buttons:** Employee lookup..., Address book lookup..., Position lookup..., Manual entry...
- Email Text:**
 - Subject: Test Email
 - Body: STEVEN AUSTIN has moved to the following address: 1523 W. Rocky Road
 - Note to append to email:
- Buttons:** Send, Cancel, Help

32. Click Send

This will send the email to the selected address.

When you are finished with this task, you should check the In Box at the address the email has been sent to in order to verify that it has been received. It is recommended that you use an email address you can easily access.

Test the import facility

This task will walk you through a test import with a sample Excel spreadsheet in order to ensure that the import functionality is working properly.

1. Access the Import Profile Manager dialog

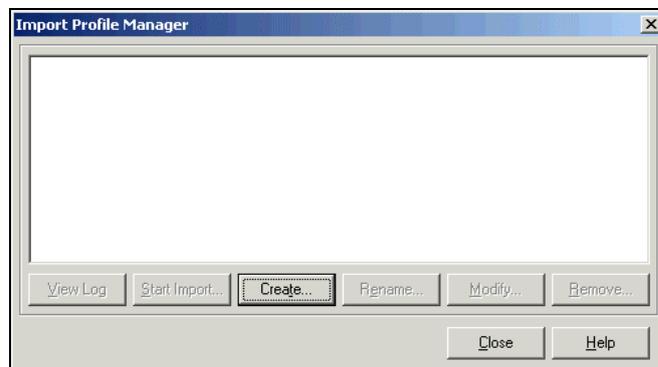
Access this dialog by selecting the Import Manager icon from the toolbar:



Alternatively, make the following selections from the menu:

Actions ► Office Integration ► Import

The Import Profile Manager dialog is displayed:



2. Click Create

Click Create to activate the Import Creation and Amendment wizard.

3. Click Next

4. Click Browse

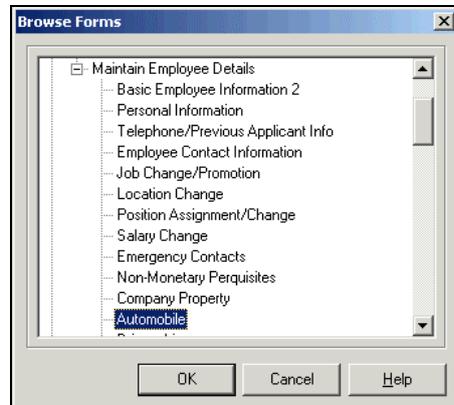
If the form displayed in the dialog is not the form to be selected for import, or if no form is being displayed, click Browse to view a list of available forms. This list contains only those forms you are authorized to access. Forms that can not be used with the import functionality are not displayed.

Use this dialog to select the The Solution Series form into which the test file will be imported.

5. Select the The Solution Series form

For the test file, make the following selections:

Employee Resourcing ► Maintain Employee Details ► Automobile



6. **Click OK**
Clicking OK will select The Solution Series form.
7. **Click Next**
8. **Click Browse**
The Open dialog will appear. Use this dialog to select the import file.
9. **Select the import file**
Use the Open dialog to find the following file path:
 \Program Files\Cyborg Systems\Clientxx\Samples\car.xls
10. **Click Open**
This will select the Excel file.
11. **Click Next**
12. **Select the First record is a header option**
This option tells the system to use the first record in the spreadsheet as a column heading.
13. **Click Next**
Now you must establish the relationship between the spreadsheet you are importing and the form into which you exporting it.
14. **Click Next**
Define the relationship between the spreadsheet and the form. The next step of this task will explain more about this relationship.
15. **Map the import-to-form relationship**
Use the 'select the name' method to map the fields in the spreadsheet to the Automobile Information form.

- For each spreadsheet field displayed in the bottom section of the dialog, click on the top row of the column. A drop-down list will display.
- Choose the field name from the drop-down list that matches the column names. The top row of the column will be updated to show the field name, and the matching field on the form will change to yellow to show that mapping has occurred. You will not see any color changes for the fields 'organization' and 'employee'.

Import Creation and Amendment Wizard step 7 of 8

The Solution Series Wizard

Automobile Information VOID, VOID VOID VOID V

Fleet ID> [Yellow]
Date> [White]
Number: [Yellow]
Make: [Yellow]
Model: [Yellow]
Color: [Yellow]
Miles: [Yellow]
Serviced (MM/YY): [White]
Date Recovered: [White]

(Organization)	Fleet ID	Number	Make	Model	Color
(Organization)	Fleet	Number	Make	Model	Color
(Employee)	6215	12345	Nissan	Sentra	Blue

on from the drop-down list if your import file does not [Organization in file above]

Next> Cancel Help

- Type the letter 'T' in the Date field. This causes the current date to be used. The field color will change to blue.
- Leave the other fields on the form blank.

16. Click Next

17. Click Finish

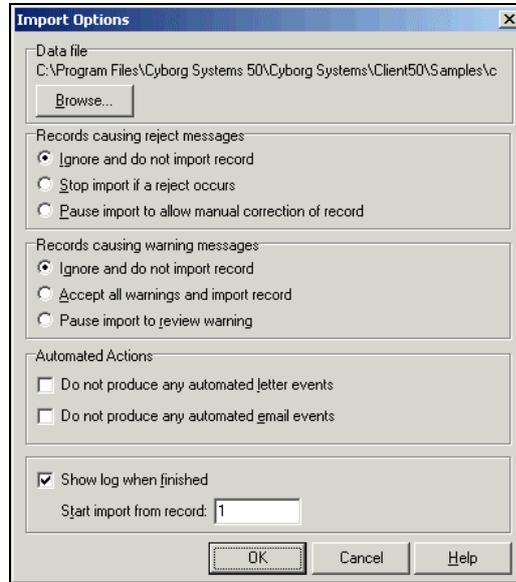
The Wizard will return you to the Import Profile Manager, and the import profile you have just created will appear in the dialog.

18. Select the desired import

Select the Import from car to Automobile Information form.

19. Select Start Import

Click **Start Import** to start the import of data to The Solution Series. The Import Options dialog is displayed:

**20. Click OK**

Click **OK** to continue the import.

The Solution Series will display a log after the import is complete. If no errors are reported, then the import was a success.

Your installation of The Solution Series for Microsoft Windows on the Administrative client is now complete.

PART 4

Appendices

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APPENDIX A

Directory Contents

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Server directory structure

Overview

The Cyborg server software is delivered in two main directories:
`/cyborghome/app` and `/cyborghomeThe Solution Series`.

/cyborghome/app

The `/cyborghome/app` directory contains application-specific delivered source and executables.

- The `/cyborghome/app/server` subdirectory contains the delivered scripts and executable of the Cyborg Application Server (CAS) daemon. This directory will also contain the system log of CAS execution and events.
- The `/cyborghome/app/server/trace` subdirectory will contain the detail trace files of execution of every client when CAS is in debug mode.

/cyborghome/cyborgxx

The `/cyborghome/cyborgxx` root directory contains the following subdirectories:

Subdirectory	Description
	Data files and control records
	Output from script processing
	Optional output from script processing
	Source and executable files
	Delivered scripts

Subdirectory	Description
	Temporary files

/cyborghome/app/server

The following files are shipped with CAS under the `/cyborghome/app/server` directory:

Filename	Description
<code>cybservd</code>	The CAS server executable
<code>casmgr</code>	CAS administration utility
<code>cas</code>	Script to start CAS
<code>cybapp.cfg</code>	List of The Solution Series applications
<code>cybenv.cfg</code>	List of The Solution Series environments
<code>viewlog</code>	Prints all detail from the System Log/trace file
<code>viewlog.msg</code>	Prints only the log message from the System Log/trace file

The following files are created by CAS as it executes:

Filename	Description
<code>/cyborghome/app/server/system.log</code>	Log of CAS execution and events
<code>/cyborghome/app/server/trace/*.trc</code>	Detailed trace files of execution of every client

cyborghome/cyborgxx/data

The `cyborghome/cyborgxx/data` directory contains the following files:

Filename	Description
<code>taxfile</code>	The Tax Authority file (U.S.).
<code>taxfilec</code>	The Tax Authority file (Canada).
<code>BESS</code>	Command Line Script called by the RSPAWNNESS script to run the Enhanced Interactive Workforce System.
<code>BHLD</code>	Called by the RSPAWN script to call the bulk load program to copy extracted data into the tables specified.

BHRD	Called by the RSPAWN script. This script runs report and creates intermediate files.
BISLOCK	Checks to see if specified file is available for access.
BISW	Called by the RSPAWN script to run the Enhanced Is/Was report and create intermediate files.
BIWE	Called by the RSPAWN script to run the Enhanced Interactive Workforce Is/Was report, create intermediate files, then rename files in the users sub-directory.
BMRG	Runs an online batch payroll merge.
BPAY	Runs an online batch payroll.
BRDT	Runs an online batch report.
BXTR	Runs an online batch pay extract.
cbsv	Contains source code for cbsvb, cbsvbt, cbsvo, and cbsvot.
cbsv.ovr	Overrides to cbsv source.
cybmst	Contains source code for all the batch programs (p2edit, p4calc, p5prnt, p9cnvt, and o4calc), COBOL and assembler subroutines, and report generators.
demo0105	The Solution Series System Control Repository in sequential format. This file contains option lists, tables, documentation, test data, and all Cyborg Scripting Language programs.
eprrdio05	Special MAINTI05 file for including Enhanced Payroll Processing and DDI CheckList and Menu records via an additional installation process.
JPRT	Submit/View. Produces printed copy of reports held for online viewing.
JQRY	Submit/View. Produces printed copy of online query.
JRPT	Submit/View. Produces printed copy of a submitted report.
P05rdrgt.dat	File used for pulling quarterly rg's and qtrmisc.
P5prnt.ovr	Overrides to p5prnt source.
p9cnvt.ovr	Overrides to p9cnvt source.
p9cbsv.04	Report generator extract parameters for jxp9cbsv.
p9strt.04	Report generator extract parameters for jxp9strt.
rdbgm	Relational only. Contains source code for rdbpgm0.cob, rdbpgm2.cob, rdbpgm3.cob, and rdbpgm4.cob
RESS	Required for Enhanced Reporting. Starts RSPAWNESS to revert control back to CBSVO.

RLCH	Required for Enhanced Reporting. Starts RSPAWN to revert control back to CBSVO.
RMRG	Required for Enhanced Reporting. Starts RSPAWMRG to revert control back to CBSVO.
RPAY	Required for Pay Process. Starts RSPAWNPAY to revert control back to CBSVO.
RSPAWN	Used for generating CBSVB output message logs on RLCH.
RSPAINESS	Used for generating CBSVB output message logs on RESS.
RSPAWNMRG	Used for generating CBSVB output message logs on RMRG.
RSPAWNPAY	Used for generating CBSVB output message logs on RPAY.
vers80.ovr	Overrides to <code>cybmst</code> source.

/cyborghome/cyborgxx/prog

The `/cyborghome/cyborgxx/prog` directory contains the following files:

Filename	Description
<code>cbsvb.cob</code>	Non-relational program source code used to process The Solution Series in batch
<code>cbsvb.mf2</code>	Non-relational program source code used to process The Solution Series in batch
<code>cbsvbt.cob</code>	Non-relational trace program source code used to process The Solution Series in batch
<code>cbsvo.cob</code>	Non-relational program source code used to process The Solution Series online
<code>cbsvot.cob</code>	Non-relational trace program source code used to process The Solution Series online
<code>cbsvrft.cob</code>	Subroutine used in non-relational installations to determine segment and segment key lengths
<code>cybio.cob</code>	Program for System Control Repository (<code>FILE01</code>) IO
<code>p10sort.cob</code>	Program that sorts data records in ascending order. Files used: <code>p05in</code> and <code>p05out</code>
<code>p45sort.cob</code>	Program that sorts data records in ascending order. Files used: <code>p40in1</code> and <code>p40out</code>
<code>p80copy.cob</code>	Program that adds carriage returns and line feeds to each record in a data file
<code>p80sort.cob</code>	Program that sorts data records in ascending order.
<code>pfssort.cob</code>	Program that sorts data records in ascending order Used in <code>f-segm</code>

Filename	Description
p9cnvt.cob	Program source code used to extract any member from the cybmst file

/cyborghome/cyborgxx/runs

The /cyborghome/cyborgxx/runs directory contains the following files:

Filename	Description
jbackem	Creates a sequential version of FILE1
jbldaky	Builds alternate keys
jclean01	Removes extraneous information from the MAINTO. For upgrades from 3.2 or 4.0.
jclean3x	Removes extraneous information from the MAINTO. For upgrades from 4.5.1 or 4.5.2.
jcmpcbio	Compiles and links cybio, skcybio, and logging
jcmpcvbn	Compiles the delivered non-relational batch programs
jcmpcvn	Compiles the non-relational batch programs as pulled from the csv file
jcmpcvr	Relational only. Compiles the relational batch programs as pulled from the csv file
jcmprdb0	Relational only. Compiles and links rdbpgm0.cob program
jcmprdb1	Relational only. Precompiles, compiles, and links the rdbpgm1.cob program
jcmpsort	Compiles p10sort.cob, p25sort.cob, p80sort.cob, p80copy.cob and pfssort.cob
jcmpsubr	Relational only. Compiles rdbpgma through rdbpgmh
jconvna	Converts 3.0/4.0 name format to 3.2/4.5 format
jrctcyb	Relational only. Creates the tablespaces, tables, indexes and views for the CYBORG database
jrctpgms	Relational only. Creates RDB programs rdbpgm1, and rdbpgma through rdbpgmh
jcycbio	Initiates the online System Control Repository (FILE01) IO by executing the cybio program
jdemo01	Creates indexed System Control Repository from sequential FILE05 (demo0105)
jexport	Exports the 'F1' and 'FTM' records from the System Control Repository. The output FILE10 is used as input FILEIN2 in jrctpgms
jf-xref	Recreates RFT records on System Control Repository (FILE01).

Filename	Description
jhrdemo	Pulls test data from the System Control Repository and populates the online Employee Database.
jhrdemoc	Pulls test data from the System Control Repository and populates the online Employee Database. (Canada.)
jmainti	Updates the System Control Repository
jmainto	Compares current System Control Repository with original FILE05 (demo0105) and produces FILE10 (mainto10), which contains the differences found
jmakecl	Extracts option list values, field definitions, screen security, and PC menu records from the System Control Repository
jmnrtrun	Updates Labor and History records following the Batch pay calculation
jp20strt	Creates the p20in batch Master File for the first time
jpymrg	Creates or updates the online Employee Database
jpayrun	Calculates pay and produces checks, reports, and a combined register
jpaxtr	Pulls timecards and adjustments from the online Employee Database and creates FILE12 (P20 Master), which will be the new p20in file
jpffsort	Sample script to run segment layout report
jpopf01	Relational only. Populates the option list and specific application tables
jpdemo	Pulls test data from the System Control Repository (Control File; FILE01) and populates fields in the online Employee Database. This script is used when first building the employee database during installation.
jpdemoc	Pulls test data from the System Control Repository (Control File; FILE01) and populates fields in the online Employee Database. This script is used when first building the employee database during installation. (Canada)
jpul_rdb	Relational only. Extracts the CASE tool, rdbpgm0, rdbpgm2, rdbpgm3, and rdbpgm4
jpulcvn	Pulls non-relational batch programs cbsvb, cbsvbt, cbsvo, and cbsvot from the csv file
jpulcvr	Relational only. Pulls relational batch programs cbsvb, cbsvbt, cbsvo, and cbsvot from the csv file
jqtrrun	Runs the quarterly processor.
jrebuild	Recreates System Control Repository using the output from jbackem

Filename	Description
jreload	Reloads (Cyborg's compile routine) Cyborg Scripting Language programs in the System Control Repository
jreport	Extracts reports from System Control Repository and the Employee Database
jrptmnu	Creates menu records on System Control Repository for enhanced pay processing.
jupdcybm	Updates the cybmst file with program updates or report generators
jxcybmst	Extracts and compiles cybmst programs (o4calc, p2edit, p4calc, p5prnt, and p9cnvt)
jxo4calr	Extracts COBOL program o4calc from cybmst, compiles the relational program, and links the machine-specific sub-routines
jxp5qtr	Creates P5QTR file.
jxp5w2pr	Extracts data for quarterly processor.
jxrept20	Extracts report generator 20 from cybmst in order to add new Organization Control Number values (companies) to the p20in Batch Master File
jxrptgen	Extracts report generators from cybmst
online	Initiates the online Solution SeriesThe Solution Series system by executing the cbsvo program
onlinet	Initiates the trace online Solution SeriesThe Solution Series system by executing the cbsvot program
rj	Command used for installing UNIX files.

A P P E N D I X B

Installation Checklists

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Installation Checklist - Indexed Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Create user and file system

Phase 2: Extract and Transfer Install Files

- The Solution Series directory structure
- Extract install files to a PC
- Transfer install files from the PC to the server
- Extract server install files
- Set up user profile
- Verify compiler versions
- Check special requirements

Phase 3: Compile Batch and Build FILE01

- Pull all cybmst programs
- Compile and link the delivered cbsvb and cbsvrf
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository

Phase 4: Compile CBSV and CYBIO

- Pull all cbsv programs - jpulcvn/r
- Compile and link all cbsv programs
- Compile and link cybio

Phase 5: Create Test p20in Batch Master

- Create test p20in Batch Master

Phase 6: Create Employee Database with pay history

- Create test Employee Database
- Populate database with test data
- Update p20in Batch Master File

- Apply taxes, timecards, and adjustments
- Create pay history
- Update the Employee Database

Phase 7: Extract HR reports

- Script Used: jreport

Phase 8: Apply System Control Repository Menu Additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Relational Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Create user and file system

Phase 2: Extract and Transfer Install Files

- The Solution Series directory structure
- Extract install files to a PC
- Transfer install files from the PC to the server
- Extract server install files
- Set up user profile
- Verify compiler versions
- Check special requirements

Phase 3: Compile Batch and Build FILE01

- Pull all cybmst programs
- Compile and link the delivered cbsvb and cbsvrf
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository

Phase 4: Compile CBSV and CYBIO

- Extract the CASE tool
- Compile rdbpgm0.cob
- Export F1 and FTM records
- Execute the make command
- Execute the CASE tool
- Pre-compile, compile, and link rdbpgm1
- Create the tablespaces, tables, indexes, and views in the Cyborg database
- Create the tablespaces, tables, indexes, and views in the Cyborg database
- Pre-compile, compile, and link rdbpgma through rdbpgmh

- Script Used: jcmpsubr
- Create the tablespaces, tables, indexes, and views in the Cyborg database
- Create the tablespaces, tables, indexes, and views in the Cyborg database

Phase 5: Create Test p20in Batch Master

- Pull all cbsv programs - jpulcvn/r
- Add Oracle link to jcmpcvr
- Compile and link all cbsv programs
- Compile and link cybio

Phase 6: Create Employee Database with pay history

- Create test p20in Batch Master

Phase 7: Extract HR reports

- Create test Employee Database
- Populate option list and application tables
- Populate database with test data
- Update p20in Batch Master File
- Apply taxes, timecards, and adjustments
- Create pay history
- Update the Employee Database

Phase 8: Apply System Control Repository Menu Additions

- Script Used: jreport

Phase 9: Apply System Control Repository Menu Additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Cyborg Application Service (CAS) Installation and Configuration

Install and Configure the Cyborg Application Server (CAS)

- Install CAS
- Start cas
- Configure the environment

Installation Checklist - Installing and Configuring the Administrative Client

Phase 1: Prepare for installation

- Ensure Cyborg Application Service is active
- Complete a configuration worksheet

Phase 2: Install the software

- Install Client files
- Install Document Data Interface (DDI)---optional
- Install Enhanced Payroll and Reporting (EPR)---optional

Phase 3: Configure the software

- Set Up Your Environment
- Configure the Cyborg Desktop (Optional)

Phase 4: Test the installation

- Run the Messaging Test Tool
- Test the connection to the server
- Test the GUI
- View the Favorites Toolbar
- Define the email and letter template folder
- Test Word integration
- Test email integration
- Test the import facility

APPENDIX C

Creating Separate Environments on the Server for the Client

In This Appendix

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Phase 2:Performing client configuration.....	130

Phase 1: Performing server configuration

Task overview

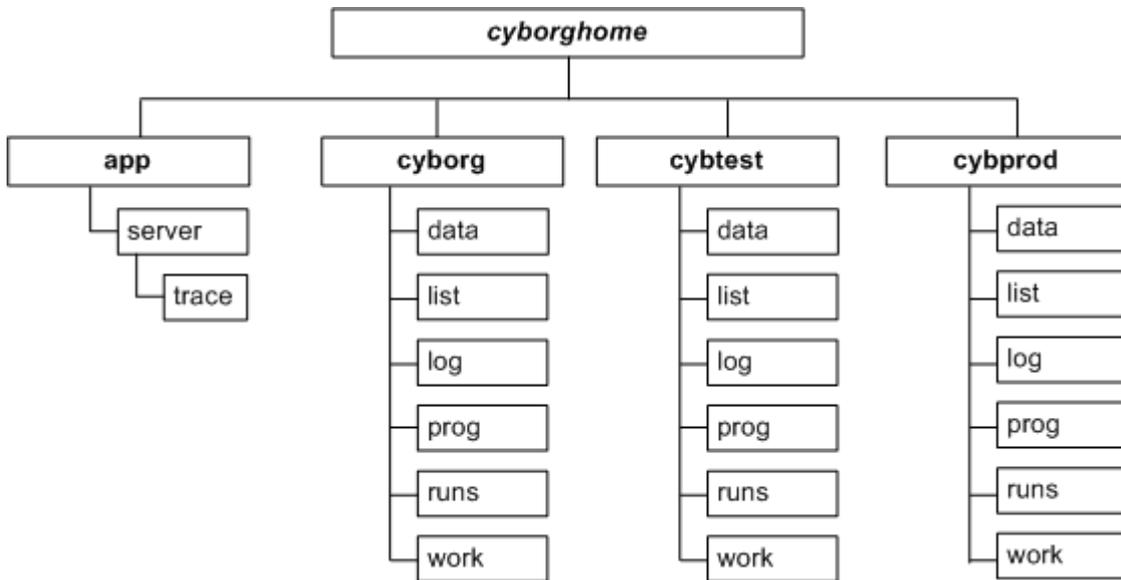
Complete the following tasks depending upon the type of environment you are configuring:

If <i>existing</i> configuration is ...	And <i>new</i> configuration is ...	Perform
non-relational	non-relational	<ul style="list-style-type: none">■ Create a unique directory under <code>cyborghome</code>■ Copy programs from the first installed environment■ Add additional environments to the Cyborg environment configuration file■ Grant read, write, execute permissions to user Id 'CYBORG' for each new subdirectory (runs, work, list, prog, data)
relational	non-relational	All Tasks
non-relational	relational	<ul style="list-style-type: none">■ Create a unique directory under <code>cyborghome</code>■ Copy programs from the first installed environment■ Complete the Installation

Create a unique directory under cyborghome

Create a unique directory structure at the server.

Note As shown in the diagram below, the `/cyborghome/app` directory must exist only **once**—no matter how many Cyborg environments you have installed.



Copy programs from the first installed environment

Maintaining the directory structure, copy all files from the first environment you installed at the server (for example, copy contents of `/cyborghome/cyborg` onto `/cyborghome/CybProd`).

Delete programs that will be recreated

Delete the following programs from your new directory on the server:

```

/cyborghome/CybProd/prog/del rdbpgm1.*
/cyborghome/CybProd/prog/del rdbpgma.*
/cyborghome/CybProd/prog/del rdbpgmb.*
/cyborghome/CybProd/prog/del rdbpgmc.*
/cyborghome/CybProd/prog/del rdbpgmd.*
/cyborghome/CybProd/prog/del rdbpgme.*
/cyborghome/CybProd/prog/del rdbpgmf.*
/cyborghome/CybProd/prog/del rdbpgmg.*
/cyborghome/CybProd/prog/del rdbpgmh.*
/cyborghome/CybProd/prog/del cbsv*.*
/cyborghome/CybProd/list/del *.*

```

Note Assumes `/cyborghome/cyborg` is the current relational environment and `/cyborghome/CybProd` is the second environment to be set up.

Copy Cyborg delivered files

Copy the Cyborg delivered files:

```
/cyborghome/CybProd/prog/cbsvb.mf2  
to  
/cyborghome/CybProd/prog/cbsvb.cob  
/cyborghome/CybProd/prog/cbsvrft.cob  
to  
/cyborghome/CybProd/prog/cbsvrft.cob
```

Complete the Installation

To complete the installation, following the instructions below for either non-relational or relational:

Non-relational

To complete a *non-relational* installation, go to ***Indexed Server Installation and Configuration***, and perform the Phases and Tasks listed below:

- **Phase 3: Compile Batch and Build FILE01 - Solution Series Install UNIX** (see "Phase 3: Compile Batch and Build FILE01" on page 26)
 - **Pull all cybmst programs** (on page 26)
 - Compile and link the delivered `cbsvb` and `cbsvrft` (on page 26)
 - **Create System Control Repository** (on page 26)
- **Phase 4: Compile CBSV and CYBIO** (on page 28)
 - Pull all `cbsv` programs (see "Pull all cbsv programs - jpulcvn" on page 28)
 - Compile and link all `cbsv` programs
 - Compile and link `cybio` (on page 28)
- **Phase 6: Create Employee Database with pay history** (see "Phase 6: Create Employee Database with pay history" on page 30)
 - Complete all tasks.

Relational

To complete a *relational* installation, go to Relational Server Installation and Configuration, and perform the Phases and Tasks listed below:

- **Phase 3: Compile Batch and Build FILE01** (on page 26)
 - Compile and link the delivered `cbsvb` and `cbsvrft`
 - Create System Control Repository

■ **Phase 4: Create Cyborg Relational Databases** (see "Phase 4: Compile CBSV and CYBIO" on page 46)

- Export F1 and FTM records
- Execute the make command
- Execute the CASE tool (`rdbpgm0` program)
- Pre-compile, compiles and link `rdbpgm1`
- Create the tablespaces. Tables, indexes, and views in the Cyborg database
- Pre-compile, compile, and link `rdbpgma` through `rdbpgmh`
- Extract, compile, and link `04calc`
- Edit `cbsv.ovr`
- Pull all `cbsv` programs
- Pre-compile, compile, and link all `cbsv` programs

■ Phase 4: Create Employee Database with pay history

- Complete all tasks.

Add additional environments to the Cyborg environment configuration file

Edit the file `cybenv.cfg` to configure an environment for *The Solution Series* users.



*For instructions on how to edit the `cybenv.cfg` file, see the *Configuring a new environment on the server* section in **Administering the Cyborg Application Server (CAS) Daemon** (on page 165).*

Grant read, write, execute permissions to user Id 'CYBORG' for each new subdirectory (runs, work, list, prog, data)

Phase 2: Performing client configuration

Configure a new environment connection at the client

To configure a new environment connection at the client, perform the following steps:

1. Access the Connection Editor dialog box

Access this dialog box by selecting:

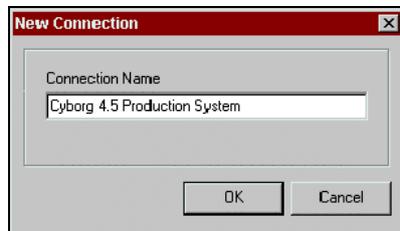
Start > Programs > The Solution Series xxx > Connection Editor

2. Click New

The New Connection entry dialog box displays.

3. Enter a Connection Name

Identify a title for the connection you will configure between the client and the server. For example, if your production environment is called `CYBPROD` and your test environment is called `CYBTEST`, you can assign a more user friendly name here such as `Cyborg 4.5 Production System`. If a user requires multi-environment access, additional environments can be set up later. This label must not contain characters `\\:*?!\"<>_'`.



Note You must create a folder on the server which will match the Connection Name that you enter here. See *Build the Client Data File, Step 6*. Create a connection subdirectory at the client.

4. Click OK

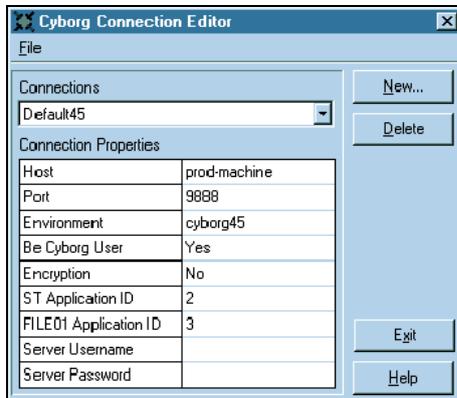
The Connection Editor dialog box displays a new connection with default settings, ready for configuration.

5. Type the configuration details

Type the following configuration details under Connection Properties on the Connection Editor dialog box:

Item	Description
Host	Identify the system name of the UNIX server, as identified on the network.
Port	Identify the port address of the UNIX server. For the Cyborg Application Server (CAS), Cyborg has registered the port address of 9888. Note You must also identify the 9888 port address on the server by editing the <code>/etc/services</code> file, as described in Chapters 3 and 4, Phase 6: Install and configure Cyborg Application Server (CAS) daemon.
Environment	Identify the environment name (up to 8 characters). Examples are: <code>ST45PROD</code> , <code>ST45TEST</code> . Note This same environment name must also be entered in the <code>cybenv.cfg</code> file on the server, as described in Appendix E: Administering the Cyborg Application Server (CAS) Daemon.
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
ST Application ID	The application name and ID number for The Solution Series application. This application ID is configured to 2 as identified in <code>cybapp.cfg</code> on the server.
FILE01 Application ID	The application name and ID number for the <code>CYBIO</code> application. This application ID is configured to 3 as identified in <code>cybapp.cfg</code> on the server.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

After you have made these entries on the Cyborg Connection Editor, it should look like this:



6. Click Exit

The new connection has been configured between the server and the client.

Build the Client Data File

This task details how to build the Client Data File using the Build FileCL utility.

Note You can build one Client Data File at the server for each environment, then copy it to each client.

Note The Client Data File can also be built by deleting the existing FILECL32. When a person logs on to the system after this has been deleted, The Solution Series will automatically build a new Client Data File.

1. Run Export Client File utility (makecl) on the server Script used: jmakecl

To obtain the source file for the Client Data File, execute the `jmakecl` script from the `$runs` subdirectory. For example:

```
nohup jmakecl > jmakecl.log &
```

Review the log to determine if there were any errors.

The `makecl110` file (FILE10) must then be copied to a local client PC.

Note Run this script in each environment for which you want to create a client data file.

2. Launch the Build Client Data File Builder program

Launch this dialog box at the client by selecting:

Start > Programs > The Solution Series ST 4.5 > Build Filecl

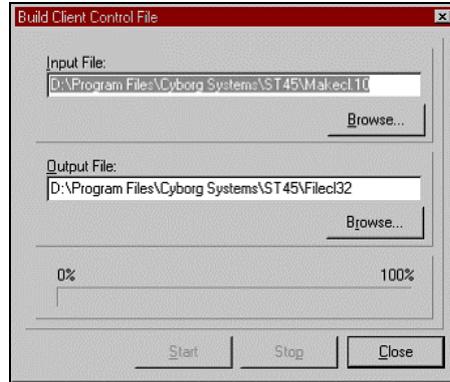
Note This executable is only available where you selected a Custom installation and included this program in the installation.

3. Locate the Input file

Browse to the location of the output file from step 1, which was copied to the local client PC from the server, and select it.

4. Locate the new Client Data File

Browse to the temporary location where you want the new Client Data File (FILECL32) to be built. From this location, the Client Data File will be copied to the client locations.



5. Click Start

A new FILECL32 is created. When the file is built, the Start button will be re-enabled. Click Cancel.

6. Create a connection subdirectory at the client

Copy the Default environment directory under the C:\Program Files\Cyborg Systems\ST4\Environments directory and rename it by the same name as the new connection name.

For example, copy contents

from: C:\Program Files\Cyborg Systems\ST45\Environments\Default
 to: C:\Program Files\Cyborg Systems\ST45\Environments\Cyborg Production System.

Note The folder that you create here must match the name that you entered in the Cyborg Connection Editor dialog box in Task 1: Configure a new environment connection at the client.

7. Copy the Client Data File to the client directory

Copy this Client Data File (FILECL32) to the appropriate environment directory on the client (for example, C:\Program Files\Cyborg Systems\ST4\Environments\Cyborg Production System).

8. Edit the Wallpaper.bmp file (optional)

The wallpaper.bmp file is located in each environment subdirectory. Copy wallpaper.bmp to each environment you create.

Using any graphics package, edit the delivered graphic or create a new image or save it as `Wallpaper.bmp` in the new subdirectory.

Note We highly recommend you change the Wallpaper when you have multiple versions of the system. This will help the user easily identify which version they are working in.

Test the connection (on the client)

1. Launch The Solution Series

Select:

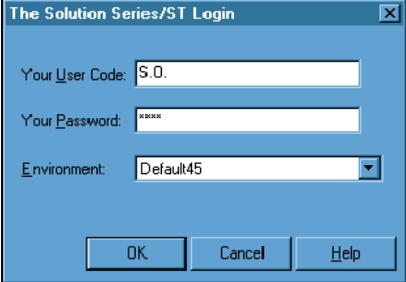
Start ► Programs ► The Solution Series ► The Solution Series
The Welcome screen displays.

2. Select the Start button on the Welcome screen

The sign on dialog box displays.

3. Sign on as the Security Officer

Select the environment you want to access, enter your user name and password.



4. Click OK

The work area for The Solution Series displays.

5. Sign off The Solution Series

APPENDIX D

ORACLE Database Considerations

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Overview

This section has been provided to assist Cyborg customer DBAs to properly create the database and minimize any 'rework' in the future or troubleshoot database problems.

Understanding the Cyborg Database

There are several things you should understand when working with the Cyborg database. This section explains the specifics of the database.

Tablespaces

There are 8 database tablespaces created to hold Cyborg data and index objects:

Tablespace 0	Temporary tablespace the Cyborg user will use
Tablespace 1	Company data + Labor/History Indexes
Tablespace 2	Other Record data + Employee Indexes
Tablespace 3	Tax data + Tax Indexes
Tablespace 4	Employee data + Other Record Indexes
Tablespace 5	Labor/History data + Company Indexes
Tablespace 6	Option List/Application Tables
Tablespace 7	Option List/Application Table Indexes

Cyborg user account

An ORACLE user account should be created to own the Cyborg database objects. Use the following guidelines:

- Minimum database privileges this user should be granted.
- Create database tables, views, synonyms, roles, procedures, and triggers.
- Select, insert, update, and delete for database tables and views.

Enough memory on machine

Before tuning memory for ORACLE, ensure that enough memory resides on your machine for the following:

- Operating system
- Assortment of support mechanisms for the operating system
- Database engine, tools, and shadow processes for your version of ORACLE
- Software that coexists with ORACLE on your machine
- Network of operating system buffers
- ORACLE databases that coexist on your machine
- Memory overhead per user on the system
- Operating system overhead for supporting the read-and-write requests of all of those users

Tuning ORACLE with INIT.ORA parameters

To see the current value of your `init.ora` parameters, you can no longer rely on reading the `init.ora` file; you should select all of the parameter names and values from `V$PARAMETER` instead. The setting of the INIT.ORA Parameters customizes the performance of each ORACLE instance to its particular needs. While default settings often yield adequate performance, the peak performance ORACLE is capable of delivering can often be attained only by careful tuning of each parameter.

While most of the parameters can be adjusted only after the database is in use, the following parameters can be adjusted immediately upon installation:

- SYSTEM GLOBAL AREA (SGA)
 - DB_BLOCK_SIZE
 - DB_BLOCK_BUFFERS
 - SHARED_POOL_SIZE
- OPEN_CURSORS
- PROCESSES
- SORT_AREA_SIZE
- DML_LOCKS
- LOG_BUFFER
- ROLLBACK_SEGMENTS

The parameters are listed in order of maximum performance gain.

SYSTEM GLOBAL AREA (SGA)

It is important that the `SHARED_POOL_SIZE` and `DB_BLOCK_BUFFERS` account for 90% of the SGA total size. In addition, the SGA should never take over 50% of the available memory. In a `SVRMGR` session, enter the following to determine the SGA values:

```
sho SGA
```

DB_BLOCK_SIZE

The size of a database block in bytes. We suggest using the default value of 2048.

DB_BLOCK_BUFFERS

The number of database blocks cached in memory. Each buffer in the cache contains one ORACLE block. The larger the cache, the more data ORACLE can hold in memory. If the data is not in memory, ORACLE issues the needed I/O request to obtain the data, which is the slowest operation a computer can perform. Set this value to the maximum number of buffers that could be added without causing paging.

SHARED_POOL_SIZE

The size in bytes of shared pool. If the ratio of reloads to pins exceed 1 percent, you should increase this parameter. This can be determined by a simple query:

```
SQL>SELECT (SUM(reloads/SUM(pins)) * 100 'Miss %' from V$LIBRARYCACHE;
```

OPEN_CURSORS

This parameter is the maximum number of cursors that a user can have open at one time. To fully use the higher value for `SHARED_POOL_SIZE`, you may also want to increase the number of cursors available to each user (`OPEN_CURSORS`).

PROCESSES

This parameter limits the number of users who can concurrently access the instance. This parameter does not effect performance but is a useful starting point in defining expected requirements for ORACLE. Keep in mind that the background processes are included in this number and if the application spawns processes recursively, all these spawned processes count.

SORT_AREA_SIZE

This is the amount of memory per user process that is allocated for sorting. Size your `SORT_AREA_SIZE` to fit the need of the users. This is a big user of memory and also a big help with performance.

DML_LOCKS

This parameter is the maximum number of locks that can be placed on all tables by all users at one time. Experience has shown this parameter should be set high, as this parameter has no effect on performance.

LOG_BUFFER

This parameter is the number of bytes that are allocated to the redo log buffer in the SGA. If the ORACLE system is processing many in-process transactions, this parameter should be increased to reduce I/O to the redo logs.

ROLLBACK_SEGMENTS

This parameter is a list of all the rollback segments available to user processes. The system rollback segment should never appear in this parameter's list. All of the user rollback segments should be the same size since they are allocated randomly. Rollback segments should be large enough to contain all of the rollback information for any anticipated transaction. Always name your rollback segments in the initialization parameter file. Always place your rollback segments in their own tablespace.



Refer to 'Managing Rollback Segments', later in this appendix.

Space Management

Space is needed for the following objects to extend tables and indexes, rollback segments, and temporary tables:

Tables and indexes

This is caused by the said objects needing additional space to satisfy an insert or update.

Rollback segments

If the culprit is a rollback segment, the error ora-1562 'failed to extend rollback segment (id = %s)' will always precede the ora-1547. The ora-1562 is telling us that it could not extend the rollback segment, and the reason is the ora-1547—not enough space.

Temporary tables

These are tables created by the ORACLE kernel to do a sort on behalf of the user. A user can tell that he is running out of space for a temporary table, based on the operation he/she is performing (such as creating an index, doing a query with an order by, or a lengthy join statement). The temporary tablespace the user will use can be seen by performing the following query:

```
SQL>select temporary_tablespace from sys.dba_users where
username='<USERNAME>';
```

If the space being used seems too large, you may want to investigate the default storage for the temp tablespace—it is possible that the defaults are too small. To see the default storage, perform the following query:

```
SQL>select initial_extent, next_extent, min_extents, pct_increase
from sys.dba_tablespaces
```

```
where tablespace_name='<NAME>;
```

Adjustments can be made to the default storage of the tablespace by issuing the following command:

```
SQL>alter tablespace <NAME> storage (initial xxx next xxx....);
```

Space can be added to a tablespace using the 'ALTER TABLESPACE' command (full syntax below). This statement will create a database file on disk and enlarge the existing tablespace. The statement can be performed on all tablespaces (including system) without shutting down the database or taking the tablespace offline. Immediately following the completion of the statement, the space is available.

```
SQL>alter tablespace <TABLESPACE_NAME> add datafile '<PATH/FILENAME>'
size <size_of_file> reuse;
```

To get an idea of the naming conventions or locations for existing files, perform the following query:

```
SQL>select file_name from sys.dba_data_files where  
tablespace_name='<NAME>';
```

Understanding and resolving common ORACLE sizing errors with tablespaces

Error 01658: Unable to create INITIAL extent for segment in tablespace %s

Cause:	Failed to find sufficient contiguous space to allocate INITIAL extent for segment being created.
Action:	Use ALTER TABLESPACE ADD DATAFILE to add additional space to the tablespace or retry with a smaller value for INITIAL.

ORACLE will ALWAYS try to allocate CONTIGUOUS space. Although the tablespace may have enough free space, if it is not contiguous, the error will occur. To see if you have enough contiguous space in the tablespace, perform the following query:

```
SQL>select max(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This will return one record which shows the biggest chunk of space free in the tablespace in question. This number will be lower than the one returned by the error. If you wish to compare the contiguous space with total space, perform the following query:

```
SQL>select sum(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This also returns one record. This value can be compared to the record above to see how much of the total space is contiguous.

Understanding and resolving common ORACLE sizing errors with tables

Error 01631: Max # extents (%s) reached in table %s.%s

Cause:	A table tried to extend past maxextents.
Action:	Recreate the table with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01653: Unable to extend table %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for table segment in tablespace
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and Resolving common ORACLE sizing errors with indexes

Error 01632: Max # extents (%s) reached in index %s.%s

Cause:	An index tried to extend past maxextents.
Action:	Recreate the index with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01654: Unable to extend index %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for index segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and resolving common ORACLE sizing errors with rollback segments

Error 01628: Max # extents (%s) reached for rollback segment %s

Cause:	Tried to extend rollback segment already at maxextents value.
Action:	Recreate the rollback segment with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01650: Unable to extend rollback segment %s by %s in tablespace %s

Cause:	Failed to allocate an extent for rollback segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Managing rollback segments

A rollback segment consists of contiguous multi-block pieces called extents. The segment uses these extents in an ordered circular fashion, moving from one to the next after the current extent is full. A transaction writes a record to the current location in the rollback segment and advances the current pointer by the size of the record.

To determine a general rollback segment configuration, balance the number of segments against the size of each segment, such that the space needed will fit into the available disk space.

Make sure that there are enough segments to avoid contention as processes access them. But also make sure that individual rollback segments are large enough for their transaction load.

Balancing transaction requirements

The next section discusses balancing these two requirements.

- A transaction can only use one rollback segment to store all of its rollback (undo) records.
- Multiple transactions can write to the same extent.

There are two issues that need to be considered when deciding if your segment is large enough.

First, make sure that transactions will not cause the head to wrap around too fast. This causes the segment to extend in size, per the principles mentioned above.

Second, if you have long running queries that access data that frequently changes, make sure that the rollback segment does not wrap around to prevent the construction of a read consistent view.



Refer to the ORACLE Database Administrator's Guide for discussions on 'read consistency' on 'avoiding the snapshot too old error'.

The size needed for a rollback segment depends directly on the transaction activity of your database. Be concerned about the activity during normal processing of the database, not with rare or semi-frequent large transactions. These special cases are to be dealt with separately.

The number of rollback segments needed to prevent contention between processes can be determined with the help of the monitor rollback display and the use of the V\$WAITSTAT table.

Undo headers may occur if there are not enough rollback segments to support the number of concurrent transactions. The following V\$WAITSTAT query will display the number of waits since instance startup:

```
SQL>SELECT * FROM V$WAITSTAT WHERE CLASS = 'undo header';
```

To find out the size and number of rollback segments needed for normal processing on the database, you need to do some testing. A good test is to start with small rollback segments.

Allow your application to force them to extend. Here are the steps to run such a test:

1. Create a rollback segment tablespace.
2. Create a number of rollback segments in the tablespace.
3. Create the rollback segments so that all extents are the same size. Choose an extent size that you suspect will need between 10 to 30 extents when the segments grow to full size.
4. Each rollback segment should start with two extents before the test is run. This is the minimum number of extents any rollback segment can have.
5. Activate only the rollback segments that you are testing by making the status 'online'. The only other segment that should be 'online' is the system rollback segment.
6. Run transactions with a load typical of the application.
7. Watch for rollback segment contention.
8. Watch for the maximum size a rollback extends to.

The maximum size any one of the rollback segments reaches during the test is the size you want to use when configuring. This size we will call the 'minimum coverage size'. If you see contention, adjust the number of segments and rerun the test. Also, if the largest size requires fewer than 10 extents, or more than 30, it is a good idea to lower or raise the extent size respectively, and rerun the test.

For sizing rollback segment extents, we strongly recommend that each extent be of the same size. In fact, we also suggest that the size of the rollback tablespace is some multiple of the common extent size. The number of extents for an individual segment should be around 20.

In the rollback segment storage clause, please use the OPTIMAL parameter. OPTIMAL sets an optimal size in bytes for a rollback segment. It can be specified in kilobytes or megabytes. ORACLE will dynamically deallocate extents in the rollback segment to maintain the optimal size.

NULL means that ORACLE never deallocates the rollback segment extents, and this is the default behavior. You must supply a size greater than, or equal to, the initial space allocated for the rollback segment by the MINEXTENTS, INITIAL, NEXT, and PCTINCREASE parameters.

Extent deallocation is expensive in regards to performance. This means that an OPTIMAL setting may decrease performance if it is too low.

Changing an ORACLE user's password

You can use the ALTER USER command as a DBA or as the user itself to accomplish this task.

```
SQL>CONNECT userid/password;
```

where *userid* is your database userid or the userid of the DBA and *password* is your current password or the password of the DBA.

```
SQL>ALTER USER john IDENTIFIED BY test;
```

Dropping the Cyborg Database

Dropping a database is not supported by ORACLE. However, taking the tablespaces offline, dropping each tablespace, dropping the Cyborg user, and deleting all related data, initialization, and control files will accomplish this.

For each of the 8 tablespaces created for the Cyborg database, perform the following two commands:

```
SQL>alter tablespace <TABLESPACE_NAME> offline;  
SQL>drop tablespace <TABLESPACE_NAME> including contents cascade  
constraints;
```

Then drop the Cyborg user:

```
SQL>drop user <USER> cascade;
```

Delete all related data, initialization, and control files in the operating system.

APPENDIX E

ORACLE Disk Requirements Worksheets

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Introduction

The tables in this appendix show an example for an Oracle database of the overhead space required for each of the tables. To calculate the table required, multiply the average row length by the number of occurrences for each table.

To calculate the overhead space required for each of the indexes, multiply the number of rows in each table by 15%.

Table 1

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
D	COMPANY	30	356	389
DB	CO_EARN_DED_RULE	31	221	255
DCAF	PAY_PROCESS_OPT	40	127	170
DCAG	PAY_STUB_MESSAGE1	3	73	79
DCAH	PAY_STUB_MESSAGE2	3	73	79
DCAJ	PAY_FREQUENCY	23	272	298
DCAK	GL_ACCOUNT_NBRS	9	84	96
DCAL	PAY_DOC_PRINT	6	93	102
DCAM	COMPANY_ROE	10	63	76
DD	PAYROLL_REPT_DEFN	18	33	54
DIDX	DIDX	4	204	211
TABLE 1				
TABLE 5 INDEXES				
TABLE 1 TOTAL				

Table 2

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
F	F_OTHER_RECORD	5	86	94
G	G_OTHER_RECORD	5	86	94
W	W_OTHER_RECORD	6	86	95
X	X_OTHER_RECORD	6	86	95
TABLE 2				

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
TABLE 4 INDEXES				
TABLE 2 TOTAL				

Table 3

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
H	TAX_SPECIFICATION	41	758	802
H4	TAX_TABLE_DEFN	23	456	482
H5	TAX_TABLE_BRACKET	9	148	160
HIDX	HIDX	5	204	212
TABLE 3 INDEXES				
TABLE 3 TOTAL				

Table 4

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MEE	EMPLOYEE	28	107	138
MEEA	EMPLOYEE_PAYMT	17	196	216
MEEB	EMPLOYEE_TRANSFER	8	84	95
MF	NAME_ADDRESS	9	158	170
MG	PAY_ALLOCATIONS	10	86	99
MH	EMP_EARN_DED	28	381	412
MIDX	MIDX	5	204	212
MJ	EMP_TAX_DED	52	827	882
MLO1	DEPENDENT	12	102	117
MLO2	DEPENDENT_EMPLYR	6	79	88
MLO3	DEPENDENT_INSUR	9	75	87
MLO4	EMRGY_CONTACT	7	79	89
MLO5	EMRGY_CONTACT_ADDR	7	79	89
MLO6	EMRGY_PHYSICIAN	7	79	89

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLO7	EMRGY_PHYS_ADDR	7	79	89
MLO8	EEO_6	10	39	52
MLOA	BENEFICIARY	11	101	115
MLOB	BENEFICIARY_ADDR	6	79	88
MLOC	BENEFICIARY_CITY	6	54	63
MLOD	COVERED_DEPENDENTS	21	74	98
MLOF	APPLICANT	12	112	127
MLOG	APPLCNT_REFERENCE	11	101	115
MLOH	APPLCNT_REF_ADDR	8	97	108
MLOI	JOB_APPLIED_FOR	16	113	132
MLOJ	WORK_PREFERENCES	21	168	192
MLOZ	EMP_FLEX_PLN_CR_PR	14	167	184
MLPB	V80_INSURANCE	14	150	167
MLPC	V80_MED_COVERAGE	11	60	74
MLPD	V80_BENEFIT	18	209	230
MLPH	SALARY_CHANGE	19	239	261
MLPM	EMP_INCUMBENCY	19	156	178
MLPQ	CAN_EMP_EQUITY	11	57	71
MLPR	V80_INJURY_DISABLE	15	117	135
MLQ0	EMP_RETIREMENT	13	70	86
MLQ1	EMP_WELFARE_PLAN	13	76	92
MLQ2	LEAVE_OF_ABSENCE	10	51	64
MLQ3	EMP_PLAN_SERVICE	14	68	85
MLQ4	EMP_DEFERRED_PLAN	14	63	80
MLQ5	EMP_PLAN_CONTRIB	20	171	194
MLQ6	PENSION_BENEFIT	16	118	137
MLQ7	PENSION_PROJCTION	15	225	243
MLQ8	EMP_PLAN_COVERAGE	12	123	138
MLQ9	EMP_PLAN_VESTING	9	69	81
MLQA	TS_FUND_ALLOCATION	16	211	230
MLQB	TS_FUND_ACCUM	17	191	211
MLQC	TS_FUND_ACTIVITY	15	111	129
MLQD	TS_FUND_TRANSFER	11	59	73
MLQE	DC_CONTRIBUTION	14	134	151
MLQF	TS_FUND_BALANCE_1	14	182	199
MLQG	TS_FUND_BALANCE_2	14	168	185

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLQH	TS_FUND_SHARE	11	116	130
MLQI	DB_PLAN_ACCUM	16	190	209
MLQJ	DB_ACCT_BALANCE	13	181	197
MLQK	DB_ACCT_ACTIVITY	8	71	82
MLQL	DC_PLAN_ACCUM	16	190	209
MLQM	DC_ACCT_ACTIVITY	14	110	127
MLQN	DC_ACCT_TRANSFER	9	57	69
MLQO	EMP_FLEX_CREDITS	17	191	211
MLQP	DC_ACCT_BALANCE_1	13	181	197
MLQQ	DC_ACCT_BALANCE_2	13	181	197
MLQR	AVG_DEFERRAL_PCT	13	184	200
MLQS	BENEFICIARY_PCT	21	226	250
MLQT	FSA_ACCT_BALANCE	14	166	183
MLQU	FSA_CLAIM	15	167	185
MLQV	HIGHLY_PAID_DEF_1	19	131	153
MLQW	HIGHLY_PAID_DEF_2	11	35	49
MLQX	FINAL_AVG_EARNINGS	9	93	105
MLQY	COBRA_QUALIFY_EVNT	15	96	114
MLQZ	J_S_BENEFIT_WAIVER	14	90	107
MLR0	SHARE_DISTRIBUTION	14	128	145
MLR1	SHARE_WITHDRAWAL	18	138	159
MLR2	SHARE_ACCT_BALANCE	11	115	129
MLR3	STOCK_CASH_BALANCE	14	128	145
MLR4	SAVINGS_BOND	9	51	63
MLR5	ALT_COMP_TOTALS	11	151	165
MLRA	EMP_ELIGIBILITY	10	57	70
MLRD	DISCIPLINE_ACTION	10	50	63
MLRJ	RELOCATION_1	13	200	216
MLRK	RELOCATION_2	13	200	216
MLRL	RELOCATION_3	21	209	233
MLRM	HOUSE_HUNTING_EXP	17	273	293
MLRN	MOVING_EXPENSE	16	251	270
MLRO	TEMP_LIVING_EXP	17	253	273
MLRP	SHIPPING_EXP	19	262	284
MLRQ	CLOSING_COST_EXP	17	236	256
MLRR	BRIDGE_LOAN	14	174	191

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLRS	POSITION_ASSIGNMT	9	103	115
MLRT	AUTH_TIME_OFF	14	228	245
MLRU	UNAUTH_TIME_OFF	8	96	107
MLT0	EMP_CLASS_REG	9	38	50
MLT1	EMP_TRAIN_REQ	8	32	43
MLT2	EMP_CLASS_RESULT	18	96	117
MLT3	EMP_COURSE_OBJ	25	84	112
MLT4	EMP_TRAIN_SALARY	9	55	67
MLT5	EMP_CLASS_COST	20	154	177
MLTB	ISSUED_BADGE	9	78	90
MLTS	SCHEDULE_ASSIGNMNT	9	80	92
MLVA	ABSENCE	15	99	117
MLVE	EEO_4_EXEMPTIONS	6	46	55
MLVF	EMPLOYEE_NAME			
MLVG	GRIEVANCE	13	97	113
MLVH	EMPLOYEE_ADDRESS			
MLWA	IMAGE_INFORMATION	8	100	111
MLWF	EMPLOYEE_CONTACT	10	106	119
MLYA	EMP_ROE_1	12	107	122
MLYB	EMP_ROE_2	13	108	124
MLYC	EMP_ROE_3	14	198	215
MLYD	EMP_ROE_4	10	122	135
MLYE	EMP_ROE_5	6	98	107
MLZ1	FORMAL_EDUCATION	13	163	179
MLZ2	TUITION_REIMBURSMT	18	250	271
MLZ3	EMP_TRAIN_COURSE	21	153	177
MLZ4	EMP_SKILL	15	73	91
MLZ5	APPL_INTERVIEW	10	82	95
MLZ6	PRIOR_EMPLOYMENT	11	110	124
MLZ7	PHYSICAL_EXAM	15	71	89
MLZ8	PHYSICAL_EXAM_RSLT	15	78	96
MLZ9	APPL_PRE_TRANSFER	18	140	161
MLZA	EMPLOYEE_1	16	118	137
MLZB	CITIZENSHIP	17	103	123
MLZC	EMPLOYMT_ACTIVITY	18	92	113
MLZD	JOB_ASSIGNMENT	11	103	117

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLZE	BONUS	12	94	109
MLZF	SALARY	19	250	272
MLZG	PERFORMANCE_RATING	17	123	143
MLZH	NON_MONETARY_PERQ	9	82	94
MLZI	ASSIGNED_PROPERTY	9	82	94
MLZJ	ASSIGNED_AUTO	12	119	134
MLZK	EXIT_INTERVIEW	9	103	115
MLZL	DRIVERS_LICENSE	10	75	88
MLZM	HEALTH_CONDITION	17	61	81
MLZN	CERTIFICATION	9	47	59
MLZO	PROFESSIONAL_ASSOC	7	44	54
MLZP	PLANNED_SALARY	17	176	196
MLZQ	SALARY_REVIEW	10	86	99
MLZR	EMP_LOCATION	15	85	103
MLZS	SCHEDULED_APPRSL	10	86	99
MLZT	MONETARY_PERQ	10	94	107
MP	PAY_PERIOD	7	89	99
TABLE 4				
TABLE 2 INDEXES				
TABLE 4 TOTAL				

Table 5

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
NEE	EMPLOYEE_LH	29	111	143
NEEA	EMPLOYEE_PAYMT_LH	18	200	221
NF	EMP_NAME_ADDR_LH	6	72	81
NG	EMP_LOCATION_LH	11	90	104
NH	LABOR_HIS_EARN_DED	7	86	96
NIDX	NIDX	6	204	213
NJ	LABOR_HIS_TAX_DED	13	203	219
NLG1	LABOR_DIST_SPLIT1	5	88	96
NLG2	LABOR_DIST_SPLIT2	5	88	96

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
NLG3	LABOR_DIST_SPLIT3	5	88	96
QEE	EMPLOYEE_MM	29	111	143
QEEA	EMPLOYEE_PAYMT_MM	18	200	221
QF	EMP_NAME_ADDR_MM	10	162	175
QG	EMP_LOCATION_MM	11	90	104
QH	EMP_EARN_DED_MM	29	385	417
QIDX	QIDX	6	204	213
QJ	EMP_TAX_DED_MM	53	831	887
TABLE 5				
TABLE 1 INDEXES				
TABLE 5 TOTAL				

Table 6

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
UDS1	NODE_CONTROL_TABLE	5	28	36
UDS2	MACHINE_PARAMETERS	3	6	12
UDS3	DISTRIB_ACCES_LOG	7	78	88
UDS4	DISTRIBUTION_RULES	5	23	31
URT01	REQ_BASIC_DETAILS	15	91	109
URT11	REQ_CAND_BASIC	12	70	85
URT12	REQ_CAND_BASIC_2	7	72	82
Y40FN	FIELD_NAMES	19	161	183
YPR0	POSITION_HEADER	10	18	31
YPR1	POSITION_CTL_BASIC	16	93	112
YPR2	POSITION_FROM_DATA	8	62	73
YPR3	POSITION_TO_DATA	8	62	73
YPR4	POSITION_NARRATIVE	5	75	83
YPR5	POSITION_DEPT	17	122	142
YPR6	POSITION_BUDGET_PC	12	144	159
YPR7	POSITION_ACTUAL	13	181	197
YPR8	POSITION_REQ	14	117	134
YPR9	POSITION_INCUMBENT	15	101	119

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YPRH	POSITION_CTRL_HDR	3	35	41
YPRS	POSITION_CTL_SKILL	15	63	81
YT	ACCRUAL_SELECTION	14	72	89
YT_A	COURSE_DEVP_COST	5	82	90
YT_AB	ABSENCE_EARN_CODE	11	74	88
YT_ARA	ACCRUAL_ROUTINE	19	269	291
YT_ARB	ACCRUAL_ROUTINE_B	11	211	225
YT_ARC	ACCRUAL_ROUTINE_C	8	145	156
YT_C_A	COORDINATOR	5	62	70
YT_C_B	COORDINATOR_B	9	62	74
YT_C_C	COORDINATOR_C	6	63	72
YT_C_D	COORDINATOR_D	11	60	74
YT_C_E	COORDINATOR_E	11	60	74
YT_C2A	CREW_ROTATION_08_A	28	83	114
YT_C2B	CREW_ROTATION_08_B	31	64	98
YT_C2C	CREW_ROTATION_08_C	11	24	38
YT_C3A	CREW_ROTATION_14_A	28	83	114
YT_C3B	CREW_ROTATION_14_B	31	64	98
YT_C3C	CREW_ROTATION_14_C	31	64	98
YT_C3D	CREW_ROTATION_14_D	26	54	83
YT_D_A	COURSE_OFFERING	8	74	85
YT_D_B	COURSE_OFFERING_B	23	149	175
YT_D_C	COURSE_OFFERING_C	20	74	97
YT_D_D	COURSE_OFFERING_D	21	119	143
YT_D_E	COURSE_OFFERING_E	17	104	124
YT_D_F	COURSE_OFFERING_F	7	73	83
YT_EC	TA_EARN_CODE	6	56	65
YT_N_A	COURSE_PROVIDER	4	66	73
YT_N_B	COURSE_PROVIDER_B	8	64	75
YT_N_C	COURSE_PROVIDER_C	4	54	61
YT_N_D	COURSE_PROVIDER_D	10	64	77
YT_N_E	COURSE_PROVIDER_E	10	64	77
YT_P	POLICY_ACTIVITY	27	462	492
YT_P_A	PROGRAM_SCHEDULE	15	62	80
YT_P_B	PROGRAM_SCHEDULE_B	15	62	80
YT_P_C	PROGRAM_SCHEDULE_C	15	62	80

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YT_P_D	PROGRAM_SCHEDULE_D	15	62	80
YT_P_E	PROGRAM_SCHEDULE_E	14	61	78
YT_P_F	PROGRAM_SCHEDULE_F	4	64	71
YT_PT	POLICY_TABLE	15	129	147
YT_R	COMPANY_XREF	3	50	56
YT_RP	ROSTER_QUERY_PARMS	6	84	93
YT_S	SCHEDULE_ACTIVITY	27	462	492
YT_S_A	CLASS_SCHEDULE	16	155	174
YT_S_B	CLASS_SCHEDULE_B	18	184	205
YT_S_C	CLASS_SCHEDULE_C	17	161	181
YT_S_D	CLASS_SCHEDULE_D	16	86	105
YT_S_E	CLASS_SCHEDULE_E	7	75	85
YT_SP	SHIFT_PREMIUM	22	158	183
YT_ST	SCHEDULE_TABLE	13	126	142
YT_T	TRAINING_REQUIRED	6	26	35
YT_X	CANCEL_COURSE_BOOK	18	124	145
YT_Y	CLASS_EVALUATION	19	88	110
YT_Z	COURSE_BOOKING	18	124	145
YT0A01	POSITION_BASIC	12	92	107
YT0A02	POSITION_BASIC_02	7	75	85
YT0A03	POSITION_EVAL	8	93	104
YT0A04	POSITION_EVAL_CRIT	8	78	89
YT0A05	POSITION_SKILLS	15	63	81
YT0A06	POSITION_MEMBERSHIP	7	73	83
YT0A07	POSITION_LICENSES	7	73	83
YT0A08	POSITION_EDUCATION	8	77	88
YT0A09	POSITION_NEXT_JOB	7	75	85
YT0A10	POSITION_DOC_REF	8	90	101
YT0A11	POSITION_REQ_EXP	8	74	85
YT0A12	POSITION_MISC_DATA	12	65	80
YT0A13	POSITION_REQ_TRAIN	7	75	85
YT0A50	POSITION_STATUS	8	50	61
YT0A51	POSITION_LOCATION	9	61	73
YT0A52	POSITION_FUND	11	110	124
YT0A53	POSITION_VEHICLE	10	95	108
YT0A54	POSITION_NEXT_REVW	8	78	89

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YT0A55	POSITION_FTE	9	127	139
YT0A56	POSITION_COMPLEMNT	8	105	116
YT0B01	ORG_UNIT_BASIC	11	83	97
YT0B02	ORG_UNIT_LVL_NAME	6	69	78
YT0B03	ORG_UNIT_FTE	9	127	139
YT0B10	ORG_UNIT_DOC_REF	8	90	101
YT0B99	ORG_UNIT_DEF_NAME	6	69	78
YT0D01	JOB_BASIC	11	91	105
YT0D02	JOB_BASIC_02	8	85	96
YT0D03	JOB_EVALUATION	8	93	104
YT0D04	JOB_EVAL_CRIT	8	78	89
YT0D05	JOB_SKILLS	8	82	93
YT0D06	JOB_MEMBERSHIP	7	73	83
YT0D07	JOB_LICENCES	7	73	83
YT0D08	JOB_EDUCATION	8	77	88
YT0D09	JOB_NEXT_JOB	7	75	85
YT0D10	JOB_DOC_REF	8	90	101
YT0D11	JOB_REQ_EXP	8	74	85
YT0D13	JOB_REQ_TRAINING	7	75	85
YTA_A	JOB_CODE	14	94	111
YTA_B	JOB_CODE_B	12	79	94
YTBA	SALARY_GRADE_ANN	12	152	167
YTBB	SALARY_GRD_PAY_PD	13	174	190
YTBC	SALARY_GRADE_HRLY	12	173	188
YTC_A	JOB_EVAL_PROFILE	23	267	293
YTC_B	JOB_EVAL_PROFILE_B	10	98	111
YTDC1	SALARY_INC_DEFN_1	13	152	168
YTDC2	SALARY_INC_DEFN_2	14	153	170
YTDC3	SALARY_INC_DEFN_3	19	284	306
YTDC4	SALARY_INC_DEFN_4	19	284	306
YTDR1	SALARY_INC_DEFN_5	13	152	168
YTDR2	SALARY_INC_DEFN_6	14	153	170
YTDR3	SALARY_INC_DEFN_7	19	284	306
YTDR4	SALARY_INC_DEFN_8	19	284	306
YTDT1	SALARY_INC_DEFN_9	13	152	168
YTDT2	SALARY_INC_DEFN_0	14	153	170

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YTE	OCCUPATION_GROUP	8	24	35
YTF	ADJ_EMP_STATUS	24	51	78
YTG	SYSTEM_OPTIONS	19	30	52
YTH	SALARY_PLAN	8	66	77
YTI	SALARY_GRADE	11	120	134
YTJ__A	PLAN_RETIRE_RULE	15	76	94
YTJ__B	PLAN_RETIRE_RULE_B	14	50	67
YTK__A	BENEFIT_PLAN	16	70	89
YTK__B	BENEFIT_PLAN_B	14	48	65
YTL	PLAN_ELIGIBILITY	23	87	113
YTM	COVERAGE_COST	14	138	155
YTN__A	PLAN_PARTICIPATE	17	110	130
YTN__B	PLAN_PARTICIPATE_B	15	63	81
YTO	ACCUMULATOR_RULES	40	51	94
YTP	MASTER_PLAN	22	68	93
YTQ	ANNUITANT_FACTOR	18	281	302
YTRA	PLAN_INTEREST_RATE	9	123	135
YTRB	FUND_INTEREST_RATE	8	103	114
YTRC	PLAN_ALLOC_METHOD	16	115	134
YTRD	FUND_ALLOC_METHOD	12	68	83
YTS	PLAN_EARN_DED_RULE	16	141	160
YTT	PLAN_OPT_ACTIVITY	29	77	109
YTU__A	BREAK_IN_SVC_RUL	25	228	256
YTU__B	BREAK_IN_SVC_RUL_B	15	122	140
YTV	DISCRIMINATION_TST	16	148	167
YTW__A	PRIOR_YEAR_TOTAL	8	125	136
YTW__B	PRIOR_YEAR_TOTAL_B	9	147	159
YTX__A	EEO_ESTABLISHMNT	12	65	80
YTX__B	EEO_ESTABLISHMNT_B	7	65	75
YTX__C	EEO_ESTABLISHMNT_C	7	69	79
YTX__D	EEO_ESTABLISHMNT_D	9	126	138
YTX__E	EEO_ESTABLISHMNT_E	10	148	161
YTY	EEO_STATISTICS	19	301	323
YTZ	COVERAGE_COST_B	9	68	80
YTZAX	HR_TABLE_CTRL	13	55	71
YTZAY	BENEFIT_TABLE_CTRL	14	61	78

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YTZAZ	ACCRUAL_TABLE_CTRL	3	17	23
YU1	FLEX_CREDIT_CALC	19	46	68
YU2	FLEX_PLAN_OPTS	18	47	68
ZCSC12	CODESET_C12	8	75	86
ZCSUNV	CODESET	6	75	84
TABLE 6 TOTAL				
TABLE 7 TOTAL				
TABLE 0 TOTAL				

A P P E N D I X F

Administering the Cyborg Application Server (CAS) Daemon

In This Appendix

Overview of the Cyborg Application Server Daemon166

Overview of the Cyborg Application Server Daemon

This appendix introduces you to the Cyborg Application Server (CAS) daemon and includes information on how to:

- Start CAS
- Configure a new environment on the server
- Use the CAS Manager to perform administrative functions
- Monitor CAS using the system log File
- Troubleshoot any problems you may encounter when installing CAS
- Enable and disable tracing
- Stop CAS (terminate the CAS daemon entirely by forcing CAS to exit)
- Uninstall CAS

What is the Cyborg Application Server (CAS) daemon?

Overview of CAS

The Cyborg Application Server (CAS) is a server that provides network transparency of clients for server applications. It allows an existing application, such as CBSV, to become the server in a client/server architecture with almost no modification to that application.

The client connects to CAS across the network via TCP/IP. The client, such as The Administrative Client, is fully aware of CAS and sends requests and receives responses via messages. Among other things, these messages ask CAS to start the server application, send input to the application, receive data from the application, and receive responses from the server.

CAS supports multiple server applications on a single system. Many clients can be connected to a Cyborg environment via CAS at the same time. Furthermore, CAS supports multiple environments on a single server. Each client can run any number of server applications available to it.

'listening' CAS and 'talking' CAS

The CAS works by creating copies of itself to allow multiple clients to access the server applications.

The CAS daemon is informally known as 'listening' CAS because it listens for incoming client requests from the network. When it receives a request from the client, it creates a child process—informally known as 'talking' CAS—to interact with the client application:

- The CAS daemon begins its execution as 'listening' CAS by waiting for a client connection from the network.
- When 'listening' CAS detects that a client has connected, it immediately creates a copy of itself; this copy is 'talking' CAS.


```
#
# {cyborg home}/app/server/cas script 1.16 for Unix CAS 1.04
#
# The Cyborg Application Server files and directories all reside in the
# same directory as this script.
#
cd `dirname $0` || exit 1
casdir=`pwd`
daemon=$casdir/cybservd
appcfg=cybapp.cfg
envcfg=cybenv.cfg
tracedir=trace
maxusers=2000
#
# Enter MicroFocus (and Oracle) environment variable lines here.
#-----
#
#-----
#
#
# Check that the proper files and directories exist
#
assert()
{
    if command test ! $1
    then
        echo "The current directory is `pwd`"
        echo "Error:" $2
        exit 1
    fi
}
assert "-e $daemon" \
    "The CAS executable \"$daemon\" does not exist"
assert "-f $daemon" \
    "The CAS executable \"$daemon\" is not a regular file"
assert "-x $daemon" \par      "The CAS executable \"$daemon\" does not have
executable permission"
assert "-e $appcfg" \
    "The application configuration file \"$appcfg\" does not exist"
assert "-f $appcfg" \
    "The application configuration file \"$appcfg\" is not a regular file"
assert "-e $envcfg" \
    "The environment configuration file \"$envcfg\" does not exist"
assert "-f $envcfg" \
    "The environment configuration file \"$envcfg\" is not a regular file"
assert "-e $tracedir" \
    "The trace file directory \"$tracedir\" does not exist"
assert "-d $tracedir" \
    "The trace file directory \"$tracedir\" is not a directory"
#
# Calculate the number of connections required.
# - Each user requires two sessions: one for online and one for cybio
# - The administrator should also get a session
#
peruser=2
maxconn=`expr $peruser \* $maxusers + 1`
#
# By default, CAS creates the system log and trace files with read/write
# privileges for everyone (user, group, other). Set the permission mask
# so that trace files have the desired permissions (e.g., 066 to only allow
```

```
# access by the file owner or 022 to allow anyone to read the file, but
# only write by the owner).
#
umask 066
#
# Launch the daemon
#
$daemon -a$appcfg -e$envcfg -T$tracedir -c$maxconn
```

The `cas` script:

- Is delivered in the `/cyborghome/app/server` directory.
- Contains the `cybservd` command line that launches the CAS daemon.
- Specifies the location of the `cybenv.cfg`, `cybapp.cfg`, system log and trace files. As delivered, the default location of these files is: `/cyborghome/app/server` directory.

Note The *Micro Focus* and *ORACLE* environmental variables that were identified in Chapters 3 and 4 (Task 4) must be included where shown in this script before CAS is started.

CAS script port

To edit the CAS script to include reference to new port

```
$daemon -pnnnn -a$appcfg -e$envcfg -T$tracedir -c$maxconn
```

where *nnnn* is the new port number

Explanation of `cybapp.cfg`

The following is the delivered `cybapp.cfg` data file. It should not be changed.

```
#
# cybapp.cfg: application configurations for the Solution Series/ST
#
# Each definition must fit on a line, and the fields in each definition
# are separated by colons.
#
# Name          Type          Description
# -----
# App ID        Number: greater than 2  ID from the app configuration file
# Enabled       Boolean: 'Y' or 'N'     Whether the environment is enabled
# Name          String: up to 32 chars  Name of the application
#
2:Y:/ST Application
3:Y:FILE01 Application
```

Configuring a new environment on the server

As part of Phase 6: Install and configure Cyborg Application Server (CAS) daemon of the server installation in Chapters 3 and 4, you need to configure an environment for Solution Series users by editing the `cybenv.cfg` file.

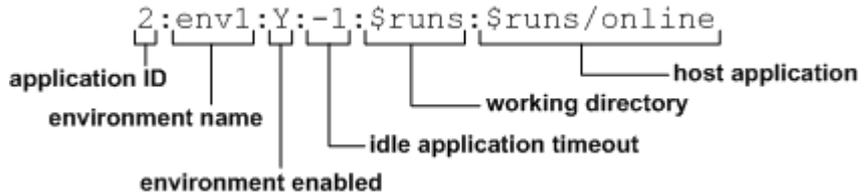
The `cybenv.cfg` file defines the two environments necessary for each client application to run The Solution Series:

```

#
# cybenv.cfg: environment configurations for the Solution Series/ST
#
# The string "$runs" on the last few lines must be replaced with the
# absolute path to the appropriate directory for that environment.
#
#
#
# Each definition must fit on a line, and the fields in each definition
# are separated by colons.
#
# Name          Type          Description
# -----
# App ID        Number: greater than 2  ID from the app configuration file
# Environment    String: 1-8 characters  Environment where the app is used
# Enabled        Boolean: 'Y' or 'N'    Whether the environment is enabled
# Idle timeout   Positive number or -1  Timeout in minutes before application
#                is shut down by the server; use a
#                value of -1 to disable the timeout.
# Working dir    String: directory       Starting directory of host app
# Executable     String: filename        Program to launch as the host app
# Parameters     String (optional)      Parameters to the host app
#
#
2:env1:Y:-1:$runs:$runs/online
3:env1:Y:-1:$runs:$runs/jcybio

```

Each environment definition (highlighted in the script above) has six fields, with the fields separated by a colon (:). All fields must appear in their defined order. The following diagram identifies those six fields:



The following table describes the environment definition fields and how to edit the `cybenv.cfg` file:

Field	Description	How to edit cybenv.cfg
application ID	<p>This field is the application ID of the application with which this environment is associated.</p> <p>This ID must correspond to the application ID in the application configuration file (<code>cybapp.cfg</code>).</p>	<p>Enter:</p> <ul style="list-style-type: none"> ■ 2 for /ST application (online) ■ 3 for FILE01 application (jcybio) <p>IMPORTANT: Each environment must have two entries in the <code>cybenv.cfg</code> file:</p> <ul style="list-style-type: none"> ■ One for an application ID of 2 (for the /ST application), and ■ A second for an application ID of 3 (for the FILE01 application).

Field	Description	How to edit cybenv.cfg
environment name	This field identifies the environment name (up to 8 characters). Examples are: ST45PROD, ST45TEST. All environment names for each application ID must be unique and are not case-sensitive. For example, ST45PROD and ST45prod are not unique and are, in fact, the same environment.	To set up a Cyborg prod environment, enter: 2:prod:... 3:prod:... This environment will be the same environment as set in the configuration using the /ST 4.5 Cyborg Connection Editor on the client workstations, as described in Chapter 5: Installing and Configuring The Solution Series/ST on the Client.
environment enabled	This field is a denotes whether the application is enabled with values of Y or N. If the application is disabled, then any request to execute it will be refused.	Enter a Y to signify that each application is enabled. 2:prod:Y:... 3:prod:Y:...
idle application timeout	This field controls how long a program may remain open when there is no activity. The amount of time is specified in minutes. If there is no communication between the client and application program within this period of time, the program is terminated. A setting of -1 disables this feature.	The timeout value is either a positive number (1, 2, 3, and so forth) or is disabled with a value of -1. As delivered, the /ST application has a value of 20 in this field, indicating that it will be terminated after 20 minutes of inactivity. The FILE01 application is delivered with a value of -1 in this field, indicating that it will never be terminated due to inactivity.
working directory	This field refers to the directory path of the working directory. Each Cyborg user should have executable permission to this directory.	Change the path to reflect the current installation by replacing \$runs with the full path.
server application	This field refers to the script that will be launched by CAS for each application. Each Cyborg user should have executable permission for this file.	Change the path to reflect the current installation by replacing \$runs with the full path to each script that will be launched by CAS.

Using the CAS Manager

Overview of the CAS Manager

The CAS Manager is a standalone program that is used to manage any version of UNIX CAS from anywhere across the network. The CAS Manager is a command-line application that is driven by the options selected on the command line.

The CAS Manager allows an administrator to perform the following tasks:

- Determine whether CAS is running
- Determine the version of CAS and the operating system on which CAS is running
- Determine whether the CAS service is enabled (in other words, whether clients are allowed to start applications)
- Disable the CAS service to disallow future clients from starting applications
- Enable the CAS service to allow future clients to start applications
- Obtain a list of sessions
- Terminate a single server application, such as CBSVO/T or CYBIO, for a specific client
- Terminate all server applications
- Terminate the CAS service entirely by terminating the CAS daemon
- Tracing the execution of CAS as it handles a single server application for a given client
- Trace the execution of every CAS process
- Disable the tracing of CAS for a single server application for a given client
- Disable the tracing of every CAS process
- Trace the execution of CAS for subsequent clients
- Disable the tracing of CAS for subsequent clients

Passwords

Prompting for a password

If a switch requires a password and none is provided on the command line, then the user is prompted for a password (this is the password for the user ID 'cyborg'), similar to the `su(1)` or `rlogin(1)` commands. If a switch requires a password and one is provided on the command line, then the user is not prompted.

For example, the `-tracedefault` switch requires a password:

```
casmgr -tracedefault
Password: _
```

If the password prompt is used, the typed password does not echo on the screen and cannot be redirected from a file; it must be typed from the console.

Password security

We advise that you do *not* use the `-password` modifier unless CAS Manager is needed in a script. Instead, let CAS Manager prompt for a password, as shown above. This method negates the need to remember which commands require passwords.

CAS Manager syntax

The `casmgr` command invokes the CAS Manager. To use the CAS Manager, use the syntax shown below:

```
$ casmgr -switch -port:nnn -password:cyborg user's password
```

Note If you want a description of the syntax or a brief description of each switch, run the CAS Manager without any switches specified.

To find out/do this	Use this switch
Is CAS is running now?	-isrunning
Is CAS service is enabled now?	-isenabled
Disable CAS service	-disable
Enable CAS service	-enable
What version of CAS or CAS Manager is this?	-version
What clients are connected?	-sessions
Trace a single session on the talking CAS	-tracesession:yyy
Disable the trace on a single session on the talking CAS	-notracesession:yyy
Trace all CAS processes	-traceall
Disable the trace on all CAS processes	-notraceall
What is the default trace setting now for new CAS processes?	-istracedefault
Enable tracing for all new CAS processes	-tracedefault
Disable tracing for all new CAS processes	-notracedefault
Terminate a single host application for a single session	-killsession:yyy
Terminate all host applications	-killtalking

CAS switch details

The following describes the various switches that can be used with the `casmgr` command. The switches are in alphabetical order:

```
-disable
-enable
-isenabled
-isrunning
-istracedefault
-killdaemon
-killsession:yyy
-killtalking
-notraceall
-notracedefault
-notracesession:yyy
-sessions
-traceall
-tracedefault
-tracseession:yyy
-version
```

-disable

Disable CAS

Use this switch to disable the CAS daemon by disallowing future clients from starting applications:

casmgr -disable

This will place CAS in the disabled state. CAS will still be running, but will refuse any requests to start server applications. Previously connected clients will continue to run normally.

Note This command requires a password.

-enable

Enable CAS

Use this switch to enable the CAS daemon, allowing future clients to start applications:

casmgr -enable

This will place CAS in the enabled state. CAS will accept requests to start server applications.

Note This command requires a password.

-isenabled

Determine whether CAS is enabled or disabled

Use this switch to determine whether the CAS daemon is enabled (that is, whether clients are allowed to start applications):

casmgr -isenabled

This will print whether the CAS daemon is enabled or disabled. When the daemon is enabled, CAS will accept requests to start server application programs. When the daemon is disabled, CAS will still be running but will refuse any requests to start server applications. Use the `-enable` and `-disable` switches to enable and disable CAS.

-isrunning

Determine whether CAS is running

Use this switch to determine whether CAS is running:

casmgr -isrunning

This will determine whether there is a CAS process running on the server.

-killdaemon

Terminate the CAS service

Use the `-killdaemon` switch to terminate the CAS daemon entirely and force the CAS process to exit:

casmgr -killdaemon

The daemon cannot be restarted using the CAS Manager, as there is no longer any daemon to answer CAS Manager commands. CAS must be re-started by the system administrator, `crontab`, or other external UNIX facility.

Use the 'determine whether CAS is running' switch (`-isrunning`) to verify that CAS has terminated.

Note This command requires a password.

-killsession

Terminate a single server application program for a specific client

Use this switch to terminate a single server application program for a specific client:

casmgr -killsession:sessionID

This will terminate a single server application program for a specific GUI client. The application program is identified with a session ID, as determined by the 'obtain a list of connected sessions' switch (`-sessions`).

Use the 'obtain a list of connected sessions' switch (`-sessions`) to verify that the application program was terminated.

Note This command requires a password.

-killtalking

Terminate all client application programs

Use this switch to terminate all application programs that are currently running.

casmgr -killtalking

Even after this command is used, CAS can still start new application programs if it is enabled. The 'disable CAS' switch (`-disable`) is often used before this command to prevent new server application programs from starting.

Use the 'obtain a list of connected sessions' switch (`-sessions`) to verify that the application programs were terminated.

Note This command requires a password.

-notraceall

Disable the tracing of every CAS process

Use this switch to disable tracing of CAS for all sessions:

casmgr -notraceall

This will disable the tracing of the CAS process and general I/O through CAS for every session: sessions with host applications, sessions managing administrative sessions, and the listening CAS session.

Tracing can be enabled using the 'enable tracing of every CAS process' switch (-traceall) or by using the 'enable tracing for a single application program for a single client' switch (-tracesession).

Note This command requires a password.

-notracedefault

Disable the tracing of CAS for subsequent clients

Use this switch to disable tracing for all new application programs:

casmgr -notracedefault

This will cause subsequent application programs to not trace immediately upon their startup. Currently executing application programs are not affected.

Tracing can be enabled using the 'enable tracing of every CAS process' switch (-traceall) or by using the 'enable tracing for a single application program for a single client' switch (-tracesession).

Note This command requires a password.

-notraceession

Disable tracing of CAS for a single host application for a given client

Use this switch to disable tracing of CAS for a single application program for a single client:

casmgr -notraceession:sessionID

This will disable the tracing of the CAS process and I/O through CAS for single application program for a particular GUI client. The application program is identified with a session ID, as determined by the 'obtain a list of connected sessions' switch (-sessions).

Note This command requires a password.

-sessions

Obtain a list of connected sessions

Use this switch to obtain a list of connected sessions:

casmgr -sessions

This will print the list of sessions connected to CAS with the following information:

- Application ID of the server application
- Environment of the server application
- Login of the user using the server application
- Starting date and time of the application program
- Process ID of the CAS process on the server that is responsible for the server application
- Hostname or IP address of the client
- Whether tracing is enabled for this application

-traceall

Enable tracing of every CAS process

Use this switch to enable tracing of CAS for all CAS processes:

casmgr -traceall

This will enable the tracing of the CAS process and general I/O through CAS for every session: sessions with host applications, sessions managing administrative sessions, and the primary server session.

Note This command requires a password.

-tracedefault

Enable tracing of CAS for subsequent clients

Use this switch to enable tracing for all new application programs:

casmgr -tracedefault

This will cause subsequent application programs to begin tracing immediately upon their startup. Currently executing sessions are not affected.

Tracing can be disabled using the 'disable tracing of every CAS process' switch (`-notraceall`) or by using the 'disable tracing for a single application program for a single client' switch (`-notraceession`).

Note This command requires a password.

-tracesession

Enable tracing for a single application program for a single client

Use this switch to enable tracing of CAS for a single server application program for a specific client:

casmgr -tracesession:sessionID

This will enable the tracing of the CAS process and I/O through CAS for a single server application program for a particular GUI client. The application program is identified with a session ID, as determined by the 'obtain a list of connected sessions' switch (`-sessions`).

Note This command requires a password.

■ **Using a trace file**

For more information about trace output

-version

Determine the version of CAS

Use this switch to determine the version of CAS:

casmgr -version

This will print the version of CAS Manager and CAS. It will also print the operating system on which CAS is running.

Monitoring the CAS daemon

Tracing

CAS can create trace files to debug a CAS installation and monitor the messages that are sent and received between the client and server application.

- CAS turns on the trace mechanism in response to an Enable Tracing message.
- CAS turns off the trace mechanism in response to a Disable Tracing message.

Tracing can be enabled or disabled by using various switches with the CAS Manager (`casmgr`) command, including:

```
-notraceession  
-notraceall  
-notracedefault  
-tracesession  
-traceall  
-tracedefault
```

Using the system log File

What is the system log file?

The system log is a single, system-wide log shared by every CAS instance on a particular machine for recording significant events (such as newly connected clients, disconnected clients, and so forth) that occur during CAS execution.

Because it is important for an administrator to see the sequence of events that occur while CAS executes, all events are recorded in the system log file.

Filename

The filename of the system log file is `system.log` and it is found in the `/cyborghome/app/server` directory.

The following is an example of a system log file:

```
1998/12/21 08:53:29 cybservd:1153 Info 15456 Initialize service  
(Service) (None) /ST 4.0 for Unix: CAS version  
  
1.00  
1998/12/21 08:53:29 cybservd:1157 Info 15456 Initialize service  
(Service) (None) Compiled on HP-UX version A,  
  
release B.10.20
```

```

1998/12/21 08:53:29 cybservd:1169 Info 15456 Initialize service
(Service) (None) Executing on machine bldrux1:

HP-UX version A, release

B.10.20
1998/12/21 08:53:29 sharmem:353 Info 15458 Initialize service
(Service) (None) Allocated semaphore (semaphore

ID=299)
1998/12/21 08:53:29 sharmem:357 Info 15458 Initialize service
(Service) (None) Allocated shared memory (shared

memory ID=4208): 293152 bytes

for 4001 users
1998/12/21 08:53:29 cybservd:649 Info 15458 Initialize service
(Service) (None) Listening on TCP port 2345 for

incoming requests
1998/12/21 08:53:29 cybservd:472 Info 15458 Initialize service
(Service) (None) CAS version 1.00 for HP-UX

started successfully (process

ID=15458)
1998/12/21 08:53:44 acpt_conn:376 Info 15459 New connection
(Session) pcl.company.com Received connection from

pcl.company.com (CAS process

ID=15459)
1998/12/21 08:53:45 acpt_conn:376 Info 15461 New connection
(Session) pcl.company.com Received connection from

pcl.company.com (CAS process

ID=15461)
1998/12/21 08:54:11 sighandlers:744 Info 15458 Session termination
(Service) (None) Closed connection to

Pcl.company.com (CAS process

ID=15461)
1998/12/21 08:54:12 sighandlers:744 Info 15458 Session termination
(Service) (None) Closed connection to

Pcl.company.com (CAS process

ID=15459)
1998/12/21 08:58:00 acpt_conn:376 Info 15483 New connection
(Session) server1.company.com Received connection from

server1.company.com (CAS

process ID=15483)
1998/12/21 08:58:00 msg_handlers:996Info 15483 Terminate Cyborg
Service(Session) server1.company.com The CAS service is being

terminated by session 15483
1998/12/21 08:58:00 sharmem:398 Info 15458 Service termination
(Service) (None) Deallocated semaphore

```

```
(semaphore ID=299)
1998/12/21 08:58:00 sharmem:400 Info 15458 Service termination
(Service) (None) Deallocated shared memory

(shared memory ID=4208)
1998/12/21 08:58:00 sighandlers:361 Info 15458 Service termination
(Service) (None) CAS service shut down via CAS

Manager
```



See the Message format of the system log and trace files section for a description of the message format.

Using a trace file

What is a trace file?

A trace file is a file that records the execution of CAS for tracing and debugging purposes. This file is created only when tracing is enabled. Every CAS instance has its own, private trace file, so the number of trace files can equal the number of CAS processes. Trace files can contain binary data as part of their trace.

The following is an example of a trace file:

```
1998/12/21 08:53:44 acpt_conn:376 Info 15459 New connection
(Session) pcl.company.com Received connection from

pcl.company.com (CAS process

ID=15459)
1998/12/21 08:53:44 acpt_conn:379 Trace 15459 New connection
(Session) pcl.company.com New process for pcl.company.com

(pid=15459)
1998/12/21 08:53:44 sharmem:492 Trace 15459 Initialize service
(Session) pcl.company.com CAS process 15459 has been

registered
1998/12/21 08:53:44 proc_msg:106 Trace 15459 Getting new message
(Session) pcl.company.com Beginning to wait for messages

from the client
1998/12/21 08:53:44 read_msg:652 Trace 15459 Start Application request
(Session) pcl.company.com Start Application received
1998/12/21 08:53:44 read_msg:714 Trace 15459 Start Application request
(Session) pcl.company.com Start Application information
1998/12/21 08:53:44 read_msg:1305 Trace 15459 Start Application request
(Session) pcl.company.com Message version = 0
1998/12/21 08:53:44 read_msg:1309 Trace 15459 Start Application request
(Session) pcl.company.com Application ID = 3
1998/12/21 08:53:44 read_msg:1313 Trace 15459 Start Application request
(Session) pcl.company.com Use Cyborg account = Yes
1998/12/21 08:53:44 read_msg:1318 Trace 15459 Start Application request
(Session) pcl.company.com Environment name = "env1"
1998/12/21 08:53:44 read_msg:1324 Trace 15459 Start Application request
(Session) pcl.company.com Username = (not

applicable)
1998/12/21 08:53:44 read_msg:1339 Trace 15459 Start Application request
(Session) pcl.company.com Encrypt data = Yes
1998/12/21 08:53:44 sharmem:1003 Trace 15459 Internal processing
(Session) pcl.company.com Updated information about CAS
```

```

process 15459
1998/12/21 08:54:12 start_app:846 Trace 15459 Application
cyborg pcl.company.com Waiting for data from either

client or host application
1998/12/21 08:54:12 start_app:972 Trace 15459 Output from host app
cyborg pcl.company.com Activity detected on stdout of

FILE01 Application
1998/12/21 08:54:12 start_app:994 Trace 15459 Output from host app
cyborg pcl.company.com Read 18 bytes from stdout of

FILE01 Application
1998/12/21 08:54:12 start_app:1001 Trace 15459 Output from host app
cyborg pcl.company.com Data from stdout: "0007C14200

GOODBY"
1998/12/21 08:54:12 write_msg:348 Trace 15459 Output from host app
cyborg pcl.company.com Writing 18 bytes of data from

stdout to client
1998/12/21 08:54:12 write_msg:353 Trace 15459 Output from host app
cyborg pcl.company.com "0007C14200 GOODBY"
1998/12/21 08:54:12 write_msg:1009 Trace 15459 Start Application response
cyborg pcl.company.com Writing message header:

class=3, type=1, length=18
1998/12/21 08:54:12 start_app:1008 Trace 15459 Output from host app
cyborg pcl.company.com Successfully sent 18 bytes to

pcl.company.com
1998/12/21 08:54:12 start_app:846 Trace 15459 Application
cyborg pcl.company.com Waiting for data from either

client or host application
1998/12/21 08:54:12 start_app:846 Trace 15459 Application
cyborg pcl.company.com Waiting for data from either

client or host application
1998/12/21 08:54:12 start_app:972 Trace 15459 Output from host app
cyborg pcl.company.com Activity detected on stdout of

FILE01 Application
1998/12/21 08:54:12 start_app:989 Trace 15459 Output from host app
cyborg pcl.company.com stdout pipe has closed
1998/12/21 08:54:12 start_app:1349 Trace 15459 Session termination
cyborg pcl.company.com Checking if FILE01 Application

has terminated (attempt 1)
1998/12/21 08:54:12 start_app:1387 Trace 15459 Session termination
cyborg pcl.company.com FILE01 Application (process

ID=15460) exited normally
1998/12/21 08:54:12 start_app:623 Trace 15459 Session termination
cyborg pcl.company.com FILE01 Application has completed

successfully
1998/12/21 08:54:12 acpt_conn:405 Trace 15459 Session termination
cyborg pcl.company.com Communication with

pcl.company.com has completed

```

```
successfully (process ID=15459)
```



See the *Message format of the system log and trace files* section for a description of the message format.

Filenames

Each instance of CAS creates its own trace file (located in the `/cyborghome/app/server/trace` directory). When there are many clients connected, the number of trace files increases similarly. The filenames of the trace files are designed to assist the administrator in finding the file for a particular client among the multitude of files.

■ For 'talking' CAS

For each CAS process started by the execution of the client session ('talking' CAS), the filename is derived from the client hostname (or IP address if the hostname is not available) and process ID of the associated 'talking' CAS. The format of the filename is:

clientaddress_processID.trc

For example:

`pc1.company.com_29159.trc`

This indicates that the client address is `pc1.company.com` and that the process ID of the 'talking' CAS process is 29159.

The usage of process ID in the filename allows a single client to connect multiple times without erasing the previous log while clearly separating each connection.

Note If tracing is enabled and disabled several times within a single connection, all traces will be written to the same file, since the client and process ID of the 'talking' CAS remain the same.

■ For 'listening' CAS

'Listening' CAS was started by the `cas` script. There is no connected client, so the filename is derived solely from the process ID of 'listening' CAS. The format of the filename is:

cybservd_processID.trc

For example:

`cybservd_29150.trc`

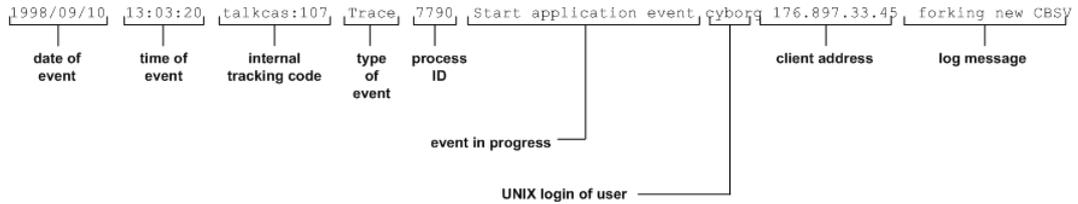
This indicates that 'listening' CAS has a process ID of 29150.

Trace file maintenance

It is the responsibility of the system administrator to remove or back up trace files. New files will be generated for each session when tracing is enabled.

Message format of the system log and trace files

The following diagram illustrates the fields found in each message:



Each message (record) will contain the following nine fields separated by tabs:

Name	Description
Date of event	Date of the event. The date format is YYYY/MM/DD.
Time of event	Time of the event. The time format is HH:MI:SS. The time is taken from the local system time on the UNIX server.
Internal tracking code	For Cyborg use only.
Type of event	The type of event. Possible values are: <ul style="list-style-type: none"> ■ Error (error) ■ Info (informational) ■ Trace (trace)
Process ID	The process ID of the CAS process that is logging the message.
Event in progress	The event in progress when the log entry was created. Examples are: New connection Getting new message
UNIX login of user	The identity under which the server application is running. For the Cyborg user, this will be 'cyborg'.
Client address	The hostname of the GUI client connected to the 'talking' CAS which is logging the event. If the hostname is not available, then the IP address is printed in dotted decimal notation.
Log message	The actual log message.

Viewing the system log and trace files

Although the system log and trace files are basically text files and can be viewed in any editor, the long text lines are difficult to manage. The scripts `viewlog` and `viewlogmsg` in the `/cyborghome/app/server` directory can be used to view the system log and trace files.

Both `viewlog` and `viewlogmsg` are `awk` scripts that use the standard **awk(1)** utility. Both scripts take the filename of the log or the trace file as their argument. If no argument is given, then they will read from standard input.

The script `viewlog` prints all the details from its input file in a more readable format, spreading the information across multiple lines and labeling each field. The script `viewlogmsg` prints only the log message without any of the other fields.

Examples:

```
viewlog system.log | more
viewlogmsg trace/pcl.company.com_29159.trc | more
tail -f system.log | viewlogmsg
```

Troubleshooting the CAS daemon

CAS installation error messages

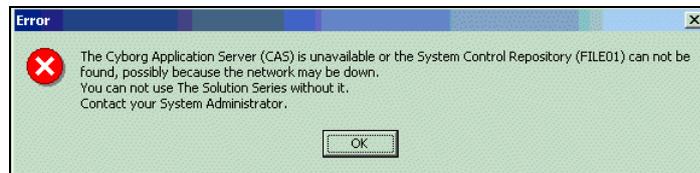
If the expected output is not displayed when starting CAS, then check the following error message table for a possible solution and then re-execute the `cas` script.

Shell	Error	Problem	Solution
bourne korn c	cas: execute permission denied ksh: cas: cannot execute cas: Permission denied.	The cas script does not have executable permissions	At the operating system command prompt, enter: chmod u+x cas
bourne korn c	cybservd: execute permission denied ksh: cybservd: cannot execute cybservd: Permission denied.	The cybservd binary does not have executable permissions	At the operating system command prompt, enter: chmod u+x cybservd
bourne korn c	cas: not found ksh: cas: not found cas: Command not found.	The cas script is not in the: /cyborghome/app/server directory	Change to the /cyborghome/app/server directory, and verify that the cas script exists by using <code>ls cas</code> .
bourne korn c	cybservd: not found ksh: cybservd: not found cybservd: Command not found.	The cybservd binary is not in the /cyborghome/app/server directory	Change to the /cyborghome/app/server directory, and verify that cybservd exists by using <code>ls cybservd</code> .

Shell	Error	Problem	Solution
bourne korn c	cybservd: Port 9888 is already in use by another process Cyborg Application Server version 1.04 terminated.	Other pre-existing software might already be configured to use this port and could be conflicting with CAS	You must change the port used by CAS by editing the /etc/services file. The administrator is responsible to ensure that each GUI client knows that CAS is no longer at 9888 but rather some other port.
		The CAS daemon is already running	Verify that the CAS daemon is running by using the following command: casmgr -isrunning
bourne korn c	If you use the following command: ps -ef grep cybservd and no processes are found	The cybservd process has aborted	Enable tracing of the CAS session immediately upon startup, so that all system error and trace messages will be sent to the trace file. To enable tracing at startup, edit the cas script. Add '-t' to the last command in the file. You must then log in as root and execute the script cas. After the process again aborts, examine the trace file using viewlogmsg to determine the reason for the process abort.
bourne korn c	cyborg: No such user on local machine	The Cyborg user has not been created	You must create the Cyborg user 'cyborg' in the operating system.

Client installation error messages

If the following error occurs:



Try one of the following:

Problem	Solution
The server is not a valid machine.	Correct the 'Host' field in the Cyborg Connection Editor for the environment in question. The server will differ from installation to installation.
The server exists but the port is not a valid number.	Correct the 'Port' field in Cyborg Connection Editor for the environment in question. The port number is listed in the /etc/services file on the server under the service name of 'cyborg'. The recommended value is 9888.
The server exists but is not the correct machine.	Use the Cyborg Connection Editor to examine the connection properties and ensure that the listed server host is the machine on which CAS is running.
The server is correct but the port is incorrect.	Use Cyborg Connection Editor to examine the connection properties and ensure that the port is correct. The port is usually 9888.
CAS is not started.	Make sure that CAS is running on the server. To launch CAS, log in as root and execute the script cas.

CAS Manager messages

Following is a list of messages you may encounter from the CAS Manager.

Additional error messages: command line parsing

Message	Condition
casmgr: Invalid switch invalidswitch	Invalid switch on command line
casmgr: Missing colon for invalidswitch	Missing colon for any switch that requires an argument
casmgr: Value required after invalidswitch	No argument after any switch except -password that requires an argument (see note below table for -password)
casmgr: Bad number invalidnumber	A badly-formed number is given where a number is expected
casmgr: Too many passwords specified	Two or more passwords on command line
casmgr: Too many commands specified	Two or more commands on command line
(Display the syntax for the command)	No arguments given on command line
casmgr: No command specified	No command on command line, but a password was specified

Note It is not an error to omit the password after the `-password` switch. This situation corresponds to using the empty string as the password.

Additional error messages: network I/O

Message	Condition
casmgr: Insufficient memory	Memory allocation failure
casmgr: CAS is not running on server, port nnnn.	CAS is not running on the current Unix host at the TCP port specified in the <code>/etc/services</code> file under 'cyborg'
casmgr: Unable to send data to server	Write error while writing to socket
casmgr: Unable to receive data from server	Read error while reading from socket

Warning messages

Warning messages are printed by CAS Manager or standard output, but do not prevent the command from completing.

Message	Condition
casmgr: Warning: password not needed	Single password on command line, but a password is not needed by the command

Stopping CAS

In the event of a payroll run or backup

All environments

To prevent online usage to all environments, we suggest that you perform the following steps:

1. `casmgr -disable`
This prevents new users from signing on.
2. `casmgr -killtalking`
This terminates any remaining processes, if required.
3. `casmgr -enable`
Once batch processing or backup is concluded, this will allow online usage.

A single environment

To prevent online usage to one environment, we suggest that you perform the following steps:

1. Edit the `cybenv.cfg` file, locate the record associated with application ID 3 for this environment and change the field labeled 'enabled' to 'N'.
This prevents new users from signing on to this one environment
2. `casmgr -killtalking`
This terminates any remaining processes, if required.
3. Once batch processing or backup is concluded, edit the `cybenv.cfg` file, locate the record associated with application ID 3 for this environment and change the field labeled 'enabled' to 'Y'.

Uninstalling CAS

To uninstall the CAS daemon, perform the following steps:

1. Stop the CAS daemon (`casmgr -killdaemon`).
2. Delete the CAS files and directories:
`cd cyborghome/app/server`
`rm cybservd cas cybapp.cfg cybenv.cfg viewlog viewlogmsg`
`rm -r system.log trace`
3. Edit the file `/etc/services` to remove the Cyborg port to the network services database. The entries in the file are usually given in numeric order, so find the location where 9888 should appear, then remove the following line of the file:
`cyborg 9888/tcp # Assigned by IANA to Cyborg Systems`
4. Save the file and exit the editor.

Installing and Configuring The Solution Series 5.0 (Windows)

1.1



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CHAPTER 1

Introduction

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Welcome

This document provides detailed installation instructions for eCyborg Version 5.0 on a Microsoft Windows environment.

Note: This guide covers the installation and configuration of eCyborg on a Windows server. The prerequisite software, as well as a majority of the procedures are either very close to the same or are, indeed, the same. We have attempted to distinguish those few areas where there is a difference between the two.

Who should read this Installation Guide

This guide is intended for a technical audience (ideally a Cyborg installation specialist), but the information may also be used by the technical/system administrator at the customer site.

A = Anyone who wishes to have an overview of The Administrative Solution or who needs to know how to prepare for an installation.

I = Cyborg installation specialist or customer performing the installation.

This Installation Guide is divided into seven chapters and eight appendices:

Who	Read this chapter	For
A	1. Introduction	An overview and description of the prerequisites required for successful installation.
I	2. The Administrative Solution Indexed Server Installation and Configuration	Detailed instructions for installing an indexed version of The Administrative Solution on a Microsoft Windows server.
I	3. The Administrative Solution Relational Server Installation and Configuration (SQL Server)	Detailed instructions for installing a relational version of The Administrative Solution in SQL Server environment.
I	4. The Administrative Solution Relational Server Installation and Configuration (Oracle)	Detailed instructions for installing a relational version of The Administrative Solution in an <i>Oracle</i> environment.
I	5. Cyborg Application service (CAS) Installation and Configuration	Detailed instructions for installing the Cyborg Application service.
I	6. Installing and Configuring the Web Client Server	Detailed instructions for installing the eCyborg Web Client Server software.
I	7. Installing and Configuring the Administrative Client	Detailed instructions for installing the Administrative Client software and configuring for access to The Solution Series Application Server.

Who	Read this chapter	For
I	A. Directory Contents	Detailed information on the files used and programs installed during the course of the installation and the purposes they serve.
I	B. Installation Checklists	Detailed checklists ideal for use when installing this implementation of The Administrative Solution on your Microsoft Windows NT server.
I	C. Creating Separate Environments	Basic instructions for creating separate environments of The Administrative Solution.
I	D. Optional SQL Server Procedures	Detailed instructions for optional operations, such as reviewing device numbers, increasing device size, and recreating a database.
I	E. ORACLE Database Considerations	Detailed instructions for optional operations, such as ensuring there is enough machine memory, tuning ORACLE with INIT.ORA parameters, understanding and resolving common ORACLE errors, managing rollback segments, changing an ORACLE user's password, and dropping the Cyborg database.
I	F. ORACLE Disk Requirements Worksheets	Guidance in calculating the disk space your company will need for an Oracle installation.

Prerequisites

This Installation Guide will be most beneficial if you are familiar with the terminology used throughout. You should be familiar with The Administrative Solution and Microsoft Windows server concepts.

Refer to the system information provided on CUBBS for the most up-to-date information on supported software, as well as any hardware requirements.

The Solution Series Application Server

Server disk requirements

The server contains both the System Control Repository—containing system objects and data dictionary (F and RFM records)—and the Employee Database. The disk space requirements on the server can vary depending on the access method used. These access methods include the following:

- Indexed
- Relational

The following table shows the approximate disk requirements for the server files in these environments. Note that these figures only reflect the amount of disk space required for the delivered system. Additional space is needed to support your data:

	Indexed	Relational
System Control Repository	75MB	75MB
Employee Database	Typical: 12,500 bytes/employee	Typical: 27,500 bytes/employee

Additional disk space may be required based upon the amount of payroll and labor distribution history retained online.

The storage requirements of the Cyborg The Administrative Solution are efficient and expandable based on data content to accommodate your data retention requirements. There is no system constraint on the amount of data retained or the length of time for which it is retained.



If using Oracle, refer to ORACLE Disk Requirements Worksheets for guidance in calculating the disk space your company will need.

Minimum Hardware Requirements

The Solution Series Application Server requires the following:

Operating system	Microsoft Windows 2000, Service Pack 2
RAM	1 GB
Disk space	1 GB (minimum per Cyborg environment), in addition to operating system requirements, for up to 2,000 employees. Allow an another 60 MB for every additional 1,000 employees. Allow additional space for temporary files.
Processor	800 MHz dual
Media access	Access to a CD-ROM drive (either locally or on a network)

Software Requirements

You should always refer to the Customer Resource Center (www.cyborg.com) for the latest software prerequisite details.

Note: Cyborg supports a Windows 2000 server with SQL Server 2000 database management software OR a Windows 2000 server with SQL 2000 database management software.

Indexed

Operating System	Windows 2000 (Service Pack 2)
Cobol Compiler	NetExpress 3.1
Other	<ul style="list-style-type: none"> ■ TCP/IP ■ Sleep Command (from Windows Resource Toolkit)

Relational (SQL Server)

Operating System	Windows 2000 (Service Pack 2)
Database Server	SQL Server 2000
Cobol Compiler	NetExpress 3.1
Other	<ul style="list-style-type: none"> ■ TCP/IP ■ Sleep Command (from Windows Resource Toolkit)

Relational (Oracle)

Operating System	Windows 2000 (Service Pack 2)
Database Server	ORACLE8i Enterprise Edition (8.1.7)
Cobol Compiler	NetExpress 3.1 -and- Pro*COBOL 1.8
Other	■ TCP/IP ■ Sleep Command (from Windows Resource Toolkit)

Application server message monitoring

You can monitor messages from the application using one of the programs in the following table:

Name	Source	Notes
Microsoft Process Viewer (PVIEW.EXE)	Provided in the Server Resource Kit	Similar to the 'ps' command in Unix
Event Viewer	Provided with Windows	System, Security, Application Logs

The Administrative Client Minimum Hardware Requirements

The Administrative Client requires the following:

Operating system	Windows 2000 Professional (Service Pack 2) Windows XP Professional Edition Windows NT Workstation Professional Edition
RAM	128 MB
Disk space	250 MB
Processor	500 MHz Pentium 500 or higher
Media access	Access to a CD-ROM drive (either locally or on a network)
Monitor	SVGA 800x600

Software Requirements

The Administrative Client requires the following software:

Administrative Client Software Requirements
Microsoft Windows 2000 -or- Windows XP Professional Edition -or- Windows NT Professional Edition
Microfocus runtime license
Windows messaging
TCP/IP

Note: Based upon your employees' individual client workstation setups, there may be missing shared .dll or .ocx files that the Cyborg product uses that are non-distributable Microsoft shared system files. If this occurs, your IT staff will need to locate and download (usually on the Microsoft website) the required file for inclusion on your PCs.

How to get additional help

If you can not find the answers to your questions in this manual, contact Customer Support, who will be able to answer specific questions and give you general advice on training.

Please visit our web site www.Cyborg.com for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

PART 2

Installing and Configuring The Solution Series Application Server

In This Section

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CHAPTER 2

Indexed Solution Series Installation and Configuration

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Introduction

This chapter provides detailed instructions for installing an indexed version of The Solution Series on a Microsoft Windows server system.

This is a technical chapter aimed at system administrators.

Note: Throughout this chapter we prefix our command line examples with 'rj' (run job). This is in reference to an executable delivered by Cyborg that automatically launches a program and displays the log output immediately after the program completes its run. Only log files are displayed; you must still navigate to the /LIST subdirectory to launch and view list files such as FILE03s.



Refer to **Relational Server Installation and Configuration (SQL Server)** (see "Relational Solution Series Installation and Configuration (SQL Server)" on page 25) or **Relational Server Installation and Configuration (SQL Server)** (see "Relational Solution Series Installation and Configuration (Oracle)" on page 49) for installation instructions for the relational version.

Deliverables

The following is included:

1	CD-ROM labeled 'The Solution Series 5.0 for <Windows>'
1	Installing and Configuring The Solution Series 5.0 (Windows 2000) (this guide)



Refer to *Directory Contents* for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

- Phase 1: Prepare for installation
- Phase 2: Install batch programs
- Phase 3: Create test P20IN Batch Master
- Phase 4: Create Employee Database with pay history
- Phase 5: Extract HR reports
- Phase 6: Apply System Control Repository menu additions



Refer to *Installation Checklists* for detailed checklists to use when installing The Solution Series on your Microsoft Windows server.

Phase 1: Prepare for installation

Install and configure prerequisite software

Verify that there is adequate space for the Microsoft 32-bit Incremental Linker by ensuring that the \TEMP directory has at least 40 MB of free space.

Copy Sleep command

Copy SLEEP.EXE from the Windows Resource Kit to the .\SYSTEM32 folder. This program is used in conjunction with the Enhanced Payroll Process, and sets a 20-second pause required to allow users to log off the system prior to running a Pay Merge from the Payroll Checklist.

Install server files

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page should open automatically. Scroll through the page, then click on the following link to start the autoinstall:

Install The Solution Series Application Server

Follow the prompts to install the software.

Modify delivered MicroFocus environment variables

The Merant environment variables are automatically set at the server. At the Administrative client PC, the variables must be called from a file originally generated by the server. To create the file to be used by the client PC, use a text editor to modify the delivered sample MFSETUP.BAT file so it reflects your designated NetExpress drive and path.

Phase 2: Build The Solution Series Environment

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes: This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (logs and list files) to determine success or failure before another script is executed. Log files are found in the \logs directory, while list files are found in the \list directory.

Pull and compile all CYBMST programs

Job Used: JXCYBMST

To extract and compile all CYBMST COBOL programs (P9CNVT, P2EDIT, P4CALC, P5PRNT, O4CALC), execute the JXCYBMST.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxcybmst
```

Review the log, then the cybmst.03 list file in the \LIST subdirectory to determine if there were any errors.

Compile and link CBSVB and CBSVRFT

Job Used: JCMPCVBN B

To compile the non-relational batch program CBSVB as delivered by Cyborg and compile the CBSVRFT subroutine, execute the JCMPCVBN.BAT B jobstream from the \RUNS subdirectory. The 'b' parameter is passed onto the jobstream in order to specifically compile the batch program (that is, CBSVB).

For example:

```
rj jmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Job Used: JCMPSORT

To compile P10SORT.CBL, P45SORT.CBL, P80SORT.CBL, P80COPY.CBL, and PFSSORT.CBL execute the JCMPSORT.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jcmsort
```

Review the log to determine if there were any errors.

Note: Your company may have different sort utilities, but by using the Cyborg delivered sort programs, we can provide you with better support should you encounter difficulties. Client supplied sort utilities are not supported by Cyborg.

Compile and link the US Quarterly Processor

Job Used: JXP5QTR

To compile the batch program P5QTR as delivered by Cyborg, execute the JXP5QTR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxp5qtr
```

Review the log to determine if there were any errors.



Refer to Using the Quarterly Processor for instructions on selecting generators, configuring the processor, and generating quarterly report output.

Create System Control Repository

Job Used: JDEMO01

This procedure creates a random System Control Repository. Execute the JDEMO01.BAT jobstream. The jobstream will utilize DEMO1.P1, DEMO1.P2, DEMO1.P3, and DEMO1.Y3 as input files.

For example:

```
rj jdemo01
```

This job may run for approximately 15 minutes depending on your system.

Review the log, then the demos01.03 list file in the \LIST subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages.

For example:

```

CSSS <UTIL( (999999(DISPLY( ( ( ( )13:38:02 02-29 XXXX
ZZTEST 99999E RELOAD IS OK. Ver-4.5 LENGTH 531 02-29-00 13:34:42*
*****
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P CYBRCI ***** RELOAD NOT FOUND *****
P CYBSCK ***** RELOAD NOT FOUND *****
P CYBSEC ***** RELOAD NOT FOUND *****
P CYBWC I ***** RELOAD NOT FOUND *****
P CYBWRK ***** RELOAD NOT FOUND *****
P CYBWZQ ***** RELOAD NOT FOUND *****
P CYBX02 ***** RELOAD NOT FOUND *****
P EXCTRL ***** RELOAD NOT FOUND *****
P QMCTRL ***** RELOAD NOT FOUND *****
P RDTBPL ***** RELOAD NOT FOUND *****
P RTCTRL ***** RELOAD NOT FOUND *****
P TBLENT ***** RELOAD NOT FOUND *****
P TBLINQ ***** RELOAD NOT FOUND *****
P TBLUPD ***** RELOAD NOT FOUND *****

```


Phase 3: create test P20IN Batch Master

**Job Used: JP20STRT (US)
JP20STRC (Canada)**

To extract the report generators from CYBMST and create the P20IN Batch Master File, execute the JP20STRT.BAT jobstream from the \RUNS subdirectory with P9STRT and P9CBSV as input.

Input files:

P05T80 (P9STRT)
P05T81(P9CBSV for US or P9CBSVC for Canada)

The P2EDIT, P4CALC, and P5PRNT programs are processed.

For example:

```
sj jp20strt
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

AUDIT2.TRL
P20STRT.03
TRANSLOD

Phase 4: Create Employee Database with pay history

Create test Employee Database

Job Used: JPAYMRG

To create a test Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate database with test data - Solution Series Install Win2000

1. Apply demo test data

Job Used: JPRDEMO (US)

JPRDEMOC (Canada)

To load test data from the System Control Repository and populate fields in the online Employee Database, execute the JPRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jprdemo
```

Review the log, then the prdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

2. Apply remaining demo test data

Job Used: JHRDEMO (US)

JHRDEMOC (Canada)

To load the remaining test data from the System Control Repository and populate fields in the online Employee Database, execute the JHRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jhrdemo
```

Review the log, then the hrdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

3. Build alternate keys

Job Used: JBLDAKY

To build or rebuild the Employee Name Alternate Key, run JBLDAKY.BAT located in the \Runs directory.

Note: This job may be modified to accommodate your build of the alternate keys once your data has been added to the system.

For example:

```
  rj jbdaky
```

Review the log, then the jbdaky.03 list file in the \LIST subdirectory to determine if there were any errors.

Update P20IN Batch Master File

Job Used: JPAYXTR

To update the P20IN Batch Master File with the demo test data, execute the JPAYXTR.BAT jobstream from the \RUNS subdirectory.

The time entries and adjustments will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

FILE10 (PAYXTR10), which contains time entries and adjustments, is also created. PAYXTR10 becomes input to the JPAYRUN as P05T81.

For example:

```
  rj jpayxtr
```

Review the log, then the payxtr.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply taxes, time entries, and adjustments

Job Used: JPAYRUN

To apply taxes (TAXFILE) and the time entries and adjustments (PAYXTR10) to the P20IN file, execute the JPAYRUN.BAT jobstream from the \RUNS subdirectory with P05T80 and P05T81 as input. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Note: Verify that the TAXFILE being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).

Input files:

```
P05T80(TAXFILE for US and TAXFILEC for Canada)
P05T81(PAYXTR10)
```

Note: If you are a Canadian customer, modify the JPAYRUN.BAT to pull the TAXFILEC instead of the TAXFILE.

For example:

```
  rj jpayrun
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

AUDITRL.LIS
CHECKNUM.LIS
PAYSLIPS.LIS
DEPSLIPS.LIS
COMBREG.LIS
TRANSLOD.LIS

Note: A number of errors display on the 9E9E (Master File Status) report the first time a PAYRUN is executed. Errors include 'INVALID SSN', 'NO ACTIVE STATES', 'NORMAL SALARY MISSING', 'NORMAL RATE MISSING', and 'SHIFT MISSING'. Disregard these errors.

Create pay history

Job Used: JMNTRUN

To create pay history and labor records and apply check numbers to the newly created history records on the P20IN Batch Master File, execute the JMNTRUN.BAT jobstream from the \RUNS subdirectory. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

For example:

```
rj jmntrun
```

Review the log, then the tranlod2.lis and auditrl2.lis list files in the \LIST subdirectory to determine if there were any errors.

Update the Employee Database

Job Used: JPAYMRG

To create a new random Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Phase 5: Extract HR reports

Job Used: JREPORT

To extract Human Resource batch reports, execute the JREPORT.BAT jobstream from the \RUNS subdirectory.

The report group that is executed is HR0001.

For example:

```
rj jreport
```

Review the log, then the rtpnt.03 and report.03 list files in the \LIST subdirectory to determine if there were any errors.

Phase 6: Apply System Control Repository menu additions

If you plan to implement the Report Launcher, Process Monitor, and Desktop Document Interface facilities on the client, then you must apply additional menu items to the System Control Repository (FILE01).

Build report menus

Job Used: jrptmnu

To build a menu containing the delivered report groups, run JRPTMNU.BAT from the \RUNS subdirectory.

For example:

```
rx jrptmnu
```

Review the log, then the rptmnu.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Job Used: jmainti

To apply menu items for online user access to batch processes and update checklists, run the JMAINTI.BAT jobstream from the \RUNS subdirectory, using EPRDDI05 as the FILE05 input.

For example:

```
rx jmainti
```

Review the log, then the mainti.03 list file in the \LIST subdirectory to determine if there were any errors.

Your installation of The Solution Series Indexed for the server is now complete. Go to the chapter 'Install and Configure Cyborg Application Server (CAS) service' for instruction on the installation and configuration of the Cyborg Application Server (CAS) service.

CHAPTER 3

Relational Solution Series Installation and Configuration (SQL Server)

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Introduction

This chapter provides detailed instructions for installing a relational version of The Solution Series on a Microsoft Windows server.

This is a technical chapter aimed at system administrators.

Note: Throughout this chapter we prefix our command line examples with 'rj' (run job). This is in reference to an executable delivered by Cyborg that automatically launches a program and displays the log output immediately after the program completes its run. Only log files are displayed; you must still navigate to the /LIST subdirectory to launch and view list files such as FILE03s.

Deliverables

The following is included:

1	CD-ROM labeled 'The Solution Series 5.0 for Windows'
1	Installing and Configuring The Solution Series 5.0 (Windows 2000) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Prepare for installation

Phase 2: Install batch programs

Phase 3: Create test P20IN Batch Master

Phase 4: Configure ODBC

Phase 5: Create Employee Database with pay history

Phase 6: Extract HR reports

Phase 7: Apply System Control Repository menu additions



Refer to Installation Checklists for detailed checklists to use when installing The Solution Series on your Microsoft Windows server.

Phase 1: Prepare for installation

Install and configure prerequisite software

Verify that there is adequate space for the Microsoft 32-bit Incremental Linker by ensuring that the \TEMP directory has at least 40 MB of free space.

Copy Sleep command

Copy SLEEP.EXE from the Windows Resource Kit to the .\SYSTEM32 folder. This program is used in conjunction with the Enhanced Payroll Process, and sets a 20-second pause required to allow users to log off the system prior to running a Pay Merge from the Payroll Checklist.

Install server files

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page should open automatically. Scroll through the page, then click on the following link to start the autoinstall:

Install The Solution Series Application Server

Follow the prompts to install the software.

Modify delivered MicroFocus environment variables

The MicroFocus environment variables are automatically set at the server. At the client PC, the variables must be called from a file originally generated by the server. To create the file to be used by the client PC, use a text editor to modify the delivered sample MFSETUP.BAT file so it reflects your designated NetExpress and SQL Server drive and path.

Modify the case tool variables

Modify the case tool variables in JCRTPGMS.BAT to include the required database information.

IMPORTANT:

The database name identified by DB_NAME must be the DB_NAME in the CBSV override file for all CBSV programs. Change the security option in the SQL database for the Cyborg users to 'SQL Server and Windows'.

Name	Example	Your System	Comment
DB_NAME	CYBORGxx		Database name. Important! There is an 8 position limit on the DB_NAME, and that name must begin with an alpha character. The 'xx' is a variable, where you might exchange the 'xx' with '50' (for example, 'cyborg50') to designate a release level.
DB_USER	cyborg		Recommended to be 'Cyborg'. Important! There is an 8 position limit on the DB_USER, and that name must begin with an alpha character.
DB_PASS	cybdba		Password for Cyborg user. Important! There is an 8 position limit on the DB_PASS, and that name must begin with an alpha character.
DB_PATH	F:\CYBORGxx\Data\		Path to database device file. (If the directory chosen does not exist, you will have to create it.) Important! The back slash (\) at the end of the entry must be present.
DB_SIZE	150		Size in MB of initial database
DB_MAX	200		Max size of database in MB; do not exceed available OS space
DB_GROWTH	500		Size in KB for expansion

Name	Example	Your System	Comment
LOG_PATH	F:\CYBORGxx\Data\		Path to log device. (If the directory chosen does not exist, you will have to create it.) Important! The back slash (\) at the end of the entry must be present. Spaces in the filename may cause problems.
LOG_SIZE	75		Size in MB of initial log
LOG_MAX	150		Max size in MB; do not exceed available OS space
LOG_GROWTH	500		Size in KB needed for log expansion

Modify the CBSV override file

Edit the CBSV.OVR override file in the \DATA subdirectory to include your database name, user ID, and server name.

Name	Example	Your System
Database name	CYBORGxx	
User ID	cyborg	
Server name	HOSTNAME	

Modify the database variables

Edit the JCRTCYB.BAT jobstream in the \RUNS subdirectory to provide required database information:

```
:  
:  
setlocal  
set SRVNAME=server  
set SYSADMUS=sa  
set SYSADMPW=master  
set DB_NAME=CYBORGxx  
set DB_USER=cyborg  
set DB_PASS=cybdba  
:  
:
```

Name	Example	Your System	Comment
SRVNAME	ntserver		Network server name where the Cyborg database resides
SYSADMUS	sa		SQL Server System Admin user name
SYSADMPW	master		SQL Server System Admin password
DB_NAME	CYBORGxx		Database name. Important! There is an 8 position limit on the DB_NAME, and that name must begin with an alpha character
DB_USER	cyborg		Recommended to be 'Cyborg'
DB_PASS	cybdba		Password for Cyborg user

Phase 2: Build The Solution Series Environment

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes: This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (logs and list files) to determine success or failure before another script is executed. Log files are found in the \logs directory, while list files are found in the \list directory.

Pull and compile all CYBMST programs

Job Used: JXCYBMST

To extract and compile all CYBMST COBOL programs (P9CNVT, P2EDIT, P4CALC, P5PRNT, O4CALC), execute the JXCYBMST.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxcybmst
```

Review the log, then the cybmst.03 list file in the \LIST subdirectory to determine if there were any errors.

Compile and link CBSVB and CBSVRFT

Job Used: JCMPCVBN B

To compile the non-relational batch program CBSVB as delivered by Cyborg and compile the CBSVRFT subroutine, execute the JCMPCVBN.BAT B jobstream from the \RUNS subdirectory. The 'b' parameter is passed onto the jobstream in order to specifically compile the batch program (that is, CBSVB).

For example:

```
rj jcmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Job Used: JCMPSORT

To compile P10SORT.CBL, P45SORT.CBL, P80SORT.CBL, P80COPY.CBL, and PFSSORT.CBL execute the JCMPSORT.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jcmpsort
```

Review the log to determine if there were any errors.

Note: Your company may have different sort utilities, but by using the Cyborg delivered sort programs, we can provide you with better support should you encounter difficulties. Client supplied sort utilities are not supported by Cyborg.

Compile and link the US Quarterly Processor

Job Used: JXP5QTR

To compile the batch program P5QTR as delivered by Cyborg, execute the JXP5QTR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxp5qtr
```

Review the log to determine if there were any errors.



Refer to Using the Quarterly Processor for instructions on selecting generators, configuring the processor, and generating quarterly report output.

Create System Control Repository

Job Used: JDEMO01

This procedure creates a random System Control Repository. Execute the JDEMO01.BAT jobstream. The jobstream will utilize DEMO1.P1, DEMO1.P2, DEMO1.P3, and DEMO1.Y3 as input files.

For example:

```
rj jdemo01
```

This job may run for approximately 15 minutes depending on your system.

Review the log, then the demos01.03 list file in the \LIST subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages.

For example:

```
CS55 <UTIL( 999999(DISPLY( ( ( ( )13:38:02 02-29 XXXX
ZZTEST 99999E RELOAD IS OK. Ver-4.5 LENGTH 531 02-29-00 13:34:42*
*****
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****_
P CYBHL ***** RELOAD NOT FOUND *****_
P CYBP15 ***** RELOAD NOT FOUND *****_
P CYBPZQ ***** RELOAD NOT FOUND *****_
P CYBRCI ***** RELOAD NOT FOUND *****_
P CYBSCK ***** RELOAD NOT FOUND *****_
P CYBSEC ***** RELOAD NOT FOUND *****_
P CYBWCI ***** RELOAD NOT FOUND *****_
P CYBWRK ***** RELOAD NOT FOUND *****_
P CYBWZQ ***** RELOAD NOT FOUND *****_
P CYBX02 ***** RELOAD NOT FOUND *****_
P EXCTRL ***** RELOAD NOT FOUND *****_
P QMCTRL ***** RELOAD NOT FOUND *****_
P RDTBPL ***** RELOAD NOT FOUND *****_
P RTCTRL ***** RELOAD NOT FOUND *****_
P TBLENT ***** RELOAD NOT FOUND *****_
P TBLINQ ***** RELOAD NOT FOUND *****_
P TBLUPD ***** RELOAD NOT FOUND *****_
```


Execute the case tool

Job Used: JCRTPGMS

Execute the JCRTPGMS.BAT jobstream from the \RUNS subdirectory. For example:

```
ry jcrtpgms
```

Review the log to determine if there were any errors.

Disregard the following messages:

```
:  
CYBRES-01 in MLPO May be within the segment key area.  
CYBRES-01 in MLPP May be within the segment key area.  
CYBRES-01 in MLQ4 May be within the segment key area.  
:
```

Create the database, tables, index, and views

Job Used: JCRTCYB

Note: If the database currently exists, you will need to drop the database before continuing with this step.



Refer to *Optional SQL Server Procedures for detailed instructions for recreating the database, should it be necessary later.*

To execute the SQL statements defined in RDBPGM1A and RDBPGM1B and create the database, tables, and index, execute the JCRTCYB.BAT jobstream from the \RUNS subdirectory. The RDBPGM1A.SQL script creates the database and permissions. The RDBPGM1B.SQL script creates tables and views.

For example:

```
ry jcrtcyb
```

Review the log to determine if there were any errors.

Rdbpgm1a.err and rdbpgm1b.err are not a part of the log and will contain information indicating a successful completion of their respective scripts. They can be found in the \Runs subdirectory.

Pre-compile, compile, and link RDBPGMA through RDBPGMH

Job Used: JCMPSUBR

To pre-compile, compile, and link the programs RDBPGMA through RDBPGMH, execute the JCMPSUBR.BAT jobstream from the \RUNS subdirectory.

For example:

```

rj jcmpsubr
    
```

Review the log to determine if there were any errors.

The following table lists and describes each subroutine generated by the CASE tool:

Program	Subroutine Description
RDBPGMA	Inserts a new row in a table
RDBPGMB	Selects data from a row in a table and passes it to CBSV
RDBPGMC	Updates values in an existing row
RDBPGMD	Deletes an existing row from a table
RDBPGME	Called when a PAYMRG 171 process is run; removes all rows from all tables in preparation for reinsertion of data from the P20 file; also disables then re-enables all indexes (where applicable)
RDBPGMF	Called when a PAYMRG 222 process is run; deletes all rows from the tables that belong to the organizations being paid
RDBPGMG	Cursors through the database and rebuilds the IDX records on the database, recreating Control 1, Control 2, and Employee Number pointers on the Employee Database; used mainly with the FIXIDX program
RDBPGMH	Provides segment and segment key length for each segment, and location of date and date type within each segment; the link between the database and The Administrative Solution

Extract, compile, and link O4CALC

Job Used: JXO4CALR

To extract COBOL program O4CALC from CYBMST, compile the program, and link the machine-specific subroutines, execute the JXO4CALR.BAT jobstream from the \RUNS subdirectory.

For example:

```

rj jxo4calr
    
```

Review the log, then the o4calc.03 list file in the \LIST subdirectory to determine if there were any errors.

Pull all CBSV programs

Job Used: JPULCVR

To pull all The Administrative Solution CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JPULCVR.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jpulcvr
```

Review the log, then the pulcvr.03 list file in the \LIST subdirectory to determine if there were any errors.

Pre-compile, compile, and link all CBSV programs

Job Used: JCMPCVR

To pre-compile, compile, and link all the CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JCMPCVR.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jcmpcvr
```

Review the log to determine if there were any errors.

Phase 3: Configure ODBC

Run ODBC

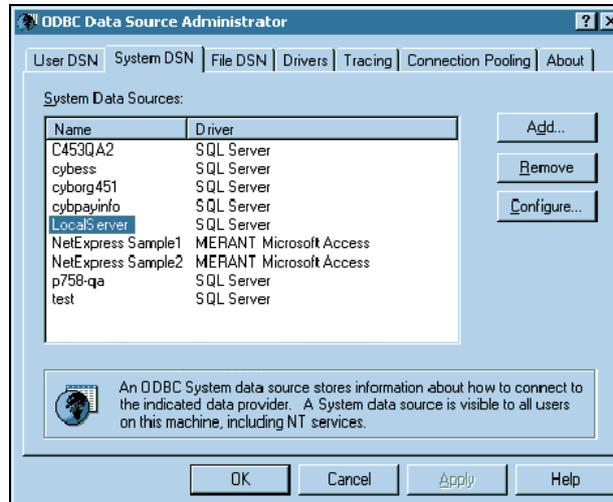
1. **Open the Data Sources (ODBC) dialog**

To start the ODBC Data Sources dialog:

Start Settings ► Control Panel ► Administrative Tools ► Data Sources (ODBC)

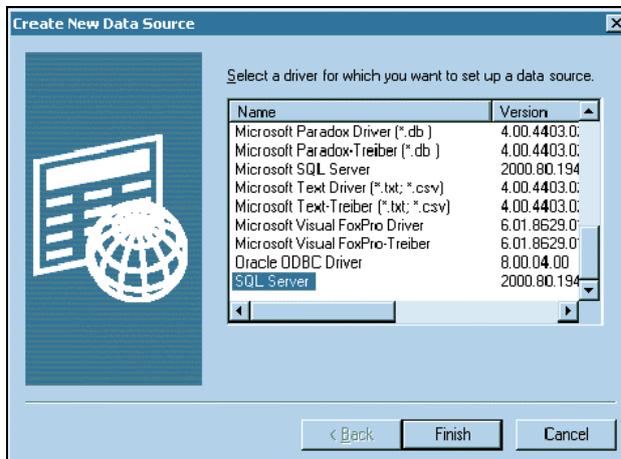
2. **Select the System DSN folder**

The screen appears as shown here:



3. **Click Add**
4. **Select the SQL Server driver**

The screen appears as shown here:

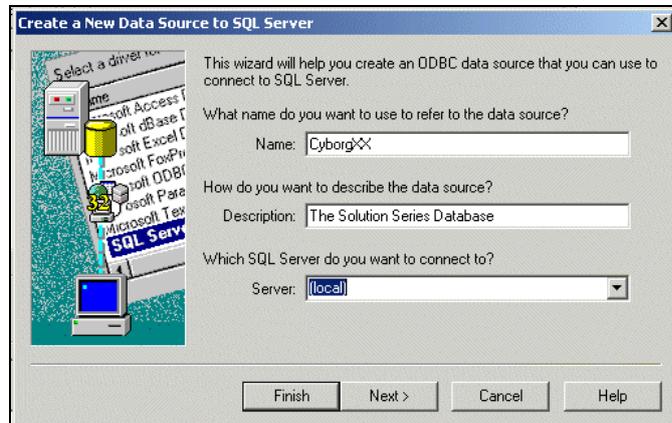


5. **Click Finish**
6. **Enter data in the 'Create a New Data Source to SQL Server' form**

Fill the following fields with the information listed:

Field	Information
Name:	CYBORG50 (should be the same as the DB_NAME in the CBSV override file for all CBSV programs, which must be the Database Name identified by DB_NAME in the script JCRTPGMS.BAT.)
Description:	Cyborg Database
Server:	<local> or 'server name'

The screen should appear as shown here:



7. Click Next

8. Enable 'Connect to SQL Server to obtain default settings for the additional configuration information'

Click on the checkbox to enable this functionality. Accept the default authentication setting.

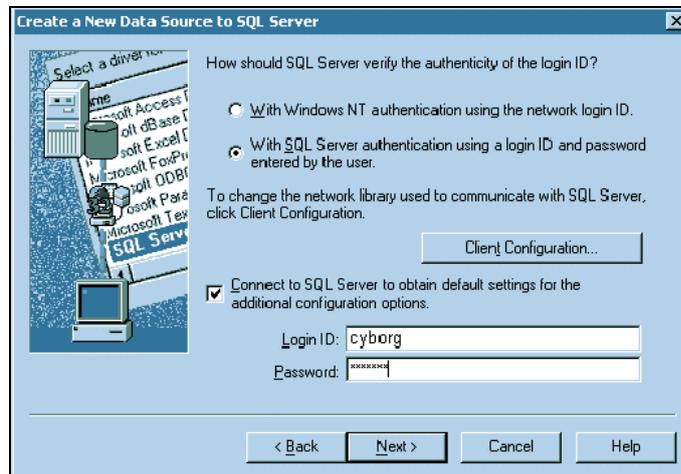
9. Verify network library

Click on Client Configuration and verify that the proper network library has been set.

10. Enter the Login ID and the Password

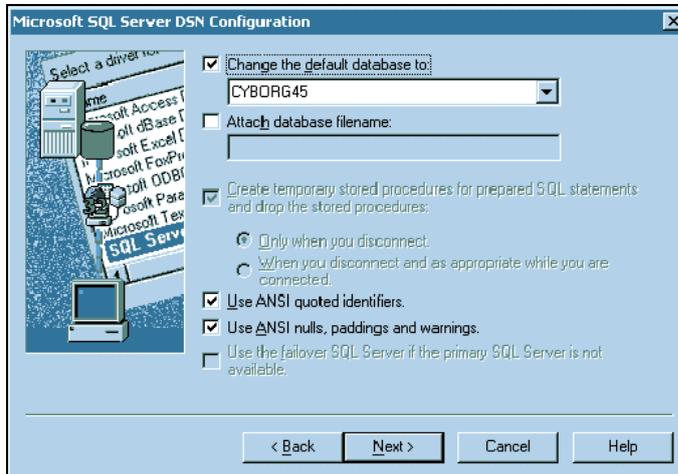
If you are using the defaults, type 'cyborg' in the Login ID field and type the current password for the SQL 'cyborg' user in the Password: field. The default is 'cybdba'.

The screen should appear as shown here:

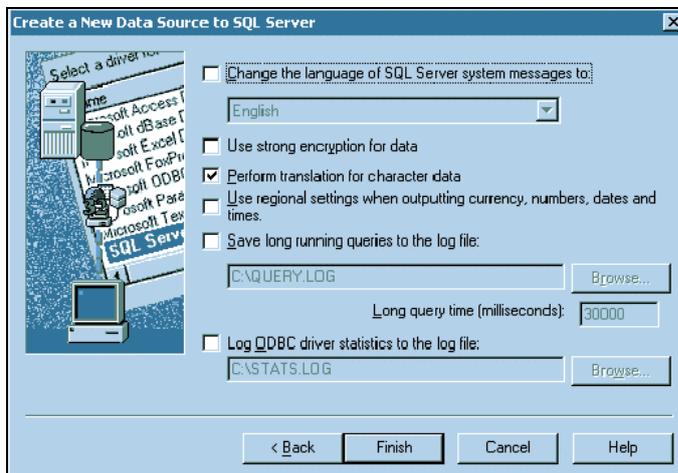


11. **Click Next**
12. **Change the default to your Cyborg Solution Series database**
CYBORGxx is the filename of the database in our example.

The window appears as shown here:

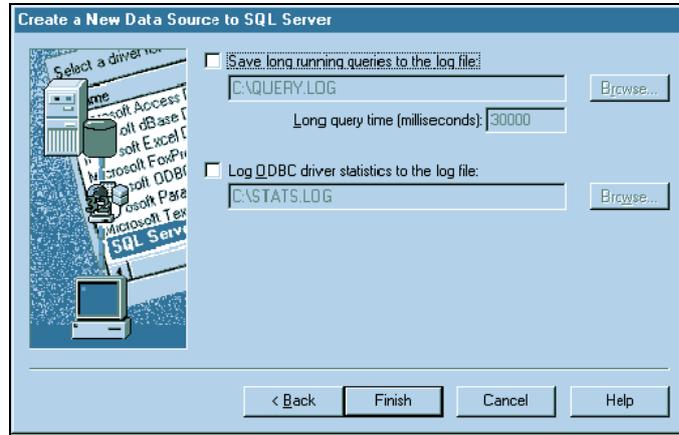


13. **Click Next**
The window appears as shown here:



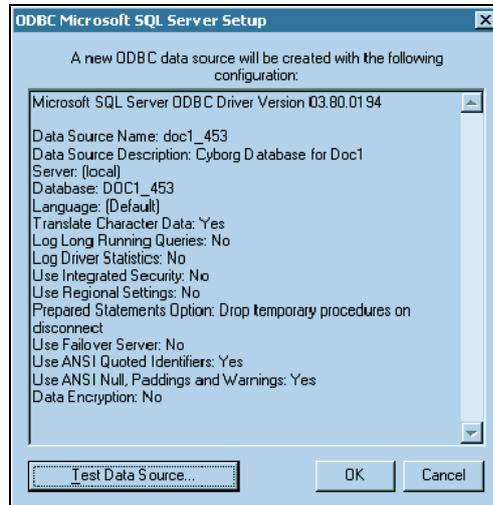
14. **Click Finish**

The window appears as shown here:



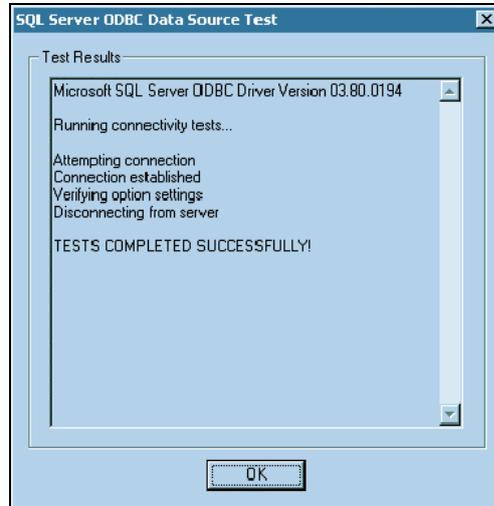
15. **On the next window, click Finish**

The window should appear as shown here:



16. Click 'Test Data Source'

You should receive a message replying, 'Tests Completed Successfully'. The window will appear as shown here:



17. Click OK

The window returns to the configurations display.

18. Click OK

Your Cyborg Solution Series database will now appear in the System Data Sources option list of the ODBC Data Source Administrator Window. The ODBC is now connected to the database.

19. Click OK

This will exit the ODBC.

Phase 4: create test P20IN Batch Master

**Job Used: JP20STRT (US)
JP20STRC (Canada)**

To extract the report generators from CYBMST and create the P20IN Batch Master File, execute the JP20STRT.BAT jobstream from the \RUNS subdirectory with P9STRT and P9CBSV as input.

Input files:

P05T80 (P9STRT)
P05T81(P9CBSV for US or P9CBSVC for Canada)

The P2EDIT, P4CALC, and P5PRNT programs are processed.

For example:

```
sj jp20strt
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

AUDIT2.TRL
P20STRT.03
TRANSLOD

Phase 5: Create Employee Database with pay history

Create test Employee Database

Job Used: JPAYMRG

To create a test Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate RDBMS tables

Job Used: JPOPF01

To synchronize the System Control Repository and relational tables for option lists and specific application tables (Cx through Xx), execute the JPOPF01.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpopf01
```

Review the log, then the popf01.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate database with test data - Solution Series Install Win2000

1. Apply demo test data

Job Used: JPRDEMO (US)

JPRDEMOC (Canada)

To load test data from the System Control Repository and populate fields in the online Employee Database, execute the JPRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jprdemo
```

Review the log, then the prdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

2. Apply remaining demo test data

Job Used: JHRDEMO (US)

JHRDEMOC (Canada)

To load the remaining test data fields in the System Control Repository and populate fields in the online Employee Database, execute the JHRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

rj jhrdemo

Review the log, then the hrdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

3. Build alternate keys

Job Used: JBLDAKY

To build or rebuild the Employee Name Alternate Key, run JBLDAKY.BAT located in the \Runs directory.

Note: This job may be modified to accommodate your build of the alternate keys once your data has been added to the system.

For example:

rj jbdaky

Review the log, then the jbdaky.03 list file in the \LIST subdirectory to determine if there were any errors.

Update P20IN Batch Master File

Job Used: JPAYXTR

To update the P20IN Batch Master File with the demo test data, execute the JPAYXTR.BAT jobstream from the \RUNS subdirectory.

The time entries and adjustments will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

FILE10 (PAYXTR10), which contains time entries and adjustments, is also created. PAYXTR10 becomes input to the JPAYRUN as P05T81.

For example:

rj jpayxtr

Review the log, then the payxtr.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply taxes, time entries, and adjustments

Job Used: JPAYRUN

To apply taxes (TAXFILE) and the time entries and adjustments (PAYXTR10) to the P20IN file, execute the JPAYRUN.BAT jobstream from the \RUNS subdirectory with P05T80 and P05T81 as input. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Note: Verify that the TAXFILE being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).

Input files:

P05T80(TAXFILE for US and TAXFILEC for Canada)
P05T81(PAYXTR10)

Note: If you are a Canadian customer, modify the JPAYRUN.BAT to pull the TAXFILEC instead of the TAXFILE.

For example:

```
rj jpayrun
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

```
AUDITRL.LIS  
CHECKNUM.LIS  
PAYSLIPS.LIS  
DEPSLIPS.LIS  
COMBREG.LIS  
TRANSLD.LIS
```

Note: A number of errors display on the 9E9E (Master File Status) report the first time a PAYRUN is executed. Errors include 'INVALID SSN', 'NO ACTIVE STATES', 'NORMAL SALARY MISSING', 'NORMAL RATE MISSING', and 'SHIFT MISSING'. Disregard these errors.

Create pay history

Job Used: JMNTRUN

To create pay history and labor records and apply check numbers to the newly created history records on the P20IN Batch Master File, execute the JMNTRUN.BAT jobstream from the \RUNS subdirectory. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

For example:

```
rj jmntrun
```

Review the log, then the tranlod2.lis and auditrl2.lis list files in the \LIST subdirectory to determine if there were any errors.

Update the Employee Database

Job Used: JPAYMRG

To create a new random Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Phase 6: Extract HR reports

Job Used: JREPORT

To extract Human Resource batch reports, execute the JREPORT.BAT jobstream from the \RUNS subdirectory.

The report group that is executed is HR0001.

For example:

```
rj jreport
```

Review the log, then the rtpnt.03 and report.03 list files in the \LIST subdirectory to determine if there were any errors.

Phase 7: Apply System Control Repository menu additions

If you plan to implement the Report Launcher, Process Monitor, and Desktop Document Interface facilities on the client, then you must apply additional menu items to the System Control Repository (FILE01).

Build report menus

Job Used: jrptmnu

To build a menu containing the delivered report groups, run JRPTMNU.BAT from the \RUNS subdirectory.

For example:

```
rj jrptmnu
```

Review the log, then the rptmnu.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Job Used: jmainti

To apply menu items for online user access to batch processes and update checklists, run the JMAINTI.BAT jobstream from the \RUNS subdirectory, using EPRDDI05 as the FILE05 input.

For example:

```
rj jmainti
```

Review the log, then the mainti.03 list file in the \LIST subdirectory to determine if there were any errors.

Your installation of The Solution Series Version for the SQL server is now complete. Go to the chapter 'Install and Configure Cyborg Application Server (CAS) service' for instruction on the installation and configuration of the Cyborg Application Server (CAS) service.

CHAPTER 4

Relational Solution Series Installation and Configuration (Oracle)

In This Chapter

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Introduction

This chapter provides detailed instructions for installing a relational version of The Solution Series on a Microsoft Windows server.

This is a technical chapter aimed at system administrators.

Note: Throughout this chapter we prefix our command line examples with 'rj' (run job). This is in reference to an executable delivered by Cyborg that automatically launches a program and displays the log output immediately after the program completes its run. Only log files are displayed; you must still navigate to the /LIST subdirectory to launch and view list files such as FILE03s.

Deliverables

The following is included:

1	CD-ROM labeled 'The Solution Series 5.0 for Windows'
1	Installing and Configuring The Solution Series 5.0 (Windows 2000) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

- Phase 1: Prepare for installation
- Phase 2: Install batch programs
- Phase 3: Create test P20IN Batch Master
- Phase 4: Create Employee Database with pay history
- Phase 5: Extract HR reports
- Phase 6: Apply System Control Repository menu additions



Refer to Installation Checklists for detailed checklists to use when installing The Solution Series on your Microsoft Windows server.

Phase 1: Prepare for installation

Install and configure prerequisite software

Verify that there is adequate space for the Microsoft 32-bit Incremental Linker by ensuring that the \TEMP directory has at least 40 MB of free space.

Copy Sleep command

Copy SLEEP.EXE from the Windows Resource Kit to the .\SYSTEM32 folder. This program is used in conjunction with the Enhanced Payroll Process, and sets a 20-second pause required to allow users to log off the system prior to running a Pay Merge from the Payroll Checklist.

Install server files

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page should open automatically. Scroll through the page, then click on the following link to start the autoinstall:

Install The Solution Series Application Server

Follow the prompts to install the software.

Modify delivered MicroFocus environment variables

The MicroFocus environment variables are automatically set at the server. At the client PC, the variables must be called from a file originally generated by the server. To create the file to be used by the client PC, use a text editor to modify the delivered sample MFSETUP.BAT file so it reflects your designated NetExpress and ORACLE drive and path.

Modify the case tools variables

Modify the case tool variables in JCRTPGMS.BAT to include the required database information.

Name	Example	Your System	Comment
Operating system	MF2		'MF2' is required to indicate this is a Windows operating system.
Relational database system	ORA		'ORA' is required input to indicate this is an Oracle database.
ASCII machine type	A		'A' is required input, indicating this is an ASCII system.
ORACLE's system manager password	manager		Required. Password of the system's manager user ID. Maximum 8 alphanumeric characters.
datafile path	F:\cyborg45\data\		Operating system path to the data files that make up the tablespaces. The 'xx' is a variable, where you might exchange the 'xx' with '45' (for example, 'cyborg45') to designate a release level. The back slash (\) at the end of the entry must be input. Maximum 30 alphanumeric characters.
ORACLE's user name	CYBORG		Cyborg Oracle user ID for execution of DDL and DML. Recommended to be 'Cyborg'. Maximum 8 alphanumeric characters.
ORACLE's user password	CYBDBA		Password for Cyborg Oracle user ID. Maximum 8 alphanumeric characters.
Tablespace indicator	S		Required. Tablespace identifier (for example, P=production, and D=development). Maximum 1 character.

The database connect string should look like the following:

```
rem .....1.....2.....3.....4.....5.....6
rem 1...5...0...5...0...5...0...5...0...5...0...
echo MF2ORAAmanager F:\cyborgxx\data\          CYBORG CYBDBA S> ..\work\control.ora
```

Modify the CBSV override file

Edit the CBSV.OVR override file in the \DATA subdirectory to include your database name, user ID, and server name.

Name	Example	Your System
Database name	CYBORGxx	
User ID	cyborg	
Server name	HOSTNAME	

Modify the database variables

Review and modify JCMRDB1.BAT as needed to show the path to the Oracle libraries.

Phase 2: Build The Solution Series Environment

Perform the following steps to install the batch and online programs, and create the random System Control Repository.

Notes: This portion of the installation must be performed locally on the server.

Each time a script is run, check all output (logs and list files) to determine success or failure before another script is executed. Log files are found in the \logs directory, while list files are found in the \list directory.

Pull and compile all CYBMST programs

Job Used: JXCYBMST

To extract and compile all CYBMST COBOL programs (P9CNVT, P2EDIT, P4CALC, P5PRNT, O4CALC), execute the JXCYBMST.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxcybmst
```

Review the log, then the cybmst.03 list file in the \LIST subdirectory to determine if there were any errors.

Compile and link CBSVB and CBSVRFT

Job Used: JCMPCVBN B

To compile the non-relational batch program CBSVB as delivered by Cyborg and compile the CBSVRFT subroutine, execute the JCMPCVBN.BAT B jobstream from the \RUNS subdirectory. The 'b' parameter is passed onto the jobstream in order to specifically compile the batch program (that is, CBSVB).

For example:

```
rj jmpcvbn b
```

Review the log to determine if there were any errors.

Compile and link sort programs

Job Used: JCMPSORT

To compile P10SORT.CBL, P45SORT.CBL, P80SORT.CBL, P80COPY.CBL, and PFSSORT.CBL execute the JCMPSORT.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jcmpsort
```

Review the log to determine if there were any errors.

Note: Your company may have different sort utilities, but by using the Cyborg delivered sort programs, we can provide you with better support should you encounter difficulties. Client supplied sort utilities are not supported by Cyborg.

Compile and link the US Quarterly Processor

Job Used: JXP5QTR

To compile the batch program P5QTR as delivered by Cyborg, execute the JXP5QTR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jxp5qtr
```

Review the log to determine if there were any errors.



Refer to Using the Quarterly Processor for instructions on selecting generators, configuring the processor, and generating quarterly report output.

Create System Control Repository

Job Used: JDEMO01

This procedure creates a random System Control Repository. Execute the JDEMO01.BAT jobstream. The jobstream will utilize DEMO1.P1, DEMO1.P2, DEMO1.P3, and DEMO1.Y3 as input files.

For example:

```
rj jdemo01
```

This job may run for approximately 15 minutes depending on your system.

Review the log, then the demos01.03 list file in the \LIST subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages.

For example:

```

CSSS <UTIL( (999999(DISPLY( ( ( ( )13:38:02 02-29 XXXX
ZZTEST 99999E RELOAD IS OK. Ver-4.5 LENGTH 531 02-29-00 13:34:42*
*****
CYBORG SYSTEMS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P CYBCRI ***** RELOAD NOT FOUND *****
P CYBSCK ***** RELOAD NOT FOUND *****
P CYBSEC ***** RELOAD NOT FOUND *****
P CYBWCI ***** RELOAD NOT FOUND *****
P CYBWRK ***** RELOAD NOT FOUND *****
P CYBWZQ ***** RELOAD NOT FOUND *****
P CYBX02 ***** RELOAD NOT FOUND *****
P EXCTRL ***** RELOAD NOT FOUND *****
P QMCTRL ***** RELOAD NOT FOUND *****
P RDTBPL ***** RELOAD NOT FOUND *****
P RTCTRL ***** RELOAD NOT FOUND *****
P TBLENT ***** RELOAD NOT FOUND *****
P TBLINQ ***** RELOAD NOT FOUND *****
P TBLUPD ***** RELOAD NOT FOUND *****

```

```
P TBLVER ***** RELOAD NOT FOUND ***** _
P V-NAME ***** RELOAD NOT FOUND ***** _
P WPTM ***** RELOAD NOT FOUND ***** _
-----
24SSS <UTIL( (999999(DEMOY3( ( ( )13:38:02 02-29 XXXX
```

Extract the CASE tool

Job Used: JPUL_RDB MF2

To extract RDBPGM0, execute the JPUL_RDB jobstream. This script will extract RDBPGM0, RDBPGM2, RDBPGM3, and RDBPGM4.

To execute this script, type:

```
sj jpul_rdb MF2
```

Note: 'MF2' must be all upper case.

Compile RDBPGM0.CBL

Job Used: JCMPRDB0

To compile the RDBPGM0.CBL program, execute the JCMPRDB0.BAT jobstream from the \RUNS subdirectory.

For example:

```
sj jcmprdb0
```

Review the log to determine if there were any errors.

Export F1 and FTM records

Job Used: JEXPORT

To export the F1 and FTM (RFT and RFM) records from the System Control Repository, execute the JEXPORT.BAT jobstream from the \RUNS subdirectory.

For example:

```
sj jexport
```

Review the log, then the export.03 list file in the \LIST subdirectory to determine if there were any errors.

Execute the case tool

Job Used: JCRTPGMS

Execute the JCRTPGMS.BAT jobstream from the \RUNS subdirectory. For example:

```
sj jcrtpgms
```

Review the log to determine if there were any errors.

Disregard the following messages:

```
:
CYBRES-01 in MLPO May be within the segment key area.
```

```
CYBRES-01 in MLPP May be within the segment key area.  
CYBRES-01 in MLQ4 May be within the segment key area.  
:
```

Pre-compile, compile and link RDBPGM1

Job Used: JCMRDB1

To pre-compile, compile, and link the program RDBPGM1, execute the JCMRDB1.BAT jobstream from the \RUNS subdirectory.

RDBPGM1 creates the database, tables, and indexes needed to support the relational version of The Administrative Solution.

For example:

```
sj jcmprdb1
```

Review the log to determine if there were any errors.

Create the database, tables, index, and views

Job Used: JCRTCYB



Refer to ORACLE Database Considerations for detailed instructions for recreating the database should it be necessary later.

To execute the SQL statements defined in JDBPGM1 and create the tables and indexes, execute the JCRTCYB.BAT jobstream from the \RUNS subdirectory.

There is no output from this run, but you or your database administrator can verify that the users, database, and tables have been created.

For example:

```
sj jcrtcyb
```

Review the log to determine if there were any errors.

Pre-compile, compile, and link RDBPGMA through RDBPGMH

Job Used: JCMPSUBR

To pre-compile, compile, and link the programs RDBPGMA through RDBPGMH, execute the JCMPSUBR.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jcmpsubr
```

Review the log to determine if there were any errors.

The following table lists and describes each subroutine generated by the CASE tool:

Program	Subroutine Description
RDBPGMA	Inserts a new row in a table
RDBPGMB	Selects data from a row in a table and passes it to CBSV
RDBPGMC	Updates values in an existing row
RDBPGMD	Deletes an existing row from a table
RDBPGME	Called when a PAYMRG 171 process is run; removes all rows from all tables in preparation for reinsertion of data from the P20 file; also disables then re-enables all indexes (where applicable)
RDBPGMF	Called when a PAYMRG 222 process is run; deletes all rows from the tables that belong to the organizations being paid
RDBPGMG	Cursors through the database and rebuilds the IDX records on the database, recreating Control 1, Control 2, and Employee Number pointers on the Employee Database; used mainly with the FIXIDX program
RDBPGMH	Provides segment and segment key length for each segment, and location of date and date type within each segment; the link between the database and The Administrative Solution

Extract, compile, and link O4CALC

Job Used: JXO4CALR

To extract COBOL program O4CALC from CYBMST, compile the program, and link the machine-specific subroutines, execute the JXO4CALR.BAT jobstream from the \RUNS subdirectory.

For example:

```
ry jxo4calr
```

Review the log, then the o4calc.03 list file in the \LIST subdirectory to determine if there were any errors.

Pull all CBSV programs

Job Used: JPULCVR

To pull all The Administrative Solution CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JPULCVR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rl jpulcvr
```

Review the log, then the pulcvr.03 list file in the \LIST subdirectory to determine if there were any errors.

Pre-compile, compile, and link all CBSV programs

Job Used: JCMPCVR

To pre-compile, compile, and link all the CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, CBSVBT), execute the JCMPCVR.BAT jobstream from the \RUNS subdirectory.

For example:

```
rl jcmpcvr
```

Review the log to determine if there were any errors.

Phase 3: create test P20IN Batch Master

Job Used: JP20STRT (US)

JP20STRC (Canada)

To extract the report generators from CYBMST and create the P20IN Batch Master File, execute the JP20STRT.BAT jobstream from the \RUNS subdirectory with P9STRT and P9CBSV as input.

Input files:

P05T80 (P9STRT)

P05T81(P9CBSV for US or P9CBSVC for Canada)

The P2EDIT, P4CALC, and P5PRNT programs are processed.

For example:

```
sj jp20strt
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

AUDIT2.TRL

P20STRT.03

TRANSLOD

Phase 4: Create Employee Database with pay history

Create test Employee Database

Job Used: JPAYMRG

To create a test Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rl jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate RDBMS tables

Job Used: JPOPF01

To synchronize the System Control Repository and relational tables for option lists and specific application tables (Cx through Xx), execute the JPOPF01.BAT jobstream from the \RUNS subdirectory.

For example:

```
rl jpopf01
```

Review the log, then the popf01.03 list file in the \LIST subdirectory to determine if there were any errors.

Populate database with test data

1. Apply demo test data

Job Used: JPRDEMO (US)

JPRDEMO (Canada)

To load test data from the System Control Repository and populate fields in the online Employee Database, execute the JPRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

```
rl jprdemo
```

Review the log, then the prdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

2. Apply remaining demo test data

Job Used: JHRDEMO (US)

JHRDEMO (Canada)

To load the remaining test data from the System Control Repository and populate fields in the online Employee Database, execute the JHRDEMO.BAT jobstream from the \RUNS subdirectory.

For example:

ry jhrdemo

Review the log, then the hrdemo.03 list file in the \LIST subdirectory to determine if there were any errors.

3. **Build alternate keys**

Job Used: JBLDAKY

To build or rebuild the Employee Name Alternate Key, run JBLDAKY.BAT located in the \Runs directory.

Note: This job may be modified to accommodate your build of the alternate keys once your data has been added to the system.

For example:

ry jbldak

Review the log, then the jbldak.03 list file in the \LIST subdirectory to determine if there were any errors.

Update P20IN Batch Master File

Job Used: JPAYXTR

To update the P20IN Batch Master File with the demo test data, execute the JPAYXTR.BAT jobstream from the \RUNS subdirectory.

The time entries and adjustments will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

FILE10 (PAYXTR10), which contains time entries and adjustments, is also created. PAYXTR10 becomes input to the JPAYRUN as P05T81.

For example:

ry jpayxtr

Review the log, then the payxtr.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply taxes, time entries, and adjustments

Job Used: JPAYRUN

To apply taxes (TAXFILE) and the time entries and adjustments (PAYXTR10) to the P20IN file, execute the JPAYRUN.BAT jobstream from the \RUNS subdirectory with P05T80 and P05T81 as input. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Note: Verify that the TAXFILE being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).

Input files:

P05T80(TAXFILE for US and TAXFILEC for Canada)
P05T81(PAYXTR10)

Note: If you are a Canadian customer, modify the JPAYRUN.BAT to pull the TAXFILEC instead of the TAXFILE.

For example:

```
rj jpayrun
```

Review the log, then all the output listings in the \LIST subdirectory to determine if there were any errors.

Output Listings:

```
AUDITRL.LIS  
CHECKNUM.LIS  
PAYSLIPS.LIS  
DEPSLIPS.LIS  
COMBREG.LIS  
TRANSLOD.LIS
```

Note: A number of errors display on the 9E9E (Master File Status) report the first time a PAYRUN is executed. Errors include 'INVALID SSN', 'NO ACTIVE STATES', 'NORMAL SALARY MISSING', 'NORMAL RATE MISSING', and 'SHIFT MISSING'. Disregard these errors.

Create pay history

Job Used: JMNTRUN

To create pay history and labor records and apply check numbers to the newly created history records on the P20IN Batch Master File, execute the JMNTRUN.BAT jobstream from the \RUNS subdirectory. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

For example:

```
rj jmntrun
```

Review the log, then the tranlod2.lis and auditrl2.lis list files in the \LIST subdirectory to determine if there were any errors.

Update the Employee Database

Job Used: JPAYMRG

To create a new random Employee Database, execute the JPAYMRG.BAT jobstream from the \RUNS subdirectory.

For example:

```
rj jpaymrg
```

Review the log, then the paymrg.03 list file in the \LIST subdirectory to determine if there were any errors.

Phase 5: Extract HR reports

Job Used: JREPORT

To extract Human Resource batch reports, execute the JREPORT.BAT jobstream from the \RUNS subdirectory.

The report group that is executed is HR0001.

For example:

```
rj jreport
```

Review the log, then the rptprt.03 and report.03 list files in the \LIST subdirectory to determine if there were any errors.

Phase 6: Apply System Control Repository menu additions

If you plan to implement the Report Launcher, Process Monitor, and Desktop Document Interface facilities on the client, then you must apply additional menu items to the System Control Repository (FILE01).

Build report menus

Job Used: jrptmnu

To build a menu containing the delivered report groups, run JRPTMNU.BAT from the \RUNS subdirectory.

For example:

```
rj jrptmnu
```

Review the log, then the rptmnu.03 list file in the \LIST subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Job Used: jmainti

To apply menu items for online user access to batch processes and update checklists, run the JMAINTI.BAT jobstream from the \RUNS subdirectory, using EPRDDI05 as the FILE05 input.

For example:

```
rj jmainti
```

Review the log, then the mainti.03 list file in the \LIST subdirectory to determine if there were any errors.

Your installation of The Solution Series for the ORACLE server is now complete. Go to the chapter 'Install and Configure Cyborg Application Server (CAS) service' for instruction on the installation and configuration of the Cyborg Application Server (CAS) service.

CHAPTER 5

Cyborg Application Service (CAS) Installation and Configuration

In This Chapter

Introduction	68
Phase 1: Install and configure the Cyborg Application Server (CAS) service	69
Phase 2: Optional---Verify mapping on server	75

Introduction

This chapter provides detailed instructions for installing the CAS on a Microsoft Windows server system.

This is a technical chapter aimed at system administrators.



*Refer to **Indexed Server Installation and Configuration**, **Relational Server Installation and Configuration (SQL Server)** (see "Relational Solution Series Installation and Configuration (SQL Server)" on page 25), and **Relational Server Installation and Configuration (SQL Server)** (see "Relational Solution Series Installation and Configuration (Oracle)" on page 49) for installation instructions.*

Deliverables

The following is included:

1	CD-ROM labeled 'The Solution Series 5.0 for <Windows>'
1	Installing and Configuring The Solution Series 5.0 (Windows 2000) (this guide)



*Refer to **Directory Contents** for detailed information on scripts used and programs installed during the installation and the purposes they serve.*

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Install and configure Cyborg Application Server (CAS) service

Phase 2: Optional—Verify mapping on server

Phase 1: Install and configure the Cyborg Application Server (CAS) service

Install CAS

To Install CAS

Note: If you are replacing CAS (*cybservd.exe*), you must first Uninstall the prior version.

1. Copy *cybservd.exe* (Service executable) and *CybCpnl.cpl* (Cyborg Control Panel DLL) from the *CYBORGxx\PROG* subdirectory to the Microsoft Windows System root directory (normally *WINNT\system32*).
2. Type the following command from the DOS prompt in the Microsoft Windows System directory:

```
cybservd -install
```

3. Press Enter.

To Uninstall CAS

If you want to uninstall the solution series application server, complete the steps below:

1. Execute the following:

Start ► Settings ► Control Panel ► Administrative Tools ► Services

2. Select the 'Cyborg Application Service' entry in the Service option list.
3. Click Stop.
4. Close the dialog.
5. Type the following command from the DOS prompt in the Microsoft Windows System directory:

```
cybservd -remove
```

6. Press Enter.

Set up services (Windows 2000)

1. Add Cyborg port to services

1. Edit the TCP/IP services file (normally *WINNT\system32\DRIVERS\etc\ SERVICES*) to add an entry of 'cyborg 9888 /tcp'. (9888 is Cyborg's registered TCP port #).

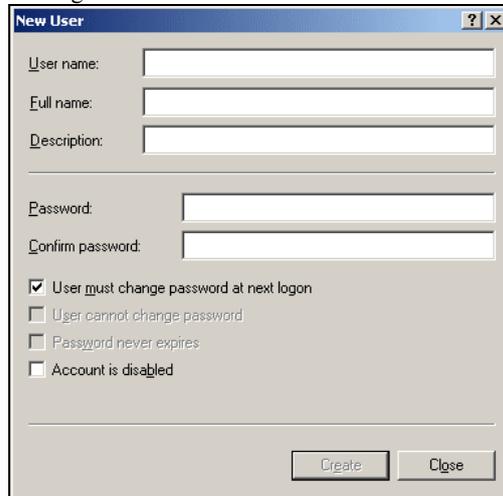
Note: The Cyborg services address should be placed in its numerical order.

2. Create a Cyborg user

1. Execute the following from Windows:

Start ► Settings ► Control Panel ► Administrative Tools ► Computer Management ► Local Users and Groups ► Users

then right-click on User and select New User.



2. Enter the username (for example, 'Cyborg') and description.
3. Clear the 'User Must Change Password at Next Logon' option.
4. Select the 'Password Never Expires' option on the New User dialog.
5. Configure a Cyborg user password.

Note: It is important to set up a password because it will be required later by the Cyborg service (CAS). Note the use of upper and lower case for use in CAS later.

6. Click Create on the New User dialog box to establish a new user. When you exit the New User dialog box, the new user appears in the Computer Management window.

3. Set up access permissions

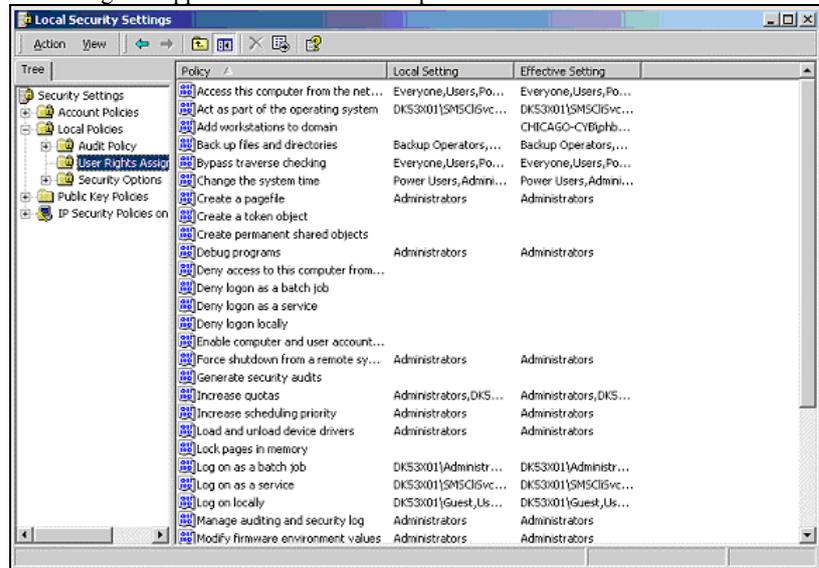
1. Access the Cyborg properties dialog by right-clicking on properties.
2. Select the 'Member Of' tab
3. Click Add.
4. Select the group you want to add.
5. Click OK.

4. Set up user rights for 'Cyborg' user

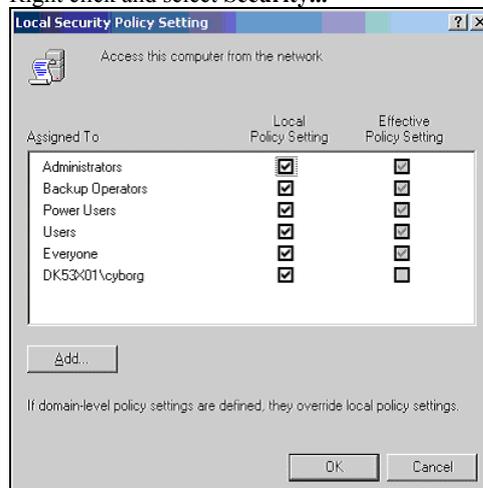
1. Execute the following:

Start ► Settings ► Control Panel ► Administrative Tools ► Computer Management ► Local Policies ► User Rights Assignment

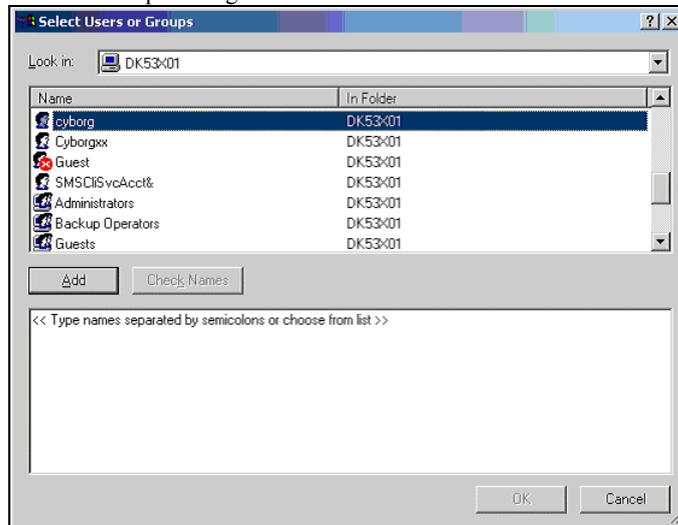
The dialog will appear similar to the example:



2. Select a policy. You will have to perform the next steps separately for each of the following policies:
 - Access this computer from network
 - Act as part of the operating system
 - Increase Quotas
 - Log on as a service
 - Replace a process level token
3. Right click and select **Security...**



4. Click **Add...**
5. With the local computer selected in the 'Look in:' field, select cyborg user in the 'Select Users or Groups' dialog:



6. Click **Add**
7. Click **OK**
8. Click **OK**
9. Repeat steps 2-8 for each policy listed in step 2.

5. Set up services for the environment

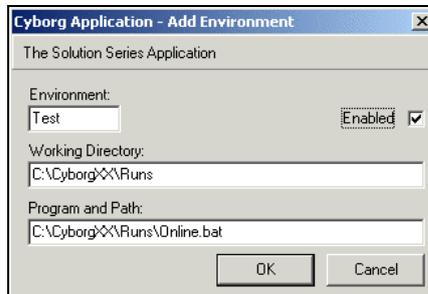
1. Execute the following:

Start ► Settings ► Control Panel ► Cyborg Service

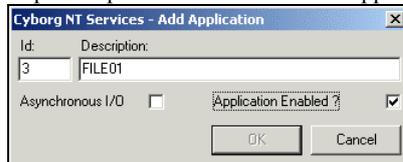
2. Click the General tab and type the password for the Cyborg user.
3. Select the Information check box to allow you to view Cyborg Application Service Startup and Shutdown messages and other basic errors in the Event Viewer. By default, this check box is selected.
4. (Optional) Select the Debug check box to enable more advanced diagnostic features of the Cyborg Application Service.
5. Select the Settings tab and click New in the Application area.
6. Type an ID of '2' with a description (for example, 'The Solution Series Application'), select the Application Enabled check box, and click OK:



7. With 'The Solution Series Application' selected in the Application area, click Add in the Environments area.
8. Type up to 8 characters in the Environment field (for example, 'Test') and select the Enabled check box.
9. Type the Working Directory of the (Test) system (for example, 'C:\CYBORGxx\RUNS').
10. Type the full Program Path (and program name) of the batch file that starts up CBSVO (for example, 'C:\CYBORGxx\RUNS\Online.bat');

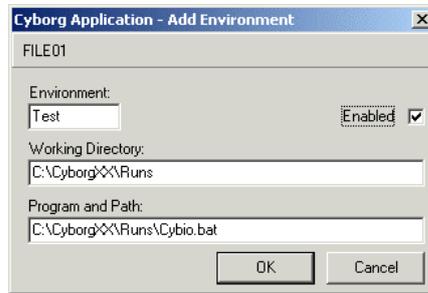


11. Click OK (on the Add Environment dialog box).
Repeat steps 5–11 for the 'FILE01 Application' with an ID of '3', for example:



Note: The FILE01 application's configuration must exactly mirror the configuration for the 'The Administrative Solution Application'. The exact same working directory must be set up.

13. Type the full Program Path (and program name) of the batch file that starts up CYBIO (for example, 'C:\CYBORGxx\RUNS\Cybio.bat').



14. Click OK

Start CAS

1. **Execute the following:**

Start ► Settings ► Control Panel ► Administrative Tools ► Services

2. **Select the 'Cyborg Application Service' entry in the Service option list.**
3. **Select 'Automatic' as the startup type.**
4. **Click Start.**
5. **Click OK.**

Verify installation

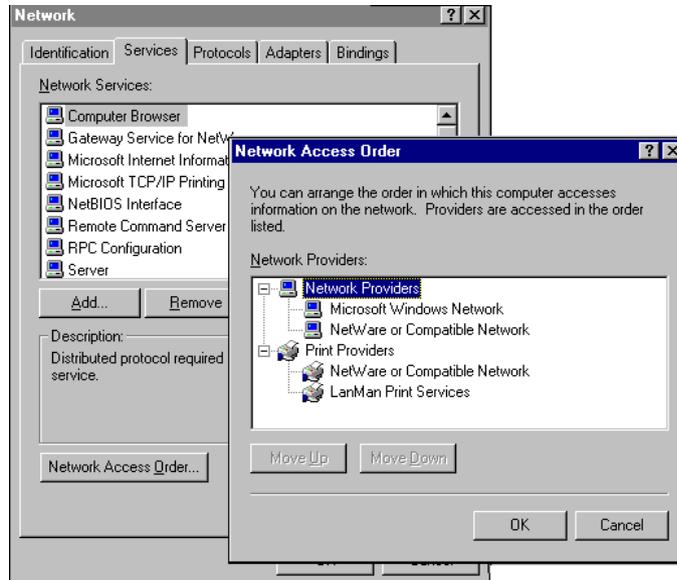
1. **Open the Application log**
Select Application log.
2. **Locate messages relevant to the Cyborg installation (identified by a 'CyborgService' entry in the Source column)**
Note: Icon symbols can be identified as follows: Red = Errors, Yellow = Warnings, Blue = Information.
3. **Double-click the Cyborg-relevant entries to see the messages**
The message should read 'CyborgService message: Service started.' The event icon should be blue in the Event Viewer.

Phase 2: Optional---Verify mapping on server

Note: You need only perform these steps if the server is attached to more than one network.

To avoid problems accessing the database from clients running in batch, the Network Access Order on the Server must have Microsoft Windows Network as the first Network Provider.

1. **Execute the following:**
Start ► Settings ► Control Panel ► Network
2. **Select the Services tab and then click Network Access Order:**



Microsoft Windows Network must be the first Network Provider. If it is not, select it and click Move Up.

3. **Click OK to save the changes.**

Your installation of The Solution Series CAS Service for Microsoft Windows on the server is now complete. Go to Client Installation and Configuration.

PART 3

Installing and Configuring the Administrative Client

CHAPTER 6

Installing and Configuring the Administrative Client

In This Chapter

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Phase 2: Install the software	83
Phase 3: Configure the software	86
Phase 4: Test the installation	89

Introduction

This chapter provides detailed instructions for configuring clients of the Windows 2000 server running The Solution Series.

This is a technical chapter aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled 'The Solution Series'
1	Installing and Configuring The Solution Series 5.0 (Windows) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Overview of the installation

The installation has been divided logically into the following phases:

Phase 1: Prepare for installation

Phase 2: Install the software

Phase 3: Configure the software

Phase 4: Test the installation

Phase 1: Prepare for installation

It is important to appropriately prepare for the client installation of The Solution Series. Because the client and server will work together, you must ensure that they are both synchronized in communication.

Before successful operations may be carried on between the server running The Solution Series and the client, you are required to install and configure the prerequisite software. This software must be in place before beginning the installation.

Note: Based upon your employees' individual client workstation setups, there may be missing shared .dll or .ocx files that the Cyborg product uses that are non-distributable Microsoft shared system files. If this occurs, your IT staff will need to locate and download (usually on the Microsoft website) the required file for inclusion on your PCs.

Ensure Cyborg Application Service is active

The Cyborg Application Service must be running on the server.



Refer to Install and Configure Cyborg Application Server (CAS) Service to learn how you can tell if CAS service is active.

Complete a configuration worksheet

During the installation, you will be prompted to supply client and server information. Complete the table below in advance preparation for these entries:

	Description	Your Configuration
Installation Location	Identify where you want the client files installed. If you accept the default location, the files will be placed at C:\Program Files\Cyborg Systems\Clientxx(where 'xx' indicates the release level of the installation).	
Type of Installation	Determine if you want to perform a Typical (recommended), Compact, or Custom installation.	
Connection Type	The only connection type available at this time is the Cyborg Application Service (CAS).	
Connection Name	<p>Identify a title for the connection you will configure between the client and the server.</p> <p>For the initial installation, accept the 'default' connection name (Defaultxx, where 'xx' indicates the release level of The Solution Series installation). If a user requires multi-environment access, additional environments can be set up later.</p> <p>This label must not contain the characters "\:*?\"<_'. If you name the connection by another name, additional steps must be performed.</p> <p> Refer to the appendices for more information on creating multiple environments (see "Creating Separate Environments" on page 135).</p>	
Host	Host name or IP address of the server to which you want the client to connect.	
Port	Identify the port address of the server. Cyborg has registered the port address of 9888 for the Cyborg Application Service (CAS). This address must be the same as was specified during the installation and configuration of Cyborg Application Service (CAS).	9888
Environment	Identify the environment name (up to 8 characters) that was established during the Cyborg Application Service (CAS) installation, for example, CYBORG, CYBPROD, CYBTEST, or CYBDEV.	

Note If installing the client on the server, then either enter 'local host' or '127.0.0.1'.

Phase 2: Install the software

Install client files

Be sure to have at hand the configuration worksheet completed as preparation as you may need to refer to it as you load programs on the PC.

1. Insert the CD-ROM into the Administrative client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Administrative client' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files	use default, or ... Other:
Setup Type	*Typical (default) *Compact *Custom	use default, or ... select one of the other options
Are you running The Solution Series on an OS/390 Server?	--	No
Launch the Connection Editor?	Deselected (No)	Do not select this option if you are installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR) (Windows and Unix only). Select this option if you are not installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR).

The installation program will prompt you when it is complete.

Install Enhanced Payroll and Reporting (EPR)---optional

If you wish to use the Enhanced Payroll and Reporting, you must first install the EPR client files.

1. Insert the CD-ROM into the Administrative Client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Enhanced Payroll and Reporting' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...'
column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files\Cyborg Systems\Clientxx	use default, or... Other:

The installation program will prompt you when it is complete.

Note: Prior to using the Process Monitor, you must specify the correct environment and user folder. The Specify Environment Folder and Specify User Folder dialogs will display the first time the Process Monitor utility is run.

Install Document Data Interface (DDI)---optional

If you wish to use the Document Data Interface, you must first install the DDI client files.

1. Insert the CD-ROM into the Administrative Client PC

The Getting Started page displays.

2. Navigate and then click on the 'Install Document Management Facility' link

Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. Follow the installation prompts

The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the 'Select the following...' column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files\Cyborg Systems\Clientxx	use default, or... Other:

The installation program will prompt you when it is complete.

Phase 3: Configure the software

Set Up Your Environment

To set up your environment, perform the following steps:

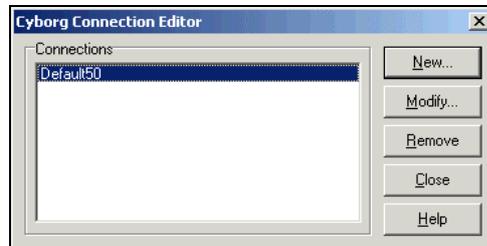
1. Access the dialog box

Access this dialog box at the end of the installation or by selecting:

Start ► Programs ► The Solution Series xxx ► Connection Editor

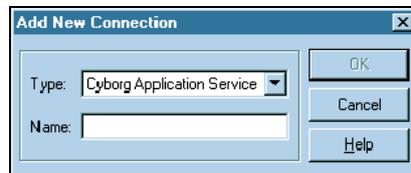
2. Click New

Click on the New button to set up a new configuration.



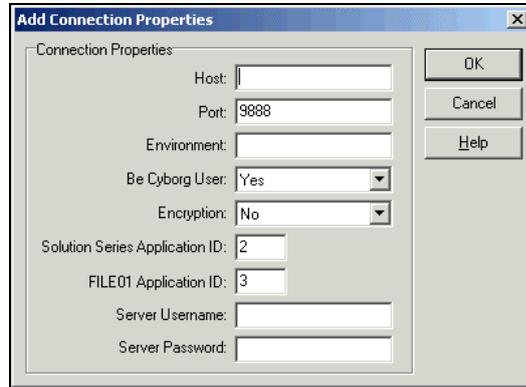
3. Type the name of your new connection

Leave Cyborg Application Service selected in the Type drop-down list box. Type the name of the connection you are creating in the Name text box.



4. Click OK

The Add Connection Properties dialog displays.

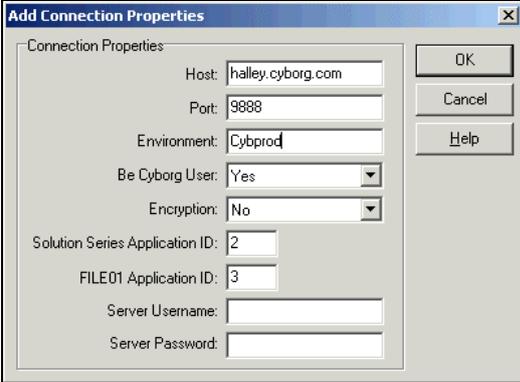


5. Type the configuration details

Type the configuration details under Connection Properties on the Connection Editor dialog box:

Item	Description
Host	Identify the system name of the server.
Port	Identify the port address of the server. For the Cyborg Application Server (CAS), Cyborg has registered the port address of 9888.
Environment	Identify the environment name (up to 8 characters) on the server. Examples are: CYBPROD, CYBTEST, and so on.
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
Solution Series Application ID	The application name and ID number for The Solution Series application. This application ID is configured to 2.
FILE01 Application ID	The application name and ID number for the CYBIO application. This application ID is configured to 3.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

After you have made these entries on the Cyborg Connection Editor, it should look similar to the following example:



The screenshot shows a dialog box titled "Add Connection Properties" with a close button (X) in the top right corner. The dialog is divided into a main area labeled "Connection Properties" and a right-hand side with three buttons: "OK", "Cancel", and "Help". The "Connection Properties" area contains the following fields:

- Host: halley.cyborg.com
- Port: 9888
- Environment: Cybprod
- Be Cyborg User: Yes (dropdown menu)
- Encryption: No (dropdown menu)
- Solution Series Application ID: 2
- FILE01 Application ID: 3
- Server Username: (empty text box)
- Server Password: (empty text box)

- 6. Click OK**
The connection properties are specified.
- 7. Click Close**
The connection has been configured between the server and the client.

Phase 4: Test the installation

Run the Messaging Test Tool

The Messaging Test Tool is used to ensure that the Address Book dialog can be properly accessed and that an email can be sent. This is a separate program packaged with The Solution Series. Messaging is essential in order for email integration to work properly.

To run the Messaging Test Tool, complete the following steps:

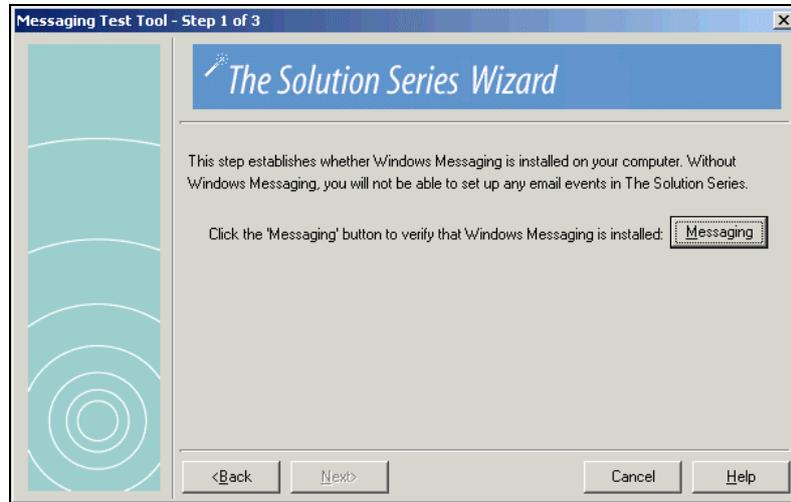
1. Launch the Messaging Test Tool

Run the Messaging Test Tool by starting the executable located in the following file path:

..\Program Files\Cyborg Systems\Clientxx\MessagingTestTool.exe

2. Click Next

The Messaging button appears:



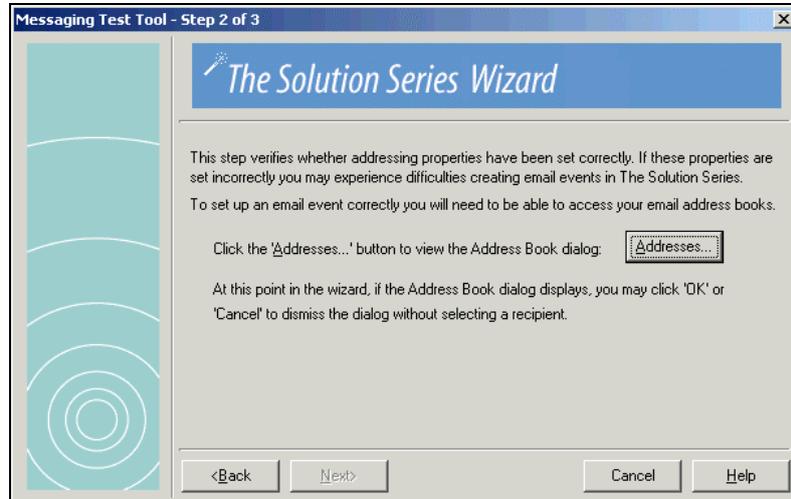
3. Click Messaging

Messaging is required to provide the system files used by MAPI-compliant email packages.

If your default email application is MAPI compliant, then the Tool will allow you to proceed. If not, contact your IT department.

4. Click **N**ext

The Address button appears:



5. Click **A**ddresses

At this point, you may get a prompt asking for your email password, depending on your email system and if you are already logged on to email.

The dialog will list the email addresses in your system. Check them to verify that this is the correct listing.

6. Click **O**K

Clicking OK will return you to Step 2 of 3 in the Messaging Test Tool dialog.

7. Click **N**ext

The dialog will now prompt you to send an email. This is to test that an email can be sent. The Subject and Message fields are editable on this dialog. If you wish to change either of these, you may do so.

8. Click **T**o

The Address Book dialog will appear, allowing you to select an email address.

9. Select an **a**ddress

This is the address where the test email will be sent. It is suggested that you use either your own or another easily accessed address—this will make it easier to confirm that the email has been properly sent and received.

10. Click **O**K

This will accept the address selection.

11. Click **S**end

The Messaging Diagnostics Tools will now send the test email.

12. Click OK

This will close the dialog.

13. Click Next

The dialog will display all three steps, indicating whether or not they were completed successfully.

14. Click Finish

This will close the Messaging Test Tool.

When you are finished with this task, you should check the In Box at the address the email has been sent to in order to verify that it has been received. It is recommended that you use an email address you can easily access.

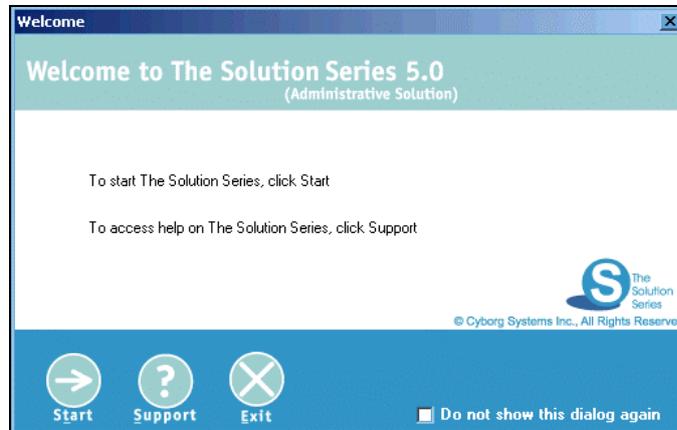
Test the connection to the server

To test the connection to the server, perform the following steps:

1. Launch The Solution Series

Select:

Start ► Programs ► The Solution Series ► The Solution Series



2. Click Start on the Welcome screen

The Login dialog box appears.

Note: If you see an error message instead of this Welcome screen, refer to the error listing in [Optional SQL Server Procedures](#) or [Optional ORACLE Procedures](#) for further information.

Test the GUI

To test the GUI, perform the following steps:

1. Log on as Security Officer

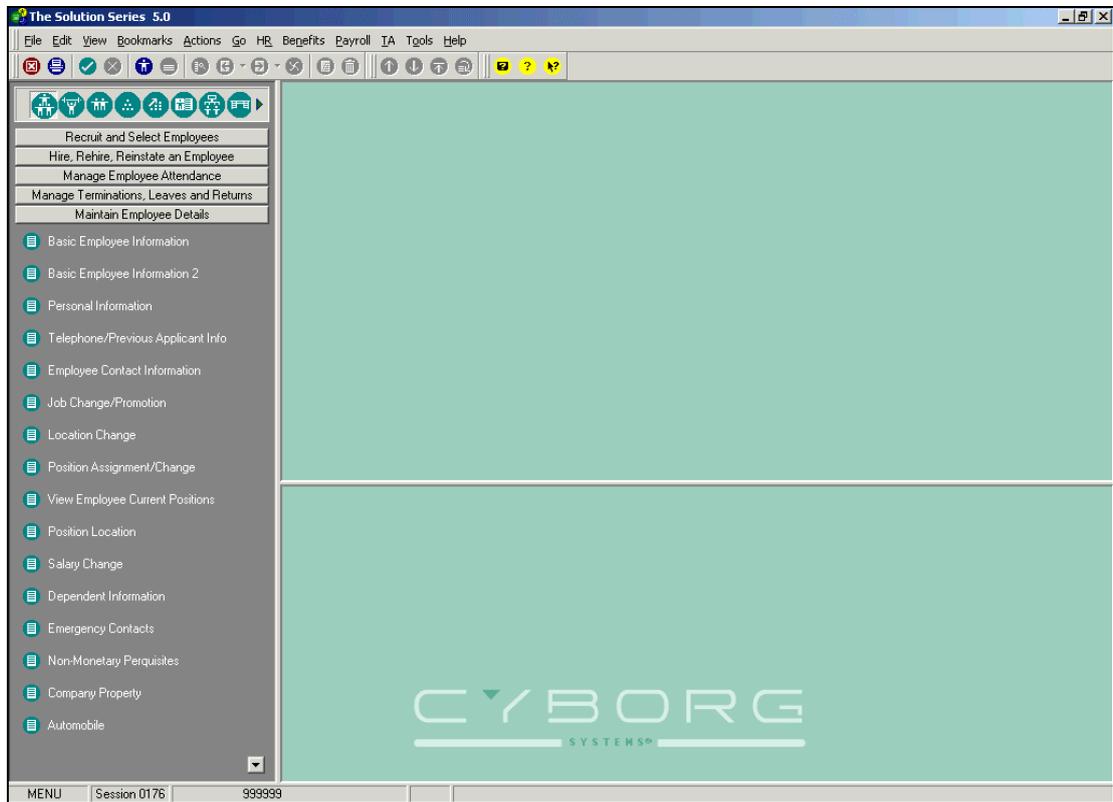
Select the environment you want to access from the option list, then type your user name and password:



The Solution Series Login dialog box. It contains three input fields: 'Your User Code:' with a masked input field (XXXXXX), 'Your Password:' with a masked input field (XXXXXX), and 'Environment:' with a dropdown menu showing 'Default'. At the bottom are three buttons: 'OK', 'Cancel', and 'Help'.

2. Click OK

The work area for The Solution Series displays:

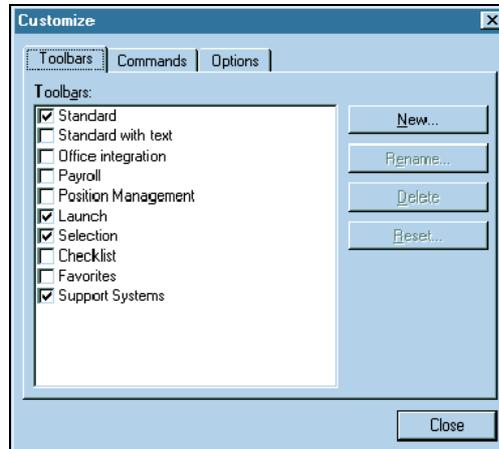




Refer to Creating Separate Environments for information on creating additional environments.

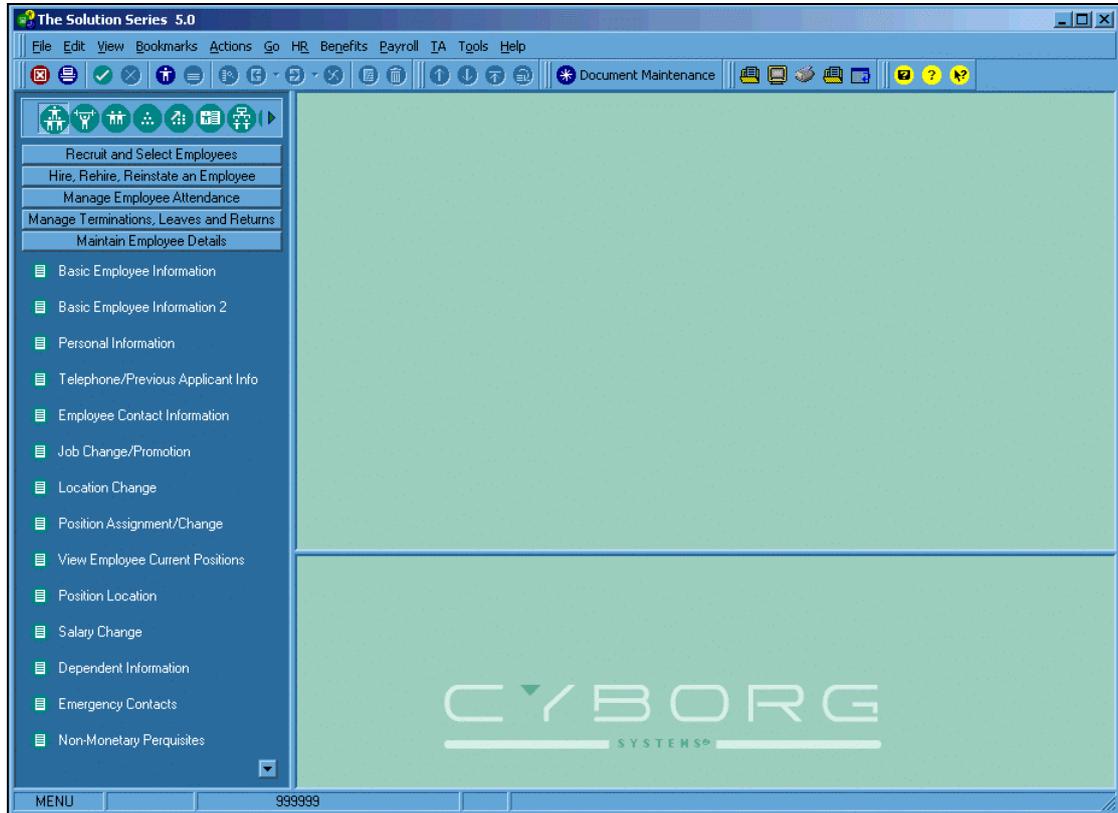
View the Favorites Toolbar

1. **Logon**
2. **To add the Launch Bar to the Menu Bar, customize the toolbar**
View ► **Customize Toolbars**
On the Toolbars tab, click beside 'Launch'.



3. Click Close

The Launch toolbar will appear:



Define the email and letter template folder

Document templates are created when a letter or email communication event is set up. These templates contain the body of the letter or email. Where the templates are stored is important. The location is specified by the 'Main Document Path' text box on the System Options form (SCOPTS).

Before setting the Main Document Path, you will need to create or determine which folder will be used for storing the templates. Communication events that will be used by multiple users should be stored on a network drive. This allows any user who might trigger the event, either manually or automatically through an action or condition, access to the templates.

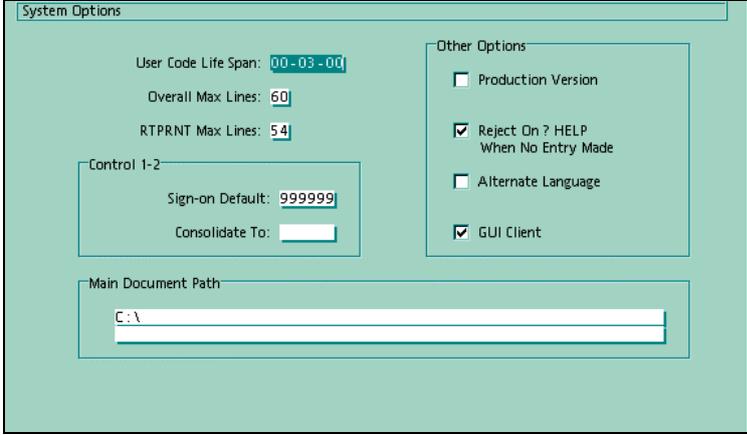
To set the Main Document Path, complete the following steps:

1. **Access the System Options form (SCOPTS)**

Access this form by selecting the following:

- Component:**  Security Tools
Process: Security Tools
Task:  Specify System Options

The System Options form (SCOPTS) appears:



The screenshot shows the 'System Options' form with the following fields and options:

- User Code Life Span: 00-03-00
- Overall Max Lines: 60
- RTPRNT Max Lines: 54
- Control 1-2: Sign-on Default: 999999, Consolidate To: []
- Main Document Path: C:\
- Other Options:
 - Production Version
 - Reject On ? HELP When No Entry Made
 - Alternate Language
 - GUI Client

2. **Enter the Main Document Path**

In the Main Document Path box, type in the path of the folder which contains the email and letter templates which the Office Integration will utilize. For general use, it is required that this path be accessible to all Administrative Clients.

3. **Press Enter**

The Main Document Path has now been set, allowing the system will to find the path where the templates are stored.

4. **Exit The Solution Series**

Before the Main Document Path will take effect, you need to log off and log back onto The Solution Series.

Test Word integration

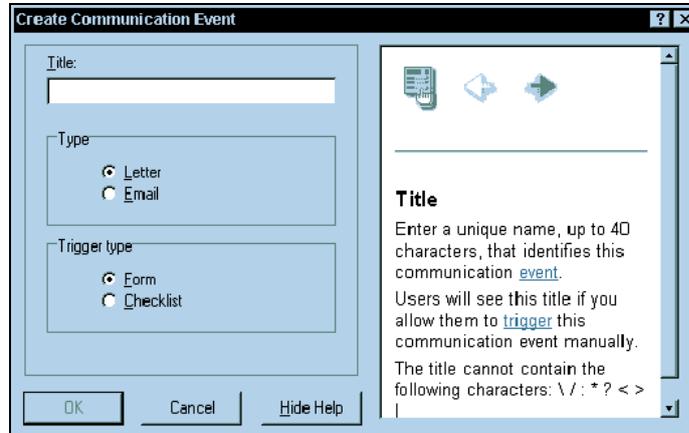
1. **Access the Communication Event dialog**

Access this dialog by making the following selections from the Navigator:

- Component:**  Administrator Tools
Process: Administrator Tools
Task:  Manage Events

2. Click **Create**

The Create Communication Event dialog appears:



3. Enter a **Title**

Type a unique title, up to 40 characters, for this communication event. For the test letter, type the following:

Test Letter

4. Select **L**etter

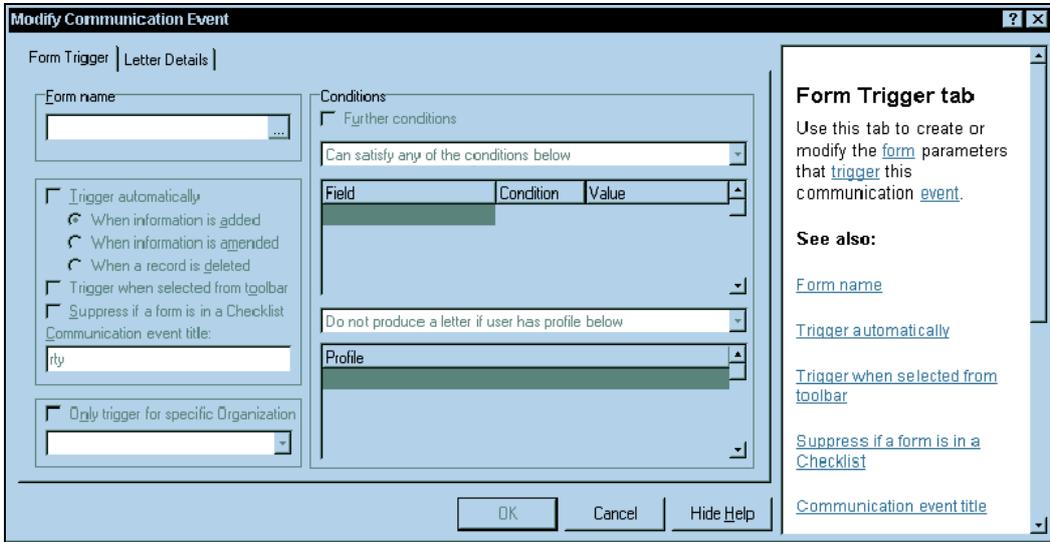
By default, **L**etter is the communication event Type selected when the dialog is first displayed. Verify that **L**etter is selected.

5. Select **F**orm

By default, **F**orm is the communication event Trigger type selected when the dialog is first displayed. Verify that **F**orm is selected.

6. Click OK

Click OK to create the communication event. The Modify Communication Event dialog appears:

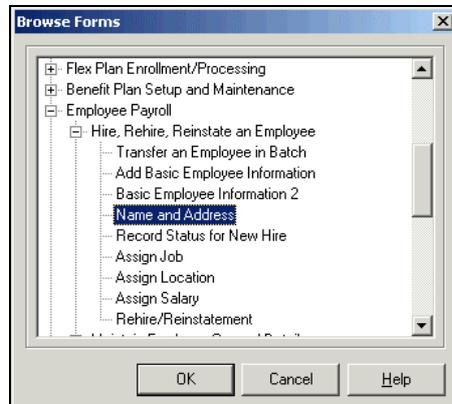


7. Select the Form name

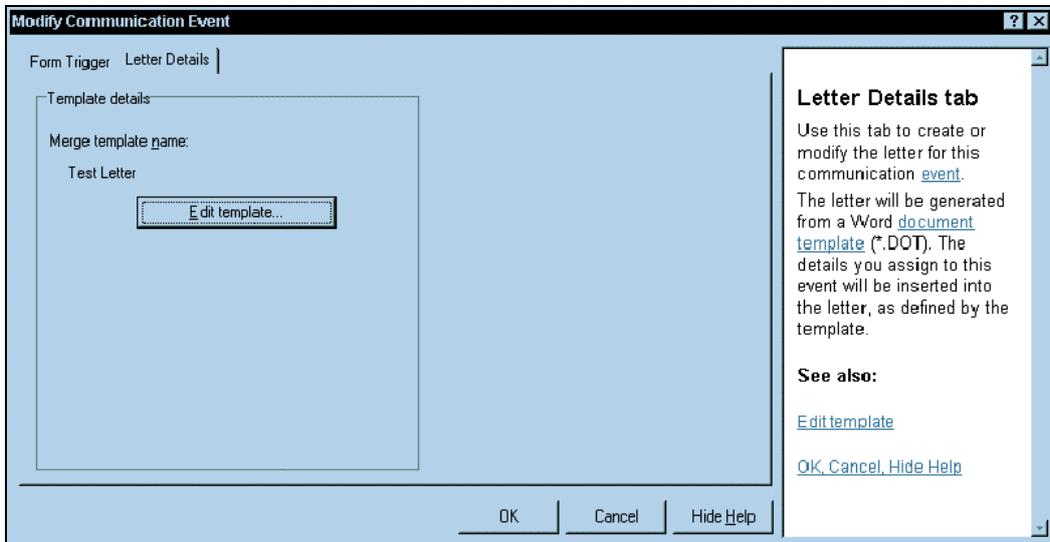
Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus.

For the test letter, select:

Employee Payroll ► Hire, Rehire, Reinstatement an Employee ► Name and Address



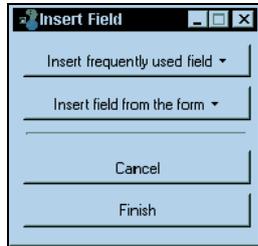
8. **Click OK**
This will select the form.
9. **Select the automatic trigger conditions**
Select 'Trigger automatically'. This will activate the trigger options.
10. **Select 'When information is amended'**
'When information is added' is the default selection – change this.
11. **Click on the 'Letter Details' tab**
The 'Letter Details' tab appears:



12. **Click 'Edit Template'**
This will open Word and the New dialog. The New dialog allows you to select existing templates on which to base the new one.
13. **Select 'Blank Document'**
This is the default.

14. Click OK

Word creates a new blank document, and the Insert Field dialog appears:



The Insert Field dialog allows you to include information directly from The Solution Series in the template.

15. Add the 'First_Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'First_Name' from the drop-down list.

This selection and the next couple will test if The Solution Series information is being pulled into the Word template properly.

16. Type a space

17. Add the 'Last_Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Last_Name' from the drop-down list.

18. Press Enter

This will start a new line on the Word document.

19. Type in a line

For the test letter, type the following line:

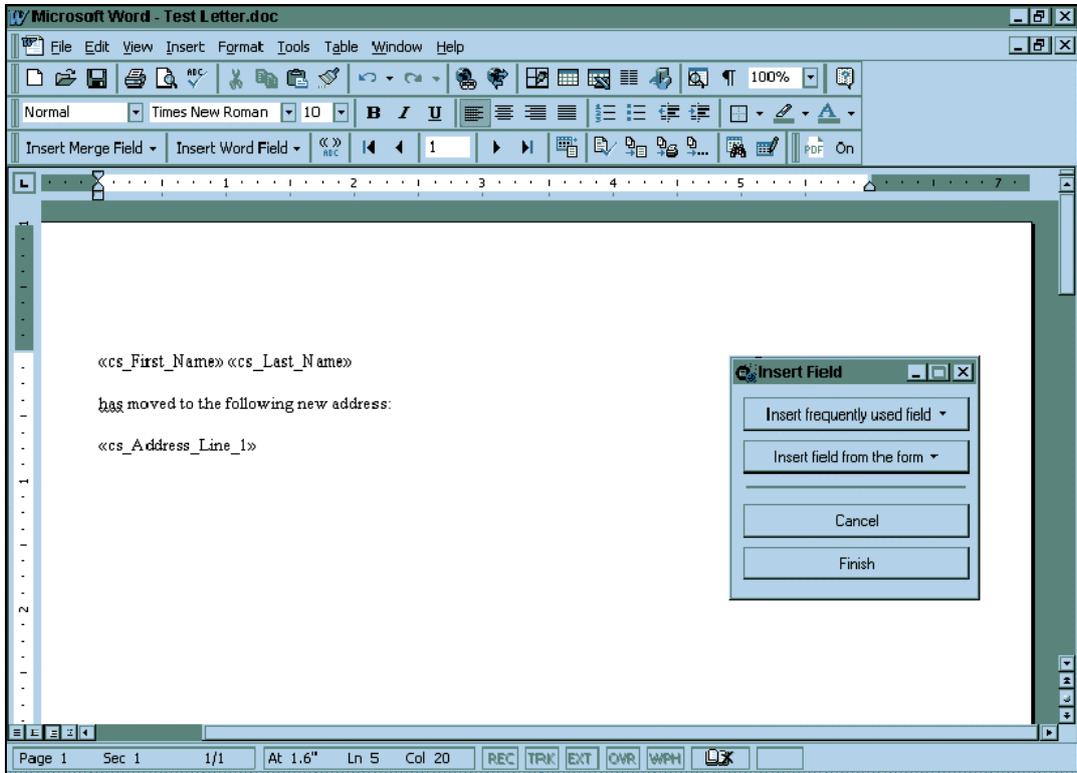
has moved to the following address:

20. Press Enter

This will start a new line on the Word document.

21. Add the 'Address_Line_1' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Address_Line_1' from the drop-down list. The display should appear like this:



22. Click Finish

Word will save the letter.

23. Click OK

This will close the Modify Communication Event dialog.

24. Click OK

This will close the Communication Event Manager dialog.

25. Access the Name and Address form

Make the following selections:

- Component:**  Employee Resourcing
- Process:** Hire, Rehire, Reinstatement an Employee
- Task:**  Name and Address

26. Select an employee

In the Number field, type:

1234

27. Click OK

The Employee Name and Address form (FF-SCR) appears with the employee information:

The screenshot shows a form titled "Employee Name And Address" with the name "AUSTIN, STEVEN" in the top right corner. The form contains the following fields and values:

- Name Code: 001
- Title: Mr (dropdown menu)
- First: STEVEN
- Middle: (empty)
- Last: AUSTIN
- Suffix: (empty dropdown menu)
- Address: 2314 W MILWAUKEE AV
APT 8
- City/State: CHICAGO IL 60614
- Country: USA (dropdown menu)

28. Type a new address

In the Address field, type the following:

1523 W. Axel Road

29. Press Enter

This will enter the new address. At this point, the Confirmation dialog appears:

The screenshot shows a "Confirmation" dialog box with the following text and buttons:

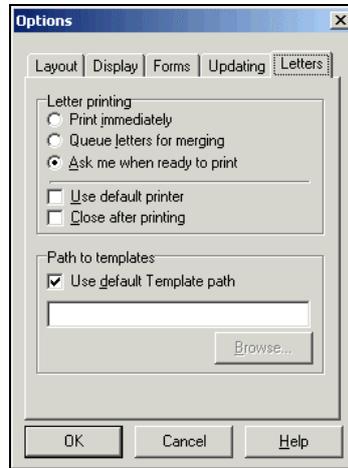
The following letter is ready to be printed
Test Letter

Buttons: View Letter, Print Now, Add to Queue, Cancel

Note: In order for this dialog to appear, you must have the 'Ask me when ready to print' option selected. This option can be found by going into The Solution Series and selecting the following:

View ► Change Options

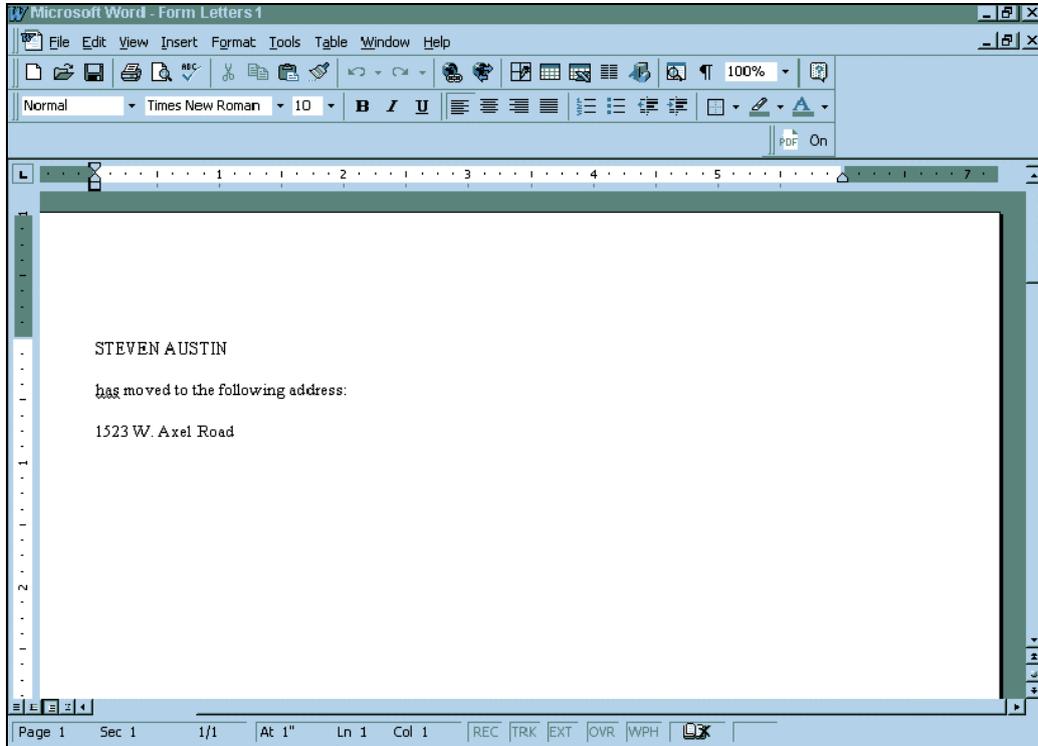
The Options dialog appears. View the Letters tab.



Select the 'Ask me when ready to print' option, then click OK.

30. Click View Letter

The system opens up the letter in Word and it includes the employee information. The display should appear as shown here:



Test email integration

1. Access the Communication Event dialog

Access this dialog by making the following selections from the Navigator:

Component:



Administrator Tools

Process:

Administrator Tools

Task:

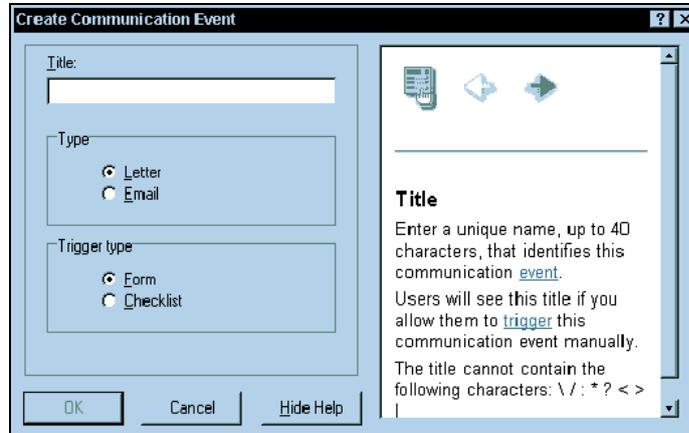


Manage Events

Note: At this point, you may want to delete the Test Letter created in the task 'Test Word integration'. This can be done on the Communication Event dialog by selecting Test Letter in the Event list, then clicking Remove.

2. Click **Create**

The Create Communication Event dialog appears:



3. Enter a **Title**

Type a unique title, up to 40 characters, for this communication event. For the test letter, type the following:

Test Email

4. Select **Email**

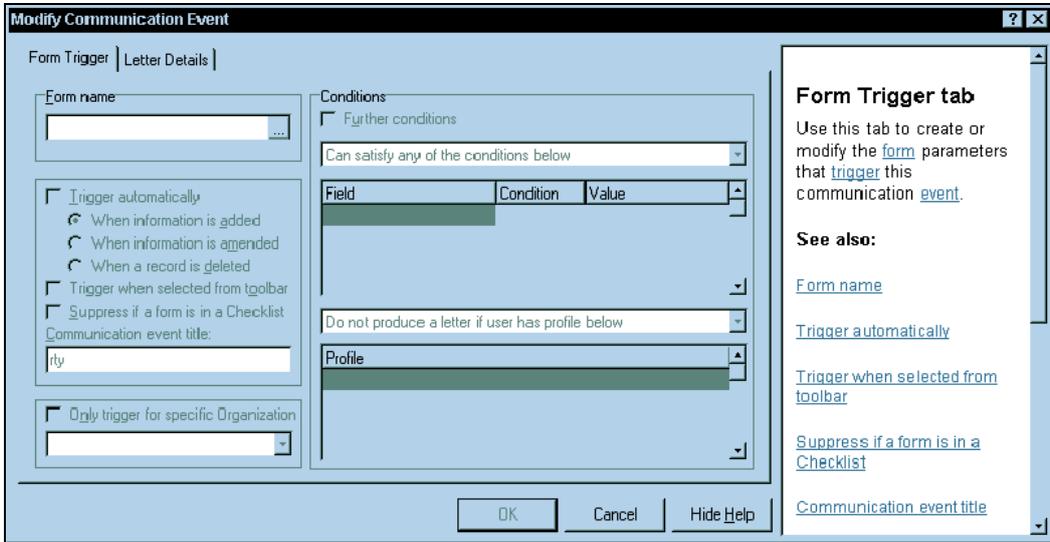
By default, Letter is the communication event Type selected when the dialog is first displayed. Change the selection to Email.

5. Select **Form**

By default, Form is the communication event Trigger type selected when the dialog is first displayed. Verify that Form is selected.

6. Click OK

The Modify Communication Event dialog appears:

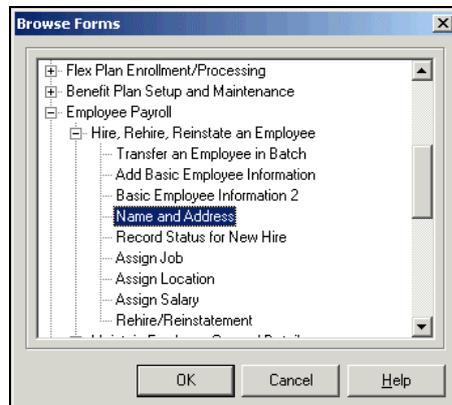


7. Select the Form name

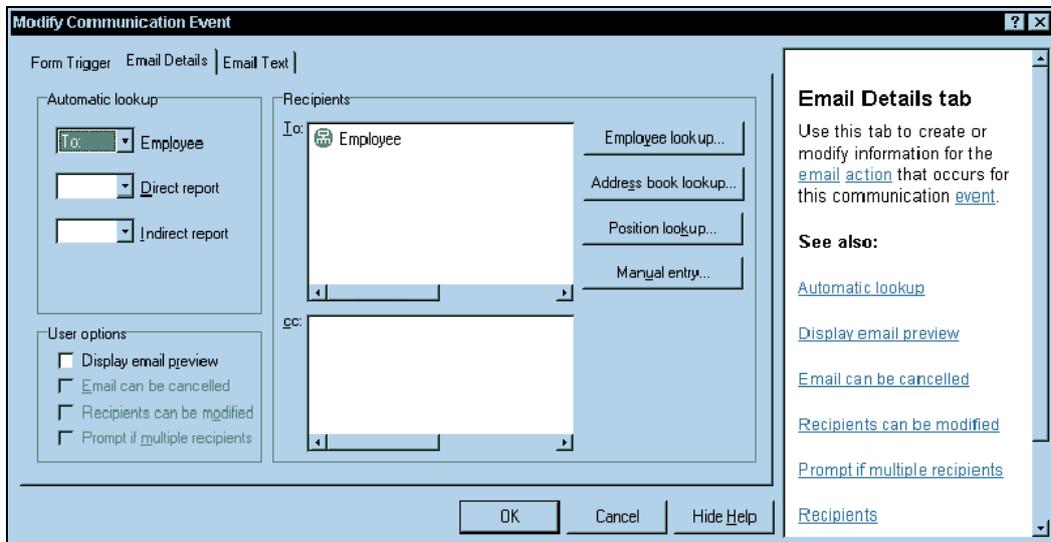
Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus.

For the test email, select:

Employee Payroll ► Hire, Rehire, Reinstatement an Employee ► Name and Address



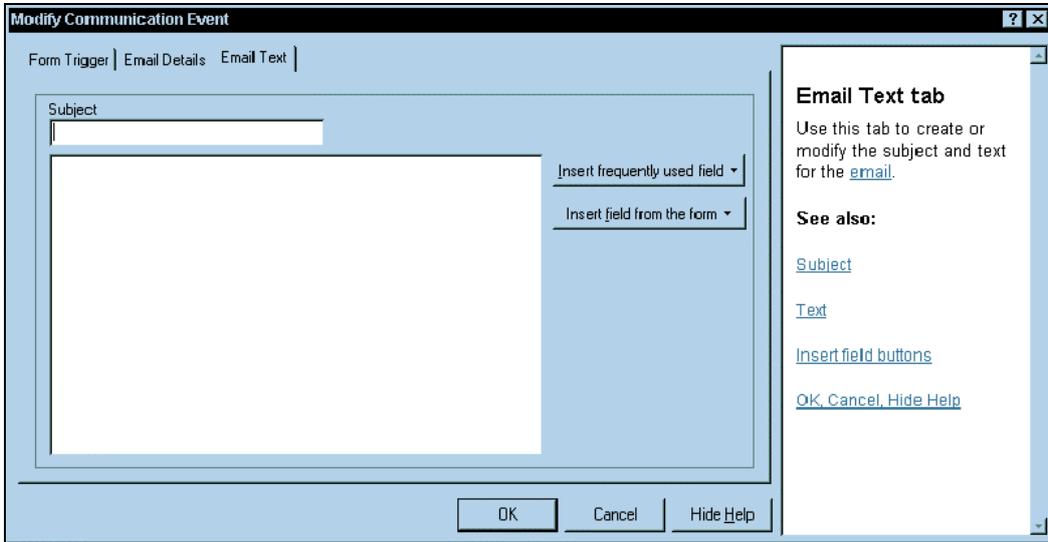
8. **Click OK**
9. **Select the automatic trigger conditions**
Select 'Trigger automatically'. This will activate the trigger options.
10. **Select 'When information is amended'**
'When information is added' is the default selection—change this.
11. **Click the Email Details tab**
The Email Details tab will appear:
12. **In the Employee field, select 'To'**
Click on the down arrow, and a drop-down list will appear—select 'To' from this list. Once you select 'To', the system will automatically include the Employee field, in order to pull the email address of the required employee.



13. **Select another email address**
Click 'Address book lookup' and select the desired email address. This will send the email to another address, which you can use to check that the email has been received—you may want to use your own or another easily accessible address.
14. **Click OK**
This will select the email address and return you to the Modify Communication Event dialog.
15. **Click on the 'Display email preview' option**
This is located in the lower left corner of the Email Details tab. Once this option is selected, the system will automatically generate a dialog which prompts you when it is generating the email.

16. Click on the Email Text tab

The Email Text tab appears:



This is where you create the email.

17. Type the Subject

In the subject field, type the following:

Test Email

18. Add the 'First Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'First Name' from the drop-down list.

This selection and the next couple will test if The Solution Series information is being pulled into the Word template properly.

19. Type a space

20. Add the 'Last Name' field

Click 'Insert Frequently used field' on the Insert Field dialog, then select 'Last Name' from the drop-down list.

21. Press Enter

This will start a new line in the email.

22. Type in a line

For the test letter, type the following line:

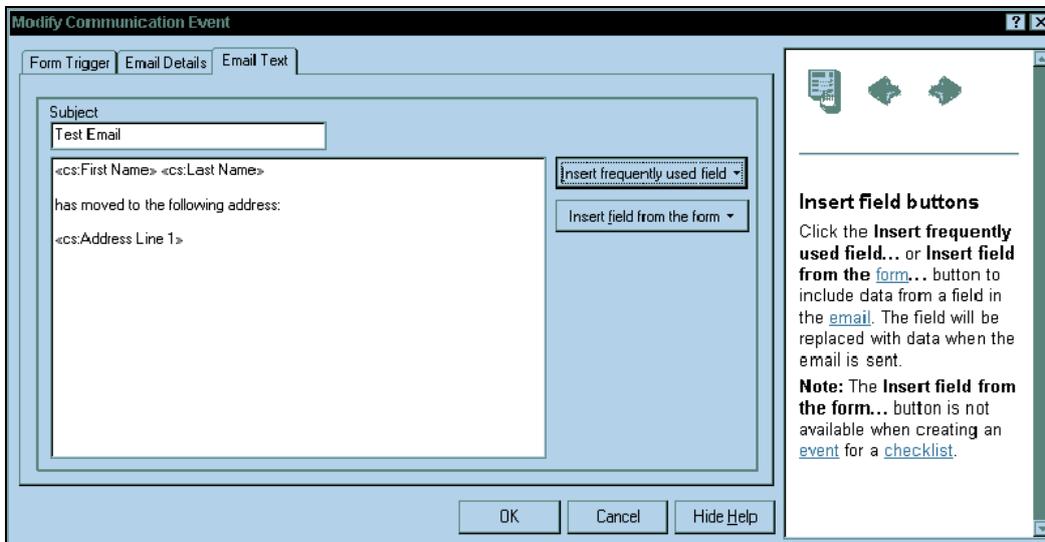
has moved to the following address:

23. Press Enter

This will start a new line in the email.

24. Add the 'Address Line 1' field

Click 'Insert Frequently used field', then select 'Address Line 1' from the drop-down list. The display should appear like this:



25. Click OK

This will enter the data and return you to the Communication Event Manager dialog.

26. Click OK

This will close the Event Manager dialog.

27. Access the Name and Address form

Make the following selections:

- Component:**  Employee Resourcing
Process: Hire, Rehire, Reinstatement of an Employee
Task:  Name and Address

28. Select an employee

In the Number field, type:

1234

29. Click OK

The Employee Name and Address form (FF-SCR) appears with the employee information:

The form displays the following information:

- Name Code: 001
- Title: Mr
- First: STEVEN
- Middle:
- Last: AUSTIN
- Suffix:
- Address: 1523 W. Rocky Road
- City/State: CHICAGO IL 60614
- Country: USA

30. Type a new address

In the Address field, type the following:

1523 W. Rocky Road

31. Press Enter

This will enter the new address. At this point, the Email Preview dialog appears:

The dialog box shows the following details:

- Recipients:** To: AUSTIN, STEVEN
- Email Text:** Subject: Test Email
- Message Body:** STEVEN AUSTIN has moved to the following address: 1523 W. Rocky Road

32. Click Send

This will send the email to the selected address.

When you are finished with this task, you should check the In Box at the address the email has been sent to in order to verify that it has been received. It is recommended that you use an email address you can easily access.

Test the import facility

This task will walk you through a test import with a sample Excel spreadsheet in order to ensure that the import functionality is working properly.

1. Access the Import Profile Manager dialog

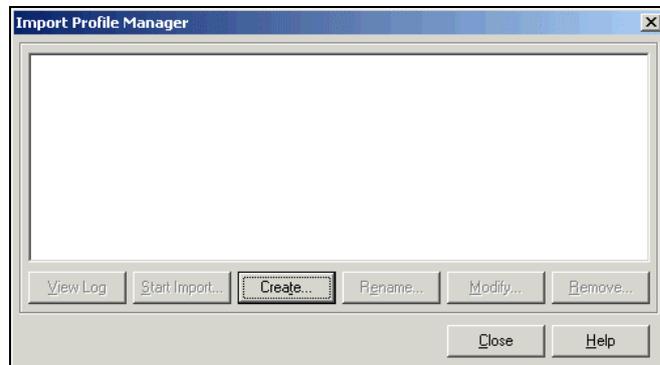
Access this dialog by selecting the Import Manager icon from the toolbar:



Alternatively, make the following selections from the menu:

Actions ► Office Integration ► Import

The Import Profile Manager dialog is displayed:



2. Click Create

Click Create to activate the Import Creation and Amendment wizard.

3. Click Next

4. Click Browse

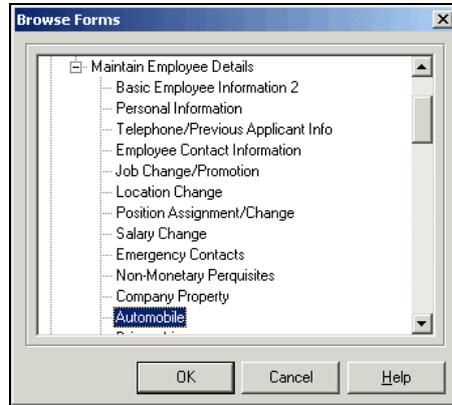
If the form displayed in the dialog is not the form to be selected for import, or if no form is being displayed, click Browse to view a list of available forms. This list contains only those forms you are authorized to access. Forms that can not be used with the import functionality are not displayed.

Use this dialog to select the The Solution Series form into which the test file will be imported.

5. Select the The Solution Series form

For the test file, make the following selections:

Employee Resourcing ► Maintain Employee Details ► Automobile



6. **Click OK**
Clicking OK will select The Solution Series form.
7. **Click Next**
8. **Click Browse**
The Open dialog will appear. Use this dialog to select the import file.
9. **Select the import file**
Use the Open dialog to find the following file path:
\\Program Files\Cyborg Systems\Clientxx\Samples\car.xls
10. **Click Open**
This will select the Excel file.
11. **Click Next**
12. **Select the First record is a header option**
This option tells the system to use the first record in the spreadsheet as a column heading.
13. **Click Next**
Now you must establish the relationship between the spreadsheet you are importing and the form into which you exporting it.
14. **Click Next**
Define the relationship between the spreadsheet and the form. The next step of this task will explain more about this relationship.
15. **Map the import-to-form relationship**
Use the 'select the name' method to map the fields in the spreadsheet to the Automobile Information form.

- For each spreadsheet field displayed in the bottom section of the dialog, click on the top row of the column. A drop-down list will display.
- Choose the field name from the drop-down list that matches the column names. The top row of the column will be updated to show the field name, and the matching field on the form will change to yellow to show that mapping has occurred. You will not see any color changes for the fields 'organization' and 'employee'.

Import Creation and Amendment Wizard step 7 of 8

The Solution Series Wizard

Automobile Information VOID, VOID VOID VOID V

Fleet ID> [Yellow]
Date> [White]
Number: [Yellow]
Make: [Yellow]
Model: [Yellow]
Color: [Yellow]
Miles: [Yellow]
Serviced (MM/YY): [White]
Date Recovered: [White]

(Organization)	Fleet ID	Number	Make	Model	Color
(Organization)	Fleet	Number	Make	Model	Color
(Employee)	6215	12345	Nissan	Sentra	Blue

on from the drop-down list if your import file does not [Organization in file above]

Next> Cancel Help

- Type the letter 'T' in the Date field. This causes the current date to be used. The field color will change to blue.
- Leave the other fields on the form blank.

16. Click Next

17. Click Finish

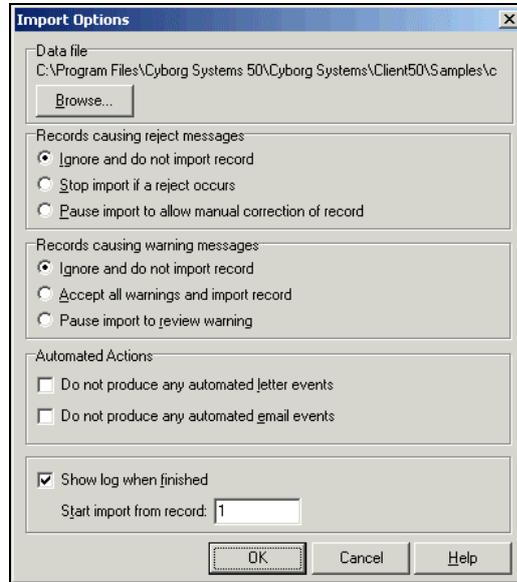
The Wizard will return you to the Import Profile Manager, and the import profile you have just created will appear in the dialog.

18. Select the desired import

Select the Import from car to Automobile Information form.

19. Select Start Import

Click **Start Import** to start the import of data to The Solution Series. The Import Options dialog is displayed:



20. Click OK

Click **OK** to continue the import.

The Solution Series will display a log after the import is complete. If no errors are reported, then the import was a success.

Your installation of The Solution Series for Microsoft Windows on the Administrative client is now complete.

PART 4

Appendices

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A P P E N D I X A

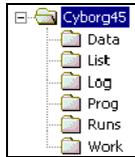
Directory Contents

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Server Directory Structure

The Cyborg server software is delivered in the following directory structure:



CYBORGxx\DATA Directory

The CYBORGxx\DATA directory contains the following files:

BESS.BAT	Runs the Enhanced Interactive Workforce System
BHLD.BAT	Calls the bulk load program to copy extracted data into the tables specified
BHRD.BAT	Runs report and creates intermediate files
BISLOCK.BAT	Checks to see if specified file is available for access
BISW.BAT	Runs the Enhanced Is/Was report and create intermediate files
BIWE.BAT	Runs the Enhanced Interactive Workforce Is/Was report, create intermediate files, then rename files in the users sub-directory
BMRG.BAT	Runs an online batch payroll merge
BPAY.BAT	Runs an online batch payrun
BRPT.BAT	Runs an online batch report
BXTR.BAT	Runs an online batch pay extract
CBSV	Contains source code for CBSVB, CBSVBT, CBSVO, and CBSVOT
CBSV.OVR	Overrides to CBSV source
CBSVB.04	Pull parameters for relational program CBSVB
CBSVBNR.04	Pull parameters for non-relational program CBSVB
CBSVBT.04	Pull parameters for relational program CBSVBT
CBSVBTNR.04	Pull parameters for non-relational program CBSVBT
CBSVO.04	Pull parameters for relational program CBSVO
CBSVONR.04	Pull parameters for non-relational program CBSVO
CBSVOT.04	Pull parameters for relational program CBSVOT
CBSVOTNR.04	Pull parameters for non-relational program CBSVOT

CYBMST	Contains source code for all the batch programs (P2EDIT, P4CALC, P5PRNT, P9CNVT, and O4CALC), COBOL and Assembler subroutines, and report generators
DEMO1.P1	Control record for program DEMO01
DEMO1.P2	Control record for program DEMO02
DEMO1.P3	Control record for program DEMO03
DEMO1.Y3	Control record for program DEMOY3
DEMO0105	The Solution Series System Control Repository in sequential format; contains option lists, tables, documentation, test data, and all Cyborg Scripting Language programs
EPRDDI05	Special MAINTI05 file for including Enhanced Payroll Processing and DDI CheckList and Menu records via an additional installation process
ISLOCK.EXE	Used by the Batch GUI PAYMRG step to determine if FILE02 is currently locked (being accessed) by a user
JPRT.BAT	SUBMIT/VIEW; produces printed copy of reports held for online viewing
JQRY.BAT	SUBMIT/VIEW; produces printed copy of online query
JRPT.BAT	SUBMIT/VIEW; produces printed copy of a submitted report
O4PART1	Pull parameters for relational O4CALC
O4PRT1NR	Pull parameters for non-relational O4CALC
P05RDRQT.DAT	File used for pulling quarterly RG's and qtrmisc
P2PART1	Pull parameters for program P2EDIT
P4PART1	Pull parameters for program P4CALC
P5PART1	Pull parameters for program P5PRNT
P5PRNT.OVR	Overrides to program P5PRNT
P5QPART1	Machine parameter card for the extract of P5QTR
P5QTR.OVR	Override file for the extract of P5QTR program
P9CBSV.04	Report generator extract parameters for JXP9CBSV.BAT
P9CBSVC.04	Canadian report generator extract parameters for JXP9CBSV.BAT
P9CNVT.OVR	Overrides to program P9CNVT
P9PART1	Pull parameters for P9CNVT
P9STRT.04	Report generator extract parameters for JXP9STRT.BAT
RDBPGM	Case tool repository. Relational only

REPT20.04	Control record for script JXREPT20.BAT
RESS.BAT	This Command Line Script is launched by CBSVO, using the ESSLCR program. This script is the first of 3 scripts that are required to run the Enhanced Reporting System. The RLCH.BAT script starts the RSPAWNNESS.BAT script in order to relinquish control back to the CBSVO program. This allows the client to perform other tasks.
RLCH.BAT	This Batch file is launched by the CBSVO program using the REQJOB EAL program. This batch job is the first of 3 batch files that are required to run reports using the Enhanced Reporting System. The RLCH.BAT batch file performs a START on the RSPAWN.BAT file in order to relinquish control back to the CBSVO program freeing up the user to perform other tasks. There are 3 parameters passed form CBSVO.
RMRG.BAT	This Batch file is launched by the CBSVO program using the UPOLCR EAL program. This batch job is the first of 3 batch files that are required to run the pay MERGE. The RMRG.BAT batch file performs a START on the RSPAWNMRG.BAT file in order to relinquish control back to the CBSVO program freeing up the user to perform other tasks. Parameters passed form CBSVO.
RPAY.BAT	This Batch file is launched by the CBSVO program using the PAYLCR EAL program. This batch job is the first of 3 batch files that are required to run the pay process. The RPAY.BAT batch file performs a START on the RSPAWNPAY.BAT file in order to relinquish control back to the CBSVO program freeing up the user to perform other tasks. Parameters passed form CBSVO.
RPTGEN.04	Control record for script JXRPTGEN.BAT
RSPAWN.BAT	This Batch file is called by RLCH.BAT. This file calls the BRPT batch file REM that creates the reports and the logs. The call is used to ensure that all output messages are collected on the LOW (LOG) file. This batch then renames LOW file to LOG. This log contains all of the output messages from the CBSVB and the sort as well as all the embedded Echo statements found in the batch job. There are 3 parameters passed form RLCH.BAT.

RSPAWNESS.BAT	This script file is called by RESS.BAT. This file calls the BESS script file that creates the reports and the logs. The call is used to ensure that all output messages are collected on the LOW (LOG) file. This script then renames LOW file to LOG. This log contains all of the output messages from the CBSVB and the sort as well as all the embedded Echo statements found in the script job. There are 3 parameters passed form RESS.BAT.
RSPAWNMRG.BAT	This Batch file is called by RMRG.BAT. This file calls the BMRG batch file that runs the pay merge. The call is used to ensure that all output messages are collected on the LOW (LOG) file. This batch then renames LOW file to LOG. This log contains all of the output messages from the CBSVB and the sort as well as all the embedded Echo statements found in the batch job. Parameters passed form RMRG.BAT.
RSPAWNPAY.BAT	RSPAWNPAY Command Line Script is called by the RPAY script. This is the second script required to run the Enhanced Pay Process. This script ensures that all output messages are collected in intermediate (*.LOW) file(s). When the process is complete the script renames all intermediate (*.LOW) file(s) TO (*.LOG) file(s). The log file(s) contains all of the output messages from CBSVB, the sort, and all embedded Echo statements found in the command line script jobs.
TAXFILE	The Tax Authority file
TAXFILEC	The Canadian Tax Authority file
VERS80.OVR	Overrides to CYBMST source

CYBORGxx\PROG Directory

The CYBORGxx\PROG directory contains the following files:

CBSVB.CBL	Non-relational program source code used to process The Solution Series in batch
CBSVB.MF2	Copy of CBSVB.CBL used to create separate environments
CBSVBT.CBL	Non-relational trace program source code used to process The Solution Series in batch
CBSVO.CBL	Non-relational program source code used to process The Solution Series online
CBSVOT.CBL	Non-relational trace program source code used to process The Solution Series online
CBSVRFT.CBL	Subroutine used in non-relational installations to determine segment and segment key lengths

CYBIO.EXE	Executable program for System Control Repository (FILE01) IO
CYBCPNL.CPL	Cyborg Control Panel DLL
CYBGETKY.C	C++ program used with online programs CBSVO and CBSVOT
CYBGETKY.OBJ	Accepts input from the screen for Windows NT
CYBSERVD.EXE	Service executable
LOGGING.C	Submodule for FILE01 IO
P10SORT.CBL	Sorts data records in ascending order; uses P05IN and P05OUT
P45SORT.CBL	Sorts data records in ascending order; uses P40IN1 and P40OUT
P80COPY.CBL	Adds carriage returns and line feeds to each record in a data file copied from tape
P80SORT.CBL	Sorts data records in ascending order; used in the JDOCPRT script
PFSSORT.CBL	Sorts data records in ascending order; used in F-SEGM
P9CNVT.CBL	Source code used to extract any member from the CYBMST file
SCKCYBIO.C	Submodule for FILE01
SCKCYBIO.H	SCKCYBIO and LOGGING
UNISTD.H	Header files used by programs

CYBORGxx\RUNS Directory

The CYBORGxx\RUNS directory contains the following files:

CYBIO.BAT	Initiates the online FILE01 IO by executing the CYBIO program
JBACKEM.BAT	Creates a sequential version of FILE1
JBLDAKY.BAT	Builds or rebuilds the Employee Name Alternate Key
JCLEAN01.BAT	Removes extraneous information from the MAINTO. Standard clean job.
JCLEAN3X.BAT	Reads a MAINTO file and removes any obsolete records
JCMPCVBN.BAT	Compiles the delivered non-relational batch programs
JCMPCVN.BAT	Compiles the non-relational batch programs as pulled from the CBSV file
JCMPCVON.BAT	Compiles the non-relational batch programs as pulled from the CBSV file
JCMPCVR.BAT	RELATIONAL ONLY. Compiles the relational batch programs as pulled from the CBSV file

JCMPP9CV.BAT	Compiles P9CNVT program
JCMPRDB0.BAT	RELATIONAL ONLY. Compiles RDBPGM0.CBL program
JCMPRDB1.BAT	RELATIONAL ONLY. Precompiles, compiles, and links the RDBPGM1.CBL program. ORACLE ONLY
JCMPSORT.BAT	Compiles P10SORT.CBL, P25SORT.CBL, P80SORT.CBL, P80COPY.CBL and PFSSORT.CBL
JCMPSUBR.BAT	RELATIONAL ONLY. Pre-compiles and compiles relational database subroutine programs RDBPGMA through RDBPGMH
JCRTCYB.BAT	RELATIONAL ONLY. Creates the Cyborg database, which contains relational tables, indexes and views
JCRTPGMS.BAT	RELATIONAL ONLY. Creates RDB programs RDBPGM1, and RDBPGMA through RDBPGMG
JDEMO01.BAT	Creates indexed System Control Repository from sequential FILE05 (DEMO0105)
JEXPORT.BAT	Exports the 'F1' and 'FTM' records from the System Control Repository; output FILE10 is used as input FILEIN2 in JCRTPGMS
JF-XREF.BAT	Builds Field Name Table (F-NAME) cross references (RFT records)
JHRDEMO.BAT	Pulls test data from the System Control Repository and populates fields in the online Employee Database
JHRDEMO.C.BAT	(Canada) Pulls test data from the System Control Repository and populates fields in the online Employee Database
JMAINTI.BAT	Updates the System Control Repository
JMAINTO.BAT	Compares current System Control Repository with original FILE05 (DEMO0105) and produces FILE10 (MAINTO10), which contains the differences found
JMAKECL.BAT	Extracts option list values, field definitions, screen security, and PC menu records from the System Control Repository
JMNTRUN.BAT	Updates Labor and History records following the Batch pay calculation
JP20STRT.BAT	Creates the P20IN Batch Master File for the first time
JPAYMRG.BAT	Creates or updates the online Employee Database
JPAYRUN.BAT	Calculates pay and produces checks, reports, and a combined register
JPAYXTR.BAT	Pulls timecards and adjustments from the online Employee Database and creates FILE12 (P20 Master), which will be the new P20IN file

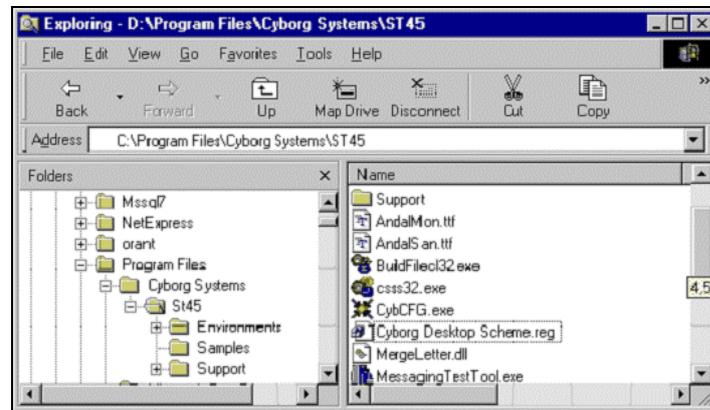
JPFSSORT.BAT	Sample script to run segment layout report
JPOPF01.BAT	RELATIONAL ONLY. Populates the RDBMS tables Cx through Xx
JPRDEMO.BAT	Pulls test data from the System Control Repository (Control File; FILE01) and populates fields in the online Employee Database; jobstream is used when first building the employee database during installation
JPUL_RDB.BAT	RELATIONAL ONLY. Extracts the CASE tool, RDBPGM0, RDBPGM2, RDBPGM3, and RDBPGM4
JPULCVN.BAT	Pulls non-relational batch programs CBSVB, CBSVBT, CBSVO, and CBSVOT from the CBSV file
JPULCVR.BAT	Pulls relational batch programs CBSVB, CBSVBT, CBSVO, and CBSVOT from the CBSV file
JQTRRUN.BAT	Runs the Quarterly Processor
JREBUILD.BAT	Recreates System Control Repository using the output from JBACKEM.BAT
JRELOAD.BAT	Reloads (Cyborg's compile routine) Cyborg Scripting Language programs in the System Control Repository
JREPORT.BAT	Extracts reports from System Control Repository and the Employee Database
JRPTMNU.BAT	Build a menu containing the delivered report groups for Enhanced Payroll Reporting
JUPDCYBM.BAT	Updates the CYBMST file with program updates or report generators
JXCYBMST.BAT	Extracts and compiles CYBMST programs (O4CALC, P2EDIT, P4CALC, P5PRNT, and P9CNVT)
JXO4CALC.BAT	Extracts COBOL program O4CALC from CYBMST; compiles the non-relational program
JXO4CALR.BAT	RELATIONAL ONLY. Extracts COBOL program O4CALC from CYBMST, compiles the relational program, and links the machine-specific sub-routines
JXP2EDIT.BAT	Extracts P2EDIT from CYBMST, compiles and links machine specific subroutines
JXP4CALC.BAT	Extracts P4CALC from CYBMST, compiles and links machine specific subroutines
JXP5PRNT.BAT	Extracts P5PRNT from CYBMST, compiles and links machine specific subroutines
JXP5QTR.BAT	Extracts P5QTR from CYBMST, compiles and links machine specific subroutines
JXP9CNVT	Extracts P9CNVT form CYBMST and compiles the program

JXREPT20.BAT	Extracts report generator 20 from CYBMST in order to add new Organization Control Number values (companies) to the P20IN Batch Master File
JXRPTGEN.BAT	Extracts report generators from CYBMST
MFSETUP.BAT	File located on the server that the client calls for environment variables
ONLINE.BAT	Initiates the online Solution Series system by executing the CBSVO program
ONLINET.BAT	Initiates the trace online Solution Series system by executing the CBSVOT program
RJ.BAT	Executable delivered by Cyborg that automatically launches a program and displays the log output immediately after the program completes its run

Client Directory Structure

The Cyborg client software is delivered in the root directory 'Cyborg Systems' in the Program Files directory. The home directory indicates the version of the release. You may have several versions of the software and several environments set up for each version of the software. By default, the following subdirectory are created:

- Environments—This directory contains the files necessary for a successful connection to The Solution Series from a client in a default environment.
- Support—This directory contains files necessary for hypertext help. The content of this directory depends upon whether a custom installation was performed and if specific (de)selections were made.



A P P E N D I X B

Installation Checklists

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Installation Checklist - Indexed Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Copy Sleep command
- Install server files
- Modify delivered MicroFocus environment variables

Phase 2: Build The Solution Series Environment

- Pull and compile all CYBMST programs
- Compile and link CBSVB and CBSVRFT
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository
- Pull all CBSV programs
- Compile and link all CBSV programs

Phase 3: create test P20IN Batch Master

Phase 4: Create Employee Database with pay history

- Create test Employee Database
- Populate database with test data - Solution Series Install Win2000
- Update P20IN Batch Master File
- Apply taxes, time entries, and adjustments
- Create pay history
- Update the Employee Database

Phase 5: Extract HR reports

- Phase 6: Apply System Control Repository menu additions
 - Build report menus
 - Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Relational Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Copy Sleep command
- Install server files
- Modify delivered MicroFocus environment variables
- Modify the case tool variables
- Modify the CBSV override file
- Modify the database variables

Phase 2: Build The Solution Series Environment

- Pull and compile all CYBMST programs
- Compile and link CBSVB and CBSVRFT
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository
- Extract the CASE tool
- Compile RDBPGM0.CBL
- Export F1 and FTM records
- Execute the case tool
- Create the database, tables, index, and views
- Pre-compile, compile, and link RDBPGMA through RDBPGMH
- Extract, compile, and link O4CALC
- Pull all CBSV programs
- Pre-compile, compile, and link all CBSV programs

Phase 3: Configure ODBC

- Run ODBC

Phase 4: create test P20IN Batch Master

Phase 5: Create Employee Database with pay history

- Create test Employee Database

- Populate RDBMS tables
- Populate database with test data - Solution Series Install Win2000
- Update P20IN Batch Master File
- Apply taxes, time entries, and adjustments
- Create pay history
- Update the Employee Database

Phase 6: Extract HR reports

Phase 7: Apply System Control Repository menu additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Relational Administrative Solution Installation and Configuration (Oracle)

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Copy Sleep command
- Install server files
- Modify delivered MicroFocus environment variables
- Modify the case tools variables
- Modify the CBSV override file
- Modify the database variables

Phase 2: Build The Solution Series Environment

- Pull and compile all CYBMST programs
- Compile and link CBSVB and CBSVRFT
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Create System Control Repository
- Extract the CASE tool
- Compile RDBPGM0.CBL
- Export F1 and FTM records
- Execute the case tool
- Pre-compile, compile and link RDBPGM1 - Relational ORACLE ST
Install NT
- Create the database, tables, index, and views - Relational ORACLE ST
Install NT
- Pre-compile, compile, and link RDBPGMA through RDBPGMH
- Extract, compile, and link O4CALC
- Pull all CBSV programs
- Pre-compile, compile, and link all CBSV programs

Phase 3: create test P20IN Batch Master

Phase 4: Create Employee Database with pay history

- Create test Employee Database
- Populate RDBMS tables
- Populate database with test data - Solution Series Install Win2000
- Update P20IN Batch Master File
- Apply taxes, time entries, and adjustments
- Create pay history
- Update the Employee Database

Phase 5: Extract HR reports

Phase 6: Apply System Control Repository menu additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Cyborg Application Service (CAS) Installation and Configuration

Phase 1: Install and configure Cyborg Application Server (CAS) service

- Task 1: Install CAS
- Task 2: Set up services
- Task 3: Start CAS
- Task 4: Verify installation

Phase 2: Optional—Verify mapping on server

Installation Checklist - Installing and Configuring the Administrative Client

Phase 1: Prepare for installation

- Ensure Cyborg Application Service is active
- Complete a configuration worksheet

Phase 2: Install the software

- Install Client files
- Install Document Data Interface (DDI)---optional
- Install Enhanced Payroll and Reporting (EPR)---optional

Phase 3: Configure the software

- Set Up Your Environment
- Configure the Cyborg Desktop (Optional)

Phase 4: Test the installation

- Run the Messaging Test Tool
- Test the connection to the server
- Test the GUI
- View the Favorites Toolbar
- Define the email and letter template folder
- Test Word integration
- Test email integration
- Test the import facility

APPENDIX C

Creating Separate Environments

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Server

Create root directory at server

(Server)

Create a unique directory structure at the server:



Copy files from the first installed environment

Maintaining the directory structure, copy all files from the first environment you installed at the server (for example, copy contents of C:\CYBORG onto D:\CYBDEV).

Delete files in LIST, LOG, and WORK subdirectories

The files in these subdirectories are generated during normal operations and are environment-specific, so they should be removed—they are not relevant to this new environment.

Delete programs that will be recreated

Delete the following programs from your new directory on the server:

D:\cybdev\cbsv*.*

If you have a relational environment, also delete the following programs from your new directory on the server:

D:\cybdev\prog\del rdbpgma.*
D:\cybdev\prog\del rdbpgmb.*
D:\cybdev\prog\del rdbpgmc.*
D:\cybdev\prog\del rdbpgmd.*
D:\cybdev\prog\del rdbpgme.*
D:\cybdev\prog\del rdbpgmf.*
D:\cybdev\prog\del rdbpgmg.*
D:\cybdev\prog\del rdbpgmh.*

If you have a SQL Server relational environment, also delete the following program from your new directory on the server:

D:\cybdev\runs\del rdbpgm1.*

If you have an ORACLE relational environment, also delete the following program from your new directory on the server:

D:\cybdev\prog\del rdbpgm1.*

Note: Assumes C:\CYBORG is the current production environment and D:\CYBDEV is the second environment to be set up.

Copy Cyborg delivered files

Copy the Cyborg delivered files:

C:\CYBORG\PROG\CBSVB.MF2 to D:\CYBDEV\PROG\CBSVB.CBL

C:\CYBORG\PROG\CBSVRFT.CBL to D:\CYBDEV\PROG\CBSVRFT.CBL

Complete the Installation

Non-relational

To complete a *non-relational* installation, go to Chapter 2: Indexed Server Installation and Configuration, and perform the Phases and Tasks listed below:

- Phase 1: Prepare for Installation
(Required if on a different server)

- Phase 2: Build The Solution Series Environment
 - Task 1: Pull and compile all CYBMST programs
 - Task 2: Compile and link CBSVB
 - Task 5: Pull all CBSV programs
 - Task 6: Compile and link all CBSV programs

- Phase 4: Create Employee Database with pay history
 - Task 1: Create test Employee Database (JPAYMRG)

Relational (SQL Server)

To complete a SQL Server *relational* installation, go to Chapter 3: Relational Server Installation and Configuration (SQL Server) and perform the Phases and Tasks listed below:

- Phase 1: Prepare for Installation
(Required if on a different server)

- Phase 2: Build The Administrative Solution Environment
 - Task 2: Compile and link CBSVB and CBSVRFT
 - Task 8: Export F1 and FTM records
 - Task 9: Execute the case tool
 - Task 10: Create the database, tables, index, and views
 - Task 11: Pre-compile, compile, and link RDBPGMA through RDBPGMH
 - Task 12: Extract, compile, and link O4CALC
 - Task 13: Pull all CBSV programs
 - Task 14: Pre-compile, compile, and link all CBSV programs

- Phase 3: Configure ODBC
Complete all tasks

- Phase 5: Create Employee Database with pay history
 - Task 1: Create test Employee Database
 - Task 2: Populate RDBMS tables

Relational (Oracle)

To complete a SQL Server *relational* installation, go to Chapter 4: Relational Server Installation and Configuration (Oracle) and perform the Phases and Tasks listed below:

- Phase 1: Prepare for Installation
(Required if on a different server)

- Phase 2: Build The Administrative Solution Environment
 - Task 1: Pull and compile all CYBMST programs
 - Task 2: Compile and link CBSVB and CBSVRFT
 - Task 8: Export F1 and FTM records
 - Task 9: Execute the case tool
 - Task 10: Pre-compile, compile and link RDBPGM1
 - Task 11: Create the database, tables, index, and views
 - Task 12: Pre-compile, compile, and link RDBPGMA through RDBPGMH
 - Task 13: Extract, compile, and link O4CALC
 - Task 14: Pull all CBSV programs
 - Task 15: Pre-compile, compile, and link all CBSV programs

- Phase 4: Create Employee Database with pay history
 - Task 1: Create test Employee Database
 - Task 2: Populate RDBMS tables

Add additional environments to the Cyborg Application Panel

1. Execute the following:

Start ► Settings ► Control Panel ► Cyborg Service

2. Select 'ST Application' from the Settings tab.
3. In the Environments section, click Add.
4. Type up to 8 characters in the Environment field (for example, 'Test') and select the Enabled check box.
5. Type the Working Directory of the (Test) system (for example, 'D:\CYBDEV\RUNS').
6. Type the full Program Path (and program name) of the batch file that starts up CBSVO (for example, 'D:\CYBDEV\RUNS\Online.bat').
7. Click OK (on the Add Environment dialog box).
8. Click OK (on the Service Properties dialog box).
9. Repeat steps 2–8, but select the 'FILE01 Application' and type the full Program Path (and program name) of the batch file that starts up CYBIO (for example, 'D:\CYBDEV\RUNS\Cybio.bat').

Client

Set Up Your Environment

To set up your environment, perform the following steps:

1. Access the dialog box

Access this dialog box by selecting:

Start ► Programs ► The Administrative Solution ► Connection Editor

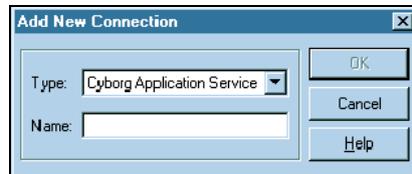
2. Click New

Click on the New button to set up a new configuration.



3. Type the name of your new connection

Leave Cyborg Application Service selected in the Type drop-down list box. Type the name of the connection you are creating in the Name text box.



4. Click OK

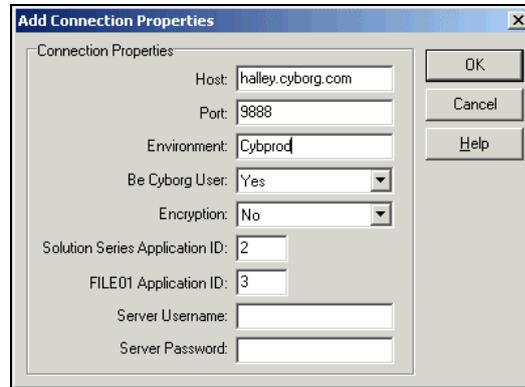
The Add Connection Properties dialog displays.

5. Type the configuration details

Type the configuration details under Connection Properties on the Connection Editor dialog box:

Item	Description
Host	Identify the system name of the server.
Port	Identify the port address of the server. For the Cyborg Application Server (CAS), Cyborg has registered the port address of 9888.
Environment	Identify the environment name (up to 8 characters) on the server. Examples are: CYBPROD, CYBTEST.
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
ST Application ID	The application name and ID number for The Administrative Solution application. This application ID is configured to 2.
FILE01 Application ID	The application name and ID number for the CYBIO application. This application ID is configured to 3.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

After you have made these entries on the Cyborg Connection Editor, it should look similar to the following example:



6. Click OK

The connection properties are specified.

7. Click Close

The connection has been configured between the server and the client.

Note: We highly recommend you change the Wallpaper when you have multiple versions of the system. This will help users easily identify the environment in which they are.

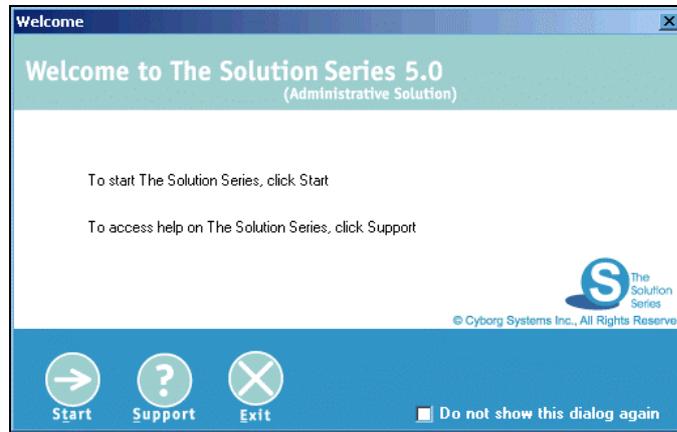
Test the connection on the client

1. Launch *The Administrative Solution/ST*

Select:

Start ► Programs ► The Administrative Solution ► The Administrative Solution ST

The Welcome screen displays:

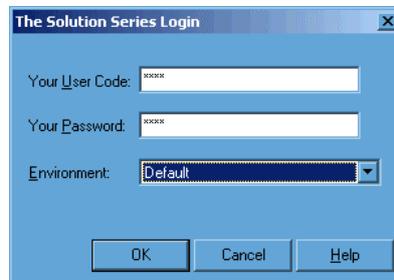


2. Click Start on the Welcome screen

The Login dialog box displays.

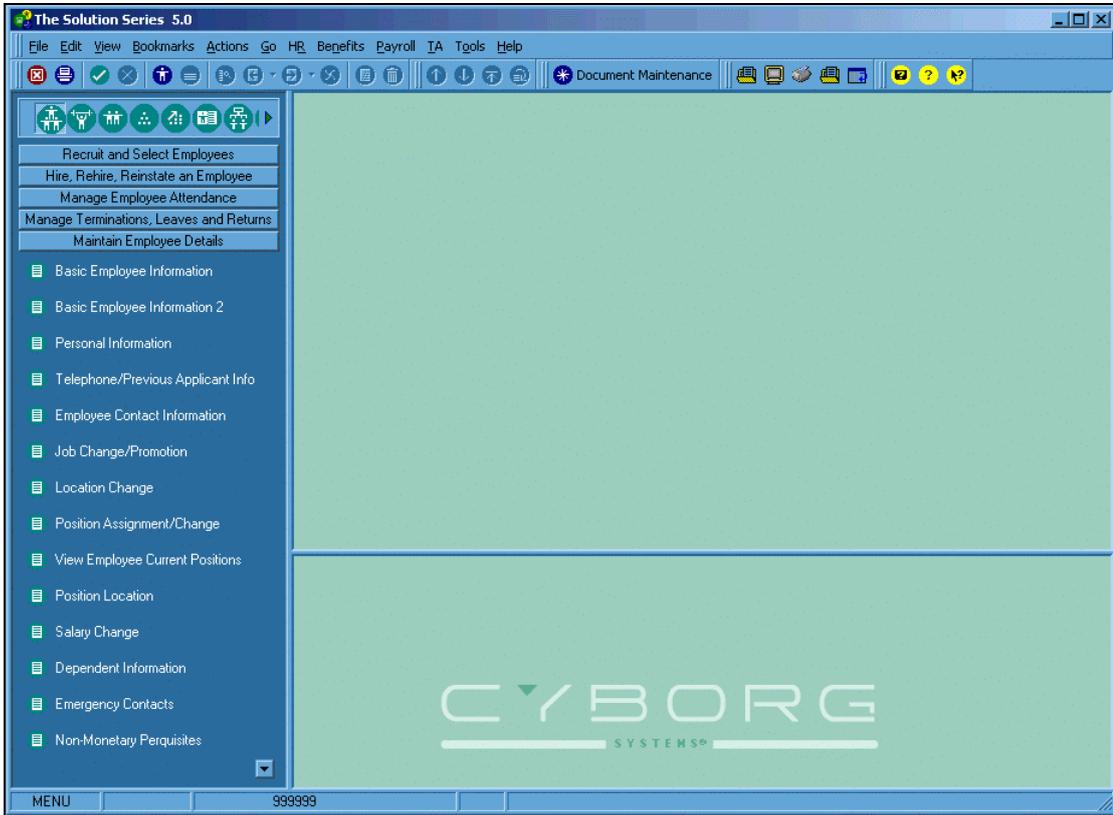
3. Log on as the Security Officer

Select the environment you want to access, then type your user name and password:



4. Click OK

The work area for The Administrative Client displays:



5. Log off The Administrative Solution

APPENDIX D

Optional SQL Server Procedures

In This Appendix

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How to clear the Transaction Log (Enterprise Manager)	149
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Password for SQL Server Login ID

Note: The commands described below are case sensitive.

1. Type:

```
isqlw -Uxxxx -Pyyyy
```

Where:

xxxx = userid

yyyy = password

2. Press Enter

3. Type:

```
sp_password [[@old =] 'old_password',] {@new = ] 'new_password'},[@loginame  
=] 'login']
```

Arguments

[@old =] 'old_password'

Is the old password. *old_password* is **sysname**, with a default of NULL.

[@new =] 'new_password'

Is the new password. *New_password* is **sysname** with no default. *old_password* must be specified if named parameters are not used.

[@login_name =] 'login'

Is the name of the login affected by the password change. Login is **sysname**, with a default of NULL. Login must already exist and can only be specified by a member of the **sysadmin** fixed server role.

How to find SQL Server messages (Enterprise Manager)

1. Expand the server group; then right-click the server.
2. Point to 'All Tasks;' then click 'Manage SQL Server Messages'.
3. On the Search tab, specify the text, error number, and severity level for the message. You can also choose to include only logged or user-defined messages.
4. Click Find.
5. The message(s) meeting the specified criteria will be displayed.

How to increase the size of a Database or Transaction Log (Enterprise Manager)

1. **Expand the server group; then expand the server.**
2. **Expand Databases, right-click the database to increase, and then click Properties.**
3. **To increase the data space, click the General tab. To increase the transaction log space, click the Transaction Log tab.**
4. **To add a new file, click the next empty row and, in the File name column, enter the file name that will contain the additional space.**

Note: The file location is generated automatically and given the *.ndf* suffix for a database file, or an *.ldf* suffix for a transaction log file.

5. **To change the default values provided in the File name, Location, Space allocated (MB), and Filegroup (not applicable for the transaction log) columns, click the cell to change and enter the new value.**

Note: For existing files, only the Space allocated (MB) value can be changed; the new value must be larger than the existing value.

6. **To specify how the file should grow, select from these options:**
 - To allow the currently selected file to grow as more data space is needed, select Automatically grow file.
 - To specify that the file should grow by fixed increments, select In megabytes and specify a value.
 - To specify that the file should grow by a percentage of the current file size, select By percent and specify a value.
7. **To specify the file size limit, select from these options:**
 - To allow the file to grow as much as necessary, select Unrestricted filegrowth.
 - To specify the maximum size the file should be allowed to grow to, select Restrict filegrowth (MB) and specify a value.

How to clear the TransactionLog (Enterprise Manager)

If log records were never deleted from the transaction log, the log would keep growing until it filled all the available space on the disks holding the log.

If log file exceeded size and log is not necessary:

Choose SQL Server Query Analyzer

The database context of the connection must be in the master database to use:

Type:

dump transaction *database_name* with *no_log|truncate_only*}

Where:

database_name = the logical name of the database where the transaction log is to be truncated.

no_log = used only when you have run out of space in the database and want the option to remove the inactive part of the log without making a backup copy of it; it saves space by not logging the operation.

truncate_only = removes the inactive part of the log without making a backup copy of it.

If a database log backup sequence is not being maintained for a database, the database can be set into log truncate mode. The 'trunc. log on chkpt.' database option must be set to TRUE for a database to be eligible for log truncate mode.

To change the database to truncate Log on Checkpoint

1. Expand the server group; then expand the server.
2. Expand Databases, right-click the database to change, and then click Properties.
3. Click the Options tab, and select Truncate Log on Checkpoint.
4. Click Apply, then OK.

Note: The 'tempdb' database is always in log truncate mode. Log truncation always occurs on a checkpoint in 'tempdb' regardless of the setting of the 'trunc. log on chkpt.' option.

How to Drop a Database

Removes one or more databases from Microsoft SQL Server. Removing a database deletes the database and the disk files used by the database.

1. **Choose SQL Server Query Analyzer.**
2. **The database context of the connection must be in the master database to use:**

Type:

```
DROP DATABASE database_name [, ...n]
```

In SQL Server version 7.0, DROP DATABASE removes damaged databases that have been marked suspect. DROP DATABASE removes the specified database unless it has been marked OFFLINE.

A database that has been dropped can be recreated only by restoring a backup. You cannot drop a database currently in use (open for reading or writing by any user). Whenever a database is dropped, the master database should be backed up.

Permissions

DROP DATABASE permission defaults to the database owner and members of the sysadmin fixed server role and is not transferable.

Example

Drop a single database

This example removes all references for the publishing database from the system tables.

```
DROP DATABASE publishing
```

Drop multiple databases

This example removes all references for each of the listed databases from the system tables.

```
DROP DATABASE pubs, newpubs
```

APPENDIX E

ORACLE Database Considerations

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Overview

This section has been provided to assist Cyborg customer DBAs to properly create the database and minimize any 'rework' in the future or troubleshoot database problems.

Understanding the Cyborg Database

There are several things you should understand when working with the Cyborg database. This section explains the specifics of the database.

Tablespaces

There are 8 database tablespaces created to hold Cyborg data and index objects:

Tablespace 0	Temporary tablespace the Cyborg user will use
Tablespace 1	Company data + Labor/History Indexes
Tablespace 2	Other Record data + Employee Indexes
Tablespace 3	Tax data + Tax Indexes
Tablespace 4	Employee data + Other Record Indexes
Tablespace 5	Labor/History data + Company Indexes
Tablespace 6	Option List/Application Tables
Tablespace 7	Option List/Application Table Indexes

Cyborg user account

An ORACLE user account should be created to own the Cyborg database objects. Use the following guidelines:

- Minimum database privileges this user should be granted.
- Create database tables, views, synonyms, roles, procedures, and triggers.
- Select, insert, update, and delete for database tables and views.

Enough memory on machine

Before tuning memory for ORACLE, ensure that enough memory resides on your machine for the following:

- Operating system
- Assortment of support mechanisms for the operating system
- Database engine, tools, and shadow processes for your version of ORACLE
- Software that coexists with ORACLE on your machine
- Network of operating system buffers
- ORACLE databases that coexist on your machine
- Memory overhead per user on the system
- Operating system overhead for supporting the read-and-write requests of all of those users

Tuning ORACLE with INIT.ORA parameters

To see the current value of your `init.ora` parameters, you can no longer rely on reading the `init.ora` file; you should select all of the parameter names and values from `V$PARAMETER` instead. The setting of the INIT.ORA Parameters customizes the performance of each ORACLE instance to its particular needs. While default settings often yield adequate performance, the peak performance ORACLE is capable of delivering can often be attained only by careful tuning of each parameter.

While most of the parameters can be adjusted only after the database is in use, the following parameters can be adjusted immediately upon installation:

- SYSTEM GLOBAL AREA (SGA)
 - DB_BLOCK_SIZE
 - DB_BLOCK_BUFFERS
 - SHARED_POOL_SIZE
- OPEN_CURSORS
- PROCESSES
- SORT_AREA_SIZE
- DML_LOCKS
- LOG_BUFFER
- ROLLBACK_SEGMENTS

The parameters are listed in order of maximum performance gain.

SYSTEM GLOBAL AREA (SGA)

It is important that the `SHARED_POOL_SIZE` and `DB_BLOCK_BUFFERS` account for 90% of the SGA total size. In addition, the SGA should never take over 50% of the available memory. In a `SVRMGR` session, enter the following to determine the SGA values:

```
sho SGA
```

DB_BLOCK_SIZE

The size of a database block in bytes. We suggest using the default value of 2048.

DB_BLOCK_BUFFERS

The number of database blocks cached in memory. Each buffer in the cache contains one ORACLE block. The larger the cache, the more data ORACLE can hold in memory. If the data is not in memory, ORACLE issues the needed I/O request to obtain the data, which is the slowest operation a computer can perform. Set this value to the maximum number of buffers that could be added without causing paging.

SHARED_POOL_SIZE

The size in bytes of shared pool. If the ratio of reloads to pins exceed 1 percent, you should increase this parameter. This can be determined by a simple query:

```
SQL>SELECT (SUM(reloads/SUM(pins)) * 100 'Miss %' from V$LIBRARYCACHE;
```

OPEN_CURSORS

This parameter is the maximum number of cursors that a user can have open at one time. To fully use the higher value for `SHARED_POOL_SIZE`, you may also want to increase the number of cursors available to each user (`OPEN_CURSORS`).

PROCESSES

This parameter limits the number of users who can concurrently access the instance. This parameter does not effect performance but is a useful starting point in defining expected requirements for ORACLE. Keep in mind that the background processes are included in this number and if the application spawns processes recursively, all these spawned processes count.

SORT_AREA_SIZE

This is the amount of memory per user process that is allocated for sorting. Size your `SORT_AREA_SIZE` to fit the need of the users. This is a big user of memory and also a big help with performance.

DML_LOCKS

This parameter is the maximum number of locks that can be placed on all tables by all users at one time. Experience has shown this parameter should be set high, as this parameter has no effect on performance.

LOG_BUFFER

This parameter is the number of bytes that are allocated to the redo log buffer in the SGA. If the ORACLE system is processing many in-process transactions, this parameter should be increased to reduce I/O to the redo logs.

ROLLBACK_SEGMENTS

This parameter is a list of all the rollback segments available to user processes. The system rollback segment should never appear in this parameter's list. All of the user rollback segments should be the same size since they are allocated randomly. Rollback segments should be large enough to contain all of the rollback information for any anticipated transaction. Always name your rollback segments in the initialization parameter file. Always place your rollback segments in their own tablespace.



Refer to 'Managing Rollback Segments', later in this appendix.

Space Management

Space is needed for the following objects to extend tables and indexes, rollback segments, and temporary tables:

Tables and indexes

This is caused by the said objects needing additional space to satisfy an insert or update.

Rollback segments

If the culprit is a rollback segment, the error ora-1562 'failed to extend rollback segment (id = %s)' will always precede the ora-1547. The ora-1562 is telling us that it could not extend the rollback segment, and the reason is the ora-1547—not enough space.

Temporary tables

These are tables created by the ORACLE kernel to do a sort on behalf of the user. A user can tell that he is running out of space for a temporary table, based on the operation he/she is performing (such as creating an index, doing a query with an order by, or a lengthy join statement). The temporary tablespace the user will use can be seen by performing the following query:

```
SQL>select temporary_tablespace from sys.dba_users where
username='<USERNAME>';
```

If the space being used seems too large, you may want to investigate the default storage for the temp tablespace—it is possible that the defaults are too small. To see the default storage, perform the following query:

```
SQL>select initial_extent, next_extent, min_extents, pct_increase
from sys.dba_tablespaces
```

```
where tablespace_name='<NAME>';
```

Adjustments can be made to the default storage of the tablespace by issuing the following command:

```
SQL>alter tablespace <NAME> storage (initial xxx next xxx....);
```

Space can be added to a tablespace using the 'ALTER TABLESPACE' command (full syntax below). This statement will create a database file on disk and enlarge the existing tablespace. The statement can be performed on all tablespaces (including system) without shutting down the database or taking the tablespace offline. Immediately following the completion of the statement, the space is available.

```
SQL>alter tablespace <TABLESPACE_NAME> add datafile '<PATH/FILENAME>'
size <size_of_file> reuse;
```

To get an idea of the naming conventions or locations for existing files, perform the following query:

```
SQL>select file_name from sys.dba_data_files where  
tablespace_name='<NAME>';
```

Understanding and resolving common ORACLE sizing errors with tablespaces

Error 01658: Unable to create INITIAL extent for segment in tablespace %s

Cause:	Failed to find sufficient contiguous space to allocate INITIAL extent for segment being created.
Action:	Use ALTER TABLESPACE ADD DATAFILE to add additional space to the tablespace or retry with a smaller value for INITIAL.

ORACLE will ALWAYS try to allocate CONTIGUOUS space. Although the tablespace may have enough free space, if it is not contiguous, the error will occur. To see if you have enough contiguous space in the tablespace, perform the following query:

```
SQL>select max(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This will return one record which shows the biggest chunk of space free in the tablespace in question. This number will be lower than the one returned by the error. If you wish to compare the contiguous space with total space, perform the following query:

```
SQL>select sum(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This also returns one record. This value can be compared to the record above to see how much of the total space is contiguous.

Understanding and resolving common ORACLE sizing errors with tables

Error 01631: Max # extents (%s) reached in table %s.%s

Cause:	A table tried to extend past maxextents.
Action:	Recreate the table with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01653: Unable to extend table %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for table segment in tablespace
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and Resolving common ORACLE sizing errors with indexes

Error 01632: Max # extents (%s) reached in index %s.%s

Cause:	An index tried to extend past maxextents.
Action:	Recreate the index with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01654: Unable to extend index %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for index segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and resolving common ORACLE sizing errors with rollback segments

Error 01628: Max # extents (%s) reached for rollback segment %s

Cause:	Tried to extend rollback segment already at maxextents value.
Action:	Recreate the rollback segment with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01650: Unable to extend rollback segment %s by %s in tablespace %s

Cause:	Failed to allocate an extent for rollback segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Managing rollback segments

A rollback segment consists of contiguous multi-block pieces called extents. The segment uses these extents in an ordered circular fashion, moving from one to the next after the current extent is full. A transaction writes a record to the current location in the rollback segment and advances the current pointer by the size of the record.

To determine a general rollback segment configuration, balance the number of segments against the size of each segment, such that the space needed will fit into the available disk space.

Make sure that there are enough segments to avoid contention as processes access them. But also make sure that individual rollback segments are large enough for their transaction load.

Balancing transaction requirements

The next section discusses balancing these two requirements.

- A transaction can only use one rollback segment to store all of its rollback (undo) records.
- Multiple transactions can write to the same extent.

There are two issues that need to be considered when deciding if your segment is large enough.

First, make sure that transactions will not cause the head to wrap around too fast. This causes the segment to extend in size, per the principles mentioned above.

Second, if you have long running queries that access data that frequently changes, make sure that the rollback segment does not wrap around to prevent the construction of a read consistent view.



Refer to the ORACLE Database Administrator's Guide for discussions on 'read consistency' on 'avoiding the snapshot too old error'.

The size needed for a rollback segment depends directly on the transaction activity of your database. Be concerned about the activity during normal processing of the database, not with rare or semi-frequent large transactions. These special cases are to be dealt with separately.

The number of rollback segments needed to prevent contention between processes can be determined with the help of the monitor rollback display and the use of the V\$WAITSTAT table.

Undo headers may occur if there are not enough rollback segments to support the number of concurrent transactions. The following V\$WAITSTAT query will display the number of waits since instance startup:

```
SQL>SELECT * FROM V$WAITSTAT WHERE CLASS = 'undo header';
```

To find out the size and number of rollback segments needed for normal processing on the database, you need to do some testing. A good test is to start with small rollback segments.

Allow your application to force them to extend. Here are the steps to run such a test:

1. Create a rollback segment tablespace.
2. Create a number of rollback segments in the tablespace.
3. Create the rollback segments so that all extents are the same size. Choose an extent size that you suspect will need between 10 to 30 extents when the segments grow to full size.
4. Each rollback segment should start with two extents before the test is run. This is the minimum number of extents any rollback segment can have.
5. Activate only the rollback segments that you are testing by making the status 'online'. The only other segment that should be 'online' is the system rollback segment.
6. Run transactions with a load typical of the application.
7. Watch for rollback segment contention.
8. Watch for the maximum size a rollback extends to.

The maximum size any one of the rollback segments reaches during the test is the size you want to use when configuring. This size we will call the 'minimum coverage size'. If you see contention, adjust the number of segments and rerun the test. Also, if the largest size requires fewer than 10 extents, or more than 30, it is a good idea to lower or raise the extent size respectively, and rerun the test.

For sizing rollback segment extents, we strongly recommend that each extent be of the same size. In fact, we also suggest that the size of the rollback tablespace is some multiple of the common extent size. The number of extents for an individual segment should be around 20.

In the rollback segment storage clause, please use the OPTIMAL parameter. OPTIMAL sets an optimal size in bytes for a rollback segment. It can be specified in kilobytes or megabytes. ORACLE will dynamically deallocate extents in the rollback segment to maintain the optimal size.

NULL means that ORACLE never deallocates the rollback segment extents, and this is the default behavior. You must supply a size greater than, or equal to, the initial space allocated for the rollback segment by the MINEXTENTS, INITIAL, NEXT, and PCTINCREASE parameters.

Extent deallocation is expensive in regards to performance. This means that an OPTIMAL setting may decrease performance if it is too low.

Changing an ORACLE user's password

You can use the ALTER USER command as a DBA or as the user itself to accomplish this task.

```
SQL>CONNECT userid/password;
```

where *userid* is your database userid or the userid of the DBA and *password* is your current password or the password of the DBA.

```
SQL>ALTER USER john IDENTIFIED BY test;
```

Dropping the Cyborg Database

Dropping a database is not supported by ORACLE. However, taking the tablespaces offline, dropping each tablespace, dropping the Cyborg user, and deleting all related data, initialization, and control files will accomplish this.

For each of the 8 tablespaces created for the Cyborg database, perform the following two commands:

```
SQL>alter tablespace <TABLESPACE_NAME> offline;  
SQL>drop tablespace <TABLESPACE_NAME> including contents cascade  
constraints;
```

Then drop the Cyborg user:

```
SQL>drop user <USER> cascade;
```

Delete all related data, initialization, and control files in the operating system.

A P P E N D I X F

ORACLE Disk Requirements Worksheets

In This Appendix

Introduction168

Introduction

The tables in this appendix show an example for an Oracle database of the overhead space required for each of the tables. To calculate the table required, multiply the average row length by the number of occurrences for each table.

To calculate the overhead space required for each of the indexes, multiply the number of rows in each table by 15%.

Table 1

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
D	COMPANY	30	356	389
DB	CO_EARN_DED_RULE	31	221	255
DCAF	PAY_PROCESS_OPT	40	127	170
DCAG	PAY_STUB_MESSAGE1	3	73	79
DCAH	PAY_STUB_MESSAGE2	3	73	79
DCAJ	PAY_FREQUENCY	23	272	298
DCAK	GL_ACCOUNT_NBRS	9	84	96
DCAL	PAY_DOC_PRINT	6	93	102
DCAM	COMPANY_ROE	10	63	76
DD	PAYROLL_REPT_DEFN	18	33	54
DIDX	DIDX	4	204	211
TABLE 1				
TABLE 5 INDEXES				
TABLE 1 TOTAL				

Table 2

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
F	F_OTHER_RECORD	5	86	94
G	G_OTHER_RECORD	5	86	94
W	W_OTHER_RECORD	6	86	95
X	X_OTHER_RECORD	6	86	95
TABLE 2				

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
TABLE 4 INDEXES				
TABLE 2 TOTAL				

Table 3

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
H	TAX_SPECIFICATION	41	758	802
H4	TAX_TABLE_DEFN	23	456	482
H5	TAX_TABLE_BRACKET	9	148	160
HIDX	HIDX	5	204	212
TABLE 3				
TABLE 3 INDEXES				
TABLE 3 TOTAL				

Table 4

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MEE	EMPLOYEE	28	107	138
MEEA	EMPLOYEE_PAYMT	17	196	216
MEEB	EMPLOYEE_TRANSFER	8	84	95
MF	NAME_ADDRESS	9	158	170
MG	PAY_ALLOCATIONS	10	86	99
MH	EMP_EARN_DED	28	381	412
MIDX	MIDX	5	204	212
MJ	EMP_TAX_DED	52	827	882
MLO1	DEPENDENT	12	102	117
MLO2	DEPENDENT_EMPLYR	6	79	88
MLO3	DEPENDENT_INSUR	9	75	87
MLO4	EMRGY_CONTACT	7	79	89
MLO5	EMRGY_CONTACT_ADDR	7	79	89
MLO6	EMRGY_PHYSICIAN	7	79	89

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLO7	EMRGY_PHYS_ADDR	7	79	89
MLO8	EEO_6	10	39	52
MLOA	BENEFICIARY	11	101	115
MLOB	BENEFICIARY_ADDR	6	79	88
MLOC	BENEFICIARY_CITY	6	54	63
MLOD	COVERED_DEPENDENTS	21	74	98
MLOF	APPLICANT	12	112	127
MLOG	APPLCNT_REFERENCE	11	101	115
MLOH	APPLCNT_REF_ADDR	8	97	108
MLOI	JOB_APPLIED_FOR	16	113	132
MLOJ	WORK_PREFERENCES	21	168	192
MLOZ	EMP_FLEX_PLN_CR_PR	14	167	184
MLPB	V80_INSURANCE	14	150	167
MLPC	V80_MED_COVERAGE	11	60	74
MLPD	V80_BENEFIT	18	209	230
MLPH	SALARY_CHANGE	19	239	261
MLPM	EMP_INCUMBENCY	19	156	178
MLPQ	CAN_EMP_EQUITY	11	57	71
MLPR	V80_INJURY_DISABLE	15	117	135
MLQ0	EMP_RETIREMENT	13	70	86
MLQ1	EMP_WELFARE_PLAN	13	76	92
MLQ2	LEAVE_OF_ABSENCE	10	51	64
MLQ3	EMP_PLAN_SERVICE	14	68	85
MLQ4	EMP_DEFERRED_PLAN	14	63	80
MLQ5	EMP_PLAN_CONTRIB	20	171	194
MLQ6	PENSION_BENEFIT	16	118	137
MLQ7	PENSION_PROJCTION	15	225	243
MLQ8	EMP_PLAN_COVERAGE	12	123	138
MLQ9	EMP_PLAN_VESTING	9	69	81
MLQA	TS_FUND_ALLOCATION	16	211	230
MLQB	TS_FUND_ACCUM	17	191	211
MLQC	TS_FUND_ACTIVITY	15	111	129
MLQD	TS_FUND_TRANSFER	11	59	73
MLQE	DC_CONTRIBUTION	14	134	151
MLQF	TS_FUND_BALANCE_1	14	182	199
MLQG	TS_FUND_BALANCE_2	14	168	185

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLQH	TS_FUND_SHARE	11	116	130
MLQI	DB_PLAN_ACCUM	16	190	209
MLQJ	DB_ACCT_BALANCE	13	181	197
MLQK	DB_ACCT_ACTIVITY	8	71	82
MLQL	DC_PLAN_ACCUM	16	190	209
MLQM	DC_ACCT_ACTIVITY	14	110	127
MLQN	DC_ACCT_TRANSFER	9	57	69
MLQO	EMP_FLEX_CREDITS	17	191	211
MLQP	DC_ACCT_BALANCE_1	13	181	197
MLQQ	DC_ACCT_BALANCE_2	13	181	197
MLQR	AVG_DEFERRAL_PCT	13	184	200
MLQS	BENEFICIARY_PCT	21	226	250
MLQT	FSA_ACCT_BALANCE	14	166	183
MLQU	FSA_CLAIM	15	167	185
MLQV	HIGHLY_PAID_DEF_1	19	131	153
MLQW	HIGHLY_PAID_DEF_2	11	35	49
MLQX	FINAL_AVG_EARNINGS	9	93	105
MLQY	COBRA_QUALIFY_EVNT	15	96	114
MLQZ	J_S_BENEFIT_WAIVER	14	90	107
MLR0	SHARE_DISTRIBUTION	14	128	145
MLR1	SHARE_WITHDRAWAL	18	138	159
MLR2	SHARE_ACCT_BALANCE	11	115	129
MLR3	STOCK_CASH_BALANCE	14	128	145
MLR4	SAVINGS_BOND	9	51	63
MLR5	ALT_COMP_TOTALS	11	151	165
MLRA	EMP_ELIGIBILITY	10	57	70
MLRD	DISCIPLINE_ACTION	10	50	63
MLRJ	RELOCATION_1	13	200	216
MLRK	RELOCATION_2	13	200	216
MLRL	RELOCATION_3	21	209	233
MLRM	HOUSE_HUNTING_EXP	17	273	293
MLRN	MOVING_EXPENSE	16	251	270
MLRO	TEMP_LIVING_EXP	17	253	273
MLRP	SHIPPING_EXP	19	262	284
MLRQ	CLOSING_COST_EXP	17	236	256
MLRR	BRIDGE_LOAN	14	174	191

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLRS	POSITION_ASSIGNMT	9	103	115
MLRT	AUTH_TIME_OFF	14	228	245
MLRU	UNAUTH_TIME_OFF	8	96	107
MLT0	EMP_CLASS_REG	9	38	50
MLT1	EMP_TRAIN_REQ	8	32	43
MLT2	EMP_CLASS_RESULT	18	96	117
MLT3	EMP_COURSE_OBJ	25	84	112
MLT4	EMP_TRAIN_SALARY	9	55	67
MLT5	EMP_CLASS_COST	20	154	177
MLTB	ISSUED_BADGE	9	78	90
MLTS	SCHEDULE_ASSIGNMNT	9	80	92
MLVA	ABSENCE	15	99	117
MLVE	EEO_4_EXEMPTIONS	6	46	55
MLVF	EMPLOYEE_NAME			
MLVG	GRIEVANCE	13	97	113
MLVH	EMPLOYEE_ADDRESS			
MLWA	IMAGE_INFORMATION	8	100	111
MLWF	EMPLOYEE_CONTACT	10	106	119
MLYA	EMP_ROE_1	12	107	122
MLYB	EMP_ROE_2	13	108	124
MLYC	EMP_ROE_3	14	198	215
MLYD	EMP_ROE_4	10	122	135
MLYE	EMP_ROE_5	6	98	107
MLZ1	FORMAL_EDUCATION	13	163	179
MLZ2	TUITION_REIMBURSMT	18	250	271
MLZ3	EMP_TRAIN_COURSE	21	153	177
MLZ4	EMP_SKILL	15	73	91
MLZ5	APPL_INTERVIEW	10	82	95
MLZ6	PRIOR_EMPLOYMENT	11	110	124
MLZ7	PHYSICAL_EXAM	15	71	89
MLZ8	PHYSICAL_EXAM_RSLT	15	78	96
MLZ9	APPL_PRE_TRANSFER	18	140	161
MLZA	EMPLOYEE_1	16	118	137
MLZB	CITIZENSHIP	17	103	123
MLZC	EMPLOYMT_ACTIVITY	18	92	113
MLZD	JOB_ASSIGNMENT	11	103	117

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
MLZE	BONUS	12	94	109
MLZF	SALARY	19	250	272
MLZG	PERFORMANCE_RATING	17	123	143
MLZH	NON_MONETARY_PERQ	9	82	94
MLZI	ASSIGNED_PROPERTY	9	82	94
MLZJ	ASSIGNED_AUTO	12	119	134
MLZK	EXIT_INTERVIEW	9	103	115
MLZL	DRIVERS_LICENSE	10	75	88
MLZM	HEALTH_CONDITION	17	61	81
MLZN	CERTIFICATION	9	47	59
MLZO	PROFESSIONAL_ASSOC	7	44	54
MLZP	PLANNED_SALARY	17	176	196
MLZQ	SALARY_REVIEW	10	86	99
MLZR	EMP_LOCATION	15	85	103
MLZS	SCHEDULED_APPRSL	10	86	99
MLZT	MONETARY_PERQ	10	94	107
MP	PAY_PERIOD	7	89	99
TABLE 4				
TABLE 2 INDEXES				
TABLE 4 TOTAL				

Table 5

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
NEE	EMPLOYEE_LH	29	111	143
NEEA	EMPLOYEE_PAYMT_LH	18	200	221
NF	EMP_NAME_ADDR_LH	6	72	81
NG	EMP_LOCATION_LH	11	90	104
NH	LABOR_HIS_EARN_DED	7	86	96
NIDX	NIDX	6	204	213
NJ	LABOR_HIS_TAX_DED	13	203	219
NLG1	LABOR_DIST_SPLIT1	5	88	96
NLG2	LABOR_DIST_SPLIT2	5	88	96

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
NLG3	LABOR_DIST_SPLIT3	5	88	96
QEE	EMPLOYEE_MM	29	111	143
QEEA	EMPLOYEE_PAYMT_MM	18	200	221
QF	EMP_NAME_ADDR_MM	10	162	175
QG	EMP_LOCATION_MM	11	90	104
QH	EMP_EARN_DED_MM	29	385	417
QIDX	QIDX	6	204	213
QJ	EMP_TAX_DED_MM	53	831	887
TABLE 5				
TABLE 1 INDEXES				
TABLE 5 TOTAL				

Table 6

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
UDS1	NODE_CONTROL_TABLE	5	28	36
UDS2	MACHINE_PARAMETERS	3	6	12
UDS3	DISTRIB_ACCES_LOG	7	78	88
UDS4	DISTRIBUTION_RULES	5	23	31
URT01	REQ_BASIC_DETAILS	15	91	109
URT11	REQ_CAND_BASIC	12	70	85
URT12	REQ_CAND_BASIC_2	7	72	82
Y40FN	FIELD_NAMES	19	161	183
YPR0	POSITION_HEADER	10	18	31
YPR1	POSITION_CTL_BASIC	16	93	112
YPR2	POSITION_FROM_DATA	8	62	73
YPR3	POSITION_TO_DATA	8	62	73
YPR4	POSITION_NARRATIVE	5	75	83
YPR5	POSITION_DEPT	17	122	142
YPR6	POSITION_BUDGET_PC	12	144	159
YPR7	POSITION_ACTUAL	13	181	197
YPR8	POSITION_REQ	14	117	134
YPR9	POSITION_INCUMBENT	15	101	119

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YPRH	POSITION_CTRL_HDR	3	35	41
YPRS	POSITION_CTL_SKILL	15	63	81
YT	ACCRUAL_SELECTION	14	72	89
YT_A	COURSE_DEVP_COST	5	82	90
YT_AB	ABSENCE_EARN_CODE	11	74	88
YT_ARA	ACCRUAL_ROUTINE	19	269	291
YT_ARB	ACCRUAL_ROUTINE_B	11	211	225
YT_ARC	ACCRUAL_ROUTINE_C	8	145	156
YT_C_A	COORDINATOR	5	62	70
YT_C_B	COORDINATOR_B	9	62	74
YT_C_C	COORDINATOR_C	6	63	72
YT_C_D	COORDINATOR_D	11	60	74
YT_C_E	COORDINATOR_E	11	60	74
YT_C2A	CREW_ROTATION_08_A	28	83	114
YT_C2B	CREW_ROTATION_08_B	31	64	98
YT_C2C	CREW_ROTATION_08_C	11	24	38
YT_C3A	CREW_ROTATION_14_A	28	83	114
YT_C3B	CREW_ROTATION_14_B	31	64	98
YT_C3C	CREW_ROTATION_14_C	31	64	98
YT_C3D	CREW_ROTATION_14_D	26	54	83
YT_D_A	COURSE_OFFERING	8	74	85
YT_D_B	COURSE_OFFERING_B	23	149	175
YT_D_C	COURSE_OFFERING_C	20	74	97
YT_D_D	COURSE_OFFERING_D	21	119	143
YT_D_E	COURSE_OFFERING_E	17	104	124
YT_D_F	COURSE_OFFERING_F	7	73	83
YT_EC	TA_EARN_CODE	6	56	65
YT_N_A	COURSE_PROVIDER	4	66	73
YT_N_B	COURSE_PROVIDER_B	8	64	75
YT_N_C	COURSE_PROVIDER_C	4	54	61
YT_N_D	COURSE_PROVIDER_D	10	64	77
YT_N_E	COURSE_PROVIDER_E	10	64	77
YT_P	POLICY_ACTIVITY	27	462	492
YT_P_A	PROGRAM_SCHEDULE	15	62	80
YT_P_B	PROGRAM_SCHEDULE_B	15	62	80
YT_P_C	PROGRAM_SCHEDULE_C	15	62	80

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YT_P_D	PROGRAM_SCHEDULE_D	15	62	80
YT_P_E	PROGRAM_SCHEDULE_E	14	61	78
YT_P_F	PROGRAM_SCHEDULE_F	4	64	71
YT_PT	POLICY_TABLE	15	129	147
YT_R	COMPANY_XREF	3	50	56
YT_RP	ROSTER_QUERY_PARMS	6	84	93
YT_S	SCHEDULE_ACTIVITY	27	462	492
YT_S_A	CLASS_SCHEDULE	16	155	174
YT_S_B	CLASS_SCHEDULE_B	18	184	205
YT_S_C	CLASS_SCHEDULE_C	17	161	181
YT_S_D	CLASS_SCHEDULE_D	16	86	105
YT_S_E	CLASS_SCHEDULE_E	7	75	85
YT_SP	SHIFT_PREMIUM	22	158	183
YT_ST	SCHEDULE_TABLE	13	126	142
YT_T	TRAINING_REQUIRED	6	26	35
YT_X	CANCEL_COURSE_BOOK	18	124	145
YT_Y	CLASS_EVALUATION	19	88	110
YT_Z	COURSE_BOOKING	18	124	145
YT0A01	POSITION_BASIC	12	92	107
YT0A02	POSITION_BASIC_02	7	75	85
YT0A03	POSITION_EVAL	8	93	104
YT0A04	POSITION_EVAL_CRIT	8	78	89
YT0A05	POSITION_SKILLS	15	63	81
YT0A06	POSITION_MEMBERSHIP	7	73	83
YT0A07	POSITION_LICENSES	7	73	83
YT0A08	POSITION_EDUCATION	8	77	88
YT0A09	POSITION_NEXT_JOB	7	75	85
YT0A10	POSITION_DOC_REF	8	90	101
YT0A11	POSITION_REQ_EXP	8	74	85
YT0A12	POSITION_MISC_DATA	12	65	80
YT0A13	POSITION_REQ_TRAIN	7	75	85
YT0A50	POSITION_STATUS	8	50	61
YT0A51	POSITION_LOCATION	9	61	73
YT0A52	POSITION_FUND	11	110	124
YT0A53	POSITION_VEHICLE	10	95	108
YT0A54	POSITION_NEXT_REVW	8	78	89

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YT0A55	POSITION_FTE	9	127	139
YT0A56	POSITION_COMPLEMNT	8	105	116
YT0B01	ORG_UNIT_BASIC	11	83	97
YT0B02	ORG_UNIT_LVL_NAME	6	69	78
YT0B03	ORG_UNIT_FTE	9	127	139
YT0B10	ORG_UNIT_DOC_REF	8	90	101
YT0B99	ORG_UNIT_DEF_NAME	6	69	78
YT0D01	JOB_BASIC	11	91	105
YT0D02	JOB_BASIC_02	8	85	96
YT0D03	JOB_EVALUATION	8	93	104
YT0D04	JOB_EVAL_CRIT	8	78	89
YT0D05	JOB_SKILLS	8	82	93
YT0D06	JOB_MEMBERSHIP	7	73	83
YT0D07	JOB_LICENCES	7	73	83
YT0D08	JOB_EDUCATION	8	77	88
YT0D09	JOB_NEXT_JOB	7	75	85
YT0D10	JOB_DOC_REF	8	90	101
YT0D11	JOB_REQ_EXP	8	74	85
YT0D13	JOB_REQ_TRAINING	7	75	85
YTA_A	JOB_CODE	14	94	111
YTA_B	JOB_CODE_B	12	79	94
YTBA	SALARY_GRADE_ANN	12	152	167
YTBB	SALARY_GRD_PAY_PD	13	174	190
YTBC	SALARY_GRADE_HRLY	12	173	188
YTC_A	JOB_EVAL_PROFILE	23	267	293
YTC_B	JOB_EVAL_PROFILE_B	10	98	111
YTDC1	SALARY_INC_DEFN_1	13	152	168
YTDC2	SALARY_INC_DEFN_2	14	153	170
YTDC3	SALARY_INC_DEFN_3	19	284	306
YTDC4	SALARY_INC_DEFN_4	19	284	306
YTDR1	SALARY_INC_DEFN_5	13	152	168
YTDR2	SALARY_INC_DEFN_6	14	153	170
YTDR3	SALARY_INC_DEFN_7	19	284	306
YTDR4	SALARY_INC_DEFN_8	19	284	306
YTDT1	SALARY_INC_DEFN_9	13	152	168
YTDT2	SALARY_INC_DEFN_0	14	153	170

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VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YTE	OCCUPATION_GROUP	8	24	35
YTF	ADJ_EMP_STATUS	24	51	78
YTG	SYSTEM_OPTIONS	19	30	52
YTH	SALARY_PLAN	8	66	77
YTI	SALARY_GRADE	11	120	134
YTJ_A	PLAN_RETIRE_RULE	15	76	94
YTJ_B	PLAN_RETIRE_RULE_B	14	50	67
YTK_A	BENEFIT_PLAN	16	70	89
YTK_B	BENEFIT_PLAN_B	14	48	65
YTL	PLAN_ELIGIBILITY	23	87	113
YTM	COVERAGE_COST	14	138	155
YTN_A	PLAN_PARTICIPATE	17	110	130
YTN_B	PLAN_PARTICIPATE_B	15	63	81
YTO	ACCUMULATOR_RULES	40	51	94
YTP	MASTER_PLAN	22	68	93
YTQ	ANNUITANT_FACTOR	18	281	302
YTRA	PLAN_INTEREST_RATE	9	123	135
YTRB	FUND_INTEREST_RATE	8	103	114
YTRC	PLAN_ALLOC_METHOD	16	115	134
YTRD	FUND_ALLOC_METHOD	12	68	83
YTS	PLAN_EARN_DED_RULE	16	141	160
YTT	PLAN_OPT_ACTIVITY	29	77	109
YTU_A	BREAK_IN_SVC_RUL	25	228	256
YTU_B	BREAK_IN_SVC_RUL_B	15	122	140
YTV	DISCRIMINATION_TST	16	148	167
YTW_A	PRIOR_YEAR_TOTAL	8	125	136
YTW_B	PRIOR_YEAR_TOTAL_B	9	147	159
YTX_A	EEO_ESTABLISHMNT	12	65	80
YTX_B	EEO_ESTABLISHMNT_B	7	65	75
YTX_C	EEO_ESTABLISHMNT_C	7	69	79
YTX_D	EEO_ESTABLISHMNT_D	9	126	138
YTX_E	EEO_ESTABLISHMNT_E	10	148	161
YTY	EEO_STATISTICS	19	301	323
YTZ	COVERAGE_COST_B	9	68	80
YTZAX	HR_TABLE_CTRL	13	55	71
YTZAY	BENEFIT_TABLE_CTRL	14	61	78

VIEW	TABLE	# OF ATTR	AVG BYTES/ROW	AVG ROW LENGTH
YTZAZ	ACCRUAL_TABLE_CTRL	3	17	23
YU1	FLEX_CREDIT_CALC	19	46	68
YU2	FLEX_PLAN_OPTS	18	47	68
ZCSC12	CODESET_C12	8	75	86
ZCSUNV	CODESET	6	75	84
TABLE 6 TOTAL				
TABLE 7 TOTAL				
TABLE 0 TOTAL				

APPENDIX G

SQL Server Sizing

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Phase 1: Methodology

Calculate the number of rows on a page

Assumptions:

- 2016 represents a 2K page.
- 100 average Cyborg row size

Therefore, $2016/100$ is the number of rows per page.

Calculate the number of data pages required

Number of rows/Number of rows per page

For the number of rows use the summary of rows from the RDBPGM3 output.

Double the number of 2K pages

This will represent the total megabytes needed for data.

Add 20% for the index overhead

The total of these four tasks represents the estimate for the database file. Remember that for SQL Server the number of megabytes for the database is entered and the log file is automatically allocated at 50% of that number.

Also be aware that the SQL Server fill factor specifies how full SQL Server should make each page. The amount of empty space on an index page is important because as an index page fills up, the system must take time to split the page to make room for additional rows. The number 2016 assumes 90% fill.

A P P E N D I X H

Administering the Cyborg Application Server (CAS)

In This Appendix

CAS Error Messages.....184

CAS Error Messages

These are the error messages that may be written to the Windows NT event log by the Cyborg Application Server (CAS).

When a WIN32 error code is written to the event log, a brief explanation of the system call that produced the error and the context in which the call was made is provided.

Please refer to Microsoft's WIN32 SDK documentation for a more complete description of system calls.

The following messages may be displayed as a result of a failure to start a requested application, typically CBSVO or CYBIO. These messages will be displayed if either the CAS or the GUI application is incorrectly configured.

- **Service Error: Unknown Application Id** *application-id* [Errno: *error-code*]
- **Application** *application-id* **disabled!**
- **Application** [*application-id*] **Environment** [*environment-name*] **disabled!**
- **Service Error: Invalid definition entry** [Working Directory] *working-directory*
- **Service Error: Invalid definition entry** [Program Name] *program-name*

The following messages may be displayed as a result of a runtime error during a CAS session:

- **Invalid initial message type** "*message-class/message-type*"
- **Unsupported Version** *<message-version>*'
- **Unknown Message Type** *<message-type>*

Message	Condition
Connection has been forcibly closed by client	The client application has either specifically closed its end of the socket connection, or terminated before the CAS could return data.
Cyborg server disabled!	The CAS service has been disabled. The service can be re-enabled using the control panel applet.
Error: Application has shutdown! - Exit Code = <i>exit-code</i>	A server application has unexpectedly terminated. Exit-code is the value the server application returned operating system on exit.
Invalid Password	The password for the 'Cyborg' user is invalid.
Invalid Username/Password	An invalid user name/password has either been supplied by the client application or specified in the control panel applet.
Server Failed: Bad Poll Event notified! [<i>Error-code</i>]	The 'WaitForMultipleObjects' system call has failed. Error-code contains the WIN32 error code.
Server Failed: Creating pipe (1) [<i>Errno:error-code</i>]	An error occurred while attempting to create a named pipe to facilitate communication with the server application. Error-code is the return value of the WIN32 'CreateNamedPipe' system call.

Message	Condition
Server Failed: Creating pipe (2) [Errno:error-code]	An error occurred while attempting to open a named pipe for write access. Error-code is the return values of the WIN32 'CreateFile' system call.
Server Failed: Execute application process [Errno:error-code]	An error has occurred while attempting to launch a server application. Error-code is the return value of either the WIN32 'CreateProcess' or 'CreateProcessAsUser' system calls.
Server Failed: Reading pipe message (1) [Errno:error-code]	An error has occurred while reading data from a server application's named pipe. Error-code is the return value of the WIN32 'GetOverlappedResult' system call.
Server Failed: Reading pipe message (2) [Errno:error-code]	An error has occurred while reading the output of a server application's named pipe. Error-code is the return value of the WIN32 'ReadFile' system call.
Server Failed: Reading socket message (1) [Errno:error-code]	An error has occurred while reading data from the client application's socket. Error-code is the return value of the WIN32 'GetOverlappedResult' system call.
Server Failed: Reading socket message (2) [Errno:error-code]	An error has occurred while reading data from the client application's socket. Error-code is the return value of the WIN32 'ReadFile' system call.
Server Failed: Writing pipe message [Errno:error-code]	An error has occurred while writing data to a server application. Error-code is the return value of the WIN32 'WriteFile' system call.
Server Failed: Writing socket message [Errno:error-code]	An error has occurred while writing data to the client application's socket. Error-code is the return value of the WIN32 'WriteFile' system call.

The following messages may be displayed as a result of a failure to load the Windows sockets dynamic link library.

Error error-code on Socket DLL wsock32.dll Load – error-description

Error Code	Error Description
0	Insufficient memory
2	File not found
3	Path not found
5	Sharing/Network error
6	Separate data segment required
8	Out of memory
10	Invalid Windows version

The following is a list of possible communications-related error codes along with their extended explanations. Errors are listed in alphabetical order by error symbolic name.

WSAEACCES

(10013)

Permission denied.

An attempt was made to access a socket in a way forbidden by its access permissions. An example is using a broadcast address for `sendto` without broadcast permission being set using `setsockopt(SO_BROADCAST)`.

Another possible reason for the WSAEACCES error is that when the **bind** function is called (on Windows NT 4 SP4 or later), another application, service, or kernel mode driver is bound to the same address with exclusive access. Such exclusive access is a new feature of Windows NT 4 SP4 and later, and is implemented by using the `SO_EXCLUSIVEADDRUSE` option.

WSAEADDRINUSE

(10048)

Address already in use.

Only one usage of each socket address (protocol/IP address/port) is normally permitted. This error occurs if an application attempts to **bind** a socket to an IP address/port that has already been used for an existing socket, or a socket that wasn't closed properly, or one that is still in the process of closing. For server applications that need to bind multiple sockets to the same port number, consider using **setsockopt** (`SO_REUSEADDR`). Client applications usually need not call `bind` at all - **connect** chooses an unused port automatically. When `bind` is called with a wildcard address (involving `ADDR_ANY`), a WSAEADDRINUSE error could be delayed until the specific address is committed. This could happen with a call to another function later, including `connect`, `listen`, `WSAConnect` or `WSAJoinLeaf`.

WSAEADDRNOTAVAIL

(10049)

Cannot assign requested address.

The requested address is not valid in its context. This normally results from an attempt to **bind** to an address that is not valid for the local machine. This can also result from **connect**, **sendto**, **WSAConnect**, **WSAJoinLeaf**, or **WSASendTo** when the remote address or port is not valid for a remote machine (for example, address or port 0).

WSAEAFNOSUPPORT

(10047)

Address family not supported by protocol family.

An address incompatible with the requested protocol was used. All sockets are created with an associated address family (that is, `AF_INET` for Internet Protocols) and a generic protocol type (that is, `SOCK_STREAM`). This error is returned if an incorrect protocol is explicitly requested in the **socket** call, or if an address of the wrong family is used for a socket, for example, in **sendto**.

WSAEALREADY

(10037)

Operation already in progress.

An operation was attempted on a nonblocking socket with an operation already in progress - that is, calling **connect** a second time on a nonblocking socket that is already connecting, or canceling an asynchronous request (WSAAsyncGetXbyY) that has already been canceled or completed.

WSAECONNABORTED

(10053)

Software caused connection abort.

An established connection was aborted by the software in your host machine, possibly due to a data transmission time-out or protocol error.

WSAECONNREFUSED

(10061)

Connection refused.

No connection could be made because the target machine actively refused it. This usually results from trying to connect to a service that is inactive on the foreign host—that is, one with no server application running.

WSAECONNRESET

(10054)

Connection reset by peer.

A existing connection was forcibly closed by the remote host. This normally results if the peer application on the remote host is suddenly stopped, the host is rebooted, or the remote host used a hard close (see **setsockopt** for more information on the SO_LINGER option on the remote socket.) This error may also result if a connection was broken due to keepalive activity detecting a failure while one or more operations are in progress. Operations that were in progress fail with WSAENETRESET. Subsequent operations fail with WSAECONNRESET.

WSAEDESTADDRREQ

(10039)

Destination address required.

A required address was omitted from an operation on a socket. For example, this error is returned if **sendto** is called with the remote address of ADDR_ANY.

WSAEFAULT

(10014)

Bad address.

The system detected an invalid pointer address in attempting to use a pointer argument of a call. This error occurs if an application passes an invalid pointer value, or if the length of the buffer is too small. For instance, if the length of an argument which is a SOCKADDR structure is smaller than the sizeof(SOCKADDR).

WSAEHOSTDOWN

(10064)

Host is down.

A socket operation failed because the destination host is down. A socket operation encountered a dead host. Networking activity on the local host has not been initiated. These conditions are more likely to be indicated by the error WSAETIMEDOUT.

WSAEHOSTUNREACH

(10065)

No route to host.

A socket operation was attempted to an unreachable host. See WSAENETUNREACH

WSAEINPROGRESS

(10036)

Operation now in progress.

A blocking operation is currently executing. Windows Sockets only allows a single blocking operation to be outstanding per task (or thread), and if any other function call is made (whether or not it references that or any other socket) the function fails with the WSAEINPROGRESS error.

WSAEINTR

(10004)

Interrupted function call.

A blocking operation was interrupted by a call to **WSACancelBlockingCall**.

WSAEINVAL

(10022)

Invalid argument.

Some invalid argument was supplied (for example, specifying an invalid level to the **setsockopt** function). In some instances, it also refers to the current state of the socket – for instance, calling **accept** on a socket that is not listening.

WSAEISCONN

(10056)

Socket is already connected.

A connect request was made on an already connected socket. Some implementations also return this error if **sendto** is called on a connected SOCK_DGRAM socket (For

SOCK_STREAM sockets, the *to* parameter in **sendto** is ignored), although other implementations treat this as a legal occurrence.

WSAEMFILE

(10024)

Too many open files.

Too many open sockets. Each implementation may have a maximum number of socket handles available, either globally, per process, or per thread.

WSAEMSGSIZE

(10040)

Message too long.

A message sent on a datagram socket was larger than the internal message buffer or some other network limit, or the buffer used to receive a datagram was smaller than the datagram itself.

WSAENETDOWN

(10050)

Network is down.

A socket operation encountered a dead network. This could indicate a serious failure of the network system (that is, the protocol stack that the Windows Sockets .dll runs over), the network interface, or the local network itself.

WSAENETRESET

(10052)

Network dropped connection on reset.

The connection has been broken due to keep-alive activity detecting a failure while the operation was in progress. It can also be returned by **setsockopt** if an attempt is made to set SO_KEEPALIVE on a connection that has already failed.

WSAENETUNREACH

(10051)

Network is unreachable.

A socket operation was attempted to an unreachable network. This usually means the local software knows no route to reach the remote host.

WSAENOBUFS

(10055)

No buffer space available.

An operation on a socket could not be performed because the system lacked sufficient buffer space or because a queue was full.

WSAENOPROTOPT

(10042)

Bad protocol option.

An unknown, invalid or unsupported option or level was specified in a **getsockopt** or **setsockopt** call.

WSAENOTCONN

(10057)

Socket is not connected.

A request to send or receive data was disallowed because the socket is not connected and (when sending on a datagram socket using **sendto**) no address was supplied. Any other type of operation might also return this error—for example, **setsockopt** setting `SO_KEEPALIVE` if the connection has been reset.

WSAENOTSOCK

(10038)

Socket operation on non-socket.

An operation was attempted on something that is not a socket. Either the socket handle parameter did not reference a valid socket, or for **select**, a member of an `fd_set` was not valid.

WSAEOPNOTSUPP

(10045)

Operation not supported.

The attempted operation is not supported for the type of object referenced. Usually this occurs when a socket descriptor to a socket that cannot support this operation, for example, trying to accept a connection on a datagram socket.

WSAEPFNOSUPPORT

(10046)

Protocol family not supported.

The protocol family has not been configured into the system or no implementation for it exists. Has a slightly different meaning to `WSAEAFNOSUPPORT`, but is interchangeable in most cases, and all Windows Sockets functions that return one of these specify `WSAEAFNOSUPPORT`.

WSAEPROCLIM

(10067)

Too many processes.

A Windows Sockets implementation may have a limit on the number of applications that may use it simultaneously. **WSAStartup** may fail with this error if the limit has been reached.

WSAEPROTONOSUPPORT

(10043)

Protocol not supported.

The requested protocol has not been configured into the system, or no implementation for it exists. For example, a **socket** call requests a SOCK_DGRAM socket, but specifies a stream protocol.

WSAEPROTOTYPE

(10041)

Protocol wrong type for socket.

A protocol was specified in the **socket** function call that does not support the semantics of the socket type requested. For example, the ARPA Internet UDP protocol cannot be specified with a socket type of SOCK_STREAM.

WSAESHUTDOWN

(10058)

Cannot send after socket shutdown.

A request to send or receive data was disallowed because the socket had already been shut down in that direction with a previous **shutdown** call. By calling shutdown a partial close of a socket is requested, which is a signal that sending or receiving or both have been discontinued.

WSAESOCKTNOSUPPORT

(10044)

Socket type not supported.

The support for the specified socket type does not exist in this address family. For example, the optional type SOCK_RAW might be selected in a **socket** call, and the implementation does not support SOCK_RAW sockets at all.

WSAETIMEDOUT

(10060)

Connection timed out.

A connection attempt failed because the connected party did not properly respond after a period of time, or the established connection failed because the connected host has failed to respond.

WSATYPE_NOT_FOUND

(10109)

Class type not found.

The specified class was not found.

WSAEWOULDBLOCK

(10035)

Resource temporarily unavailable.

This error is returned from operations on nonblocking sockets that cannot be completed immediately, for example **recv** when no data is queued to be read from the socket. It is a non-fatal error, and the operation should be retried later. It is normal for **WSAEWOULDBLOCK** to be reported as the result from calling **connect** on a nonblocking **SOCK_STREAM** socket, since some time must elapse for the connection to be established.

WSAHOST_NOT_FOUND

(11001)

Host not found.

No such host is known. The name is not an official host name or alias, or it cannot be found in the database(s) being queried. This error may also be returned for protocol and service queries, and means the specified name could not be found in the relevant database.

WSA_INVALID_HANDLE

(OS dependent)

Specified event object handle is invalid.

An application attempts to use an event object, but the specified handle is not valid.

WSA_INVALID_PARAMETER

(OS dependent)

One or more parameters are invalid.

An application used a Windows Sockets function which directly maps to a Win32 function. The Win32 function is indicating a problem with one or more parameters.

WSA_INVALIDPROC

(OS dependent)

Invalid procedure table from service provider.

A service provider returned a bogus procedure table to **WS2_32.dll**. (Usually caused by one or more of the function pointers being **NULL**.)

WSA_INVALID_PROVIDER

(OS dependent)

Invalid service provider version number.

A service provider returned a version number other than 2.0.

WSA_IO_INCOMPLETE

(OS dependent)

Overlapped I/O event object not in signaled state.

The application has tried to determine the status of an overlapped operation which is not yet completed. Applications that use `WSAGetOverlappedResult` (with the *Wait* flag set to `FALSE`) in a polling mode to determine when an overlapped operation has completed get this error code until the operation is complete.

WSA_IO_PENDING

(OS dependent)

Overlapped operations will complete later.

The application has initiated an overlapped operation which cannot be completed immediately. A completion indication will be given at a later time when the operation has been completed.

WSA_NOT_ENOUGH_MEMORY

(OS dependent)

Insufficient memory available.

An application used a Windows Sockets function which directly maps to a Win32 function. The Win32 function is indicating a lack of required memory resources.

WSANOTINITIALISED

(10093)

Successful `WSAStartup` not yet performed.

Either the application has not called `WSAStartup` or `WSAStartup` failed. The application may be accessing a socket which the current active task does not own (that is, trying to share a socket between tasks), or `WSACleanup` has been called too many times.

WSANO_DATA

(11004)

Valid name, no data record of requested type.

The requested name is valid and was found in the database, but it does not have the correct associated data being resolved for. The usual example for this is a host name -> address translation attempt (using `gethostbyname` or `WSAAsyncGetHostByName`) which uses the DNS (Domain Name Server), and an MX record is returned but no A record – indicating the host itself exists, but is not directly reachable.

WSANO_RECOVERY

(11003)

This is a non-recoverable error.

This indicates some sort of non-recoverable error occurred during a database lookup. This may be because the database files (for example, BSD-compatible HOSTS, SERVICES, or PROTOCOLS files) could not be found, or a DNS request was returned by the server with a severe error.

WSAPROVIDERFAILEDINIT

(OS dependent)

Unable to initialize a service provider.

Either a service provider's DLL could not be loaded (LoadLibrary failed) or the provider's WSPStartup/NSPStartup function failed.

WSASYSCALLFAILURE

(OS dependent)

System call failure.

Returned when a system call that should never fail does. For example, if a call to WaitForMultipleObjects fails or one of the registry functions fails trying to manipulate the protocol/name space catalogs.

WSASYSNOTREADY

(10091)

Network subsystem is unavailable.

This error is returned by **WSAStartup** if the Windows Sockets implementation cannot function at this time because the underlying system it uses to provide network services is currently unavailable. Users should check:

- That the appropriate Windows Sockets DLL file is in the current path.
- That they are not trying to use more than one Windows Sockets implementation simultaneously. If there is more than one WINSOCK DLL on your system, be sure the first one in the path is appropriate for the network subsystem currently loaded.
- The Windows Sockets implementation documentation to be sure all necessary components are currently installed and configured correctly.

WSATRY_AGAIN

(11002)

Non-authoritative host not found.

This is usually a temporary error during host name resolution and means that the local server did not receive a response from an authoritative server. A retry at some time later may be successful.

WSAVERNOTSUPPORTED

(10092)

WINSOCK.DLL version out of range.

The current Windows Sockets implementation does not support the Windows Sockets specification version requested by the application. Check that no old Windows Sockets .dll files are being accessed.

WSAEDISCON

(10094)

Graceful shutdown in progress.

Returned by **WSARecv** and **WSARecvFrom** to indicate that the remote party has initiated a graceful shutdown sequence.

WSA_OPERATION_ABORTED

(OS dependent)

Overlapped operation aborted.

An overlapped operation was canceled due to the closure of the socket, or the execution of the SIO_FLUSH command in **WSAIoctl**.

Hewitt

Upgrading The Solution Series from 5.0 to 5.2

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PART 1

Introduction

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CHAPTER 1

About This Manual

In This Chapter

Welcome.....4

Welcome

This manual has been designed to guide you through the process of upgrading your current system (The Solution Series 5.0, 5.01, or 5.02) to the latest version of the system—The Solution Series version 5.2.

Who should use this manual?

This manual is designed to be used by a number of different users. The following users will find it most useful:

- **System administrators**
If you fulfill the technical role of a system administrator at your company, performing tasks such as scheduling reports and applying program temporary fixes.
- **Project managers**
If you fulfill the role of the project manager in charge of the upgrade from The Solution Series 5.0 or 5.0.1 or 5.0.2 to the new version 5.2.

Prerequisite skills

Users of this manual should possess a variety of technical skills and authorities, depending on the roles they will play.

System administrator

- Understanding of the job control language or shell scripts for your environment
- Familiarity with job streams
- Understanding of system backup and recovery
- Authority to compile and link production programs
- Understanding of the programs that have been customized
- Programming skills in Cyborg Scripting Language (CSL), Report Generator, and COBOL

Project manager

- Understanding of project management concepts and techniques
- Authority to assign resources

Additional documentation and training

The following documentation is available to help you understand the usage, configuration, and maintenance tasks performed for an implementation of The Solution Series.

Documentation

Document	Description
Using The Solution Series: Administrative Solutions	This prerequisite course documentation covers the introductory concepts and tasks related to The Solution Series. It describes how to navigate through the software and explains the important concepts and functionality of The Solution Series.
Optimizing System Features	This manual provides descriptions of and detailed instructions for performing the configuration and functional administration tasks that support the implementation of The Solution Series.
Technical Administration	This manual provides descriptions of and detailed instructions for performing the technical tasks that support The Solution Series.

If you do not have a copy of any of these documents, you can obtain them from Customer Support.

Training Courses

The following classes are available for customers upgrading from previous versions of eCyborg:

Class	Details
5.2 Webinar	Webinar highlighting the new features and enhancements included in the eCyborg 5.2 release.
eCyborg 5.2 Upgrade Planning	A one-day course during which the upgrade process is discussed.
Upgrading from eCyborg 5.0 to eCyborg 5.2 Workshop	A two-day course during which you begin working on your system upgrade.

If you wish to attend any of these courses, contact Customer Support or visit our website www.hewitt.com/eCyborg for details of course dates and availability.

How this manual is organized

This manual has been organized to make it as easy to use as possible.

	Read this Chapter	To learn about
1	About This Manual	How the manual is organized Where to find what you are looking for Who should use the manual Where to get help
2	What's New in the 5.2 Release	The features and enhancements of eCyborg 5.2
3	Planning your Upgrade	Advice and suggestions to consider when planning to perform the 5.2 upgrades.
4	Implementing The Solution Series 5.2 Release	Detailed steps to get your customizations from the existing production environment into the new 5.2 environment.
5	Convert Data	Detailed steps to get your HR data from the existing production environment into the new 5.2 environment.
A	Expand Transactions	Important information on changes to the EXPAND area.
B	Component Lists	Lists of delivered components.
C	Report Generators	Details of delivered RGs.
D	Machine Parameters	Machine parameters
E	Changes to Menu Records	An alternate language version of the menu item title as well as the already existing primary language version.
F	Large Number Changes to Fields	The size of the type 4 data fields changed to accommodate the large numbers enhancement.

Conventions used in this manual

The underlying page layout and design of this manual are meant to be as intuitive as possible for you. Our intent is to make it easy for you to navigate through the manual and concentrate on learning and doing.

Cross-references

Wherever appropriate, we provide cross-references to help you find additional information or further discussion of a specific topic.



Refer to a cross-reference to find more detail or more discussion on a given topic.

See also:

■ *A topic to find more detail or more discussion on a given topic (on page no n.) For more information.*

Notes

Whenever there is important information you should be aware of, we provide a note.

Note: You will find tips or quick techniques covered in notes.

Important!

Important note or warning.

Identification of platform-specific information

This manual is designed to support The Solution Series on Windows, UNIX, and z/OS operating systems.

Some platform-specific information is offered in tables, according to the format shown here:

Platform	Information
Windows	Windows-specific information
UNIX	UNIX-specific information
z/OS	z/OS-specific information

How to get additional help

If you cannot find the answers to your questions in this manual, contact Customer Support, who will be able to answer specific questions and give you general advice on training.

Please visit our Web site at www.hewitt.com/ecyborg for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

CHAPTER 2

What's New in the 5.2 Release

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Overview of the eCyborg 5.2 release

eCyborg version 5.2 includes both new functionality and enhancements to existing functionality. It contains many Payroll, Foundational, Interactive Workforce and both US and Canadian Regulatory enhancements.

Enhancements to Payroll for 5.2

US Garnishments

Enhanced garnishment processing includes the following functionality:

- Calculation of net disposable income
- Automation of multiple child support orders
- Prioritization of multiple garnishment orders
- Automation of Garnishment Rule Maintenance
- Handle the following Garnishment types:
 - Bankruptcy
 - Child Support
 - Child Support Arrears < 12 weeks
 - Child Support Arrears > 12 weeks
 - Spousal Support
 - State/Local Debt
 - Federal HEA & DCA debt
 - Consumer Garnishments
 - Wage Assignments
 - Federal Tax Levy
 - Voluntary Deductions

Note: The existing 5.1.3 Garnishment process will continue to be available in 5.2 until such time as you activate the 5.2 model on the Organization-To-Rules Cross Reference for Payroll form (AW-SCR).

A report utility will be provided to list your Child Support data on file. In addition, an Excel spreadsheet will be provided to help map your existing data from the Child Support Garnishment Administration form (PO-SCR) to the new forms. The existing data will then be imported to the new forms with the import wizard.

Differences from 5.1.3

The 5.2 garnishment processing functionality differs from the 5.1.3 process in the following ways:

- **Organization Level**
The organizational rules will be maintained in tables and calculated automatically by P4CALC, rather than researched and manually applied by the processor as is done with 5.1.3.

Federal and State protection rule tables delivered with 5.2 are based on the laws known at the time of release. Updates to the rules, thereafter, will be done through Regulatory Bulletins. This will be addressed in the documentation to enhance the maintenance process for the tables going forward.

▪ **Employee Level**

In 5.1.3, prioritization of multiple orders for a single employee is currently a manual process involving creating HEDs in a specific order to allow the garnishment with the highest priority to be deducted first. Prioritization in 5.2 will be automated with report generators and tables.

Accounts Payable

ACH Tape (6A6A) report, Child Support ACH Tape (6I6I) report, and Direct Deposit Register – Child Support (6R6R) have been modified to use the new garnishment L segments built by the GR1SCR – GR4SCR forms. It should be noted that the accounts payable portion of the 5.2 process will function just as the 5.1.3 process does.

New forms

The following new forms have been created for Garnishments:

Org Level	EE Level	Data Delivered	Form	Purpose	Inquiry
X		Yes	Required Deduction HED Types (GRASCR)	Used to establish HED types for deductions required by Federal and state law.	Yes
X		No	HEDs for Required Deduction HED Types (GRBSCR)	Used to establish HED numbers for the HED types required by Federal and state law. <i>Setup by client required at implementation.</i>	Yes
X		Yes	Deduction Priority (GRCSCR)	Used to set up the Federal and state deduction priorities for garnishment types, allowing the deductions to be taken in the order required by law.	Yes
X		No	HED Range for Garnishment Type (GRDSCR)	Used to set up HED ranges for each garnishment type. This allows the GR2SCR to determine the next available HED. <i>Setup by client required at implementation.</i>	
X		Yes	Federal Tax Levy Protection Rules (GRESR)	Used to determine the amount of an employee's earnings which is protected by Federal law from a tax levy. These amounts determined by Publication 1494.	
X		Yes	Support Protection Rules (GRFSCR)	Used to determine the amount of earnings which is protected by Federal and state law from a child (or other) support order.	

Org Level	EE Level	Data Delivered	Form	Purpose	Inquiry
X		Yes	Garnishment Protection Rules (GRGSCR)	Used to determine the amount of an employee's earnings which is protected by Federal and state law from garnishment types other than Federal tax levies and support orders.	Yes
X		No	Net Disposable Income Reduction HEDs (GRHSCR)	Used to establish the order in which deductions will be taken to calculate an employee's net disposable income. <i>Setup by client required at implementation.</i>	Yes
	X	No	Garnishment Administration 1 of 4 (GR1SCR)	Used to enter a garnishment order for an employee. Completion of this form is required.	
	X	No	Garnishment Administration 2 of 4 (GR2SCR)	Used to enter a garnishment order for an employee. Completion of this form is required.	
	X	No	Garnishment Administration 3 of 4 (GR3SCR)	Used to enter a garnishment order for an employee. Completion of this form is required for tax levies, unnecessary for all other garnishment types.	
	X	No	Garnishment Administration 4 of 4 (GR4SCR)	Used to enter the electronic filing information (ONLY) for a child support order. Completion of this form required for child support orders.	

Modified forms

- **Organization-To-Rules Cross Reference for Payroll screen (AW-SCR)**
A Garnishments section will be added with these new fields: Garnishment Admin (the control number to tie an organization to a specific set of HEDs); Allow Fees checkbox (to indicate if the client company allows fees to be collected). Entry of a Garnishment Administration control number is required for 5.2 garnishment processing.

Modified option lists

- **PP02**
New category 'Garnishments 60' added. Used by the A8-SCR to indicate garnishment processing by the new method. When setting up garnishment A8s that will use the new methodology, they must be assigned to this new category.

New option lists

The following option lists have been added for Garnishments:

Option List	Used By
GR01—Garnishment Type	GR1SCR, GR2SCR, GR3SCR, GR4SCR, GRDSCR, GRGSCR
GR02—Garnishment Federal and States	GR1SCR, GR2SCR, GR3SCR, GR4SCR, GRASCR, GRFSCR
GR03—Levy Table Category	GRESR
GR04—Tax Filing Category	GR1SCR, GR3SCR, GRESR
GR05—HED Types	GRASCR, GRBSCR
GR06—Court/Agency	GR1SCR
GR07—Garnishment Calculation Method	GR2SCR
GR08—Multiple Child Support	GRFSCR
GR09—Deduction Priority	GRFSCR (via radio buttons)
GR10—State Option	GR3SCR
GR12—Garnishment Stop Method	GR2SCR
GR13—Pay Frequency	GRESR
GR15—Vendor Number Option List	GR1SCR

New report generators

- Calculation of Available Pay—calculates the employee's available pay
- Net Disposable Pay—calculates the employee's net disposable income based on the order type and issuing state
- Federal Tax Levy Protected Pay—calculates an employee's protected pay when a federal tax levy is processed
- Calculate Support Assignments—calculates an employee's protected pay when a support order is processed
- Other Garnishments—calculates an employee's protected pay when any other order type is processed
- State specific rules governing the calculation of protected earnings are entered on the Support Protection Rules form (GRFSCR) and Garnishment Protection Rules form (GRGSCR) and are delivered with the system.

Tax reciprocity enhancements

When reciprocal taxation is active for an organization (by way of the "Reciprocal Rules" option on the Organization Options form (AF-SCR)), an employee's reciprocal code is now determined automatically during the pay run. To accomplish this, the processing program, P4CALC, has been modified to recognize the Resident/Work State value (Option List PR10) on the Employee Tax Record Maintenance form (JJ-SCR). The following end-user changes are a result of this enhancement:

- The Reciprocity Rule on the Employee Tax Record Maintenance form (JJ-SCR) is read-only, and is updated following a pay run if necessary.
- Time entry overrides to the employee's normal work location will invoke the automatic reciprocity rule look-up.
- The Reciprocal Tax Mass Maintenance form (JRMSCR) has been removed from the system.
- A new pay run report, "Reciprocal Rules Report, Rules in Effect by Employee" (5R5R), has been created. This report lists the employees who have different resident and work locations and displays the associated reciprocal rule and tax reduction if appropriate.
- It is no longer necessary to use the State Reciprocal Tax Setup form (JR-SCR) to enter an employee's reciprocal code. This form is still available for informational purposes.

Tax Arrears

The ability to place uncollected taxes into arrears for an employee has been added to the payroll system. This situation can occur when an employee is paid large amounts of imputed income. Modifications to the system for this enhancement include:

- Addition of the Tax Arrears switch on the Organization Options (AF-SCR) screen to activate this feature.
- Changes to the Payroll Audit Trail warning the user that a tax was not withheld.
- Addition of the Tax Arrears Report Generator (3U3U) which will produce a report of employees that taxes go into arrears during the current tax run.
- Addition of the Tax Arrears Balance (JTASCR) screen which will display an employee's current tax arrears and balances and allow for a manual update of the arrears and arrear status.

Reformatted Payroll Reports

The 5.2 release incorporates enhancements to the Combined Register and adds two new payroll reports.

Combined Register (2222)

Changes have been made to improve the usability of the Combined Register. At a high level, the changes/updates are as follows:

- The Combined Register report can now be sorted by Controls 3, 4, 5, and 6 by using a new multi-paneled form, the Register Overrides form (CK-SCR and CK2SCR).
- An employee name consisting of up to 30 characters will display.
- The 2T2T Tax Filing report is being renamed "Tax Register".
- The Combined Register now includes the report Memo HED Register (2M2M and 2M2M Combreg) as an optional report.

Remittance Summary (2L2L)

This new report provides a summary of deductions to enable easier identification of remittances, such as tax payments and remittances to other government agencies.

The parameters can be defined to have a summary of selected HEDs and Tax Bodies, and the report produces a total across organizations having the common setup parameters. The report is independent of the CONTROL-COUNTRY to which an organization is set up.

Time Entry and Analysis

There are 10 new reports run from the Report Group Activities form (RGMSTR). The reports can be run at any time during a payroll run to enable you to review and approve the time entries and adjustments entered into the system (or identify any that require revisions).

The 10 new reports (PR71PT, PR72PT, PR73PT, PR74PT, PR75PT, PR76PT, PR77PT, PR78PT, PR79PT, and PR7APT) each display the relevant information available on the Employee Database (FILE02). The following table identifies the report and the screen records it displays:

CSL Report	Display records from:
PR71PT	TC1SCR, TC1EDT, TCFSCR, TCFEDT
PR72PT	TC2SCR, TC2EDT
PR73PT	TCBSCR, TCBEDT
PR74PT	KA-SCR
PR75PT	KB-SCR
PR76PT	KC record entered in KA-SCR. KB-SCR
PR77PT	KD-SCR, KG-SCR
PR78PT	KF-SCR, KH-SCR
PR79PT	KL-SCR
PR7APT	TCMSCR, TCMEDT

The 10 reports are designed to be run together from a user-created report group (RG) from the Report Group Activities form (RGMSTR) but can be run separately as individual elements. Additionally, any configuration of the reports can be grouped into a report group.

Retroactive Pay Processing

This is an automatic process to calculate back-dated pay changes. This new feature will automatically process retroactive pay calculations for salary records entered on the Salary Assignment/Changes form (40-SCR) with an effective date earlier than the start date of the current pay period for the employee. This process will now support FLSA premiums on payments generated within the 5.2 system.

New forms

The following forms have been added for Retroactive Pay Processing:

Form	Description
Retroactive Pay Process Parameter form (RPPSCR)	This form is used to store the Retroactive Pay Process Parameter details. It will allow a retroactive payment of Non Overtime/Overtime HEDs to be routed to another HED element and/or cost center(s).
Retroactive Pay Method Rules form (RPMSCR)	This form is used to store the Retroactive Pay Method Rules details. It will allow a retroactive payment of a particular HED to be routed to another HED element and/or cost center(s).
Retroactive Pay Control Settings form (RPCSCR)	This form is used to store the Retroactive Pay Control Settings details. It controls if retroactive pay calculations are required automatically.
Payroll Extended/Misc. Details form (PEMSCR)	This form will be used as a multipurpose employee payroll form. For retro pay, the form will be used to hold employee-level Retroactive Pay Rule details.

New report

- **Automated Retroactive Processor report (ARPRPT)**
Parameters form: A-ARPR
This report is used to read the QRT (Retroactive Trigger) records and create retroactive payments based on rules as defined on the supporting Retroactive forms.

Modified form

- **Organization-To-Rules Cross-Reference For Payroll form (AW-SCR)**
Amended to add 'switch' to turn on automated retroactive pay functionality.

Foundational Enhancements for 5.2

Security Enhancements

Significant enhancements have been made to eCyborg security to comply with the tightened security requirements imposed by the Sarbanes Oxley Act. Security Officers wishing to know more about these security features should refer to the Setting Up and Maintaining Security guide or contact their Hewitt customer support representative for more information.

Extended security features include:

- Password encryption using SHA-1
- Minimum password size for both Admin users and other users
- Minimum number of alpha characters in passwords
- Minimum number of numeric characters in passwords
- Mandatory password change after a configurable number of days
- No password reuse within a configurable number of days
- No password reuse using a configurable number of previous passwords
- Password expiration date
- Set up of initial password
- Account locking after configurable number of inactive days
- Account removal after configurable number of inactive days
- Account locking after configurable number of unsuccessful logon attempts
- Support for multiple security officers (One-on-one security)

Three new forms have been created for Security Officers to maintain password rules and to manage user accounts:

- Extended Security Setup (SECEXT)
- User Account Setup (SECUSR)
- Inactive Accounts - Removal (SECRMV)

Important! The security enhancements do **not** support Flexible security. It is recommended that you configure your security so that only One-on-one security is used before enabling this functionality. Refer to the Setting Up and Maintaining Security manual for more information on Flexible and One-on-one security.

HTML-Enabled Content

This requirement impacts how HTML resource strings are filtered to remove potentially unsafe tags.

The HTML resource strings will be filtered before being used to remove all tags that are not in a predefined list of acceptable tags. In order to allow you to modify resource strings using other tags, an alternative list of allowed tags can be added to the IW database in the IW_CONFIG table, by adding a property named "resourceTags", whose value is a comma and/or space separated list of tag names.

Multiple activities on the same date

Modifications have been to the Major Activities segment (LZC) to allow for multiple activities to be effective on the same date (such as a layoff and a rehire). The main part of this modification is the addition of key separator in the key of the Major Activities (LZC) segment. The key separator ZC-KEY-SEPARATOR has been placed in between the ACTIVITY-CODE and the ACTIVITY-DATE fields.

Changes to EXPAND records

We have significantly enlarged the sizes of the Company (PAYER), Employee (PAYEE), and Tax area.

P4CALC/O4CALC

In P4CALC/O4CALC, the PAYER and PAYEE areas have been increased by 100,000 characters each. Also, the TAX AREA has increased:

EXPAND Area	New area sizes for 5.2 (bytes)
Company area (PAYER)	132,271
Employee area (PAYEE)	124,788
TAX AREA	784,000

Note: You have the option to reduce the new size of the TAX AREA. If a "T" is added to the Machine Parameter string, then 720,000 bytes will be removed leaving 64,000.

CBSV

In CBSV, AREA 2 and AREA 4 have been increased by 100,000 characters each:

EXPAND Area	New area sizes for 5.2 (bytes)
AREA 2 (employee)	129,158
AREA 3	232,767
AREA 4 (company)	132,293

Important!

The pre-5.2 EXPANDs will not function in extracting programs from the 5.2 CYBMST. You will need to remove or modify your EXPAND control records before upgrading to 5.2.

Enhancements to Interactive Workforce for 5.2

JDBC driver to replace STAPI in Interactive Workforce architecture

A new JDBC driver is now used by Interactive Workforce (IW) to communicate with eCyborg instead of the previous API (STAPI). This removes the need for Orbix.

Interactive Workforce JSP request parameters

An enhancement has been made so that each IW JSP is checked to ensure employee key information is not being passed as a request parameter. Any JSPs that are found to be passing key information as a request parameter will be modified. This requirement removes the request parameters used in JSPs and instead codes them as setters and getters in Java bean. This makes the employee data secure from unauthorized access.

Option to remove national ID/SIN/SSN from all Self Service Screens

To comply with privacy laws an option is now available in Interactive Workforce (IW) to prevent IW from displaying the ID/SIN/SSN of the employee's family members and beneficiaries. The employee will still be able to enter it, but once entered either by the employee or directly into The Solution Series, it will not be displayed again in IW.

Interactive Workforce will also no longer display the IS/SIN/SSN on the employee's pay advice page.

Note: In the UK, Ireland, and Jersey, this is National Insurance Number, PPS Number, and Social Security Number.

Security enhancements

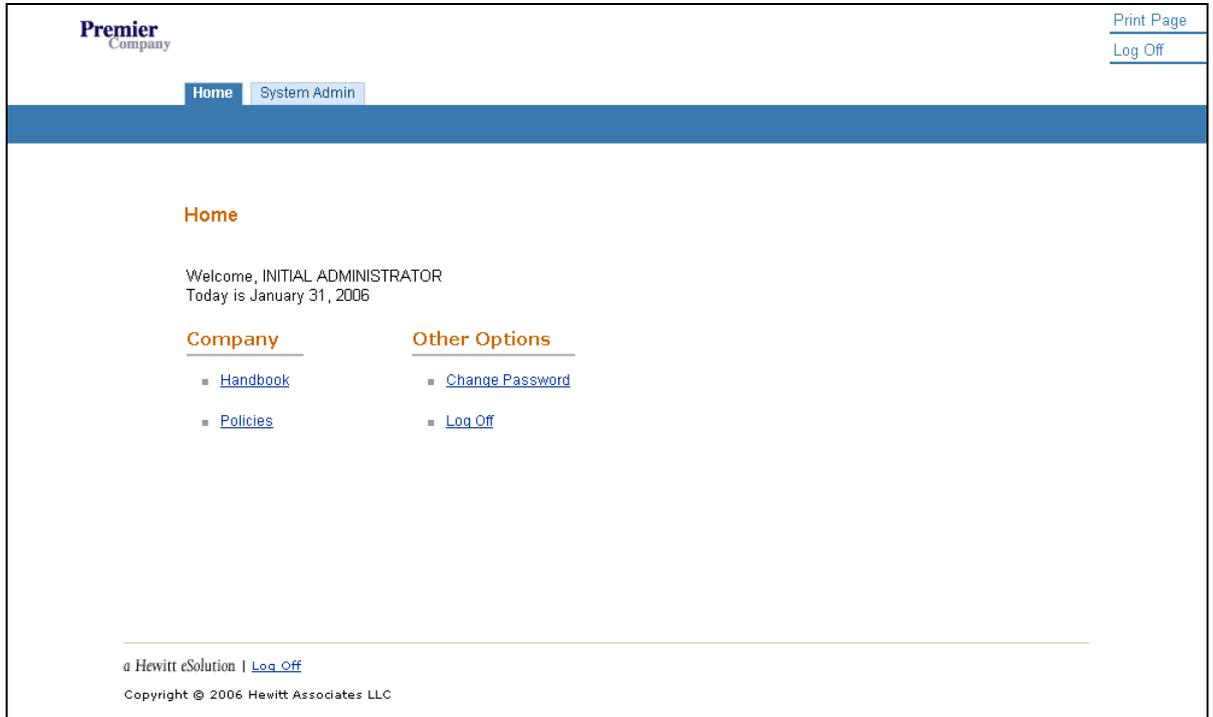
Many security enhancements have been added to ensure that Interactive Workforce complies with the Sarbanes Oxley Act.

Data encryption

It is now possible to have the initial password column in the Interactive Workforce Cyborg Users database table display as hashes (#) and encrypt a password distribution file containing a notification email address.

Enhanced interface

Interactive Workforce has been given a new look, consistent with the Hewitt family of products. The following are examples of the new interface:



Premier
Company

[Print Page](#)
[Log Off](#)

[Home](#) [System Admin](#)

Handbook

The handbook gives you access to your company's procedures, guidelines, and more.

Employee Handbook



The employee handbook provides employees with the procedures, guidelines, and other information employees need to know about the company.

Manager Handbook



The manager handbook provides managers with the procedures, guidelines, and other information managers need to know about the company.

a Hewitt eSolution | [Log Off](#)
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System Admin

Interactive Workforce

- [User Account and Password](#)
- [Account and Password Policies](#)
- [Generate New User Passwords](#)
- [Features Management](#)
- [System Maintenance](#)
- [Resulting Statuses Selection](#)
- [Organization Selection](#)
- [Option List Refresh](#)

Human Resources

- [Dependent Numbering](#)
- [Requisition Descriptions](#)

Benefits

- [Benefit Plan Groups](#)
- [Benefit Plan Subgroups](#)
- [Benefit Plan Display Order](#)
- [Select Flex Master Plan](#)
- [Flex Master Plan Maintenance](#)
- [Benefit Plan Maintenance](#)
- [Dependent Coverage](#)
- [Beneficiary Numbering](#)

Payroll

- [Direct Deposit HED Set-Up](#)

Problem Notifications, Program Temporary Fixes, and Defect fixes in 5.2

Fixes resulting from customer feedback have been integrated into the system. Feedback has come via Problem Notifications from WebFirst, Program Temporary Fixes posted on CUBBS, and defects identified by the Quality Assurance group.

PTF and PN fixes have been packaged together in the 5.1.1, 5.1.2, and 5.1.3 service packs. These service packs have been rolled into the product, and additional PTF and PN fixes have been rolled in.



For details on the PNs and PTFs included in the 5.2 release, refer to the Listing of PTFs and PNs included in the 5.2 release excel spreadsheet, available for download from the 5.x Documentation area on the Customer Center.

US Regulatory Enhancements included in 5.2

The following regulatory bulletins are included in the 5.2 release. Please refer to the relevant RB documentation for more information on any of the RBs.

BERKS EIT - PA Locals (RB04-005)

This bulletin provides the necessary tax-related updates to meet the Berks E. I. T. Bureau requirements for Pennsylvania locals with 50 or more employees. Berks collects information on the employees' earned income tax and submits Quarterly Form 511.

California Meal Penalty and Puerto Rico Overtime (RB04-007)

This Regulatory Bulletin brings the Time and Attendance application in compliance with the following California and Puerto Rico laws:

California Meal Periods

Employees are entitled to a minimum of a thirty (30) minute duty-free meal period for every five (5) hours worked. A second meal period is required if an employee works more than ten (10) hours per day. Meal periods may be waived by mutual consent. Employees, whose total work period is no more than six (6) hours, may agree to waive the meal period requirement providing their employer concurs. (Labor Code § 512) If an employer fails to provide a meal period, the employer must pay one (1) additional hour of pay at the employee's regular rate of pay.

Puerto Rico Extra Hours of Work

Except when fixed by the Minimum Wage Board or by a collective bargaining agreement, or both, an employer must pay double the regular rate for extra hours of work. Employers covered under the federal FLSA must pay 1 ½ times the employee's regular rate for hours worked over 8 hours a day.

Puerto Rico defines extra hours of work as follows:

- Over eight hours in any period of 24 consecutive hours
- Over 40 hours during any week unless the hours worked daily over eight are paid at double the regular rate
- In the day when the establishment is closed to the public by law unless the employer secured a permit from the secretary of labor and the total hours worked during the day is not over eight hours or 40 hours during the week
- On days of rest for business and industries not subject to the closing of their establishment
- Over the maximum hours set by the Minimum Wage Board for the occupation, business, or industry in question
- Over the maximum hours a day fixed in a collective labor agreement

Puerto Rico also requires that employees receive a meal time after the fifth hour of consecutive work.

Tax Authority File Enhancement (RB04-013)

The current tax code structure for local taxing authorities maintained on the TAXFILE may combine municipality and school district rates into a single tax code. With the release of RB04-013, all combined municipality and school district rates are separated into distinct tax codes. Additionally, the TAXFILE has been enhanced to include all tax codes. The following is a list of the changes:

- Updates to the TAXFILE
- TAXFILE loading enhancements
- Conversion to add municipal and school district tax authorities

Updates to the TAXFILE

The following updates were made to the TAXFILE:

- Local tax authorities formally maintained in the Maintaining Payroll Tax Codes manual are now maintained on the TAXFILE.
- Created new tax codes and rates for each school district in Pennsylvania.

TAXFILE loading enhancements

With over 3,000 records being added to the TAXFILE in this one release, the audit trail will increase by several hundred pages. In response, new functionality has been added to P4CALC to perform the following:

- All tax authorities are now loaded to the master file without placing a 'A' into the LOAD TAX BODY field of the T1 transaction. To accomplish this step, you now have the option of placing a 'A' in position 27 of the H2 parameter transaction (P05RDR file for P4CALC step).
- P4CALC has been modified so that only company tax fields which are actually changing are printed in the IS/WAS section of the Payroll Audit Trail. To force the IS/WAS to print all company tax fields, even those which are not changing, you can specify a value of 'A' in position 28 of the H2 parameter transaction (P05RDR file for P4CALC step).

Conversion to add municipal and school district tax authorities

A new one-time Report Generator (9L9L) and WL transactions were included in this bulletin. The Report Generator adds Employee 'J' batch transactions for employees. The transactions add the Pennsylvania school district tax record for employees who have a municipal tax code for which a school district tax code was created. Once the Report Generator is run, it is not copied in the output P20 Payroll Master File.

Unemployment/Disability Insurance Calculation Enhancements (RB04-017)

This bulletin provided the following modifications:

System fields that have been modified

The following fields have been redefined to more clearly report wages and taxes:

- FLD 121, which previously reported YTD uncutoff (total) UI wages, now reports YTD cutoff (taxable) UI wages
- FLD 123, which previously reported current, MTD, and YTD OT Premium, now reports uncutoff (gross) current, MTD, QTD, and YTD UI wages
- FLD 118, which previously reported UI Total Wages for state tax authorities, now reports current, MTD, QTD, and YTD Resident Wages
- OT Premium amounts have been removed from the employee's tax segment and are now stored in a new employee segment
- Fields 117 through 124 now display for all tax types (with the exception of 101, 103, 104, and 105) on the following forms:
 - Taxes To-Date Inquiry (JT-SCR)
 - Tax Adjustment (KD-SCR)
 - Tax Adjustment - Alternate (KG-SCR)
 - Employee Profile (PROFIL)

Overtime premium storage modifications

Overtime premium amounts, previously accumulated in Field 123 and stored on the employee's tax segment, are now accumulated and stored on a new employee segment (L7D). A new Overtime Premium form (OP-SCR) allows you to override an incorrect overtime premium amount for an employee.

Existing forms that have been modified

The following forms have been modified:

- **Organization Options (AF-SCR)**
 - Frick Tape field has been removed
 - A new field for unemployment insurance wages accumulation, (UI Accum) has been added. This gives you the option to decide, at an organization level, whether unemployment (and disability, where applicable) insurance wages will be accumulated in the permanent work state or in the override work state when a time entry location override occurs.

- **Taxes To-Date Inquiry (JT-SCR)**
 - Tax code 102 Federal Withholding tax:
Field 121—field label Federal UI Wages is now Taxable FUI Wgs
Field 123—field label OT Premium is now Gross FUI Wages
 - Tax codes beginning with 2:
Field 118—field label UI Total Wages is now Resident Wages
Field 121—field label State UI Wages is now Taxable SUI Wgs
Field 123—field label OT Premium is now Gross SUI Wages
 - Tax codes beginning with city or county:
Field 121—field label State UI Wages is now Taxable UI Wgs
Field 123—field label OT Premium is now Gross UI Wages
 - Tax codes beginning with 4, containing a DI in positions 5 and 6 of the Tax ID:
Field 121—field label Disability is now Taxable DI Wgs
Field 123—field label OT Premium is now Gross DI Wages
- **Tax Adjustment (KD-SCR)**
 - Field 121—field label Unemploy Wages is now Taxable UI Wgs
 - Field 123—field label Premium is now Gross UI Wgs
- **Tax Adjustment - Alternate (KG-SCR)**
 - Field 121—field label Unemploy Wages is now Taxable UI Wgs
 - Field 123—field label Premium is now Gross UI Wgs
- **Employee Profile (PROFIL)**
 - Tax code 102 Federal Withholding Tax:
Field 121—field label Fed UI Wages is now Taxable FUI Wgs
Field 123—field label OT Premium is now Gross FUI Wages
 - Tax codes beginning with 2:
Field 121—field label State UI Wages is now Taxable SUI Wgs
Field 123—field label OT Premium is now Gross SUI Wages
 - Tax codes beginning with 3:
Field 121—field label UI Wages is now Taxable UI Wgs
Field 123—field label OT Premium is now Gross UI Wages
 - Tax codes beginning with 4, containing a D in position 54 of the T3-transaction of the TAF:
Field 121—field label Disability Wages is now Taxable UI Wgs
Field 123—field label OT Premium is now Gross UI Wages

Existing report generators that have been modified

The following report generators have been modified:

- **Active Employees on the 12th of the month (2B2B)**
This report, which previously used field 121 to report gross UI wages for the quarter, now uses Field 123.
- **Control Headers (0103)**
Frick Tape flag has been removed from the Organization Options form (AF-SCR). In its place, unemployment insurance accumulation (UI Accum) data is reported. The new column label is UI ACCUM.
- **Master File (0202)**
The following headings have been changed:
 - UNEMP is now Taxable UI Wgs
 - O.T. Premium is now Gross UI Wgs
- **Tax Filing Report - All Frequencies (9091)**
Overtime premium amounts are no longer reported here. The following headings have been changed:
 - FUI Wages is now Taxable UI Wages
 - SUI Wages is now Taxable UI Wages
 - Disability Wages is now Taxable DI Wages
 - Premium O.T. is now Gross UI Wages or Gross DI Wages
 - Premium O.T./QTD-SUI TTL is now Gross UI Wages
- **Tax Register Report - Paid Frequencies Only (2T2T)**
Overtime premium amounts are no longer reported here. The following headings have been changed:
 - FUI Wages is now Taxable UI Wages
 - SUI Wages is now Taxable UI Wages
 - Disability Wages is now Taxable DI Wages
 - Premium O.T. is now Gross UI Wages
 - Premium O.T./QTD-SUI TTL is now Gross UI Wages
- **Tax Filing Report - Paid Frequencies Only (9090)**
This report does not feed into the Combined Register Report (2222). Overtime premium amounts are no longer reported here. The following headings have been changed:
 - FUI Wages is now Taxable UI Wages
 - SUI Wages is now Taxable UI Wages
 - Disability Wages is now Taxable DI Wages
 - Premium O.T. is now Gross UI Wages
 - Premium O.T./QTD-SUI TTL is now Gross UI Wages
- **Workers Compensation (7W7W)**
This report, which previously obtained overtime premium amounts from an employee's tax segment, now obtains the amounts from a new employee segment (L7D).

2005 Reporting Distributions to 1099-R Recipients (RB04-021)

This bulletin provides the necessary instructions to take advantage of the Combined Federal/State Filing (CF/SF) Reporting for 1099-R recipients at year-end 2005.

To take advantage of this program, you must report 1099-R distributions by type of distribution. Following is a list of the 2004 1099-R distribution types and their codes.

Code	Explanation
1	Early Distribution, no known exception
2	Early (premature) distribution - exception applies other than disability or death
3	Disability
4	Death (includes payments to a beneficiary)
5	Prohibited Transaction
6	Section 1035 Exchange
7	Normal Distribution
8	Excess Contributions plus earnings/excess deferrals and/or earnings taxable in the current year
9	PS 58 Costs
A	Qualifies for ten-year averaging (Code A) and can be specified only when the Box 7 Primary distribution code is numeric
D	Excess contributions plus earnings/excess deferrals taxable two years ago
E	Excess Annual Additions under section 415
F	Charitable Gift-Annuity
G	Direct rollover & Rollover Contribution to a Qualified Plan
J	Early distribution from a Roth IRA, no known exception
L	Loans treated as deemed distributions
R	Recharacterized IRA contribution made for current year
P	Excess contributions plus earnings/excess deferrals taxable last year
Q	Qualified Distribution from a Roth IRA
R	Recharacterized IRA contribution made for the previous year
S	Early distribution from a SIMPLE IRA in the first two years, no known exception
T	Roth IRA distribution, exception applies

Use one of the following three methods to report 1099-R distributions and generate the necessary magnetic media with K records using the Hewitt year-end processor for year-end 2005 federal/state filing:

- Set up a separate 1099-R company for each distribution type used by your organization.
OR
- In a 1099-R company, set up a separate employee record for each type of distribution the employee receives.
OR
- Use the new procedure that follows to include all recipients of 1099-R distributions in a separate 1099-R company and set up HEDs and taxes for 1099-R reporting.

Important: For all of the above methods, 1099-R recipients must be in a retirement organization (control 1-2), and separate checks must be issued for distributions sent to different states. For example, if the recipient moved between states during a pay period, two checks must be issued, one for each state.

Supplemental Wages over 1,000,000 (RB04-023)

The American Jobs Creation Act of 2004 provides for withholding at the highest incremental rate for supplemental wages in excess of \$1,000,000. For 2005 this rate is 35%. The 25% withholding rate continues to apply to supplemental wages less than \$1,000,000.

Supplemental wages may include bonuses, commissions, payments for accumulated sick leave, severance pay, awards, back pay and retroactive pay increases, and payments for non-deductible moving expenses. This withholding rate requires organizations to total the supplemental wages for an individual employee across companies when determining the withholding rate. A new report, SSNs with Supplemental Wages, lists employees who received cumulative supplemental wages of \$1 million or more year-to-date.

Hewitt has developed a process that will allow you to more easily track supplemental wages paid to employees by a control group of companies as defined by the Internal Revenue Service.

Emergency and Municipal Services Tax (RB05-005)

Act 222 of 2004 amends the Local Tax Enabling Act, Act 511 of 1965, to permit municipalities and school districts (except the Pittsburgh School District) to impose a combined Emergency and Municipal Services Tax (EMS tax) of up to \$52 a year beginning on and after January 1, 2005. The EMS tax replaces the occupational privilege tax.

Supplemental Tax Phase II (RB05-016)

This bulletin provides the necessary updates to meet the taxation on supplemental wages set forth in the American Jobs Creation Act of 2004.

Currently, in Solution Series employer taxes are setup as deductions (Memo HEDs). With this bulletin, an employer TAXFILE contains new or updated employer/employee tax records. There are (4) types of tax categories:

- Hours Based
- Wage Base (x) Tax Rate
- Employee Count (x) Fixed Dollar Amount
- EMST for Pennsylvania

Remove Social Security Numbers from Pay Advices (RB05-025)

California passed a law governing the use of social security numbers that is summarized by the Office of Privacy Protection, Department of Consumer Affairs. Effective January 1, 2008, only the last four digits of a Social Security Number or existing employee identification number other than a Social Security Number, may be shown on a payroll check.

To protect employee privacy, Hewitt is releasing the overrides and updates contained in this bulletin now to remove the Social Security Number (SSN) and Social Insurance Number (SIN) from all external employee informational reporting not being used for tax filing purposes.

The documents targeted for modification are the Payroll Check and Payroll Deposit Advice in addition to various payroll reports. Internal reports and reports used for tax filing and reporting purposes will remain unchanged. The report change removes all instances of the SSN and SIN and displays only the employee number (10-digits). The modifications made with this project affect the eCyborg Payroll Module.

Important! California law requires that employers remove their employee's social security number from payroll reporting information no later than January 1, 2008. For your employee's privacy, however, you may want to do it sooner.

US Tax regulatory bulletins included in 5.2

All tax bulletins from RB04-001 up through the RB06-002 tax regulatory bulletin, have been incorporated into the 5.2 release:

- Tax Bulletin (RB04-001)
- Tax Bulletin (RB04-002)
- Tax Update (RB04-010)
- Tax Update (RB04-011)
- Tax Update (RB04-012)
- Tax Update (RB04-015)
- Tax Update (RB04-022)
- Tax Update (RB04-025)
- Tax Update (RB05-001)
- Tax Update (RB05-002)
- Tax Update (RB05-003)
- Tax Update (RB05-004)
- Tax Update (RB05-006)
- Tax Update (RB05-012)
- Tax Update (RB05-014)
- Tax Bulletin (RB05-017)
- Tax Bulletin (RB05-019)
- Tax Bulletin (RB05-020)
- Tax Bulletin (RB05-021)
- Tax Bulletin (RB05-023)
- Tax Update (RB05-024)
- Tax Bulletin (RB05-026)
- Tax Bulletin (RB05-029)
- Tax Bulletin (RB05-033)
- Tax Update (RB06-001)
- Tax Update (RB06-002)
- Tax Update (RB06-003)

Please refer to the relevant RB documents for further details on the contents of each tax bulletin.

All subsequent tax regulatory bulletins must be applied to the 5.2 release.

US Quarterly regulatory bulletins included in 5.2

The latest available Quarterly regulatory bulletins (Quarter 1, 2004 through Quarter 4, 2005) has been included in the 5.2 release.

- 2004 Q1 Quarterly Processor (RB04-004)
- 2004 Q2 Quarterly Processor (RB04-008)
- 2004 Q3 Quarterly Processor (RB04-014)
- 2004 Q4 Quarterly Processor (RB04-019)
- 2005 Q1 Quarterly Processor/Electronic Filing (RB04-004)
- 2005 Q1 Berks Quarterly (RB04-008)
- 2005 Q2 Quarterly Processor (RB05-015)
- 2005 Q3 Quarterly Processor (RB05-022)
- 2005 Q4 Quarterly Processor (RB05-030)

Please refer to the relevant RB documentation for further information on any particular bulletin.

All subsequent Quarterly bulletins must be applied to the 5.2 release.

Canadian Regulatory Enhancements included in 5.2

The following Canadian regulatory bulletins are included in the 5.2 release. Please refer to the relevant RB documentation for more information on any of the RBs.

Quebec Provincial Taxability Code (RB05-010)

Provincial Changes

Québec

Québec requires special provincial taxation rules around non-benefit earnings (stock payout for Québec employees). Québec requires part of the payment to be provincially taxable and not federally taxable.

A new taxability code (Option List PP09) value 21 – QC Prov/QPP/EI only was created to withhold provincial tax only.

Overrides to P4CALC are required to accomplish this taxability change.

Record of Employment (ROE) for Web Bulk Transfer (RB05-013)

The purpose of this Regulatory Bulletin is to provide the ability to transfer ROE information from the Solution Series to the HRSDC website.

In order to accept the transferred file, HRSDC requires that the file format be an ASCII text format, the file type a fixed width, the file size must be less than or equal to 1,048,576 bytes (approx. 500 ROEs) and that the naming convention be a file name that is a maximum of 32 alphanumeric characters and that the file extension must be 'BLK' (ex: ACME_ROE200.BLK). The following was created in order to produce the required new file:

- A new program to extract the required information: ROE File extract for WEB ROE submission (EIWRPT).
- A new parameters form: Report Parameters for ROE Record of Employment WEB extract (R-EIW) which is used to supply information to the new ROE File extract for WEB ROE submission (EIWRPT) program.
- A new COBOL program (ROEWEB) to manipulate the extract file into the Bulk Web Transfer layout required by HRSDC.
- A new job (JPULROE.BAT) to pull, compile and link the new COBOL program (ROEWEB).
- A new job (JREPORT-ROE.BAT) to run the report/conversion from the command line.
- A new Checklist – Canadian ROE Checklist to facilitate the ROE process.
- A new program (EIWLCR) to launch the ROE Web process for EPR clients.
- New jobs required for client who use the EPR process (online execution).

The process will be the same as generating the ROE forms (EIFRPT) except that instead of creating the actual forms, you will be creating a file for transfer to HRSDC over the Web. Information must still be entered in the Company Record of Employment Data (EICSCR) form, Employee ROE General Information (EI1SCR) form, Employee ROE Other Earnings (EI2SCR) form, and the Employee ROE Comments (EI3SCR) form.

Once the report (ROE Record of Employment WEB Extract (EIWRPT)) is completed, the file which is created will be converted (ROEWEB.exe) to the file layout required to transfer as a 'ROE Web Bulk Transfer' to HRSDC.

Note: Any errors will be written to the FILE03 report (ROEWEB.LIS or ROEWEB.03). Please review this report to determine if there are any errors.

Important: There are various reasons why the file you are submitting to HRSDC might get rejected, such as an invalid SIN number or missing required information. Check and compare the number of ROEs you are submitting to the number of records that were transferred to the HRSDC site.

For the Contact Name to split into the required fields, your entry must have a comma (,) separating the field: LAST, FIRST M. If the field is not entered correctly, the program will not continue to the next employee.

For more information on how to enter required data or how to fill out an ROE, please see the Reference section in the RB documentation for this bulletin for related HRSDC sites. For Solution Series related ROE information, you may want to review the ROE section in the Canadian Tax Manual, Chapter 10.

Canadian tax updates included in 5.2

The following Canadian tax bulletins have been incorporated into the 5.2 release:

- Tax Bulletin (RB05-018)
- Tax Bulletin (RB05-027)
- QPIP Tax Update (RB05-028)
- Tax Bulletin (RB05-032)
- Tax Update (RB06-004) (ROE Web)

Please refer to the relevant RB documents for further details on the contents of each tax bulletin.

All subsequent tax regulatory bulletins must be applied to the 5.2 release.

Overview of the eCyborg 5.2 Release (5.0 to 5.1)

The 5.2 release of The Solution Series and eCyborg offers a wealth of new features and functionality. Many enhancements are delivered as part of the core Solution Series product, where other exciting features are provided within the eCyborg product, including enhancements to Interactive Workforce, the Web Client, Analytics, and the Collaborative Platform.

This section provides an overview of the changes that occurred between versions 5.0 and 5.1.

Note: Support has changed for operating systems and third party products with this release. Please refer to the Customer Support Center at www.hewitt.com/ecyborg for technical prerequisite details.

- Enhancements to The Solution Series core system
 - Relational Database enhancements
 - Support for bilingual French and English
 - Support for communication events triggered from the web client, Interactive Workforce, or the Collaborative Platform
 - Large number support for amounts larger than 9,999,999.99
 - Automatic employee number assignment
 - Enhanced setup for the Benefits Recalc Report (85-RPT)
 - New Workforce Planning functionality
 - 24/7 access for online updates during payroll runs
- Enhancements to Reporting Administration
 - Data mart and Catalog enhancements--additional employee data and applicant tracking data have been added to the delivered data mart and catalogs
 - Upgrade macros and methodology that will simplify the work required to keep the catalogs up to date
 - Support for the incremental extraction of employee data to the WorkForce Data Mart
 - Support for Web Impromptu (requires Professional Services assistance)
 - Bilingual catalogs available with Canadian bilingual product
- Enhancements to Interactive Workforce
 - New workflows for employee name and address changes, employee competency updates, and job applications
 - Support for mid-year Benefit enrollments for life event changes
 - Support for employee benefit rollover selections from one year to the next
 - Support for single sign-on functionality from a company portal
- Web client enhancements
 - Ability to configure environments using the web client

- Analytics enhancements
 - Four new PowerPlay models:
 - Turnover Analysis
 - Time Away (Absenteeism) Analysis
 - Work Related Injury Analysis
 - Compensation Change Analysis
 - Support for the Cognos Upfront portal (requires Professional Services assistance)
- Enhancements to the Collaborative Platform
 - Ability to write data updates to The Solution Series from outside applications
 - New strategic partners (requires Professional Services assistance)
- Problem Notifications, Program Temporary Fixes, and Defect fixes
 - Fixes resulting from customer feedback have been integrated into the system. Feedback has come via Problem Notifications from WebFirst, Program Temporary Fixes posted on CUBBS, and defects identified by our Quality Assurance group. The PTF and PN fixes are in addition to those accumulated and delivered in the 5.0.1 and 5.0.2 service packs.
- North American Regulatory enhancements
 - Citizenship Country code (HR05) option list (RB02-030)
 - US Electronic funds transfer of child support (RB02-018)
 - US INS compliance (RB02-032)
 - US Equal Employment Opportunity (EEO) and Federal Contractor Veterans' Employment (VETS-100) reporting updates (RB02-022 and RB02-028)
 - US HIPAA Electronic Data Transfer enhancements (RB02-033)
 - US HIPAA Privacy enhancements (RB03-004)
 - US Supplemental Wage enhancements (RB02-024)
 - US California Flat Tax Rates (RB03-001)
 - US Tax regulatory bulletin updates (through RB03-010)
 - US Quarterly regulatory bulletins (through Q1 2003--RB03-007)
 - Canadian Tax updates (RB02-036 and RB02-038)

Enhancements to The Solution Series core system between 5.0 and 5.1

Relational Database enhancements

With the 5.2 release of the system, we introduce the enhanced relational database system.

The new RDBMS provides:

- Improved Commit, Rollback and Recovery
- Data keys for Company/Organization, Employee and Tax removed from FILE02
- Improved error handling
- New CSL requirements
- Changes to the Installation Process
- Changes to the process for applying PN fixes

Technical Considerations

Improved Commit, Rollback, and Recovery

With our intention to improve upon several key points of relational processing, we believe the improvement of our commit/rollback methodology provides the foundation on which to build. Our commit/rollback methodology enforces a logical unit of work through out CBSVO/B for update, add and/or delete for both on-line and background transactions on the System Control Repository (FILE01) and the database. This includes program O4CALC, a member of CYBMST.

The Relational Database Management System (RDBMS) is the primary repository of application data. Database backups are an important part of a comprehensive database protection strategy and are the responsibility of the customer. Our enhancements ensure the 100% synchronization of the System Control Repository (FILE01) and the database.

For the System Control Repository (FILE01), we now maintain a copy on the database in TABLE01. The exception to this is 'ZL' (lock) records. For FILE02, we have moved the company, employee, tax and various Z records to two new tables on the database. Table ZZ2IND contains the Company/Organization, Employee and Tax keys. The various Z (other) records will now be stored in table, Z_TABLE. The exceptions to this are the temporary records, ZN records, scratch area records created by the CSL verb SCRATCH; ZT records, scratch area records created by the CSL verb SCRATCH; ZQ records, records used to pass data back and forth with O4CALC during PAY-CP; ZX records, executable code which is refreshed from System Control Repository (FILE01) if not found on FILE02.

Record	Description
ZE	Application Error record
ZH	These records are created by Training Administration, Position Management, and WRITER when necessary to keep track of where a user currently is in a process
ZI	IS/WAS Audit record, used in producing the IS/WAS Audit Report
ZR	Report Viewing records, are created when the VIEW feature is used

Record	Description
ZU	Batch Balancing records, are created as a result of batch balancing time entries
ZV	Batch Time entry records
ZY	Session records
ZZ	Audit records
ZZA	Time Entry records

RDBMS vendors ensure that if any errors occur during a transaction, the database uses the information in the rollback log file to roll back the transaction. In our rollback strategy, we include the database changes made but not committed and the corresponding System Control Repository (FILE01) updates. We store System Control Repository (FILE01) keys that have been involved in adds, changes, and deletions in a working storage array, TABLE01-TABLE, prior to the logical unit of work (LUW) being committed.

For background (batch) transactions and high volume I-O to the System Control Repository (FILE01), we have created a system configurable commit limit within CBSV. SSQLIM, configurable via the EXPAND screen, is the minimum # of SQL transactions before COMMIT. Generally, the SSQLIM is set high to improve performance. SSQLIM is initialized to 5000 in CBSVO/CBSVB. During batch DEMO and PAYMRG 171 processing, the limit also set to 5000. The value of SSQLIM is dependent on the amount and size of the rollback logs available for use. If the limit is reached prior to the completion of background (batch) process, we will force a commit to maintain the integrity of the rollback files.

Data Keys for Organization/Company, Employee, Tax keys removed from FILE02

The organization/company, employee, and tax keys are no longer resident on the Employee Database (FILE02). With this improvement, all organization/company, employee, tax and various Z record data exist on the database where data synchronization would now be taken care of by the RDBMS vendor. The Employee Database (FILE02) now contains Batch Payroll Master (Report Generators), CSL executable programs, temporary Z records, SUBMIT/VIEW report output and error log records.

Improved Error Handling

A new Error Logging and Display facility (E.L.D.) logs and communicates errors from SQL, COBOL, and other 3rd party tools. Once the ZE errors are logged to FILE02, the E.L.D. facility performs a rollback if necessary, and either terminates, or returns to the paragraph from which it was invoked. The E.L.D. facility is utilized for relational and non-relational systems, since not all errors are relational in origin. This solution provides for error severity level validation, which allows users to continue in the event of a non-fatal error. There are two categories of errors: Reject or Terminal. Rejects are those errors that are informational and allow the user the ability to continue working (for example, invalid password). Terminal errors indicate a failure during processing, and ultimately abort the process or transaction. These errors are recorded on FILE02 for evaluation. A new utility, DSPERR, will print formatted error information. The ZE errors on FILE02 will be cleared during a PAYMRG 171 process.

The layout of the ZE record is as follows:

Columns	Contents
01-02	ZE
03-22	Organization Control Number (Control 1-2), Employee Number, Labor/History Number
23-24	Sequence Number
25-38	Time and Date
40-43	User Code
46-51	Program/Form Name
52-55	Table Name
56-61	SQLCODE
62-74	Segment Key

Note: For improved usability, run *DSPERR* using the *Process Confirmation - Ad-Hoc Jobs* form (*ADHOC*).

New CSL requirements

Although our commit methodology enforces a logical unit of work (LUW) throughout CBSVO/B for update of both online and background (batch) transactions, it is possible for CSL programs to have high volume I-O within a logical unit of work. To ensure these processes remain within your system's configured commit limit, *SQLLIM*, a new CSL verb—*COMMIT-CHECK*—has been delivered. Each time a record is updated, a counter (*SQLCNT*) is incremented. Each time the verb *COMMIT-CHECK* is executed, it performs a check to see if the *SQLCNT* > (*SQLLIM* – 100) and performs a *COMMIT* when the condition is met. Several core CSL programs have been updated to include a call to the *COMMIT-CHECK* verb after each update. They are:

ABSTMC
AE-@UK
CYB707
CY710P
CYB710
CYB90B
DEMOY2
F-XREF
HEDUPD
HHMSCR
HHM@UK
KEYDEL
KEYDRH
MAINTI
MASSTR
POPF01
PURGE
QUERY
RELOADW

TCLPAY
TMC@UK
TMCARD
WWWDEL

COMMIT-CHECK is a quick verb and its use does not impact run time performance and is recommended for customer use should there be custom CSL that includes the high volume I-O.

Changes to the installation process

The installation of the relational version has changed in so far as the very first execution of CBSVB, normally the DEMO process, will begin with a relational version of CBSVB. This program together with an EXPORT.10 will be delivered in the install media.

To ensure consistency and limit the RDBMS licenses to 1 per on-line session, we have moved the write of menu records, server checklists and user profiles from program CYBIO to program(s) CBSVO/CBSVOT.

Changes to the administration process

For a relational implementation, the steps to implement a PN fix affecting the data dictionary have changed. This includes adding, changing or deleting tables, fields, data types, data length, or data precision.



Refer to Application of Temporary Fixes in the Technical Administration documentation for detailed steps.

Support for bilingual French and English

An international group from Canada, the United Kingdom, and the US worked together to provide a bilingual version of eCyborg (including the Windows and Web user interfaces, Interactive Workforce, and Cognos Impromptu catalogs). Although The Solution Series has supported alternate language functionality for many years, this new functionality is different.

A Canadian company need not implement either an English or French language version of the product; the company's user can elect the language they wish to use when they log in.

This product will be available in Canada to customers who order the French version of the eCyborg product.

Large number support for amounts larger than 9,999,999.99

The Solution Series now allows the storage of accumulator values up to a maximum of 999,999,999.99.

This enhancement addresses errors that have occurred calculating tax in the US when large bonuses have been paid. This enhancement also ensures that paychecks and W2s can be printed correctly. In addition, it significantly reduces the chance of errors in certain countries where the currency and inflation rates have previously led to the system not being able to cope with higher paid employees.

Note: This change does not attempt to solve the issue of static fields, for example Annual Salary in the LZF segment.



Refer to the *Using Payroll Administration* documentation for details about payment reversals (not allowed for any Net Pay amount over 999,999.99) and online pay calculations (must replace report generator RPT5Z with RPT5ZL).



Refer to the *Technical Administration* documentation for details on the LUC\LUD and XLUC\XLUD pay document formats.

Technical considerations

Important!

Support for large numbers necessitated a major change in data structure for the 5.2 system. The 5.2 system supports only 6-byte data formats. This guide will instruct you on the procedures you must follow in order to convert your data to the accepted format.

- To display additional digits, a number of new RG instructions, together with additional R5/6 Edit Patterns, have been introduced. Existing RG instructions and R5/6 Edit Patterns will produce the same results as at present.
- The P40OUT is limited to 200 bytes. Although all of the supplied report generators operate safely within this limit, it is possible that overflow may occur within your custom generators if no allowance was made for the maximum counter size. This may result in incomplete data appearing in reports. If you believe that there is a risk that this may happen, we recommend that you run a test pay run using the H2 debug option 'D' in column 13, which will report in the Audit Trail any generators where overflow occurs (without a P20OUT being produced).
- CSL reports are limited to 150 bytes. There is no easy way to determine record length in CSL reports; however, computational fields are not often used in CSL reports. Check your report details carefully.

- If you have custom check generators, you must make a change to the type '9' extract record (change instruction 'FLD087L19' to 'FLD087'). This refers to particular records that are written as part of the payslip RG. The type 9 writes information that gets past through to the Combined Register. If this change is not made, P4CALC will abort on some platforms (z/OS) or the check recon number will not recycle back to the p20 history record on other platforms. Also the name line on the Combined Register will be incorrectly formatted, as will the employee name on the Payment Register.
- Computational field sizes have been increased. If you have custom computational fields, their sizes will be updated when you import your changes (MAINTI) by placing 'PUB' in column 31 of the control record. Data type 3 is no longer supported—Data type 4 is now required.

See also:

- Large Number Changes to Fields (*on page 205*)

For a list of the fields whose lengths changed as a result of the large number enhancement.

Support for communication events triggered from the web client, Interactive Workforce, or the Collaborative Platform

The event functionality was introduced with the 4.5 release of the Administrative Client and allows the automatic generation of emails and letters. A trigger can be set-up and executed via a form (Add, Change or Deletion of a transaction) or a Checklist action (Pause, Finish).

In the 5.2 release, the 'form trigger' event functionality within the Administrative Client is also supported for the Web Client, Interactive Workforce, and applications that use the SQL driver, such as the Collaborative Platform.

The following table shows a comparison between Client-based and the new Server-based events:

Feature	Client-based event	Server-based event
Trigger from all clients (including Checklist events for Administrative and Web clients)	No	Yes
Email user options (such as Preview)	Yes	No
Letter dialog with options to Preview/Queue/Print	Yes	No
Generation of queued mail merge data (downloaded via the use of the Web Application for letters)	No	Yes
Manually execute an event from the toolbar	Yes	No
Option to suppress an event assigned to a form if it is in a checklist	Yes	No



Refer to the server events installation steps in your eCyborg installation guide for detailed steps for installing and configuring the events server.



Refer to the client installation steps in your Solution Series installation guide or to the *Optimizing System Features* documentation for detailed steps for creating and modifying event triggers.

Technical considerations

New system file

A new file (FILE51) has been added to The Solution Series to store pending events.

An event can be set-up and identified as a server-based event

- The Solution Series stores form information if a form is updated AND is associated with a server-based event.
- A Windows service called the Event Server is responsible for executing server-based events. Any pending events stored via The Solution Series are processed against server-based events as set-up via the Administrative Client. The processing of server-events will occur via an interval (set by the user) and can be changed by using the Control panel Application for the service.
- A web application is used to download generated letters.

Backward compatibility

- Any client-based events you may have on your system are backward compatible with the addition of server-based events. Client-based events will work as before and be triggered and processed within the Administrative Client. You can simply change the client-based event to a server-based event by editing the event configuration and selecting a Server Event checkbox.

Modify Communication Event

Form Trigger | Email Details | Email Text

Form name: Add Basic Employee Information

Server Event: Trigger automatically: When information is added, When information is appended, When a record is deleted, Trigger when selected from toolbar, Suppress if a form is in a Checklist

Communication event title: Test Event

Only trigger for specific Organization: ACME MANUFACTURING

Conditions: Further conditions. Can satisfy any of the conditions below.

Field	Condition	Value
Name Code	=	001

Do not send an email if user has profile below: Profile

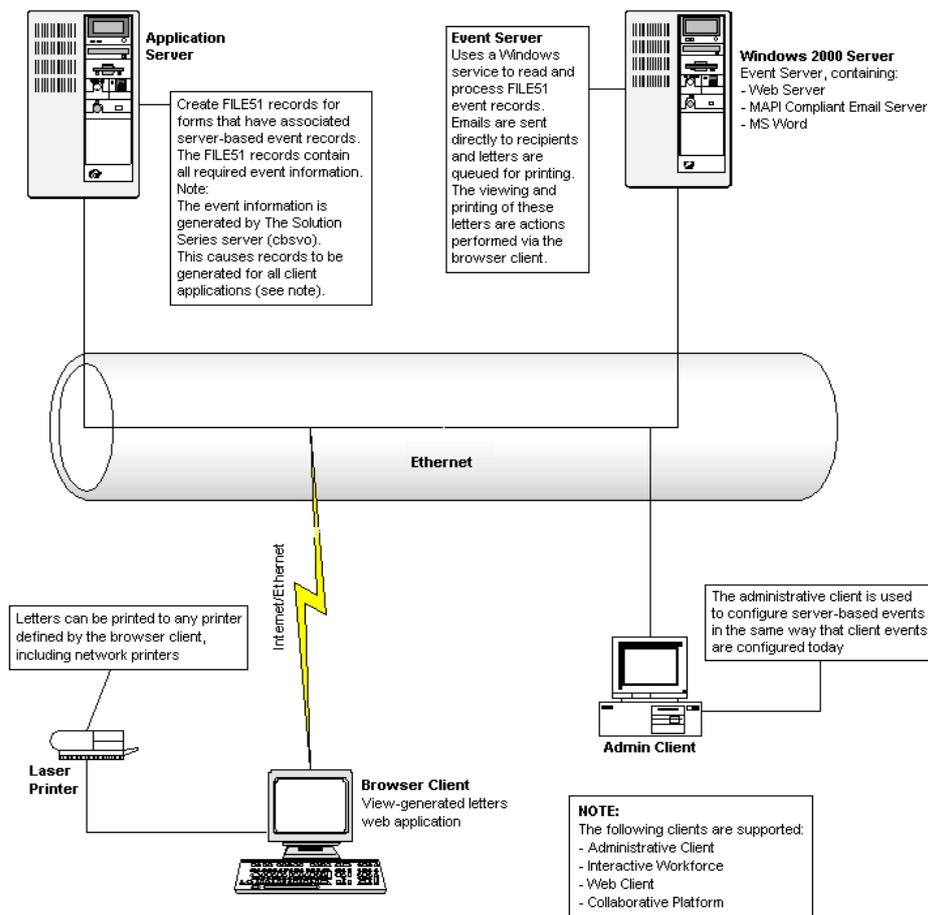
Form Trigger tab
Use this tab to create or modify the form parameters that trigger this communication event.
See also:
[Form name](#)
[Trigger automatically](#)
[Trigger when selected from toolbar](#)
[Suppress if a form is in a Checklist](#)
[Communication event title](#)

OK Cancel Hide Help

- The setup is no different except for the addition of the Server Event option; and if checked, certain options are disabled. The default option is set to trigger as a client-based event.
- All form trigger functionality is supported for email and letter events, except:
 - the 'Trigger when selected from Toolbar' option
 - the 'Suppress form in a Checklist' option
- Some options that rely on client interaction such as the 'User options' shown on the Email Detail tab are disabled when setting up a server-based event (a dedicated server machine sends the actual emails for a server-based event, not the original client machine that triggered the email as with client-based events).

System requirements

- A Windows machine is required to execute the service, interact with MAPI compliant email systems and Microsoft Word, so this machine must adhere to the same prerequisites as the Administrative Client.



Configuration suggestions

It is most likely that if you choose to use server-based events for your system, you would only have server-based events set-up within your system. This option removes the need to have Microsoft Word and MAPI set-up for Administrative Client users. Of course, those users who set-up and manage events still need Microsoft Word and MAPI set-up. This option also benefits the user in that all letter-generated events will be managed via the web application and not within the Administrative Client. This may otherwise prove confusing to a user who uses both the Web Client and Administrative Client because he or she would need to look in two areas for batches of queued letters.

Combining client- and server-based events is practicable if you observe the following 'rules':

- Ensure that only client-based events exist for a particular form.
- If both a client-based and server-based event exists for a particular form, profiling must be set-up and used as a filter within the server-based event profiling conditions. This will stop the server-based event from being triggered if using the Administrative Client.

Note: *The only benefit the user gains from a client-based event is with the interactive options 'User Options' for email.*

You can also take advantage of the Profile Conditions functionality to suppress Interactive Workforce form triggers for any chosen events. This is because Interactive Workforce uses one account to connect to The Solution Series. The same can be applied for the Collaborative Platform if you do not want certain events to be triggered from the Collaborative Platform.

Automatic employee number assignment

Due to increasing concern over regulatory and privacy concerns, organizations are finding that they must automate the employee numbering scheme. Historically, employee numbering schemes have gone through a number of stages. At one point an employee number contained a number of identifying characteristics about the employee, including gender, birth date, department, and so forth. As organizations upgrade to more sophisticated HRIS systems, the need to have an employee number contain this type of information has diminished. Still needing a unique identifier, many employers turned to using the employee's government issued identifier (social security number in the United States). Now, due to privacy issues and the proliferation of identity theft, the use of these governmental identifiers for a company's identification of individuals has come under fire. It is now considered best practice to use random numbers as employee numbers. Since this number should now be completely random, it is much easier for the system to generate it.

In addition to the concern for privacy, organizations are also increasingly conducting their applicant processes through the web. To automatically bring web applicants into The Solution Series, each applicant must have an applicant/employee number assigned for tracking purposes within the system. This enhancement allows easy collaboration with third party recruiting services. These services can be used to add applicants to the Applicant Administration module, allowing the automation of 'onboarding' selected candidates as employees.

The Company-To-Rules Cross-Reference For HR 2 form (BX-SCR) holds only one control number text box, which is for the automatic numbering functionality. This feature, when activated, assigns employee numbers when a new applicant or employee is added to the system. The control number allows you to specify whether you want to utilize a shared numbering scheme across all organizations or use unique numbering schemes.

The Automatic Employee Numbering form (AUTSCR) is used to specify settings so that employee or applicant numbers are automatically assigned when a new employee or applicant is added to an organization using one of the following forms:

- Employee Information form (EF-SCR)
- Set Up A New Employee form (NH-SCR)
- Applicant Information form (001SCR)

You can have employee and applicant numbers:

- automatically assigned (the automatic numbering feature is active)
- assigned manually (the automatic numbering feature is inactive)--this is the default setting
- automatically assigned or entered manually (the automatic numbering feature is neutral)

Automatically assigned employee numbers are numeric and always have 10 positions with leading zeros.

During implementation of the automatic numbering feature, enter the starting number with which you wish to begin employee and applicant numbers in the Last Number Used field. Thereafter, the field is updated to indicate the last number assigned to the new employee or applicant and the date on which the number was assigned displays below the field.

Note: Automatic employee numbering is a 'from this point forward' feature. If you already have employees with employee numbers in The Solution Series, you may manually convert their employee numbers to your numbering scheme at your leisure, or simply utilize the auto-numbering feature for new employees.



Refer to the Implementation Essentials documentation for more details of configuring an employee numbering scheme.



Refer to Using Human Resource Administration and Using Payroll Administration documentation for details on hiring an applicant or new employee and the impact on this process, depending on the scheme you implement with respect to automatic employee numbering.

Enhanced setup for the Benefits Recalc Report (85-RPT)

The Benefits Recalc Report (85-RPT) is meant to be run to implement plan or employee changes exclusively. Often, users selected both of the choices (plan or employee changes) resulting in lengthy or invalid runs of this report. The Solution Series now presents a reject message if both options are selected. The user is notified immediately that the selections is invalid and can correct his or her selection prior to running the report.



Refer to the Using Benefits Administration documentation for details about this report and its parameter form.

New Workforce Planning functionality

Workforce planning is a strategic capability necessary for the most successful organizations. The organization is able to compare the current competencies of its workforce to the competencies of the work needed. More importantly, it allows an organization to plan for the future, implement succession planning, and identify career paths along which human capital can be moved to increasingly responsible positions. The ability to track readiness and progress is paramount to the success of the organization. An organization must identify its key positions and determine if it is ready with replacements should one of these key positions become vacant.

Enhancements in the 5.2 release support these activities and provide the building blocks for the desired result: leveraging the data in the system, turning it into information and ultimately performing the type of analysis needed to project, plan, develop, and hire human capital that can have the capability to maximize the competitive position of the organization.

Three new forms have been added to the system:

- **Career Paths (MCPSCR)**—used to establish career paths that list the succession for up to eight positions using the Career Paths form (MCPSCR). On this form, you can link two career paths together by indicating the career path that would be pursued once the final position of the first career path is achieved.
- **High Potential Employee (HP-SCR)**—used to record a special significance an employee has to the company. For example, an employee may be considered on the 'fast track' or as having high potential. Such distinctions can be recorded on the High Potential Employee form (HP-SCR). The High Potential Designation option list (PM31) used on this form can be populated with designations to meet your business needs.
- **Key Position (MKPSCR)**—used to designate a Position as having a special significance in your organization. For example, a Position may be designated as 'hard to fill' or 'hard to retain'.



Refer to Using Position Administration for details on designating significance to a position and establishing career paths.



Refer to the Using Human Resource Administration for details on designating significance to an employee.

24/7 Access for online updates during payroll runs

Windows and UNIX platforms only

This feature allows the ongoing use of all areas of the system—even while a payroll is being run. Prior to this release, users executing a selective pay run had to log off the system before the final phase of a payroll (update to the online database). By implementing a 24/7 payroll cycle, along with the behind-the-scenes movement of the updatable forms into Inquiry mode, any 'down' time is hidden from the users and is very short termed. Implementing this feature is an option—it is an additional activity—but the 5.2 release includes the components required to make this feature work at your site.

The methodology protects certain data from being updated externally to the pay run process. This feature has also been designed to interface with the Enhanced Payroll Processing and Reporting and the Process Monitor and Report Viewer tools. You must have installed these tools to fully utilize the 24/7 Access feature.

If you elect to implement this feature, your payroll process will be altered. This feature assumes you will be running selective payrolls.



Refer to the Implementing and Using 24/7 Access documentation for details on the implementation steps required.

Enhancements to Reporting Administration between 5.0 and 5.1

Reporting Administration has been enhanced to provide additional data and to make updating your custom catalogs much easier.

Catalog enhancements

Reporting Administration is currently made up of four catalogs—General, Benefits, Training Admin and Payroll. These catalogs were designed specifically for typical user groups within the HR domain. While most of the data in The Administrative Solution is contained in one or more of the four catalogs, the 5.2 release offers the major addition of applicant information, as well as information related to grievances and discipline.

Following is a general breakdown by catalog of the content additions and changes.

General Catalog

Employee Additional Contract Information	In 5.0 data mart, added to 5.2 catalog
Employee Emergency Contact Information	In 5.0 data mart, added to 5.2 catalog
Employee Non-Monetary Compensation	In 5.0 data mart, added to 5.2 catalog
Employee Discipline and Grievance	In 5.0 data mart, added to 5.2 catalog
Employee Health and Safety	In 5.0 data mart, added to 5.2 catalog
Applicant Tracking	New
Name and Address	4.5 Enhancement

Benefits Catalog

Employee Additional Contact Information	In 5.0 data mart, added to 5.2 catalog
Name and Address	4.5 Enhancement

Training Admin Catalog

Employee Additional Contact Information	In 5.0 data mart, added to 5.2 catalog
Name and Address	4.5 Enhancement

Payroll Catalog

Employee Additional Contact Information	In 5.0 data mart, added to 5.2catalog
Name and Address	4.5 Enhancement

The data reflected on the following forms are included in the catalogs. This list will expand as additional forms and fields are added to The Solution Series.

Employee Additional Contact Information	
EM-SCR	Employee Contact Information

Employee Emergency Contact	
16-SCR	Emergency Contact/Physician

Employee Additional Contact Information	
EM-SCR	Employee Contact Information

Employee Discipline and Grievance	
DA-SCR	Disciplinary Actions
GT-SCR	GrievancesCurrently in DataMart

Employee Health and Safety	
15-SCR	Emergency Medical Information
PR-SCR	Injury Information (RB-01-023 added fields to this existing form)
18-SCR	Physical Exam Schedule/Completed
19-SCR	Physical Exam Test Results

Name and Address	
EF-SCR	Name and Address (General Release 4.5 enhanced name & address)

Applicant	
001SCR	Applicant Information
002SCR	Applicant Name and Address
008SCR	Applicant Contact Information
004SCR	Applicant Preferred Work Environment
006SCR	Applicant Work History
007SCR	Interview Recap
009SCR	Applicant Job References
003SCR	Job or Position Applied For

020SCR	Hired Applicant Pre-Transfer Information
--------	--

Note: Data from the Applicant Identifying Documentation form (005SCR) is accessible for applicants from the employee folder. This is similar to other forms that are accessible for both applicant companies and employee companies (for example, competency data).

Improved Extract and Load performance - Incremental extracts

History and Labor data has always been extracted from The Solution Series incrementally. Previously, however, employee data could only be extracted in its entirety for inclusion in the Workforce Data Mart. With the 5.2 release, a new option is available: a one-time build and incremental updates thereafter (although we recommend occasionally rebuilding the full data mart) of the employee data.

Note: Position Administration data is extracted in its entirety--it is not extracted incrementally.

When you elect to use an incremental extraction methodology, only information that has changed (add, change, or delete) since the last extraction is incorporated into any extractions performed after the data mart's initial build.



Refer to the Technical Administration documentation for more information and detailed steps for running incremental data extracts for Reporting Administration.

Technical considerations

To elect an incremental extraction option, you must activate Reporting Administration on the System Options form (SCOPTS). The COBOL checks this field to see if it needs to write records to a system file, FILE08. When activated, FILE08 is where all changes made to the Employee Database (FILE02) and FILE01 are recorded. When the incremental extraction is performed, this file is read for data that must be refreshed in the data mart.

The parameters form for the Reporting Administration extract (R-RSXR) form has been revised to provide a new filter, which allows the RSXRPT Extract Report to extract data in FULL or INCREMENTAL mode.

Note: Only data from employee level segments is extracted incrementally—not Position Administration or Organization data.

Modification to EXTRACT PROGRAMS

If you have customized or created additional data mart extracts, you must revise them for use in an incremental extraction. All employee level programs have been modified to process only the segment changing. If an L-segment you need has changed, you must locate that changed segment. Below is the sample code used by some of the delivered extract programs.

```
IF R-RSX-EXTRACT-TYPE EQUAL 'I'          (check if Incremental)
  MOVE W0-15-819 TO L-SEGMENT             (move additional key from change)
  MOVE W0-05-860 TO R-RSX-TARGET         (Target is required for the table update)
  FIND L-SEGMENT STARTING WITH L-SEGMENT-KEY (find segment change by using key)
  PERFORM P200-TABLE-DATA
  GO TO P999-RETURN.
```

Change L-SEGMENT to the segment being changed – G-segment, J-segment, H-segment, F-segment, or P-segment.



If you have attended the Customizing Reporting Administration class, contact Support—they can provide you with an updated guide. You must attend this class if you wish to customize the data extracts and receive support for your customizations.

Catalog Upgrade Macros

Our database and Cognos experts have devised a more automated way to update your catalogs with the enhancements we are delivering with 5.2 and upcoming releases—without overwriting the modifications you may have made. That means we deliver the catalogs, then you make your customizations (including: add folders, change the names of folders, add security user classes, define user class passwords, add alias tables, change the joins, and so forth). When we deliver the next set of catalogs with enhancements and updates, you should not lose modifications.

To achieve this, we delivers two new Cognos macros:

- **Compare macro**

This macro compares the two catalogs (old and new 'vanilla') and creates the output files for new additions/modifications for the new catalog. Additions/modifications are captured for all catalog tables, columns, joins, all folder levels, fields, prompts, derived fields, and filters.

- **Update macro**

This macro reads all the output text files (generated by Compare Macro) reflecting the differences between two catalogs and applies the changes to your customized catalog.



Refer to the Upgrading Reporting Administration to 5.2 documentation for details on performing an upgrade to your Impromptu catalogs.

Enhancements to Interactive Workforce between 5.0 and 5.1

The 5.2 release of Interactive Workforce offers additional support of IW-enabled workflows, including:

- Employee name and address changes
- Internal job applications
- Employee competencies
- US benefits rollover
- Mid-year enrollments for life event changes

Additionally, the 5.2 release offers a simplified multi-environments installation and implementable single sign-on capabilities.

Password case sensitivity change

As a security enhancement for the 5.2 release, we changed the logic for Interactive Workforce so that the password validation logic is now case sensitive. Previously, it was case insensitive, but the system converted everything to upper case in the database. So, when you upgrade to 5.2, all existing passwords will be treated as upper case and users must type them in that way to gain initial access to the upgraded system. Once a user has accessed the system for the first time, he or she can change the password to lower case or mixed case. The password will be saved in the database in the case entered and the user must type in his or her password with the correct use of case going forward.

Employee name and address changes

The name and address feature in Interactive Workforce allows the HR department to view and acknowledge changes employees make to their name and address information. When an employee changes any information on the Name and Address pages in Interactive Workforce, you can:

- Allow the system to automatically update the employee's permanent record on the Employee Name and Address form (EF-SCR) in the Administrative Solution

OR

- Route all changes to name and address information to the HR department for confirmation

To route changes to the HR department you complete the Workflow Control Table for Administrator form (T933CR). If you do not complete this form, HR will not receive notification of a change to name and address information.

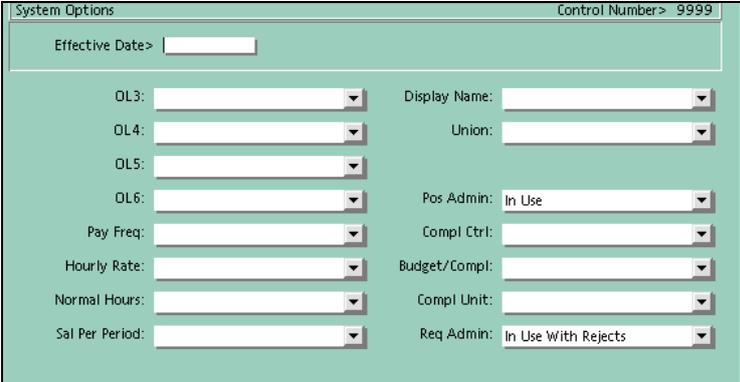


Refer to the Interactive Workforce: The Administrator's Guide documentation for more details.

Internal job applications

Interactive Workforce now provides capabilities for displaying position openings. Employees can view and apply for open positions. Managers can view the requisitions for their area, and also see who has applied for openings. An applicant profile is provided showing all competencies for the applicant.

To use the online Requisitions and Applications feature, your organization must have selected 'In use' from the drop down list in the Pos Admin field and selected 'In use with Rejects' in the Req Admin field on the System Options form (TG-SCR).



The screenshot shows the 'System Options' form with the following fields and values:

System Options		Control Number > 9999	
Effective Date > <input type="text"/>			
OL3:	<input type="text"/>	Display Name:	<input type="text"/>
OL4:	<input type="text"/>	Union:	<input type="text"/>
OL5:	<input type="text"/>	Pos Admin:	In Use
OL6:	<input type="text"/>	Compl Ctrl:	<input type="text"/>
Pay Freq:	<input type="text"/>	Budget/Compl:	<input type="text"/>
Hourly Rate:	<input type="text"/>	Compl Unit:	<input type="text"/>
Normal Hours:	<input type="text"/>	Req Admin:	In Use With Rejects
Sal Per Period:	<input type="text"/>		

Each organization (Control 1-2) must have control numbers set up on the Organization-To-Rules Cross-Reference for HR form (AX-SCR). The Position Administration code on this form distinguishes the routing control tables used for the workflow in Interactive Workforce.

Position Administration must also contain all the positions in your organization and the reporting structure for the positions. You can create requisitions only for positions that have been created in Position Administration.



Refer to the Interactive Workforce: The Administrator's Guide documentation for more details.

Employee competencies

Employees can now enter and track their own skills and competencies gained from learning experiences. Organizations can choose to have employee entries verified by their managers and/or Administrators. An employee's competencies information also displays to managers if the employee applied for an open position using Interactive Workforce.

When your organization implements Interactive Manager, you give employees the ability to update their professional background and competencies records online. Employees can update their records in the following categories:

- Certificates, Licenses, and Permits
- Professional Association Memberships
- Formal Education
- Skills and Competencies
- Experience

When an employee creates a new record or modifies an existing record in any of the above categories, they submit the update for approval. Depending on the workflow setup for each of the categories, Interactive Workforce routes the record to the employee's manager and/or HR Department. If you set up no workflow, the system automatically updates the corresponding form in the Administrative Solution when an employee uses Interactive Workforce to update his or her competencies.

Note: The Skills and Competencies form can also be updated when an employee successfully completes a course from the Skills/Competencies panel of the Course Directory form used by Training Administration.

Using the Competencies Workflow Setup form (T932CR) you determine where you want each category of professional information routed.

Note: If a professional competencies record has no routing set up, the system automatically approves any requests for that type of record update.

The screenshot shows a web-based form titled "Competencies Workflow Setup" with a "Control Number" of 99. The form is light blue and contains a central white box with three fields: "Request Type" is a dropdown menu set to "Comp-Education"; "Routing Order" is a numeric input field set to "1"; and "Approver" is a dropdown menu set to "HR".

You can set a different approval routing for each of the categories/types of competencies that appear in the drop down option list. If you do not set up a routing for a request type, the system automatically updates the record in the Administrative Solution. The number in the sequence entry tells Interactive Workforce the order in which you want the request routed.



Refer to the Interactive Workforce: The Administrator's Guide documentation for more details.

US benefits rollover

If an employee's benefits choices are identical to the previous year's choices, and the employee does not wish to change anything, a single 'rollover' can be selected during open enrollment.

Open enrollment is a window of time during which all existing employees in the organization have the opportunity to select their benefit coverage options for the following 12 months. Open enrollment takes place during the current coverage period. During open enrollment the employee chooses his or her coverage for the next coverage period, usually a calendar year.

During open enrollment, an enrolled employee can access the following information pages. The system displays a page with three tabs:

- **Welcome to Benefits Enrollment:** Explains the benefits enrollment process in Interactive Benefits.
- **What's new this year:** Contains information for the benefit plans available or the enrollment process that differs from the previous year's information.
- **About the Enrollment Process:** Explains the open enrollment process and contains instructions for benefits enrollment in Interactive Benefits.

When an enrolled employee selects the Benefits Eligibility link on the Navigator, the system displays additional pages with the following benefits information that is specific to the employee:

- **Benefit Choices:** Shows the benefit plans for which the employee is eligible along with a description of each plan. This page may also contain links to additional benefit information and flexible benefits credits if applicable to your organization.
- **Information About You:** Contains employment information about the employee that may affect his or her benefits enrollment.

The remainder of the enrollment process is similar for both newly hired employees and employees who have previously completed the enrollment process.



Refer to the Interactive Workforce: A Guide to Your Benefits information documentation for more details.

Mid-year enrollments for life event changes

If an employee experiences a life event change such as marriage, the birth or adoption of a child, or a divorce or legal separation, the employee can modify his or her benefits enrollments to reflect the change. In addition to benefits choices, an employee may need to change personal information such as name, address, and/or beneficiaries. To help update the appropriate information online, Interactive Workforce provides a checklist of information that may have changed as a result of the life event. To access the checklist, the employee selects Life Event from the Navigator pane, selects the appropriate event, and enters the date the event occurred. When the employee clicks Next, the system presents a list of links to pages where the employee can update information.



Refer to the Interactive Workforce: The Administrator's Guide documentation for more details.

Single sign-on

Once users successfully sign on to their organization's portal, they will not have to sign on again to Interactive Workforce or to another web application, such as Enwise. Single sign-on does not apply to the Administrative Solutions.

We highly recommend the assistance of a consultant for this implementation.

As with other enhancements, record keeping or logging of all customization to your original system is very important. By keeping these records using a consistent method, you create an audit trail that can then be reconstructed and applied when you receive upgrades to the software.

Before implementing single sign-on you will need to have installed Interactive Workforce and have the following installed on the server that you are using for single sign on implementation:

- An HTTP server
- A servlet container

Microsoft Internet Information Server and New Atlanta ServletExec are installed as part of the Interactive Workforce installation. If you are using the same server on which you have installed Interactive Workforce to implement single sign on, you will not need to reinstall the HTTP server or servlet container.



Please refer to the Customer Center to review other HTTP server and servlet containers supported with single sign-on.



Refer to the Interactive Workforce: Technical Implementation documentation for more details.

Simplified multi-environments installation

The autoinstallation executable can now be used to create additional Interactive Workforce environments.

Interactive Workforce is an extension of The Solution Series, and it also supports multiple environments. We recommend a two-server configuration for Interactive Workforce. In the two-server configuration, multiple Interactive Workforce environments run on the web server and communicate with one or more of The Solution Series environments on the Solution Series Application Server.

At the completion of the installation, the following environments may be established:

- Default
- Test
- Production

The Interactive Workforce auto-install program creates the Default environment. The Default environment provides verification of a full Interactive Workforce system. It is strongly recommended that the Default environment be maintained to provide a base on which to install and verify later software releases.

The Default environment also provides a source from which the Test and Production environments are created. The Test and Production environments are created manually by following the directions in the Interactive Workforce installation guide.

Interactive Workforce utilizes a software package, ServletExec from Unify, that requires separate licensing. Each Interactive Workforce environment requires a separate instance of ServletExec to run. For each Interactive Workforce environment that is intended to be used widely with reasonable performance, a separate ServletExec license is required. Two ServletExec licenses are provided, one for the Test environment and one for the Production environment. The Default environment is usable, but with a limit of 5 concurrent users. Contact your account representative if you need additional ServletExec licenses.



Refer to your Interactive Workforce installation guide for detailed steps to create multiple environments.

Web Client enhancements between 5.0 and 5.1

Enhancements to the Web Client include:

- Administrator pages for setting up environments
- Communication event management—letter preview

Additionally, the 5.2 release offers client-side XSLT translation for Internet Explorer (for improved performance), enhanced support for the Netscape browser, and support for alternate language/multilingual support (Canadian bilingual version).

Administrator pages on the web

New administration pages allow you to:

- **Change the administrator password**

The first time you log on, you must change the password. This password is required to add, modify, and remove connections to the Web Client application.

- **Create a Web Client connection**

You can create a new Web Client Connection or modify an existing one.



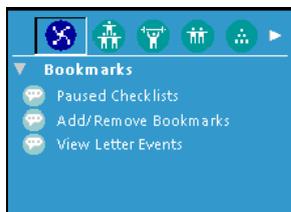
Refer to your eCyborg or Solution Series installation guide for detailed steps for using the web administration pages.

Communication events on the web

Communication events are letters or emails that can be triggered automatically within The Solution Series. Communication events include data from the current form or record. For example, a manager may set up a communication event that automatically generates a Salary Increase confirmation letter to an employee when his or her salary is changed on the Salary Assignment/Changes form (40-SCR).

When communication events are set up as Server events, emails and/or letters are triggered by the forms and checklists you use on The Solution Series web client. When you set up a server event, the generated emails are sent automatically, and the generated letters are queued for release.

The Solution Series automatically generates communication event letters and queues them on the server. You access the queued letters through the View Letter Events bookmark on your browser.



The Queued Letter Events page lists all of the letters queued for printing. The letters are grouped by your ID. To print the letters you must download both the Template (.dat file) and Data (.doc file) files for the letter from the page that displays when you View Letter Events. You use the Microsoft mail merge feature to generate the letter. Downloading and viewing the letters gives you the capability of editing and printing them using the functions and tools in Microsoft Word.

Note: The mail merge function works differently based on your version of Microsoft Word.



Refer to the eCyborg: Using the Web Client documentation for details on using the communication event functionality with the web client.

Analytics enhancements between 5.0 and 5.1

HR metrics do not live in isolation from the rest of the enterprise. eCyborg Analytics facilitates informed decisions and strategic organizational planning, through the immediate, accessible access to reports and figures it provides. Rather than concentrating on gathering and producing coherent data, HR uses information from analytics to accomplish strategic business goals in all areas of the company.

When HR determines to implement a new training initiative, change benefits, revamp the compensation structure, or outsource a function, it is necessary to identify the expected results and measure the actual results as they relate to the business goal or objective.

Although PowerPlay and some PowerPlay models are delivered with Reporting Administration, eCyborg Analytics consists of Cognos PowerPlay for the web, along with other server-type functionality, such as Upfront. In addition, a major component of Analytics is the addition of more PowerPlay models designed to answer your analytics needs.

With the 5.2 release, a number of Cognos PowerPlay cubes and reports are delivered. Their purpose is to allow the business to track and analyze the impact of its Human Capital. By taking advantage of this analysis, your business can easily pinpoint areas that may require attention, track performance improvement related to various HR initiatives and evaluate the effectiveness of HR programs.

To make business decisions and solve business problems, you must have easy access not only to data and information but also to business intelligence. eCyborg Analytics provides this capability. Analytics allows you to track performance using high-level indicators and drill down to specific areas to determine where performance is not meeting expectation. This enables corrective action to be taken before a crisis situation presents itself. Now you can better manage your business and make the best decision on Human Capital programs that will have the most positive impact on the organization and its employees.

eCyborg 5.2 will deliver four new Power Play models and cubes:

- Turnover Analysis
- Time Away (Absenteeism) Analysis
- Work Related Injury Analysis
- Compensation Change Analysis

The cubes are accessible via the following Cognos applications:

- Power Play (version 7.0 MR2) for client users
- Up Front (version 7.0 MR2) for web users



Refer to the Using Reporting Administration and Analytics training documentation for details on working with Cognos and the Solution Series catalogs.

Turnover Analysis

This cube allows the organization to evaluate its turnover from a number of different employee, organizational structure and occupation perspectives. Analysis can be performed on the employee demographics of gender, age, and length of service. Analysis can also be performed against structural elements of the organization such as organization units, jobs and positions. The reasons that employees are leaving can be evaluated against these elements to pinpoint problem areas and area of success.

Examples of Business Questions Answered

- Are separations increasing or decreasing?
- Are voluntary separations increasing or decreasing?
- Are involuntary separations increasing or decreasing?
- What are the reasons for the separations?
- What is the separation rate and trends for various segments of the employee population—gender, age, length of service?
- What is the separation rate and trends for various segments of the organization—org units?
- What is the separation rate and trends for occupations/jobs/positions within the organization?

Time Away (Absenteeism) Analysis

This model and cube allow the organization to evaluate its absenteeism as an employee relations or relationship management metric. The analysis includes all types of time away for which the organization maintains records. Absenteeism can have a profound effect on the performance of the organization. It is often a morale indicator and can be a precursor that foretells future undesirable turnover if corrective action is not taken. An organization cannot function without its employees and when they are away regardless of the reason, productivity is diminished. It is imperative that the organization maintain vigilance of this area as it can provide valuable clues about employee morale.

Examples of Business Questions Answered

- Is the absenteeism improving or getting worse?
- Is there a particular organizational unit or segment of the organization that is having an absentee problem?
- Does it appear employees in a particular area are taking advantage of paid sick time?
- Does a particular job/position have more absenteeism?
- Is absenteeism increasing or decreasing in the entire organization or for specific segments of the organization?
- Is absenteeism increasing or decreasing for certain occupation groups, job, positions or FLSA classes?
- Does a particular employee demographic (age, gender, length of service) have more absenteeism?

Work Related Injury Analysis

This cube allows the organization to evaluate the severity and frequency of its work related injuries. It is a Work Environment metric. This cube provides the organization with the ability to evaluate the work related injury history from the perspective of severity and frequency. The alternate drill down paths from Injury Category through to the specific injury description allow the user to evaluate severity along with the additional measures of number of days lost and number of days restricted. This evaluation can be performed for the organization as a whole or down through the organizational structure to pinpoint problem areas and areas that are showing improvement. Employee demographics of age, sex, and length of service can be evaluated in relation to the other dimensions. Occupations groups, jobs and positions add more dimensions for analysis.

Examples of Business Questions Answered

- Is the frequency of work related injuries increasing or decreasing for the organization or segments of the organization?
- Is the severity of work related injuries increasing or decreasing for the organization or segments of the organization?
- Which segments of the organization are having an unacceptable number and/or severity of lost time injuries?
- Which occupation groups, jobs, and positions experience the greatest number of work related injuries?
- What is the frequency and severity of the various types of work related injuries?

Compensation Change Analysis

This analytics cube focuses on monetary compensation. It is a compensation measurement. It is used to analyze changes in the monetary compensation of employees over time. This cube allows the organization to evaluate changes in monetary compensation specific salary, bonuses, commissions and monetary perquisites. It allows the monetary compensation factors to be analyzed from a number of different employee, organizational structure and occupation perspectives. Analysis can be performed on the employee demographics of gender, age, and length of service. Analysis can also be performed against structural elements of the organization such as organization units, jobs and positions.

Examples of Business Questions Answered

- Which segments of the organization receive the greatest/least number and amount of bonuses and commissions?
- Which segments of the organization receive the greatest/least number and amount of monetary perquisites?
- Which segments of the employee population by employee demographic factors receive the greatest/least number and amount of bonuses and commissions?
- Which segments of the employee population by employee demographic factors receive the greatest/least number and amount of monetary perquisites?
- Which segments of the organization are being given the greatest/least number and amount of salary increases/decreases?
- Which segments of the employee population by employee demographic factors are being given the greatest/least number and amount of salary increases/decreases?

Enhancements to the Collaborative Platform between 5.0 and 5.1

The Collaborative Platform was first introduced in release 5.0 of eCyborg, providing the enabling technology to extend the core eCyborg product with various Human Capital Management point solutions (WEB services providing personal finance, travel, and so forth). With the 5.2 release, this powerful feature is enhanced to enable mapping eCyborg data into defined XML schemas supporting both read and write transactions.



Refer to The Collaborative Platform user documentation for details.

Technical considerations

Read-Write functionality

Prior to this release the SQL driver only supported an SQL SELECT statement, which allowed read access to Solution Series forms. This release allows update functionality by providing new SQL commands INSERT and UPDATE. These new commands can be used to perform updates to The Solution Series using standard SQL.



Refer to The Collaborative Platform user documentation for details.

Problem Notifications, Program Temporary Fixes, and Defect fixes between 5.0 and 5.1

Fixes resulting from customer feedback have been integrated into the system. Feedback has come via Problem Notifications from WebFirst, Program Temporary Fixes posted on CUBBS, and defects identified by the Quality Assurance group.

PTF and PN fixes have been packaged together in the 5.0.1 and 5.0.2 service packs. These service packs have been rolled into the product, and additional PTF and PN fixes have been rolled in.



For details on the PNs and PTFs included in the 5.2 release, refer to the Listing of PTFs and PNs included in the 5.1 release excel spreadsheet, available for download from the 5.x Documentation area on the Customer Center.

North American Regulatory Enhancements between 5.0 and 5.1

Citizenship Code option list (HR05) revised

Important!

This is a global change to The Solution Series, although it was released as a regulatory bulletin for US customers. If you previously performed the operations described in US Regulatory Bulletin RB02-030, you need not convert your data.

The Citizenship Code option list (HR05) has been revised to ensure that it meets the requirements of ISO3166. It also makes the necessary updates to meet Magnetic Media Reporting and Electronic Filing (MMREF) requirements for the US Year End process and US Quarterly Reporting.

The Citizenship Code option list (HR05) is used in a number of forms, both employee and applicant, for specifying a country or citizenship. The option list name has been changed from Citizenship Code option list (HR05) to Employee/Applicant Country Code option list (HR05) to alleviate confusion when using this option list.

US regulatory bulletins between 5.0 and 5.1

The following regulatory bulletins are included in the 5.1 release. Please refer to the relevant RB documentation for more information on any of the RBs.

US Electronic Funds Transfer of Child Support (RB02-018)

Because two states (Illinois and Indiana) currently require that child support payments be submitted using Electronic Funds Transfers (EFT), we generalized the system based on the requirements set forth by the US Office of Child Support Enforcement (OCSE) to accommodate Electronic Funds Transfers (EFT) for child support payments.

In response to the state of Indiana's legislation requiring companies with 50 or more employees to submit child support payments using Electronic Funds Transfer (EFT), modifications have been made to the Child Support Register (6H6H), Child Support ACH Tape (6I6I), and Direct Deposit - Child Support (6R6R) reports, along with the Garnishment Administration form (PO-SCR).

US Supplemental Wage enhancements (RB02-024)

Government guidelines on how to calculate withholding for supplemental wages provide several methods for computing withholding. Many states follow the federal guidelines. These guidelines give you a choice of methods for calculating withholding based on whether supplemental wages are combined with regular wages or paid separately. Employers may combine the supplemental wages with the regular wages or pay the regular wages and supplemental wages separately, for example, issuing a separate payment for a bonus. The Solution Series allows employers to calculate taxes for supplemental wages by three methods: a flat rate method, an aggregate supplemental method, and a table method. The method used is related to whether supplemental wages are combined with regular wages or paid separately.

- If payment consists of regular wages and supplemental wages combined, income taxes will be withheld using the table method or the flat rate method applicable for the taxing authority. This method is delivered on the Tax Authority and Tax Maintenance files.
- If payment consists of supplemental wages only, income tax will be withheld on the supplemental wages by one of the following methods:
 - Flat rate method
 - Aggregate supplemental method
 - Table method

Where the tax authority allows use of the aggregate supplemental taxation method or a flat rate, the flat rate is delivered. With this enhancement, we also deliver a method to override the rates on the Tax Authority and Tax Maintenance files for supplemental wages. Using the Tax Misc2 text box on the Tax Specification Information form (T1-SCR) you can enter a code to override the delivered method. Before overriding the delivered method, however, check the accepted method(s) for the specific tax authority. The entries you make in the Tax Misc2 text box are never altered by a tax update (with the exception of 2AZ) because the fields are left blank on the Tax Authority File (.taf) and Tax Maintenance File (.tmf).

US Equal Employment Opportunity (EEO) and Federal Contractor Veterans' Employment (VETS-100) reporting updates (RB02-022 and RB02-028)

In order to maintain compliance with Equal Employment Opportunity (EEO) and Federal Contractor Veterans' Employment (VETS-100) reporting, we made several modifications and enhancements to existing forms reports, and option lists, and the following have been added to the system:

- VETS-100 Headquarters Location Definition form (VTCSCR)
- VETS-100 Hiring Location Definition form (VT-SCR)
- UVT1 Table Records Batch Format (9V1RPT)
- UVT2 Table Records Batch Format (9V2RPT)
- VETS Establishment option list (EO279)

US INS compliance updates (RB02-032)

To ensure that they comply with INS (U.S. Immigration and Naturalization Service) specifications and include accurate options, updates to the ID/Work Authority option list (HR47), the Identity Established option list (HR49), and the Visa Types option list (HR06) have been made.

These option lists (HR47, HR49, and HR06) are used in the Additional Personal and ID Information form (02-SCR) and the Applicant Identifying Documentation form (005SCR).

US HIPAA Electronic Data Transfer enhancements (RB02-033)

Updates were made to they system to meet the requirements set forth by the Electronic Data Interchange sections of the Administrative Simplification provisions of the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Standards have been set forth by the Secretary of Health and Human Services (as required by the Health Insurance Portability and Accountability Act of 1996) for the transmission of specific administrative and financial health care transactions, some of which involve data stored within Benefits Administration component. In response to these requirements, we responded with several new forms for setting up company information and capturing employee and dependent information necessary for the transmission of the 834 (Benefit Enrollment and Maintenance) and 820 (Group Premium Payment for Insurance Products) transactions. Professional Services can assist you in creating interface files to enable you to transmit these transactions in the required format.

In addition to updates to existing forms and option lists the following new forms and option lists are delivered in the 5.1 release:

New forms for recording organizational level information

- Additional Benefit Plan Information (UH-SCR)
- Covered Entity Information (HE-SCR)
- Covered Entity Contact Information (HECSCR)
- HIPAA Covered Entity Plan Components (HEPSCR)

New forms for recording employee information

- Dependent Custody/Responsibility (DCRSCR)
- Dependent-Related Address Information (DRASCR)
- Medicare/Medicaid Information (MM-SCR)
- Coordination of Benefits Information (COBSCR)—records information for employees or dependents who have enrollment in two benefit plans with similar coverage.

New forms associated with the 834 (Benefit Enrollment and Maintenance) and 820 (Group Premium Payment for Insurance Products) Transaction Sets

- HIPAA 820 Remittance Detail (RD-SCR)
- HIPAA 820 Financial Information (HF-SCR)
- HIPAA - 820 Parameter Control Information (820SCR)
- HIPAA - 834 Parameter Control Information (834SCR)



Contact Professional Services for assistance in creating interface files to enable you to transmit the 834 (Benefit Enrollment and Maintenance) and 820 (Group Premium Payment for Insurance Products) transactions in the required format.

New option lists

- HIPAA Entity Identification Codes (BA74)
- HIPAA Identification Code Qualifier (BA75)
- Time Zone (BA76)
- HIPAA Transaction Type (BA82)
- Dependent/Custody/Responsibility Entity ID Code (BA77)
- Dependent Custody/Responsible Entity ID Code Qual (BA78)
- Telephone Qualifier (BA79)
- COB Insurance Product Type (BA83)
- COB Payer Sequence (BA84)
- COB ID Code Qualifier (BA85)
- Federal Admin ID Code Qualifier (BA86)
- Medicare Plan Options (BA68)
- Remittance Type (BA88)
- Remittance Reference ID (BA89)
- Remittance Adjustment Reason (BA92)
- Transaction Handling (BA93)
- Payment Method (BA94)
- Payment Format (BA97)
- DFI Qualifier (BA98)
- Account Type (BAA1)
- HIPAA - 820 Trace Type (BA87)
- HIPAA - 834 Action Code (BA80)
- HIPAA - 834 Purpose Code (BA81)

US California Flat Tax rates (RB03-001)

To accommodate the California flat withholding rate for stock option payments and the various ways of accumulating and reporting imputed income, we created a new form, the Tax Code Specific HED Overrides form (R2-SCR). This form adds additional flexibility to the payroll tax functions of The Solution Series.

California employers may use a flat withholding rate of 9.3% for stock-option payments that are considered wages, paid on or after January 1, 2002. The 9.3% rate is in lieu of using the standard flat rate of 6% or the withholding tables. With this Regulatory Bulletin, The Solution Series enables you to set up an alternate flat tax to accommodate this situation.

For federal purposes, the value of employer-provided group-term life insurance coverage in excess of \$50,000, less any employee after-tax contributions, is considered imputed income and must be included in an employee's earnings. The value of the excess coverage is subject to social security and medicare taxes but is not subject to federal income tax withholding or federal unemployment (FUTA) tax. Therefore, taxable wages must be updated for FICA, but Federal tax is not withheld. The Solution Series accommodates the Federal guidelines by allowing you to update wages but not take withholding tax by using a Tax Frequency of "Report: No Tax Taken".

The above option works for most taxing authorities; however, there are some exceptions. The city of Wilmington, Delaware requires that withholding tax be taken from all imputed income earnings, for example for group term life (GTL). Therefore, taxable wages must be updated and taxes withheld for Wilmington, Delaware. The state of Pennsylvania and some Pennsylvania local tax authorities exclude GTL regardless of the value of the insurance. For these tax authorities taxable wages are not to include GTL nor are taxes to be withheld.

US HIPAA Privacy (RB03-004)

Standards have been set forth by the Secretary of Health and Human Services (as required by the Health Insurance Portability and Accountability Act of 1996) defining the appropriate disclosures of individually identifiable health information (Protected Health Information, or PHI)—information that may involve data stored within Benefits Administration component. In response to these requirements, we are delivering a new form to capture information regarding the disclosure of an employee's or dependent's health information and a report to present this information in a printable format.

The following new forms are delivered with the 5.1 release.

- HIPAA Privacy Authorization/Disclosure form (HADSCR)
- HIPAA PHI Authorization/Disclosure Report (PHIRPT)
- Report Parameters for HIPAA PHI Authorization/Disclosure form (RPHIR)

Note: The HIPAA Privacy Authorization/Disclosure form (HADSCR) and the fields it contains, and the HIPAA PHI Authorization/Disclosure Report (PHIRPT) (along with the Report Parameters for HIPAA PHI Authorization/Disclosure form [RPHIR] and the fields it contains) should be secured for use by the Privacy Officer and his/her designees only.

US Tax regulatory bulletins between 5.0 and 5.1

All tax bulletins up through the RB03-010 tax regulatory bulletin, released 24 April 2003, have been incorporated into the 5.2 release. All subsequent tax regulatory bulletins must be applied to the 5.2 release.

US Quarterly regulatory bulletins between 5.0 and 5.1

The latest available Quarterly unemployment regulatory bulletin (Quarter 1, 2003) has been included in the 5.2 release. All subsequent Quarterly bulletins must be applied to the 5.2 release.

Canadian tax updates between 5.0 and 5.1

The following Canadian tax bulletins have been incorporated into the 5.1 release:

RB02-036 and RB02-038

December 11, 2002 - (RB02-038) The federal and provincial changes that became effective January 1, 2003.

December 16, 2002 - (RB02-038) Canada Customs and Revenue Agency (CCRA) issued a modified 'Payroll Deductions Formulas for Computer Programs -77th Edition Effective January 1, 2003'. This entailed changes to tax calculations for the province of Saskatchewan and the territory of Nunavut. This affects only clients running payrolls in Saskatchewan and Nunavut.

Please refer to the relevant RB documents for further details on the contents of each tax bulletin.

CHAPTER 3

Planning Your Upgrade

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Upgrade considerations

Prerequisites

The software and hardware prerequisites for installing our products vary depending on your platform and the modules you purchased. Some third-party software must be purchased and installed before installing our products. To review hardware and software prerequisites for installing our products, follow these steps:

- 1. Access the Hewitt Cyborg home page**
In the Address area at the top of your browser, type www.hewitt.com/cyborg and then press Enter.
- 2. Access the Customer Center**
At the top of the home page click Customer Center Login.
- 3. Log in to the Customer Center**
Click LOG IN, enter your User name and Password, and then either click OK or press Enter.
- 4. Select Product Updates**
On the left pane of the page, click Product Updates.
- 5. Select prerequisites for the Product/Version**
On the right side of the pane, click the product/version you want to view and their prerequisites.

Deliverables

The following is included:

1	Upgrading The Solution Series from 5.0 to 5.2 (this guide)
---	--

Platform	Media
Windows	CD-ROM labeled 'The Solution Series 5.2 for Windows'
UNIX	CD-ROM labeled 'The Solution Series 5.2 for UNIX'
z/OS	CD-ROM labeled 'The Solution Series 5.2 for z/OS'

Timing your upgrades

There are multiple upgrades you will perform in addition to The Solution Series, depending on the functionality in use in your organization such as Reporting Administration and/or Interactive Workforce.

Because the content and architecture of Reporting Administration and Interactive Workforce are dependent upon the content and architecture of The Solution Series, it is important to time your 'go live' date accordingly. Because of architecture enhancements made to the 5.2 version of The Solution Series, Reporting Administration, and Interactive Workforce, once you move into production with The Solution Series 5.2, any pre-5.2 implementation of Reporting Administration or Interactive Workforce will either fail or be problematic.

Plan to go live on all components of your configuration at once, limiting the amount of 'down time' to be experienced by your users.

Server configuration options for Interactive Workforce upgrade

Interactive Workforce requires a version of ServletExec that is mutually exclusive to version 5.2—the version of this software required for 5.2 will not support your earlier versions of Interactive Workforce.

This being the case, by installing version 5.2 of Interactive Workforce on your current live web server you will, in effect, make your production version of the software unavailable to your employees.

You have two options:

- Purchase and configure a 'spare' web server.
This could be a low-level PC to act as a temporary web server as the test environment need not be powerful. You can use the non-licensed version of ServletExec, which allows up to three concurrent users.
- Use your application server as a web server.
If you were to use this method, you would:
 1. Copy your production version of The Solution Series to the Application server machine.
 2. Perform your upgrade to The Solution Series.
 3. Install Interactive Workforce on your temporary web server machine
 4. When ready to go live with 5.2, perform the upgrade to Interactive Workforce on your production web server and then switch machines.

Warning - Converting Data (Only applies to pre-5.2 production systems)

Support for large numbers in payroll necessitated a major change in data structure for the 5.2 system. The 5.2 system supports only 6-byte data formats.

To make the data conversion as easy as possible, Distributed Administration components (4- or 5-byte) are provided for installation on your pre-5.2 version system for the purpose of easily transferring your data from pre-5.2 system to the new 6- byte 5.2 system.

Once your data is converted, there is no going back. The data in the 5.2 environment becomes inherently incompatible with the data in your current production system. You can convert the data from your production system as many times as needed before going live on 5.2, but once live, the systems are incompatible.

To maintain historic labor data, you may elect to maintain a system at the current level of your production system. Alternatively, you can convert the data in your archived P20s the same way you convert your live data.

Important!

Distributed Administration programs and functionality are exclusively for use with the upgrade as expressly described herein. No other use of these programs and functionality, or portion thereof, are permitted for any reason whatsoever absent the prior written license grant from Hewitt Associates LLC or Cyborg Systems, Inc. Any non-permitted use shall constitute an infringement of our proprietary rights and subject to vigorous pursuit of rights and remedies available in law and in equity.

Warning - Changes to EXPAND areas

Important!

Because the program areas to store Company and Employee data have been significantly increased, you must remove or modify your existing EXPAND Control Records before upgrading to Solution Series 5.2.

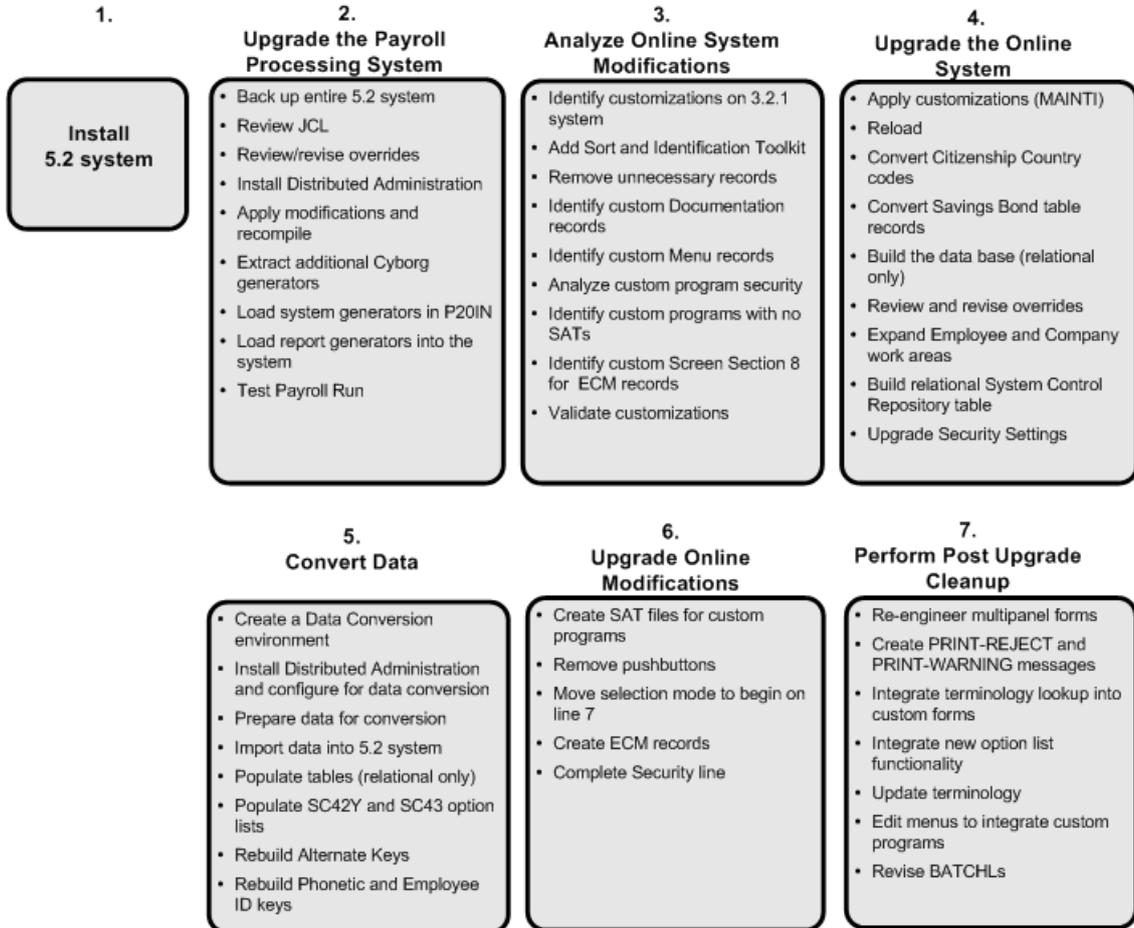


Refer to **Expand Transactions** (on page 153) for detailed information on the new Expand requirements.

The upgrade process

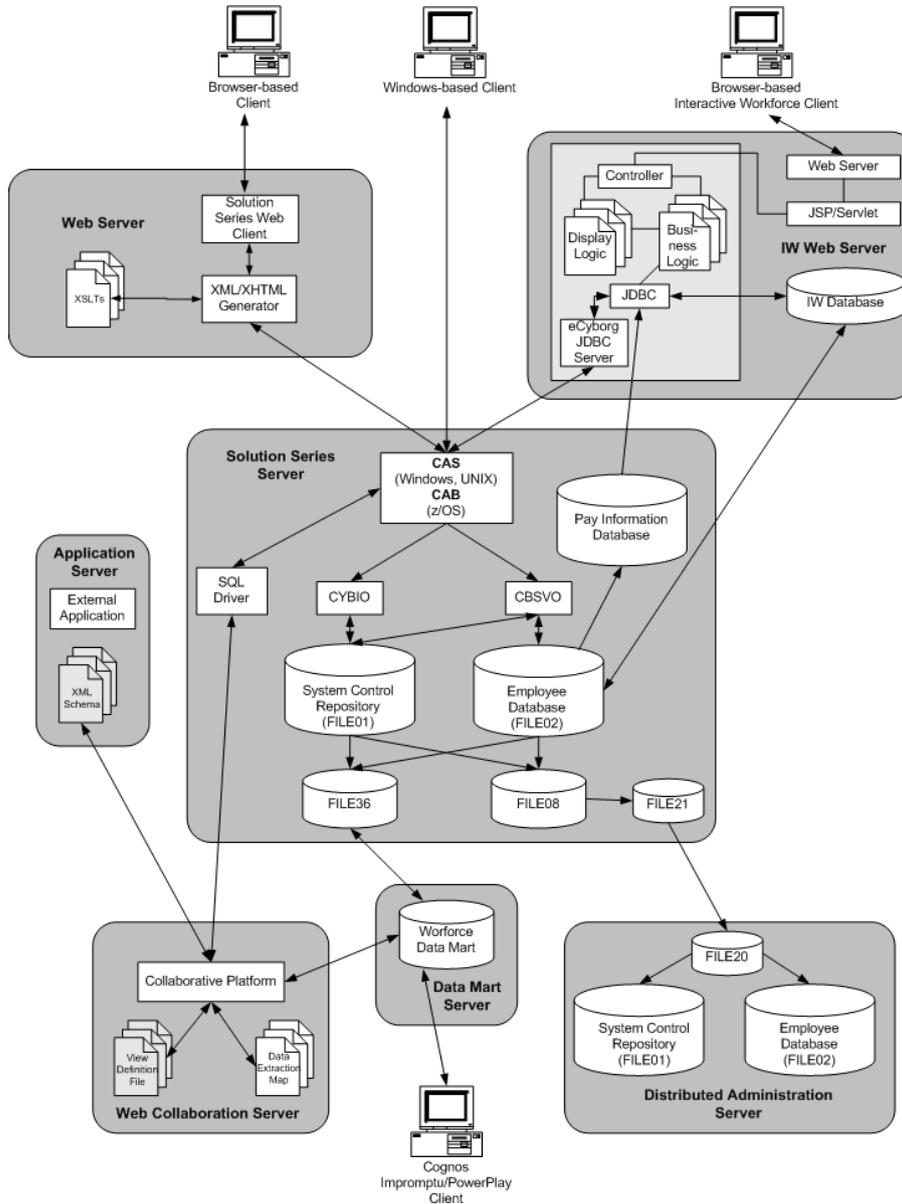
There are several ways to perform an upgrade, but the process we describe in this guide is believed to be 'best practice'. That is, the most logical approach.

A high-level flowchart of the process is shown below. To move into production, you must at a minimum complete up through Convert Data. The other steps may be done afterwards, but they should still be completed in order for future upgrades to go as smoothly as possible.



The following diagram shows the components of The Solution Series and their relationships:

Complete Product Installation Overview



P A R T 2

Implementing the 5.2 Release

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CHAPTER 4

Implementing the 5.2 Release

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Phase 1: Install The Solution Series 5.2

Important!

Because the program areas to store Company and Employee data have been significantly increased, you must remove or modify your existing EXPAND Control Records before upgrading to Solution Series 5.2.



Refer to **Expand Transactions** (on page 153) for detailed information on the new Expand requirements.

Perform the following tasks in this phase:

1. Install a vanilla 5.2 non-relational test system.
2. Back up the 5.2 test system.

Task 1: Install a vanilla 5.2 non-relational test system

To install the delivered system, in a non-relational form, follow the steps detailed in the installation documentation for the server platform you require. Once the environment is installed and configured, apply any updates.

Note: We have rolled in PTFs for the CBSVx programs. If you have any additional overrides you want to bring into the new system, do so during the installation.

This is the environment onto which you will be implementing your customizations. From this point in the document, we may refer to this system as your 'Test 5.2 system', your '5.2 Test system', or your '5.2 environment'.



Refer to the *eCyborg 5.2* or *Solution Series 5.2* installation guide for your platform and complete the steps to perform the installation.

Task 2: Back up the 5.2 test system

It is very important that you be able to recover from the changes that you make to the 5.2 test system. To protect your test system, back it up **in its entirety** before proceeding with the upgrade.

In addition to all of the program executables, it is important to back up the FILE01, as well as the P20 file that resulted from the test payrun performed when you validated installation.

Phase 2: Install Distributed Administration components on your 5.2 vanilla system

Support for large numbers in payroll necessitated a major change in data structure for the 5.2 system. The 5.2 system supports only 6-byte data formats.

To make the data conversion as easy as possible, we provide a 5.2 (6-byte) version of the Distributed Administration programs. Once installed, you may use the Distributed Administration components (as indicated in this guide) to assist in data conversion and transfer.

We have also (separately) provided (4- or 5-byte) Distributed Administration components for installation on your pre-5.2 version system for the purpose of easily transferring your data from your pre-5.2 version system to the new 6-byte 5.2 system. You will install this version of Distributed Administration later in the process.

Important!

Distributed Administration programs and functionality are exclusively for use with the upgrade as expressly described herein. No other use of these programs and functionality, or portion thereof, are permitted for any reason whatsoever absent the prior written license grant from Cyborg Systems, Inc or Hewitt associates LLC. Any non-permitted use shall constitute an infringement of proprietary rights and subject to vigorous pursuit of rights and remedies available in law and in equity.

Perform the following tasks in this phase:

1. Load the Distributed Administration programs on a PC.
2. Move Distributed Administration files from the PC to the Server.
3. Install Distributed Administration files.

Task 1: Load the Distributed Administration programs on a PC

Read the content of The Solution Series 5.2 Data Conversion CD's HTML Getting Started page very carefully. You must install the 6-byte version of the Distributed Administration programs in your 5.2 environment.

- 1. Launch the Distributed Administration 5.2 autoinstallation program (Install_Distrib_Server_v52.exe)**

Follow the onscreen prompts and the Distributed Administration files will be placed on a local PC in a selected folder.

2. Allocate files (z/OS only)

The following demonstrates the characteristics of FILE20:

Data Set Name : CYBORG.FILE20	
General Data	
Volume serial : TSO30A	Current Allocation
Device type : 3390	Allocated cylinders : 4
Organization : PS	Allocated extents . : 1
Record format : VB	
Record length : 640	
Block size : 27998	Current Utilization
1st extent cylinders: 4	Used cylinders . . : 1
Secondary cylinders : 5	Used extents . . . : 1
Creation date : 2001/05/17	
Referenced date . . . : 2001/05/17	
Expiration date . . . : ***None***	

The following example demonstrates the characteristics of the FILE21:

Data Set Name : CYBORG.FILE21	
General Data	
Volume serial : TSO30A	Current Allocation
Device type : 3390	Allocated cylinders : 4
Organization : PS	Allocated extents . : 1
Record format : V	
Record length : 850	
Block size : 854	Current Utilization
1st extent cylinders: 4	Used cylinders . . : 1
Secondary cylinders : 5	Used extents . . . : 1
Creation date : 2001/04/25	
Referenced date . . . : 2001/05/17	
Expiration date . . . : ***None***	

Task 2: Move Distributed Administration files from the PC to the server (Windows only)

Copy files to correct The Solution Series directories on server

If you look in the directory where the files have been installed, you will find the following directory:

- \Distrib\NT

Under the \NT directory, you will find the following subdirectories:

- \Data
- \Scripts

Copy the contents of those subdirectories into the corresponding subdirectories of The Solution Series environment.

Note: Copy the files from the \Scripts subdirectory to the \Runs subdirectory in The Solution Series 5.2 environment.

(UNIX and z/OS)

1. Edit FTP job for the correct server name or IP Address

Script used: jftp

Before running this job, you must edit it to use the correct server name or IP Address of the machine where The Solution Series is installed. Open the job in a text editor and add the server name or IP Address to the following line:

```
SET FTPTOSYS=
```

2. Edit FTP job for the correct platform

Script used: jftp

Before running this job, you must edit it to use the proper ftp commands script. Open the job in text editor and add one of the following filenames, depending on which platform you are installing:

z/OS filename: ftpcmds_ds.os2

z/OS relational for DB2: ftpcmds_db2_ds.os2

UNIX filename: ftpcmds_ds.unx

Add the correct ftp command filename to the following line in the jftp job:

```
SET FTPCMDS=
```

Save the changes once complete.

3. Download the files

Script used: jftp

At the command prompt, run the edited jftp job. When entering the command to execute this job, the format should be:

```
jobname username
```

You will be prompted for the password. Review the ftpupload.log, located in the same directory as the install files, for error messages.

You should see 'Job completed'.

Task 3: Install Distributed Administration files

1. **Extract, compile, and link Replication Reception program (DSRECV)**

Script used: JXDSRECV

This job uses the delivered library files (DSCYBMST for your 5.2 environment) and P9CNVT to extract, compile, and link the Distributed Administration Replication Reception program (DSRECV).

Refer to the delivered JCL for any overrides that may be necessary. Machine parameters are defined in the appendix.

2. **Turn on Distributed Administration**

Script used: JDSRSET

The JDSRSET job turns on Distributed Administration, making your 5.2 system ready to receive the input from the data conversion environment and apply the converted data.

Phase 3: Analyze and upgrade the Payroll Processing System

Perform the following tasks in this phase:

1. Review CYBMST override files.
2. Revise override files.
3. Review generators and overrides.
4. Apply modifications and recompile the Payroll Processing system programs.
5. Copy 04CALC to CICS region (z/OS).
6. Compile sort programs.

Task 1: Review CYBMST override files

If you have override files, perform this task. As an existing user, you may have several override files - at least one for each of the following:

- COBOL Payroll programs P2EDIT, P4CALC and O4CALC
- COBOL Payroll program P5PRNT
- COBOL Payroll program P9CNVT
- Report and system generators

Review your Payroll COBOL override files

Overrides to the Payroll COBOL programs are applied during the extraction process. The Reader File (P05RDR) contains your overrides to the Payroll COBOL programs (P2EDIT, P4CALC, O4CALC, P9CNVT and P5PRNT).

Task 2: Revise override files

Once you have determined which of your overrides are still valid, edit your override files to remove ambiguous overrides. Save your new files in the same location as your back-up.

Note: Expansions for PAYER, EMPLOYEE, and TAX will not be required.

Remove all overrides for Regulatory Bulletins delivered with 5.2.

Review your Payroll COBOL override files

Overrides to the Payroll COBOL programs are applied during the extraction process. The Reader File (P05RDR) contains your overrides to the Payroll COBOL programs (P2EDIT, P4CALC, O4CALC, P9CNVT and P5PRNT).

Task 3: Review generators and overrides

All Report Generators have been updated in 5.2. Review the Payroll Audit Trail from your production environment to identify additional report generators that you use so that they can be extracted and applied to your P20 master file. Review the delivered report and system generators to determine which generators you want to pull and load to your system.

Review your override file for report and system generators. Overrides to report and system generators are applied during a separate extraction process. The Reader File (P05RDR) contains your overrides.



Refer to 5.2 Report Generators (on page 178) for details of the Report Generators delivered in 5.2.

Task 4: Apply modifications and recompile the Payroll Processing system programs

Script used: jxcybmst

This process extracts and compiles the Payroll Processing COBOL program source code from the delivered CYBMST file. The Reader file (P05RDR) varies, depending on the platform. Copy your updated and resequenced override file into the Reader file before performing this operation.

Platform	Location and script
Windows	[Solution Series directory]\Runs\jxcybmst
UNIX	\$(CyborgHome)/runs/jxcybmst
z/OS	?HLQ?.JCL.CNTL(JXCYBMST)

Task 5: Copy 04CALC to CICS region (z/OS)

After running JXCYBMST, 04CALC needs to be new copied to the CICS region:

```
CEMT SET PROG (04CALC) NEW
```

Note: You will not be able to see 04CALC in CEMT until it is executed once and loaded into CICS. Once this is done, you will be able to perform the new copy

Task 6: Compile sort programs

Script used: **jcmpsort**

Platform	Location and script
Windows	[Solution Series directory]\Runs\jcmpsort
UNIX	[\$CyborgHome]/runs/jcmpsort
z/OS	No sort programs delivered as this is handled in the JCL

Review the log to determine if there were any errors.

Note: Your company may have different sort utilities, but by using the delivered sort programs, we can provide you with better support should you encounter difficulties Client-supplied sort utilities are not supported.

Phase 4: Analyze and update online modifications

This phase provides one script to upgrade the Payroll Processing components with new CYBMST programs and report and system generators.

Note: After running any processes, review the output to determine if there were any errors.

1. Create P20 with your data and new/updated 5.2 RGs.
2. Perform a test Payroll run.
3. Identify your customizations to the online system.
4. Remove unnecessary records and separate the Maintenance Out output into logical files.
5. Update checklist and menu records.
6. Remove user-defined FILE01 table records (Relational).
7. Apply your online customizations.
8. Convert Documentation Management Facility SC55 option list data (Windows and UNIX only).
9. Convert Citizen Country Codes.

Task 1: Create P20 with your data and new/updated 5.2 RGs

Script used: jcrtp20

Before executing, review each step for input required.

Run this script to:

1. **Extract System Report Generators (RGs)**
2. **Extract other Report Generators (RGs)**
3. **Create 'Empty' Initial P20**
4. **Maintenance to apply RGs from step 1 & 2 to P20 from Step 3**
5. **Extract Additional RGs (Add your custom RGs and overrides here)**
6. **Maintenance to apply RGs (P05T80) and your custom RGs (P05T81)**

7. PAYXTR ALL (from current 5.2 = copy of production)

Note: After running any processes, review the output to determine if there were any errors.

Platform	Location and script
Windows	[Solution Series directory]\Runs\jertp20
UNIX	\$(CyborgHome)/runs/jertp20
z/OS	?HLQ?.JCL.CNTL(JCRTP20)

Important! Do not extract custom report generators and/or method codes in expanded format—only perform the load operation.

Task 2: Perform a test Payroll run

1. Set up 999999 organization to be paid online

Note: In Canada set up 997777 organization to be paid online.

On The Solution Series system, access the Payroll Run Process Control form (AE-SCR) by making the following selections from the Navigator:

You access this form by selecting:

- Component:**  Payroll Setup Processing
- Process:** Payroll Processing Setup
- Task:**  Schedule Payroll Runs

Set up the payroll run parameters, as represented in the graphic, for the following Semi-Monthly pay frequency.

Be sure to set all of the fields as shown on the form. The Run Date field is optional and may be left blank. The Payment Date field must be the current or another relevant date.

In the Frequency field, enter one of the following values then press enter:

- '3' for a Semi-Monthly pay run

Log out of The Solution Series.



Refer to the *Introduction to Payroll Administration* guide for detailed instructions.

2. Update P20IN Batch Master File

Script used: jpayxtr

Test company and employee data from the online Employee Database will be extracted from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

FILE10 (PAYXTR10), which contains time entries and adjustments, is also created. PAYXTR10 becomes input to the JPAYRUN as P05T81.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jpayxtr
UNIX	\$(CyborgHome)/runs/jpayxtr
z/OS	?HLQ?.JCL.CNTL(JPAYXTR)

3. Apply optional transactions

Script used: jpayrun

Note: If you use Interactive Workforce and have modified the jesspym jobstream, run it instead of jpayrun.

Review the P05RDR file to make sure a 'Y' is in position 18 to ensure the input of the recycle file. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Include either an S (P05T81 only) or a B (P05T80 and P05T81) in column 19 in the P05RDR file.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jpayrun
UNIX	\$(CyborgHome)/runs/jpayrun
z/OS	HLQ?.JCL.CNTL.(JPAYRUN)

Check your output listings for any anomalies.

4. Perform a maintenance run to create pay history

Script used: jmntrun

To create pay history and labor records, and apply check numbers to the newly created history records on the P20IN Batch Master File, execute the JMNTRUN jobstream. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Note: If you modified position 19 in the P05RDR card, you should remove it from position 19 now.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jmntrun
UNIX	\$(CyborgHome)/runs/jmntrun
z/OS	?HLQ?.JCL.CNTL.(JMNTRUN)

5. Update the online Employee Database

Script used: jpaymrg

This process synchronizes the online Employee Database with the updated, final P20 file.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jpaymrg
UNIX	\$(CyborgHome)/runs/jpaymrg
z/OS	?HLQ?.JCL.CNTL.(JPAYMRG)

Task 3: Identify your customizations to the online system

To identify the differences between your custom system and the system originally delivered, perform a Change Control Facility Maintenance Out (MAINTO) operation on your current pre-5.2 version system.

Your upgrade analysis begins by your Solution Series system administrator reviewing the output of a MAINTO operation on your current pre-5.2 version environment. When you run the Change Control Facility Maintenance Out (MAINTO), an output file is produced in FILE10, which you can then use to locate areas of customized code.

Position 80 of each line in this report will contain a change code that indicates the type of difference between the original System Control Repository and the customized System Control Repository.

Change Codes:

Blank = Record was added
 A = Record was added
 C = Content of the record was changed
 D = Record was deleted

Program temporary fixes (PTFs) will also display in your MAINTO output.

Notes: Record types RT, P/S, and F do not have associated PTF numbers..

Output example:

1	2	3	4	5	6	7	8
1...5...0...5...0...5...0...5...0...5...0...5...0...5...0...5...0							
C BA03 03		Employee & One Child					D
C BA03 04		Family/EE & Some Dep					D
C BA03 06		Employee & Sponsored					D
MMNP		S	Menus15:46:28	07-22N00002815:46:28	07-22		C
MMNP10106		S	Eligibility and &Enrollment			400	C
MMNP1030509		TRAI SC	F-CPlan/Fund &Interest Rates			400	C
MMNP20201		TMBS CR	06Uniform Premium Table				A
MMNP3000000		II-SCR F	&Injury Information				C
MMNP3000001		TABSCR F	&Assign Badge				C
RQM0102199J30R		QXVSM	M	N			A
RQM0407200G08R		Y	?X58SPT Y		!	2Y	A
RQM0412199J07R		N	GX261PTC Y	12	E !D	C0 L	1 P 0 A
T*T991111110002006			RP				A
T*Z99111111205C31011001		200K30		P Y9999992001		R	A
T*Z99111111205C31011002		200K30		P Y9999992002		R	A
.							

Perform a Change Control Facility (MAINTO) operation

Script used: `jmainto`

To locate any and all revisions to your System Control Repository (Control File; FILE01), you must use the Change Control Facility to perform a MAINTO operation in batch.

Run this job against your existing pre-5.2 version system.

This operation compares your current random System Control Repository (FILE01) with the sequential System Control Repository (DEMO0105) that was originally delivered with your version of the system.

For example, which version of The Solution Series are you running in production right now?

Upgrading from	To	Where to find the DEMO0105 file you need to use
5.0	5.2	delivered with 5.0 vanilla installation
5.0.1	5.2	delivered on CUBBS>Service Pack>5.0.2>I have already applied Service Pack 5.0.1 to my system
5.0.2	5.2	delivered on CUBBS>Service Pack>5.0.2>I have already applied Service Pack 5.0.1 to my system

Any information that does not match with that in the delivered DEMO0105 file is identified on a per-line basis.

Platform	Location and Job
Windows	[Solution Series Directory]\Runs\jmainto
UNIX	[\$CyborgHome]/runs/jmainto
z/OS	?HLQ?.JCL.CNTL(JMAINTO)

Execute this utility in batch as follows:

INPUT	FILE01 FILE02 FILE04 FILE05	Custom System Control Repository (Control File) Employee Database (Master File) Control Record File [your production version] sequential control (DEMO0105)
OUTPUT	FILE03 FILE10	Audit/Message File System Control Repository Change File
EXECUTE	CBSVB	

The control record on FILE04 has the following syntax:

In these positions	Enter	Description
23–28	MAINTO	program name

Control record example:

1	2	3	4	5
1...5...0...5...0...5...0...5...0...5...0...5				
MAINTO				

Task 4: Remove unnecessary records and separate the Maintenance Out output into logical files

JCLEAN01, executed from the delivered The Solution Series 5.2 system, compares source code to remove any records in the MAINTO file that are unnecessary because of the inclusion of PTFs in the 5.2 system and system-generated object types; all unnecessary records are removed from the MAINTO output file.

Note: JCLEAN01 operates on the assumption that all customizations and modifications made to your pre-5.2 version environment were performed according to our programming and naming standards. Customizations that do not follow standards will need to be reworked to standards before they can be loaded into the 5.2 version. Unpredictable results including loss of functionality will occur otherwise.



Refer to the Naming Conventions appendix in the Technical Administration documentation for specific naming standards. Programming standards are documented throughout the Cyborg Scripting Language programming documentation.

To remove unnecessary records and separate the output from your MAINTO operation into logical files, follow these steps:

Script used: jclean01

Run this job from your new Test 5.2 system, against the MAINTO output.

Platform	Location and Job
Windows	[Solution Series Directory]\Runs\jclean01
UNIX	[\$[CyborgHome]/runs/jclean01
z/OS	?HLQ?.JCL.CNTL.(JCLEAN01)

Expected output files:

- **maintocl** (z/OS), **MAINTO.CLN** (Windows, UNIX)
This is the FILE10 created during the RTPRNT step. It is the 'clean' MAINTO file and should be used in all further MAINTO analysis.
- **recovery** (all platforms)
This is the FILE03 created during the RTPRNT step. It contains the records removed from the original MAINTO file. This file should be saved in the event any discrepancies are later found.

Both files are subsequent sub-listings of records found in the original MAINTO file.

Note: Any PTF that has been applied without the new sequence number assigned to the object will be identified and removed. This program will not capture all PTFs—a subsequent manual review of the MAINTO file is necessary.



Refer to the *Analyzing and Editing the Difference File* appendix in the *Technical Administration* documentation for rules for retaining and removing records from the MAINTO file.

Task 5: Update checklist and menu records (Windows and UNIX systems only)

Look at the MAINTO from your existing pre-5.2 version environment to check for Enhanced Payroll and Reporting checklist records that have been included in The Solution Series 5.2 system. Duplicate records must be removed from or resequenced in the input file prior to applying your customizations to The Solution Series 5.2 system.

Note: If you have made extensive modifications to menu records in your pre-5.2 version environment, you will need to re-program those customizations in your new 5.2 environment.

Warning!

Menu records for HR, Payroll, and some of the Tool items have been redesigned for internationalization. Records now hold an alternate language version of the menu item title. Therefore, you may not be able to use MAINTO to update menu records for these modules.

See also:

- Changes to Menu Records (*on page 193*)
For the new menu record layout.

1. Check MAINTO of existing system for modifications

Compare the MAINTO FILE10 output of your existing pre-5.2 version system against the following file in The Solution Series 5.2 environment:

- \Data\epRDDI05 (Windows)
- /Data/epRDDI05 (UNIX)

Look for the following record types:

- MML5 records
- MMNP records

2. Remove duplicate records from the MAINTO file

Records found on the MAINTO file that are also found in eprDDI05 should be removed from the MAINTO file. Otherwise, these records will generate errors when you apply the MAINTO file to The Solution Series 5.2 system.

3. Modify the checklist and menu records in MAINTO FILE10

If you have modified the delivered checklists and menu records for Enhanced Payroll and Reporting, you may have to modify the MAINTO FILE10 records to reflect those changes. This may mean creating deletions for the delivered The Solution Series 5.2 records if you resequenced your pre-5.2 version version. Modifications may have to be removed or resequenced.

Task 6: Remove user-defined FILE01 table records (Relational only)

Because there are some relational elements that will be applied to the system before the relational database has been rebuilt, this is the point where you must manually remove any user-defined FILE01 table records (records that begin with 'T', 'U', 'V', 'W', and/or 'X'. If not removed, these records may result in a failed Maintenance In process. Extract your user-defined FILE01 table records to a file, which will be imported later.

Task 7: Apply your online customizations

Having run your MAINTO operation, then reviewed and edited your MAINTO output, you can now apply your 'clean' MAINTO file as input to the MAINTI operation against the 'vanilla' 5.2 system.

1. Perform a Change Control Facility (MAINTI) operation

Script used: jmainti

To apply your customizations to your 5.2 System Control Repository (Control File; FILE01), you must use the Change Control Facility to perform a MAINTI operation in batch.

Edit the jmainti job to include 'PUB' in column 31 of the control record. This will correct the data type for custom computational fields so your fields will be compatible with the 5.2 system.

The control record on FILE04 has the following syntax:

In these positions	Enter	Description
23-28	MAINTI	program name
31	PUB	ensures your fields will be compatible with the 5.2 system

Control record example:

1	2	3	4	5
1...5...0...5...0...5...0...5...0...5...0...5	MAINTI PUB			

Note: FILE05 is the input file. It must either contain the content of your 'clean' MAINTO file, or you must redirect the job to use your 'clean' MAINTO file as the input file.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jmainti
UNIX	\$(CyborgHome)/runs/jmainti
z/OS	?HLQ?.JCL.CNTL.(JMAINTI)

Check your audit messages. Reconcile any errors before continuing the upgrade process.

If necessary, restore the FILE01 from the 5.2 'vanilla' back up you performed after you installed your 5.2 test system. Fix any problems you identify by editing FILE05, then rerun the MAINTI against the restored FILE01.

Task 8: Convert Document Management Facility SC55 option list data (Windows and UNIX only)

Program used: CVSC55

Prior to this release, the option list used by the Document Management Facility (SC55) used the area reserved for the alternate language to store the document type and default path for each type of document. In order to use the alternate language area as it was designed (for the alternate language), the document type and path have been moved to a separate line (identified as D00). Since this involves a change to a delivered option list, a conversion program must be run on Windows and UNIX platforms to convert the SC55 option list to the new format.

Perform this step only if your MAINTI indicated that your SC55 (Document Definitions) option list is different than that originally installed on your pre-5.2 vanilla system.

CVSC55 can be run online or in batch. The program requires no parameters.

Note: This program need only be run once, but accidentally running this program more than once will not affect the outcome.

Task 9: Convert Citizen Country Codes

Important!

If you previously performed the operations described in US Regulatory Bulletin RB02-030, skip this task. If you have not done so, review the documentation available on the Customer Center for this regulatory bulletin and apply this fix.

The Citizenship Code option list (HR05) has been revised to ensure that it meets the requirements of ISO3166. It also makes the necessary updates to meet Magnetic Media Reporting and Electronic Filing (MMREF) requirements for the US Year End process and US Quarterly Reporting.

The Citizenship Code option list (HR05) is used in a number of forms, both employee and applicant, for specifying a country or citizenship. The option list name has been changed from Citizenship Code option list (HR05) to Employee/Applicant Country Code option list (HR05) to alleviate confusion when using this option list.

Phase 5: Build the Database (Relational Environments only)

Note: If you do not want to have a relational environment, skip this phase and go on to **Phase 6** (see "Phase 6: Upgrade your CBSV Processing System" on page 113).

Perform the following tasks in this phase:

1. Back up your System Control Repository (FILE01).
2. Export F1 and FTM records.
3. Compile RDBPGM0.
4. Execute the case tool.
5. Compile and link the RDBPGM1 (UNIX only).
6. Create the database/tablespaces, tables, index, and views.
7. Pre-compile, compile, and link RDBPGMA through RDBPGMH.
8. Extract and compile relational 04CALC.
9. Reorganize the System Control Repository (FILE01) (Indexed).
10. Repopulate the Employee Database (FILE02).
11. Recompile CBSVB (Relational only).

Task 1: Back up your System Control Repository (FILE01)

For relational, the output (FILE 10) is the backup of FILE01 and will be needed later in JREBUILD in Task 1 of Phase 7.

To run BACKEM, execute CBSVBT as follows:

INPUT	FILE01 FILE02 FILE04	System Control Repository Employee Database Control Record File
OUTPUT	FILE03 FILE10	Audit/Message File Sequential backup file
EXECUTE	CBSVBT	Program

The control record on FILE04 has the following syntax:

In these positions	Enter	Description
23–28	BACKEM	program name

Task 2: Export F1 and FTM records

To export the F1 and FTM (RFT and RFM) records from the System Control Repository, execute the JEXPORT jobstream.

Script used: `jexport`

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jexport
UNIX	[\$CyborgHome]/runs/jexport
z/OS	?HLQ?.JCL.CNTL.(JEXPORT)

Check the audit message file for any errors.

Task 3: Compile RDBPGM0

Script used: `jcmprdb0`

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jcmprdb0
UNIX	[\$CyborgHome]/runs/jcmprdb0
z/OS	?HLQ?.JCL.CNTL.(JCMRDB0)

Task 4: Execute the case tool

1. Modify the control record in jcrtpgms (Windows and UNIX only)

Modify the control record in jcrtpgms to include the datafile path, database connect string, and the tablespace indicator to uniquely identify this environment.

2. Execute the case tool

Script used: `jcrtpgms`

Platform	Location and script
Windows	[Solution Series directory]\Runs\jcrtpgms
UNIX	[\$CyborgHome]/runs/jcrtpgms
z/OS	?HLQ?.JCL.CNTL.(JCRTPGMS)

Review the log to determine if there were any errors.

Task 5: Compile and link the RDBPGM1 (UNIX only)

Script used: `jcmprdb1`

To compile the program RDBPGM1, execute the JCMRDB1 jobstream.

RDBPGM1 creates the tablespaces, tables, indexes, and views needed to support the relational version of The Solution Series.

Task 6: Create the database/tablespaces, tables, index, and views

Note: If you have a relational environment, you must drop your 5.2 (vanilla) database and rebuild the database so it includes your customizations.

Script used: jertyb

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jertyb
UNIX	\$(CyborgHome)/runs/jertyb
z/OS	?HLQ?.JCL.CNTL.(JCRTCYB)

Task 7: Pre-compile, compile, and link RDBPGMA through RDBPGMH

The following table lists and describes each subroutine generated by the CASE tool:

Program	Subroutine Description
RDBPGMA	Inserts a new row in a table
RDBPGMB	Selects data from a row in a table and passes it to CBSV
RDBPGMC	Updates values in an existing row
RDBPGMD	Deletes an existing row from a table
RDBPGME	Called when a PAYMRG 171 process is run; removes all rows from all tables in preparation for reinsertion of data from the P20 file; also disables then re-enables all indexes (where applicable)
RDBPGMF	Called when a PAYMRG 222 process is run; deletes all rows from the tables that belong to the organizations being paid
RDBPGMG	Cursors through the database and rebuilds the IDX records on the database
RDBPGMH	Provides segment and segment key length for each segment, and location of date and date type within each segment; the link between the database and The Administrative Solution

z/OS

Scripts used: jsqlcomp, jcomprdbh

Platform	Location of Scripts
z/OS	?HLQ?.JCL.CNTL.([jobname])

1. **Pre-compile, compile, and link the programs RDBPGMA through RDBPGMG**
Script used: JSQCOMP
2. **Pre-compile, compile, and link RDBPGMH**
Script used: JCOMPRDBH

Windows and UNIX

Pre-compile, compile, and link the RDBPGM subroutines.

Script used: **jcmpsbr**

Platform	Location and Script
Windows	[Solution Series directory]\Runs\j cmpsbr
UNIX	[\$CyborgHome]/runs/j cmpsbr

Check the audit message file for any errors.

Task 8: Extract and compile relational O4CALC

To extract COBOL program O4CALC from CYBMST, compile the program, and link the machine-specific subroutines, execute JXO4CALR.

Script used: **jxo4calr**

Platform	Location and Script
Windows	[Solution Series directory]\Runs\j xo4calr
UNIX	[\$CyborgHome]/runs/j xo4calr
z/OS	?HLQ?.JCL.CNTL.(J XO4CALR)

Task 9: Reorganize the System Control Repository (FILE01) (indexed) or synchronize FILE01 and TABLE01 (relational)

Important!

This step is required for relational installations and is optional for indexed installations.

In order for the upcoming PULL processes to function properly, FILE01 must be updated and TABLE01 must be in synch with FILE01.

Script used: **jebuild**

Platform	Location and Script
Windows filepath	[Solution Series directory]\Runs\j rebuild
UNIX	[\$CyborgHome]/runs/j rebuild
z/OS	?HLQ?.JCL.CNTL.(J REBUILD)

Check the audit message file for any errors.

Task 10: Repopulate the Employee Database (FILE02)

Important!

This step is required for relational installations and is optional for indexed installations.

To run PAYMRG and repopulate FILE02 and the associated Tables after the relational database has been rebuilt. This is also required for the 'PULL' of the CBSV code described in Phase 3. The P20 file used was created earlier in this chapter.

Script used: jpaymrg

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jpaymrg
UNIX	\$(CyborgHome)/runs/jpaymrg
z/OS	?HLQ?.JCL.CNTL.(JPAYMRG)

Task 11: Recompile CBSVB (Relational only)

Script used: jempevbr

During the base installation of The Solution Series 5.2 relational version, a CBSVB was pulled and compiled. You must now recompile (not pull and compile) the CBSVB program so you can use the newly defined database and RDBPGM modules. This recompiled version of CBSVB is required in order to further extract and compile COBOL programs in the next Phase.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jempevbr
UNIX	\$(CyborgHome)/runs/jempevbr
z/OS	?HLQ?.JCL.CNTL.(JCMPCVBR)

Check the audit message file for any errors.

Phase 6: Upgrade your CBSV Processing System

Perform the following tasks in this phase:

1. Review override files.
2. Revise override files.
3. Expand employee (AREA2) and/or company (AREA4) work areas.
4. Extract and compile the COBOL programs to include the new AREA2-BOTH and AREA4-BOTH values.
5. Delete the AREA size record and online executable code.

Task 1: Review override files

As an existing user, you may have several override files—at least one for each of the following:

- COBOL online program CBSVO
- COBOL online trace program CBSVOT
- COBOL batch program CBSVB
- COBOL batch trace program CBSVBT

Review your online COBOL override files

Overrides to the CBSV COBOL programs are applied during the extraction (CBSVB) process. The override file contains your overrides to the CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, and CBSVBT).

Task 2: Revise override files

Once you have determined which of your overrides are still valid, edit your override files to remove unnecessary overrides.

Note: COBOL PTFs (identified by a value in column 77–80) must be removed from your override file.

Resequence your overrides to match the source programs in CBSV and save your new override files where your backups reside.

Task 3: Expand employee (AREA2) and/or company (AREA4) work areas

This task shows you how to move the work area expansions from your existing environment into the new one, and rebuild the CBSV.

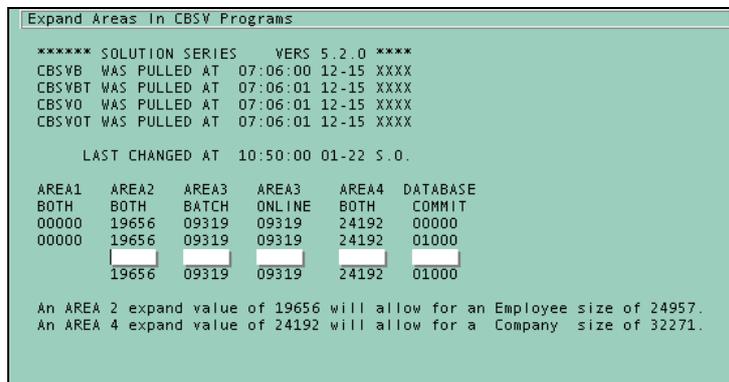
1. Obtain expansion amounts from your pre-5.2 version environment

Log into your pre-5.2 version environment and identify the work area expansions by performing the following steps:

1. Access the Expand Areas in CBSV Programs form. You access this form by selecting:

Component:  Development Tools
Process: System Operations
Task:  Expand Program Memory

The Expand Areas in CBSV Programs form is displayed:



```
Expand Areas in CBSV Programs
***** SOLUTION SERIES      VERS 5.2.0 *****
CBSV8 WAS PULLED AT 07:06:00 12-15 XXXX
CBSV8T WAS PULLED AT 07:06:01 12-15 XXXX
CBSV0 WAS PULLED AT 07:06:01 12-15 XXXX
CBSV0T WAS PULLED AT 07:06:01 12-15 XXXX

      LAST CHANGED AT 10:50:00 01-22 5.0.

AREA1  AREA2  AREA3  AREA3  AREA4  DATABASE
BOTH   BOTH   BATCH  ONLINE BOTH   COMMIT
00000  19656  09319  09319  24192  00000
00000  19656  09319  09319  24192  01000
       [ ]   [ ]   [ ]   [ ]   [ ]
       19656  09319  09319  24192  01000

An AREA 2 expand value of 19656 will allow for an Employee size of 24957.
An AREA 4 expand value of 24192 will allow for a Company size of 32271.
```

2. Take note of the expanded values. These values must be changed in the new 5.2 environment to match.

2. Apply expansion amounts to your new, updated 5.2 environment(s)

Log into your new 5.2 environment and perform the following steps to expand the work areas:

1. Access the Expand Areas in CBSV Programs form (EXPAND). You access this form by selecting:

Component:  Development Tools
 Process: System Operations
 Task:  Expand Program Memory

The Expand Areas in CBSV Programs form is displayed:

```

Expand Areas In CBSV Programs

***** SOLUTION SERIES      VERS 5.2.0 *****
CBSVWB WAS PULLED AT 07:06:00 12-15 XXXX
CBSVBT WAS PULLED AT 07:06:01 12-15 XXXX
CBSVVO WAS PULLED AT 07:06:01 12-15 XXXX
CBSVOT WAS PULLED AT 07:06:01 12-15 XXXX

      LAST CHANGED AT 10:50:00 01-22 S.O.

AREA1  AREA2  AREA3  AREA3  AREA4  DATABASE
BOTH   BOTH   BATCH  ONLINE BOTH   COMMIT
00000  19656  09319  09319  24192  00000
00000  19656  09319  09319  24192  01000
        [ ]   [ ]   [ ]   [ ]   [ ]
        19656  09319  09319  24192  01000

An AREA 2 expand value of 19656 will allow for an Employee size of 24957.
An AREA 4 expand value of 24192 will allow for a Company size of 32271.
    
```

2. Enter the total expanded amount for the employee in AREA2-BOTH. This should be the same amount you expanded to for EMPLOYEE in the the Payroll (P4CALC and O4CALC) overrides.
3. Enter the total expanded amount for the company in AREA4-BOTH. This should be the same amount you expanded to for PAYER in the Payroll (P4CALC and O4CALC) overrides.
4. Press Enter.
5. Log out.

Task 4: Extract and compile the COBOL programs to include the new AREA2-BOTH and AREA4-BOTH values

Extract and compile CBSVO, CBSVOT, CBSVB, and CBSVBT using PULL.

z/OS

Scripts used: jcbsvb, jcbsvbt, jcbsvbo, jcbsvot

Platform	Location of Scripts
z/OS	?HLQ?.JCL.CNTL.([jobname])

1. **Extract and compile CBSVB**
Script used: JCBSVB
2. **Extract and compile CBSVBT**
Script used: JCBSVBT
3. **Extract and compile CBSVO**
Script used: JCBSVO
4. **Extract and compile CBSVOT**
Script used: JCBSVOT

Windows and UNIX

Scripts used: jpulevn jpulcvr, jempevn, jempevr

Platform	Location and Script
Windows	[Solution Series directory]\Runs\ [jobname]
UNIX	\$(CyborgHome)/runs/ [jobname]

1. **Extract and compile relational Solution Series programs**
Script used: JPULCVN (non-relational)
Script used: JPULCVR (relational)
2. **Compile relational Solution Series programs**
Script used: JCMPCVN (non-relational)
Script used: JCMPCVR (relational)

Check the audit message file for any errors.

Task 5: Delete the AREA size record and online executable code

To do this, run the ZX-DEL program. You run this program in batch as follows:

INPUT	FILE01 FILE02 FILE04	System Control Repository Employee Database Control Record File
OUTPUT	FILE03	Audit/Message File
EXECUTE	CBSVB	

The control record on FILE04 has the following syntax:

In these positions	Enter	Description
23–28	ZX-DEL	Name of the program

This program deletes the ZXCYP88W record (or the ZXCYP88M record for all non-PC platforms), as well as any online executable code.

A new record, ZXCYP88W or ZXCYP88M as appropriate, will be created on the Employee Database the next time the COBOL programs are executed.

Phase 7: Build the database equivalent of the non-relational FILE01—Relational Environments only

Perform the following tasks in this phase:

1. RECALC, RETYPE, and RELOAD all Calculation option lists, report layouts, and CSL programs in The Solution Series.
2. Populate RDBMS tables (relational only).
3. Load the user-defined Table records into The Solution Series.

Task 1: RECALC, RETYPE, and RELOAD all Calculation option lists, report layouts, and CSL programs in The Solution Series

Script used: `jdemo023`

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jdemo023
UNIX	\$(CyborgHome)/runs/jdemo023
z/OS	?HLQ?.JCL.CNTL(JDEMO023)

Check the audit message file for any errors.

Task 2: Populate RDBMS tables (Relational only)

Script used: `jpopf01`

To synchronize and populate the System Control Repository and relational tables for option lists and specific application tables (Cx through Xx), execute the JPOPF01 script.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jpopf01
UNIX	\$(CyborgHome)/runs/jpopf01
z/OS	?HLQ?.JCL.CNTL.(JPOPF01)

Check the audit message file for any errors.

Task 3: Load the user-defined Table records into The Solution Series

Script used: `jmainti`

To apply the user-defined FILE01 table records removed in Phase 4, Task 6, use the Change Control Facility to perform a MAINTI operation in batch. Be sure to change the FILE05 name to match the file created in *Phase 4, Task 6* (see "Task 6: Remove user-defined FILE01 table records (Relational only)" on page 106).

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jmainti
UNIX	[\$[CyborgHome]/runs/jmainti
z/OS	?HLQ?.JCL.CNTL.(JMAINTI)

Check the audit message file for any errors.

CHAPTER 5

Convert Data

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Warning - Converting Data (Only applies to pre-5.2 production systems)

Support for large numbers in payroll necessitated a major change in data structure for the 5.2 system. The 5.2 system supports only 6-byte data formats.

To make the data conversion as easy as possible, Distributed Administration components (4- or 5-byte) are provided for installation on your pre-5.2 version system for the purpose of easily transferring your data from pre-5.2 system to the new 6- byte 5.2 system.

Once your data is converted, there is no going back. The data in the 5.2 environment becomes inherently incompatible with the data in your current production system. You can convert the data from your production system as many times as needed before going live on 5.2, but once live, the systems are incompatible.

To maintain historic labor data, you may elect to maintain a system at the current level of your production system. Alternatively, you can convert the data in your archived P20s the same way you convert your live data.

Important!

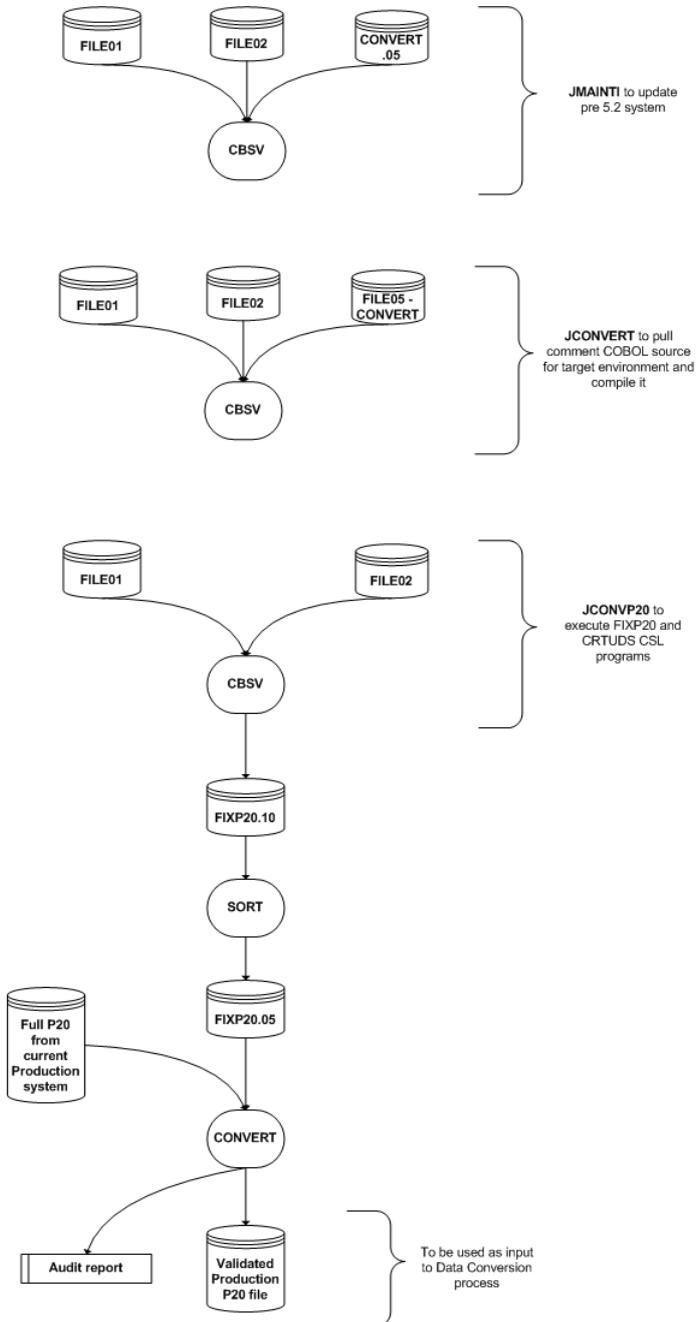
Distributed Administration programs and functionality are exclusively for use with the upgrade as expressly described herein. No other use of these programs and functionality, or portion thereof, are permitted for any reason whatsoever absent the prior written license grant from Hewitt Associates LLC or Cyborg Systems, Inc. Any non-permitted use shall constitute an infringement of our proprietary rights and subject to vigorous pursuit of rights and remedies available in law and in equity.

Overview of data conversion process

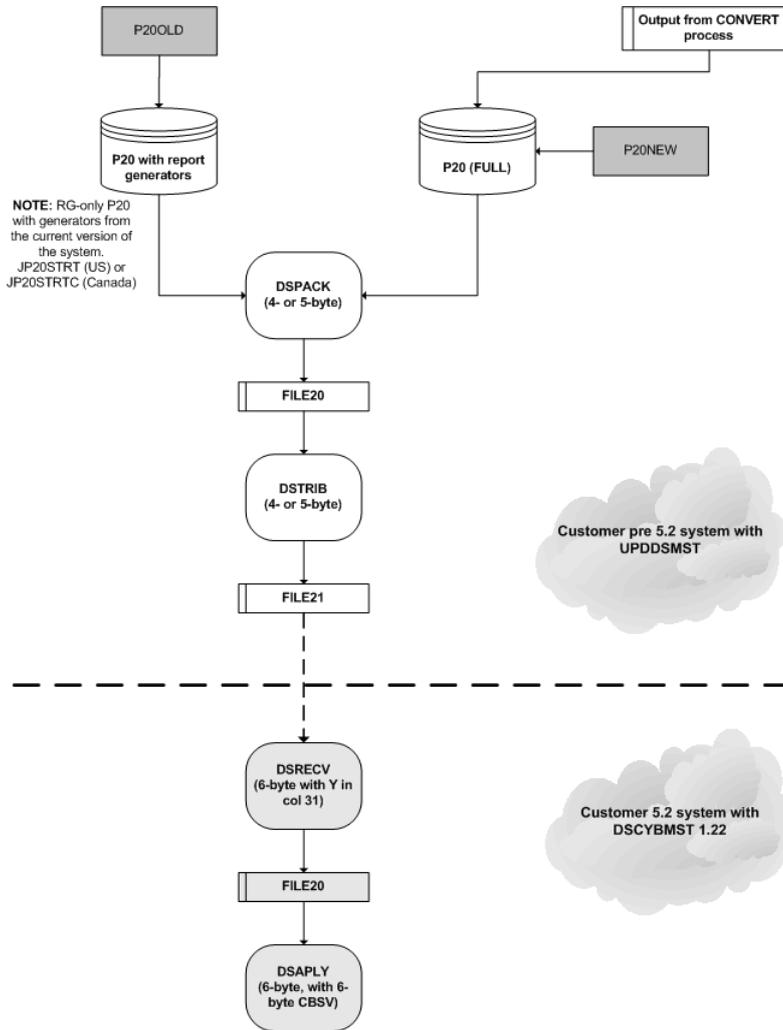
In the following phases of this upgrade, you will perform a data conversion and migrate your data over to the new 5.2 system. The following jobs reflect the activities starting in Phase 3, Task 1: Preparing your data (pre-5.2 data conversion environment), which is discussed in detail later in this chapter:

1. N99 PAYRUN
2. PAYXTR
3. PAYRUN
4. MNTRUN
5. GENONLY P20 Creation

The following diagrams illustrate the data conversion for the 5.2 system:



Upgrading The Solution Series from 5.0 to 5.2



Phase 1: Create pre-5.2 Data Conversion environment

To protect your Production pre 5.2 system and its data, copy it **in its entirety** before proceeding with the upgrade. Use this copy of your production system to perform your data conversions.

We will now refer to this environment as your 'pre 5.2 data conversion system'.

Perform this operation prior to a full payroll run on your Production system. By doing so, you will be able to perform parallel payroll test runs on your Production and pre 5.2 system, as well as your new 5.2 test system.

Having set up this environment, you may update the data as many times as you wish. Once you have updated the data in this data conversion environment, perform the steps in ***Phase 3: Move data into your new 5.2 environment*** (on page 133) again. You may then run another parallel payroll test and/or go 'live' into production.

Phase 2: Install Distributed Administration components on your pre-5.2 data conversion system

Support for large numbers in payroll necessitated a major change in data structure for the 5.2 system. The 5.2 system supports only 6-byte data formats.

Important!

If you are currently using Distributed Administration in your pre-5.2 version environment, skip this phase.

To make the data conversion as easy as possible, we provide (4- or 5-byte) Distributed Administration components for installation on your pre-5.2 version system for the purpose of easily transferring your data from your pre-5.2 version system to the new 6-byte 5.2 system.

Perform the following tasks in this phase:

1. Load the Distributed Administration programs on a PC - pre-5.2 system.
2. Move Distributed Administration files from the PC to the Server.
3. Install Distributed Administration files.

Task 1: Load the Distributed Administration programs on a PC - pre-5.2 system

Read the content of The Solution Series 5.2 Data Conversion CD's HTML Getting Started page carefully. You must install the 4- or 5-byte version of the Distributed Administration programs (dataconv_v52.zip) in your pre-5.2 version environment.

1. Click on step 1 'Install 6-byte Distributed Administration'

Launch the Distributed Administration 5.2 autoinstallation program (Install_Distrib_Server_v52.exe) .

Follow the onscreen prompts and the 5.2 Distributed Administration files will be placed on a local PC in a selected folder.

2. Click on step 2 'Install updates for specialized 4-or 5-byte data conversion'

Launch the zip file (dataconv_v52.zip).

The zip file contains several files and scripts that will need to overlay some of the version 5.2 Distributed Administration files making this implementation specific to data conversion.

Load the files from the zip file into the same directory as the base conversion. If you loaded the conversion information from Step 1 using the default directory structure, all the information is now in *C:\[sol series dir]\Distrib*. Unzip the new information in the *Distrib* directory to automatically create a new directory named *DataConv*.

3. Unzip the contents of the zip file (dataconv_v52.zip)

Opening the zip file in the Distrib directory creates the DataConv folders with its subordinates. Elements within DataConv must be copied to existing folders within the initial structure to accomplish the overlay. The following table itemizes those elements with their current and new locations:

Platform	Copy the following:	From:	To:
Windows	jdspack.bat jdstrib.bat jxdspack.bat jxdistrib.bat jconv02.bat	[Solution Series directory]\Distrib\ DataConv\Scripts\NT	[Solution Series directory]\Distrib\ NT\Scripts
UNIX	jdspack jdstrib jxdspack jxdistrib jconv02	[Solution Series directory]\Distrib\ DataConv\Scripts\UNIX	[Solution Series directory]\Distrib\ UNIX\Scripts
z/OS	jdspack jdstrib jxdspack jxdistrib jconv02	[Solution Series directory]\Distrib\ DataConv\Scripts\zOS	[Solution Series directory]\Distrib\ zOS\Scripts

Review any fixes on CUBBS for scripts and data components that may have changed for the 5.2 conversion. Any fixes will need to replace the existing corresponding scripts or components in the DataConv directory.

Task 2: Move Distributed Administration files from the PC to the server - pre-5.2 system

Windows only

Copy files to correct The Solution Series directories on server

If you look in the directory where the files have been installed, you will find the following subdirectory:

- \DataConv

Under the \DataConv directory, you will find the following subdirectories:

- \Data
- \Scripts

Copy the contents of those subdirectories into the corresponding subdirectories of The Solution Series environment.

Note: Copy the files from the \Scripts subdirectory to the \Runs subdirectory in The Solution Series pre-5.2 Data Conversion environment.

UNIX and z/OS

1. Edit FTP job for the correct server name or IP Address

Script used: jftp

Before running this job, you must edit it to use the correct server name or IP Address of the machine where The Solution Series is installed. Open the job in a text editor and add the server name or IP Address to the following line:

```
SET FTPTOSYS=
```

2. Edit FTP job for the correct platform

Script used: jftp

Before running this job, you must edit it to use the proper ftp commands script. Open the job in text editor and add one of the following filenames, depending on which platform you are installing:

z/OS filename: ftpcmds_ds.os2

z/OS relational for DB2: ftpcmds_db2_ds.os2

UNIX filename: ftpcmds_ds.unx

Add the correct ftp command filename to the following line in the jftp job:

```
SET FTPCMDS=
```

Save the changes once complete.

3. Transfer the files

Script used: jftp

Change the following to point to proper File System or Data Area or High Level Qualifier within the 5.2 system. Because the FTP commands are located at [sol series dir]\Distrib, you must edit the following FTP file:

Platform	FTP file	Items in FTP script to change
UNIX	ftpcmds_ds.unx	?FILESYS?
zOS Indexed	ftpcmds_ds.os2	?HLQ?
zOS DB2	ftpcmds_db2_ds.os2	?HLQ?

At the command prompt, run the edited jftp job. When entering the command to execute this job, the format should be:

```
jobname username
```

You will be prompted for the password. Review the ftpupload.log, located in the same directory as the install files, for error messages.

You should see 'Job completed'. The job will be run from the following directory:

```
[Solution Series directory]\Distrib
```

4. **Transfer the specific 5.2 conversion files**

Script used: jftp

Change the following to point to proper File System or Data Area or High Level Qualifier within the 5.2 system. Because the FTP commands are located at [sol series dir]\Distrib\DataConv\FTP\Scripts, you must edit the following FTP file:

Platform	FTP file	Items in FTP script to change
UNIX	ftpcmds_upd.unx	?FILESYS?
zOS Indexed	ftpcmds_upd.os2	?HLQ?
zOS DB2	ftpcmds_upd.os2	?HLQ?

At the command prompt in [sol series dir]\Distrib\DataConv\FTP\Scripts, run the edited jftp job. When entering the command to execute this job, the format should be the following:

```
jobname username
```

You will be prompted for the password. Review the ftpupload.log, located in the same directory as the install files, for error message.

You should see 'Job completed'. The job will be run from the \Scripts directory.

Task 3: Install Distributed Administration files - pre-5.2 system

1. **Extract, compile, and link Distributed Administration programs**

Scripts used: JXDSPACK, JXDSTRIB

These jobs use the delivered library files (UPDDSMST for your production environment) and P9CNVT to extract, compile, and link Distributed Administration programs (DSPACK and DSTRIB).

Refer to the delivered JCLs for any overrides that may be necessary. Machine parameters are defined in the appendix.

2. Allocate files (z/OS only)

The following demonstrates the characteristics of FILE20:

```
Data Set Name . . . : CYBORG.FILE20

General Data                               Current Allocation
Volume serial . . . : TSO30A                Allocated cylinders : 4
Device type . . . . : 3390                  Allocated extents . : 1
Organization . . . . : PS
Record format . . . . : VB
Record length . . . . : 640
Block size . . . . . : 27998                Current Utilization
1st extent cylinders: 4                      Used cylinders . . : 1
Secondary cylinders : 5                      Used extents . . . : 1

Creation date . . . : 2001/05/17
Referenced date . . : 2001/05/17
Expiration date . . : ***None***
```

The following example demonstrates the characteristics of the FILE21:

```
Data Set Name . . . : CYBORG.FILE21

General Data                               Current Allocation
Volume serial . . . : TSO30A                Allocated cylinders : 4
Device type . . . . : 3390                  Allocated extents . : 1
Organization . . . . : PS
Record format . . . . : V
Record length . . . . : 850
Block size . . . . . : 854                  Current Utilization
1st extent cylinders: 4                      Used cylinders . . : 1
Secondary cylinders : 5                      Used extents . . . : 1

Creation date . . . : 2001/04/25
Referenced date . . : 2001/05/17
Expiration date . . : ***None***
```

Phase 3: Move data into your new 5.2 environment

This phase provides detailed instructions for moving your data from your existing pre-5.2 version environment into the new 5.2 Employee Database (FILE02).

Perform the following tasks in this phase:

1. Prepare your data (pre-5.2 data conversion environment).
2. Import your data (5.2 environment).
3. Populate RDBMS tables (relational only).
4. Recreate RFT records.
5. Rebuild Alternate Keys.
6. Rebuild Phonetic and Employee ID Keys.

Task 1: Prepare your data (pre-5.2 data conversion environment)

Important!

If you are currently using Distributed Administration, be sure and perform your replications and distributions before proceeding, as the following steps configure Distributed Administration for use solely for the purpose of data conversion.

1. Run an N99 payrun

Access the Payroll Run Process Control form (AE-SCR) and set up a pay run for all pay frequencies for all organizations.

You access this form by selecting:

Component:		Payroll Setup Processing
Process:		Payroll Processing Setup
Task:		Schedule Payroll Runs

The Payroll Run Process Control form (AE-SCR) should be set up as represented in the following example:

Frequency Identifier	Frequency	New Period	Payment Date	Pay Cycle	Deduction Cycle
<input type="checkbox"/>	1 WEEKLY	<input checked="" type="radio"/> Yes <input type="radio"/> No		9	9
<input type="checkbox"/>	2 BI WEEKLY				
<input type="checkbox"/>	3 SEMI MONTHLY				
<input type="checkbox"/>	4 MONTHLY				

2. Update P20IN Batch Master File

Script used: **jpaxtr all**

Company and employee data for all organizations will be extracted from the online Employee Database and placed in FILE12.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\ jpaxtr
UNIX	\$(CyborgHome)/runs/ jpaxtr
z/OS	?HLQ?.JCL.CNTL(JPAYXTR)

3. Perform a pay run**Script used: jpayrun**

Note: If you use Interactive Workforce and have modified the jesspyrn jobstream, run it instead of jpayrun.

Review the P05RDR file to make sure a 'Y' is in position 18 to ensure the input of the recycle file. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Include either an S (P05T81 only) or a B (P05T80 and P05T81) in column 19 in the P05RDR file.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jpayrun
UNIX	#[CyborgHome]/runs/jpayrun
z/OS	?HLQ?.JCL.CNTL(JPAYRUN)

Check your output listings for any anomalies.

4. Perform a maintenance run to create pay history**Script used: jmntrun**

To create pay history and labor records, and apply check numbers to the newly created history records on the P20IN Batch Master File, execute the JMNTRUN jobstream. The P2EDIT, P4CALC, and P5PRNT programs will be processed. The P20 output from this job will be input into the JCONVP20 process.

Note: If you modified position 19 in the P05RDR card, you should remove it from position 19 now.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jmntrun
UNIX	#[CyborgHome]/runs/jmntrun
z/OS	?HLQ?.JCL.CNTL(JMNTRUN)

5. Obtain a generators-only P20

**Script used: jp20strt (US)
jp20strtc (Canada)**

Edit the job so that so that the P20IN.MNT reference is changed to P20IN.GEN. the P20IN.GEN is used as one of the two P20 files used in the JDSPACK process.

Input files:

P05T80 (P9STRT)
P05T81 (P9CBSV for US or P9CBSVC for Canada)

The P2EDIT, P4CALC, and P5PRNT programs are processed.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jp20strt
UNIX	\$(CyborgHome)/runs/jp20strt
z/OS	?HLQ?.JCL.CNTL(JP20STRT)

6. Apply the data conversion programs to your System Control Repository (FILE01)

Script used: **jmainti**

Use the MAINTI program to apply the CONVERT.05 and CONVERT.04 as input files, containing the FIXP20,CONLZC, CV02PT and CRTUDS CSL programs to your current pre-5.2 version system.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jmainti
UNIX	\$(CyborgHome)/runs/jmainti
z/OS	?HLQ?.JCL.CNTL(JMAINTI)

7. Performing a reload

Script used: **jreload**

Recompiles Cyborg Scripting Language programs in the System Control Repository.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jreload
UNIX	\$(CyborgHome)/runs/jreload
z/OS	?HLQ?.JCL.CNTL(JRELOAD)

Check your audit messages. Reconcile any errors before continuing the upgrade process.

8. Extract, compile, and link the CONVERT program

Script used: **jconvert**

Use CONVERT and CBSVB to extract, compile, and link the CONVERT program.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jconvert
UNIX	\$(CyborgHome)/runs/jconvert
z/OS	?HLQ?.JCL.CNTL(JCONVERT)

9. Extract and convert Employee Database records**Script used: jconv02**

Execute jconv02 for LZC to extract, convert and apply the FILE02 Employee Database records.

Warning!

JCONV02 can only be executed once.

Platform	Location and script
Windows	[Solution Series directory]\Runs\jconv02
UNIX	[\$[CyborgHome]/runs/jconv02
z/OS	?HLQ?.JCL.CNTL(JCONV02)

10. Turn on Distributed Administration**Script used: JDSRSET**

The JDSRSET job turns on Distributed Administration, making your pre-5.2 data conversion system ready to create the files used to apply converted data to the 5.2 system.

11. Create the data dictionary**Script used: jconvp20**

FIXP20 extracts field information from FILE01 and creates a data dictionary. CRUTDS configures your system for the conversion process. CONVERT is then run, with the FILE10 output from FIXP20 and an up-to-date full P20 as input. A new P20 is created. The input P20 and output P20 should be the same size; sizes may be different if invalid records are excluded from the converted file. The data will be 'cleaned up', but corrupted data will cause errors. Address data problems due to corrupted records by recreating the data P20.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jconvp20
UNIX	[\$[CyborgHome]/runs/jconvp20
z/OS	?HLQ?.JCL.CNTL(JCONVP20)

12. Compare P20 files and log the differences

Script used: `jdspack`

Run DSPACK, with two P20s as input (one that includes the report generators, and one should be the P20 created as output from the JCONVP20 process). A FILE20 is populated with your data.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jdspack
UNIX	\$(CyborgHome)/runs/jdspack
z/OS	?HLQ?.JCL.CNTL(JDSPACK)

13. Access the Distribution Access Log Table form (DSRULE)

Access this form by making the following selections from the Navigator:

- Component:**  Distributed Administration
- Process:** Distribution Rules/Log Table
- Task:**  Distribution Access Log Table

14. Identify the target DL

Enter the 5-position alphanumeric Node ID of the target DL.

15. Enter a valid organization ID associated with the source DL

Enter a 6-position organization identifier. By entering the ID here, you are indicating that the associated data from the source node may be distributed to this target DL.

Note: If you plan on distributing option lists and/or tables from the System Control Repository, a 'ZFILE1' organization must be configured on the Distribution Access Log Table form (DSRULE) for the target DL that will be given access or you will receive a FILE01 error.

16. Enter date to initiate distribution for this DL

Enter a date in the format MM-DD-CCYY or CCYYMMDD. This date may be the current date, a previous date, or a future date that tells the system to begin distributing the data.

Note: It is suggested that you enter a date that has already passed, such as 19250102 (January 2, 1925).

The form should look similar to the following example:

17. Click Save or press Enter

The Date text box changes to the format MM-DD-CCYY and the Time text box is populated by zeros. This form displays the message ----New table entry has been established----. Data distribution for this target DL is initialized.

18. Repeat steps 15 through 17 for every organization

19. Repeat steps 13 through 18 for each target node

20. Distribute the FILE20 to FILE21

Script used: `jdstrib`

Run DSTRIB with FILE20 as input. A new FILE21 is created and populated in a format transferable to your new 5.2 system.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jdstrib
UNIX	\$(CyborgHome)/runs/jdstrib
z/OS	?HLQ?.JCL.CNTL(JDSTRIB)

Task 2: Import your data (5.2 environment)

1. **Accept the FILE21 from your pre-5.2 version system into the 5.2 system**

Script used: **jdsrecv**

Place a 'Y' in column 31 of the FILE04 reader card. Failing to set this flag will result in an 'Incorrect segment length' error in the first record with the 'conv' node id.

Run DSRECV with FILE21 (from your pre-5.2 version system) as input. A new FILE20 is created.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jdsrecv
UNIX	\$(CyborgHome)/runs/jdsrecv
z/OS	?HLQ?.JCL.CNTL(JDSRECV)

2. **Apply your pre-5.2 version data to the 5.2 system**

Script used: **jdsaply**

Run DSAPLY, with the new FILE20 as input.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jdsaply
UNIX	\$(CyborgHome)/runs/jdsaply
z/OS	?HLQ?.JCL.CNTL(JDSAPLY)

Note: If you are working in a relational environment, you may receive 'SQL Limit Reached - Commit Performed' messages in the log file. Disregard these messages—there is no error.

3. **Turn off Distributed Administration**

Script used: **jduset**

The JDSUSET job turns off Distributed Administration.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jduset
UNIX	\$(CyborgHome)/runs/jduset
z/OS	?HLQ?.JCL.CNTL(JDUSET)

4. Apply converted Employee Database data

Script used: **jloadhr**

To apply converted Employee Database information, run JLOADHR. Use the output from *Phase 3, Task 1* (see "Task 1: Prepare your data (pre-5.2 data conversion environment)" on page 133), step 4 as the FILE05 input.

Platform	Location and script
Windows	[Solution Series directory]\Runs\jloadhr
UNIX	\$(CyborgHome)/runs/jloadhr
z/OS	?HLQ?.JCL.CNTL(JLOADHR)

Check FILE03 to determine if there were any errors. A 'COMMIT FORCED BY SQL LIMIT' error may occur, but you can ignore it.

You have now moved your data from your pre-5.2 version system to the new 5.2 system.

Task 3: Populate RDBMS tables (relational only)

Script used: **jpopf01**

To synchronize and populate the System Control Repository and relational tables for option lists and specific application tables (Cx through Xx), execute the JPOPF01 script.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jpopf01
UNIX	\$(CyborgHome)/runs/jpopf01
z/OS	?HLQ?.JCL.CNTL(JPOPF01)

Task 4: Recreating RFT records

Script used: **jf-xref/JFXREF**

Run the jf-xref/JFXREF program to build and maintain the Field Name Table cross-reference menu.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jf-xref
UNIX	\$(CyborgHome)/runs/jf-xref
z/OS	?HLQ?.JCL.CNTL.(JFXREF)

Task 5: Rebuild Alternate Keys

Script used: jblldaky

Run this script to update the alternate keys built during the initial installation.

Platform	Location and Script
Windows	[Solution Series directory]\Runs\jblldaky
UNIX	\$(CyborgHome)/runs/jblldaky
z/OS	?HLQ?.JCL.CNTL(JBLDAKY)

Task 6: Rebuild Phonetic and Employee ID Keys

1. Indicate the type of key to build

You do this on the second panel of the Organization Options (AF-SCR) form.

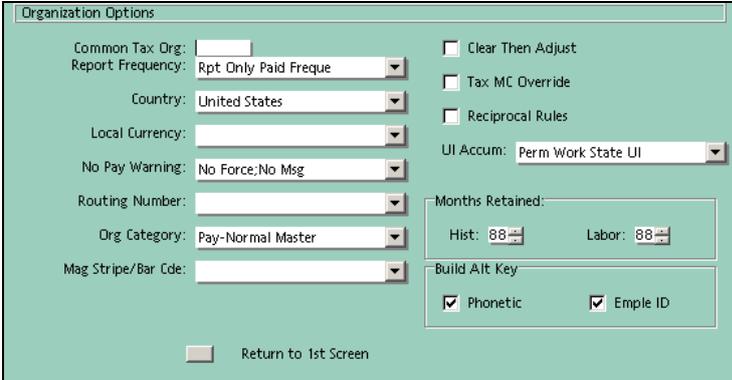
You access this form by selecting:

Component:  Payroll Setup Processing
Process: Organization Setup
Task:  Organization Options

and then selecting the 'More Options' button.

2. Select the type of key(s) to build

You can choose Phonetic and/or Employee ID. The indicated keys will be built automatically for new or transferred employees.



The screenshot shows the 'Organization Options' form with the following fields and options:

- Common Tax Org: []
- Report Frequency: Rpt Only Paid Freque [v]
- Country: United States [v]
- Local Currency: []
- No Pay Warning: No Force;No Msg [v]
- Routing Number: []
- Org Category: Pay-Normal Master [v]
- Mag Stripe/Bar Cde: []
- Clear Then Adjust:
- Tax MC Override:
- Reciprocal Rules:
- UI Accum: Perm Work State UI [v]
- Months Retained:
 - Hist: 88 [v]
 - Labor: 88 [v]
- Build Alt Key:
 - Phonetic
 - Emple ID
- Return to 1st Screen:

3. Save the form

4. Delete Phonetic/Employee ID Keys

The first step in rebuilding the Phonetic and/or Employee ID Keys is to delete them. Generally, you would do this after loading production data during an upgrade.

To delete all phonetic keys, perform the following steps:

1. Run the Delete All Phonetic Keys (DEL-PE) program.
To run this program from the Navigator, select:

Component:  Development Tools
Process: System Control Repository Utilities
Task:  Delete All Phonetic Keys

2. Click OK or press Enter

All Phonetic and Employee ID Key records are deleted for all organizations.

5. Rebuild Phonetic/Employee ID Keys from the System Control Repository

The KEY-PE program requires a two-line control record. The control records for each Phonetic Key type and each Organization Control Number value must be added to the KEY-PE job. Each control record must have the appropriate FROM and TO values.

The following are the input files, output files, and the program you need to execute KEY-PE.

To execute this utility, you need to run CBSVB as follows:

INPUT	FILE01 FILE02 FILE04	System Control Repository Employee Database Control Record File
OUTPUT	FILE03	Audit/Message File
EXECUTE	CBSVB	

For control record line 1:

In these positions	Enter
17–22	Organization Control Number value
23–28	QUERY
56–61	KEY-PE
62–63	00
64–74	FROM Employee Number (positions 1–11)
75	Continuation character '*'

Phase 4: Initialize updates to custom WRITER programs

Revisions have been made to the underlying system, but before proceeding, any custom programs in your system that were created using Solution View (WRITER) must be initialized.

An easy way to identify a WRITER program is that (so long as your naming conventions adhere to standards), the program ID begins with either a '~' or an 'X'.

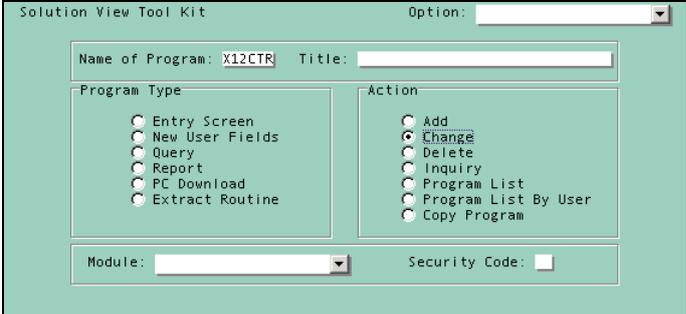
1. Launch Solution View (WRITER)

Component:  User Tools
Process: User Tools
Task:  Solution View

2. Type the program ID of the custom program in the Name of Program field

3. Select the Change radio button option in the Action area

The screen should look similar to the following:



4. Press Enter

Repeat this procedure for all your custom programs. This procedure initializes the custom programs against the new version of The Solution Series.

Phase 5: Analyze garnishments

If you choose to convert to the new Garnishments model, you will need to perform some analysis of your existing Garnishments configuration.

Four spreadsheets are available to use as part of the conversion process—one spreadsheet per new Garnishments form (Garnishments Administration 1 through 4 (GR1SCR, GR2SCR, GR3SCR, GR4SCR)). Complete each of these spreadsheets with the relevant information and transfer the information into The Solution Series using the Import feature.



Refer to the [Optimizing System Features](#) documentation for detailed information on using the Import functionality.

Phase 6: Install and configure the administrative client

Perform the following tasks to install and configure the Administrative Client:

1. Download the administrative client update.
2. Run the update executable.

Note: After running any processes, review the output to determine if there were any errors.

1. Download the administrative client update.
2. Run the update executables.

Task 1: Download the administrative client update

1. **Create a directory on a PC to store the downloaded files**
2. **Access CUBBS**



Refer to *Accessing CUBBS in the knowledgebase or Technical Administration guide for detailed instructions for logging onto CUBBS.*

3. **Go to the 5.2 page**

Scroll through the page and click on the appropriate links to download the installation program to your download directory.

To configure the replacement for the administrative client, refer to the *Installing and Configuring The Solution Series 5.2* guide for your platform for detailed information and instructions on performing the necessary tasks. You can download this document in PDF format from the Customer Center.

Important! The AutoInstall installs a new client or updates an existing pre-5.2 client with the 5.2 files. If you install a new client without deleting the FILECL32, you may receive errors when you try to connect to the existing environment.

Task 2: Run the update executable

1. **Run the update executable**

Start the update process by clicking the Install_admin_client_v52 executable from the folder to which it was downloaded. Follow the InstallShield instructions.

2. **Automatic File Backup**

Your 5.1 ccss32.exe, MergeLetter.dll, and CybCfg.exe will be backed up in a folder called 'backup' located in the current Client51 directory.

3. **Indicate if you are running on a z/OS system**

4. **Check your Setup Information**

At this point, you can click Back to review your setup data or click Next to continue.

5. Launch Connection Editor

At this point in the upgrade, the Connection Editor launches automatically.

To configure the 5.2 replacement for the administrative client, refer to the *Installing and Configuring The Solution Series 5.2* guide for your platform and use the existing instructions. You can download this document in PDF format from the Customer Center.

Phase 7: Configure security

The tasks in this phase need to be carried out by your Security Officer:

1. Add Security Records.
2. Implement Security Enhancements.

Task 1: Add Security Records

There are two security records which need to be added by your Security Officer. It is not possible to use MAINTI to perform this operation.

Please have your Security Officer refer to the *Setting Up and Maintaining Security* guide for further details. The relevant information can be found in the appendix Adding Secure Records During Installation/Upgrade.

Task 2: Implement Security Enhancements

There are new security features with 5.2 which have been added to comply with the tightened security requirements imposed by the Sarbanes Oxley Act.

To implement these features, your Security Officer should refer to the *Setting Up and Maintaining Security* guide for details about the enhancements and for instructions on installing them. The relevant section can be found in the appendix Activating and using Extended Security.

PART 3

Appendices

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A P P E N D I X A

Expand Transactions

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Introduction

Due to an increasing amount of Company and Employee data being stored on the client side, Hewitt has significantly increased the size of several storage areas in Solution Series 5.2:

P4CALC/O4CALC

- Company area – PAYER
- Employee area – PAYEE

CBSV

- AREA2 – employee
- AREA3
- AREA4 – company header

EXPAND area increases

We have significantly enlarged the sizes of the Company (PAYER), Employee (PAYEE), and Tax area.

P4CALC/O4CALC

In P4CALC/O4CALC, the PAYER and PAYEE areas have been increased by 100,000 characters each. Also, the TAX AREA has increased:

EXPAND Area	New area sizes for 5.2 (bytes)
Company area (PAYER)	132,271
Employee area (PAYEE)	124,788
TAX AREA	784,000

Note: You have the option to reduce the new size of the TAX AREA. If a "T" is added to the Machine Parameter string, then 720,000 bytes will be removed leaving 64,000.

CBSV

In CBSV, AREA 2 and AREA 4 have been increased by 100,000 characters each:

EXPAND Area	New area sizes for 5.2 (bytes)
AREA 2 (employee)	129,158
AREA 3	232,767
AREA 4 (company)	132,293

Important!

The pre-5.2 EXPANDs will not function in extracting programs from the 5.2 CYBMST. You will need to remove or modify your EXPAND control records before upgrading to 5.2.

Requirements for the 5.2 upgrade

Hewitt has significantly changed the layout of the Batch System expand records. Your pre-5.2 expand transactions will not function when extracting programs from CYBMST. Based on the new values listed above, you may be able to remove the following expansions:

- EXPAND TAX
- EXPAND PAYER
- EXPAND EMPLOYEE

Note: During this process, you should monitor the Payroll Audit Trail (0101) line 'POSITIONS LEFT IN DATA AREA'.

If you decide to keep any expand records, be aware that the EXPAND value has moved from columns 25/29 to 25/31 with leading zeros:

1	2	3
1235678901234567890123456789012345		
EXPAND TAX		0005000
EXPAND REPORT BATCH		0010000

If you wish to use the H2 'A' option to load all the U.S. tax tables, an EXPAND of 200,000 is recommended (place a 'A' in position 27 of the H2 parameter transaction - P05RDR file for P4CALC step):

1	2	3
12345678901234567890123456789012345		
EXPAND TAX		0200000

In The Solution Series application, the 'Expand Areas in CBSV Programs' form controls the expansion of AREA2, AREA3, and AREA4 – these expansions can now be set to zero.

Note: Do NOT reduce the DATABASE COMMIT value.

You can run the RECSIZ CSL program to determine the largest Employee and Company records in your FILE02 and how they relate to the new area sizes in CBSV.

APPENDIX B

Component Lists

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Tax Files	176

Server Data

Common

p05rdrqt.dat
file4mnt
file5mnt
re5204
re5205
re52m04
re52m05
cvbmst
cbsv
taxfile
taxfilec

Windows

JCONV02_REPORT.bat
JLOADHR.bat

Enhanced Reporting / DDI

MMLRecs_EnhancedRpt.dat
MMNP2Recs_EnhancedRpt.dat

UNIX

Indexed

cbsv.ovr
eprddi05
p9cbsv.04
p9cbsvc.04
Demo0105_4-byte_ASCII

Windows

Indexed

Cbsv.ovr
eprddi05
Islock.exe
O4PRT1NR
P4PART1
P9CBSV.04
JCONV02.bat
JLOADHR.bat
Demo0105_4-byte_ASCII

Oracle

f1rstr.04
f2rstr.04
O4PART1

SQL

F1RSTR.04
F2RSTR.04
O4PART1

z/OS

Demo0105_4-byte_EBCDIC

Indexed

P9CBSC04
P9CBSV04
P9STRT04
SBMidx05

DB2

P9CBSV04
P9STRT04
SBMdb205

Java Related

jbldcab
Jbldgfac

Server Programs

Common

CBSVRFT.CBL

UNIX

Indexed

cbsvb.cob

cbsvb.mf2

bsvbt.cob

cbsvo.cob

cbsvot.cob

cybio.cob

p20cnvt.cbl

p45sort.cob

p9cnvt.cob

repsort.cob

sha.cob

AIX

cybsha1.o

HP

cybsha1.o

Solaris

cybsha1.o

Oracle

RDBPGM0.cob

cbsvbr

cbsvb.pco

Windows

Indexed

CBSVB.CBL

cbsvb.mf2

CBSVBT.CBL

CBSVO.CBL

CBSVOT.CBL

CybIO.exe

cybsha1.obj

p20cnvt.cbl

p45sort.cbl

P9CNVT.CBL

repsort.cbl

sha.cbl

Oracle

CBSVB.pco

CBSVBR

RDBPGM0.cbl

SQL

CBSVB.CBL

CBSVBR

RDBPGM0.CBL

z/OS

Indexed

CBSVADV

CBSVB

CBSVBOL

CBSVBOS2

CBSVBT

CBSVO

CBSVOT

CBSVSETF

CSTCFG

CYBIO

EXCICBSV

EXCIREPL

EXECBSV

CYBSHA1

CICS

CAB.jar

CABSrv.jar

CLRTSQS.CBL

dfjvmpr.props

ftpcmds_cab.os2

ftpcmds_ior.os2

jftp_CAB.bat

DB2

cbsvb

cbsvbr

RDBPGM0

Server Scripts

UNIX

EPR

BESS

BISLOCK

BISW

BIWE

BPAY

BXTR

P247PAY

RSPAWNPAY

U247UPD

Installation

jinstallst

Indexed

j52up1

j52up2

j52upm

jcmpcvbn

jcmpcvn

jcmpp20

jcmprft

jcmpsort

jconvp20

jcrt20

jcrt20c

jcrossx

jdemo023

jdextr

jdscr08

jiswasx

jloadessgen

jloadgen
jlogexp
jlogext
jmntf08
jmntrun
jmtoanl
jmtoclr
jmtolod
jp20cvt
jp20strc
jp20strt
jpaymrg
jpaymrg_full
jpayrun
jpayxtr
jqtrrun
jupdateU
jupdgen
Oracle
jcf1rstr
jcf2rstr
jf1rstr
jf2rstr
AIX
jcmpcvbr
jcmpcvr
jxo4calr
HP Solaris
jcmpcvbr
jcmpcvr
jxo4calr

Windows

EPR

bess.bat
BHL.D.BAT
BHR.D.BAT
Bislock.bat
BISW.BAT
BIWE.BAT
Bmrg.bat
Bpay.bat
Brpt.bat
BXTR.BAT
P247LAUNCH.BAT
P247PAY.bat
RspawnPAY.BAT
RSXLAUNCH.bat
RSXUPD.BAT
U247LAUNCH.BAT
U247UPD.bat

Indexed

j52up1.bat
j52up2.bat
j52upm.bat
jclean01.bat
jcmpebio.bat
JCMPCVBN.BAT
jcmpevn.bat
JCMPCVON.BAT
Jcmp20.bat
JCMPRFT.BAT
jcmpsort.bat
jcompevb.bat
jcompevo.bat

jcossx.bat
jcrtp20
jcrtp20c
jdemo023.bat
jdocxr.bat
jdscr08.bat
jessdemo.bat
jfullmrg.bat
JISWASE.BAT
jloadESSgen.bat
jloadgen.bat
Jlogexp.bat
Jlogext.bat
JMNTF08.BAT
jmntrun.bat
jmtoanl.bat
jmtocl.bat
jmtolod.bat
JP20CNVT.BAT
jp20strc.bat
jp20strt.bat
jpaymrg.bat
jpayrun.bat
jpayxtr.bat
jqtrun.bat
JUpdateW.bat
jupdgen.bat
jxcybmst.bat
mfextfh.cfg
MFSETUP.BAT

Oracle

jcf1rstr.bat
jcf2rstr.bat
jcmpevbr.bat
jcmpevr.bat
jcmprdb0.bat
jf1rstr.bat
jf2rstr.bat
jpopf01.bat
jxo4calr.bat
jcmpsha1.bat

SQL

jcf1rstr.bat
jcf2rstr.bat
jcmpevbr.bat
jcmpevor.bat
JCMPCVR.BAT
jf1rstr.bat
jf2rstr.bat

Submit View

jqry.bat
jrpt.bat

z/OS

DB2

DATAPROC
J52UP1
J52UP2
J52UPM
JASSEMBL
JBACKEM
JBINDCYB
JBINDF
JBLDAKY

Jbldefg
JCBSVB
JCBSVBN
JCBSVBT
JCBSVO
JCBSVOT
JCF1RSTR
JCF2RSTR
jclean01
jclean3x
JCMPCBIO
JCMPCFG
JCMPCVBR
JCMPF1RS
JCMPP9C
jcmppgms
JCMPRDB0
JCMPRDBH
JCMPSUBR
JCOMCBSV
JCOMDB2O
JCOMPRFT
JCONVERT
JCONVERT.OS
JCONVNA
JCONVP20
JCONVP20.OS
JCROSSX
JCRTCYB
JCRTPGMS
Jevtcfg
Jevtrstr
JDATASET

JDEFINE
JdefSS
Jdefv22
JDEMO01
JDSCR08
JEMPDATA
JESSiswe
JESSldgn
JESSmtrn
JESSpmrg
JESSpxtr
JESSpym
JESSxpt
JESSxrg
JEXPORT
jexportr
JF1RSTR
JF2RSTR
JFULLMRG
Jfxref
jhrdemc
JHRDEMO
JISWASX
JLOGEXP
JLOGEXT
JMAINTI
JMAINTO
JMAKECL
JMNTF08
JMNTRUN
JMTOANL
JMTOCLR
JMTOLOD

JP20STRT
JPAYMRG
JPAYRUN
JPAYXTR
JPOPF01
jprdemc
JPRDEMO
JPULCVBR
JPULLRDB
JREBUILD
JRELOAD
JREPORT
Jtooldat
jupdateo
JUPDCYBM
JXCYBMST
JXO4CALC
JXP2EDIT
JXP4CALC
JXP5PRNT
jxp9cbse
JXP9CBSV
JXP9CNVT
JXP9STRT
JXREPT20
JXRPTGEN
JXRPTQTR
JXSUBRTN

Indexed

DATAPROC

J52UP1

J52UP2

J52UPM

JASSEMBL

JBACKEM

JBLDAKY

Jbldcfg

JCBSVB

JCBSVBT

JCBSVO

JCBSVOT

jclean01

jclean3x

JCMPCBIO

JCMPCFG

JCMPCVBN

JCMPP9C

JCMPPGMS

JCOMCICS

JCOMPBOL

JCOMPRFT

JCONVERT

JCONVERT.OS

JCONVNA

JCONVP20

JCONVP20.OS

JCRTP20

JCRTP20C

JCRAUDIT

Jcvtcfg

Jcvtrstr

JDATASET
JDEFBCYL
JDEFBOL
JDEF CFG
Jdefgrp
JDEFINE
Jdefomvs
JdefSS
Jdefv22
JDELETE
JDEMO01
jdemo023
JDSCR08
JEMPDATA
JESSiswe
JESSldgn
JESSmtrn
JESSpmrg
JESSpxtr
JESSpym
JESSxpt
JESSxrg
JEXPORT
JFULLMRG
Jfxref
jhrdemc
JHRDEMO
JISWASX
JLOADGEN
jlogexp
jlogext
JMAINTI
JMAINTO

JMAKECL
JMNTF08
JMNTRUN
JMTOANL
JMTOCLR
JMTOLOD
JP20STRC
JP20STRT
JPAYMRG
JPAYRUN
JPAYXTR
jprdemc
JPRDEMO
JPULCVN
JQTRRUN
JRAUDIT
Jrcvpdse
JRDOBOL
JREBUILD
JRELOAD
JREPORT
JRESUME
JRSXFTP
JSUSPEND
Jtooldat
jupdateo
JUPDCYBM
JUPDGEN
JXCYBMST
JXO4CALC
JXP2EDIT
JXP4CALC
JXP5PRNT

jxp5qtr
JXP7COMP
jxp9cbse
JXP9CBSV
JXP9CNVT
JXP9STRT
JXREPT20
JXRPTGEN
JXRPTQTR
JXSUBRTN

Server Events

Common

CyborgEventService.exe

CybEvtSvc.cpl

DLLs

Registered

BackendEventsLibrary.dll

WebApp

srvevent.war

Canada

srvevent_fr.war

Tax Files

U.S.

taxfile

Canada

Taxfilec

APPENDIX C

Report Generators

In This Appendix

5.2 Report Generators.....178

5.2 Report Generators

The following table lists the Report Generators (RGs) delivered with 5.2:

Generator	Name as listed on CYBMST	Generator Name	New/Changed
010A	R.RPT0A	PERMANENT CONSTANTS	
010G	R.RPT0G	VARIABLE CONSTANTS V1.0	
010O	R.RPT0O	WRKFLDS	
010P	R.RPT0P	PAY CONSTANTS	
0100	R.RPT00	ERRORS AND WARNINGS V1.1	
0100	R.RPT00F	ERREURS ET AVERTIS.1.0F	
0101	R.RPT01	PAYROLL AUDIT TRAIL V1.0	
0101	R.RPT01F	VÉRIFICATION - PAIE V1.1	
0103	R.RPT03	CONTROL HEADERS V3.01	Changed
0103	R.RPT03F	EN-TÊTES CONTRÔLE V2.00F	
0117	R.RPT17	EDIT ERROR MESSAGES 1.0	
0118	R.RPT18	ROUTINE NUMBERS 000-099	
0119	R.RPT19	ROUTINE NUMBERS 100-255	
0120	R.RPT20	DEFINE EDIT TABLES V1.0	Changed
0121	R.RPT21	FIELD NUMBERS 1-100	
0122	R.RPT22	FIELD NUMS 101-200 V1.0	
0123	R.RPT23	FIELD NUMS 201-300 V1.0	Changed
0124	R.RPT24	FIELD NUMBERS 301-400	
0125	R.RPT25	FIELD NUMBERS 401-500	
0126	R.RPT26	FIELD NUMBERS 501-600	
0127	R.RPT27	FIELD NUMBERS 601-700	
0128	R.RPT28	FIELD NUMBERS 701-800	
0129	R.RPT29	FIELD NUMS 801-900 V1.1	Changed
0202	R.RPT02	MASTER FILE PRINT V1.4	Changed
0202	R.RPT02F	DOSSIER MAÎTRE V1.01F	
0404	R.RPT04	UNLOAD MASTER DATA V1.20	Changed
0505	R.RPT05	ACCRUAL REPORT v1.01	
0505	R.RPT05F	RAPPORT ACCUMULÉ	
1C1C	R.RPT1C	PAY RECONCILIATION V1.01	
1C1C	R.RPT1CF	RAPPROCHEMENT DE PAIE 1F	
1H1H	R.RPT1H	HISTORY REPORT V1.2	Changed

Generator	Name as listed on CYBMST	Generator Name	New/Changed
1H1H	R.RPT1HF	RAPPORT HISTORIQUE PAIE	
1J1J	R.RPT1J	CORRECT CITY/ST FMT V1.0	Changed
1K1K	R.RPT1K	DUMMY GEN FOR 1J1J ADJS	
1L1L	R.RPT1L	LABOR REPORT 40.0	
1L1L	R.RPT1LC	LABOUR REPORT 40.0	
1L1L	R.RPT1LF	RAPPORT MAIN-D'OEUVRE 40	
1M1M	R.RPT1M	Flat Rate Tax Filing Rpt	
1S1S	R.RPT1S	SSA EVS INTERFACE V1.10	
1T1T	R.RPT1T	R1-SRC/R2-SCR RPT V1.00	
1Y1Y	R.RPT1Y	DELETE WLFDW2 DATA	
1Z1Z	R.RPT1Z	TAX ADJ FROM MEMO HEDS.	
2B2B	R.RPT2B	FLAG ACTIVE J'S v1.0	Changed
2C2C	R.RPT2C	OUTSTANDING RECON NBRS.	
2C2C	R.RPT2CF	NOS RAPPRO. EN CIRCUL.	
2F2F	R.RPT2F	0 FREQS.-TERM. EMPS. 2.0	Changed
2F2F	R.RPT2FF	FRÉQ.ZÉRO-CESSATION EMP	
2G2G	R.RPT2G	0 GARNNS.-TERM. EMPS. 1.0	New
2H2H	R.RPT2H	HED'S-COMB REG LARGE	Changed
2H2H	R.RPT2HF	HED'S-COMB REG LARGE	Changed
2K2K	R.RPT2K	GARNISHMENTS ACTIONED	New
2L2L	R.RPT2L	PAYROLL SUMMARY REP V1.0	New
2M2M	R.RPT2M	MEMO HED'S	Changed
2M2M	R.RPT2M-COMREG	MEMO HED'S + COM REG	New
2M2M	R.RPT2MF	MÉMO REGISTRE HED GROSS	Changed
2M2M	R.RPT2MF+COMREG	MÉMO REGISTRE + COM REG	New
2P2P	R.RPT2P	PHILA TAX REPORT	
2R2R	R.RPT2R	PITTSBURGH TAX REPORT	
2S2S	R.RPT2S	WAGE SUPPLEMNTL RPT V1.1	Changed
2T2T	R.RPT2T	TAXES-COMB REGISTER V1.3	Changed
2T2T	R.RPT2TF	IMPÔTS-REGISTRE COM 1.0F	Changed
2U2U	R.RPT2U	FUI WAGES BY STATE	
2W2W	R.RPT2W	AUDIT TRAIL WARNINGS	
2W2W	R.RPT2WF	AVERTIS. VÉRIFI.PAIE	
2X2X	R.RPT2X	OUT OF BALANCE CHECK	
2X2X	R.RPT2XF	VÉRIF.HORS ÉQUILIBRE	

Upgrading The Solution Series from 5.0 to 5.2

Generator	Name as listed on CYBMST	Generator Name	New/Changed
2222	R.RPT22	COMBINED REGISTER	Changed
2222	R.RPT22F	REGISTRE COMBINÉ	Changed
3U3U	R.RPT3U	Tax Arrears Report V1.0	New
4C4C	R.RPT4C	X CARDS-MANUAL RECON	
4L4L	R.RPT4L	SUMMARIZE LABOR V1.0	Changed
4L4L	R.RPT4LF	SOMMAIRE MAIN-D'OEUVRE	
4R4R	R.RPT4R	ER CARDS-MANUAL RECON	
4S4S	R.RPT4S	SUPPLEMENTAL WGS RPT 1.0	New
4W4W	R.RPT4W	NON-SUBMITTED W-4'S	
4X4X	R.RPT4X	MODIFY WITHHOLDING	
4040	R.RPT40	CREATE ER VOID(CARD)	
4141	R.RPT41	TRANSFER BASIC DATA V1.0	
4242	R.RPT42	TRANSFER AMOUNTS	
4245	R.RPT45	PAYROLL ER VOID(RECYCLE)	
4343	R.RPT43	HISTORY REVERSAL	
4646	R.RPT46	FOR. CURR. SCHED. V1.0	
4747	R.RPT47	COST CENTRE SUMM V1.0	
4848	R.RPT48	FOR. CURR. BY EMP V1.0	
4949	R.RPT49	ALL CURR BY EMP V1.0	
5G!A	R.RPT!A	CONSUMER ALASKA V1.0	New
5G!B	R.RPT!B	CONSUMER ARKANSAS V1.0	New
5G!C	R.RPT!C	MC !C FOR COLUMBIA V1.0	New
5G!D	R.RPT!D	MC !D FOR HAWAII V1.0	New
5G!E	R.RPT!E	MC !E FOR MO NE V1.0	New
5G!F	R.RPT!F	MC !F FOR NJ AND NY	New
5G!G	R.RPT!G	MC !G FOR ND SD TN V1.0	New
5G!H	R.RPT!H	MC !H FOR OREGON V1.0	New
5G!I	R.RPT!I	CONSUMER GARN RI V1.0	New
5G!J	R.RPT!J	CONSUMER GARN TN SD V1.0	New
5G!K	R.RPT!K	CONSUMER GARN MD OR 1.0	New
5G!L	R.RPT!L	CHILD SUPP CA V1.0	New
5G!M	R.RPT!M	CHILD SUPPCT V1.0	New
5G!N	R.RPT!N	CHILD SUPP NC V1.0	New
5G!O	R.RPT!O	MC !O FOR OREGON V1.0	New
5G!P	R.RPT!P	MC !P FOR RI V1.0	New
5G!Q	R.RPT!Q	WAGE ASSIGN ARIZONA V1.0	New

Generator	Name as listed on CYBMST	Generator Name	New/Changed
5G!R	R.RPT!R	NM CA MT SD VT VA V1.0	New
5G!S	R.RPT!S	WAGE ASSIGN COL. V1.0	New
5G!T	R.RPT!T	WAGE ASSIGN ILL. V1.0	New
5G!U	R.RPT!U	WAGE ASSIGN MASS V1.0	New
5G!V	R.RPT!V	WAGE ASSIGN NEW YORK 1.0	New
5G!W	R.RPT!W	WAGE ASSIGN RI WI V1.0	New
5G!X	R.RPT!X	WAGE ASSIGN W.VIR V1.0	New
5G!Y	R.RPT!Y	WAGE ASSIGN AZ WV V1.0	New
5G!Z	R.RPT!Z	MC !Z FOR WV V1.0	New
5G!I	R.RPT!I	WAGE ASSIGN !I V1.0	New
5G+C	R.RPT+C	FEDERAL TAX LEVY	New
5G+D	R.RPT+D	SUPPORT LEVY	New
5G+E	R.RPT+E	OTHER LEVY	New
5GPC	R.RPTPC	GST M.C.	
5G1B	R.RPT1B	NAME FORMAT SUBRTN v003	
5G2L	R.RPT2L	2L2L SUBROUTINE V1.0	New
5G35	R.RPT35	BENEFITS ROUTINES	
5G4F	R.RPT4F	FRICK SUBROUTINE V1.00	
5G51	R.RPT51	FIPS POST. CODES v002	
5G6C	R.RPT6C		
5G6I	R.RPT6I	CH SUPPORT ACH TAPE V1.5	New
5G6R	R.RPT6RR	RECIPROCAL FLAG SETUP	
5G7B	R.RPT7B	RG TAX METHOD CODES V1.0	
5G7R	R.RPT7R	RECIP TAX OFFSETS V2.0	Changed
5G8A	R.RPT8A	ACCUMULATION M/C V1.04	
5G8B	R.RPT8B	MINIMUM CHECK M/C	
5G8C	R.RPT8C	INTEREST CALCULATION	
5G8G	R.RPT8G	GARNISHMENT M/C V1.03	
5G8Q	R.RPT8Q	HOURS WORKED M/C v001	
5G8R	R.RPT8R	RECIP TAX SETUP M/C V1.0	New
5G9A	R.RPT9A	WASH IND COMM 5 DEC RATE	
5G9E	R.RPT9E	DATE DRIVEN TC MC 38.0	
5G9K	R.RPT9K	ROUND NET PAY	
5G9W	R.RPT9W	HOURS WORKED M.C. V1.00	
5G9Y	R.RPT9Y	RATE X FACTOR M.C. V1.0	

Upgrading The Solution Series from 5.0 to 5.2

Generator	Name as listed on CYBMST	Generator Name	New/Changed
5G97	R.RPT97	PC SORT BINARY	
5H5Z	R.RPT5Z	ON-LINE CSSS ROOT V1.04	Changed
5R5R	R.RPT5R	RECIP TAX OFFST RPT V1.0	New
5Z5Y	R.RPT5Y	BUILD RANDOM FILE	
5558	R.RPT58	ENDING BALANCES	
5558	R.RPT58F	SOLDE DE CLÔTURE	
5959	R.RPT59	BOND BALANCE REGISTER	
6A6A	R.RPT6A	ACH TAPE V1.4	
6B6B	R.RPT6B	CANADIAN DIRECT DEPOSIT	
6B6B	R.RPT6BF	DÉPÔT DIRECT CANADIEN	
6D6D	R.RPT6D	DIRECT DEPOSIT REG V1.2	Changed
6D6D	R.RPT6DF	REGISTRE DÉPÔT DIRECT	
6E6E	R.RPT6E	DIRDEP REG, BY PMNT DATE	
6E6E	R.RPT6EF	DÉP DIR RÉG,PAR DATE PMT	
6H6H	R.RPT6H	UPDT. L7O/LPO GARN V1.1	Changed
6I6I	R.RPT6I	ACH TAPE CH-SUP 5.2 V1.8	Changed
6K6K	R.RPT6K	DEP SLIP/COMB. REGISTER	Changed
6L6L	R.RPT6L	PAY DOC./COMB. REG. V1.2	
6R6R	R.RPT6R	CH SUPP ACH REG. V1.1	
6S6S	R.RPT6S	BILLING STATISTICS V1.0	
6262	R.RPT62	CANADIAN CHEQUE V1.20	Changed
6263	R.RPT63	CANADIAN CHEQ-FREN V1.10	Changed
6262	R.RPT62L	CDN LASER CHEQUE V1.40	Changed
6263	R.RPT63F	CANADIEN - CHÈQUE V1.10	Changed
6263	R.RPT63L	CDN CHEQUE-FREN LS V1.10	Changed
6666	R.RPT66	CAN. DEPOSIT SLIP V1.10	Changed
6666	R.RPT66F	REGIS DE DÉPÔT-CDN V1.10	Changed
6666	R.RPT66L	CAN. DEPOSIT LSR V1.10	Changed
6767	R.RPT67	DEPOSIT SLIP-COMB. REG.	
6868	R.RPT68	CHECK-COMBINED REG V1.4	Changed
7A7A	R.RPT7A	PD7A REMITTANCE V00.01	
7A7A	R.RPT7AF	VERSEMENT PD7A V00.01	
7C7C	R.RPT7C	DISTRIBUTION REPORT	
7C7C	R.RPT7CF	RAPPORT DE DISTRIBUTION	
7D7D	R.RPT7D	BLS MWR FORMT V37.01	
7E7E	R.RPT7E	Data Mart HL Xtrat V1.53	

Generator	Name as listed on CYBMST	Generator Name	New/Changed
7G7G	R.RPT7G	CAN PAYROLL SAVINGS V1.0	
7G7G	R.RPT7GF	ÉPARGNE CANADA -PAIE V1.0	
7H7H	R.RPT7H	CPS REGISTER	
7H7H	R.RPT7HF	REGISTRE OEC	
7L7L	R.RPT7L	PAY INFO EXTRACT V1.1	Changed
7L7L	R.RPT7LA	PAY INFO EXTRACT V1.1	
7L7L	R.RPT7LF	EXTRAIT INFO PAIE V1.0	
7M7M	R.RPT7M	PAYSLIP EXTRACT V1.1	Changed
7M7M	R.RPT7MA	PAYSLIP EXTRACT V1.1	
7M7M	R.RPT7MF	PAYSLIP EXTRACT V1.0	
7Q7Q	R.RPT7Q	BACK OUT QTD FIGURES	
7S7S	R.RPT7S	WCB - MONTHLY V00.01	
7S7S	R.RPT7SF	CST - MENSUEL V00.01F	
7T7T	R.RPT7T	TAX REPORTING TAPE	
7U7U	R.RPT7U	REPORT ON HIRINGS	
7V7V	R.RPT7V	CDN WCB REPORT V00.01	
7V7V	R.RPT7VF	RAPPORT CST V00.01F	
7W7W	R.RPT7W	WORKERS COMP REPORTV1.1	Changed
7Y7Y	R.RPT7Y	CDN NF WCB V01.01	
7Y7Y	R.RPT7YF	WHSCC (NF) V00.01F	
7Z7Z	R.RPT7Z	WCB-NOVA SCOTIA V00.01	
7Z7Z	R.RPT7ZF	CST-NOUVELLE ÉCOSSE 1.0F	
7575	R.RPT75	JOURNAL ENTRY-FILE V1.0	
7575	R.RPT75F	DOSSIER-ÉCRITURE JRNL1.F	
7676	R.RPT76	JOURNAL ENTRY-PRT V1.0	
7676	R.RPT76F	ÉCRITURE JOURNAL V1.00F	
7777	R.RPT77	PAYROLL ACCRU-TAPE V1.00	
7777	R.RPT77F	BANDE-PAIE ACCUMUL.V1.0F	
7878	R.RPT78	PAYROLL ACCRU-PRNT V1.00	
7878	R.RPT78F	RAP-PAIE ACCUMUL. V1.00F	
7979	R.RPT79	LABOR DISTRIBUTION V1.01	
7979	R.RPT79F	DISTR.MAIN D'OEUVRE 1.0F	
8S8S	R.RPT8S	COLLECT HOURS WORKED	
8T8T	R.RPT8T	YEAR END CLEARINGS V1.0	
8T8T	R.RPT8TF	SUPPR FIN EXERCISE V1.0	

Upgrading The Solution Series from 5.0 to 5.2

Generator	Name as listed on CYBMST	Generator Name	New/Changed
8W8W	R.RPT8W	W-2 FORMS ESTIM. V1.0	
8Z8Z	R.RPT8Z	COLLECT HOURS WRKED V1.0	Changed
9A9A	R.RPT9A	941 SUMMARY REPORT v001	
9B9B	R.RPT9B	QUARTERLY EMP CNTS v001	
9E9E	R.RPT9E	MASTER FILE STATUS V1.10	Changed
9F9F	R.RPT9F	MASTER FIL STAT (CAN)V1.0	
9F9F	R.RPT9FF	DOSSIER MAÎTRE D'ÉTAT V1.0	
9H9H	R.RPT9H	DELETE UNUSED H & J SEGS	
9M9M	R.RPT9M	STATISTICS CANADA REPORT	
9M9S	R.RPT9S	STATS CANADA - PART 2	
9N9N	R.RPT9N	INSURABLE EARNINGS	
9R9R	R.RPT9R	RETRO PAY INCREASE	
9090	R.RPT90	PD FRQ TAX FLNG RPTV1.3	Changed
9091	R.RPT91	ALL FREQ TAX FILING V1.2	Changed
9595	R.RPT95	STATE 941A'S v788	
9\$9\$	R.RPT9\$	FEDERAL SUMMARY RPT v001	

APPENDIX D

Machine Parameters

In This Appendix

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5.1 Machine Parameters

Introduction

This appendix provides detailed machine parameter information for Distributed Administration programs. These machine parameters are to be used along with the delivered library files (DSCYBMST for your 5.2 environment to extract, compile, and link Distributed Administration executables (DSTRIB, DSRECV, and DSPACK).

UNIX and Windows Platforms Using Microfocus Compiler (with or without relational database)

```
      1 1 2 2 3 3 4 4 5
1...5...0...5...0...5...0...5...0...5...0
DSTRIB | ISEV@C MICRO-FOCUS.
** C.DSTRIB
999999
DSRECV | ISEV@C MICRO-FOCUS.
** C.DSRECV
999999
DSPACK | ISEV@C MICRO-FOCUS.
** C.DSPACK
999999
```

IBM Mainframe Platforms (with or without relational database)

```
      1 1 2 2 3 3 4 4 5
1...5...0...5...0...5...0...5...0...5...0
DSTRIB OPCY IBM-370.
** C.DSTRIB
999999
DSRECV OPCY IBM-370.
** C.DSRECV
999999
DSPACK OPCY IBM-370.
** C.DSPACK
999999
```

APPENDIX E

Tables and Forms

In This Appendix

5.2 Tables and Forms.....188

5.2 Tables and Forms

Introduction

The following tables list the tables/forms added or modified in 5.2. The information has been presented in two formats—by Solution Series form and by Table.

Solution Series forms added/changed

The following table shows the Solution Series forms that have been added or amended since 5.1:

Solution Series Forms Added/Changed since 5.1	Table	Segment
02-SCR	EMP_MILITARY_DATE	ML6F
30HSCR	FORMAL_EDUC_REQ	L6S
59CSCR	DEPENDENT_GTL_CVG	L9X
AF-SCR	PAY_PROCESS_OPT	DCAF
ARPSUB	RETROACTIVE_INFO	MLG6
AW-SCR	PR_TABLE_CTRL	YTZAW
CK-SCR	REGISTER_OVERRIDES	DCKK
FFGSCR	NAME_ADDR_REQ_NAME	L8Q
GR1SCR	GRNS_EE_ORD_PART1	L76
	GRNS_EE_ORD_PART2	L77
GR2SCR	GRNS_EE_ORD_PART3	L78
GR3SCR	GRNS_EE_ORD_PART4	L79
GR4SCR	GRNS_EE_ORD_PART5	L70
GRASCR	GRNS_REQ_DED	YUG01
GRBSCR	GRNS_REQ_DED_HED	YUG02
GRCSCR	GRNS_DED_PRI	YUG03
GRDSCR	GRNS_HED_RANGE	YUG04
GRESR	GRNS_TAX_LEVY_RULE	YUG05
GRFSCR	GRNS_SUPPORT_RULES	YUG06
GRGSCR	GRNS_GARN_RULES	YUG07
GRHSCR	GRNS_NDI_REDUCT	YUG08
GRKSCR	GRNS_ACH_HEAD	DCC8
	GRNS_ST_ACH_HEAD	DCC9
GRTSCR	GRNS_SWTCH_OFF	YUG13
HL-SCR	RETROACTIVE_INFO	MLG6
JTASCR	TAX_ARREARS_BLNCE	L6O

Solution Series Forms Added/Changed since 5.1	Table	Segment
OP-SCR	EMP_OVERTIME_PREM	L7D
PD-SCR	V80_BENEFIT	LPD
PEMSCR	MISC_PAY_DETAILS	L8Z
PTMSCR	PLCY_MEAL_PNLT	YT_PM
QI-SCR	QTR_ADTL_INFO_B	YUQR9B
QM-SCR	QTR_COMPUTER_INFO	YUQR4
QN-SCR	QTR_CONTACT_INFO_C	YUQR3C
RPCSCR	RETRO_PAY_CONTROL	YURPC
RPMSCR	RETRO_PAY_METHOD_1	YURPMA
	RETRO_PAY_METHOD_2	YURPMB
RPPSCR	RETRO_PAY_PROCESS1	YURPPA
	RETRO_PAY_PROCESS2	YURPPB
STMSCR	SCHD_MEAL_PNLT	YT_SM
T1-SCR	TAX_SPECIFICATION	HIDX
TAWSCR	PNLT_WAIVERS	LTT
TE1SCR	TAX_WORK_LOCATION	UTE1
TE4SCR	TAX_WORK_LOCN	ML86
Multiple	EMPLOYMT_ACTIVITY	MLZC

Solution Series tables added/changed

The following table shows the Solution Series tables that have been added or amended since 5.1:

Tables Added/Changed since 5.1	Segment	Solution Series Form
DEPENDENT_GTL_CVG	L9X	59CSCR
EMP_MILITARY_DATE	ML6F	02-SCR
EMP_OVERTIME_PREM	L7D	OP-SCR
EMPLOYMT_ACTIVITY	MLZC	Multiple
FORMAL_EDUC_REQ	L6S	30HSCR
GRNS_ACH_HEAD	DCC8	GRKSCR
GRNS_C9_HED	DCC9	GRKSCR
GRNS_EE_ORD_PART1	L76	GR1SCR
GRNS_EE_ORD_PART2	L77	GR1SCR
GRNS_EE_ORD_PART3	L78	GR2SCR
GRNS_EE_ORD_PART4	L79	GR3SCR
GRNS_EE_ORD_PART5	L70	GR4SCR
GRNS_GARN_RULES	YUG07	GRGSCR
GRNS_NDI_REDUCT	YUG08	GRHSCR
GRNS_REQ_DED	YUG01	GRASCR
GRNS_REQ_DED_HED	YUG02	GRBSCR
GRNS_DED_PRI	YUG03	GRCSCR
GRNS_ST_ACH_HED	DCDA	GRLSCR
GRNS_SUPPORT_RULES	YUG06	GRFSCR
GRNS_SWTCH_OFF	YUG13	GRTSCR
GRNS_TAX_LEVY_RULE	YUG05	GRESOCR
MISC_PAY_DETAILS	L8Z	PEMSCR
NAME_ADDR_REQ_NAME	L8Q	FFGSCR
PAY_PROCESS_OPT	DCAF	AF-SCR
PLCY_MEAL_PNLT	YT_PM	PTMSCR
PNLT_WAIVERS	LTT	TAWSCR
PR_TABLE_CTRL	YTZAW	AW-SCR
QTR_ADTL_INFO_B	YUQR9B	QI-SCR
QTR_COMPUTER_INFO	YUQR4	QM-SCR
QTR_CONTACT_INFO_C	YUQR3C	QN-SCR
REGISTER_OVERRIDES	DCCK	CK-SCR

Tables Added/Changed since 5.1	Segment	Solution Series Form
RETROACTIVE_INFO	MLG6	HL-SCR ARPSUB
RETRO_PAY_CONTROL	YURPC	RPCSCR
RETRO_PAY_METHOD_1	YURPMA	RPMSCR
RETRO_PAY_METHOD_2	YURPMB	RPMSCR
RETRO_PAY_PROCESS1	YURPPA	RPPSCR
RETRO_PAY_PROCESS2	YURPPB	RPPSCR
SCHD_MEAL_PNLT	YT_SM	STMSCR
TAX_ARREARS_BLNCE	L6O	JTASCR
TAX_SPECIFICATION	HIDX	T1-SCR
TAX_WORK_LOCN	ML86	TE4SCR
TAX_WORK_LOCATION	UTE1	TE1SCR
V80_BENEFIT	LPD	PD-SCR

Tables obsoleted since 5.1:

Table	Segment
QTR_LOCAL_REPORTNG	YUQRL

APPENDIX F

Changes to Menu Records

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5.1 Menu Records

Previous Menu Record Layout

Menu records for The Solution Series have been changed for internationalization. The record now holds an alternate language version of the menu item title as well as the already existing primary language version. The record is a fixed length of 80 bytes.

Title	Size (bytes)	Position	Possible Values
Primary key	4	1–4 (inc)	"MMNP"
Level 0	1	5	"0" – "9"
Level 1	2	6–7 (inc)	"00" – "99"
Level 2	2	8–9 (inc)	"00" – "99"
Level 3	2	10–11 (inc)	"00" – "99"
Filler	12	12–23 (inc)	Blank text
Product Flag	1	24	" ", "W", "G", "N"
Program	6	25–31 (inc)	"EF-SCR", etc
Bitmap	1	32	"Y" or " "
Type	1	33	"C", "D", "H", "F", "S", "W"
Separator	1	34	"-" or blank
Clear Keys	1	35	"C" or blank
Menu Title	40	36–75 (inc)	"Job Assignment In&quiry"
Help ID	4	76–79 (inc)	"8001" or blank

The 80th byte is used to terminate the record.

New Record Layout

The new record is 160 bytes long (2 x 80 bytes). This is accomplished by using two 'physical' records as one 'logical' record. Both records have the same key, and a suffix of either '1' for the first half of the record or a '2' for the second half. An example follows:

```

0.....+.....1.....+.....2.....+.....3.....+.....4.....+.....5.....+.....6.....+.....7.....+.....8
MMNP0000420 1           G06-SCR F CJob Assignment In&quiry
MMNP0000420 2           L'En&quête de Tâche de travail
    
```

Warning: The measurement characters above should not be used to calculate the position of the fields. To correctly calculate the position of a field, use the table that follows.

New Menu Record Layout Part 1

The table that follows shows the first 80 bytes of the record. New additions are highlighted.

Title	Size (bytes)	Position	Possible Values
Primary key	4	1–4 (inc)	"MMNP"
Level 0	1	5	"0" – "9"
Level 1	2	6–7 (inc)	"00" – "99"
Level 2	2	8–9 (inc)	"00" – "99"
Level 3	2	10–11 (inc)	"00" – "99"
Filler	1	12	Blank
New style record indicator	1	13	"1"
Filler	10	14–23 (inc)	Blank
Product Flag	1	24	" " for none, "W" for WebClient, "G" for GUI, or "N" for none.
Program	6	25–30 (inc)	"EF-SCR", etc
Bitmap	1	31	"Y" or " "
Type	1	32	C, D, H, F, S, or W
Separator	1	33	"-" or blank
Clear Keys	1	34	"C" or blank
Menu Title	40	35–74 (inc)	"&Quick Hire"
Help ID	4	75–78 (inc)	"8001" or blank
Filler	1	79	blank

The 80th byte is used to terminate the record.

New Menu Record Layout Part 2

The concluding 'half' of the record (the second 80 bytes) is displayed below. New additions or differences are highlighted in bold.

Title	Size (bytes)	Position	Possible Values
Primary key	4	1-4 (inc)	"MMNP"
Level 0	1	5	"0" – "9"
Level 1	2	6-7 (inc)	"00" – "99"
Level 2	2	8-9 (inc)	"00" – "99"
Level 3	2	10-11 (inc)	"00" – "99"
Filler	1	12	Blank
New style record indicator	1	13	"2"
Filler	11	14-24 (inc)	Blank
Alternate Menu Title	40	25-64 (inc)	"L'Enquête de Tâche de travail"
Filler	15	65-79(inc)	Blank

The 80th byte is used to terminate the record.

5.2 Menu Records

The following tables detail the menu records added or amended in the 5.2 release.

Upgrading The Solution Series from 5.0 to 5.2

New menu items

The following table gives details of menu records added for 5.2:

Menu (1)	Component (2)	Process (3)	Task (4)	Prog. name	Hot Key	Div line	Form	Sub menu	Help	Clear Keys	Web Dsply	
<u>HR</u>	Employee <u>R</u> esourcing	Maintain <u>A</u> dditional Employee Details	<u>H</u> igh Potential Employees	HP-SCR	H		*					
<u>HR</u>	Employee <u>D</u> evelopment	<u>E</u> mployee Skills, Competencies, Training	<u>H</u> igh Potential Employees	HP-SCR	H		*					
<u>HR</u>	HR <u>S</u> etup	<u>S</u> etup HR Rules	Organization to Rules Cross-Reference <u>2</u>	BX-SCR	2		*			*		
			Autom <u>a</u> tic Employee Numbering	AUTSCR	M		*			*		
		Setup <u>V</u> ETS-100 Rules (New submenu)				V			*			
		Setup <u>V</u> ETS-100 Rules	Establish VETS-100 Headquarter Location	VTCSQR	Q			*				
			Establish VETS-100 <u>H</u> iring Locations	VT-SCR	H			*				
			<u>R</u> eporting Information	HR9999	R	*				*		
<u>HR</u>	Position Administration	<u>P</u> osition Details	<u>S</u> etup/Maintain Career Paths	MCPSQR	S		*					
			<u>K</u> ey Positions	MKPSQR	Y		*					
		<u>W</u> orkforce Planning (New submenu)				W	*					
		<u>W</u> orkforce Planning	<u>S</u> etup/Maintain Career Paths	MCPSQR	S			*				
			<u>H</u> igh Potential Employees	HP-SCR	H			*				
			<u>K</u> ey Positions	MKPSQR	Y			*				

Menu (1)	Component (2)	Process (3)	Task (4)	Prog. name	Hot Key	Div line	Form	Sub menu	Help	Clear Keys	Web Dsply	
Benefits	Health/ Welfare Plan Enrollment/ Maint	Eligibility and Enrollment	Dependent Group Term Life Coverage	59CSCR	E		*					
Payroll	Employee Payroll	Maintain Employee Payroll Details	Overtime Premium	OP-SCR	R							
			Employee Dated HEDs	HHSSCR	E	*	*					
			Employee Dated Direct Deposits	H9SSCR	A		*					
			Employee Dated Hours and Pay Rate	H1SSCR	O		*					
		Maintain <u>R</u> .O.E. Information (New submenu)					R			*		
		Maintain Employee <u>G</u> arnishment Details (New submenu)					G			*		
		Maintain Employee <u>G</u> arnishment Details	Garnishment Admin <u>1</u> (Dates & Info)	GR1SCR	1		*					
			Garnishment Admin <u>2</u> (HED Info)	GR2SCR	2		*					
			Garnishment Admin <u>3</u> (Protections)	GR3SCR	3		*					
			Garnishment Admin <u>4</u> (Electronic Filing)	GR4SCR	4		*					
		<u>V</u> iew Employee Payroll Details (New submenu)					V			*		
		<u>V</u> iew Employee Payroll Details	Employee Dated <u>H</u> EDs	HSISCR	H		*					
		<u>T</u> ime & Entry	<u>G</u> roup Time Entry	DLG009	G							
Payroll	Payroll Setup Processing	<u>E</u> arnings/ Deductions/	<u>V</u> oluntary Deduction Rules	UX-SCR	V		*					

Upgrading The Solution Series from 5.0 to 5.2

Menu (1)	Component (2)	Process (3)	Task (4)	Prog. name	Hot Key	Div line	Form	Sub menu	Help	Clear Keys	Web Dsply
		Accruals	Paycheck Estimator HEDs	UY-SCR	P		*				
		Payroll Processing Setup	Register Overrides	CK-SCR	R		*				
		Tax Information	Associated Tax Codes Table	URLSCR	O		*				N
		Garnishment Administration Rules (New submenu)			N			*			
		Garnishment Administration Rules	HEDs For Required Deduction HED Types	GRBSCR	H		*				
			HED Range for Garnishment Type	GRDSCR	E		*				
			Net Disposable Income Reduction HEDs	GRHSCR	N		*				
			Required Deduction HED Types	GRASCR	R	*	*				
			Deduction Priority	GRCSCR	D		*				
			Federal Tax Levy Protection Rules	GRESOCR	F		*				
			Support Protection Rules	GRFSCR	S		*				
			Garnishment Protection Rules	GRGSCR	G		*				
			Switching off Garnishments	GRTSCR	W		*				
TA	Time and Attendance	Setup/Maintain Employee	Meal Penalty Waivers	TAWSCR	W		*				
		Set up TA Rules	Policy Meal Penalty Rules	PTMSCR	L		*			*	
			Schedule Meal Penalty Rules	STMSCR	M		*			*	

Menu (1)	Component (2)	Process (3)	Task (4)	Prog. name	Hot Key	Div line	Form	Sub menu	Help	Clear Keys	Web Dsply
<u>T</u> A	Time <u>E</u> ntry (New submenu)				T						
<u>T</u> A	Time <u>E</u> ntry	Employee <u>M</u> anager Time Entry (New submenu)			M				*		
		Employee <u>M</u> anager Time Entry	Time Entry <u>W</u> orkflow Enabling	T934CR	W		*			*	
			Time Entry/ <u>H</u> ED Cross Reference	TATSCR	H		*			*	
			Time Entry <u>R</u> ecord Retention Parameters	ITRTCR	R		*			*	
			Department-Option List Mapping	GGTSCR	D		*			*	
			Payroll Administrator <u>I</u> nbox of Time Entries	ITMSCR	I		*			*	
			Payroll Administrator <u>A</u> pproval/Process	GENTCR	A		*			*	
			<u>P</u> urge Time Entry Records	PURTCR	P		*			*	
			<u>L</u> ocal Administrator Setup	ITEADM	L		*			*	
<u>T</u> ools	<u>U</u> ser Tools	<u>U</u> ser Tools	Logon <u>D</u> uration Auditing	LOG000	D		*		*		
<u>T</u> ools	<u>A</u> dministrator Tools	<u>A</u> dministrator Tools	<u>P</u> urge FILE08	MNTF08	P		*			N	
		<u>C</u> hecklist Tools	Create/Modify a <u>C</u> hecklist	WIZ001	C						N
			Remove a <u>C</u> hecklist	DLG005	H						N
			<u>P</u> aused Checklist Details	MMPSCR	P	*	*				
		<u>E</u> dit Paused Checklists	MMPRSC	E		*					

Upgrading The Solution Series from 5.0 to 5.2

Menu (1)	Component (2)	Process (3)	Task (4)	Prog. name	Hot Key	Div line	Form	Sub menu	Help	Clear Keys	Web Dsply
			View Completed Paused Checklist	MMPCSC	V		*				
			Delete Completed Paused Checklist	DELMMP	D		*				
Tools	Security Tools	Security Tools	Extended Security Setup	SECEXT	X		*				
			User Account Setup	SECUSR	T		*				
			Account Removal	SECRMV	V		*				

Amended menu items

The following table shows changes to the menu records or 5.2:

Menu (1)	Component (2)	Process (3)	Task (4)	Prog. name	Amendment	
HR	Employee Resourcing	Maintain Additional Employee Details	Drivers License	25-SCR	Moved to after Non-Monetary Perquisites	
			EEO-4 Reporting Information	EO4SCR	Changed places with Alternative Compensation Totals	
	HR Setup	Setup EEO Rules	Establish EEO Hiring Locations	TX-SCR	Renamed from EEO Establishment Definition	
			Establish EEO Parent Company Definition	TXCSCR	Renamed from EEO Parent Company Definition	
	Position Administration	Position Details	Basic Details	M20SCR	Changed hot key designation from B to a	
			Skills Required	M23SCR	Changed hot key designation from S to k	
Benefits	Health/Welfare Plan Enrollment/Maint	Eligibility and Enrollment	Check EE Plan Eligibility	90-SCR	Changed hot key designation from E to k	
Payroll	Employee Payroll	Maintain Employee Payroll Details	Reciprocal Tax Setup	JR-SCR	Deleted	
		Maintain R.O.E. Information				New submenu
		Maintain R.O.E. Information	R.O.E. General Information	EI1SCR	Moved from Maintain Employee Payroll Details submenu	
			R.O.E. Other Earnings	EI2SCR	Moved from Maintain Employee Payroll Details submenu	
			R.O.E. Comments	EI3SCR	Moved from Maintain Employee Payroll Details submenu	
		View Employee Payroll Details				New submenu
		View Employee Payroll Details	Earnings and Deductions	HHISCR	Removed 'View' from name and moved from Maintain Employee Payroll Details submenu	

Upgrading The Solution Series from 5.0 to 5.2

Menu (1)	Component (2)	Process (3)	Task (4)	Prog. name	Amendment
			T <u>a</u> x Information	JJISCR	Removed 'View' from name and moved from Maintain Employee Payroll Details submenu
			L <u>a</u> bor <u>A</u> llocations	GGISCR	Removed 'View' from name and moved from Maintain Employee Payroll Details submenu
			<u>D</u> irect Deposit Information	H9ISCR	Removed 'View' from name and moved from Maintain Employee Payroll Details submenu
			<u>P</u> eriod End Date Records	PI-SCR	Removed 'View' from name and moved from Maintain Employee Payroll Details submenu
			Payment History/ <u>L</u> abor Records	HL-SCR	Removed 'View' from name and moved from Maintain Employee Payroll Details submenu
	Payroll <u>S</u> etup Processing	<u>T</u> ax Information	Reciprocal Tax <u>M</u> ass Maintenance	JRMSCR	Deleted
<u>T</u> ools	<u>D</u> evelopment Tools	<u>S</u> ystem Control Repository Utilities	Re <u>b</u> uild TOP Cross Ref Records	ME5SCR	Changed 'O' to '0' in TOP

APPENDIX G

Large Number Changes to Fields

In This Appendix

Fields206

Fields

The size of the following type 4 data fields has changed to accommodate the large numbers enhancement in 5.1.

42-HED-AMOUNT-CUR	PERM-01-V0	TAX-PREMIUM-MTD
42-HED-AMOUNT-MTD	PERM-01-V2	TAX-PREMIUM-QTD
42-HED-AMOUNT-QTD	PERM-02-V2	TAX-PREMIUM-YTD
42-HED-AMOUNT-YTD	PERM-03-V2	TAX-RESIDENT-MTD
ACCR-RESULT-BASE	PERM-04-V2	TAX-RESIDENT-QTD
COUNTER01	PERM-05-V2	TAX-RESIDENT-YTD
COUNTER02	PERM-06-V2	TAX-UNEMPLOY-MTD
COUNTER08	PERM-07-V2	TAX-UNEMPLOY-QTD
EMPLOYEE-WAGES-MTD	PERM-08-V2	TAX-UNEMPLOY-YTD
EMPLOYEE-WAGES-QTD	PERM-09-V2	TAX-WITHHELD-MTD
EMPLOYEE-WAGES-YTD	PERM-10-V2	TAX-WITHHELD-QTD
EMPLOYER-WAGES-MTD	PERM-11-V2	TAX-WITHHELD-YTD
EMPLOYER-WAGES-QTD	PERM-12-V2	TAX-WORK-MTD
EMPLOYER-WAGES-YTD	PERM-13-V2	TAX-WORK-QTD
ESS-PERM-01-V0	PERM-14-V2	TAX-WORK-YTD
EST-ANNUAL-INCOME	PERM-15-V2	TAXABLE-WAGES-MTD
HED-AMOUNT-CUR	PERM-16-V2	TAXABLE-WAGES-QTD
HED-AMOUNT-L-H	PERM-17-V2	TAXABLE-WAGES-YTD
HED-AMOUNT-L/H	PERM-21-V2	TEMP-01-V2
HED-AMOUNT-MTD	PERM-22-V2	TEMP-02-V2
HED-AMOUNT-QTD	PERM-23-V2	TEMP-03-V2
HED-AMOUNT-YTD	PERM-24-V2	TEMP-04-V2
HED-AMOUNT-CUR-12	PERM-25-V2	TEMP-05-V2
HED-AMOUNT-L/H-12	PERM-26-V2	TEMP-06-V2
HED-WORK-AMOUNT	SS-01-V2	TOTAL -PAY-MTD
LCF-PA-LCP-AMOUNT	SS-02-V2	TOTAL-PAY-QTD
		TOTAL-PAY-YTD

Upgrading from 4.5 to 5.0

Document Issue: 1.0



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CHAPTER 1

Introduction

Welcome

This manual has been designed to guide you through the process of upgrading your current system (The Solution Series 4.5.1 or 4.5.2 or 4.5.3) to the latest version of the system—The Solution Series version 5.0.

Who should use this manual?

This manual is designed to be used by a number of different users. The following users will find it most useful:

- System administrators
If you fulfill the technical role of a system administrator at your company, performing tasks such as scheduling reports and applying program temporary fixes.
- Project managers
If you fulfill the role of the project manager in charge of the upgrade from The Solution Series 4.5.1 or 4.5.2 or 4.5.3 to the new version 5.0.

Prerequisite skills

Users of this manual should possess a variety of technical skills and authorities, depending on the roles they will play.

System administrator

- Understanding of the job control language or shell scripts for your environment
- Familiarity with job streams
- Understanding of system backup and recovery
- Authority to compile and link production programs
- Understanding of the programs that have been customized
- Programming skills in Cyborg Scripting Language (CSL), Report Generator, and COBOL

Project manager

- Understanding of project management concepts and techniques
- Authority to assign resources

Additional documentation and training courses

The following documentation and training courses are available from Cyborg Systems to help you understand the usage, configuration, and maintenance tasks performed for an implementation of The Solution Series.

Documentation

Document	Description
Using The Solution Series: Administrative Solutions	This prerequisite course documentation covers the introductory concepts and tasks related to The Solution Series. It describes how to navigate through the software and explains the important concepts and functionality of The Solution Series.

Document	Description
Optimizing System Features	This manual provides descriptions of and detailed instructions for performing the configuration and functional administration tasks that support the implementation of The Solution Series.
Technical Administration	This manual provides descriptions of and detailed instructions for performing the technical tasks that support The Solution Series.

If you do not have a copy of any of these documents, you can obtain them from Customer Support.

Training Courses

Related Course	Description
Using The Solution Series: Administrative Solutions	Provides the introductory concepts and tasks related to The Solution Series.
Optimizing System Features	Introduces important concepts and tasks for the functional administrator who performs the configuration tasks that support the implementation of The Solution Series.
Technical Administration	Introduces important concepts and tasks for the administrator who performs the technical tasks that support The Solution Series.

If you wish to attend any of these courses, contact Customer Support or visit our website www.Cyborg.com for details of course dates and availability.

How this manual is organized

This manual has been organized to make it as easy to use as possible.

Read this chapter		To learn about
1	About This Manual	How the manual is organized Where to find what you are looking for Who should use the manual Where to get help
2	Overview	The elements of eCyborg 5.0
3	Implementing The Solution Series 5.0 Release	Detailed steps to get your customizations and HR data from the existing production environment into the new 5.0 environment.

Read this chapter		To learn about
A	Release Implementation Checklist	Checklists to ensure all tasks have been completed.

Identification of platform-specific information

This manual is designed to support The Solution Series on Windows, UNIX, AS/400, and OS/390 operating systems.

Some platform-specific information is offered in tables, according to the format shown here:

Platform	Information
NT/ Windows 2000	NT/Windows 2000-specific information
HP-UX	HP UNIX-specific information
AIX, Solaris	AIX- and Solaris-specific information
OS/390	OS/390-specific information
AS/400	AS/400-specific information

What is a Service Pack?

A Service Pack is the means by which updates to the system are distributed. Service Packs keep the product current, and extend and update the functionality of your installation. They can include updates, program fixes, and additional components. Service Packs are cumulative—each new Service Pack contains all the fixes in previous Service Packs, as well as any new fixes.

This product release provides support for all strategic platforms, so we can bring our latest products to more of our customers. The numbering system used for Cyborg product releases is as follows: Version x.y.z (for example, version 4.5.3). The following table explains the variables:

Variable	Descriptor	Description
x	Version number	Version number changes indicate a major release that offers significant new functionality and/or technological advances.
y	Release number	A product release also includes new functionality, but without significant technology or database changes.

Variable	Descriptor	Description
z	Service Pack number	A Service Pack is essentially a packaging of Program Temporary Fixes (PTFs) issued between releases.

How to get additional help

If you cannot find the answers to your questions in this manual, contact Customer Support, who will be able to answer specific questions and give you general advice on training.

Please visit our web site www.Cyborg.com for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on our performance support materials. Please forward any comments on this manual to Customer Support.

CHAPTER 2

Overview

Overview

For nearly three decades, Cyborg has focused exclusively on human resources, studying best practices and drawing from our own internal expertise to ensure that Cyborg's products meet your real-world requirements. This focus has resulted in a comprehensive, integrated solution that can do what no other solution can.

Recent studies indicate that as much as 30 percent of an organization's total value can be attributed to human capital management (HCM) practices. Efficient, streamlined HCM practices are therefore essential in achieving long-term success. So how does an organization effectively manage their HCM solution to gain a competitive advantage? By building an enterprise strategy that's based around its most valuable asset – its workforce.

Optimization of the workforce allows an organization to meet its objectives and gain a competitive edge. True optimization, however, can only be achieved with a diverse portfolio of solutions that leverage a strong HCM foundation. eCyborg is that foundation.



eCyborg Administrative Solutions

At the core of eCyborg is a strong administrative backbone that's built on more than 28 years of focused HR and payroll experience. Delivering the latest in human resource, payroll, benefits administration, time and attendance and reporting and data analysis functionality, eCyborg provides the high-end tools necessary to meet your real-world requirements.

eCyborg Web Architecture

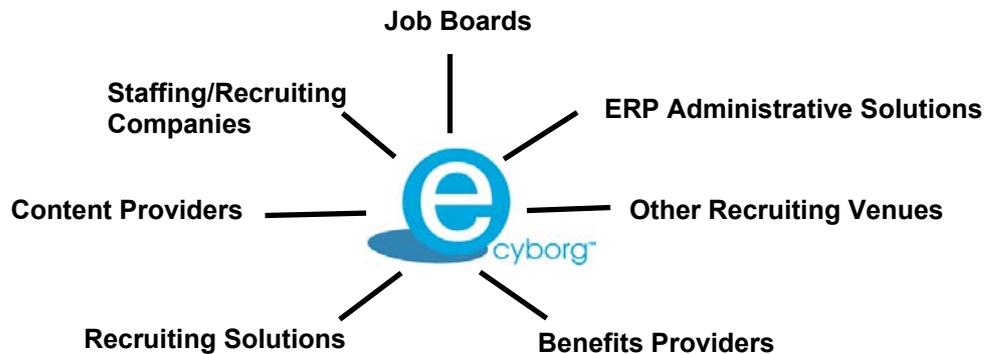
eCyborg's Web Architecture enables your organization to extend its administrative functions to the entire workforce and beyond to help you achieve true optimization.

Web Accessibility

A zero footprint client allows your workforce to access eCyborg functionality anytime, anywhere through a standard Web browser. This ensures that the right people have the right information, right when they need it.

Collaboration

eCyborg delivers tools that enable your workforce and HCM applications to work collaboratively, allowing you to develop your individual HCM portfolio.



eCyborg facilitates collaboration with...

...*Your Workforce*

eCyborg encourages interaction between your employee and manager population to gain efficiencies in your business processes.

...*Value-Add Services*

eCyborg links and communicates openly with third-party vendors to maximize the level of service provided to your workforce.

...*Enterprise Solutions*

eCyborg's offers the ability for your organization to put its workforce information at the center of its enterprise strategy.

eCyborg Interactive Workforce

The Interactive Workforce module extends administrative functions to the appropriate employees and managers, thereby freeing HR to focus on more strategic activities. Interactive Workforce is comprised of three modules:

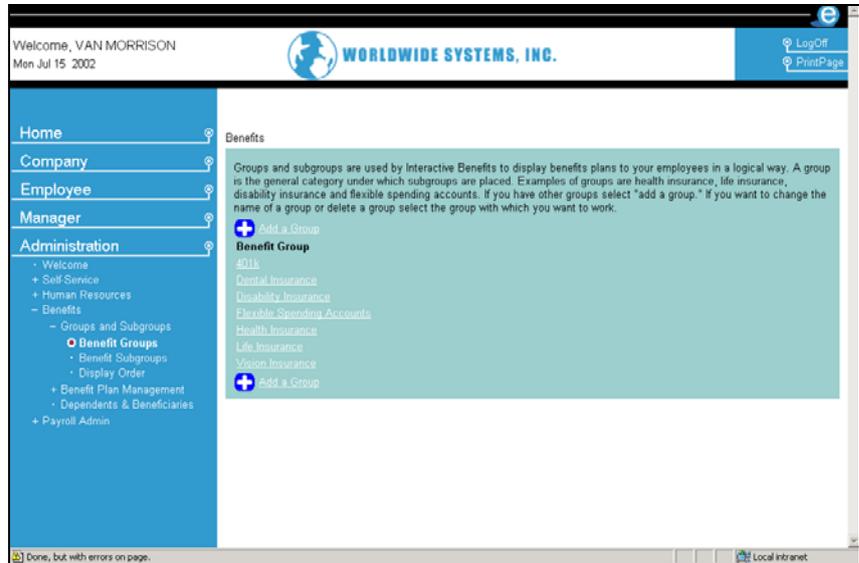
Interactive Employee

Interactive Employee empowers employees to maintain their own personal information online, without assistance from HR.

The screenshot shows a web browser window titled "eCyborg Self-Service Center - Microsoft Internet Explorer". The page header includes a welcome message for "JUNE MEYER" dated "February 27, 2002" and the "WORLDWIDE SYSTEMS, INC." logo. A navigation menu on the left lists sections: Home, Company, Employee (with sub-items like Employee News, Personal Information, Name and Address, etc.), Manager, and Administration. The main content area is titled "Legal Name and Address" and "Mailing Name and Address". It contains a form with the following fields: Title (Ms), First Name (JUNE), Middle Name or Initial (L), Last Name (MEYER), Suffix (dropdown), Street Address (1010 MISTY LANE, UNIT 5), City (EL SEGUNDO), State (IL), ZIP Code (93101), and Country (USA). A "Save Changes" button is checked and visible at the bottom of the form.

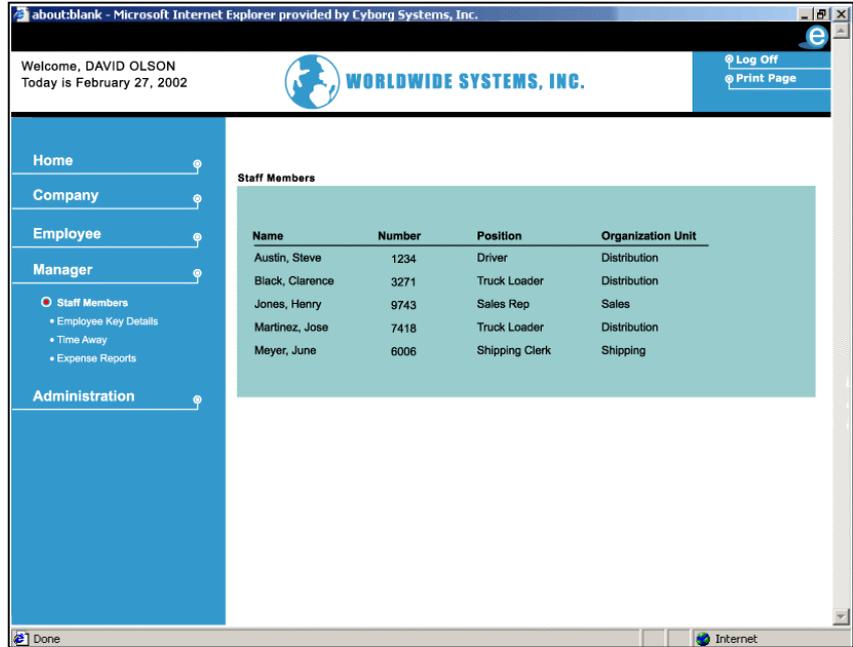
Interactive Benefits

Interactive Benefits provides employees with the ability to review their benefit plan information and elections and participate in open enrollment online.



Interactive Manager

Interactive Manager puts critical HR and employee information at the fingertips of your organization's management team to enable them to make more informed business decisions.



eCyborg Analytics

Workforce optimization relies heavily on your organization's ability to measure and analyze its workforce's performance. By combining powerful Cognos™ Business Intelligence applications with eCyborg's Workforce Data Mart, eCyborg Analytics puts Web-based data analysis capabilities at the fingertips of your organization's management team. This allows decision-makers to easily identify both where your organization is today and where they want it to be in the future.

CHAPTER 3

Implementing the 5.0 Release

Phase 1: Install The Solution Series 5.0

Task 1: Install a ‘vanilla’ 5.0 test system

To install the delivered system, follow the steps detailed in the installation documentation for the server platform you require. Once the environment is installed and configured, apply any updates.

Note: Cyborg has rolled in PTFs for the CBSVx programs. If you have any additional overrides you want to bring into the new system, do so during the installation.

Task 2: Back up the 5.0 test system

It is very important that you be able to recover from the changes that you implement to the 5.0 test system. To protect your test system, back it up **in its entirety** before proceeding with the upgrade.

In addition to all of the program executables, it is important to back up the FILE01, as well as the P20 file that resulted from the test payrun performed when you validated installation. You may wish to use this P20 to test your customizations later.

It is important that your enhancements do not ‘break’ any of the delivered programs. One way to identify a problem at an early stage is to re-run the original Payroll using the P20 created during the installation with your customized executables. In doing so, you can review the output from the Payroll run performed at the end of the installation with your results and ensure your new executables work as expected, rather than waiting until you have converted your own data later in the process.

Phase 2: Analyze and upgrade the Payroll Processing System

This phase provided detailed instructions for upgrading the Payroll Processing components with new CYBMST programs and report and system generators.

Task 1: Reviewing and revising jobs

Review all Jobs (batch files, scripts, JCL, CL, and so forth) from your existing environment, comparing them against the jobs delivered with the new 5.0 system. If you find modifications in the existing jobs that you wish to have in the new jobs, make those modifications to the new jobs.

The default locations of the 5.0 jobs that you will compare against your existing jobs are:

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\[jobname]
UNIX filepath	\${CyborgHome}/runs/[jobname]
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(jobname)
AS/400 Library	Executable job =CBSVP.[jobname] Source=CBSVS.QCLSRC.[jobname] Reader file=CBSVS.QTXTSRC.[jobname]

Task 2: Reviewing override files

As an existing user, you may have several override files—at least one for each of the following:

- COBOL Payroll programs P2EDIT, P4CALC, and O4CALC
- COBOL Payroll program P5PRNT
- COBOL Payroll program P9CNVT
- Report and system generators

1. Review your Payroll COBOL override files

Overrides to the Payroll COBOL programs are applied during the extraction (P9CNVT) process. The Reader File (P05RDR) contains your overrides to the Payroll COBOL programs (P2EDIT, P4CALC, O4CALC, P9CNVT, and P5PRNT).

2. Review report and system generators and your overrides

Review the delivered report and system generators to determine those you want to pull and load to your system.

Review the Payroll Audit Trail to identify any additional report generators that you use. Also review your override file for report and system generators. Overrides to report and system generators are applied during a separate extraction (P9CNVT) process. The Reader File (P05RDR) contains your overrides to the system and report generators.

Task 3: Revising override files

Once you have determined which of your overrides are still valid, edit your override files to remove ambiguous overrides. Save your new override files where your backups reside.

Note: All PTFs (identified by a value in column 77–80) must be removed from your override file.

Resequence your overrides to match the source programs in CYBMST and save your new override files where your backups reside.

Task 4: Applying modifications and recompiling the Payroll Processing System programs

This process extracts and compiles the Payroll Processing COBOL program source code from the delivered CYBMST file. The Reader file (P05RDR) varies, depending on the platform. Copy your updated and resequenced CYBMST override file into the Reader file before performing this operation.

OS/390 and AS/400 systems:

Platform	Location of Jobs
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.([jobname])
AS/400 Library	CBSVP. [jobname] Reader file=CBSVS.QTXTSRC. [jobname]

1. Extract and compile P2EDIT
Job used: JXP2EDIT
2. Extract and compile P4CALC
Job used: JXP4CALC
3. Extract and compile P5PRNT
Job used: JXP5PRNT
4. Extract and compile O4CALC
Job used: JXO4CALC

NT/Windows 2000 and UNIX systems:

Job used: jxcybmst

Platform	Location and Job
NT/Windows 2000 filepath	..\Cyborg50\Runs\jxcybmst
UNIX filepath	\$(CyborgHome)/runs/jxcybmst

Task 5: Extracting additional Cyborg generators

New report generators are extracted during the initial installation of your system, but there may be additional generators you want to extract.

The process of extracting is actually quite flexible. You may perform the steps detailed in this and the next task as many times as you prefer, performing each task for specific purposes. For example, you may decide to perform these tasks separately for each of the following purposes:

1. Overrides to RPT20 (to add companies)
2. Overrides to delivered system generators
3. Overrides to delivered report generators and method codes
4. Additional delivered (but not installed) generators (with no overrides)

Note: For custom report generators and/or method codes in expanded format, do not extract—just perform the load operation.

Job Used: jxrptgen

This process extracts any additional custom report generators you want that are supplied in the delivered CYBMST. Copy the updated and resequenced report generator overrides into the Reader file before performing this operation. The Reader file (P05RDR) varies, depending on the platform.

Platform	Location and Job
NT/Windows 2000 filepath	..\Cyborg50\Runs\jxrptgen
UNIX filepath	\$(CyborgHome)/runs/jxrptgen
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JXRPTGEN)
AS/400 Library	Executable job =CBSVP.JXRPTGEN Source=CBSVS.QCLSRC.JXRPTGEN Reader file=CBSVS.QTXTSRC.RPTTENRDR

File assignments

Input files	P05RDR FILE05	Reader file CYBMST file
Output files	PRNT1 FILE1	Activity report Extracted source code
Execute	P9CNVF	

Task 6: Loading system generators (0A, 0G,0O, 0P, and 17–29) into the P20

The process of loading selected system generators with overrides is quite flexible. You may perform the steps detailed in this and the previous task as many times as you prefer, performing each task for specific purposes.

Note: Report generators and system generators must be loaded in separate payruns. If you are only loading report generators, you can skip this task. If you have custom report generators AND system generators to load, you must perform both tasks 6 and 7.

1. Apply selected system generators with overrides

Job Used: jpaxtr (all organizations)

Cyborg’s test company and employee data from the online Employee Database will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jpaxtr
UNIX filepath	\$(CyborgHome)/runs/jpaxtr
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JPAYXTR)
AS/400 Library	Executable job =CBSVP.JPAYXTR Source=CBSVS.QCLSRC.JPAYXTR Reader file=CBSVS.QTXTSRC.JPAYXTR

2. Set up the P05RDR file in the maintenance run to ensure the input of the recycle file

Review the P05RDR file to make sure a ‘Y’ is in position 18 to ensure the input of the recycle file. Also, review the control record to ensure a ‘Y’ is in position 19—this ensures P2EDIT will process the P05T80 file (FILE1 from JXRPTGEN).

3. Perform a maintenance run to update the P20

Job Used: jmntrun

Place a 'P' in position 21 of the H2 card (which is input to P4CALC) so pay is not calculated for any organizations set up for a payrun. This process applies P05T80 (FILE1 from Task 5) and new report generator source code to update the P20 file. You must modify the script in two places to bring in the P20.

Platform	Location and Job
NT/Windows 2000 filepath	..\Cyborg50\Runs\jmntrun
UNIX filepath	\$(CyborgHome)/runs/jmntrun
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JMNTRUN)
AS/400 Library	Executable job =CBSVP.JMNTRUN Source=CBSVS.QCLSRC.JMNTRUN Reader file=CBSVS.QTXTSRC.JMNTRUN

4. Update the Employee Database

Job Used: jpaymrg

Note: If your implementation is relational and you use performance tuning (such as 'A' in position 39), do NOT do so when you run this Pay Merge.

Platform	Location and Job
NT/Windows 2000 filepath	..\Cyborg50\Runs\jpaymrg
UNIX filepath	\$(CyborgHome)/runs/jpaymrg
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JPAYMRG)
AS/400 Library	Executable job =CBSVP.JPAYMRG Source=CBSVS.QCLSRC.JPAYMRG Reader file=CBSVS.QTXTSRC.JPAYMRG

Task 7: Loading report generators into the P20

Cyborg generally advises that custom generator code be included in the override file in a compatible format, but you may have generators in ‘expanded’ format. If you have custom generators in expanded format, they must be applied separately.

The process of loading and applying generators is quite flexible. You may perform the steps detailed in this and the previous task as many times as you prefer, performing each task for specific purposes.

Note: For custom report generators and/or method codes in expanded format, do not extract—just perform the load operation)

1. Apply new and additional generators

Job Used: jpayxtr (all organizations)

Cyborg’s test company and employee data from the online Employee Database will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jpayxtr
UNIX filepath	\$(CyborgHome)/runs/jpayxtr
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JPAYXTR)
AS/400 Library	Executable job =CBSVP.JPAYXTR Source=CBSVS.QCLSRC.JPAYXTR Reader file=CBSVS.QTXTSRC.JPAYXTR

2. Set up the P05RDR file in the maintenance run to ensure the input of the recycle file

Review the P05RDR file to make sure a ‘Y’ is in position 18 to ensure the input of the recycle file. Also, review the control record to ensure a ‘Y’ is in position 19—this ensures P2EDIT will process the P05T80 file (FILE1 from JXRPTGEN or expanded report generator code).

3. Perform a maintenance run to update the P20

Job Used: jmntrun

Place a 'P' in position 21 of the H2 card (which is input to P4CALC) so pay is not calculated for any organizations set up for a payrun. This process applies P05T80 (FILE1 from Task 5) and new report generator source code to update the P20 file. You must modify the script in two places to bring in the P20.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jmntrun
UNIX filepath	\$(CyborgHome)/runs/jmntrun
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JMNTRUN)
AS/400 Library	Executable job =CBSVP.JMNTRUN Source=CBSVS.QCLSRC.JMNTRUN Reader file=CBSVS.QTXTSRC.JMNTRUN

4. Update the Employee Database

Job Used: jpaymrg

Note: If your implementation is relational and you use performance tuning (such as 'A' in position 39), do NOT do so when you run this Pay Merge.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jpaymrg
UNIX filepath	\$(CyborgHome)/runs/jpaymrg
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JPAYMRG)
AS/400 Library	Executable job =CBSVP.JPAYMRG Source=CBSVS.QCLSRC.JPAYMRG Reader file=CBSVS.QTXTSRC.JPAYMRG

Task 8: Performing a test Payroll run

1. Set up Cyborg 999999 organization to be paid online

On The Solution Series system, access the Payroll Run Process Control form (AE-SCR) by making the following selections from the Navigator:

You access this form by selecting:

- Component:**  Payroll Setup Processing
- Process:** Payroll Processing Setup
- Task:**  Schedule Payroll Runs

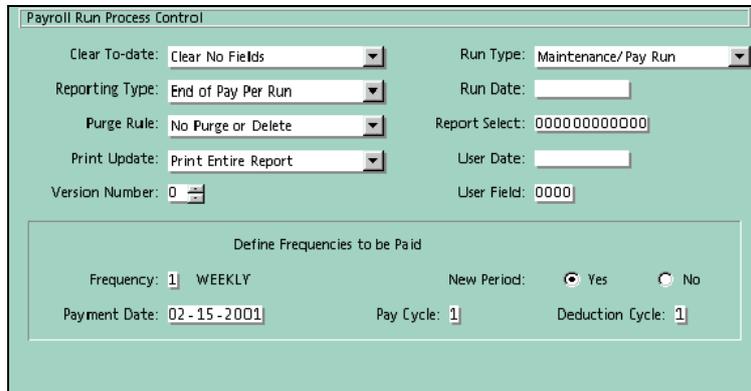
Set up the payroll run parameters, as represented in the graphic, for the following three pay frequencies:

1. Weekly
2. Bi-Weekly
3. Semi-Monthly

Be sure to set all of the fields as shown on the form. The Run Date field is optional and may be left blank. The Payment Date field must be the current or another relevant date.

In the Frequency field, enter one of the following values then press enter:

- '1' to set up a Weekly pay pay run
- '2' for a Bi-Weekly pay run
- '3' for a Semi-Monthly pay run



Payroll Run Process Control

Clear To-date: Clear No Fields Run Type: Maintenance/ Pay Run

Reporting Type: End of Pay Per Run Run Date:

Purge Rule: No Purge or Delete Report Select: 0000 00000000

Print Update: Print Entire Report User Date:

Version Number: 0 User Field: 0000

Define Frequencies to be Paid

Frequency: 1 WEEKLY New Period: Yes No

Payment Date: 02-15-2001 Pay Cycle: 1 Deduction Cycle: 1

Log out of The Solution Series.



Refer to the Introduction to Payroll Administration guide for detailed instructions.

2. Update P20IN Batch Master File

Job Used: jpayxtr

Cyborg’s test company and employee data from the online Employee Database will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

FILE10 (PAYXTR10), which contains time entries and adjustments, is also created. PAYXTR10 becomes input to the JPAYRUN as P05T81.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jpayxtr
UNIX filepath	\${CyborgHome}/runs/jpayxtr
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JPAYXTR)
AS/400 Library	Executable job =CBSVP.JPAYXTR Source=CBSVS.QCLSRC.JPAYXTR Reader file=CBSVS.QTXTSRC.JPAYXTR

3. Apply optional transactions

Job Used: jpayrun

To apply optional transactions, such as employee transactions from outside systems or interfaces, as well as the time entries and adjustments (PAYXTR10), execute the JPAYRUN jobstream with P05T80 and P05T81 as input. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

By including the appropriate letter in column 19 in the P05RDR file, the following input selections may be made:

- Y = P05T80 only
- B = P05T80 and P05T81
- S = P05T81 only

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jpayrun
UNIX filepath	\${CyborgHome}/runs/jpayrun
OS/390 High level Qualifier	HLQ?.JCL.CNTL.(JPAYRUN)

Platform	Location and Job
AS/400 Library	Executable job =CBSVP.JPAYXTR Source=CBSVS.QCLSRC.JPAYXTR Input file=CBSVF. P05T80 Input file=CBSVF. P05T81 Reader file=CBSVS.QTXTSRC.P2EO1RDR

Input files:

P05T80 (optional transaction input)

P05T81 (PAYXTR10)

Check your output listings for any anomalies.

4. Perform a maintenance run to create pay history

Job Used: jmntrun

To create pay history and labor records, and apply check numbers to the newly created history records on the P20IN Batch Master File, execute the JMNTRUN jobstream from HLQ?.JCL.CNTL. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Note: If you modified position 19 in the PO5RDR card, you should remove it from position 19 now.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jmntrun
UNIX filepath	\$(CyborgHome)/runs/jmntrun
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JMNTRUN)
AS/400 Library	Executable job =CBSVP.JMNTRUN Source=CBSVS.QCLSRC.JMNTRUN Reader file=CBSVS.QTXTSRC.JMNTRUN

5. Update the online Employee Database

Job Used: jpaymrg

This process synchronizes the online FILE02 with the updated, final P20 file.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jpaymrg
UNIX filepath	\$(CyborgHome)/runs/jpaymrg
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JPAYMRG)
AS/400 Library	CBSVP.JPAYMRG

Phase 3: Analyzing and updating online modifications

This phase provides detailed instructions for moving your online System Control Repository (FILE01) customizations from the old environment to the new.

Task 1: Identifying your customizations to the online system

To identify the differences between your custom system and the system originally delivered, perform a Maintenance Out operation.

Your upgrade analysis begins by your Solution Series system administrator reviewing the output of a MAINTO operation on your current production environment. When you run the Change Control Facility (MAINTO), an output file is produced in FILE10, which you can then use to locate areas of customized code.

Position 80 of each line in this report will contain a change code that indicates the type of difference between the original System Control Repository and the customized System Control Repository.

Change Codes:

- Blank = Record was added
- A = Record was added
- C = Content of the record was changed
- D = Record was deleted

Program temporary fixes (PTFs) will also display in your MAINTO output.

Notes: Record types RT, P/S, and F do not have associated PTF numbers..

Output example:

1	2	3	4	5	6	7	8
1...5...0...5...0...5...0...5...0...5...0...5...0...5...0...5...0							
C BA03 03		Employee & One Child					D
C BA03 04		Family/EE & Some Dep					D
C BA03 06		Employee & Sponsored					D
MMNP		S	Menus15:46:28	07-22N00002815:46:28	07-22		C
MMNP10106		S	Eligibility and &Enrollment			400	C
MMNP1030509		TRAI SC	F-CPlan/Fund &Interest Rates			400	C
MMNP20201		TMBSCR	06Uniform Premium Table				A
MMNP3000000		II-SCR	F &Injury Information				C
MMNP3000001		TABSCR	F &Assign Badge				C
RQM0102199J30R		QXVSM	M		N		A
RQM0407200G08R		Y	?X58SPT	Y		!	2Y
RQM0412199J07R		N	GX261PTC	Y	12	E !D	C0 L 1 P 0
T*T991111110002006		RP					A
T*Z99111111205C31011001		200K30			P Y9999992001		R
T*Z99111111205C31011002		200K30			P Y9999992002		R
.							A

Perform a Change Control Facility (MAINTO) operation

Job used: jmainto

To locate any and all revisions to your System Control Repository (Control File; FILE01), you must use the Change Control Facility to perform a MAINTO operation in batch.

Run this job against your existing 4.5.x production system.

This operation compares your current random System Control Repository (FILE01) with the sequential System Control Repository (DEMO0105) that was originally delivered. Any information that does not match with that in the delivered DEMO0105 file is identified on a per-line basis.

Note: If you have a 4.5.1 production system and do not have a 4.5.1 DEMO0105 file, contact Cyborg Customer Support. You will be provided with a password to download this file from CUBBS.

Platform	Location and Job
NT/Windows 2000 filepath	..\Cyborg50\Runs\jmainto
UNIX filepath	\${CyborgHome}/runs/jmainto
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JMAINTO)
AS/400 Library	CBSVP.JMAINTO

Execute this utility in batch as follows:

INPUT	FILE01 FILE02 FILE04 FILE05	Custom System Control Repository (Control File) Employee Database (Master File) Control Record File 4.5.x sequential control (DEMO0105)
OUTPUT	FILE03 FILE10	Audit/Message File System Control Repository Change File
EXECUTE	CBSVB	

The control record on FILE04 has the following syntax:

In these positions	Enter	Description
23–28	MAINTO	program name

Note: Any PTF that has been applied without the new sequence number assigned to the object will be identified and removed. This program will not capture all PTFs—a subsequent manual review of the MAINTO file is necessary.

Note: Rules for retaining and removing records from the MAINTO file can be found in Appendix A: Analyzing and Editing the Difference File in the Technical Administration manual.

Task 3: Updating checklist and menu records (Windows and UNIX systems only)

Look at the MAINTO from your existing 4.5.1 or 4.5.3 environment to check for Enhanced Payroll and Reporting checklist and menu records that have been included in The Solution Series 5.0 system. Duplicate records must be removed from or resequenced in the input file prior to applying your customizations to The Solution Series 5.0 system.

Note: If you have made extensive modifications to menu records in your 4.5.x environment, you will need to re-program those customizations in your new The Solution Series 5.0 environment.

1. Check MAINTO of existing system for modifications

Compare the MAINTO FILE10 output of your existing production system against the following file in The Solution Series 5.0 environment:

```
..\Data\epRDDi05      (Windows)
../Data/epRDDi05     (UNIX)
```

Look for the following record types:

- MML5 records
- MMNP records

2. Remove duplicate records from the MAINTO file

Records found on the MAINTO file that are also found in eprddi05 should be removed from the MAINTO file. Otherwise, these records will generate errors when you apply the MAINTO file to The Solution Series 5.0 system.

3. Modify the checklist and menu records in MAINTO FILE10

If you have modified the delivered checklists and menu records for Enhanced Payroll and Reporting, you may have to modify the MAINTO FILE10 records to reflect those changes. This may mean creating deletions for the delivered The Solution Series 5.0 records if you resequenced the 4.5.1/.2/.3 versions. Modifications may have to be removed or resequenced.

Task 4: Applying your online customizations

Having run your MAINTO operation, then reviewed and edited your MAINTO output, you can now apply your ‘clean’ MAINTI file to the ‘vanilla’ 5.0 system.

1. Perform a Change Control Facility (MAINTI) operation

Job Used: jmainti

To apply your customizations to your 5.0 System Control Repository (Control File; FILE01), you must use the Change Control Facility to perform a MAINTI operation in batch.

Note: FILE05 is the input file. It must either contain the content of your ‘clean’ MAINTI file, or you must redirect the job to use your ‘clean’ MAINTI file as the input file.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jmainti
UNIX filepath	\$(CyborgHome)/runs/jmainti
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JMAINTI)
AS/400 Library	Executable job =CBSVP.JMAINTI Source=CBSVS.QCLSRC.JMAINTI Input file=CBSVF.[FILE05]

Check your audit messages. Reconcile any errors before continuing the upgrade process.

If necessary, restore the FILE01 from the 5.0 ‘vanilla’ back up you performed after you installed your 5.0 test system. Fix any problems you identify by editing FILE05, then rerun the MAINTI against the restored FILE01.

2. Performing a reload

Job Used: jreload

Recompiles Cyborg Scripting Language programs in the System Control Repository.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jreload
UNIX filepath	\$(CyborgHome)/runs/jreload
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JRELOAD)
AS/400 Library	CBSVP.JRELOAD

Check your audit messages. Reconcile any errors before continuing the upgrade process.

If necessary, restore the FILE01 from the 5.0 ‘vanilla’ back up you performed after you installed your 5.0 test system. Fix any problems you identify by editing FILE05, then repeat steps 1 and 2 with the restored FILE01.

Task 5: Updating menu records (Windows and UNIX systems only)

Perform this operation to create menu records for all CSL reports in the new FILE01.

Job Used: jrptmnu

Run this job on the new, updated 5.0 system.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jrptmnu
UNIX filepath	\$(CyborgHome)/runs/jrptmnu

Review the log, then the jrptmnu.03 list file in the list subdirectory to determine if there were any errors.

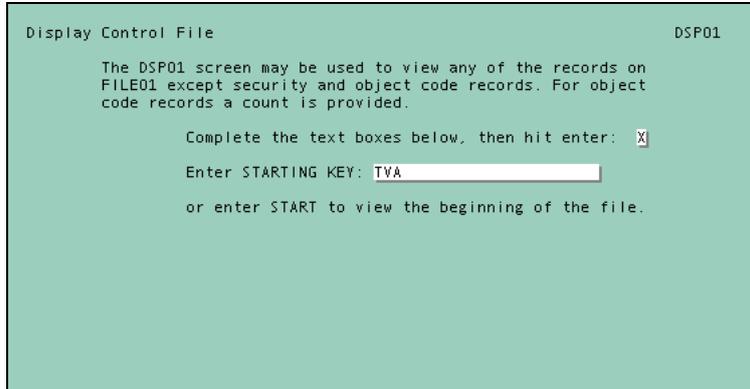
Task 6: Converting Saving Bond table records

- 1. Check to see if the program has already been run in your 4.5.x environment**

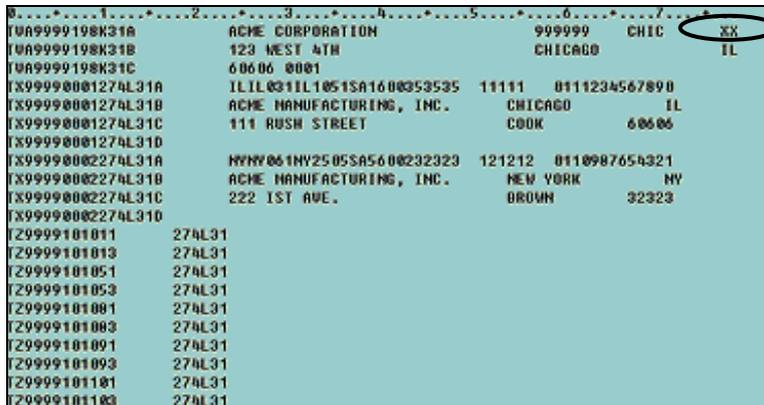
Display the code for TVA. Use the Display System Control Repository Records program (DSP01) to display the TVA records.

Component:  Development Tools
 Process: System Control Repository Utilities
 Task:  List System Control Repository

Type ‘TVA’ as the Starting Key and press Enter.



If data is present in position 77 in Line 1 or of any record A (TV in position 0-1 and A in position 13), then CNVTVA has not been run and you must run CNVTVA. Otherwise, go on to Phase 4.



2. Create a job to remap Savings Bond table records

Create a job called JCNVTVA. Execute this utility in batch as follows:

INPUT	FILE01	Custom System Control Repository (Control File)
	FILE02	Employee Database (Master File)
	FILE04	Control Record File
OUTPUT	FILE03	Audit/Message File
EXECUTE	CBSVB	

The control record on FILE04 has the following syntax:

In these positions	Enter	Description
23–28	CNVTVA	program name

Control record example:

1	2	3	4	5
1...5...0...5...0...5...0...5...0...5...0...5	CNVTVA			

3. Remap Savings Bond table records

Job Used: jcnvtva

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jcnvtva
UNIX filepath	\$(CyborgHome)/runs/jcnvtva
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JCNVTVA)
AS/400 Library	Executable job =CBSVP.JCNVTVA Source=CBSVS.QCLSRC.JCNVTVA Reader file=CBSVS.QTXTSRC.FILE04

Check the audit message file for any errors.

Phase 4: Rebuilding the Database—Relational Environments only

Note: If you do not have a relational environment, skip this phase and go on to Phase 5.

If you have a relational environment, you must drop your current 5.0 database and rebuild the database so it includes your customizations.

Task 1: Export F1 and FTM records

To export the F1 and FTM (RFT and RFM) records from the System Control Repository, execute the JEXPORT jobstream.

Job Used: jexport

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jexport
UNIX filepath	\$(CyborgHome)/runs/jexport
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JEXPORT)
AS/400 Library	CBSVP.JEXPORT

Check the audit message file for any errors.

Task 2: Execute the case tool

Job Used: jcrtpgms

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jcrtpgms
UNIX filepath	\$(CyborgHome)/runs/jcrtpgms
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JCRTPGMS)
AS/400 Library	CBSVP.JCRTPGMS

Review the log to determine if there were any errors.

Disregard the following messages:

```
CYBRES-01 in MLPO May be within the segment key area.
CYBRES-01 in MLPP May be within the segment key area.
CYBRES-01 in MLQ4 May be within the segment key area.
```

Task 3: Create the database/tablespaces, tables, index, and views

Note: If the database currently exists, you will need to drop the database before continuing with this step.

Job Used: jcrtyb

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jcrtyb
UNIX filepath	\$(CyborgHome)/runs/jcrtyb
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JCRTCYB)
AS/400 Library	CBSVP.JCRTCYB

Task 4: Pre-compile, compile, and link RDBPGMA through RDBPGMH

The following table lists and describes each subroutine generated by the CASE tool:

Program	Subroutine Description
RDBPGMA	Inserts a new row in a table
RDBPGMB	Selects data from a row in a table and passes it to CBSV
RDBPGMC	Updates values in an existing row
RDBPGMD	Deletes an existing row from a table
RDBPGME	Called when a PAYMRG 171 process is run; removes all rows from all tables in preparation for reinsertion of data from the P20 file; also disables then re-enables all indexes (where applicable)
RDBPGMF	Called when a PAYMRG 222 process is run; deletes all rows from the tables that belong to the organizations being paid
RDBPGMG	Cursors through the database and rebuilds the IDX records on the database, recreating Control 1, Control 2, and Employee Number pointers on the Employee Database; used mainly with the FIXIDX program
RDBPGMH	Provides segment and segment key length for each segment, and location of date and date type within each segment; the link between the database and The Administrative Solution

OS/390 and AS/400 systems:

Platform	Location of Jobs
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.([jobname])
AS/400 Library	CBSVP. [jobname]

1. Pre-compile, compile, and link the programs RDBPGMA through RDBPGMG
Job used: JSQLCOMP
2. Pre-compile, compile, and link RDBPGMH
Job used: JCOMPRDBH

NT/Windows 2000 and UNIX systems:

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jcmprdbh
UNIX filepath	[\$CyborgHome]/runs/jcmprdbh

Check the audit message file for any errors.

Phase 5: Upgrading your CBSV Processing System

Task 1: Reviewing override files

As an existing user, you may have several override files—at least one for each of the following:

- COBOL online program CBSVO
- COBOL online trace program CBSVOT
- COBOL batch program CBSVB
- COBOL batch trace program CBSVBT

Review your online COBOL override files

Overrides to the CBSV COBOL programs are applied during the extraction (CBSVB) process. The override file contains your overrides to the CBSV COBOL programs (CBSVO, CBSVOT, CBSVB, and CBSVBT).

Task 2: Revising override files

Once you have determined which of your overrides are still valid, edit your override files to remove ambiguous overrides. Save your new override files where your backups reside.

Note: All PTFs (identified by a value in column 77–80) must be removed from your override file.

Resequence your overrides to match the source programs in CBSV and save your new override files where your backups reside.

Task 3: Expanding employee (AREA2) and/or company (AREA4) work areas

This task shows you how to move the work area expansions from your existing environment into the new one, and rebuild the CBSV.

1. Obtain expansion amounts from your production 4.5.x environment

Log into your production environment and identify the work area expansions by performing the following steps:

1. Access the Expand Areas in CBSV Programs form. You access this form by selecting:

Component:		Development Tools
Process:		System Operations
Task:		Expand Program Memory

The Expand Areas in CBSV Programs form is displayed:

```

Expand Areas In CBSV Programs

***** SOLUTION SERIES/ST VERS 4.5 *****
CBSVB WAS PULLED AT 12:36:03 11-15 XXXX
CBSVBT WAS PULLED AT 12:36:04 11-15 XXXX
CBSVO WAS PULLED AT 12:36:03 11-15 XXXX
CBSVOT WAS PULLED AT 12:36:05 11-15 XXXX

AREA1 AREA2 AREA3 AREA3 AREA4 LAST CHANGE
BOTH BOTH BATCH ONLINE BOTH INFORMATION
00000 19656 10000 10000 24192 11:41 03/18/94
00000 19656 10000 10000 24192 13:21 06/09/00
      [ ] [ ] [ ] [ ]
      19656 10000 10000 24192

An AREA 2 expand value of 19656 will allow for an Employee size of 24957.
An AREA 4 expand value of 24192 will allow for a Company size of 32271.
    
```

2. Take note of the expanded values. These values must be changed in the new 5.0 environment to match.

2. Apply expansion amounts to your new, updated 5.0 environment(s)

Log into your new 5.0 environment and perform the following steps to expand the work areas:

1. Access the Expand Areas in CBSV Programs form (EXPAND). You access this form by selecting:

- Component:  Development Tools
- Process: System Operations
- Task:  Expand Program Memory

The Expand Areas in CBSV Programs form is displayed:

```

Expand Areas In CBSV Programs

***** THE SOLUTION SERIES VERS 5.0 *****
CBSVB WAS PULLED AT 14:42:58 06-07 XXXX
CBSVBT WAS PULLED AT 14:43:00 06-07 XXXX
CBSVO WAS PULLED AT 14:42:59 06-07 XXXX
CBSVOT WAS PULLED AT 14:43:02 06-07 XXXX

AREA1 AREA2 AREA3 AREA3 AREA4 LAST CHANGE
BOTH BOTH BATCH ONLINE BOTH INFORMATION
00000 19656 10000 10000 24192 11:41 03/18/94
00000 19656 10000 10000 24192 13:21 06/09/00
      [ ] [ ] [ ] [ ]
      19656 10000 10000 24192

An AREA 2 expand value of 19656 will allow for an Employee size of 24957.
An AREA 4 expand value of 24192 will allow for a Company size of 32271.
    
```

2. Enter the total expanded amount for the employee in AREA2-BOTH.
3. Enter the total expanded amount for the company in AREA4-BOTH.
4. Press Enter.
5. Log out.

3. Expand the Payroll Process work areas (P4CALC and O4CALC)

Note: If you have already moved the EXPAND transactions for payroll from the 4.5.x environment to the new 5.0 environment (when you applied modifications and recompiled the Payroll Processing programs), you may skip this step.

Include your new Expand values in your override file..

An EXPAND transaction has the following syntax:

In these positions	Enter	Description
1-6	EXPAND	
8-23	EMPLOYEE or PAYER	Name of area to expand
25-29	nnnnn	Number of characters the area should be changed by or the number of additional occurrences for reports
30	-	De-expand switch

Sample EXPAND transactions

1	2	3	4	5	6
1234567890234567890123456789023456789023456789023456789023456789					
04CALC	LI45VSEPCYd	24	VAX-11.		
EXPAND	EMPLOYEE	08000			
EXPAND	PAYER	00799			

Note: P9CNVT recalculates expansion amounts.

4. Extract and compile the Payroll Process COBOL programs to include the EXPAND transactions

Note: If you have already moved the EXPAND transactions for payroll from the 4.5.x environment to the new 5.0 environment (when you applied modifications and recompiled the Payroll Processing programs), you may skip this step.

OS/390 and AS/400 systems:

Platform	Location of Jobs
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.([jobname])
AS/400 Library	CBSVP. [jobname] Reader file=CBSVS.QTXTSRC. [jobname]

1. Extract and compile P4CALC
Job used: JXP4CALC
2. Extract and compile O4CALC
Job used: JXO4CALC

NT/Windows 2000 and UNIX systems:

Job used: jxcybmst

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jxcybmst
UNIX filepath	[\$[CyborgHome]/runs/jxcybmst

Task 4: Extract and compile the COBOL programs to include the new AREA2-BOTH and AREA4-BOTH values

Extract and compile CBSVO, CBSVOT, CBSVB, and CBSVBT using PULL.

OS/390 and AS/400 systems:

Platform	Location of Jobs
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.([jobname])
AS/400 Library	CBSVP.[jobname] Reader file=CBSVS.QTXTSRC.[jobname]

1. Extract and compile CBSVB
Job used: JCBSVB
2. Extract and compile CBSVBT
Job used: JCBSVBT
3. Extract and compile CBSVO
Job used: JCBSVO
4. Extract and compile CBSVOT
Job used: JCBSVOT

NT/Windows 2000 and UNIX systems:

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\[jobname]
UNIX filepath	\$(CyborgHome)/runs/[jobname]

1. Extract and compile relational Solution Series programs
 Job used: JPULCVN (non-relational)
 Job used: JPULCVR (relational)

2. Compile relational Solution Series programs
 Job used: JCMPCVN (non-relational)
 Job used: JCMPCVR (relational)

Check the audit message file for any errors.

Task 5: Delete the AREA size record

To do this, run the DEL-ZX program. You run this program in batch as follows:

INPUT	FILE01 FILE02 FILE04	System Control Repository Employee Database Control Record File
OUTPUT	FILE03	Audit/Message File
EXECUTE	CBSVB	

The control record on FILE04 has the following syntax:

In these positions	Enter	Description
23–28	DEL-ZX	Name of the program

This program deletes the ZXCYP88W record (or the ZXCYP88M record for all non-PC platforms).

A new record, ZXCYP88W or ZXCYP88M as appropriate, will be created on the Employee Database the next time the COBOL programs are executed.

Phase 6: Moving data into your new 5.0 environment

This phase provides detailed instructions for moving your data from your existing 4.5.1/2/3 production environment into the new 5.0 Employee Database (FILE02).

Task 1: Creating the Batch Master (P20) and the Employee Database (FILE02)

Job Used: jpayxtr

To create a P20IN Batch Master File with your production Employee Database (FILE02) data, execute the jpayxtr jobstream in your current 4.5.1/2/3 environment. Perform this selective pay extract for all records except the Cyborg-delivered 9's companies.

Note: Do NOT include Cyborg test company data (organizations 999999, 995555, 996666, and 993333). The data in these organizations has been updated in the 5.0 delivered system. If you carry these over, the updated test data will be overwritten. HOWEVER, if you use CONSID, you MUST include organization 991111 data.

Company and employee records will be pulled from the online Employee Database and placed in FILE12. This will be the new P20IN master file.

FILE10 (PAYXTR10), which contains time entries and adjustments, is also created. PAYXTR10 becomes input to the jpayrun as P05T81.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg45x\Runs\jpayxtr
UNIX filepath	\${CyborgHome}/runs/jpayxtr
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JPAYXTR)
AS/400 Library	Executable job =CBSVP.JPAYXTR Source=CBSVS.QCLSRC.JPAYXTR Reader file=CBSVS.QTXTSRC.P05T80 Reader file=CBSVS.QTXTSRC.P05T81

Note: Review the PAYXTR10 file and include it in any payruns you perform during a parallel or production turnover process.

INPUT	FILE01 FILE02 FILE04 FILE11	System Control Repository (Control File) Employee Database (Master File) Control Record File Most up-to-date P20
OUTPUT	FILE03 FILE10 FILE12	Audit/Message File Timecards and adjustments Your 4.5.x data together with report generators (from FILE11)
EXECUTE	CBSV	

Control record example:

1	2	3	4	5
1...5...0...5...0...5...0...5...0...5...0...5...0...5				
	PAYXTR	PAYnnn		

where nnn=PayC12 number (for example, PAY001).

Review the log and the audit message file to determine if there were any errors.

Task 2: Running a selective Pay Merge into the new system

Job Used: jpaymrg 222

To create a new random Employee Database, execute the jpaymrg jobstream in your new 5.0 environment.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jpaymrg
UNIX filepath	\$(CyborgHome)/runs/jpaymrg
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JPAYMRG)
AS/400 Library	CBSVS.CLSRC.JPAYMRG

INPUT	FILE01 FILE02 FILE04 FILE11 FILE13	System Control Repository (Control File) Employee Database (Master File) Control Record File Your 4.5.x data (FILE12 from the first Task in this phase) Most up-to-date 5.0 P20
OUTPUT	FILE03 FILE12	Audit/Message File Combined company and employee data (yours and Cyborg's)
EXECUTE	CBSV	

Task 3: Recreating RFT records

Job Used: jf-xref/JFXREF

Run the jf-xref/JFXREF program to build and maintain the Field Name Table cross-reference menu.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jf-xref
UNIX filepath	\${CyborgHome}/runs/jf-xref
OS/390 High level Qualifier	?HLQ?.JCL.CNTL.(JFXREF)
AS/400 Library	CBSVP.JFXREF

Task 4: Rebuilding Alternate Keys

Job Used: jbldak

Run this script to update the alternate keys built during the initial installation.

Platform	Location and Job
NT/Windows 2000 filepath	..Cyborg50\Runs\jbldak
UNIX filepath	\${CyborgHome}/runs/jbldak
OS/390 High level Qualifier	?HLQ?.JCL.(JBLDAKY)
AS/400 Library	CBSVP.JBLDAKY

Task 5: Rebuilding Phonetic and Employee ID Keys

1. Indicate the type of key to build

You do this on the second panel of the Organization Options (AF-SCR) form.

You access this form by selecting:

- Component:**  Payroll Setup Processing
- Process:** Organization Setup
- Task:**  Organization Options

and then selecting the 'More Options' button.

2. Select the type of key(s) to build

You can choose Phonetic and/or Employee ID. The indicated keys will be built automatically for new or transferred employees.

3. Save the form

4. Delete Phonetic/Employee ID Keys

The first step in rebuilding the Phonetic and/or Employee ID Keys is to delete them. Generally, you would do this after loading production data during an upgrade.

To delete all phonetic keys, perform the following steps:

1. Run the Delete All Phonetic Keys (DEL-PE) program.
To run this program from the Navigator, select:

Component:  Development Tools
 Process:  System Control Repository Utilities
 Task:  Delete All Phonetic Keys

2. Click OK or press Enter

All Phonetic and Employee ID Key records are deleted for all organizations.

APPENDIX A

Release Implementation Checklist

Checklist—Implementing the 5.0 Release

Phase 1: Install The Solution Series 5.0

- Task 1: Install a ‘vanilla’ 5.0 test system
- Task 2: Back up the 5.0 test system

Phase 2: Analyze and upgrade the Payroll Processing System

- Task 1: Reviewing and revising jobs
- Task 2: Reviewing override files
- Task 3: Revising override files
- Task 4: Applying modifications and recompiling the Payroll Processing System programs

Jobs used:

OS/390 and AS/400=
JXP2EDIT
JXP4CALC
JXP5PRNT
JXO4CALC

Windows and UNIX=jxcybmst

- Task 5: Extracting additional Cyborg generators
Job used: jxrptgen
- Task 6: Loading system generators (0A, 0G,0O, 0P, and 17–29) into the P20
Jobs used:
jpayxtr
jmntrun
jpaymrg
- Task 7: Loading report generators into the P20
Jobs used:
jpayxtr
jmntrun
jpaymrg

- Task 8: Performing a test Payroll run

Form and jobs used:

AE-SCR
 jpayxtr
 jpayrun
 jmntrun
 jpaymrg

Phase 3: Analyzing and updating online modifications

- Task 1: Identifying your customizations to the online system
Job used: jmainto
- Task 2: Removing unnecessary records and separating the Maintenance Out output into logical files
Job used: jclean01
- Task 3: Updating checklist and menu records (Windows and UNIX systems only)
- Task 4: Applying your online customizations
Jobs used:
 jmainti
 jreload
- Task 5: Updating menu records (Windows and UNIX systems only)
Job used: jrptmnu
- Task 6: Converting Saving Bond table records
Programs used:
 DSP01
 CNVTVA

Phase 4: Rebuilding the Database—Relational environments only

- Task 1: Export F1 and FTM records
Job used: jexport
- Task 2: Execute the case tool
Job used: jertpgms
- Task 3: Create the database/tablespaces, tables, index, and views
Job used: jertcyb
- Task 4: Pre-compile, compile, and link RDBPGMA through RDBPGMH
Jobs used:

OS/390 and AS/400=
 JSQLCOMP
 JCOMPRDBH

Windows and UNIX=jcmpsubr

Phase 5: Upgrading your CBSV Processing System

- Task 1: Reviewing override files
- Task 2: Revising override files
- Task 3: Expanding employee (AREA2) and/or company (AREA4) work areas

Form and jobs used:

EXPAND

OS/390 and AS/400=

JXP4CALC

JXO4CALC

Windows and UNIX=jxcybmst

- Task 4: Extract and compile the COBOL programs to include the new AREA2-BOTH and AREA4-BOTH values
Program used: CBSVB
- Task 5: Delete the AREA size record
Program used: DEL-ZX

Phase 6: Moving data into your new 5.0 environment

- Task 1: Creating the Batch Master (P20) and the Employee Database (FILE02)
Job used: jpayxtr

- Task 2: Running a selective Pay Merge into the new system
Job used: jpaymrg

- Task 3: Recreating RFT records
Job used:
OS/390 and AS/400=JFXREF
Windows and UNIX=jf-xref

- Task 4: Rebuilding Alternate Keys
Job used: jbldak

- Task 5: Rebuilding Phonetic and Employee ID Keys
Forms used:
AF-SCR
DEL-PE
QUERY (KEY-PE)

Date Completed	Completed By

Comments:

Hewitt

Installing and Configuring The Solution Series 5.2 (UNIX)

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PART 1

Before You Begin...

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Introduction

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Welcome

This document provides detailed installation instructions for The Solution Series on a UNIX environment.

How to get additional help

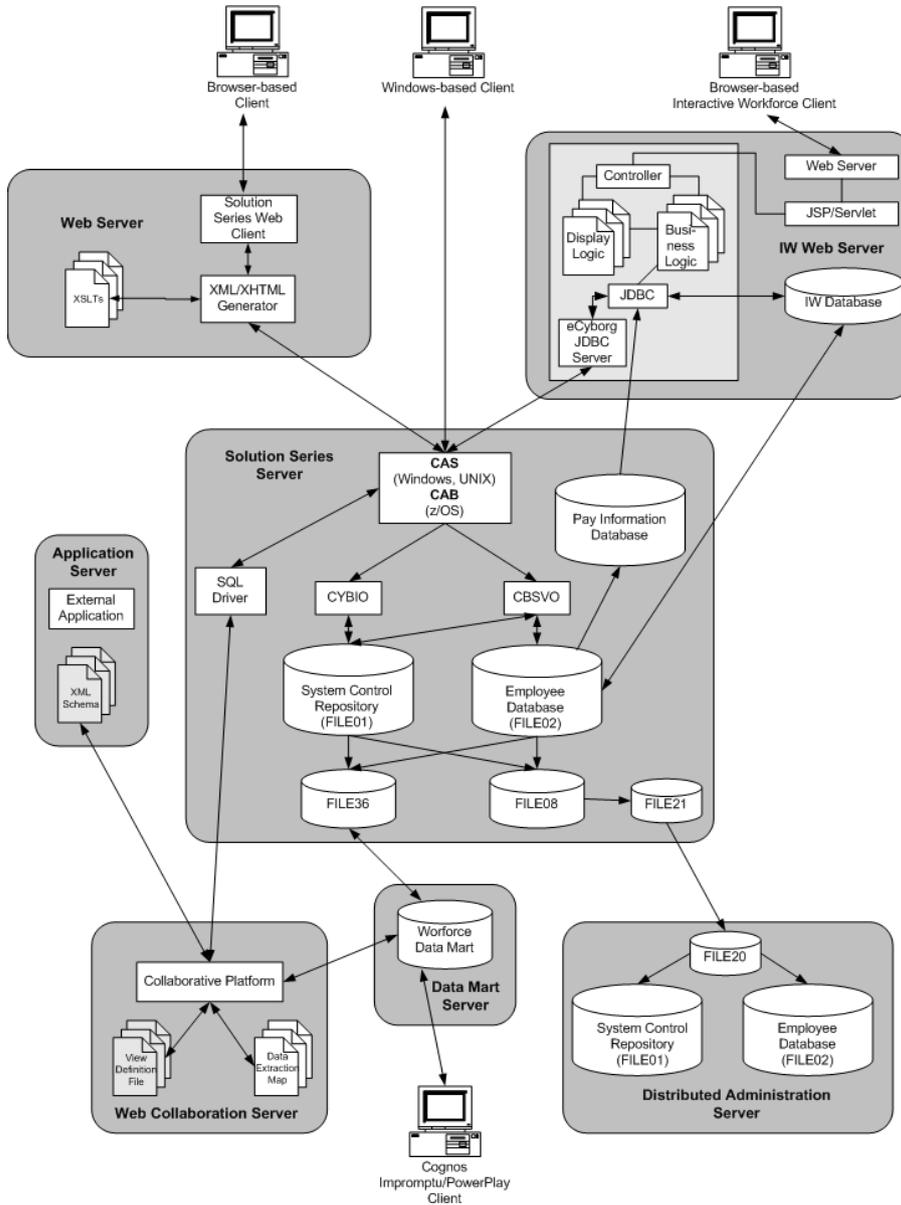
If you cannot find the answers to your questions in this manual contact Customer Support who will be able to answer specific questions and give you general advice on training.

Please visit our web site www.hewitt.com/cyborg for the latest schedule of available courses and course descriptions.

Suggestions and feedback

We value your feedback on the performance support materials. Please forward any comments about this document to Customer Support.

Complete Product Installation Overview



Prerequisites

The software and hardware prerequisites for installing our products vary depending on your platform and the modules you purchased. Some third-party software must be purchased and installed before installing our products. To review hardware and software prerequisites for installing our products, follow these steps:

- 1. Access the Hewitt Cyborg home page**
In the Address area at the top of your browser, type www.hewitt.com/cyborg and then press Enter.
- 2. Access the Customer Center**
At the top of the home page click Customer Center Login.
- 3. Log in to the Customer Center**
Click LOG IN, enter your User name and Password, and then either click OK or press Enter.
- 4. Select Product Updates**
On the left pane of the page, click Product Updates.
- 5. Select prerequisites for the Product/Version**
On the right side of the pane, click the product/version you want to view and their prerequisites.

PART 2

Installing and Configuring The Solution Series Application Server

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Indexed Server Installation and Configuration

This section provides detailed instructions for installing The Solution Series Application Server on a UNIX system. This is a technical section aimed at system administrators.

Note: Throughout this section, we have suggested a naming convention for log files created when you execute the script. Entering a command like the following:

```
rz jpayxtr
```

The command will run the script and create the log in the `$log` subdirectory. The log name will default to the name of the script, for example, `jpayxtr.log`. Please make sure you review all output after each script is run to identify and address any errors that may have occurred.

Deliverables

The following is included:

1	CD-ROM labeled The Solution Series 5.2 for UNIX
1	Installing and Configuring The Solution Series 5.2 (UNIX) (this guide)



Refer to *Directory Contents* for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Phase 1: Prepare for installation

Install and configure prerequisite software

It is assumed that you have already installed and configured the prerequisite software described in Chapter 1 on the server. These must be in place before beginning the installation.

Create user and file system

To create the user and file system for your installation, perform the following steps:

1. Check for, or create, a file system

Set a file system with at least 1GB of free space.

2. Create the installation user account

A user ID of 'cyborg' is required for the installation of the Cyborg Application Server (CAS) daemon. You must set up the permissions for this new account (for example 777 for the app directory and the files within it).

Note: If you already have an existing cyborg account from a previous installation, re-use the existing cyborg user account.

3. Log into the system

Log into the system using the given installation user account.

4. CBSVB and CBSVO Override

An override file is provided in the data directory called cbsv.ovr. The jpulcvn script which extracts the cobol programs use this file. If you have any user overrides for cbsvb or cbsvo, they must be added into this file prior to processing the script. In addition, two files are supplied:

- edi.ovr
- postcode.ovr.

If this functionality is required, they must be copied into cbsv.ovr.

Phase 2: Extract and Transfer Install Files

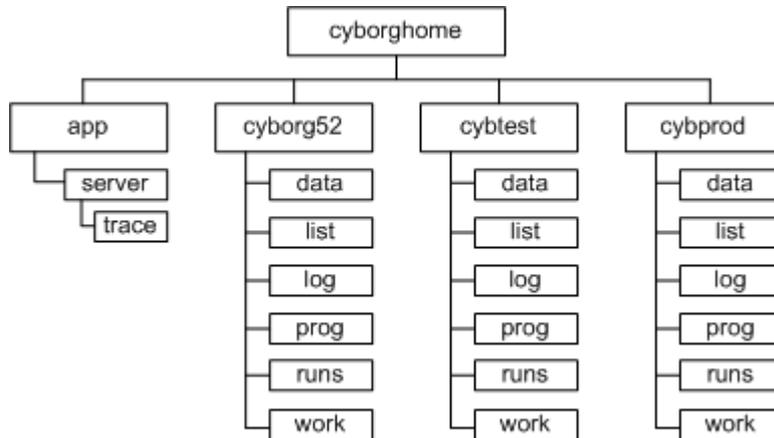
The Solution Series directory structure

The server software is delivered in two main directories:

`/cyborghome/app` and `/cyborghome/Cyborg52`. The name of the directory `/cyborghome` and subdirectory `Cyborg52` is customizable during media installation.

Follow the appropriate steps listed below to copy the installation files and directory structure to your server.

Note: To allow each version of the software to operate independently using its own CAS, an additional port other than 9888 can be set up for the Cyborg Application Server. It is recommended that your `/cyborghome/app` directory exist only once no matter how many environments you have installed for this version.



Extract install files to a PC

Insert the CD-ROM into The Solution Series Application Server machine. The 'Getting Started' page starts automatically. Scroll through the page, then click the following link to start the autoinstall:

Install The Solution Series application server

Follow the installation prompts. The following table tells you what information the installation program will require. The center column, Options/Defaults contains defaults. If you are not using defaults, complete the Your Entries/Selections column with information needed for your organization's install.

Prompt	Options/Defaults	Your Entries/Selections
Destination	C:\Hewitt\Cyborg52\UNIX	

Prompt	Options/Defaults	Your Entries/Selections
Setup Type	*Complete *Custom	
UNIX	*AIX RS6000 *HP-UX *Sun Solaris	
Select Index or Relational	*Indexed *Relational (Oracle)	
UNIX Server HOSTNAME or IP Address	HOSTNAME	Enter IP Address or Hostname of UNIX Server
File System	/cyborghome/CYBORG52	

Transfer install files from the PC to the server

1. Verify system name and variables

FTP Command Script: `ftpcmds_ST_idx.unx`

The information that was entered during the copying of programs from the CD to the PC has been inserted into this file.

2. Run the file transfer program

Script used: `jftp`

Run the file transfer script from a command prompt on the Windows client. This will load the eCyborg files from the PC to the UNIX machine.

Note: You will need the FTP capability enabled on both systems.

Example of command line to run this script:

```
JFTP USERNAME
```

You will be prompted for the password. You can verify the FTP by checking the `ftpupload.log` file which will be generated in the same directory with the FTP script.

Note: The following command is included in the FTP script:

```
quote site chmod 755 jinstallst
```

If the following error: 'SITE command not implemented' is present in your `ftpupload.log` file, you must manually enable the access modifier to 755 on the `jinstallst` script before running it.

Extract server install files

Script used: `jinstallst`

This script should be run while logged in as CYBORG user. It extracts and installs the UNIX files onto the server.

Follow the installation prompts. The table following shows the information the install script will require along with the defaults used during the installation.

Prompt	Options/ Defaults
Enter the directory where the installation files were uploaded.	/installfiles/ Cyborg52_Install
Enter the top-level directory where the software will be installed.	/cyborghome
Please indicate whether you would like to install the base eCyborg product.	Enter Yes and press Enter.
Enter the name of the directory where The Solution Series will be installed.	CYBORG52
Please indicate whether you would like to install the Cyborg Application Server (CAS).	Enter Yes and press Enter.

The installation script will prompt you to verify that the information entered is correct and ask if you want to proceed with the installation. Once the files have been successfully installed, you may delete the CYBORG52_Install directory and all its files created by the FTP process.

Note: The install program pipes error messages sent to the screen through user parameter \$PAGER to control error messages from scrolling off the screen. Press a key when you see the -MORE- prompt.

Set up user profile

The 'Cyborg' user needs its profile to include the updated values for the MicroFocus environment variables and \$path. To set up the user profile, perform the following steps:

1. **Modify Cyborg environment variable lines in the .profile**

You need to modify the .profile identifying necessary variables for the environment. This is necessary for the compilation and execution of the background delivered source programs . Include the following lines in the .profile:

```
data=/cyborghome/CYBORG52/data      ; export data
work=/cyborghome/CYBORG52/work      ; export work
list=/cyborghome/CYBORG52/list      ; export list
prog=/cyborghome/CYBORG52/prog      ; export prog
runs=/cyborghome/CYBORG52/runs      ; export runs
log=/cyborghome/CYBORG52/log        ; export log
TERM=vt100                          ; export TERM
PATH=$PATH:/cyborghome/CYBORG52/runs ; export PATH
```

Note The directory /cyborghome/CYBORG52 is the default directory for the product.

2. **Include Server Express environment variable lines in the .profile**

You need to modify the .profile identifying necessary variables for the Micro Focus COBOL Compiler. This is necessary for the compilation and execution of the background delivered source programs. Please set the following environment variables:

- COBDIR - Specifies the directory that contains Server Express
- PATH - Specifies the directories to searched by all background programs, including the run-time system.
- LD_LIBRARY_PATH, LIBPATH or SHLIB_PATH, depending on your UNIX system. Specifies the directory for the UNIX system, cob and run-time system to search for shared libraries and callable shared objects.

Example:

For AIX RS6000

```
COBDIR=/usr/lpp/cobol                ; export COBDIR
PATH=$COBDIR/bin:$PATH              ; export PATH
PATH=/usr/ccs/bin                   ; export PATH
LIBPATH=$COBDIR/lib:$LIBPATH        ; export LIBPATH
```

For Sun Solaris

```
COBDIR=/usr/lib/cobol                ; export COBDIR
PATH=$COBDIR/bin:$PATH              ; export PATH
LD_LIBRARY_PATH=$COBDIR/lib:$LD_LIBRARY_PATH ; export LD_LIBRARY_PATH
```

For HP-UX

```
COBDIR=/opt/lib/cobol                ; export COBDIR
PATH=$COBDIR/bin:$PATH              ; export PATH
SHLIB_PATH=$COBDIR/lib:$SHLIB_PATH  ; export SHLIB_PATH
```

Note Please refer to the Micro Focus installation guide for the settings for these variables.

3. Include location of C compiler in the PATH

You need to add the file path of the C compiler to the .profile. For example:

For HP-UX

```
PATH=/opt/ansic/bin:$COBDIR/bin:/opt/bin/cobol:$PATH ; export PATH
```

For AIX RS6000

```
PATH=/usr/vac/bin:$COBDIR/bin:/usr/lpp/cobolbin:$PATH ; export PATH
```

For Sun Solaris

```
PATH=/usr/SUNWspro/bin:$COBDIR/bin:/usr/bin/cobol:$PATH ; export PATH
```

4. Refresh environment variables

Refresh the environment so the logical names take effect by executing the following:

```
./profile (dot-space-dot-slash-dot-profile)
```

Verify compiler versions

The delivered binary programs were compiled on the certified platform versions and are not guaranteed to run on earlier versions. To verify that ServerExpress environment variables are set correctly, perform the following steps:

1. Execute the cob command

To verify that ServerExpress environment variables are set correctly, execute the following command:

```
cob
```

The response should be:

```
I see no work
```

Note: If you do not receive this response, verify that your ServerExpress environment variables are set correctly.

2. Verify the version of the installed compilers

To verify what version of ServerExpress is installed, execute the following command:

```
cat $COBDIR/etc/cobver
```

This will show you the version and revision level of the COBOL compiler installed. To obtain the C version, perform the following command for your operating system:

For Sun Solaris

```
$ cc -V 2>&1 | head -1
```

For AIX RS6000

```
$ lslpp -L|grep ibmc**.cmp|cut -c30-34|head-
```

For HP-UX

```
$ what /usr/bin/cc|head -2|tail -1
```

Note: These examples are case-sensitive.

Check special requirements

1. Check output

Each time a script is run, check all output before another one is executed. For example, verify the output of the compiles and/or audit reports.

2. Server Express

Server Express can be installed as a 32 or 64 bit product. This release has been certified using the 32 bit compiler. To ensure your implementation is using the 32 bit compiler, include the following in all the .profiles and the CAS script:

```
COBMODE=32 ; export COBMODE
```

3. Compile all COBOL programs with the align(8) compiler directive

Insert the align (8) compiler directive into your existing compile jobs. The following is a sample of how you include this compiler directive:

```
cob -xv -C align(8) nobound ibmcomp noosvs notrunc -N nocheck noboundopt  
$prog/{program}.cob -o $prog/{program}
```

Phase 3: Compile Batch Programs and Build FILE01

Perform the following steps to install the batch and online programs and create the random System Control Repository.

Note: This portion of the installation must be performed locally on the server.

Jobs are run with the following syntax:

```
rk jobname
```

The rk prefix runs the job and creates a log. It is important to note that rk runs the job in the background. When a job is submitted, the first part of the log is displayed on the console. Control is then returned to the command prompt while the job continues to run in the background. Use the 'tail' command to examine the end of the log file, until the Job Complete message displays. Review the output after each script has completed to identify any errors that may have occurred. Review the output after each script has completed to identify any errors that may have occurred.

Extract and compile all cybmst programs

Script used: jxcybmst

To extract and compile all cybmst COBOL programs (P9CNVT, P2EDIT, P4CALC, P5PRNT, P7COMP, 04CALC) and cbsvft, execute the jxcybmst script from the \$runs subdirectory. For example:

```
rk jxcybmst
```

Review the log, then the cybmst.03 list file in the \$list subdirectory to determine if there were any errors.

Compile and link sort programs

Script used: jcmsort

To compile p10sort.cob, p45sort.cob, p80sort.cob, p80copy.cob, and pfssort.cob execute the jcmsort script from the \$runs subdirectory. For example:

```
rk jcmsort
```

Review the log to determine if there were any errors.

Compile and link the delivered cbsvb

Script used: jcmpcvbn

To compile the non-relational batch program cbsvb as delivered, execute the jcmpcvbn script from the \$runs subdirectory. For example:

```
rk jcmpcvbn
```

Review the log to determine if there were any errors.

Compile and link the US Quarterly Processor

Script Used: jxp5qtr

To compile the script p5qtr as delivered, execute jxp5qtr from the \$runs subdirectory. For example:

```
rl jxp5qtr
```

Review the log to determine if there were any errors.



Refer to Using the Quarterly Processor for instructions on selecting generators, configuring the processor, and generating quarterly report output.

Create System Control Repository

Script used: jdemo01

This procedure creates the System Control Repository. Execute the jdemo01 script. For example:

```
rl jdemo01
```

Review the log, then the demo.03 list file in the \$list subdirectory to determine if there were any errors. If you receive any 'RELOAD NOT FOUND' messages, disregard these messages. For example:

```
DEMO01 V001 04-29-2005 04:44:29 RECORD COUNT-675,796
-----
CSSS <UTIL( (999999(DISPLY( ( ( ( )13:46:31 05-02 XXXX
ZZTEST 999999E RELOAD IS OK. Ver-5.2 LENGTH 531 05-02-05 13:43:03
HEWITT ASSOCS - RELOAD PROGRAM CHECK
-----
P CYBADT ***** RELOAD NOT FOUND *****
P CYBEZQ ***** RELOAD NOT FOUND *****
P CYBHL ***** RELOAD NOT FOUND *****
P CYBP15 ***** RELOAD NOT FOUND *****
P CYBPZQ ***** RELOAD NOT FOUND *****
P CYBRCI ***** RELOAD NOT FOUND *****
P CYBSCK ***** RELOAD NOT FOUND *****
P CYBSEC ***** RELOAD NOT FOUND *****
P CYBWCI ***** RELOAD NOT FOUND *****
P CYBWRK ***** RELOAD NOT FOUND *****
P CYBWZQ ***** RELOAD NOT FOUND *****
P CYBX02 ***** RELOAD NOT FOUND *****
P EXCTRL ***** RELOAD NOT FOUND *****
P QMCTRL ***** RELOAD NOT FOUND *****
P RDEMRL ***** RELOAD NOT FOUND *****
P RDEMRO ***** RELOAD NOT FOUND *****
P RDTBPL ***** RELOAD NOT FOUND *****
P RTCTRL ***** RELOAD NOT FOUND *****
P TBLENT ***** RELOAD NOT FOUND *****
P TBLINQ ***** RELOAD NOT FOUND *****
P TBLUPD ***** RELOAD NOT FOUND *****
P TBLVER ***** RELOAD NOT FOUND *****
P V-NAME ***** RELOAD NOT FOUND *****
P WPTM ***** RELOAD NOT FOUND *****
27SSS <UTIL( (999999(DEMOY3( ( ( ( )13:46:32 05-02 XXXX
*****
```


Phase 4: Compile CBSV and CYBIO

Extract cbsv programs

Script used: `jpulcvn`

For example:

```
rm -rf cbsv
rj jpulcvn
```

Review the log and then the `pulcvn.lis` list file in the `$list` subdirectory to determine if there were any errors.

Compile and link all CBSV programs

Script used: `jcmpcvn`

For example:

```
rj jcmpcvn
```

Review the log to determine if there were any errors.

Compile and link CYBIO programs

Script used: `jcmpcbio`

To compile and link the CYBIO programs, execute the `jcmpcbio` script from the `$runs` subdirectory. For example:

```
rj jcmpcbio
```

Review the log to determine if there were any errors.

Phase 5: Create Test P20IN Batch Master

Extract Report Generators

Script used: `jp20strt (U.S.)`
`jp20strc (Canada)`

To extract the report generators from CYBMST and create the P20IN Batch Master File, execute the `jp20strt` script from the `$runs` subdirectory with `p9strt` and `p9cbsv` as input.

Input files

<code>p05t80</code>	<code>p9strt</code>
<code>p05t81</code>	<code>p9cbsv (U.S.)</code> <code>p9cbsvc (Canada)</code>

The P2EDIT, P4CALC, and P5PRNT programs are processed. For example:

```
rj jp20strt
```

Review the log and then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

```
audit2.trl  
p20strt.03  
transload
```

Create Test Employee Database

Script used: `jpaymrg`

To create a test Employee Database, execute the `jpaymrg` script from the `$runs` subdirectory. For example:

```
rj jpaymrg
```

Review the log and then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 6: Create Test Employee Database

Populate database with test data

To populate the database with test data, perform the following steps:

1. Load test companies

Script used: jprdemo (U.S.)
jprdemoc (Canada)

This procedure loads the payroll test data into the Employee Database (Master File: FILE02). Execute the jprdemo script from the \$runs subdirectory. For example:

```
rx jprdemo
```

Review the log and then the prdemo.03 list file in the \$list subdirectory to determine if there were any errors.

2. Load HR test data

Script used: jhrdemo (U.S.)
jhrdemoc (Canada)

This procedure loads HR test data into the Employee Database (Master File: FILE02). Execute the jhrdemo script from the \$runs subdirectory. For example:

```
rx jhrdemo
```

Review the log and then the hrdemo.03 list file in the \$list subdirectory to determine if there were any errors.

3. Build alternate keys

Script used: jbldak

To build or rebuild the Employee Name Alternate Key, run the jbldak script located in the \$runs directory.

Note: This script may be altered to accommodate your build of the alternate keys once your data has been added to the system.

For example:

```
rx jbldak
```

Review the log and then the bldaky.03 list file in the \$list subdirectory to determine if there were any errors.

Extract full payroll data

Script used: jpayxtr

To update the P20IN Batch Master File with the demo test data, execute the jpayxtr script from the \$runs subdirectory.

The organization and employee data will be extracted from the online Employee Database and placed in FILE12. This will be the new P20IN Batch Master File.

FILE10 (payxtr10), which contains time entries and adjustments, is also created. payxtr10 becomes input to the jpayrun as p05t81. For example:

```
rj jpayxtr
```

Review the log and then the payxtr.03 list file in the \$list subdirectory to determine if there were any errors.

Complete a payroll run

Script used: jpayrun

Complete a payroll run to apply taxes (TAXFILE) and the time entries and adjustments (payxtr10) to the p20in file. Execute the jpayrun script from the \$runs subdirectory with p05t80 and p05t81 as input. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Note: Verify that the TAXFILE being applied is the current tax related regulatory bulletin from CUBBS (Cyborg Users Bulletin Board).



Refer to Accessing CUBBS in the knowledgebase or Technical Administration guide for detailed instructions for logging onto CUBBS.

Input files

p05t80	TAXFILE (US) TAXFILEC (Canada)
p05t81	payxtr10

Note: If you are a Canadian customer, modify the script to extract TAXFILEC instead of the TAXFILE.

For example:

```
rj jpayrun
```

Review the log, then all the output listings in the \$list subdirectory to determine if there were any errors.

Output listings

```
auditrl1.lis  
checknum.lis  
payslips.lis  
depslips.lis  
combreg.lis  
transload.lis
```

Perform a payroll maintenance run

Script used: jmntrun

Perform a payroll maintenance run to create pay history and labor records and apply check numbers to the newly created history records on the p20in Batch Master File. Execute the

jmnrtrun script from the `$runs` subdirectory. The P2EDIT, P4CALC, and P5PRNT programs will be processed. For example:

```
rl jmnrtrun
```

Review the log, then the `transload2.lis` and `auditrl2.lis` list files in the `$list` subdirectory to determine if there were any errors.

Update the Employee Database

Script used: jpaymrg

To create a new random Employee Database, execute the `jpaymrg` script from the `$runs` subdirectory. For example:

```
rl jpaymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 7: Extract HR reports

Extract HR Reports

Script Used: jreport

To extract Human Resource batch reports, execute the `jreport` script from the `$runs` subdirectory. For example:

```
rl jreport
```

Review the log, then the `rtpnt.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 8: Apply System Control Repository Menu Additions

If you plan on implementing the Report Launcher, Process Monitor, and Desktop Document Interface facilities on the client, the you must apply additional menu items to the System Control Repository (FILE01).

Build report menus

Script used: jrptmnu

To build a menu containing the delivered report groups, run jrptmnu located in the \$runs directory. For example:

```
rx jrptmnu
```

Review the log, then the rptmnu.03 list file in the \$list subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Script used: jmainti

To apply menu items for online user access to batch processes, run the jmainti script from the \$runs directory, using the \$data/eprddi05 file as FILE05 input. For example:

```
rx jmainti
```

Review the log, then the mainti.03 list file in the \$data subdirectory to determine if there were any errors.

Go the the chapter titled, *Cyborg Application Service (CAS) Installation and Configuration* (on page 51), for instructions on the installation and configuration of the Cyborg Application Server (CAS) service.

CHAPTER 3

Relational Solution Series Installation and Configuration

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Introduction

This section provides detailed instructions for installing The Administrative Server on a UNIX system. This is a technical section aimed at system administrators.

Note: Throughout this section, we have suggested a naming convention for log files created when you execute the script. Entering a command like the following:

```
rz jpayxtr
```

The command will run the script and create the log in the `$LOG` subdirectory. The log name will default to the name of the script, for example, `jpayxtr.log`. Please make sure you review all output after each script is run to identify and address any errors that may have occurred.

Deliverables

The following is included:

1	CD-ROM labeled The Solution Series 5.2 for UNIX
1	Installing and Configuring The Solution Series 5.2 (UNIX) (this guide)



Refer to *Directory Contents* for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Phase 1: Prepare for installation

Install and configure prerequisite software

It is assumed that you have already installed and configured the prerequisite software described in Chapter 1 on the server. These must be in place before beginning the installation.

Create user and file system

To create the user and file system for your installation, perform the following steps:

1. Check for, or create, a file system

Set a file system for CYBORG with at least 1GB of free space.

2. Create the installation user account

A user ID of Cyborg is required for the installation of the Cyborg Application Server (CAS) daemon. You must set up the permissions for this new account (for example 777 for the app directory and the files within it).

Note: If you already have an existing cyborg account from a previous installation, re-use the existing cyborg user account.

3. Log into the system

Log into the system using the Cyborg user account.

Note: The Cyborg user account information will be needed for later steps.

Phase 2: Extract and Transfer Install Files

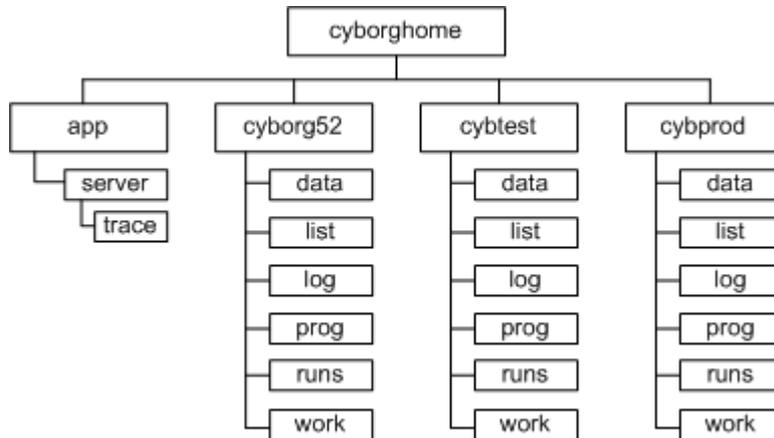
The Solution Series directory structure

The server software is delivered in two main directories:

`/cyborghome/app` and `/cyborghome/Cyborg52`. The name of the directory `/cyborghome` and subdirectory `Cyborg52` is customizable during media installation.

Follow the appropriate steps listed below to copy the installation files and directory structure to your server.

Note: To allow each version of the software to operate independently using its own CAS, an additional port other than 9888 can be set up for the Cyborg Application Server. It is recommended that your `/cyborghome/app` directory exist only once no matter how many environments you have installed for this version.



Extract install files to a PC

Insert the CD-ROM into The Solution Series Application Server machine. The Getting Started page starts automatically. Scroll through the page, then click the following link to start the autoinstall:

Install The Solution Series application server

Follow the installation prompts. The table following tells you what information the installation program will require. The center column, Options/Defaults contains the defaults. If you are not using the defaults, complete the Your Entries/Selections column with information needed for your organization's install.

Prompt	Options/Defaults	Your Entries/Selections
Destination	C:\Hewitt\Cyborg52\UNIX	

Prompt	Options/Defaults	Your Entries/Selections
Setup Type	*Complete *Custom	
UNIX	*AIX RS6000 *HP-UX *Sun Solaris	
Select Index or Relational	*Indexed *Relational (Oracle)	
UNIX Server HOSTNAME or IP Address	HOSTNAME	Enter IP Address or Hostname of UNIX Server:
File System	/cyborghome/CYBORG52	

The installation program will prompt you when it is complete.

Transfer install files from the PC to the server

1. Verify system name and variables

FTP Command Script: `ftpcmds_st_ora.unx`

The information that was entered during the copying of programs from the CD to the PC has been inserted into this file.

Note: The script is located in the destination defined in the extract step.

2. Run the file transfer program

Script used: `jftp`

Run the file transfer script from a command prompt on the Windows client. This script will load the Solution Series files from the PC to the UNIX machine.

Note: The script is located in the destination defined in the extract step and you will need to have the FTP capability enabled on both systems.

Example of command line to run this script:

```
JFTP USERNAME
```

You will be prompted for the password. You can verify the ftp by checking the ftpupload.log file which will be generated in the same directory with the ftp script.

Note: The following command is included in the ftp script:

```
quote site chmod 755 jinstallst
```

If the following error SITE command not implemented is present in your ftpupload.log file, you must manually enable the access modifier to 755 on the jinstallst script before running it.

Extract server install files

Script used: `jinstallst`

This script should be run while logged in as CYBORG user. It extracts and installs the UNIX files onto the server. Follow the installation prompts. The table following shows the information the install script will require along with the defaults used during the installation.

Prompt	Options/ Defaults
Enter the directory where the installation files were uploaded.	/installfiles/ Cyborg52_Install
Enter the top-level directory where the software will be installed.	/cyborghome
Please indicate whether you would like to install the base eCyborg product.	Enter Yes and press Enter.
Enter the name of the directory where The Solution Series will be installed.	CYBORG52
Please indicate whether you would like to install the Cyborg Application Server (CAS).	Enter Yes and press Enter.

The installation script will prompt you to verify that the information entered is correct and ask if you wish to proceed with the installation. Once the files have been successfully installed, you may delete the CYBORG52_Install directory and all its files created by the FTP process.

Note: The install program pipes error messages sent to the screen through user parameter `$PAGER` to control error messages from scrolling off the screen. Press a key when you see the `-MORE-` prompt.

Set up user profile

Every batch user must include the updated values for the MicroFocus environment variables and `$path` (to include the Cyborg user). To set up the user profile, perform the following steps:

1. Modify environment variable lines in the `.profile`

You need to modify the `.profile` identifying necessary variables for the environment. This is necessary for the compilation and execution of the background delivered source programs v5.2. Include the following lines in the `.profile`.

```
data=/cyborghome/CYBORG52/data      ; export data
work=/cyborghome/CYBORG52/work      ; export work
list=/cyborghome/CYBORG52/list      ; export list
prog=/cyborghome/CYBORG52/prog      ; export prog
runs=/cyborghome/CYBORG52/runs      ; export runs
log=/cyborghome/CYBORG52/log        ; export log
NLS_LANG=AMERICAN_AMERICA.WE8MSWIN1252 ; export NLS_LANG
TERM=vt100                          ; export TERM
PATH=$PATH:/cyborghome/CYBORG52/runs ; export PATH
```

Note: The directory `/cyborhome/CYBORG52` is the default directory.

2. Include Server Express environment variable lines in the `.profile`

You need to modify the `.profile` identifying necessary variables for the Micro Focus COBOL Compiler. This is necessary for the compilation and execution of the background delivered source programs v5.2. Please set the following environment variables:

- `COBDIR` - Specifies the directory that contains Server Express
- `PATH` - Specifies the directories to be searched by all background programs, including the run-time system.
- `LD_LIBRARY_PATH`, `LIBPATH` or `SHLIB_PATH`, depending on your UNIX system. Specifies the directory for the UNIX system, `cob`, and run-time system to search for shared libraries and callable shared objects.

Examples:

For AIX RS6000

```
COBDIR=/usr/lpp/cobol                ; export COBDIR
PATH=${COBDIR}/bin:$PATH             ; export PATH
LIBPATH=${COBDIR}/lib:$LIBPATH       ; export LIBPATH
```

For Sun Solaris

```
COBDIR=/usr/lib/cobol                ; export COBDIR
PATH=${COBDIR}/bin:$PATH             ; export PATH
LD_LIBRARY_PATH=${COBDIR}/lib:$LD_LIBRARY_PATH ; export LD_LIBRARY_PATH
```

For HP-UX

```
COBDIR=/opt/lib/cobol                ; export COBDIR
PATH=${COBDIR}/bin:$PATH             ; export PATH
SHLIB_PATH=${COBDIR}/lib:$SHLIB_PATH ; export SHLIB_PATH
```

3. Include location of C compiler in the `PATH`

You need to add the file path of the C compiler to the `.profile`. For example:

For AIX RS6000

```
PATH=/usr/vac/bin:${COBDIR}/bin:/usr/lpp/cobol/bin:$PATH ; export PATH
```

For Sun Solaris

```
PATH=/usr/SUNWspro/bin:${COBDIR}/bin:/usr/bin/cobol:$PATH ; export PATH
```

For HP-UX

```
PATH=/opt/ansic/bin:${COBDIR}/bin:/opt/bin/cobol:$PATH ; export PATH
```

4. Include Oracle environment variable lines in the `.profile`

You need to modify the `.profile` identifying necessary variables for Oracle. This is necessary for the compilation and execution of the background delivered source programs v5.2. Please set the following environment variables:

```
NLS_LANG=AMERICAN_AMERICA.WE8MSWIN1252 ;export NLS_LANG
ORACLE_ADMIN=                             ;export ORACLE_ADMIN
ORACLE_BASE=                               ;export ORACLE_BASE
ORACLE_HOME=                               ;export ORACLE_HOME
```

```
ORACLE_PATH=                ;export ORACLE_PATH
ORACLE_SID=                  ;export ORACLE_SID
```

5. Refresh environment variables

Refresh the environment so the logical names take effect by executing the following:

```
./profile (dot-space-dot-slash-dot-profile)
```

Verify compiler versions

The delivered binary programs were compiled on the certified platform versions and are not guaranteed to run on earlier versions. To verify that ServerExpress environment variables are set correctly, perform the following steps:

1. Execute the cob command

To verify that ServerExpress environment variables are set correctly, execute the following command:

```
cob
```

The response should be:

```
I see no work
```

Note: If you do not receive this response, verify that your ServerExpress environment variables are set correctly.

2. Verify the version of the installed compilers

To verify what version of ServerExpress is installed, execute the following command:

```
cat $COBDIR/etc/cobver
```

This will show you the version and revision level of the COBOL compiler installed. To obtain the C version, perform the following command for your operating system:

For Sun Solaris

```
$ cc -v 2>&1 | head -1
```

For AIX RX6000

```
$ lslpp -L|grep ibmc** .cmp|cut -c30-34|head-
```

For HP-UX

```
$ what /usr/bin/cc|head -2|tail -1
```

Note: These examples are case-sensitive.

Check special requirements

1. Check output

Each time a script is run, check all output before another one is executed. For example, verify the output of the compiles and/or audit reports.

2. Server Express

Server Express can be installed as a 32 or 64 bit product. This release has been certified using their 32 bit compiler. To assure your implementation is using the 32 bit compiler, include the following in the all .profiles and the cas script:

```
COBMODE = 32 ; export COBMODE
```

3. ORACLE Character Set

The we8iso8859p1 character set does not support all characters. Using this character set, you will experience operational errors during installation. When you create the database, we recommend choosing the following:

- WE8MSWIN1252 as the database character set
- AL16UTF16 as the national character set

In order to determine this, enter the following command. This command lists the language-relevant parameters of your database. Among these are the contents of the variables verify the contents of NLS_CHARACTERSET and NLS_NCHAR_CHARACTERSET, which were selected when the database was created.

```
SELECT * FROM sys.props$  
WHERE name LIKE 'NLS%';
```

4. Compile all COBOL programs with the 'align(8)' compiler directive

Insert the align (8) compiler directive into your existing compile jobs. The following is a sample of how you include this compiler directive:

```
cob -xv -C "align(8) nobound ibmcomp noosvs notrunc" -N "nocheck noboundopt"  
$prog/{program}.cob -o $prog/{program}
```

Phase 3: Build The Solution Series Environment

Perform the following steps to install the batch and online programs and create the random System Control Repository.

Note: This portion of the installation must be performed locally on the server. By preceding the batch job with 'rj' you run the script and create the log. Be sure to review output after you run each script to identify and address any errors that may have occurred.

Extract and compile all cybmst programs

Script used: `jxcybmst`

To extract and compile all cybmst COBOL programs (P9CNVT, P2EDIT, P4CALC, P5PRNT, P7COMP, O4CALC) and cbsvrft, execute the `jxcybmst` script from the `$runs` subdirectory. For example:

```
rj jxcybmst
```

Review the log, then the `cybmst.03` list file in the `$list` subdirectory to determine if there were any errors.

Compile and link sort programs

Script used: `jcmsort`

To compile `p10sort.cob`, `p45sort.cob`, `p80sort.cob`, `p80copy.cob`, and `pfssort.cob`, execute the `jcmsort` script from the `$runs` subdirectory. For example:

```
rj jcmsort
```

Review the log to determine if there were any errors.

Compile and link the US Quarterly Processor

Script used: `jxp5qtr`

To compile the batch program `p5qtr` as delivered, execute the `jxp5qtr` script from `$runs`. For example:

```
rj jxp5qtr
```

Review the log to determine if there were any errors.



Refer to Using the Quarterly Processor documentation for instructions on selecting generators, configuring the processor, and generating quarterly report output.

Compile `rdbpgm0.cob`

Script Used: `jcmprdb0`

To compile the `rdbpgm0.cob` program, execute the `jcmprdb0` script from the `$runs` subdirectory. For example:

```
rj jcmprdb0
```

Review the log to determine if there were any errors.

Execute the CASE tool

Script Used: jcrtpgms

1. **Modify the control record in jcrtpgms**

Modify the control record in jcrtpgms to include the datafile path, database connect string, and the tablespace indicator to uniquely identify this environment.

Important!: The database must be created by the Database Administrator. In addition to the rdbpgm1 program created in this step, all cbsv programs will contain the connect clause for the database.

2. **Execute jcrtpgms**

Execute the jcrtpgms script from the \$runs subdirectory. For example:

```
rl jcrtpgms
```

Review the log to determine if there were any errors.

Execute the make command

To be able to precompile, compile, and link The Solution Series relational programs, execute the make commands and test the sample1 program delivered by ORACLE.



Please refer to the ORACLE installation guide for information on the name and location of the make file.

Log in as the ORACLE administrator and execute the make commands as in the following example (actual commands may differ according to compiler):

```
cd $ORACLE_HOME/precomp/demo/procob2
make -f demo_procob_32.mk -n sample1 > $runs/cyborg.mk
```

Note: If the program above generated an 'Undefined symbol: pthread_yield' error, this is due to the fact that pthread_yield() was removed from the Posix (XOpen Version 5) standard. IBM provides a compatibility library for vendors who still use pthread_yield(). You will still need to create the cyborg.mk file; however, you will need to modify the cyborg.mk file to include a reference to '-lpthreads_compat' near the start of the file.

ORACLE linkage

The ORACLE linkage step (cyborg.mk) created by the make command will be needed for the following relational scripts:

```
jcmpsbr
jcmprdb1
jxo4calr
jcmpcvr
jcmpcvbr
```

Pre-compile, compile, and link rdbpgm1

1. Add Oracle linkage before running this script

This delivered script includes a sample ORACLE linkage step (underlined in the script). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in Execute the make command.

```
echo \n\n\t JCMPRDB1 IN PROGRESS \n
echo \n\n\t CHECKING FOR FILES \n
test -f $prog/rdbpgm1.pco || echo \n\t rdbpgm1.pco does not exist
cd $prog
procob32 ireclen=132 oreclen=132 select_error=no litdelim=apost mode=ansi
iname=rdbpgm1.pco oname=rdbpgm1.cob
cob -xv -C IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8) -N nocheck noboundopt -o
rdbpgm1 rdbpgm1.cob \
\
-L /oracle/OraHome1/lib32/ /oracle/OraHome1/precomp/lib32/cobsqlntf.o -lclntsh
cat /oracle/OraHome1/lib32/ldflags cat
/oracle/OraHome1/lib32/sysliblist -lm -lpthread -lpthread
/
cd $runs
echo \n\n\t JCMPRDB1 COMPLETE
```

For HP-UX and Sun Solaris, procob32 is executed. For AIX RS6000, procob or procob32 is executed.

2. Execute jcmprdb1

To pre-compile, compile, and link the program rdbpgm1, execute the jcmprdb1 script from the \$runs subdirectory. For example:

```
rijcmprdb1
```

Review the log to determine if there were any errors.

Create the tablespaces, tables, indexes, and views

Script Used: jrcrcyb

To execute the SQL statements defined in rdbpgm1 and create the tablespaces, tables, indexes, and views, execute the jrcrcyb script from the \$runs subdirectory. There is no output from this run, but you or your database administrator can execute the SQL statements to verify the tablespaces, tables, indexes, and views have been created. For example:

```
rijrcrcyb
```

Review the log to determine if there were any errors.

Pre-compile, compile, and link rdbpgma through rdbpgmh

1. Add Oracle linkage before running this script

This delivered script includes a sample ORACLE linkage step (underlined in the script). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in Execute the make command. For example:

```
echo \n\n\t JCMPSUBR IN PROGRESS \n
```

```

echo \n\n\t CHECKING FOR FILES \n
test -f $prog/rdbpgma.pco || echo \n\t rdbpgma.pco does not exist
test -f $prog/rdbpgmb.pco || echo \n\t rdbpgmb.pco does not exist
test -f $prog/rdbpgmc.pco || echo \n\t rdbpgmc.pco does not exist
test -f $prog/rdbpgmd.pco || echo \nrdbpgmd.pco does not exist
test -f $prog/rdbpgme.pco || echo \n\t rdbpgme.pco does not exist
test -f $prog/rdbpgmf.pco || echo \n\t rdbpgmf.pco does not exist
test -f $prog/rdbpgmg.pco || echo \n\t rdbpgmg.pco does not exist
test -f $prog/rdbpgmh.cob || echo \n\t rdbpgmh.cob does not exist
cd $prog

for file in rdbpgma rdbpgmb rdbpgmc rdbpgmd rdbpgme rdbpgmf rdbpgmg
do
echo \n\n\t COMPILATION OF ${file} IN PROGRESS \n
procob32 iname=${file}.pco oname=${file}.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C ibmcomp noosvs nobound notrunc align(8) -N nocheck noboundopt -o
${file} ${file}.cob \
\
-L/oracle/OraHome1/lib32/ /oracle/OraHome1/precomp/lib32/cobsqlintf.o -lclntsh cat
/oracle/OraHome1/lib32/ldflags cat
/oracle/OraHome1/lib32/sysliblist` -lm -lpthread -lpthread
/
echo \n\n\t COMPILATION OF ${file} COMPLETE \n
done

echo \n\n\t COMPILATION OF RDBPGMH IN PROGRESS \n
cob -xv -C ibmcomp noosvs nobound notrunc align(8) -N nocheck noboundopt
$prog/rdbpgmh.cob -o $prog/rdbpgmh
echo \n\n\t COMPILATION OF RDBPGMH COMPLETE \n
cd $runs
echo \n\n\t JCMPSUBR COMPLETE

```

For HP-UX and Sun Solaris, procob32 is executed. For AIX RS6000, procob or procob32 is executed.

2. Execute jcmpsubr

To pre-compile, compile, and link the programs rdbpgma through rdbpgmh, execute the jcmpsubr script from the \$runs subdirectory. For example:

```

rj jcmpsubr

```

The following table lists and describes each program generated by the CASE tool.

Program	Description
rdbpgma	The subroutine that handles inserting a new row in a table.
rdbpgmb	The subroutine that handles selecting data from a row in a table and passing it to cbsv.
rdbpgmc	The subroutine that handles updating values in an existing row.
rdbpgmd	The subroutine that handles deleting an existing row from a table.
rdbpgme	The subroutine called when a PAYMRG 171 process is run. It removes all rows from all tables in preparation for reinsertion of data from the P20 file. It also disables, then re-enables, all indexes (where applicable).

Program	Description
rdbpqmf	The subroutine called when a PAYMRG 222 process is run. It deletes all rows from the appropriate tables that belong to the Organizations being paid.
rdbpqmg	The subroutine that cursors through the database and rebuilds the IDX records on the database.
rdbpqmh	The subroutine that provides segment and segment key length for each segment and location of data and data type within each segment.

Review the log to determine if there were any errors.

Extract, compile, and link o4calc

1. Add Oracle linkage before running this script

This delivered script includes a sample ORACLE linkage step (underlined in the job). This linkage step must be replaced by the linkage step created by executing the ORACLE make command in Execute the make command.

```
echo \n\n\t JXO4CALR IN PROGRESS
echo \n\n\t CHECKING FOR FILES \n
test -f $prog/p9cnvt      || echo \n\t p9cnvt does not exist
test -f $data/cybmst     || echo \n\t cybmst does not exist
test -f $data/vers80.ovr || echo \n\t vers80.ovr does not exist
test -f $prog/rdbpqma.o  || echo \n\t rdbpqma.o does not exist
test -f $prog/rdbpqmb.o  || echo \n\t rdbpqmb.o does not exist
test -f $prog/rdbpqmc.o  || echo \n\t rdbpqmc.o does not exist
test -f $prog/rdbpqmd.o  || echo \n\t rdbpqmd.o does not exist
test -f $prog/rdbpqmh.o  || echo \n\t rdbpqmh.o does not exist

echo \n\n\t CREATION OF O4CALC (RELATIONAL) IN PROGRESS \n
echo O4CALC      |ISEV@PCYd& 24      MICRO-FOCUS.> $work/o4calc.04
FILE1=$prog/o4calc.pco ; export FILE1
PRINT1=$list/o4calc.03 ; export PRINT1
P05RDR=$work/o4calc.04 ; export P05RDR
CYBMST=$data/cybmst   ; export CYBMST
$prog/p9cnvt

cd $prog
echo \n\n\t COMPILATION OF O4CALC IN PROGRESS \n
procob32  iname=o4calc.pco oname=o4calc.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8) -N NOCHECK NOBOUNDOPT -o o4calc
o4calc.cob rdbpqma.o rdbpqmb.o rdbpqmc.o rdbpqmd.o rdbpqmh.o \
\
-L/oracle/OraHome1/lib32/ /oracle/OraHome1/precomp/lib32/cobsqlintf.o -lcIntsh cat
/oracle/OraHome1/lib32/ldflags cat
/oracle/OraHome1/lib32/sysliblist` -lm -lpthread -lpthread
/

cd $runs
echo \n\n\t JXO4CALR COMPLETE
```

For HP-UX and Sun Solaris, `procob32` is executed. For AIX RS6000, `procob` or `procob32` is executed.

2. Execute `jxo4calr`

To extract COBOL program `o4calc` from `CYBMST`, compile the program, and link the machine-specific subroutines. Execute the `jxo4calr` script from the `$runs` subdirectory. For example:

```
rx jxo4calr
```

Review the log, then the `o4calc.03` list file in the `$list` subdirectory to determine if there were any errors.

Compile and link the delivered `cbsvb`

1. Add Oracle linkage before running this script

This delivered script includes a sample ORACLE linkage step (underlined in the script). The linkage step must be replaced by the linkage step created by executing the ORACLE make command.

```
echo \n\n\t JCMPCVBR IN PROGRESS \n
echo \n\n\t CHECKING FOR FILES \n
test -f $prog/cbsvb.pco || echo \n\t cbsvb.pco does not exist
cd $prog
echo \n\n\t COMPILATION OF CBSVB IN PROGRESS \n
procob32 iname=cbsvb.pco oname=cbsvb.cob ireclen=132 oreclen=132 select_error=no
litdelim=apost mode=ansi
cob -xv -C IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8) -N NOCHECK NOBOUNDPT -o
${file} ${file}.cob rdbpgma.o rdbpgmb.o rdbpgmc.o rdbpgmd.o rdbpgme.o
rdbpgmf.o rdbpgmg.o rdbpgmh.o \
\
-L/oracle/OraHome1/lib32/ /oracle/OraHome1/precomp/lib32/cobsqlintf.o -lclntsh cat
/oracle/OraHome1/lib32/ldflags cat
/oracle/OraHome1/lib32/sysliblist` -lm -lpthread -lpthread
/
cd $runs
echo \n\n\t JCMPCVBR COMPLETE
```

2. Execute `jcmpcvbr`

To compile the relational batch program `CBSVB` as delivered, execute the `jcmpcvbr` script from the subdirectory. For example:

```
rx jcmpcvbr
```

Review the log to determine if there were any errors.

Create System Control Repository

Script used: `jdemo01r`

This procedure creates the System Control Repository. Execute the `jdemo01r` script. The `userid` and `password` parameters should be replaced with the database `userid` and `password`. For example:

Phase 4: Compile CBSV and CYBIO

Extract all cbsv programs

1. Edit cbsv.ovr

Edit the cbsv.ovr file located in the \$data subdirectory to include your database connect string, as in the example shown here:

C141250+R	-E	01	USERID	PIC	X(08)	VALUE	CYBORG52
C141300+R	-E	01	PASSWD	PIC	X(08)	VALUE	CYBDBA
C142100+R		01	DB-NAME	PIC	X(8)	VALUE	CYBORG52

2. Execute jpulcvs

To extract all The Administrative Solution CBSV COBOL programs (cbsvo, cbsvot, cbsvb, cbsvbt), execute the jpulcvs script from the \$runs subdirectory. The userid and password parameters should be replaced with the database userid and password. For example:

```
jpulcvs userid password | tee $log/jpulcvs.log
```

Note: In the above example the results are piped to a log file.

Review the log to determine if there were any errors.

Compile and link CBSV programs

1. Add Oracle linkage before running this script

This delivered script includes a sample ORACLE linkage step (underlined in the script). This linkage step must be replaced by the linkage step created by executing the ORACLE make command. For example:

```
echo \n\n\t JCMPCVR IN PROGRESS \n
echo \n\n\t CHECKING FOR FILES \n
test -f $prog/cbsvb.pco || echo \n\t cbsvb.pco does not exist
test -f $prog/cbsvbt.pco || echo \n\t cbsvbt.pco does not exist
test -f $prog/cbsvo.pco || echo \n\t cbsvo.pco does not exist
test -f $prog/cbsvot.pco || echo \n\t cbsvot.pco does not exist
cd $prog
for file in cbsvb cbsvbt
do
echo \n\n\t COMPILATION OF ${file} IN PROGRESS \n
procob32 iname=${file}.pco oname=${file}.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C "IBMCOMP NOOSVS NOBOUND NOTRUNC ALIGN(8)" -N "NOCHECK NOBOUNDOPT" -o
${file} ${file}.cob rdbpgma.o rdbpgmb.o rdbpgmc.o rdbpgmd.o rdbpgme.o
rdbpgmf.o rdbpgmg.o rdbpgmh.o \
\underline{-L/oracle/OraHome1/lib32/ /oracle/OraHome1/precomp/lib32/cobsqlntf.o -lclntsh cat}
\underline{/oracle/OraHome1/lib32/ldflags cat}
\underline{/oracle/OraHome1/lib32/sysliblist` -lm -lpthread -lpthread}
/
echo \n\t COMPILATION OF ${file} COMPLETE \n
done
for file in cbsvo cbsvot
do
echo \n\n\t COMPILATION OF ${file} IN PROGRESS \n
```

```
procob32  iname=${file}.pco oname=${file}.cob ireclen=132 oreclen=132
select_error=no litdelim=apost mode=ansi
cob -xv -C "IBMCOMP NOOSVS -L/oracle/OraHome1/lib32/
/oracle/OraHome1/precomp/lib32/cobsqlntf.o -lclntsh cat
/oracle/OraHome1/lib32/ldflags  cat
/oracle/OraHome1/lib32/sysliblist -lm -lpthread -lpthread
NOBOUND NOTRUNC ALIGN(8) -N NOCHECK NOBOUNDOPT -o ${file} ${file}.cob o4calc.o
rdbpgma.o rdbpgmb.o rdbpgmc.o rdbpgmd.o
rdbpgme.o rdbpgmf.o rdbpgmg.o rdbpgmh.o \
\
-L/oracle/OraHome1/lib32/ /oracle/OraHome1/precomp/lib32/cobsqlntf.o -lclntsh cat
/oracle/OraHome1/lib32/ldflags  cat
/oracle/OraHome1/lib32/sysliblist` -lm -lpthread -lpthread
/
echo \n\n\t COMPILATION OF ${file} COMPLETE \n
done
cd $runs
echo \n\n\t JCMPCVR COMPLETE
```

2. Execute jcmpcvr

For example:

```
rijcmpcvr
```

Review the log, to determine if there were any errors.

Compile and link CYBIO programs

Script used: jcmpcbio

To compile and link the CYBIO programs, execute the jcmpcbio script from the \$runs subdirectory. For example:

```
rijcmpcbio
```

Review the log to determine if there were any errors.

Phase 5: Create Test P20IN Batch Master

Extract Report Generators

Script used: `jp20strt (U.S.)`
`jp20strc (Canada)`

To extract the report generators from CYBMST and create the P20IN Batch Master File, execute the `jp20strt` script from the `$runs` subdirectory with `p9strt` and `p9cbsv` as input.

Input files

<code>p05t80</code>	<code>p9strt</code>
<code>p05t81</code>	<code>p9cbsv (U.S.)</code> <code>p9cbsvc (Canada)</code>

The `P2EDIT`, `P4CALC`, and `P5PRNT` programs are processed. For example:

```
rl jp20strt
```

Review the log and then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

```
audit2.trl  
p20strt.03  
transload
```

Create Test Employee Database

Script used: `jpymrg`

To create a test Employee Database, execute the `jpymrg` script from the `$runs` subdirectory. For example:

```
rl jpymrg
```

Review the log and then the `paymrg.03 list` file in the `$list` subdirectory to determine if there were any errors.

Phase 6: Create Test Employee Database

Populate option list and application tables

Script Used: jpopf01

To synchronize the System Control Repository and relational tables for option lists and specific application tables (Cx through Xx), execute the jpopf01 script from the \$runs subdirectory. For example:

```
rx jpopf01
```

Populate database with test data

To populate the database with test data, perform the following steps:

1. Load test companies

**Script used: jprdemo (U.S.)
jprdemoc (Canada)**

This procedure loads the payroll test data into the Employee Database (Master File: FILE02). Execute the jprdemo script from the \$runs subdirectory. For example:

```
rx jprdemo
```

Review the log and then the prdemo.03 list file in the \$list subdirectory to determine if there were any errors.

2. Load HR test data

**Script used: jhrdemo (U.S.)
jhrdemoc (Canada)**

This procedure loads HR test data into the Employee Database (Master File: FILE02). Execute the jhrdemo script from the \$runs subdirectory. For example:

```
rx jhrdemo
```

Review the log and then the hrdemo.03 list file in the \$list subdirectory to determine if there were any errors.

3. Build alternate keys

Script used: jbldaky

To build or rebuild the Employee Name Alternate Key, run the jbldaky script located in the \$runs directory.

Note: This script may be altered to accommodate your build of the alternate keys once your data has been added to the system.

For example:

```
rx jbldaky
```

Review the log and then the bldaky.03 list file in the \$list subdirectory to determine if there were any errors.

Extract full payroll data

Script used: `jpaxtr`

To update the P20IN Batch Master File with the demo test data, execute the `jpaxtr` script from the `$runs` subdirectory. The organization and employee data will be extracted from the online Employee Database and placed in `FILE12`. This will be the new `p20in` master file.

`FILE10` (`payxtr10`), which contains time entries and adjustments, is also created. `payxtr10` becomes input to the `jpaxrun` as `p05t81`. For example:

```
rl jpaxtr
```

Review the log and then the `payxtr.03` list file in the `$list` subdirectory to determine if there were any errors.

Complete a payroll run

Script used: `jpaxrun`

Complete a payroll run to apply taxes (`TAXFILE`) and the time entries and adjustments (`payxtr10`) to the `p20in` file. Execute the `jpaxrun` script from the `$runs` subdirectory with `p05t80` and `p05t81` as input. The `P2EDIT`, `P4CALC`, and `P5PRNT` programs will be processed.

Note: Verify that the `TAXFILE` being applied is the current tax related regulatory bulletin from `CUBBS` (Cyborg Users Bulletin Board).



Refer to 'Accessing `CUBBS`' in the KnowledgeBase or Technical Administration guide for detailed instructions for logging onto `CUBBS`.

Input files

<code>p05t80</code>	<code>TAXFILE</code> (US) <code>TAXFILEC</code> (Canada)
---------------------	---

<code>p05t81</code>	<code>payxtr10</code>
---------------------	-----------------------

Note: If you are a Canadian customer, modify the script to extract `TAXFILEC` instead of the `TAXFILE`.

For example:

```
rl jpaxrun
```

Review the log, then all the output listings in the `$list` subdirectory to determine if there were any errors.

Output listings

auditrl1.lis
checknum.lis
payslips.lis
depslips.lis
combreg.lis
transload.lis

Perform a payroll maintenance run

Script used: `jmnrtrun`

Perform a payroll maintenance run to create pay history and labor records and apply check numbers to the newly created history records on the P20IN Batch Master File. Execute the `jmnrtrun` script from the `$runs` subdirectory. The P2EDIT, P4CALC, AND P5PRNT programs will be processed. For example:

```
rl jmnrtrun
```

Review the log, then the `transload2.lis` and `auditrl2.lis` list files in the `$list` subdirectory to determine if there were any errors.

Update the Employee Database

Script used: `jpymrg`

To create a new random Employee Database, execute the `jpymrg` script from the `$runs` subdirectory. For example:

```
rl jpymrg
```

Review the log, then the `paymrg.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 7: Extract HR Reports

Extract HR Reports

Script Used: jreport

To extract Human Resource batch reports, execute the `jreport` script from the `$runs` subdirectory. For example:

```
rl jreport
```

Review the log, then the `rtpnt.03` list file in the `$list` subdirectory to determine if there were any errors.

Phase 8: Apply System Control Repository Menu Additions

Build report menus

Script used: jrptmnu

To build a menu containing the delivered report groups, run jrptmnu located in the \$runs directory. For example:

```
rx jrptmnu
```

Review the log, then the rptmnu.03 list file in the \$list subdirectory to determine if there were any errors.

Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Script used: jmainti

To apply menu items for online user access to batch processes, run the jmainti script from the \$runs directory, using the \$data/epRDDI05 file as FILE05 input. For example:

```
rx jmainti
```

Review the log, then the mainti.03 list file in the \$data subdirectory to determine if there were any errors.

Go to the chapter titled, *Cyborg Application Service (CAS) Installation and Configuration* (on page 51), for instructions on the installation and configuration of the Cyborg Application Server (CAS) service.

CHAPTER 4

Cyborg Application Service (CAS) Installation and Configuration

In This Chapter

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Installing and Configuring CAS

This section provides detailed instructions for installing the Cyborg Application Server (CAS) on The Solution Series Application Server on a UNIX system. This is a technical section aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled The Solution Series 5.2 for UNIX
1	Installing and Configuring The Solution Series 5.2 (UNIX) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Install and Configure the Cyborg Application Server (CAS)

The Cyborg user profile and the CAS script must include the updated values for the ServerExpress environment variables and \$path. The CAS sends \$data, \$work, \$list, \$prog and \$runs to the running CBSVO using the path defined in the cybenv.cfg.

First time install of the Cyborg CAS daemon

Perform the following steps to install the CAS daemon:

1. Verify that CAS can execute on the system

Execute the following command from the directory where you chose to install the CAS script:

```
./cybservd -v
```

CAS should respond with:

```
Cyborg Application Server version x.xx for <system name>
```

Note: Operating system names are Solaris for Sun Solaris (from Sun Microsystems), AIX for AIX RS6000 (from IBM), and HP-UX for HP-UX (from Hewlett-Packard).

The CAS script must be restarted to register these changes. If a message such as 'Exec format error' appears, then CAS will not run on the system, and CAS needs to be compiled specially for that particular UNIX server. If an error appears and CAS will not run, please contact Customer Support.

2. Edit and add environment variables to CAS script in the MicroFocus/Oracle section.

These are some of the same environment variables defined in the Cyborg profile.

For AIX RS6000

```
COBDIR=/opt/lib/cobolspl                ; export COBDIR
LIBPATH=$COBDIR/lib:$LIBPATH            ; export LIBPATH
ORACLE_HOME=                             ; export ORACLE_HOME
ORACLE_PATH=                             ; export
ORACLE_PATHNLS_LANG=AMERICAN_AMERICA.WE8MSWIN1252; export NLS_LANG
```

For Sun Solaris

```
COBDIR=/opt/lib/cobolspl                ; export COBDIR
LD_LIBRARY_PATH=$COBDIR/lib:$LD_LIBRARY_PATH ; export LD_LIBRARY_PATH
ORACLE_HOME=                             ; export ORACLE_HOME
ORACLE_PATH=                             ; export ORACLE_PATH
NLS_LANG=AMERICAN_AMERICA.WE8MSWIN1252    ; export NLS_LANG
```

For HP-UX

```
COBDIR=/opt/lib/cobolspl                ; export COBDIR
SHLIB_PATH=$COBDIR/lib:$SHLIB_PATH      ; export SHLIB_PATH
ORACLE_HOME=                             ; export ORACLE_HOME
ORACLE_PATH=                             ; export ORACLE_PATH
```

```
NLS_LANG=AMERICAN_AMERICA.WE8MSWIN1252          ; export NLS_LANG
```

3. Add the Cyborg port to the network services file

Because CAS is a TCP/IP server, it uses a system resource called a *port number*. A port number is simply a number at which a server program can be located. Port number 9888 is reserved for CAS. The port will be configured in a system-wide file called `/etc/services`.

1. Edit the file `/etc/services` to add the port to the network services file. The entries in the file are usually given in numeric order, so find the location where 9888 should appear, then add the following line to the file:

```
cyborg      9888/tcp      # Assigned by IANA to Cyborg Systems
```

Note: You also need to enter the 9888 port number on the Connection Editor during client installation, as described in **Installing and Configuring the Administrative Client** (on page 59).

2. Save the file and exit the editor.



If you have any problems with CAS installation, see the Troubleshooting section in **Administering the Cyborg Application Server (CAS) Daemon** (on page 131).

4. Add CAS to the list of programs to launch at system startup

Add the CAS script to the list of programs to launch at startup (cd to CAS directory and execute the script). This ensures that clients will be able to access The Solution Series even if the machine is rebooted.

Subsequent installations of CAS

Use the following instructions if you already have the CAS daemon installed. Since the CAS script includes references to the associated compiler, when a different compiler is used, it is necessary to install a new CAS. Perform the following steps to install another CAS daemon:

1. Verify that CAS can execute on the system

Execute the following command from the `/cyborghome/app/server` directory:

```
./cybservd -v
```

CAS should respond with:

```
Cyborg Application Server version x.xx for <system name>
```

Note: Operating system names are *Solaris* for Sun Solaris (from Sun Microsystems), *AIX* for AIX RS6000 (from IBM), and *HP-UX* for HP-UX (from Hewlett-Packard).

The CAS script must be restarted to register these changes. If a message such as 'Exec format error' appears, then CAS will not run on the system, and CAS needs to be compiled specially for that particular UNIX server. If an error appears and CAS will not run, please contact the Help Desk.

2. Edit and add environment variables to CAS script in the MicroFocus/Oracle section.

These are some of the same environment variables defined in the profile.

For AIX RS6000:

COBDIR=/opt/lib/cobolspl	;export COBDIR
NLS_LANG=AMERICAN_AMERICA.WE8MSWIN1252	;export NLS_LANG
LIBPATH=\$COBDIR/lib:\$LIBPATH	;export LIBPATH
ORACLE_HOME=	;export ORACLE_HOME
ORACLE_PATH=	;export ORACLE_PATH

For Sun Solaris:

COBDIR=/opt/lib/cobolspl	;export COBDIR
NLS_LANG=AMERICAN_AMERICA.WE8MSWIN1252	;export NLS_LANG
LD_LIBRARY_PATH=\$COBDIR/lib:\$LD_LIBRARY_PATH	;export LD_LIBRARY_PATH
ORACLE_HOME=	;export ORACLE_HOME
ORACLE_PATH=	;export ORACLE_PATH

For HP-UX:

COBDIR=/opt/lib/cobolspl	;export COBDIR
NLS_LANG=AMERICAN_AMERICA.WE8MSWIN1252	;export NLS_LANG
SHLIB_PATH=\$COBDIR/lib:\$SHLIB_PATH	;export SHLIB_PATH
ORACLE_HOME=	;export ORACLE_HOME
ORACLE_PATH=	;export ORACLE_PATH

3. Add the new port number to the CAS script

Because CAS is a TCP/IP server, it uses a system resource called a *port number*. A port number is simply a number at which a server program can be located. Port number 9888 is reserved for the CAS. If this port is already in use, please select the next available number for use by this CAS. There is no need to edit the file called `/etc/services`. When using CASMGR, you will need to include reference to this port number. Edit the cas script. On the last line, enter the port number, as follows:

```
$daemon -p9889 -a$appcfg -e$envcfg -T$tracedir -c$maxconn
```

Note: You also need to enter the port number on the Connection Editor during client installation, as described in **Installing and Configuring the Administrative Client** (on page 59).



If you have any problems with CAS installation, see the Troubleshooting section in **Administering the Cyborg Application Server (CAS) Daemon** (on page 131).

4. Add CAS to the list of programs to launch at system startup

This step should be performed by the administrator. Add the script:

```
/cyborghome/app/server/cas
```

to the list of programs to launch at system startup. This ensures that clients will be able to access The Solution Series even if the machine is rebooted.

Start CAS

CAS can only be started by the administrator or a similarly privileged process. To launch CAS, log in as `root` and execute the script CAS. The following output should be displayed:

```
CAS version x.xx for <system name> started successfully (process ID xxxx)
```

where xxxx is the process ID of the daemon.

Note: Operating system names for Solaris for Sun Solaris (from Sun Microsystems), AIX for AIX RS6000 (from IBM), and HP-UX for HP-UX (from Hewlett-Packard).

The command prompt is returned to the user, as CAS has placed itself into the background and will continue to run in the background. This script encapsulates the settings that are used by this installation.



*For information on the CAS script or are unable to start CAS, see **Appendix E** (see "Administering the Cyborg Application Server (CAS) Daemon" on page 131)*

Configure the environment

To configure the environment for this installation, follow the directions in the 'Configuring a new environment on the server' section in **Appendix E** (see "Administering the Cyborg Application Server (CAS) Daemon" on page 131).

PART 3

Installing and Configuring the Administrative Client

In This Section

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CHAPTER 5

Installing and Configuring the Administrative Client

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Introduction

This chapter provides detailed instructions for configuring clients of The Solution Series. This is a technical chapter aimed at system administrators.

Deliverables

The following is included:

1	CD-ROM labeled The Solution Series 5.2 for Windows
1	Installing and Configuring The Solution Series 5.2 (Windows) (this guide)



Refer to Directory Contents for detailed information on scripts used and programs installed during the installation and the purposes they serve.

Phase 1: Prepare for installation

It is important to appropriately prepare for the client installation of The Solution Series. Because the client and server will work together, you must ensure that they are both synchronized in communication.

Before successful operations can be carried on between the server running The Solution Series and the client, you are required to install and configure the prerequisite software described in Chapter 1. This software must be in place before beginning the installation.

Note: Based upon your employees individual client workstation setups, there may be missing shared .dll or .ocx files that the product uses that are non-distributable Microsoft shared system files. If this occurs, your IT staff will need to locate and download (usually on the Microsoft website) the required file for inclusion on your PCs.

Ensure Cyborg Application Service is active

The Cyborg Application Service must be running on the server.



Refer to Install and Configure Cyborg Application Server (CAS) service to learn how you can tell if CAS service is active.

Complete a configuration worksheet

During the installation, you will be prompted to supply client and server information. Complete the table below in advance preparation for these entries:

	Description	Your Configuration
Installation Location	Identify where you want the client files installed. If you accept the default location, the files will be placed at C:\Program Files\Cyborg Systems\Clientxx (where xx indicates the release level of the installation).	
Connection Type	The only connection type available at this time is the Cyborg Application Service (CAS).	
Connection Name	<p>Identify a title for the connection you will configure between the client and the server.</p> <p>For the initial installation, accept the default connection name (Defaultxx, where xx indicates the release level of The Solution Series installation). If a user requires multi-environment access, additional environments can be set up later.</p> <p>This label must not contain the characters \\:*?\<>_. If you name the connection by another name, additional steps must be performed.</p> <p>Refer to the appendices for more information on creating <i>Multiple Environments</i> (see "Creating Separate Environments on the Server for the Client" on page 109).</p>	
Host	Host name or IP address of the server to which you want the client to connect.	
Port	Identify the port address of the server. We registered the port address of 9888 for the Cyborg Application Service (CAS). This address must be the same as was specified during the installation and configuration of Cyborg Application Service (CAS).	9888

	Description	Your Configuration
Environment	Identify the environment name (up to 8 characters) that was established during the Cyborg Application Service (CAS) installation, for example, CYBORG, CYBPROD, CYBTEST, or CYBDEV. <i>Note: The environment name should contain no space characters, and should reflect the name of the Cyborg Application Service (CAS) for that environment.</i>	

Note: If installing the client on the Windows server, then either enter localhost or 127.0.0.1.

Phase 2: Install the software

Install client files

Be sure to have at hand the configuration worksheet completed as preparation as you may need to refer to it as you load programs on the PC.

1. **Insert the Solution Series CD-ROM into the Administrative client PC**
The Getting Started page displays.

2. **Navigate and then click on the Install Administrative client link**
Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.

3. **Follow the installation prompts**
The following table tells you what information the installation program will require. If you need anything other than the defaults, use the information in the Select the following... column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Program Files	Use default or Other:
Are you running The Solution Series on an zOS Server?	--	No
Launch the Connection Editor?	Selected (Yes)	Deselect this option if you are installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR) (Windows and UNIX only). Select this option if you are not installing Document Management Facility and/or Enhanced Payroll and Reporting (EPR) and are ready to configure the client connection.

The installation program will prompt you when it is complete.

(Optional) Install Enhanced Payroll and Reporting

If you wish to use Enhanced Payroll and Reporting, you must first install the EPR client files.

- 1. Insert the Solution Series CD-ROM into the Administrative Client PC**
The getting Started page displays.
- 2. Navigate to and click Install Enhanced Payroll and Reporting link**
Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.
- 3. Follow the installation prompts**
The following table tells you the information required by the installation program. If you need anything other than the defaults, use the information in the Select the following... column.

Prompt	Options/Default	Select the following...
Destination Folder	C:\Hewitt\Client52	Use default or Other:

The installation program will prompt you when it is complete.

Note: Prior to using the Process Monitor, you must specify the correct environment and user folder. The Specify Environment Folder and Specify User Folder dialogs will display the first time the Process monitor utility is run.

This requires you to map a windows drive to the /users directory in the applicable environment(s) on the UNIX Server. This requires either NFS or SAMBA Software to be installed and configured. NFS and SAMBA are 3rd party tools and are outside the scope of this guide.

(Optional) Install Document Management Facility

If you want to use the Document Data Interface, you must first install the Document Management Facility client files.

- 1. Insert the Solution Series CD-ROM into the Administrative Client PC**
The Getting Started page displays.
- 2. Navigate to and click on the Install Document Management Facility link**
Clicking this link allows you to either launch the autoinstall or save the file to a local PC for later installation.
- 3. Follow the installation prompts**
The table following tells you what information the installation program will require. If you need anything other than the defaults, use the information in the Select the following... column.

Prompt	Options/Defaults	Select the following...
Destination Folder	C:\Hewitt\Client52	Use default or Other:

The installation program will prompt you when it is complete.

Phase 3: Configure the software

Set Up Your Environment

To set up your environment, perform the following steps:

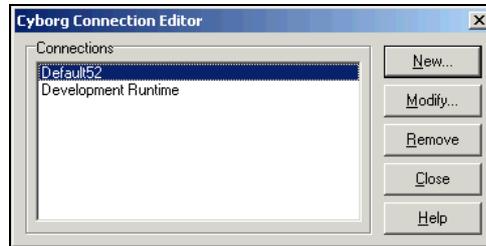
1. Access the Connection Editor

Access this dialog box at the end of the installation by selecting:

Start ► All Programs ► Hewitt Associates ► The Solution Series Admin v52 ► Connection Editor

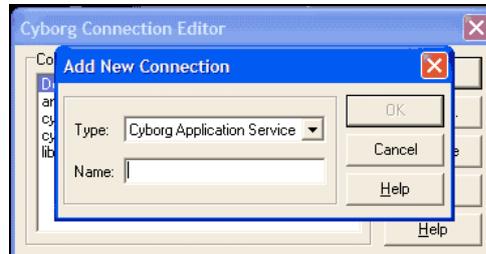
2. Click New

Click on the New button to set up a new configuration.



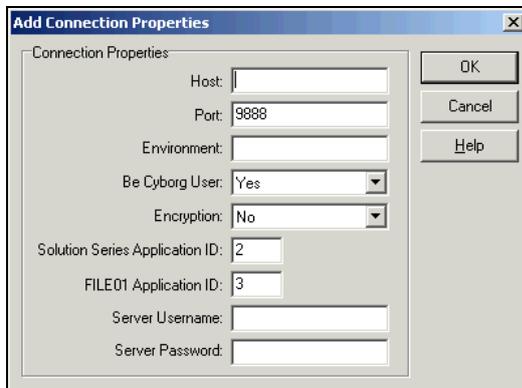
3. Type the name of your new connection

Leave Cyborg Application Service selected in the Type drop-down list box. Type the name of the connection you are creating in the Name text box.



4. Click OK

The Add Connection Properties dialog displays.



5. Type the configuration details

Type the configuration details under the Connection Properties on the Add Connection Properties dialog box.

Item	Description
Host	Identify the system name of the server.
Port	Identify the port address of the server. The port address of 9888 has been registered for the Cyborg Application Server (CAS). Be sure to use the same port on the server.
Environment	Identify the environment name (up to 8 characters) on the server. Examples are: CYBPROD, CYBTEST, and so on. (See the environment name on your configuration worksheet.)
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
Solution Series Application ID	The application name and ID number for The Solution Series application. This application ID is configured to 2.
FILE01 Application ID	The application name and ID number for the CYBIO application. This application ID is configured to 3.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

- 6. Click OK**
The connection properties are specified.
- 7. Click Close**
The connection has been configured between the server and the client.

Phase 4: Test the installation

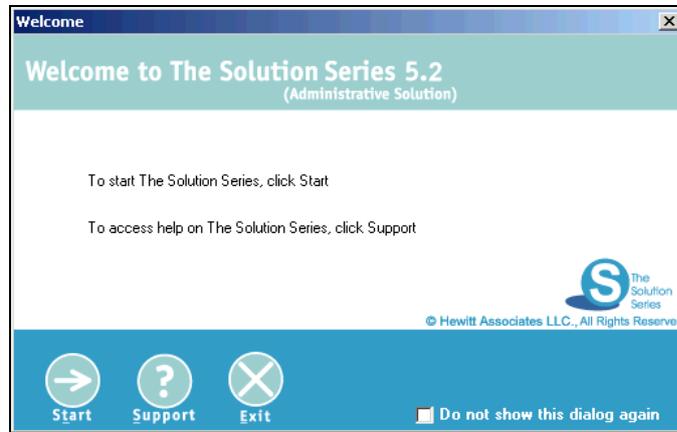
Test the connection to the server

To test the connection to the server, perform the following steps:

1. **Launch The Solution Series**

Select:

Start ► All Programs ► Hewitt Associates ► The Solution Series Admin v5.2 ►
The Solution Series Administrative Client v5.2



2. **Click Start on the Welcome screen**

The Login dialog box appears.

Note: If you see an error message instead of this Welcome screen, refer to the error listing in [Optional SQL Server Procedures](#) or [Optional ORACLE Procedures](#) for further information.

Test the GUI

To test the GUI, perform the following steps:

1. Log on as Security Officer

Select the environment you want to access from the option list and then type your user name and password:



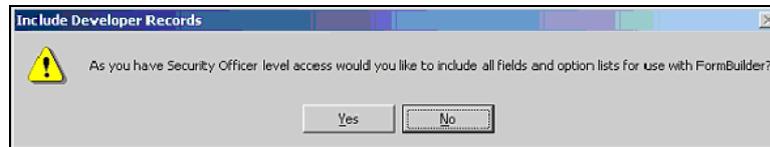
2. Click OK

If FILECL32, the Client Data File, does not exist on your machine, the following dialog displays:



3. Click Yes.

The Solution Series builds the Client Data File and prompts you to build the fields and option lists.



4. Click Yes

The Solution Series builds the fields and option lists, and the work area for The Solution Series displays.



Refer to Creating Separate Environments for information on creating additional environments.

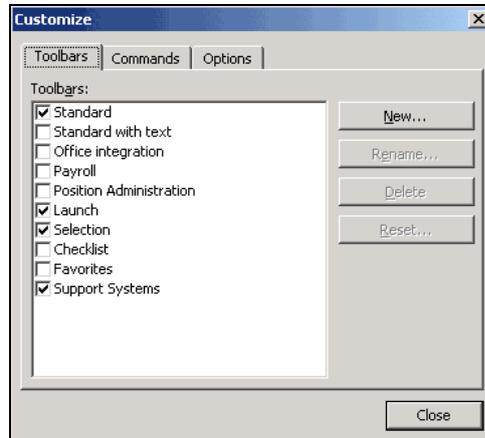
View the Favorites Toolbar

1. Logon

2. To add the Launch Bar to the Menu Bar, customize the toolbar

View ► Customize Toolbars

On the Toolbars tab, click beside Launch.



3. Click Close

The Launch toolbar appears.

Define the email and letter template folder

Document templates are created when a letter or email communication event is set up. These templates contain the body of the letter or email. Where the templates are stored is important. The location is specified by the Main Document Path text box on the System Options form (SCOPTS).

Before setting the Main Document Path, you need to create or determine which folder will be used for storing the templates. Communication events that will be used by multiple users should be stored on a network drive. This allows any user who might trigger the event, either manually or automatically through an action or condition, to access the templates.

Note: You perform this task only once.

To set the Main Document Path, complete the following steps:

1. Access the System Options form (SCOPTS)

Access this form by selecting the following:

Component:		Security Tools
Process:		Security Tools
Task:		Specify System Options

The System Options form (SCOPTS) appears.

Note: In the Sign-on Default field, enter a valid control 1-2 for your organization.

2. Enter the Main Document Path

In the Main Document Path box, type in the path of the folder that contains the email and letter templates that the Office Integration will utilize. For general use, it is required that this path be accessible to all Administrative Clients.

3. Press Enter

The Main Document Path has now been set allowing the system to find the path where the templates are stored.

4. Exit The Solution Series

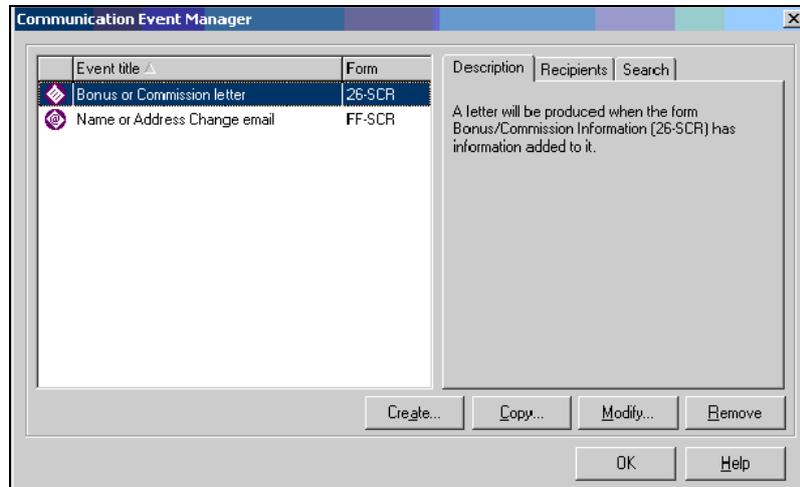
Before the Main Document Path will take effect, you need to log off and log back onto The Solution Series.

Test Word integration

1. Access the Communication Event dialog

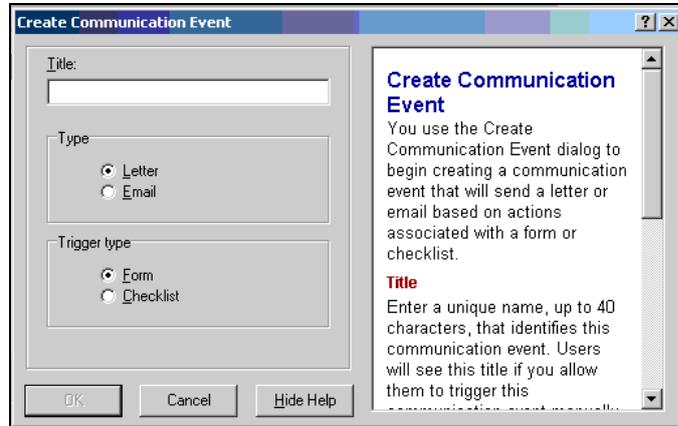
Access this dialog by making the following selections from the Navigator:

- Component:**  Administrator Tools
- Process:** Administrator Tools
- Task:**  Manage Events



2. Click Create

The Create Communication Event dialog appears:



3. Enter a Title

Type a unique title, up to 40 characters, for this communication event. For the test letter, type the following:

Test Letter

4. Select Letter

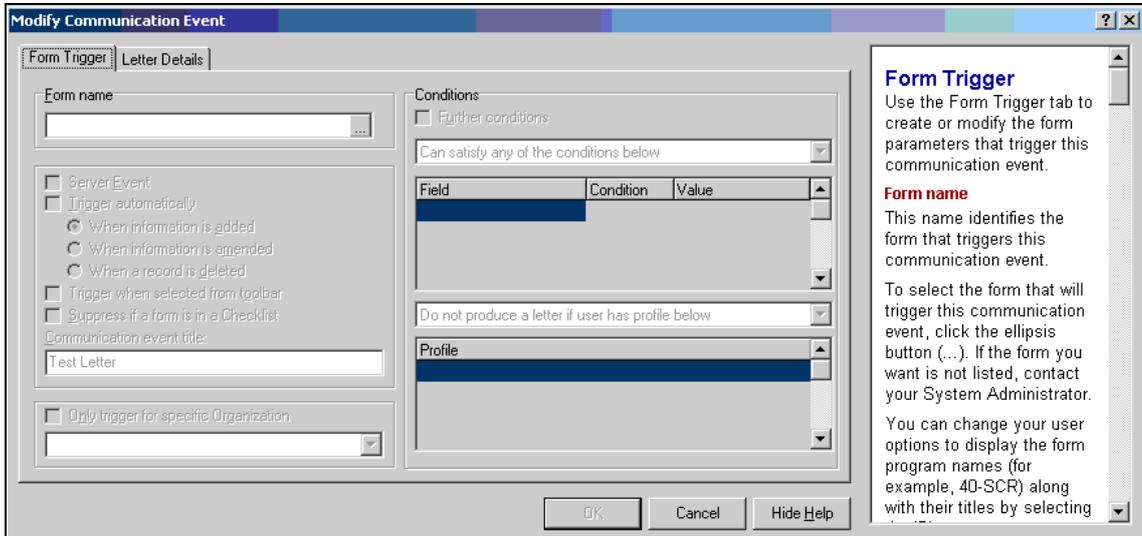
By default, Letter is the communication event Type selected when the dialog is first displayed. Verify that Letter is selected.

5. Select Form

By default, Form is the communication event Trigger type selected when the dialog is first displayed. Verify that Form is selected.

6. Click OK

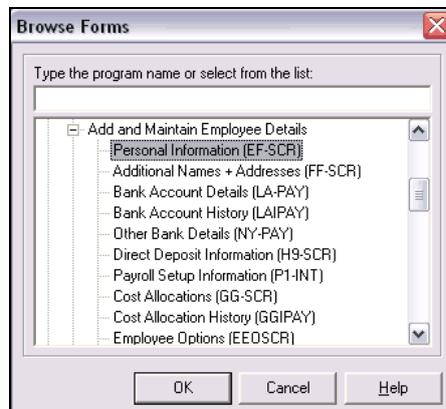
Click OK to create the communication event. The Modify Communication Event dialog appears:



7. Select the Form name

Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus. For the test letter, select:

Employee Payroll ► Add and Maintain Employee Details ► Personal Information



8. Click OK

This will select the form.

9. Select the automatic trigger conditions

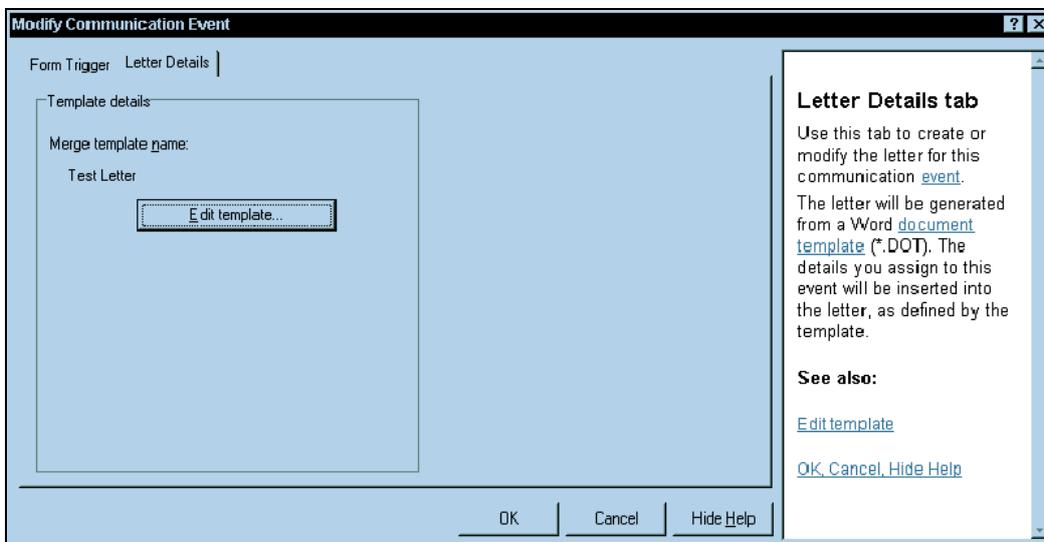
Select Trigger automatically. This will activate the trigger options.

10. Select When information is amended

When information is added is the default selection—change this.

11. Click on the Letter Details tab

The Letter Details tab appears:



12. Click Edit Template

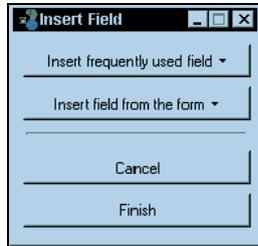
This will open Word and the New dialog. The New dialog allows you to select existing templates on which to base the new one.

13. Select Blank Document

This is the default.

14. Click OK

Word creates a new blank document, and the Insert Field dialog appears:



The Insert Field dialog allows you to include information directly from The Solution Series in the template.

15. Add the First Name field

Click 'Insert frequently used field' on the Insert field dialog, and then select First Name from the drop-down list. This selection and the next couple tests whether The Solution Series information is being placed in the Word template properly.

16. Type a space in the work area

17. Add the Last Name field

Click Insert Frequently used field on the Insert Field dialog and then select Last Name from the drop-down list.

18. Press Enter twice in the work area

This will add two lines to the Word document.

19. Type in a line in the work area

For the test letter, type the following:

has moved to the following address:

20. Press Enter twice in the work area

This will add two lines to the Word document.

21. Add the Address_Line_1 field

Click Insert frequently used field on the Insert field dialog and then select Address_Line_1 From the drop-down list. The display should appear like this:

22. Click Finish

Word will save the letter.

23. Click OK

This will close the Modify Communication Event dialog.

24. Click OK

This will close the Communication Event Manager dialog.

25. Access the Name and Address form

Make the following selections:

Component:  Employee Resourcing
Process: Maintain Employee Details
Task:  Basic Employee Information

26. Select an employee

In the Number field, type: 0003 in the Control 1-2 of 777777.

27. Click OK

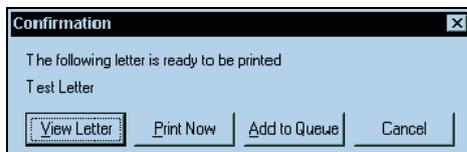
The Employee Information form (EF-SCR) appears with the employee information:

28. Type a new address

In the Address Line 1 field, type the following: 17 Moore House.

29. Press Enter

This will enter the new address. At this point, the Confirmation dialog appears:



30. Click View Letter

The system opens up the letter in Word and it includes the employee information.

31. Close the application

Review the letter and close the application.

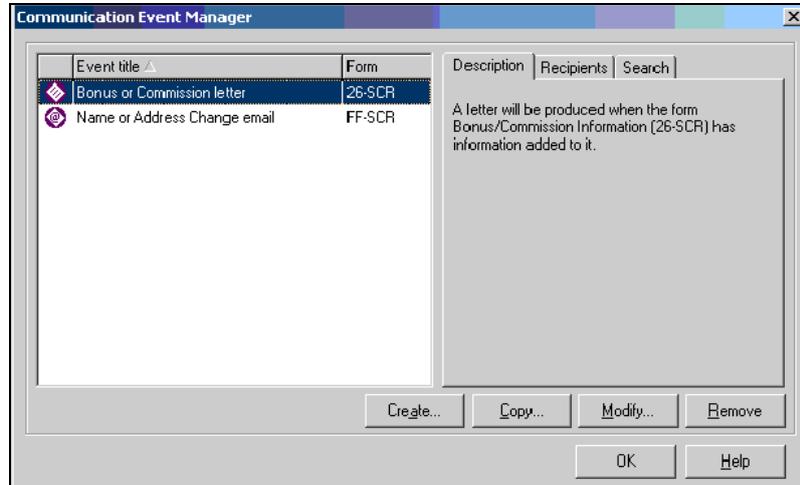
Test email integration

1. Access the Communication Event dialog

Access this dialog by making the following selections from the Navigator:

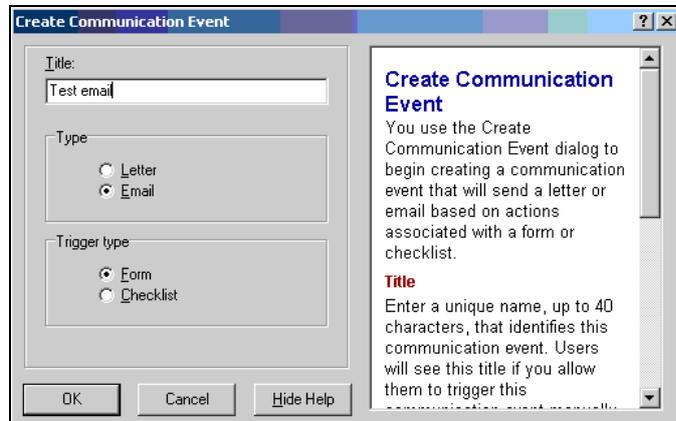
Component:  Administrator Tools
Process: Administrator Tools
Task:  Manage Events

Note: At this point, you may want to delete the Test Letter created in the task Test Word integration. This can be done on the Communication Event dialog by selecting Test Letter in the Event list, then clicking Remove.



2. Click Create

The Create Communication Event dialog appears:



3. Enter a Title

Type a unique title, up to 40 characters, for this communication event. For the test email type the following:

Test Email

4. **Select Email**

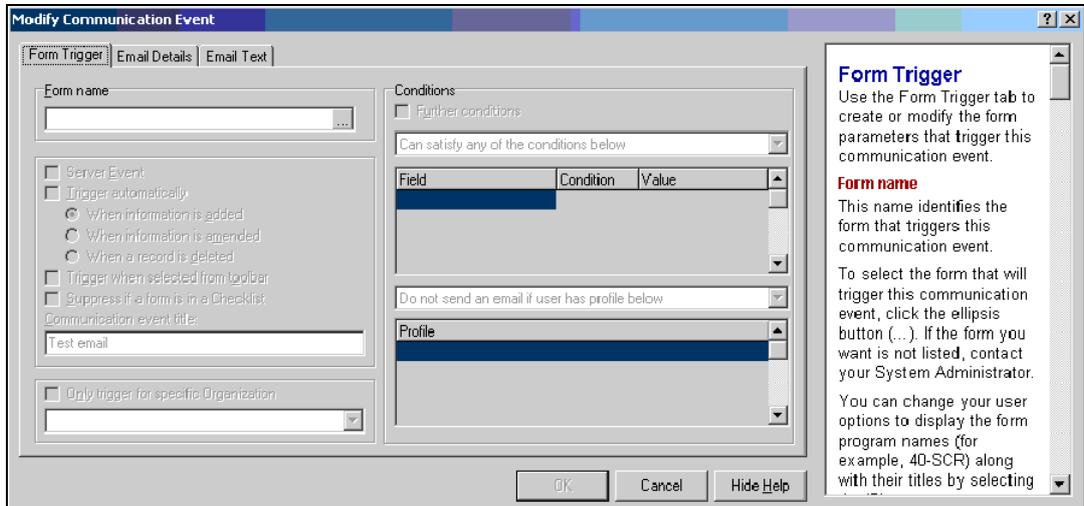
By default, Letter is the communication event Type selected when the dialog is first displayed. Change the selection to Email.

5. **Select Form**

By default, Form is the communication event Trigger type selected when the dialog is first displayed. Verify that Form is selected.

6. **Click OK**

The Modify Communication Event dialog appears:

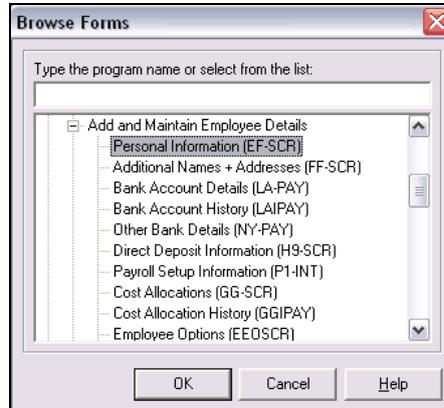


7. **Select the Form name**

Select the form on which this communication event will be triggered by clicking the ellipsis (...) on the right side of the Form name list box. The Browse Forms dialog will show the menu structure from which you can select a form by drilling down through the menus.

For the test email, select:

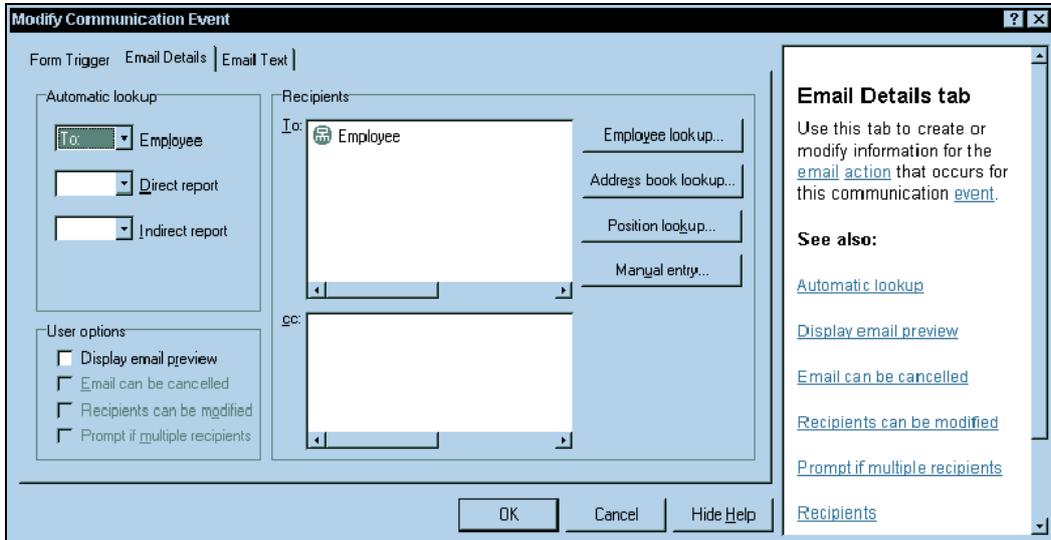
Employee Payroll ► Add and Maintain Employee Details ► Personal Information



8. **Click OK**
9. **Select the automatic trigger conditions**
Select Ttrigger automatically. This will activate the trigger options.
10. **Select When information is ammended**
When information is added is the default selection—change this.
11. **Click the Email Details tab**
The Email Details tab will appear.

12. In the Employee field, select To:

Click on the down arrow, and a drop-down list will appear. Select To: from the list. Once you select To, the system automatically includes the Employee field, in order to obtain the email address of the required employee.



13. Select another email address

Click Address book lookup and select the desired email address. This will send the email to another address, which you can use to check that the email has been received. You may want to use your own or another easily accessible address.

14. Click OK

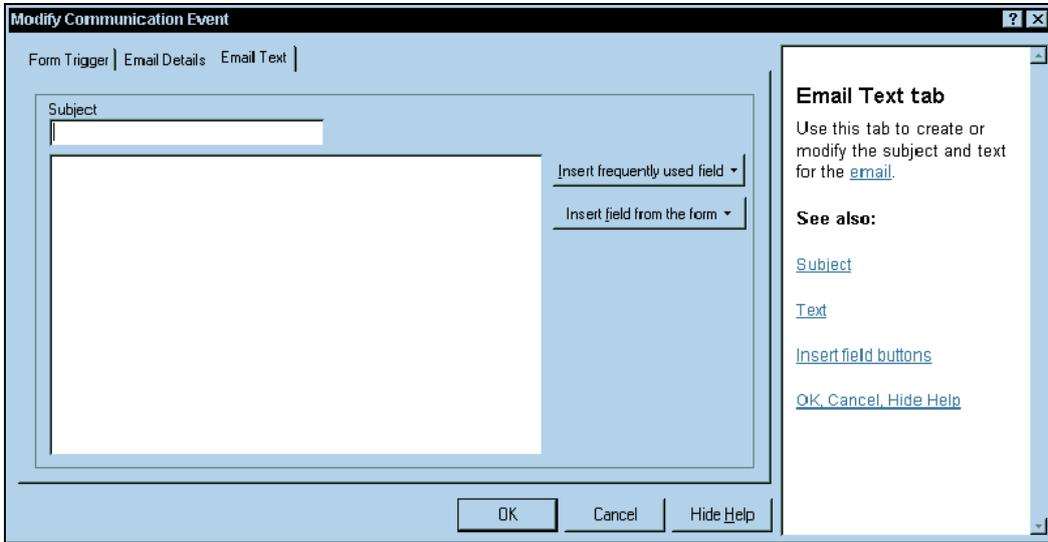
This will select the email address and return you to the Modify Communication Event dialog.

15. Click on the Display email preview option

This is located in the lower left corner of the Email Details tab. Once this option is selected, the system will automatically generate a dialog that prompts you when it is generating the email.

16. Click on the Email Text tab

The Email Text tab appears:



This is where you create the email.

17. Type the Subject

In the subject field, type the following:

Test Email

18. Add the First Name field

Click Insert frequently used field on the Insert field dialog and then select First Name from the drop-down list. This selection and the next couple will test if The Solution Series information is being placed in the Word template properly.

19. Type a space

20. Add the Last Name field

Click Insert frequently used field on the Insert Field dialog and then select Last Name from the drop-down list, and click in the work area.

21. Press Enter twice

This will add two lines to the email.

22. Type in a line

For the test letter, type the following line:

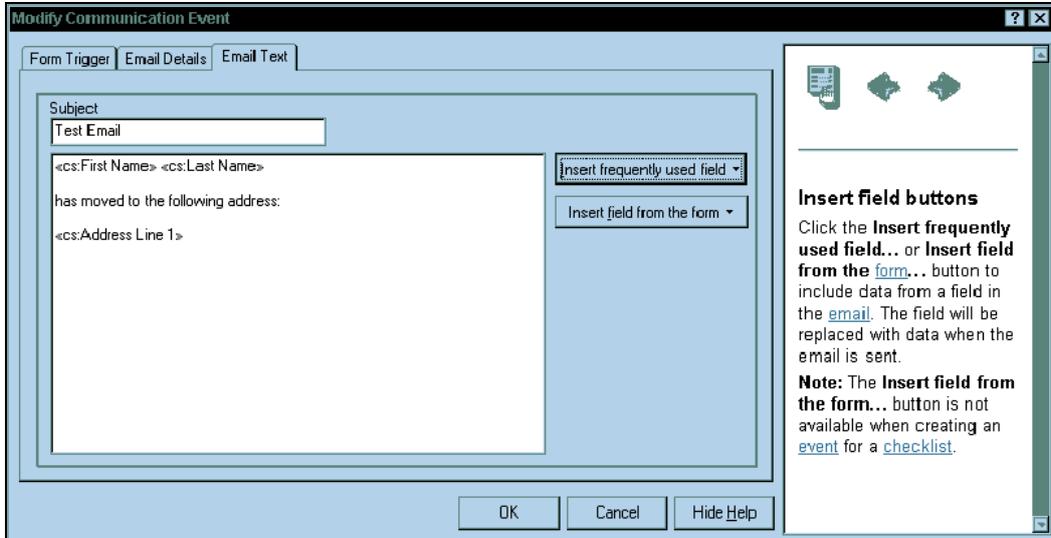
has moved to the following address:

23. Press Enter twice

This will add two lines to the email.

24. Add the Address Line 1 field

Click **Insert frequently used field** and then select Address Line 1 from the drop-down list. The display should appear like this:



25. Click OK

This will enter the data and return you to the Communication Event Manager dialog.

26. Click OK

This will close the Event Manager dialog. The Employee Personal Information form (EF-SCR) displays with the employee information.

27. Type a new address

In the Address Line 1 field, type the following: 19 Moore House.

28. Press Enter

Press Enter to update the new address. At this point, the Email Preview dialog appears.

29. Click Send

This will send the email to the selected address. When you are finished with this task, you should check the In Box at the address the email has been sent to in order to verify that it has been received. It is recommended that you use an email address you can easily access.

Test the import facility

Standard test data must be loaded. This task will walk you through a test import with a sample Excel spreadsheet in order to ensure that the import functionality is working properly.

1. Access the Import Profile Manager dialog

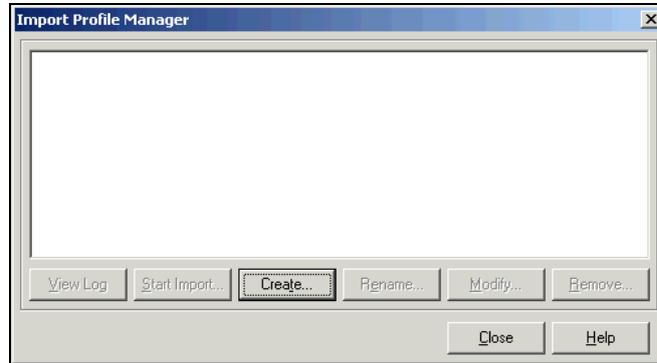
Access this dialog by selecting the Import Manager icon from the toolbar:



Alternatively, make the following selections from the menu:

Actions ► Office Integration ► Import

The Import Profile Manager dialog is displayed:



2. Click Create

Click Create to activate the Import Creation and Amendment wizard.

3. Click Next

4. Click Browse

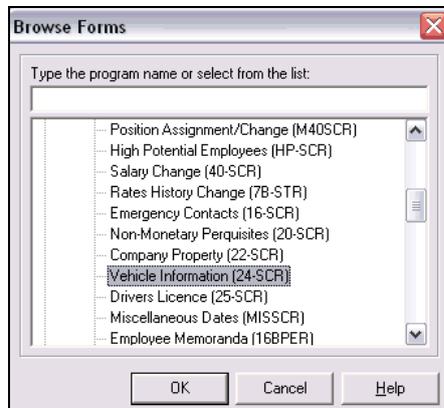
If the form displayed in the dialog is not the form to be selected for import, or if no form is being displayed, click Browse, and browse to the correct directory and file to be imported. Forms that cannot be used with the import functionality do not display.

Use this dialog to select The Solution Series form into which the test file will be imported.

5. Select The Solution Series form

For the test file, make the following selections:

Employee Resourcing ► Maintain Employee Details ► Vehicle information

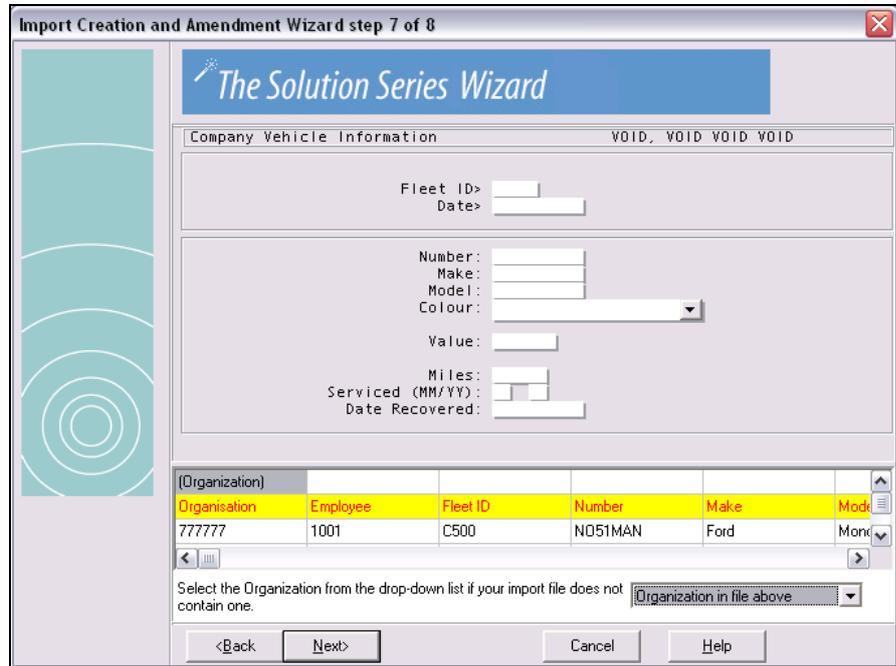


6. **Click OK**
Clicking OK will select The Solution Series form.
7. **Click Next**
8. **Click Browse**
The Open dialog will appear. Use this dialog to select the import file.
9. **Select the import file**
Use the Open dialog to find the following file path:
`\Program Files\AdminSolutions\Clientxx\Samples\car.xls`
Where xx is the version number.
10. **Click Open**
This will select the Excel file.
11. **Click Next**
12. **Select the First record is a header option**
This option tells the system to use the first record in the spreadsheet as a column heading.
13. **Click Next**
Now you must establish the relationship between the spreadsheet you are importing and the form into which you exporting it.
14. **Click Next**
Define the relationship between the spreadsheet and the form. The next step of this task will explain more about this relationship.

15. Map the import-to-form relationship

Use the select the name method to map the fields in the spreadsheet to the Automobile Information form.

- For each spreadsheet field displayed in the bottom section of the dialog, click on the top row of the column. A drop-down list will display.
- Choose the field name from the drop-down list that matches the column names. The top row of the column will be updated to show the field name, and the matching field on the form will change to yellow to show that mapping has occurred. You will not see any color changes for the fields organization and employee.



- Type the letter T in the Date field. This causes the current date to be used. The field color will change to blue.
- Leave the other fields on the form blank.

16. Click Next

17. Click Finish

The Wizard will return you to the Import Profile Manager, and the import profile you have just created will appear in the dialog.

18. Select the desired import

Select the Import from car to Automobile Information form.

19. Select Start Import

Click **Start Import** to start the import of data to The Solution Series. The Import Options dialog displays:



20. Click OK

Click **OK** to continue the import. The Solution Series will display a log after the import is complete. If no errors are reported, then the import was a success.

21. Review and close the log

22. Close the Import Dialog Box

Your installation of The Solution Series for Microsoft Windows on the Administrative Client is now complete.

PART 4

Appendices

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APPENDIX A

Installation Checklists

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Installation Checklist - Indexed Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Create user and file system

Phase 2: Extract and Transfer Install Files

- The Solution Series directory structure
- Extract install files to a PC
- Transfer install files from the PC to the server
- Extract server install files
- Set up user profile
- Verify compiler versions
- Check special requirements

Phase 3: Compile Batch Programs and Build FILE01

- Extract and compile cybmst programs
- Compile and link sort programs
- Compile and link the delivered cbsvb
- Compile and link the US Quarterly Processor
- Create System Control Repository

Phase 4: Compile CBSV and CYBIO

- Extract cbsv programs
- Compile and link CBSV programs
- Compile and link CYBIO programs

Phase 5: Create Test P20IN Batch Master

- Extract Report Generators
- Create Test Employee Database

Phase 6: Create Test Employee Database

- Populate database with test data
- Extract full payroll data

- Complete a payroll run
- Perform a payroll maintenance run
- Update the Employee Database

Phase 7: Extract HR reports

- Extract HR Reports

Phase 8: Apply System Control Repository Menu Additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Relational Administrative Solution Installation and Configuration

Phase 1: Prepare for installation

- Install and configure prerequisite software
- Create user and file system

Phase 2: Extract and Transfer Install Files

- The Solution Series directory structure
- Extract install files to a PC
- Transfer install files from the PC to the server
- Extract server install files
- Set up user profile
- Verify compiler versions
- Check special requirements

Phase 3: Build The Solution Series environment

- Extract and compile all cybmst programs
- Compile and link sort programs
- Compile and link the US Quarterly Processor
- Compile rdbpgm0.cob
- Execute the CASE tool
- Execute the make command
- Pre-compile, compile, and link rdbpgm1
- Create the tablespaces, tables, indexes, and views
- Pre-compile, compile, and link rdbpgma through rdbpgmh
- Extract, compile, and link o4calc
- Compile and link the delivered CBSVB
- Create System Control Repository

Phase 4: Compile CBSV and CYBIO

- Extract all cbsv programs
- Compile and link all CBSV programs
- Compile and link CYBIO programs

Phase 5: Create test P20IN Batch Master

- Extract Report Generators
- Create Test Employee Database

Phase 6: Create Test Employee Database

- Populate option list and application tables
- Populate database with test data
- Extract full payroll data
- Complete a payroll run
- Perform a payroll maintenance run
- Update the Employee Database

Phase 7: Extract HR reports

- Extract HR reports

Phase 8: Apply System Control Repository Menu Additions

- Build report menus
- Apply menu and checklist updates for Document Launcher and Enhanced Payroll Reporting

Installation Checklist - Cyborg Application Service (CAS) Installation and Configuration

Install and Configure the Cyborg Application Server (CAS)

- Install CAS
- Start CAS
- Configure the environment

Installation Checklist - Installing and Configuring the Administrative Client

Phase 1: Prepare for installation

- Ensure Cyborg Application Service is Active
- Complete a configuration worksheet

Phase 2: Install the software

- Install Client files
- (Optional) Install Enhanced Payroll and Reporting (EPR)
- (Optional) Install Document Management Facility

Phase 3: Configure the software

- Set Up Your Environment

Phase 4: Test the installation

- Test the connection to the server
- Test the GUI
- View the Favorites Toolbar
- Define the email and letter template folder
- Test Word integration
- Test email integration
- Test the import facility

APPENDIX B

Directory Contents

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Server directory structure.....100

Server directory structure

The server software is delivered in two main directories:
`/cyborghome/app` and `/cyborghome`

`/cyborghome/app` directory

The `/cyborghome/app` directory contains application-specific delivered source and executables.

- The `/cyborghome/app/server` subdirectory contains the delivered scripts and executable of the Cyborg Application Server (CAS) daemon. This directory will also contain the system log of CAS execution and events.
- The `/cyborghome/app/server/trace` subdirectory will contain the detail trace files of execution of every client when CAS is in debug mode.

`/cyborghome/cyborgxx` directory

The `/cyborghome/cyborgxx` root directory contains the following subdirectories:

Subdirectory	Description
<code>bacs</code>	Output for BACS
<code>data</code>	Data files and control records
<code>list</code>	Output from script processing
<code>log</code>	Optional output from script processing
<code>prog</code>	Source and executable files
<code>runs</code>	Delivered scripts
<code>updates</code>	Delivered source files
<code>users</code>	Directory created by process monitor
<code>work</code>	Temporary files

`/cyborghome/app-server` directory

The following files are shipped with CAS under the `/cyborghome/app-server` directory:

Filename	Description
<code>cas</code>	Script to start CAS
<code>casadduser.pl</code>	CAS script
<code>casdeluser.pl</code>	CAS script
<code>casmgr</code>	CAS administration utility
<code>caspasswd.conf</code>	CAS script
<code>caspasswd.pl</code>	CAS script
<code>cybservd</code>	The CAS server executable

Filename	Description
cybapp.cfg	List of The Solution Series applications
cybenv.cfg	List of The Solution Series environments
viewlog	Prints all detail from the System Log/trace file
viewlog.msg	Prints only the log message from the System Log/trace file

The following files are created by CAS as it executes:

Filename	Description
/cyborghome/app/server/system.log	Log of CAS execution and events
/cyborghome/app/server/trace/*.trc	Detailed trace files of execution of every client

./data directory

The cyborghome/cyborgxx/data directory contains the following files:

Filename	Description
taxfile	The Tax Authority file (U.S.).
taxfilec	The Tax Authority file (Canada).
TAXFILEE	The Tax Authority file for employer/employee taxes
cbsv	Contains source code for cbsvb, cbsvbt,cbsvo, and cbsvot
cbsv.ovr	Overrides to cbsv source.
cybmst	Contains source code for all the batch programs (P2EDIT, P4CALC, P5PRNT, P9CNVT, and O4CALC), COBOL and assembler subroutines, and report generators.
cybqtrus	U. S. Quarterly Processor UI programs
demo0105	The Solution Series System Control Repository in sequential format. This file contains option lists, tables, documentation, test data, and all Cyborg Scripting Language programs.
eprrdio05	Special MAINTI05 file for including Enhanced Payroll Processing and DDI CheckList and Menu records via an additional installation process.
export.10	Output of jexport.bat
F1RSTR	Source code for jcf1rstr
F2RSTR	Source code for jcf2str
file4mnt	Upgrade script
file5mnt	Upgrade script
p05rdrqt.dat	File used for pulling quarterly rg's and qtrmisc.

Filename	Description
p5prnt.ovr	Overrides to P5PRNT source.
p5qtr.ovr	Overrides to P5QTR source.
p7comp.ovr	Overrides to P7COMP source
p9cbsvc.04	Report generator extract parameters for jsp9cbsvc
p9cnvt.ovr	Overrides to P9CNVT source.
p9cbsv.04	Report generator extract parameters for jxp9cbsv.
p9cbsv.04	Report generator extract parameters for jxp9cbsv (Canada)
p9strt.04	Report generator extract parameters for jxp9strt.
rdbpgm	Relational only. Contains source code for rdbpgm0.cob, rdbpgm2.cob, rdbpgm3.com, and rdbpgm4.cob
re5204	--
re5205	--
re52m04	--
re52m05	--
vers80.ovr	System override file
BESS	Command Line Script called by the RSPAWNESS script to run the Enhanced Interactive Workforce System.
BHLD	Called by the RSPAWN script to call the bulk load program to copy extracted data into the tables specified.
BHRD	Called by the RSPAWN script. This script runs report and creates intermediate files.
BISLOCK	Checks to see if specified file is available for access.
BISW	Called by the RSPAWN script to run the Enhanced Is/Was report and create intermediate files.
BIWE	Called by the RSPAWN script to run the Enhanced Interactive Workforce Is/Was report, create intermediate files, then rename files in the users sub-directory.
BMRG	Runs an online batch payroll merge.
BPAY	Runs an online batch payrun.
BRPT	Runs an online batch report.
BXTR	Runs an online batch pay extract.
JPRT	--
JQRY	--
JRPT	--
P274	--
p247LAUNCH	One of the three scripts used to complete a pay process using 24/7 access

Filename	Description
p247PAY	One of the three scripts used to complete a pay process using 24/7 access
RESS	Required for Enhanced Reporting. Starts RSPAWNESS to revert control back to CBSVO.
RLCH	Required for Enhanced Reporting. Starts RSPAWN to revert control back to CBSVO.
RMRG	Required for Enhanced Reporting. Starts RSPAWMRG to revert control back to CBSVO.
RPAY	Required for Pay Process. Starts RSPAWNPAY to revert control back to CBSVO.
RSPAWN	Used for generating CBSVB output message logs on RLCH.
RSPAWNESS	Used for generating CBSVB output message logs on RESS.
RSPAWNMRG	Used for generating CBSVB output message logs on RMRG.
RSPAWNPAY	Used for generating CBSVB output message logs on RPAY.
RSXLAUNCH	One of three scripts that updates Reporting Administration labor and history tables in the Workforce Data Mart
RSXU	One of three scripts that updates Reporting Administration labor and history tables in the Workforce Data Mart
RSXUPD	One of three scripts that updates Reporting Administration labor and history tables in the Workforce Data Mart
u247	One of three scripts that perform a selective pay merge for 24/7 processing
u247LAUNCH	One of three scripts that perform a selective pay merge for 24/7 processing
u247UPD	One of three scripts that perform a selective pay merge for 24/7 processing

../prog directory

The /cyborghome/cyborgxx/prog directory contains the following files:

Filename	Description
cbsvb.cob	Non-relational program source code used to process The Solution Series in batch

Filename	Description
cbsvb.mf2	Non-relational program source code used to process The Solution Series in batch
cbsvb.pco	--
cbsvbr	Relational program source code used to process The Solution Series in batch
cybstdio.c	--
cbsvbr.pco	--
cbsvbt.cob	Non-relational trace program source code used to process The Solution Series in batch
cbsvo.cob	Non-relational program source code used to process The Solution Series online
cbsvot.cob	Non-relational trace program source code used to process The Solution Series online
CBSVRFT.CBL	Cobol script
cybgetkey.o	--
cybio.cob	Program for System Control Repository (FILE01) IO
cybsha1.o	--
p10sort.cob	Program that sorts data records in ascending order. Files used: p05in and p05out
p20cnvt.cbl	Cobol script
p45sort.cob	Program that sorts data records in ascending order. Files used: p40in and p40out
p80copy.cob	Program that adds carriage returns and line feeds to each record in a data file
p80sort.cob	Program that sorts data records in ascending order.
pfssort.cob	Program that sorts data records in ascending order Used in <code>f-segm</code>
p9cnvt.cob	Program source code used to extract any member from the cybmst file
RDBPGM0.com	Creates databases, tables, and indexes to support the relational version of The Solution Series
RDBPGM2.com	Creates databases, tables, and indexes to support the relational version of The Solution Series
RDBPGM3.com	Creates databases, tables, and indexes to support the relational version of The Solution Series
RDBPGM4.com	Creates databases, tables, and indexes to support the relational version of The Solution Series
repsort.cob	Cobol file - programs source code
sha.cob	Cobol file - programs source code

./runs directory

The \runs directory contains the following files:

File Name	Description
jbackem	Creates a sequential version of FILE1
jbldak	Builds or rebuilds the Employee Name Alternate Key
jcf1rstr	Batch program to restore FILE01
jcf2rstr	Batch program to restore FILE02
jclean01	Removes extraneous information from the MAINTO Standard clean script
jclean3x	Reads a MAINTO file and removes any obsolete records
jcmpcbio	Compiles the delivered cybio program
jcmpcvbn	Compiles the delivered non-relational batch programs
jcmpcvbr	--
jcmpcvn	Compiles the non-relational batch programs as extracted from the CBSV file
jcmpcvr	--
jcmp20	--
jcmprdb0	--
jcmprdb1	--
jcmp9cv	Compiles P9CNVT program
jcmprft	--
jcmpsort	Compiles P10SORT.CBL, P25SORT.CBL, P80SORT.CBL, P80COPY.CBL and PFSSORT.CBL
jcmpsubr	--
jconv02	--
jconvert	Extracts, compiles, and links the CONVERT program
jconvna	Converts name and address data to new field format
jconvp20	Uses the FIXP20, CRUTDS, and CONVERT programs to create a 'clean' data dictionary
jcrosx	--
jrtcylb	--
jrt20	--
jrt20c	--
jrtpgms	--

File Name	Description
jcybio	--
jdemo01	Creates indexed System Control Repository from sequential FILE05 (DEMO0105)
jdemo01r	--
jdemo023	Reloads all CSL programs during the upgrade process
jdocxtr	--
jdscr08	--
jessxpt	Extracts employee data for Interactive Workforce
jexport	Exports the 'F1' and 'FTM' records from the System Control Repository; output FILE10 is used as input FILEIN2 in JCRTPGMS
jf-xref	Builds Field Name Table (F-NAME) cross references (RFT records)
jf1rstr	--
jf2rstr	--
jfultcl	--
jhrdemo	Extracts test data from the System Control Repository and populates fields in the online Employee Database
jhrdemoc	(Canada) Extracts test data from the System Control Repository and populates fields in the online Employee Database
jiswase	Produces the Interactive Workforce audit trail
jiswasx	Produces The Solution Series audit trail
jloadessgen	Loads the Interactive Workforce report generators
jloadgen	Builds a P20IN file that contains only report generators for the 24/7 access process
jloadhr	--
jlogexp	--
jlogext	--
jmainti	Updates the System Control Repository
jmainto	Compares current System Control Repository with original FILE05 (DEMO0105) and produces FILE10 (MAINTO10), which contains the differences found
jmakecl	Extracts option list values, field definitions, form security, and PC menu records from the System Control Repository
jmntf08	--

File Name	Description
jmntrun	Updates Labor and History records following the Batch pay calculation
jmtoanl	--
jmtocl	--
jmtoclr	--
jmtolod	--
jp20cnvt	--
jp20strc	Extracts Canadian report generators
jp20strt	Creates the P20IN Batch Master File for the first time
jpymrg	Creates or updates the online Employee Database
jpymrg_full	--
jpayrun	Calculates pay and produces checks, reports, and a combined register
jpaxtr	Pulls Time entries and adjustments from the online Employee Database and creates FILE12 (P20 Master), which will be the new P20IN file
jpssort	Sample script to run segment layout report
jpopf01	RELATIONAL ONLY. Populates the RDBMS tables Cx through Xx
jpdemo	Extracts test data from the System Control Repository (Control File; FILE01) and populates fields in the online Employee Database; script is used when first building the employee database during installation
jpdemoc	Loads Canadian test companies
jpul_rdb	RELATIONAL ONLY. Extracts the CASE tool, RDBPGM0, RDBPGM2, RDBPGM3, and RDBPGM4
jpulcvn	Extracts non-relational batch programs CBSVB, CBSVBT, CBSVO, and CBSVOT from the CBSV file
jpulcvr	Extracts relational batch programs CBSVB, CBSVBT, CBSVO, and CBSVOT from the CBSV file
jpulcvs	Extracts the CVSB COBOL programs
jqtrun	Runs the Quarterly Processor
jrebuild	Recreates System Control Repository using the output from JBACKEM.BAT

File Name	Description
jreload	Reloads (Solution Series compile routine) Cyborg Scripting Language programs in the System Control Repository
jreport	Extracts reports from System Control Repository and the Employee Database
JRPTMNU	Build a menu containing the delivered report groups for Enhanced Payroll Reporting
jupdateU	Upgrade script
jupdcybm	Updates the CYBMST file with program updates or report generators
jupdgen	Upgrade script
jxcybmst	Extracts and compiles CYBMST programs (O4CALC, P2EDIT, P4CALC, P5PRNT, and P9CNVT)
jxessrptgen	Extracts the Interactive Workforce report generators
jxo4calr	Compile relational O4CALC
jxp5qtr	Extracts P5QTR from CYBMST, compiles and links machine specific subroutines
jxp7comp	Extracts and compiles P7COMP from CYBMST
jxrept20	Extracts report generator 20 from CYBMST in order to add new Organization Control Number values (companies) to the P20IN Batch Master File
jxrptgen	Extracts report generators from CYBMST
jxrptqtr	Extracts Quarterly Processor report generators
online	Initiates the online Solution Series system by executing the CBSVO program
onlineE	--
onlinet	Initiates the trace online Solution Series system by executing the CBSVOT program
rj	Executable that automatically launches a program and displays the log output immediately after the program completes its run

APPENDIX C

Creating Separate Environments on the Server for the Client

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Phase 1: Performing server configuration

Configuration Chart

Complete the following tasks depending upon the type of environment you are configuring:

If <i>existing</i> configuration is ...	And <i>new</i> configuration is ...	Perform
non-relational	non-relational	<ul style="list-style-type: none"> ■ Create a unique directory under <code>cyborghome</code>. ■ Copy programs from the first installed environment. ■ Add additional environments to the Cyborg environment configuration file. ■ Grant read, write, execute permissions to user ID.. 'CYBORG' for each new subdirectory (runs, work, list, prog, data)
relational	non-relational	<ul style="list-style-type: none"> ■ Create a unique directory under <code>cyborghome</code>. ■ Execute script <code>jbackem</code> in relational environment for a sequential backup of FILE01. ■ Execute script <code>payxtr.bat</code>. ■ All tasks in Chapter 2, incorporating your overrides from the relational environment. For task, Create System Control Repository, use the output of <code>jbackem (backem.10)</code> as input to script <code>jrebuild</code>. ■ Execute <code>paymrg.bat</code> with the <code>p20.xtr</code> created from <code>payxtr</code>. ■ Add additional environments to the environment configuration file. ■ Grant read, write, execute permissions to user ID 'CYBORG' for each new subdirectory (runs, work, list, prog, data).

If existing configuration is ...	And new configuration is ...	Perform
non-relational	relational	<ul style="list-style-type: none"> ■ Create a unique directory under <i>cyborghome</i>. ■ Execute script <i>jbackem</i> in non-relational environment for a sequential backup of FILE01. ■ Execute script <i>payxtr.bat</i>. ■ Execute script <i>jexport</i> in non-relational environment to extract F1 and RFM records. ■ All tasks in Chapter 3, incorporating your overrides from the non-relational environment. For task, Execute the Case Tool, use the output of <i>jexport</i> (<i>export.10</i>) as input to script <i>jcrtpgms</i>. For task, Create System Control Repository, use the output of <i>jbackem</i> (<i>backem.10</i>) as input to script <i>jrebuild</i>. ■ Execute <i>paymrg.bat</i> with the <i>p20.xtr</i> created from <i>payxtr</i>. ■ Add additional environments to the environment configuration file. ■ Grant read, write, execute permissions to user ID 'CYBORG' for each new subdirectory (<i>runs</i>, <i>work</i>, <i>list</i>, <i>prog</i>, <i>data</i>).

Phase 2: Performing client configuration

Configure a new environment connection at the client

To configure a new environment connection at the client, perform the following steps:

1. Access the Connection Editor dialog box

Access this dialog box by selecting:

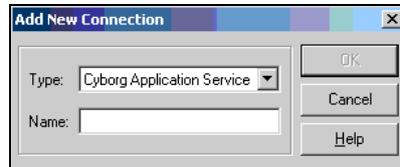
Start ► Programs ► Hewitt Associates ► The Solution Series xxx ► Connection Editor

2. Click New

The New Connection entry dialog box displays.

3. Enter a Connection Name

Identify a title for the connection you will configure between the client and the server. For example, if your production environment is called CYBPROD and your test environment is called CYBTEST, you can assign a more user friendly name here such as Solution Series 5.x.x Production System. If a user requires multi-environment access, additional environments can be set up later. This label must not contain characters "\|:*\?"<>_'.



Note You must create a folder on the server which will match the Connection Name that you enter here. See *Build the Client Data File* (next section). Create a connection subdirectory at the client.

4. Click OK

The Connection Editor dialog box displays a new connection with default settings, ready for configuration.

5. Type the configuration details

Type the following configuration details under Connection Properties on the Connection Editor dialog box:

Item	Description
Host	Identify the system name of the UNIX server, as identified on the network.

Item	Description
Port	Identify the port address of the UNIX server. Port address 9888 has been registered for the Cyborg Application Server (CAS). Note You must also identify the 9888 port address on the server by editing the /etc/services file, as described in Chapters 3 and 4, Phase 6: Install and configure Cyborg Application Server (CAS) daemon.
Environment	Identify the environment name (up to 8 characters). Examples are: CYB52PROD, CYB52TEST. Note This same environment name must also be entered in the cybenv.cfg file on the server, as described in Appendix E: Administering the Cyborg Application Server (CAS) Daemon.
Be Cyborg User	Accept the default entry of Yes to enable the Cyborg User.
Encryption	The default entry is No. If Yes is entered, the sign-on data sent between the client and the server will be encrypted.
ST Application ID	The application name and ID number for The Solution Series application. This application ID is configured to 2 as identified in cybapp.cfg on the server.
FILE01 Application ID	The application name and ID number for the CYBIO application. This application ID is configured to 3 as identified in cybapp.cfg on the server.
Server Username	Leave this field blank.
Server Password	Leave this field blank.

6. Click Exit

The new connection has been configured between the server and the client.

Build the Client Data File

This task details how to build the Client Data File using the Build FileCL utility.

Note You can build one Client Data File at the server for each environment, then copy it to each client. The Client Data File can also be built by deleting the existing FILECL32. When a person logs on to the system after this has been deleted, The Solution Series will automatically build a new Client Data File.

Run Export Client File utility (makecl) on the server

Script used: jmakecl

To obtain the source file for the Client Data File, execute the jmakecl script from the \$runs subdirectory. For example:

```
jmakecl
```

Review the log to determine if there were any errors.

The makecl10 file (FILE10) must then be copied to a local client PC.

Note Run this script in each environment for which you want to create a client data file.

Test the connection (on the client)

1. Launch The Solution Series

Select:

Start ► Programs ► The Solution Series ► The Solution Series

The Welcome screen displays.

2. Select the Start button on the Welcome screen

The sign on dialog box displays.

3. Sign on as the Security Officer

Select the environment you want to access, enter your user name and password.

4. Click OK

The work area for The Solution Series displays.

5. Sign off The Solution Series

APPENDIX D

ORACLE Database Considerations

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Overview

This section has been provided to assist customer DBAs to properly create the database and minimize any rework in the future or troubleshoot database problems.

Understanding the Solution Series Database

There are several things you should understand when working with the database. This section explains the specifics of the database.

Tablespaces

Following are the database tablespaces created to hold data and index objects:

Tablespace 0	Temporary tablespace the Cyborg user will use
Tablespace 1	Company data + Labor/History Indexes
Tablespace 2	Other Record data + Employee Indexes
Tablespace 3	Tax data + Tax Indexes
Tablespace 4	Employee data + Other Record Indexes
Tablespace 5	Labor/History data + Company Indexes
Tablespace 6	Option List/Application Tables
Tablespace 7	Option List/Application Table Indexes
Tablespace 8	Z-TABLE
Tablespace 9	Z_TABLE Indexes
Tablespace A	TABLE01 + ZZ2IND
Tablespace B	TABLE01 + ZZ2IND Indexes

User account

An ORACLE user account should be created to own the Solution Series database objects. Use the following guidelines:

- Minimum database privileges this user should be granted.
- Create database tables, views, synonyms, roles, procedures, and triggers.
- Select, insert, update, and delete for database tables and views.

Enough memory on machine

Before tuning memory for ORACLE, ensure that enough memory resides on your machine for the following:

- Operating system
- Assortment of support mechanisms for the operating system
- Database engine, tools, and shadow processes for your version of ORACLE
- Software that coexists with ORACLE on your machine
- Network of operating system buffers
- ORACLE databases that coexist on your machine
- Memory overhead per user on the system
- Operating system overhead for supporting the read and write requests of all of those users

Tuning ORACLE with INIT.ORA parameters

To see the current value of your INIT.ORA parameters, you can no longer rely on reading the INIT.ORA file; you should select all of the parameter names and values from V\$PARAMETER instead. The setting of the INIT.ORA Parameters customizes the performance of each ORACLE instance to its particular needs. While default settings often yield adequate performance, the peak performance ORACLE is capable of delivering can often be attained only by careful tuning of each parameter.

While most of the parameters can be adjusted only after the database is in use, the following parameters can be adjusted immediately upon installation:

- SYSTEM GLOBAL AREA (SGA)
 - DB_BLOCK_SIZE
 - DB_BLOCK_BUFFERS
 - SHARED_POOL_SIZE
- OPEN_CURSORS
- PROCESSES
- SORT_AREA_SIZE
- DML_LOCKS
- LOG_BUFFER
- ROLLBACK_SEGMENTS

The parameters are listed in order of maximum performance gain.

SYSTEM GLOBAL AREA (SGA)

It is important that the SHARED_POOL_SIZE and DB_BLOCK_BUFFERS account for 90% of the SGA total size. In addition, the SGA should never take over 50% of the available memory. In a SVRMGR session, enter the following to determine the SGA values:

```
sho SGA
```

DB_BLOCK_SIZE

The size of a database block in bytes. We suggest using the default value of 2048.

DB_BLOCK_BUFFERS

The number of database blocks cached in memory. Each buffer in the cache contains one ORACLE block. The larger the cache, the more data ORACLE can hold in memory. If the data is not in memory, ORACLE issues the needed I/O request to obtain the data, which is the slowest operation a computer can perform. Set this value to the maximum number of buffers that could be added without causing paging.

SHARED_POOL_SIZE

The size in bytes of shared pool. If the ratio of reloads to pins exceeds 1 percent, you should increase this parameter. This can be determined by a simple query:

```
SQL>SELECT (SUM(reloads/SUM(pins)) * '100 Miss' % from V$LIBRARYCACHE;
```

OPEN_CURSORS

This parameter is the maximum number of cursors that a user can have open at one time. To fully use the higher value for SHARED_POOL_SIZE, you may also want to increase the number of cursors available to each user (OPEN_CURSORS).

PROCESSES

This parameter limits the number of users who can concurrently access the instance. This parameter does not affect performance but is a useful starting point in defining expected requirements for ORACLE. Keep in mind that the background processes are included in this number and if the application spawns processes recursively, all these spawned processes count.

SORT_AREA_SIZE

This is the amount of memory per user process that is allocated for sorting. Size your SORT_AREA_SIZE to fit the need of the users. This is a big user of memory and also a big help with performance.

DML_LOCKS

This parameter is the maximum number of locks that can be placed on all tables by all users at one time. Experience has shown this parameter should be set high, as this parameter has no effect on performance.

LOG_BUFFER

This parameter is the number of bytes that are allocated to the redo log buffer in the SGA. If the ORACLE system is processing many in-process transactions, this parameter should be increased to reduce I/O to the redo logs.

ROLLBACK_SEGMENTS

This parameter is a list of all the rollback segments available to user processes. The system rollback segment should never appear in this parameter's list. All of the user rollback segments should be the same size since they are allocated randomly. Rollback segments should be large enough to contain all of the rollback information for any anticipated transaction. Always name your rollback segments in the initialization parameter file. Always place your rollback segments in their own tablespace.



Refer to 'Managing Rollback Segments', later in this appendix.

Space Management

Space is needed for the following objects to extend tables and indexes, rollback segments, and temporary tables:

Tables and indexes

This is caused by the said objects needing additional space to satisfy an insert or update.

Rollback segments

If the culprit is a rollback segment, the error ora-1562 'failed to extend rollback segment (id = %s)' will always precede the ora-1547. The ora-1562 is telling us that it could not extend the rollback segment, and the reason is the ora-1547—not enough space.

Temporary tables

These are tables created by the ORACLE kernel to do a sort on behalf of the user. A user can tell that he is running out of space for a temporary table, based on the operation he/she is performing (such as creating an index, doing a query with an order by, or a lengthy join statement). The temporary tablespace the user will use can be seen by performing the following query:

```
SQL>select temporary_tablespace from sys.dba_users where
username='<USERNAME>';
```

If the space being used seems too large, you may want to investigate the default storage for the temp tablespace—it is possible that the defaults are too small. To see the default storage, perform the following query:

```
SQL>select initial_extent, next_extent, min_extents, pct_increase
from sys.dba_tablespaces
```

```
where tablespace_name='<NAME>;'
```

Adjustments can be made to the default storage of the tablespace by issuing the following command:

```
SQL>alter tablespace <NAME> storage (initial xxx next xxx....);
```

Space can be added to a tablespace using the 'ALTER TABLESPACE' command (full syntax below). This statement will create a database file on disk and enlarge the existing tablespace. The statement can be performed on all tablespaces (including system) without shutting down the database or taking the tablespace offline. Immediately following the completion of the statement, the space is available.

```
SQL>alter tablespace <TABLESPACE_NAME> add datafile '<PATH/FILENAME>'
size <size_of_file> reuse;
```

To get an idea of the naming conventions or locations for existing files, perform the following query:

```
SQL>select file_name from sys.dba_data_files where  
tablespace_name='<NAME>';
```

Understanding and resolving common Oracle sizing errors with tablespaces

Error 01658: Unable to create INITIAL extent for segment in tablespace %s

Cause:	Failed to find sufficient contiguous space to allocate INITIAL extent for segment being created.
Action:	Use ALTER TABLESPACE ADD DATAFILE to add additional space to the tablespace or retry with a smaller value for INITIAL.

ORACLE will ALWAYS try to allocate CONTIGUOUS space. Although the tablespace may have enough free space, if it is not contiguous, the error will occur. To see if you have enough contiguous space in the tablespace, perform the following query:

```
SQL>select max(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This will return one record that shows the biggest chunk of space free in the tablespace in question. This number will be lower than the one returned by the error. If you wish to compare the contiguous space with total space, perform the following query:

```
SQL>select sum(blocks) from sys.dba_free_space where tablespace_name='<NAME>';
```

This also returns one record. This value can be compared to the record above to see how much of the total space is contiguous.

Understanding and resolving common Oracle sizing errors with tables

Error 01631: Max # extents (%s) reached in table %s.%s

Cause:	A table tried to extend past maxextents.
Action:	Recreate the table with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01653: Unable to extend table %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for table segment in tablespace
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and Resolving common Oracle sizing errors with indexes

Error 01632: Max # extents (%s) reached in index %s.%s

Cause:	An index tried to extend past maxextents.
Action:	Recreate the index with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01654: Unable to extend index %s.%s by %s in tablespace %s

Cause:	Failed to allocate an extent for index segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Understanding and resolving common Oracle sizing errors with rollback segments

Error 01628: Max # extents (%s) reached for rollback segment %s

Cause:	Tried to extend rollback segment already at maxextents value.
Action:	Recreate the rollback segment with larger initial, next, and pctincrease extents. If this is not possible, check if self maxextents storage parameter is less than system allowable max, then raise this value and consider upping the pctincrease value as well.

Error 01650: Unable to extend rollback segment %s by %s in tablespace %s

Cause:	Failed to allocate an extent for rollback segment in tablespace.
Action:	Use the ALTER TABLESPACE ADD DATAFILE statement to add one or more files to the tablespace indicated.

ORACLE uses the logical 'tablespace' unit. However, the physical aspect of the tablespace unit is the datafile. The datafile, which is created physically on disk, is where all objects within that tablespace reside. In order to add space to the tablespace, you must add a datafile.

Managing rollback segments

A rollback segment consists of contiguous multi-block pieces called extents. The segment uses these extents in an ordered circular fashion, moving from one to the next after the current extent is full. A transaction writes a record to the current location in the rollback segment and advances the current pointer by the size of the record.

To determine a general rollback segment configuration, balance the number of segments against the size of each segment, such that the space needed will fit into the available disk space.

Make sure that there are enough segments to avoid contention as processes access them. But also make sure that individual rollback segments are large enough for their transaction load.

Balancing transaction requirements

The next section discusses balancing these two requirements.

- A transaction can only use one rollback segment to store all of its rollback (undo) records.
- Multiple transactions can write to the same extent.

There are two issues that need to be considered when deciding if your segment is large enough.

First, make sure that transactions will not cause the head to wrap around too fast. This causes the segment to extend in size, per the principles mentioned above.

Second, if you have long running queries that access data that frequently changes, make sure that the rollback segment does not wrap around to prevent the construction of a read consistent view.



Refer to the ORACLE Database Administrator's Guide for discussions on 'read consistency' on 'avoiding the snapshot too old error'.

The size needed for a rollback segment depends directly on the transaction activity of your database. Be concerned about the activity during normal processing of the database, not with rare or semi-frequent large transactions. These special cases are to be dealt with separately.

The number of rollback segments needed to prevent contention between processes can be determined with the help of the monitor rollback display and the use of the V\$WAITSTAT table.

Undo headers may occur if there are not enough rollback segments to support the number of concurrent transactions. The following V\$WAITSTAT query will display the number of waits since instance startup:

```
SQL>SELECT * FROM V$WAITSTAT WHERE CLASS = 'undo header';
```

To find out the size and number of rollback segments needed for normal processing on the database, you need to do some testing. A good test is to start with small rollback segments.

Allow your application to force them to extend. Here are the steps to run such a test:

1. Create a rollback segment tablespace.
2. Create a number of rollback segments in the tablespace.
3. Create the rollback segments so that all extents are the same size. Choose an extent size that you suspect will need between 10 to 30 extents when the segments grow to full size.
4. Each rollback segment should start with two extents before the test is run. This is the minimum number of extents any rollback segment can have.
5. Activate only the rollback segments that you are testing by making the status 'online'. The only other segment that should be 'online' is the system rollback segment.
6. Run transactions with a load typical of the application.
7. Watch for rollback segment contention.
8. Watch for the maximum size a rollback extends to.

The maximum size any one of the rollback segments reaches during the test is the size you want to use when configuring. This size we will call the 'minimum coverage size'. If you see contention, adjust the number of segments and rerun the test. Also, if the largest size requires fewer than 10 extents, or more than 30, it is a good idea to lower or raise the extent size respectively, and rerun the test.

For sizing rollback segment extents, we strongly recommend that each extent be of the same size. In fact, we also suggest that the size of the rollback tablespace is some multiple of the common extent size. The number of extents for an individual segment should be around 20.

In the rollback segment storage clause, please use the `OPTIMAL` parameter. `OPTIMAL` sets an optimal size in bytes for a rollback segment. It can be specified in kilobytes or megabytes. `ORACLE` will dynamically deallocate extents in the rollback segment to maintain the optimal size.

`NULL` means that `ORACLE` never deallocates the rollback segment extents, and this is the default behavior. You must supply a size greater than, or equal to, the initial space allocated for the rollback segment by the `MINEXTENTS`, `INITIAL`, `NEXT`, and `PCTINCREASE` parameters.

Extent deallocation is expensive in regards to performance. This means that an `OPTIMAL` setting may decrease performance if it is too low.

Changing an ORACLE user's password

You can use the ALTER USER command as a DBA or as the user itself to accomplish this task.

```
SQL>CONNECT userid/password;
```

where *userid* is your database userid or the userid of the DBA and *password* is your current password or the password of the DBA.

```
SQL>ALTER USER john IDENTIFIED BY test;
```

Dropping the Database

Dropping a database is not supported by ORACLE. However, taking the tablespaces offline, dropping each tablespace, dropping the Cyborg user, and deleting all related data, initialization, and control files will accomplish this. For each of the 8 tablespaces created for the database, perform the following two commands:

```
SQL>alter tablespace <TABLESPACE_NAME> offline;  
SQL>drop tablespace <TABLESPACE_NAME> including contents cascade  
constraints;
```

Then drop the Cyborg user:

```
SQL>drop user <USER> cascade;
```

Delete all related data, initialization, and control files in the operating system.

APPENDIX E

Administering the Cyborg Application Server (CAS) Daemon

In This Appendix

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Overview of the Cyborg Application Server Daemon

This appendix introduces you to the Cyborg Application Server (CAS) daemon and includes information on how to:

- Start CAS
- Configure a new environment on the server
- Use the CAS Manager to perform administrative functions
- Monitor CAS using the system log File
- Troubleshoot any problems you may encounter when installing CAS
- Enable and disable tracing
- Stop CAS (terminate the CAS daemon entirely by forcing CAS to exit)
- Uninstall CAS

What is the Cyborg Application Server (CAS) daemon?

Overview of CAS

The Cyborg Application Server (CAS) is a server that provides network transparency of clients for server applications. It allows an existing application, such as CBSV, to become the server in a client/server architecture with almost no modification to that application.

The client connects to CAS across the network via TCP/IP. The client, such as The Administrative Client, is fully aware of CAS and sends requests and receives responses via messages. Among other things, these messages ask CAS to start the server application, send input to the application, receive data from the application, and receive responses from the server.

CAS supports multiple server applications on a single system. Many clients can be connected to an environment via CAS at the same time. Furthermore, CAS supports multiple environments on a single server. Each client can run any number of server applications available to it.

'listening' CAS and 'talking' CAS

The CAS works by creating copies of itself to allow multiple clients to access the server applications.

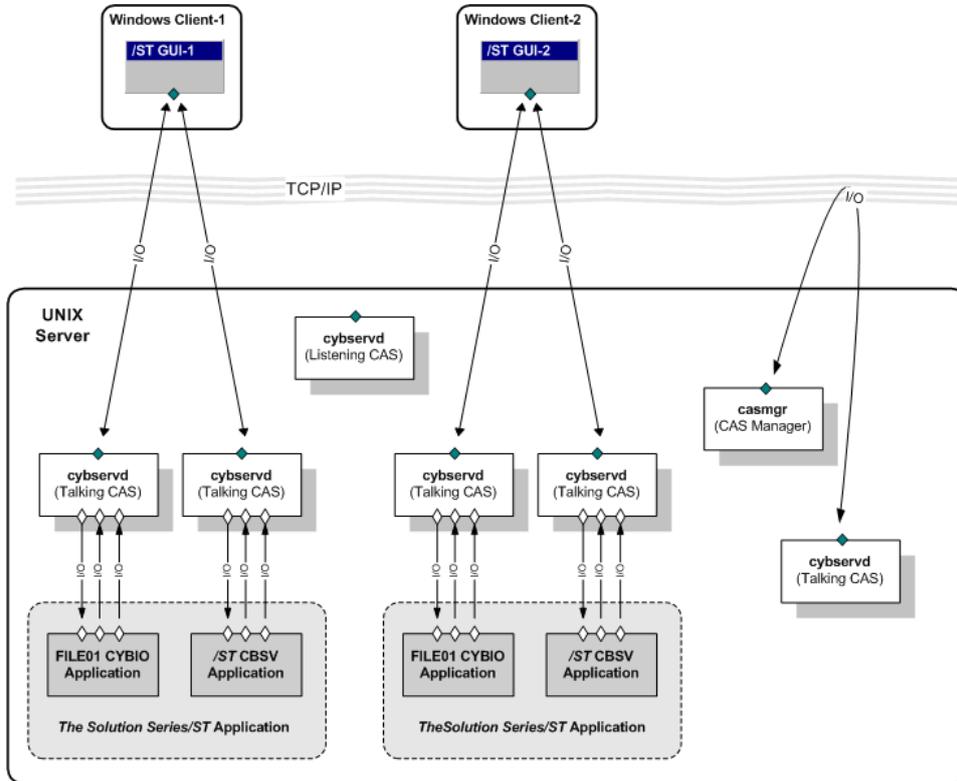
The CAS daemon is informally known as 'listening' CAS because it listens for incoming client requests from the network. When it receives a request from the client, it creates a child process (informally known as 'talking' CAS) to interact with the client application:

- The CAS daemon begins its execution as 'listening' CAS by waiting for a client connection from the network.
- When 'listening' CAS detects that a client has connected, it immediately creates a copy of itself; this copy is 'talking' CAS.

- After creating the copy, 'listening' CAS is free to listen for new clients, while 'talking' CAS will be responsible for starting the server application and handling all subsequent communication with that client, including passing I/O between the client and server application.
- At any time, there is only one 'listening' CAS on the UNIX system, while there can be any number (including zero) 'talking' CAS processes.

Major components of CAS

The following diagram gives you an overview of the major components of the Cyborg Application Server as it is implemented on a UNIX platform. It shows the processes that interact with UNIX CAS and their I/O relationships.



Explanation of the cas script

To launch the Cyborg Application Server (CAS) daemon, you need to execute the CAS script. The following is the delivered CAS script:

```
#!/bin/ksh
#
# {cyborg home}/app/server/cas script 1.16 for UNIX CAS 1.04
```

```
#
# The Cyborg Application Server files and directories all reside in the
# same directory as this script.
#
cd `dirname $0` || exit 1
casdir=`pwd`
daemon=$casdir/cybservd
appcfg=cybapp.cfg
envcfg=cybenv.cfg
tracedir=trace
maxusers=2000
#
# Enter MicroFocus (and Oracle) environment variable lines here.
#-----
#
#-----
#
# Check that the proper files and directories exist
#
assert()
{
    if command test ! $1
    then
        echo "The current directory is `pwd`"
        echo "Error:" $2
        exit 1
    fi
}
assert "-e $daemon" \
    "The CAS executable \"$daemon\" does not exist"
assert "-f $daemon" \
    "The CAS executable \"$daemon\" is not a regular file"
assert "-x $daemon" \par          "The CAS executable \"$daemon\" does not have
executable permission"
assert "-e $appcfg" \
    "The application configuration file \"$appcfg\" does not exist"
assert "-f $appcfg" \
    "The application configuration file \"$appcfg\" is not a regular file"
assert "-e $envcfg" \
    "The environment configuration file \"$envcfg\" does not exist"
assert "-f $envcfg" \
    "The environment configuration file \"$envcfg\" is not a regular file"
assert "-e $tracedir" \
    "The trace file directory \"$tracedir\" does not exist"
assert "-d $tracedir" \
    "The trace file directory \"$tracedir\" is not a directory"
#
# Calculate the number of connections required.
# - Each user requires two sessions: one for online and one for cybio
# - The administrator should also get a session
#
peruser=2
maxconn=`expr $peruser \* $maxusers + 1`
#
# By default, CAS creates the system log and trace files with read/write
# privileges for everyone (user, group, other). Set the permission mask
# so that trace files have the desired permissions (e.g., 066 to only allow
# access by the file owner or 022 to allow anyone to read the file, but
# only write by the owner).
```

```
#
umask 066
#
# Launch the daemon
#
$daemon -a$appcfg -e$envcfg -T$tracedir -c$maxconn
```

The `cas` script:

- Is delivered in the `/cyborghome/app/server` directory.
- Contains the `cybservd` command line that launches the CAS daemon.
- Specifies the location of the `cybenv.cfg`, `cybapp.cfg`, system log and trace files. As delivered, the default location of these files is: `/cyborghome/app/server` directory.

Note: *The Micro Focus and ORACLE environmental variables that were identified in Chapters 3 and 4 (Task 4) must be included where shown in this script before CAS is started.*

CAS script port

To edit the CAS script to include reference to new port

```
$daemon -pnnnn -a$appcfg -e$envcfg -T$tracedir -c$maxconn
```

where `nnnn` is the new port number.

Explanation of `cybapp.cfg`

The following is the delivered `cybapp.cfg` data file. It should not be changed.

```
#
# cybapp.cfg: application configurations for the Solution Series/ST
#
# Each definition must fit on a line, and the fields in each definition
# are separated by colons.
#
# Name          Type          Description
# -----
# App ID        Number: greater than 2  ID from the app configuration file
# Enabled       Boolean: 'Y' or 'N'     Whether the environment is enabled
# Name          String: up to 32 chars  Name of the application
#
2:Y:/ST Application
3:Y:FILE01 Application
```

Configuring a new environment on the server

You need to configure an environment for Solution Series users by editing the `cybenv.cfg` file. The `cybenv.cfg` file defines the two environments necessary for each client application to run The Solution Series:

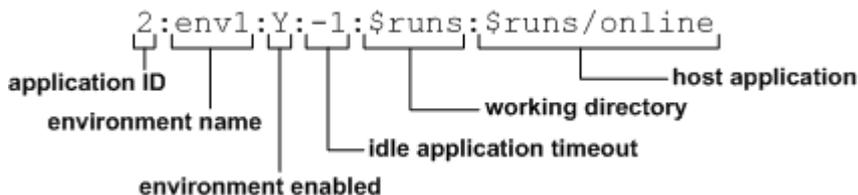
```
#
# cybenv.cfg: environment configurations for the Solution Series/ST
#
# The string "$runs" on the last few lines must be replaced with the
# absolute path to the appropriate directory for that environment.
#
#
```

```

#
# Each definition must fit on a line, and the fields in each definition
# are separated by colons.
#
# Name          Type          Description
#-----
# App ID        Number: greater than 2  ID from the app configuration file
# Environment    String: 1-8 characters  Environment where the app is used
# Enabled        Boolean: 'Y' or 'N'     Whether the environment is enabled
# Idle timeout   Positive number or -1  Timeout in minutes before application
#                is shut down by the server; use a
#                value of -1 to disable the timeout.
#
# Working dir    String: directory       Starting directory of host app
# Executable     String: filename        Program to launch as the host app
# Parameters     String (optional)      Parameters to the host app
#
2:env1:Y:-1:$runs:$runs/online
3:env1:Y:-1:$runs:$runs/jcybio

```

Each environment definition (highlighted in the script above) has six fields, with the fields separated by a colon (:). All fields must appear in their defined order. The following diagram identifies those six fields:



The following table describes the environment definition fields and how to edit the `cybenv.cfg` file:

Field	Description	How to edit cybenv.cfg
application ID	This field is the application ID of the application with which this environment is associated. This ID must correspond to the application ID in the application configuration file (<code>cybapp.cfg</code>).	Enter: <ul style="list-style-type: none"> ■ 2 for /ST application (online) ■ 3 for FILE01 application (jcybio) IMPORTANT: Each environment must have two entries in the <code>cybenv.cfg</code> file: <ul style="list-style-type: none"> ■ One for an application ID of 2 (for the /ST application), and ■ A second for an application ID of 3 (for the FILE01 application).

Field	Description	How to edit cybenv.cfg
environment name	This field identifies the environment name (up to 8 characters). Examples are: CYB52PROD, CYB52TEST. All environment names for each application ID must be unique and are not case-sensitive. For example, CYB52PROD and CYB52prod are not unique and are, in fact, the same environment.	To set up a Solution Series prod environment, enter: 2:prod:... 3:prod:... This environment will be the same environment as set in the configuration using the Connection Editor on the client workstations, as described in Chapter 5: Installing and Configuring The Solution Series on the Client.
environment enabled	This field is a denotes whether the application is enabled with values of Y or N. If the application is disabled, then any request to execute it will be refused.	Enter a Y to signify that each application is enabled. 2:prod:Y:... 3:prod:Y:...
idle application timeout	This field controls how long a program may remain open when there is no activity. The amount of time is specified in minutes. If there is no communication between the client and application program within this period of time, the program is terminated. A setting of -1 disables this feature.	The timeout value is either a positive number (1, 2, 3, and so forth) or is disabled with a value of -1. As delivered, the /ST application has a value of 20 in this field, indicating that it will be terminated after 20 minutes of inactivity. The FILE01 application is delivered with a value of -1 in this field, indicating that it will never be terminated due to inactivity.
working directory	This field refers to the directory path of the working directory. Each user should have executable permission to this directory.	Change the path to reflect the current installation by replacing \$runs with the full path.
server application	This field refers to the script that will be launched by CAS for each application. Each user should have executable permission for this file.	Change the path to reflect the current installation by replacing \$runs with the full path to each script that will be launched by CAS.

Using the CAS Manager

Overview of the CAS Manager

The CAS Manager is a standalone program that is used to manage any version of UNIX CAS from anywhere across the network. The CAS Manager is a command-line application that is driven by the options selected on the command line.

The CAS Manager allows an administrator to perform the following tasks:

- Determine whether CAS is running
- Determine the version of CAS and the operating system on which CAS is running
- Determine whether the CAS service is enabled (in other words, whether clients are allowed to start applications)
- Disable the CAS service to disallow future clients from starting applications
- Enable the CAS service to allow future clients to start applications
- Obtain a list of sessions
- Terminate a single server application, such as CBSVO/T or CYBIO, for a specific client
- Terminate all server applications
- Terminate the CAS service entirely by terminating the CAS daemon
- Tracing the execution of CAS as it handles a single server application for a given client
- Trace the execution of every CAS process
- Disable the tracing of CAS for a single server application for a given client
- Disable the tracing of every CAS process
- Trace the execution of CAS for subsequent clients
- Disable the tracing of CAS for subsequent clients

Passwords

Prompting for a password

If a switch requires a password and none is provided on the command line, then the user is prompted for a password (this is the password for the user ID 'cyborg'), similar to the `su(1)` or `rlogin(1)` commands. If a switch requires a password and one is provided on the command line, then the user is not prompted.

For example, the `-tracedefault` switch requires a password:

```
casmgr -tracedefault
Password: _
```

If the password prompt is used, the typed password does not echo on the screen and cannot be redirected from a file; it must be typed from the console.

Password security

We advise that you do *not* use the `-password` modifier unless CAS Manager is needed in a script. Instead, let CAS Manager prompt for a password, as shown above. This method negates the need to remember which commands require passwords.

CAS Manager syntax

The `casmgr` command invokes the CAS Manager. To use the CAS Manager, use the syntax shown below:

```
$ casmgr -switch -port:nnn -password:cyborg user's password
```

Note If you want a description of the syntax or a brief description of each switch, run the CAS Manager without any switches specified.

To find out/do this	Use this switch
Is CAS is running now?	-isrunning
Is CAS service is enabled now?	-isenabled
Disable CAS service	-disable
Enable CAS service	-enable
What version of CAS or CAS Manager is this?	-version
What clients are connected?	-sessions
Trace a single session on the talking CAS	-tracesession:yyy
Disable the trace on a single session on the talking CAS	-notracesession:yyy
Trace all CAS processes	-traceall
Disable the trace on all CAS processes	-notraceall
What is the default trace setting now for new CAS processes?	-istracedefault
Enable tracing for all new CAS processes	-tracedefault
Disable tracing for all new CAS processes	-notracedefault
Terminate a single host application for a single session	-killsession:yyy
Terminate all host applications	-killtalking

CAS switch details

The following describes the various switches that can be used with the `casmgr` command. The switches are in alphabetical order:

```
-disable  
-enable  
-isenabled  
-isrunning  
-istracedefault  
-killdaemon  
-killsession:yyy  
-killtalking  
-notraceall  
-notracedefault  
-notracesession:yyy  
-sessions  
-traceall  
-tracedefault  
-tracseession:yyy  
-version
```

-disable

Disable CAS

Use this switch to disable the CAS daemon by disallowing future clients from starting applications:

casmgr **-disable**

This will place CAS in the disabled state. CAS will still be running, but will refuse any requests to start server applications. Previously connected clients will continue to run normally.

Note: This command requires a password.

-enable

Enable CAS

Use this switch to enable the CAS daemon, allowing future clients to start applications:

casmgr **-enable**

This will place CAS in the enabled state. CAS will accept requests to start server applications.

Note: This command requires a password.

-isenabled

Determine whether CAS is enabled or disabled

Use this switch to determine whether the CAS daemon is enabled (that is, whether clients are allowed to start applications):

casmgr **-isenabled**

This will print whether the CAS daemon is enabled or disabled. When the daemon is enabled, CAS will accept requests to start server application programs. When the daemon is disabled, CAS will still be running but will refuse any requests to start server applications. Use the `-enable` and `-disable` switches to enable and disable CAS.

-isrunning

Determine whether CAS is running

Use this switch to determine whether CAS is running:

casmgr **-isrunning**

This will determine whether there is a CAS process running on the server.

-killdaemon

Terminate the CAS service

Use the `-killdaemon` switch to terminate the CAS daemon entirely and force the CAS process to exit:

casmgr -killdaemon

The daemon cannot be restarted using the CAS Manager, as there is no longer any daemon to answer CAS Manager commands. CAS must be re-started by the system administrator, `cron`, or other external UNIX facility.

Use the 'determine whether CAS is running' switch (`-isrunning`) to verify that CAS has terminated.

Note: *This command requires a password.*

-killsession

Terminate a single server application program for a specific client

Use this switch to terminate a single server application program for a specific client:

casmgr -killsession:sessionID

This will terminate a single server application program for a specific GUI client. The application program is identified with a session ID, as determined by the 'obtain a list of connected sessions' switch (`-sessions`).

Use the 'obtain a list of connected sessions' switch (`-sessions`) to verify that the application program was terminated.

Note: *This command requires a password.*

Monitoring the CAS daemon

Tracing

CAS can create trace files to debug a CAS installation and monitor the messages that are sent and received between the client and server application.

- CAS turns on the trace mechanism in response to an Enable Tracing message.
- CAS turns off the trace mechanism in response to a Disable Tracing message.

Tracing can be enabled or disabled by using various switches with the CAS Manager (`casmgr`) command, including:

```
-notrace  
-notraceall  
-notracedefault  
-tracesession  
-traceall  
-tracedefault
```

Using the system log File

What is the system log file?

The system log is a single, system-wide log shared by every CAS instance on a particular machine for recording significant events (such as newly connected clients, disconnected clients, and so forth) that occur during CAS execution.

Because it is important for an administrator to see the sequence of events that occur while CAS executes, all events are recorded in the system log file.

Filename

The filename of the system log file is `system.log` and it is found in the `/cyborghome/app/server` directory.

The following is an example of a system log file:

```
2004/12/21 08:53:29 cybservd:1153 Info 15456 Initialize service
(Service) (None) /ST 5.2 for UNIX: CAS version

1.00
2004/12/21 08:53:29 cybservd:1157 Info 15456 Initialize service
(Service) (None) Compiled on HP-UX version A,

release B.10.20
2004/12/21 08:53:29 cybservd:1169 Info 15456 Initialize service
(Service) (None) Executing on machine bldruxl:

HP-UX version A, release

B.10.20
2004/12/21 08:53:29 sharmem:353 Info 15458 Initialize service
(Service) (None) Allocated semaphore (semaphore

ID=299)
2004/12/21 08:53:29 sharmem:357 Info 15458 Initialize service
(Service) (None) Allocated shared memory (shared

memory ID=4208): 293152 bytes

for 4001 users
2004/12/21 08:53:29 cybservd:649 Info 15458 Initialize service
(Service) (None) Listening on TCP port 2345 for

incoming requests
2004/12/21 08:53:29 cybservd:472 Info 15458 Initialize service
(Service) (None) CAS version 1.00 for HP-UX

started successfully (process

ID=15458)
2004/12/21 08:53:44 acpt_conn:376 Info 15459 New connection
(Session) pcl.company.com Received connection from

pcl.company.com (CAS process

ID=15459)
2004/12/21 08:53:45 acpt_conn:376 Info 15461 New connection
(Session) pcl.company.com Received connection from

pcl.company.com (CAS process

ID=15461)
2004/12/21 08:54:11 sighandlers:744 Info 15458 Session termination
(Service) (None) Closed connection to

Pcl.company.com (CAS process

ID=15461)
```

```
2004/12/21 08:54:12 sighandlers:744 Info 15458 Session termination
(Service) (None) Closed connection to

pcl.company.com (CAS process

ID=15459)
2004/12/21 08:58:00 acpt_conn:376 Info 15483 New connection
(Session) server1.company.com Received connection from

server1.company.com (CAS

process ID=15483)
2004/12/21 08:58:00 msg_handlers:996Info 15483 Terminate Cyborg
Service(Session) server1.company.com The CAS service is being

terminated by session 15483
2004/12/21 08:58:00 sharmem:398 Info 15458 Service termination
(Service) (None) Deallocated semaphore

(semaphore ID=299)
2004/12/21 08:58:00 sharmem:400 Info 15458 Service termination
(Service) (None) Deallocated shared memory

(shared memory ID=4208)
2004/12/21 08:58:00 sighandlers:361 Info 15458 Service termination
(Service) (None) CAS service shut down via CAS

Manager
```



See the *Message format of the system log and trace files* section for a description of the message format.

Using a trace file

What is a trace file?

A trace file is a file that records the execution of CAS for tracing and debugging purposes. This file is created only when tracing is enabled. Every CAS instance has its own, private trace file, so the number of trace files can equal the number of CAS processes. Trace files can contain binary data as part of their trace.

The following is an example of a trace file:

```
1998/12/21 08:53:44 acpt_conn:376 Info 15459 New connection
(Session) pcl.company.com Received connection from

pcl.company.com (CAS process

ID=15459)
1998/12/21 08:53:44 acpt_conn:379 Trace 15459 New connection
(Session) pcl.company.com New process for pcl.company.com

(pid=15459)
1998/12/21 08:53:44 sharmem:492 Trace 15459 Initialize service
(Session) pcl.company.com CAS process 15459 has been

registered
1998/12/21 08:53:44 proc_msg:106 Trace 15459 Getting new message
(Session) pcl.company.com Beginning to wait for messages

from the client
1998/12/21 08:53:44 read_msg:652 Trace 15459 Start Application request
(Session) pcl.company.com Start Application received
```

```
1998/12/21 08:53:44 read_msg:714 Trace 15459 Start Application request
(Session) pcl.company.com Start Application information
1998/12/21 08:53:44 read_msg:1305 Trace 15459 Start Application request
(Session) pcl.company.com Message version = 0
1998/12/21 08:53:44 read_msg:1309 Trace 15459 Start Application request
(Session) pcl.company.com Application ID = 3
1998/12/21 08:53:44 read_msg:1313 Trace 15459 Start Application request
(Session) pcl.company.com Use Cyborg account = Yes
1998/12/21 08:53:44 read_msg:1318 Trace 15459 Start Application request
(Session) pcl.company.com Environment name = "env1"
1998/12/21 08:53:44 read_msg:1324 Trace 15459 Start Application request
(Session) pcl.company.com Username = (not
applicable)
1998/12/21 08:53:44 read_msg:1339 Trace 15459 Start Application request
(Session) pcl.company.com Encrypt data = Yes
1998/12/21 08:53:44 sharmem:1003 Trace 15459 Internal processing
(Session) pcl.company.com Updated information about CAS

process 15459
1998/12/21 08:54:12 start_app:846 Trace 15459 Application
cyborg pcl.company.com Waiting for data from either
client or host application
1998/12/21 08:54:12 start_app:972 Trace 15459 Output from host app
cyborg pcl.company.com Activity detected on stdout of
FILE01 Application
1998/12/21 08:54:12 start_app:994 Trace 15459 Output from host app
cyborg pcl.company.com Read 18 bytes from stdout of
FILE01 Application
1998/12/21 08:54:12 start_app:1001 Trace 15459 Output from host app
cyborg pcl.company.com Data from stdout: "0007C14200
GOODBY"
1998/12/21 08:54:12 write_msg:348 Trace 15459 Output from host app
cyborg pcl.company.com Writing 18 bytes of data from
stdout to client
1998/12/21 08:54:12 write_msg:353 Trace 15459 Output from host app
cyborg pcl.company.com "0007C14200 GOODBY"
1998/12/21 08:54:12 write_msg:1009 Trace 15459 Start Application response
cyborg pcl.company.com Writing message header:
class=3, type=1, length=18
1998/12/21 08:54:12 start_app:1008 Trace 15459 Output from host app
cyborg pcl.company.com Successfully sent 18 bytes to
pcl.company.com
1998/12/21 08:54:12 start_app:846 Trace 15459 Application
cyborg pcl.company.com Waiting for data from either
client or host application
1998/12/21 08:54:12 start_app:846 Trace 15459 Application
cyborg pcl.company.com Waiting for data from either
client or host application
1998/12/21 08:54:12 start_app:972 Trace 15459 Output from host app
cyborg pcl.company.com Activity detected on stdout of
FILE01 Application
```

```
1998/12/21 08:54:12 start_app:989 Trace 15459 Output from host app
cyborg    pcl.company.com  stdout pipe has closed
1998/12/21 08:54:12 start_app:1349 Trace 15459 Session termination
cyborg    pcl.company.com  Checking if FILE01 Application

has terminated (attempt 1)
1998/12/21 08:54:12 start_app:1387 Trace 15459 Session termination
cyborg    pcl.company.com  FILE01 Application (process

ID=15460) exited normally
1998/12/21 08:54:12 start_app:623 Trace 15459 Session termination
cyborg    pcl.company.com  FILE01 Application has completed

successfully
1998/12/21 08:54:12 acpt_conn:405 Trace 15459 Session termination
cyborg    pcl.company.com  Communication with

pcl.company.com has completed

successfully (process ID=15459)
```



See the *Message format of the system log and trace files* section for a description of the message format.

Filenames

Each instance of CAS creates its own trace file (located in the `/cyborghome/app/server/trace` directory). When there are many clients connected, the number of trace files increases similarly. The filenames of the trace files are designed to assist the administrator in finding the file for a particular client among the multitude of files.

- **For 'talking' CAS**

For each CAS process started by the execution of the client session ('talking' CAS), the filename is derived from the client hostname (or IP address if the hostname is not available) and process ID of the associated 'talking' CAS. The format of the filename is:

clientaddress_processID.trc

For example:

`pcl.company.com_29159.trc`

This indicates that the client address is `pcl.company.com` and that the process ID of the 'talking' CAS process is 29159.

The usage of process ID in the filename allows a single client to connect multiple times without erasing the previous log while clearly separating each connection.

Note: If tracing is enabled and disabled several times within a single connection, all traces will be written to the same file, since the client and process ID of the 'talking' CAS remain the same.

- **For 'listening' CAS**

'Listening' CAS was started by the CAS script. There is no connected client, so the filename is derived solely from the process ID of 'listening' CAS. The format of the filename is:

cybservd_processID.trc

For example:
cybservd_29150.trc

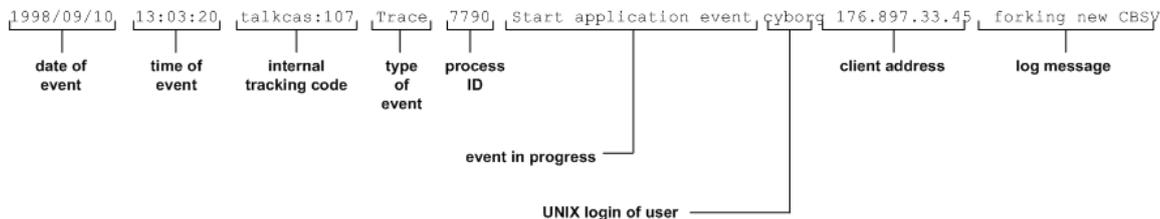
This indicates that 'listening' CAS has a process ID of 29150.

Trace file maintenance

It is the responsibility of the system administrator to remove or back up trace files. New files will be generated for each session when tracing is enabled.

Message format of the system log and trace files

The following diagram illustrates the fields found in each message:



Each message (record) will contain the following nine fields separated by tabs:

Name	Description
Date of event	Date of the event. The date format is YYYY/MM/DD.
Time of event	Time of the event. The time format is HH:MI:SS. The time is taken from the local system time on the UNIX server.
Internal tracking code	For internal use only.
Type of event	The type of event. Possible values are: <ul style="list-style-type: none"> ■ Error (error) ■ Info (informational) ■ Trace (trace)
Process ID	The process ID of the CAS process that is logging the message.
Event in progress	The event in progress when the log entry was created. Examples are: New connection Getting new message
UNIX login of user	The identity under which the server application is running. For the Cyborg user, this will be 'cyborg'.
Client address	The hostname of the GUI client connected to the 'talking' CAS which is logging the event. If the hostname is not available, then the IP address is printed in dotted decimal notation.
Log message	The actual log message.

-killtalking

Terminate all client application programs

Use this switch to terminate all application programs that are currently running.

casmgr -killtalking

Even after this command is used, CAS can still start new application programs if it is enabled. The 'disable CAS' switch (`-disable`) is often used before this command to prevent new server application programs from starting.

Use the 'obtain a list of connected sessions' switch (`-sessions`) to verify that the application programs were terminated.

Note: This command requires a password.

-notraceall

Disable the tracing of every CAS process

Use this switch to disable tracing of CAS for all sessions:

casmgr -notraceall

This will disable the tracing of the CAS process and general I/O through CAS for every session: sessions with host applications, sessions managing administrative sessions, and the listening CAS session.

Tracing can be enabled using the 'enable tracing of every CAS process' switch (`-traceall`) or by using the 'enable tracing for a single application program for a single client' switch (`-tracesession`).

Note: This command requires a password.

-notracedefault

Disable the tracing of CAS for subsequent clients

Use this switch to disable tracing for all new application programs:

casmgr -notracedefault

This will cause subsequent application programs to not trace immediately upon their startup. Currently executing application programs are not affected.

Tracing can be enabled using the 'enable tracing of every CAS process' switch (`-traceall`) or by using the 'enable tracing for a single application program for a single client' switch (`-tracesession`).

Note: This command requires a password.

-notracesession

Disable tracing of CAS for a single host application for a given client

Use this switch to disable tracing of CAS for a single application program for a single client:

casmgr -notrace*sessionID*

This will disable the tracing of the CAS process and I/O through CAS for single application program for a particular GUI client. The application program is identified with a session ID, as determined by the 'obtain a list of connected sessions' switch (-sessions).

Note: This command requires a password.

-sessions

Obtain a list of connected sessions

Use this switch to obtain a list of connected sessions:

casmgr -sessions

This will print the list of sessions connected to CAS with the following information:

- Application ID of the server application
- Environment of the server application
- Login of the user using the server application
- Starting date and time of the application program
- Process ID of the CAS process on the server that is responsible for the server application
- Hostname or IP address of the client
- Whether tracing is enabled for this application

-traceall

Enable tracing of every CAS process

Use this switch to enable tracing of CAS for all CAS processes:

casmgr -traceall

This will enable the tracing of the CAS process and general I/O through CAS for every session: sessions with host applications, sessions managing administrative sessions, and the primary server session.

Note: This command requires a password.

-tracedefault

Enable tracing of CAS for subsequent clients

Use this switch to enable tracing for all new application programs:

casmgr -tracedefault

This will cause subsequent application programs to begin tracing immediately upon their startup. Currently executing sessions are not affected.

Tracing can be disabled using the 'disable tracing of every CAS process' switch (-notraceall) or by using the 'disable tracing for a single application program for a single client' switch (-notraceession).

Note: This command requires a password.

-tracesession

Enable tracing for a single application program for a single client

Use this switch to enable tracing of CAS for a single server application program for a specific client:

`casmgr -tracesession:sessionID`

This will enable the tracing of the CAS process and I/O through CAS for a single server application program for a particular GUI client. The application program is identified with a session ID, as determined by the 'obtain a list of connected sessions' switch (-sessions).

Note: This command requires a password.

■ **Using a trace file**

For more information about trace output

-version

Determine the version of CAS

Use this switch to determine the version of CAS:

`casmgr -version`

This will print the version of CAS Manager and CAS. It will also print the operating system on which CAS is running.

Viewing the system log and trace files

Although the system log and trace files are basically text files and can be viewed in any editor, the long text lines are difficult to manage. The scripts `viewlog` and `viewlogmsg` in the `/cyborghome/app/server` directory can be used to view the system log and trace files.

Both `viewlog` and `viewlogmsg` are `awk` scripts that use the standard **awk(1)** utility. Both scripts take the filename of the log or the trace file as their argument. If no argument is given, then they will read from standard input.

The script `viewlog` prints all the details from its input file in a more readable format, spreading the information across multiple lines and labeling each field. The script `viewlogmsg` prints only the log message without any of the other fields.

Examples:

```
viewlog system.log | more
```

```
viewlogmsg trace/pcl.company.com_29159.trc | more
```

```
tail -f system.log | viewlogmsg
```

Troubleshooting the CAS daemon (UNIX)

CAS installation error messages

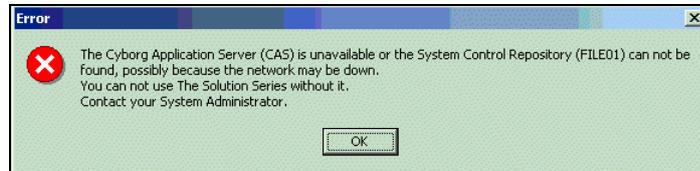
If the expected output is not displayed when starting CAS, then check the following error message table for a possible solution and then re-execute the `cas` script.

Shell	Error	Problem	Solution
bourne korn c	cas: execute permission denied ksh: cas: cannot execute cas: Permission denied.	The cas script does not have executable permissions	At the operating system command prompt, enter: <code>chmod u+x cas</code>
bourne korn c	cybservd: execute permission denied ksh: cybservd: cannot execute cybservd: Permission denied.	The cybservd binary does not have executable permissions	At the operating system command prompt, enter: <code>chmod u+x cybservd</code>
bourne korn c	cas: not found ksh: cas: not found cas: Command not found.	The cas script is not in the: <code>/cyborghome/app/server</code> directory	Change to the <code>/cyborghome/app/server</code> directory, and verify that the cas script exists by using <code>ls cas</code> .
bourne korn c	cybservd: not found ksh: cybservd: not found cybservd: Command not found.	The cybservd binary is not in the <code>/cyborghome/app/server</code> directory	Change to the <code>/cyborghome/app/server</code> directory, and verify that cybservd exists by using <code>ls cybservd</code> .
bourne korn c	cybservd: Port 9888 is already in use by another process Cyborg Application Server version 1.04 terminated.	Other pre-existing software might already be configured to use this port and could be conflicting with CAS	You must change the port used by CAS by editing the <code>/etc/services</code> file. The administrator is responsible to ensure that each GUI client knows that CAS is no longer at 9888 but rather some other port.
		The CAS daemon is already running	Verify that the CAS daemon is running by using the following command: <code>casmgr -isrunning</code>

Shell	Error	Problem	Solution
bourne korn c	If you use the following command: ps -ef grep cybservd and no processes are found	The cybservd process has aborted	Enable tracing of the CAS session immediately upon startup, so that all system error and trace messages will be sent to the trace file. To enable tracing at startup, edit the cas script. Add '-t' to the last command in the file. You must then log in as root and execute the script cas. After the process again aborts, examine the trace file using viewlogmsg to determine the reason for the process abort.
bourne korn c	cyborg: No such user on local machine	The Cyborg user has not been created	You must create the Cyborg user 'cyborg' in the operating system.

Client installation error messages

If the following error occurs:



Try one of the following:

Problem	Solution
The server is not a valid machine.	Correct the 'Host' field in the Connection Editor for the environment in question. The server will differ from installation to installation.
The server exists but the port is not a valid number.	Correct the 'Port' field in Connection Editor for the environment in question. The port number is listed in the /etc/services file on the server under the service name of 'cyborg'. The recommended value is 9888.
The server exists but is not the correct machine.	Use the Connection Editor to examine the connection properties and ensure that the listed server host is the machine on which CAS is running.

Problem	Solution
The server is correct but the port is incorrect.	Use Connection Editor to examine the connection properties and ensure that the port is correct. The port is usually 9888.
CAS is not started.	Make sure that CAS is running on the server. To launch CAS, log in as root and execute the script cas.

CAS Manager messages

Following is a list of messages you may encounter from the CAS Manager.

Additional error messages: command line parsing

Message	Condition
casmgr: Invalid switch invalidswitch	Invalid switch on command line
casmgr: Missing colon for invalidswitch	Missing colon for any switch that requires an argument
casmgr: Value required after invalidswitch	No argument after any switch except -password that requires an argument (see note below table for -password)
casmgr: Bad number invalidnumber	A badly-formed number is given where a number is expected
casmgr: Too many passwords specified	Two or more passwords on command line
casmgr: Too many commands specified	Two or more commands on command line
(Display the syntax for the command)	No arguments given on command line
casmgr: No command specified	No command on command line, but a password was specified

Note It is not an error to omit the password after the -password switch. This situation corresponds to using the empty string as the password.

Additional error messages: network I/O

Message	Condition
casmgr: Insufficient memory	Memory allocation failure
casmgr: CAS is not running on server, port nnnn.	CAS is not running on the current UNIX host at the TCP port specified in the /etc/services file under 'cyborg'
casmgr: Unable to send data to server	Write error while writing to socket

Message	Condition
casmgr: Unable to receive data from server	Read error while reading from socket

Warning messages

Warning messages are printed by CAS Manager or standard output, but do not prevent the command from completing.

Message	Condition
casmgr: Warning: password not needed	Single password on command line, but a password is not needed by the command

Stopping CAS

In the event of a payroll run or backup**All environments**

To prevent online usage to all environments, we suggest that you perform the following steps:

1. `casmgr -disable`
This prevents new users from signing on.
2. `casmgr -killtalking`
This terminates any remaining processes, if required.
3. `casmgr -enable`
Once batch processing or backup is concluded, this will allow online usage.

A single environment

To prevent online usage to one environment, we suggest that you perform the following steps:

1. Edit the `cybenv.cfg` file, locate the record associated with application ID 3 for this environment and change the field labeled 'enabled' to 'N'.
This prevents new users from signing on to this one environment
2. `casmgr -killtalking`
This terminates any remaining processes, if required.
3. Once batch processing or backup is concluded, edit the `cybenv.cfg` file, locate the record associated with application ID 3 for this environment and change the field labeled 'enabled' to 'Y'.

Uninstalling CAS

To uninstall the CAS daemon, perform the following steps:

1. Stop the CAS daemon (`casmgr -killdaemon`).
2. Delete the CAS files and directories:
`cd cyborghome/app/server`
`rm cybservd cas cybapp.cfg cybenv.cfg viewlog viewlogmsg`
`rm -r system.log trace`
3. Edit the file `/etc/services` to remove the Cyborg port to the network services database.

The entries in the file are usually given in numeric order, so find the location where 9888 should appear, then remove the following line of the file:

```
cyborg 9888/tcp # Assigned by IANA to Cyborg Systems
```

4. Save the file and exit the editor.

APPENDIX F

Configuring Kernel Parameters on UNIX

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Configure Kernel Parameters

UNIX resources facilitate inter-process communication. Review the table below for the recommended platform settings. If your parameter settings are insufficient, you might experience operational errors after installation. Remember to make a backup copy of your UNIX kernel. Consult your operating system documentation for additional information. For Oracle, consult the Oracle Installation documentation for additional requirements. Recommended Kernel Parameters per Operating System:

- For each Solution Series online session, processes = 2 (CYBIO + CBSVO)
- For Interactive Workforce, processes = (max # of CYBIO) + (max # of CBSVO) connections
- For each Web Client session, processes = 2 (CYBIO + CBSVO)

Operating System	Maximum number of ...	Kernel Parameter	Recommended
AIX RS6000	Open files per system	No parameter defined	NA
	Processes per User	maxuproc	**((nproc*9)/10)
	Processes per system	No parameter defined	NA
	Processes per system using semaphore "undo" structures	No parameter defined	NA
	Max # of file locks per system	No parameter defined	**nproc * 12
HP-UX	Open files per system	nfile	(15*nproc + 2048)
	Processes per User	Maxuprc	((nproc*9)/10)
	Processes per system	nproc	(20 + 8 * maxusers)
	Processes per system using semaphore "undo" structures	semmnu	nproc + 4
	Max # of file locks per system	No parameter defined	nproc * 12
Sun Solaris	Open files per system	No parameter defined	NA
	Processes per User	maxuprc	((nproc*9)/10)

Operating System	Maximum number of ...	Kernel Parameter	Recommended
	Processes per system	max_nprocs	(20 + 8 * maxusers)
	Processes per system using semaphore "undo" structures	seminfo_semmnu	nproc + 4
	Max # of file locks per system	No parameter defined	nproc * 12

**AIX should not require kernel parameter configuration as it will adjust itself to handle any number of processes; however, certain system parameters may need to be adjusted to increase performance.

Installing the Quarterly Processor

1.0



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PART 1

Introduction

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CHAPTER 1

Introduction

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Welcome

This document provides detailed installation instructions for installing the Quarterly Processor for Unemployment Insurance reporting for The Solution Series versions 5.0, 4.5.3, and 3.2.1.

How this manual is organized

This installation guide is divided into parts and chapters.

Read this chapter	For
1. Introduction	An overview and description of the prerequisites required for successful installation
2. Installation	Detailed directions for installing the Quarterly Processor

Prerequisites

Verify your Solution Series/eCyborg software version

To install the Quarterly Processor, you must be using one of the following software versions:

- 5.0 or greater
- 4.5.3
- 3.2.1

All software versions

Change permissions

If your operating system requires that you set file permissions, change the permissions so that you can execute the scripts.

Edit scripts according to your environment variables

Review the scripts/jobstreams and change, as necessary, the environment variables such as directory paths or library names.

Make sure the following jobs are loaded on the system:

- jxrptqtr
- jxp5qtr
- jqtrrun

For The Solution Series version 3.2

Ensure that P4CALC has FILE01 read access.

P4CALC should have been loaded using the latest machine parameters for your particular computer system. To ensure that occurred, look at the top of the P9CNVT Activity Report and compare the parameters shown there with those shown in the Machine Parameters appendix of this manual.

Also confirm that there is a FILE01 assignment in JPAYRUN and JMNTRUN in the area labeled 'P4CALC' processing of each job.

AS400

If not previously run, create files for the Quarterly Processor.

Script used: jqtrcrtpf

Modify this job to reflect your environment variables.

This job, which is only to be run on the AS400, creates files for the Quarterly Processor on the AS400.

For the AS400 and OS/390:

1. Ensure that CYBQTRUS has been allocated. (Use CYBMST as a model.)
2. Check that P50QTR file has been created

AS400

If not previously done, create the P50qtr physical file by executing this command:

CRTPF FILE(CBSVFXXXXX/P50QTR) RCDLEN(150) SIZE(*NOMAX)

IBM IDMS, OS/390, and IMS/DL

If not previously done, modify your JDATASET job to include the following steps to create the P50qtr file.

```
//*  ?HLQ?.P50QTR -  
//DD26      DD DSN=?HLQ?.P50QTR,DISP=(NEW,CATLG,DELETE),  
//          UNIT=SYSDA,SPACE=(CYL,(5,2),RLSE),  
//          VOL=SER=??VOL??,  
//          DCB=(LRECL=150,BLKSIZE=1500,RECFM=FB)  
//
```

Apply the latest Regulatory Bulletin

How to get additional help

If you cannot find the answers to your questions in this manual, contact your Cyborg Systems Customer Service Manager.

Suggestions and feedback

We spend a great deal of time designing, writing, and reviewing our manuals. However, we recognize that there is always room for improvement. We value your comments and feedback on this manual.

Please send them to your Cyborg Systems Service Manager.

PART 2

Part 2 - Installation

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CHAPTER 2

Quarterly Processor Installation

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Phase 1 - Install the Quarterly Processor

Extract the quarterly generators

Script used: jxrptqtr

Note: Check CUBBS to get the latest version of the quarterly processor (CYBQTRUS). If there is a later version, you must apply the associated Regulatory Bulletin.

Extract the quarterly generators from the delivered CYBQTRUS file.

If this is the first time you have used the Quarterly Processor, edit P05RDRQT to add your machine parameters as used in JXRPTGEN.

Note: Depending on your platform, P05RDRQT may have a '.dat' filename extension.

Create the P20 Batch master file

Script used: jpayxtr

To create the P20 Batch Master file, execute the JPAYXTR jobstream.

Note: Run this job with no company setup to pay when doing the extract. Time entries should be pulled off or saved to prevent their deletion during the extract.

Review the log file and then the payxtr.03 file to determine if there were any errors. Correct any errors before proceeding.

Apply quarterly generators

Script used: jpayrun

Execute JPAYRUN with P05T80 (created in the first step) as input. The P2EDIT, P4CALC, and P5PRNT programs will be processed.

Input file:

P05T80 (the generators and D transactions extracted in the first step)

Review the Payroll Audit Trail to verify the following generators have been loaded with no errors:

- Main Extract Generator (7F7F)
- Balancing Report by Organization (7I7I)
- Balancing Report by State (7J7J)
- Exceptions Listing (7K7K)

Perform a maintenance run

Script used: jmntrun

This procedure synchronizes the names of the P20IN Batch Master File for the next step.

Update the Employee Database

Script used: jpaymrg

To create a new random Employee Database, execute JPAYMRG.

Review the log then the paymrg.03 list file to determine if there were any errors.

Extract and Compile the Quarterly Processor program

Script used: jxp5qtr

Note: Download the latest version of the Quarterly Processor (CYBQTRUS) from CUBBS.

Modify this job to reflect your environment variables.

To extract and compile the Quarterly Processor, execute jxp5qtr.

Review the log file for errors.

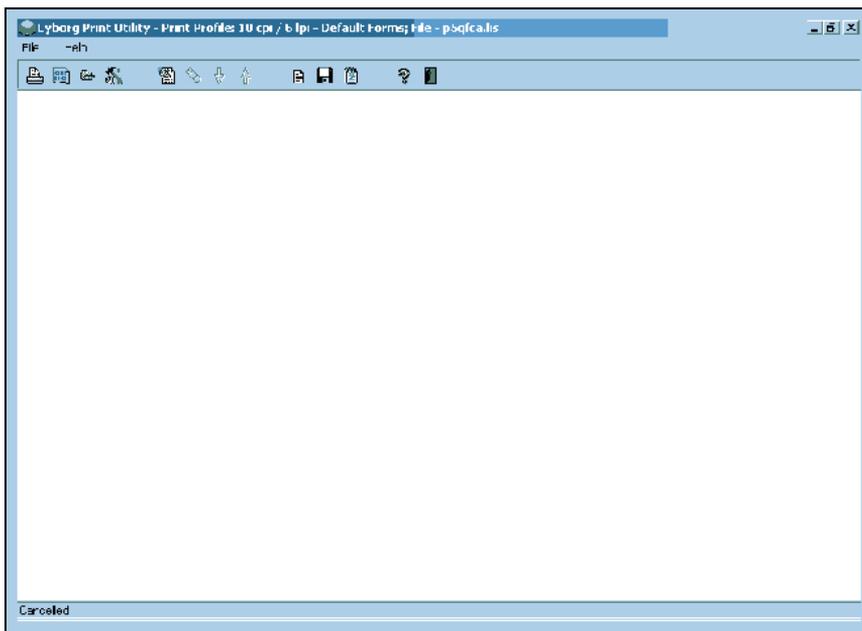
Phase 2 - Install the Print Utility

Cyborg Systems provides a Print Utility (CYBPRUTL.EXE) that can be used for printing and viewing quarterly and other reports.

If you do not have this Print Utility, check the Cyborg Users Bulletin Board (CUBBS) to download the latest version of the software as well as the manual, Using the Cyborg Print Utility.

To facilitate use of this program, create a desktop shortcut for the CYBPRUTL.EXE.

After clicking the desktop shortcut, the following form should appear:



PART 3

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Machine Parameters

Machine parameters

The machine parameter string begins in column 13 and must contain no blanks.

The program parameter is always placed in columns 26–28.

The computer name always starts in column 34.

AS400

AS400	Job/Script	Cols 13–25	Cols 26–28	Cols 34–80
	P2EDIT	MI54PE	2	AS400.
	P4CALC	MI54PECc	4	AS400.
	P5PRNT	MI54PEc	5	AS400.
	P5QTR	MI54ECc		AS400.
	P5W2PR	MI54PEc	5	AS400.
(PAY-CP)	04CALC	MI54PECcd	24	AS400.
	P9CNVT	MI54PECc		AS400.

HEWLETT-PACKARD SPECTRUM

HP SPECTRUM	Job/Script	Cols 13–25	Cols 26–28	Cols 34–80
	P2EDIT	DQS	2	HP-3000.
	P4CALC	DQS	4	HP-3000.
	P5PRNT	DQS	5	HP-3000.
	P5QTR	DQS		HP-3000.
	P5W2PR	DQS	5	HP-3000.
(PAY-CP)	04CALC	DQS	24	HP-3000.
	P9CNVT	DQS		HP-3000.

IBM MAINFRAME—DOS

IBM Mainframe—DOS	Job/Script	Cols 13–25	Cols 26–28	Cols 34–80
	P2EDIT	D=	2	SEE MANUAL.
(BATCH)	P4CALC	DPC=	4	SEE MANUAL.
	P5PRNT	D=	5	SEE MANUAL.
	P5W2PR	D=	5	SEE MANUAL.
	P5QTR	DC=		SEE MANUAL.
	P9CNVT	D=		SEE MANUAL.
ONLINE-CICS	O4CALC	DP=	24C	IBM-370.

IBM MAINFRAME—OS 390

IBM Mainframe—OS	Job/Script	Cols 13–25	Cols 26–28	Cols 34–80
	P2EDIT	O=	2	IBM-370.
(VSAM)	P4CALC	OPC=	4	IBM-370.
(CBSVDB)	P4CALC	OP8=	4	IBM-370.
(IMS)	P4CALC	OP=	4KK	IBM-370.
(IDMS)	P4CALC	OP=	4QQ	IBM-370.
(DL1)	P4CALC	OP2=	4CC	IBM-370.
	P5PRNT	O=	5	IBM-370.
(VSAM)	P5QTR	OC=		IBM-370.
(IMS)	P5QTR	O=	5KK	IBM-370.
(IDMS)	P5QTR	O8=	5QQ	IBM-370.
(DL1)	P5QTR	O2=	5CC	IBM-370.
	P5W2PR	O=	5	IBM-370.
	P9CNVT	O=		IBM-370.
(ONLINE-VSAM-CICS)	O4CALC	OP=	24C	IBM-370.
(ONLINE-IMS)	O4CALC	OP=	24K	IBM-370.
(ONLINE-CMS)	O4CALC	OPC=	24M	IBM-370.
(ONLINE-IDMS)	O4CALC	OP8=	24Q	IBM-370.
(ONLINE-DLI-CICS)	O4CALC	OP2=	24C	IBM-370.

UNIX/NT

UNIX	Job/Script	Cols 13–25	Cols 26–28	Cols 34–80
	P2EDIT	ISEV@P	2	MICRO-FOCUS.
	P4CALC	ISEV@PC	4	MICRO-FOCUS.
	O4CALC	ISEV@PCd	24	MICRO-FOCUS.
RELTNL	O4CALC	ISEV@PCd&	24	MICRO-FOCUS.
NTSQLSRV	O4CALC	ISEV@PCd&j	24	MICRO-FOCUS.
INFRMX	O4CALC	ISEV@PCd&x (Drop 'x' if DBDATE is not default)I	24	MICRO-FOCUS.
	P5PRNT	ISEV@P	5	MICRO-FOCUS.
	P5W2PR	ISEV@P	5	MICRO-FOCUS.
	P5QTR	ISEV@C		MICRO-FOCUS.

Installing the Quarterly Processor

UNIX	Job/Script	Cols 13–25	Cols 26–28	Cols 34–80
	P9CNVT	SEV@P		MICRO-FOCUS.

VAX 11

VAX 11	Job/Script	Cols 13–25	Cols 26–28	Cols 34–80
	P2EDIT	LI54VSEP	2	VAX-11.
	P4CALC	LI54VSEP	4	VAX-11.
(PAY-CP)	O4CALC	LI54VSEPCd	24	VAX-11.
	P5PRNT	LI54VSEP	5	VAX-11.
	P5QTR	LI54VSEP		VAX-11.
	P5W2PR	LI54VSEP	5	VAX-11.
	P9CNVT	LI54VSEP		VAX-11.

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