# iWay

iWay Server Installation
Version 5 Release 3.3

# Preface

This manual is intended for system administrators responsible for installing the iWay Server. It provides an overview of common administrative tasks including installation requirements, how to install the iWay Server, and how to configure iWay Adapters, Services, and components.

## How This Manual Is Organized

This manual includes the following chapters:

| Chapter | | Contents |
|---|---|---|
| 1 | Introduction to Server Installation | Lists the necessary terminology and prerequisites for general sever installation. |
| 2 | Server Installation for Windows | Describes the installation requirements and the step-by-step instructions for a Windows installation. |
| 3 | Server Installation for UNIX | Describes the installation requirements and the step-by-step instructions for a UNIX installation. This includes all UNIX platforms such as HP-UX, AIX®, Solaris™, and Linux®. |
| 4 | Server Installation for OS/390 and z/OS | Describes the installation requirements and the step-by-step instructions for an OS/390 and z/OS installation. |
| 5 | Server Installation for MVS | Describes the installation requirements and the step-by-step instructions for an MVS installation. |
| 6 | Server Installation for OS/400 | Describes the installation requirements and the step-by-step instructions for an OS/400 installation. |
| 7 | Server Installation for OpenVMS | Describes the installation requirements and the step-by-step instructions for an OpenVMS installation. |
| 8 | Server Installation for VM | Describes the installation requirements and the step-by-step instructions for a VM installation. |

# Documentation Conventions

The following conventions apply throughout this manual:

| Convention | Description |
| --- | --- |
| THIS TYPEFACE or this typeface | Denotes syntax that you must enter exactly as shown. |
| *this typeface* | Represents a placeholder (or variable) in syntax for a value that you or the system must supply. |
| <u>underscore</u> | Indicates a default setting. |
| *this typeface* | Represents a placeholder (or variable), a cross-reference, or an important term. It may also indicate a button, menu item, or dialog box option you can click or select. |
| **this typeface** | Highlights a file name or command. |
| Key + Key | Indicates keys that you must press simultaneously. |
| {  } | Indicates two or three choices; type one of them, not the braces. |
| [  ] | Indicates a group of optional parameters. None are required, but you may select one of them. Type only the parameter in the brackets, not the brackets. |
| \| | Separates mutually exclusive choices in syntax. Type one of them, not the symbol. |
| ... | Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis points (…). |
| . . . | Indicates that there are (or could be) intervening or additional commands. |

# Related Publications

To view a current listing of our publications and to place an order, visit our World Wide Web site, http://www.iwaysoftware.com. You can also contact the Publications Order Department at (800) 969-4636.

## Customer Support

Do you have questions about the iWay Server?

Call Information Builders Customer Support Service (CSS) at (800) 736-6130 or (212) 736-6130. Customer Support Consultants are available Monday through Friday between 8:00 a.m. and 8:00 p.m. EST to address all your iWay Server questions. Information Builders consultants can also give you general guidance regarding product capabilities and documentation. Please be ready to provide your six-digit site code (*xxxx.xx*) when you call.

You can also access support services electronically, 24 hours a day, with InfoResponse Online. InfoResponse Online is accessible through our World Wide Web site, http://www.informationbuilders.com. It connects you to the tracking system and known-problem database at the Information Builders support center. Registered users can open, update, and view the status of cases in the tracking system and read descriptions of reported software issues. New users can register immediately for this service. The technical support section of www.informationbuilders.com also provides usage techniques, diagnostic tips, and answers to frequently asked questions.

To learn about the full range of available support services, ask your Information Builders representative about InfoResponse Online, or call (800) 969-INFO.

## Information You Should Have

To help our consultants answer your questions most effectively, be ready to provide the following information when you call:

- Your six-digit site code (*xxxx.xx*).

- Your iWay Software configuration:

    - The iWay Software version and release.

    - The communications protocol (for example, TCP/IP or LU6.2), including vendor and release.

- The stored procedure (preferably with line numbers) or SQL statements being used in server access.

- The database server release level.

- The database name and release level.

- The Master File and Access File.

- The exact nature of the problem:

    - Are the results or the format incorrect? Are the text or calculations missing or misplaced?

    - The error message and return code, if applicable.

    - Is this related to any other problem?

- Has the procedure or query ever worked in its present form? Has it been changed recently? How often does the problem occur?

- What release of the operating system are you using? Has it, your security system, communications protocol, or front-end software changed?

- Is this problem reproducible? If so, how?

- Have you tried to reproduce your problem in the simplest form possible? For example, if you are having problems joining two data sources, have you tried executing a query containing just the code to access the data source?

- Do you have a trace file?

- How is the problem affecting your business? Is it halting development or production? Do you just have questions about functionality or documentation?

## User Feedback

In an effort to produce effective documentation, the Documentation Services staff welcomes your opinions regarding this manual. Please use the Reader Comments form at the end of this manual to relay suggestions for improving the publication or to alert us to corrections. You can also use the Documentation Feedback form on our Web site, http://www.iwaysoftware.com.

Thank you, in advance, for your comments.

## iWay Software Training and Professional Services

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For information on course descriptions, locations, and dates, or to register for classes, visit our World Wide Web site (http://www.iwaysoftware.com) or call (800) 969-INFO to speak to an Education Representative.

Interested in technical assistance for your implementation? Our Professional Services department provides expert design, systems architecture, implementation, and project management services for all your business integration projects. For information, visit our World Wide Web site (http://www.iwaysoftware.com).

# Contents

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# Introduction to Server Installation

**Topics:**

- Terminology
- Installation Requirements

This documentation covers the requirements necessary for installation, configuration, and general use of the server software on a given platform. The installation process, while not exactly the same on all platforms, has many steps and concepts in common. Each platform-related section is organized by issues and steps in the order in which they would occur during the installation process.

The steps in the following chapters for Windows, UNIX®, OS/390 and z/OS™, OpenVMS™, or OS/400® platforms will result in the installation of the software plus a basic configuration with no configured data adapters.

Installation on MVS® and VM does not produce a basic configuration. Specific configuration of the data adapters, including basic configuration, is covered in the Server Administration manuals for each platform.

# Terminology

To eliminate the repetitive listing of individual platform names and terms that may be particularly long and sometimes confusing, the following terms and generalities will be used.

- UNIX refers to any UNIX or Linux implementation (for example, Solaris, Tru64™, AIX, Red Hat™, and others). Linux is a generic open source implementation of UNIX, but a particular Linux release has specific implementations by specific vendors (or groups) for specific hardware platforms. Therefore, compiled software for a given Linux operating system level may be interchangeable between Intel releases; it does not mean that compiled software may be directly used on any hardware implementation with a different chipset.

- Windows refers to supported Windows Servers, specifically Windows NT 4.0 with Service Pack 5 or higher, Windows 2000 Server, and Windows 2003 Server. iWay Servers are not supported on Windows NT 3.x and Windows workstation releases (for example, 95, 98, ME, 2000 Professional, and XP Professional). However, connectors are supported on workstation releases.

- MVS or Traditional MVS refers to the implementation model for MVS that uses JCL, PDSs, and Load Libraries that run as started tasks.

- OS/390 and z/OS refers to an OS/390 and z/OS implementation model using UNIX System Services (USS) as a run time shell and file system to store and run applications. The actual implementation of the product can access traditional MVS application PDS files and data sets. There is also JCL in this implementation, but it is used for installation purposes and as a shell to start, control, and stop the USS implementation. The USS implementation is more like a UNIX release in terms of the way processes run and the features.

- OS/400 refers to an AS/400 machine running OS/400. The AS/400 is also known as IBM's iSeries of machines. Generally, the terms AS/400 and OS/400 can be used interchangeably, but AS/400 is the hardware and OS/400 is the operating system. The distinction only recently became important because other operating systems are now available on AS/400 hardware. The OS/400 implementation is a mix of traditional OS/400 program libraries. Use of the QSH (UNIX) shell and file system (IFS) plus traditional OS/400 application libraries are also accessible. Only RISC processor hardware is supported. The older CISC machines are not supported.

- OpenVMS refers to Compaq's OpenVMS operating system. Some people also refer to OpenVMS as VMS™; the terms are interchangeable. OpenVMS was originally from Digital Equipment Company (DEC), which later merged with Compaq. It is not uncommon to hear the original company name in reference to this platform. Only Alpha processor hardware is supported, the older VAX machines are not supported.

- VM refers to IBM's VM/CMS. While UNIX Systems Services do exist under VM, only the traditional VM model is supported.

- A connector refers to client side products and/or actual applications that talk to a server for some purpose.

- A server refers to the server environment that connects requests with application agents to service the requests. The server environment is a number of processes that provide management, logging, and application processing. The environment is generally configured with data adapters that allow the application agents to access data sources such as Oracle®, DB2®, SQL Server, and other remote servers acting as subservers.

- A server or data adapter refers to the ability of an application agent to access an external data source such as Oracle, DB2, Essbase, SQL Server, and other remote servers acting as subservers. Adapter configuration is part of the general configuration of the server environment and is not specific to individual application agents. The actual data adapters available will vary by platform. Specifics are detailed in the *Server Administration* manual.

## Installation Requirements

Review the documented installation process before starting. Checking the steps beforehand will allow the installation to go smoothly. In some cases, the information provided in this manual might need to be disseminated among several administrators if job functions, such as software loading and ID creation, are performed by several people.

# Server Installation for Windows

**Topics:**

- Installation Requirements
- Installation Directories
- Installing a Server
- Installing a Server Silently
- Verifying Server Installation
- Configuring Server Security
- Additional Server Installation Options
- Troubleshooting for Windows

This chapter outlines the tasks and procedures that you must complete in order to install the iWay Server on supported Microsoft Windows platforms.

Depending on your system landscape and working environment, these tasks can be performed by several people, including a security administrator, a network administrator, or a systems programmer.

The following procedures illustrate the installation of a Full-Function version of the Server, but they also apply, with obvious changes, to installing other server versions.

# Installation Requirements

**In this section:**

Platform and Operating Environment Requirements

Disk Space Requirements

Memory Requirements

Communications Requirements

User ID Requirements

Choosing Between Interactive and Silent Installation

Before you install the server, review the requirements in the following topics. Exact requirements vary according to your configuration and the number of users or deployed applications.

## Platform and Operating Environment Requirements

**Processor.** The server runs on all Intel® Pentium®-based computers.

For security reasons as well as performance considerations, it is advisable not to run an instance of the server—or any of its components—on the primary domain controller (PDC) or on the backup domain controllers (BDC).

**Operating system.** The server runs in the following versions of Microsoft Windows:

- 2000 Advanced Server with Service Pack 4 or higher applied.
- 2000 Server with Service Pack 4 or higher applied.
- 2000 Professional with Service Pack 4 or higher applied.
- Server 2003 Standard Edition
- Server 2003 Enterprise Edition
- Server 2003 Datacenter Edition
- NT 4.0 Server with Service Pack 6a applied.
- XP Professional SP2

**Note:**

- The server requires Microsoft Internet Explorer 6 Service Pack 1 or higher for the Web Console.
- Particular database vendors may have specific minimum service pack requirements.
- The iWay Client components support Windows 98, Windows ME, Windows XP, Windows NT 4.0, Windows 2000, and Windows 2003.
- Windows NT 3.5.1 is not supported.

## Disk Space Requirements

The installation of the iWay Server requires 20MB of temporary disk space on your Windows %HOME% drive and 120 MB of permanent disk space on the designated hard disk.

## Memory Requirements

Memory usage depends on the following elements:

- Number of data access agents.

- Type of access that is performed (for example, joins, large-scale retrieval, and so on).

- Connection queue.

The memory requirements for installation and operation of the server are:

- Workspace memory: 12 megabytes.

- Memory per active agent: 10 megabytes.

These numbers apply when the server is in an idle state, so they may fluctuate slightly.

## Communications Requirements

The following communications protocols are supported with the server.

| Communications Protocol | Requirements |
|---|---|
| SNA LU6.2 | One of the following SNA servers must be installed on the computer on which you will install the server. If you will be installing the server on: <br><br>• **Windows NT, Version 4.0,** you can use Microsoft SNA Server Version 4.0 with Service Pack 3. <br><br>• **Windows 2000/2003,** you can use Microsoft Integration Server 2000 or 2003. <br><br>• **Any supported Windows operating system,** you can use IBM's eNetwork Communications Server Version 6.0 or higher (for Windows 2000, Version 6.1 or higher). |
| TCP/IP | Microsoft TCP/IP must be installed on the computer on which you will install the server. <br><br>You need six consecutive ports for each server instance that you configure. You specify the first port number during configuration. |

# User ID Requirements

Depending on your security environment and company security policies, you need two types of Windows logon privileges:

- **Server administrator IDs** (iadmin). Server administrators start and configure the server.

  The installation of the server requires that you are logged on as an administrator or as a member of the Administrator's group. Administrators of the iWay Server are also responsible for tasks such as starting, stopping, pausing, resuming, and restarting iWay services on remote or local computers.

  Note that the name iadmin is used to refer to the server administrator ID throughout this manual, but you may use any name for this ID.

  A server administrator's ID and password are encrypted and stored in the server's configuration file. You must keep these IDs and passwords synchronized with Windows IDs and passwords to start the server with security on. When starting the server with security on, if the server administrator does not have a password, or the password is not synchronized with Windows, the server starts in safe mode, and not all functionality is available. See *Troubleshooting for Windows* on page 2-22 for details about how to fix this problem.

  For security purposes, you should not allow users and applications to use administrator or a member of the administrator's group user ID. The iWay Server Administrator ID should be available only to users who require server administrative privileges.

- **User and application IDs.** When users and applications try to access the server while it is running in secure mode, they are authenticated against the operating system. You need to make available to them operating system IDs that can access the server. Server data access agents will impersonate these IDs before performing any file access on their behalf.

  For more information about running the server in secure mode, see *Configuring Server Security* on page 2-19.

## Choosing Between Interactive and Silent Installation

You can run the installation procedure in:

- **Interactive mode.** This is the default installation mode. It displays windows that prompt you for installation parameters. We recommend that you use this mode the first time you install the server, so that you become familiar with the procedure. To install a server interactively, see *Installing a Server* on page 2-6.

- **Silent mode.** In this mode you launch the installation and specify a text file that contains the installation parameters. The installation procedure does not prompt for any information. Installing silently can be helpful if, for example, you want to install many servers at once throughout your enterprise. To install a server silently, see *Installing a Server Silently* on page 2-16.

# Installation Directories

The installation process creates these high-level directories:

- **Home directory.** This installation directory stores the iWay Server's executable and binary files. The path is stored in the environment variable EDAHOME. The default directory is

  *drive*`:\ibi\srv53\home`

  where:

  *drive*

  Is the hard drive on which the directory resides.

- **Configuration directory.** The files that control the behavior of each server instance reside here. The path is stored in the environment variable EDACONF. The default directory is

  *drive*`:\ibi\srv53\`*servertype*`[`*suffix*`]`

  where:

  *drive*

  Is the hard drive on which the directory resides.

  *servertype*

  Designates the type of server. The default values are:

  `ffs` for a Full-Function Server.
  `dm ` for a DataMigrator Server.
  `wfs` for a WebFOCUS Reporting Server.
  `cgw` for a Communications Gateway.

*suffix*

> Optional with the initial default installation and configuration. Required for additional instances of the iWay Server configuration. You must add a suffix to the directory name to ensure that each configuration is unique.

For example:

`c:\ibi\srv53\ffs002`

- **Application directory.** This is the default location for storing applications. The path of the application directory is stored in the environment variable APPROOT. This directory may be shared by applications created with other iWay Software and Information Builders products. It defaults to

*drive*`:\ibi\apps`

where:

*drive*

> Is the hard drive on which the directory resides.

Security for application directories is handled at the operating system level. To avoid any possibility of these directories being accessed inappropriately by means of APP commands (such as APP DELETE *AppDirName*), use directory security to set the appropriate permissions on these directories.

# Installing a Server

Installing the server includes configuring several server properties using the iWay Server Web Console. After installation, you can configure additional properties, such as outbound communications nodes and adapters.

**Procedure: How to Install and Configure a Server**

**Note:** You should exit all programs before continuing.

1. If you received the server installation on CD, insert the CD into your CD-ROM drive.

2. If the Windows autorun feature is active, the installation program starts automatically. If not, execute the following application file in the root of the CD:

`setup.exe`

The Choose Setup Language window opens.
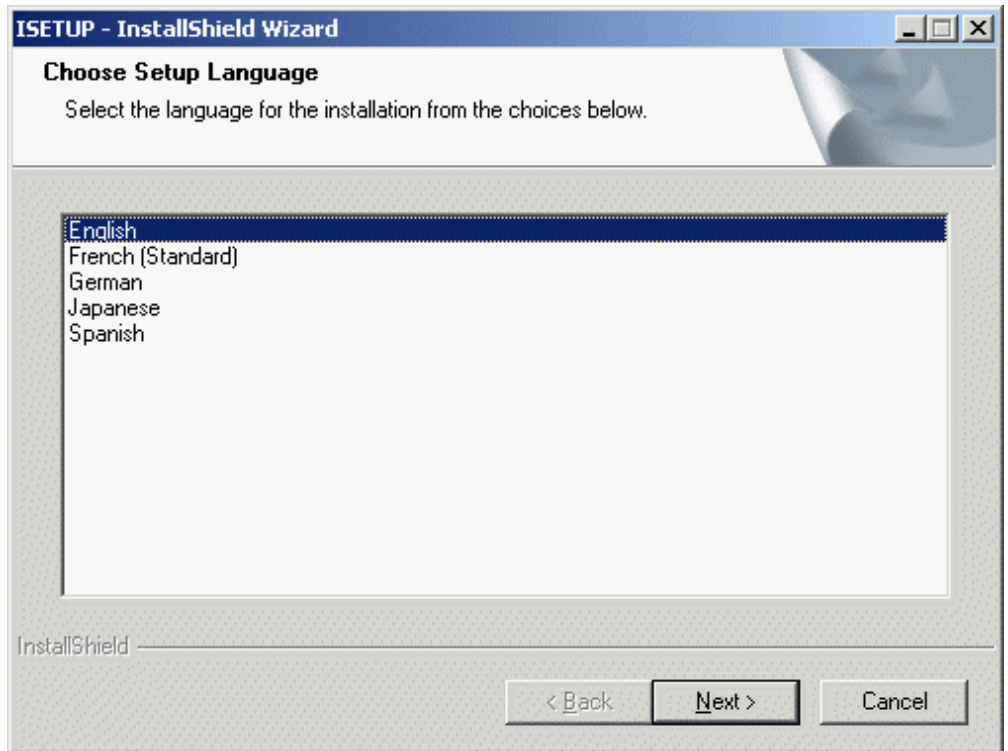


3. Select the language to be used during installation and click *Next*.

   If your computer:

   - **Already has a 5.3 server from a previous installation,** you are asked if you would like to refresh the installation. Continue with Step 4.

   - **Does not have a 5.3 server from a previous installation,** the Software License Agreement window opens. Skip to Step 5.

4. If you want to:

   - **Install a new server or configuration,** click *No*.
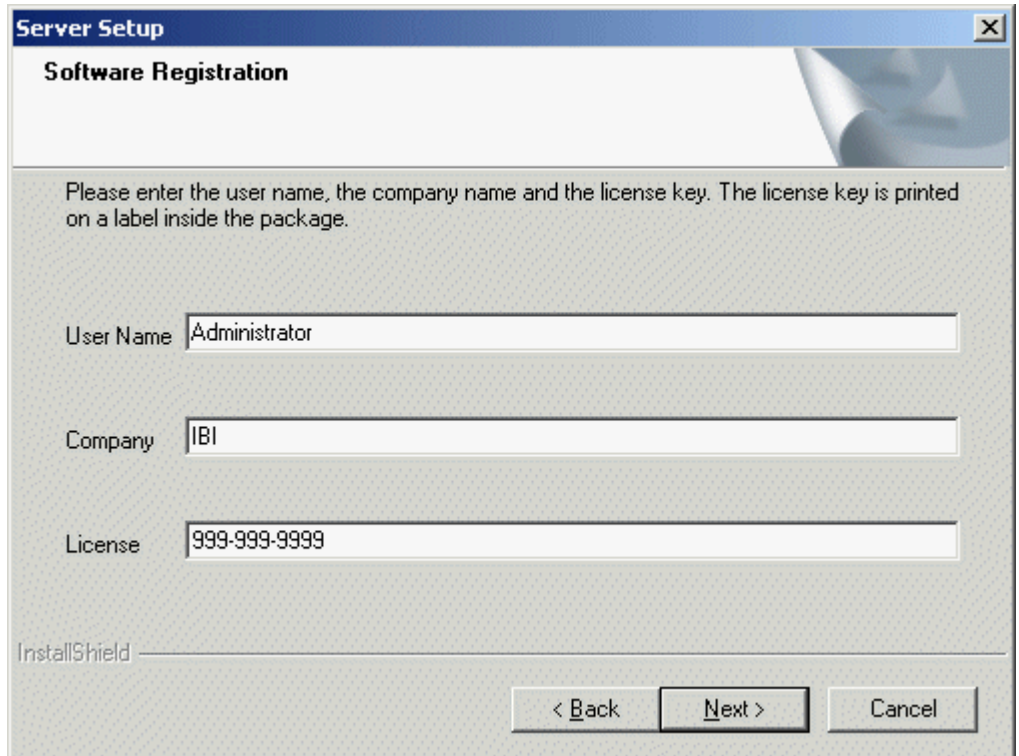
     The Software License Agreement window opens. Continue with Step 5.

   - **Replace the current installation,** click *Yes*.

     The installation begins without prompting you for parameters. When it is finished, you can start the server. Continue with *Verifying Server Installation* on page 2-18.

**5.** Click *Yes* to accept the terms of the agreement and continue installing the server. Click *No* to reject the software license agreement and exit the setup program.

The Software Registration window opens:



**6.** In the Software Registration window, type the User Name, Company, and the three part License key.

**Important:** The license key is printed on a form included with the software and should be saved for future reference. You must include the hyphens.

The License Key determines which product you are installing, such as a Full-Function Server, a WebFOCUS Reporting Server, or a DataMigrator Server. Default settings, such as folder names, vary depending on the license key you type. The screens that follow are for an iWay Full-Function Server.

**7.** Click *Next*.

- If you type an invalid License Key, the setup program displays a warning.



Click *OK* to correct the key.

- If the License Key is correct, the Registration Confirmation window opens.

**8.** Click *OK* to continue.

The next window varies depending on whether there is an existing 5.3 server installed on the computer.

- **If a 5.3 server is not already installed,** the Select Program Folder window opens. Skip to Step 10.

- **If a 5.3 server is already installed,** the Prior Installations Found: Select Option window opens. Continue with Step 9.
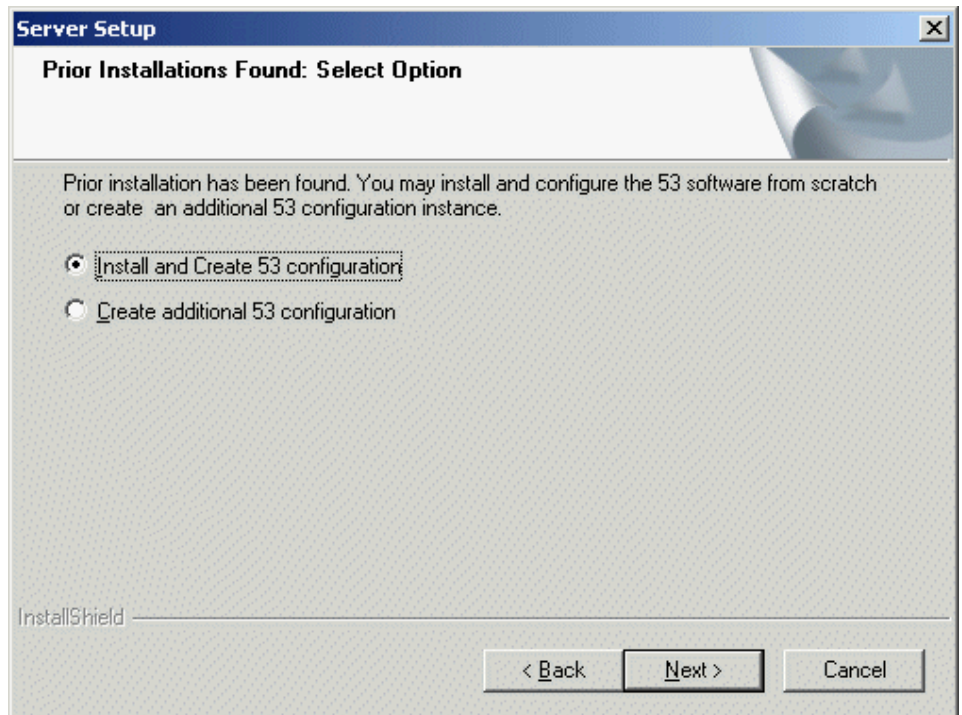
**9.** In the Prior Installations Found: Select Option window, choose an option and click *Next*:

- **Install and Create 53 configuration.** This option creates the software installation directory (EDAHOME) and an original configuration directory (EDACONF). You can choose to create a new directory or overwrite an existing one.

- **Create additional 53 configuration.** This option allows you to create a new configuration for an additional server instance.

The Select Program Folder window opens.
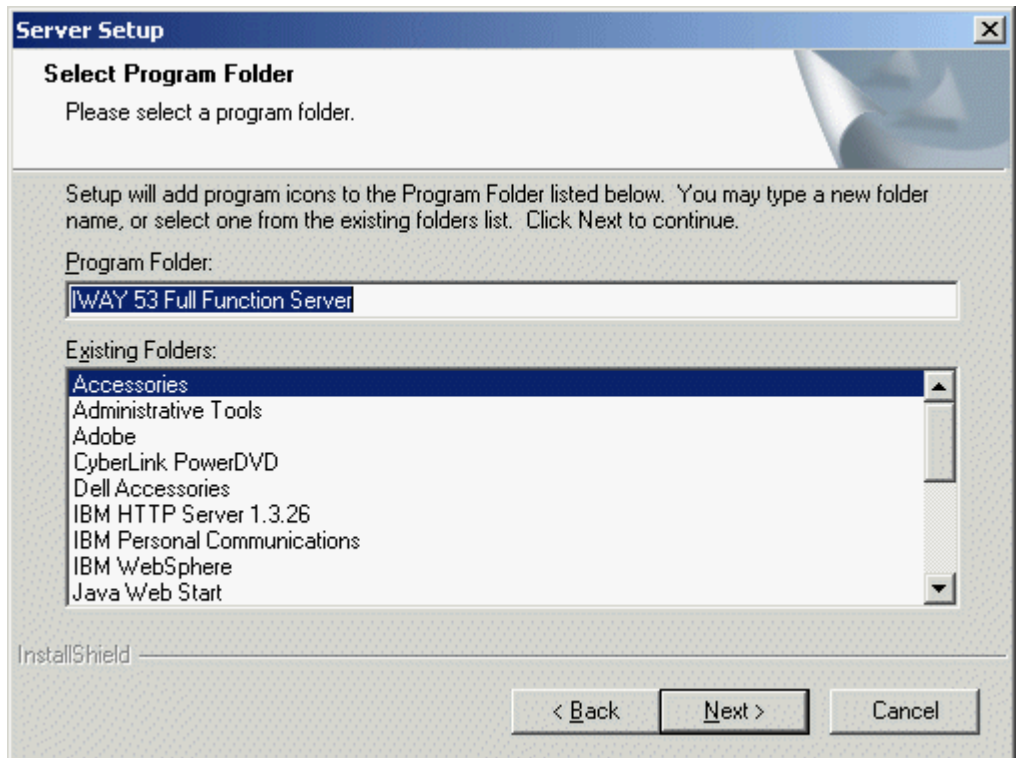


**10.** Accept the default, or specify a new program folder, and click *Next*.

The name defaults based upon the server type being installed, but you can change the name (for example, adding a suffix—iWay 53 Full-Function Server 1—to distinguish between multiple server instances). The name must be unique. The setup program adds this new folder to the Windows Start menu.

**11.** Complete the Select Directories window and click *Next*. This window varies depending on whether pre-existing servers were found.

- The following Select Directories window opens if no pre-existing servers were found, or a server was found and you chose *Install and Create 53 Configuration*.
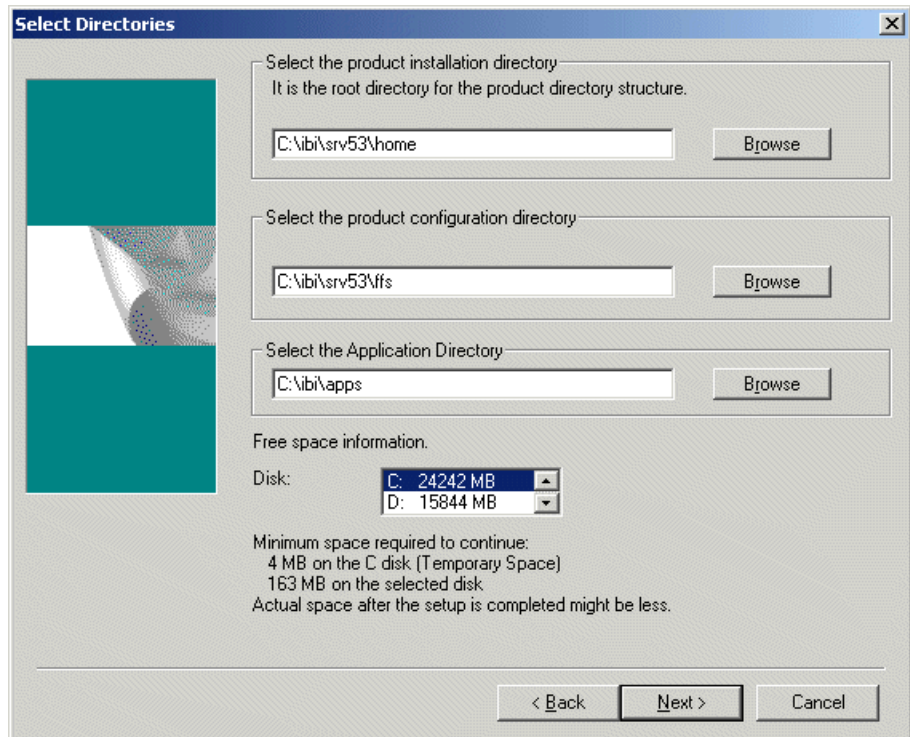


Accept the default locations, type, or browse to different directories for the:

- Server's installation directory for its executable files (EDAHOME).
- Configuration directory for the first server instance (EDACONF).
- Server's application directory (APPROOT).

Proceed to Step 12.

• The following Select Directories window opens if an existing 5.3 server was found and you chose *Create additional 53 configuration*.
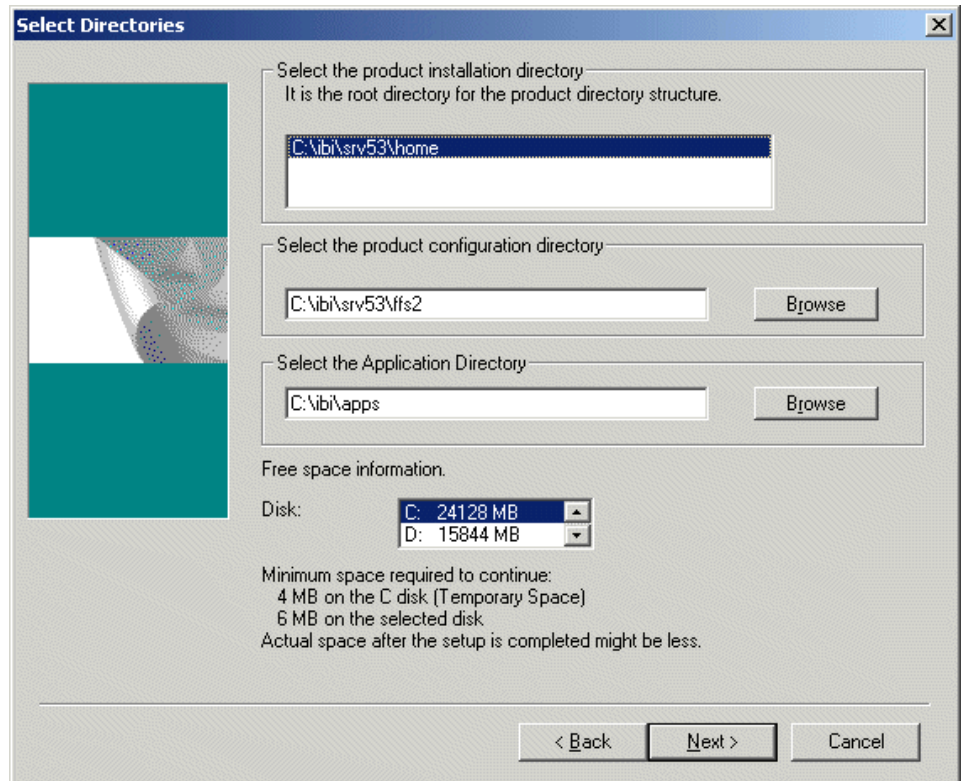


Type a directory to store your additional configuration. If multiple EDAHOME directories exist on your computer, a list of EDAHOME directories appears. Select the EDAHOME directory you want to use for the new configuration.

**12.** In the Configure Server Administrator ID/Password and Inbound Communications window, supply the information requested and click *Next*.



- **Server Password.** Type the password of the person logged on to the computer. Both the ID and password can be changed after the installation using the Web Console. If the password is incorrect, the server will start in safe mode. See *Troubleshooting for Windows* on page 2-22 for more information.

- **TCP/IP Services.** Type the Base TCP/IP Port Number or the service name representing the port number that the server is using for TCP/IP. The server needs up to six consecutive ports for internal and external communications. The default varies by product to support multiple servers on a particular computer.

  **For a Full-Function Server,** 8100 is the default value, which reserves ports 8100-8105.

  **For a WebFOCUS Reporting Server,** 8120 is the default value, which reserves ports 8120-8125.

  **For DataMigrator,** 8116 is the default value, which reserves ports 8116-8121.

  The HTTP port number is one greater than the base TCP port number. For example, if the base TCP port is 8100, the HTTP port number is 8101.

**13.** In the Demo Files Installation window, optionally select the language in which demo files should be installed. These files are not required for the operation of the server. If no language is selected, the installation continues but demo files are not installed.

**14.** Click *Next*. The setup program installs software and configures the server using the information you specified. The setup program creates a server program group to receive the program icons for the product. The name of this group is based upon the server product that was installed.

When the installation completes, the Setup Complete window opens:
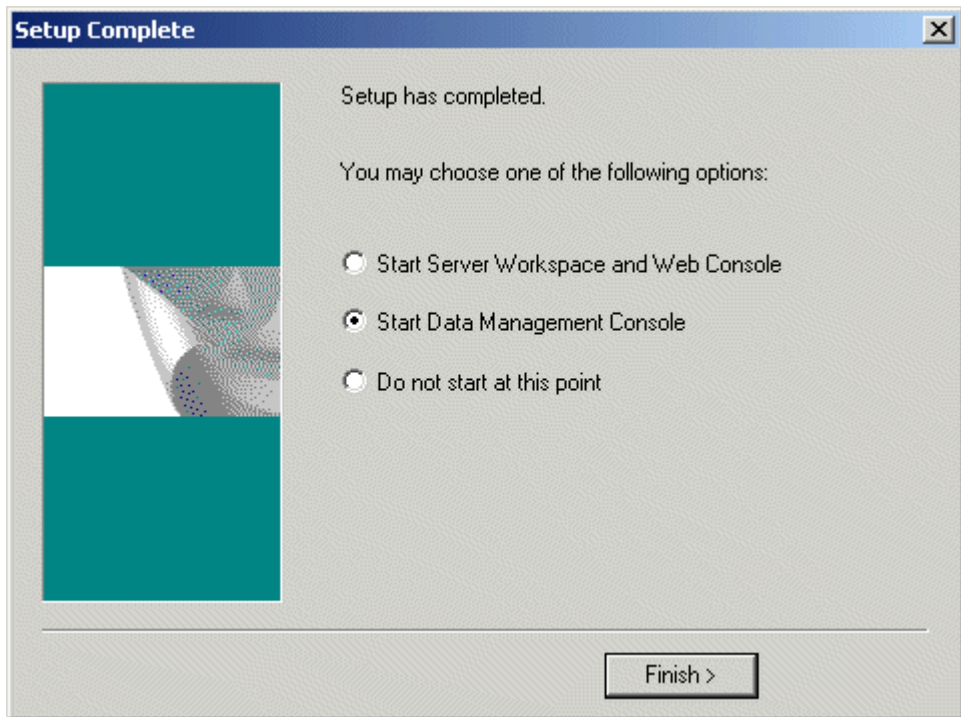


**15.** Select *Start Server Workspace and Web Console* and click *Finish* to exit the setup program.

**Note:** If you chose to leave the Server Administrator password blank in *Step 12*, do not choose *Start Server Workspace and Web Console*. The console will automatically start in safe mode.

You should now verify your installation, as described in *Verifying Server Installation* on page 2-18.

# Installing a Server Silently

You can install a server "silently," preventing the installation procedure from prompting you for information. Before installing, you create a text file that specifies your server's installation parameters. Installing silently can be helpful if, for example, you want to install many servers at once throughout your enterprise.

We recommend that the first time you install a server, you use the default interactive mode, not the silent mode, so that you become familiar with the procedure. Installing a server interactively is described *Installing a Server* on page 2-6.

## Procedure: How to Create the Server Installation Parameters File

Use a text editor to create a file with the following syntax to specify your server's installation parameters:

```
-inst
-license nnn-nnn-nnnn
-edahome drive:\ibi\srv53\home
-edaconf drive:\ibi\srv53\servertype
-port portnum
-host hostname
-approot drive:\ibi\apps
-programfolder "folder-title"
-pass password
-nostart
```

where:

*nnn-nnn-nnnn*

Is the 10 digit license. Include a hyphen (-) following the third and sixth digits.

*drive:\ibi\*

Is the drive and directory to which you want to install the server.

*servertype*

Designates the type of server. The default values are:

`ffs` for a Full-Function Server.
`dm` for a DataMigrator Server.
`wfs` for a WebFOCUS Reporting Server.
`cgw` for a Communications Gateway.

*portnum*

Is the base TCP port for the server.

*hostname*

Is the server's hostname.

*folder-title*

>   Is the name you want to assign the Windows program folder and service. For example:

>   `-programfolder "IWAY 53 Full Function Server"`

*password*

>   Is the password of the user ID with which you are installing the server.

To see a list of additional installation options:

1.  Open a command prompt and navigate to the directory containing the setup.exe file for the server.

2.  Enter the following:

>   `setup ?`

## Procedure: How to Launch a Silent Installation

1.  Open a command prompt and navigate to the directory containing the setup.exe file for the server.

2.  Enter the following:

>   `setup -Lcode -opt drive:\path\srvoptions.txt`

>   where:

*code*

>   Is the code specifying the language of the server Web Console's user interface. This language will also be used in the status windows displayed by the installation procedure.

>   The language code is preceded by -L (a hyphen followed by the letter "L").

>   The language codes are:

>   **English** `0x409`

>   **French** `0x040c`

>   **German** `0x407`

>   **Japanese** `0x411`

>   **Spanish** `0x040a`

*drive:\path\srvoptions.txt*

>   Is the full path and file name of the file specifying your installation options.

For example, to specify English and an options file named serveroptsFFS1.txt:

`setup -L0x409 -opt C:\temp\serveroptionsFFS1.txt`

3.  After the installation has completed you should verify that it was successful, as described in *Verifying Server Installation* on page 2-18.

# Verifying Server Installation

After you have installed a server, verify that it is functioning properly.

**Procedure: How to Verify Server Installation**

1. Start the server depending on the desired security mode.

   For information about security modes, see *Configuring Server Security* on page 2-19.

   - **Security on.**

     Using the Windows Start menu, select *Programs*, the server's program group (for example, *iWay 53 Full-Function Server*), and *Start Security On*.

     or

     Open the Services window (*Control Panel, Administrative Tools, Services*), right-click your server's name, and click *Start*.

   - **Security off.**

     Using the Windows Start menu, select *Programs*, the server's program group (for example, *iWay 53 Full-Function Server*), *Start With Alternative Security Modes*, and *Start Security OFF*.

2. The Web Console opens after the installation completes. If it does not open:

   a. Ensure that the server is started.

   b. Using the Windows Start menu, select *Programs*, the server's program group (for example, *iWay 53 Full-Function Server*), and *Web Console*.

      The Web Console opens. (You can get online help for the Web Console by clicking *Help* in its left pane.)

3. Click *Step 1* to test basic server functionality.

   A sample report is executed and a new window will display the result.

Now that you have successfully verified your server installation, you can:

- **Configure server security,** as described in *Configuring Server Security* on page 2-19.

- **Configure additional server properties,** such as outbound communication nodes and adapter support, using the Web Console.

  For more information about using the Web Console and configuring outbound nodes, see the *Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual. For more information about configuring adapter support, see the *Adapter Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

# Configuring Server Security

You can set a server's security to:

- **Off.** Users do not provide a password when logging on the server.

  This is the default if the server has *not* been set to secure mode.

- **On.** The server runs as a Windows service. Requires a user to provide his or her operating system user ID and password when logging on to the server.

  Each connecting user's credentials are authenticated using Microsoft Windows Security Services. The iWay Server invokes authentication and impersonation services and enforces RDBMS access control.

  This is the default if the server has been set to secure mode.

# Additional Server Installation Options

**How to:**

Configure an Additional Server Instance

Refresh or Upgrade a Server Installation

Uninstall a Server

This section explains how to add additional configurations, upgrade or refresh servers, and uninstall servers or configurations.

## Procedure: How to Configure an Additional Server Instance

Adding an additional configuration allows you to run multiple instance of a server without having to reinstall binaries. To add a configuration:

1. Execute the installation program.

   The Choose Setup Language window opens.

2. Select the language to be used during installation and click *Next*.

   When an existing 5.3 server is found, you are asked if you would like to refresh the installation.

3. Click *No*.

4. Follow the steps for a normal installation, but be sure to select *Create additional 53 configuration* at the following screen.
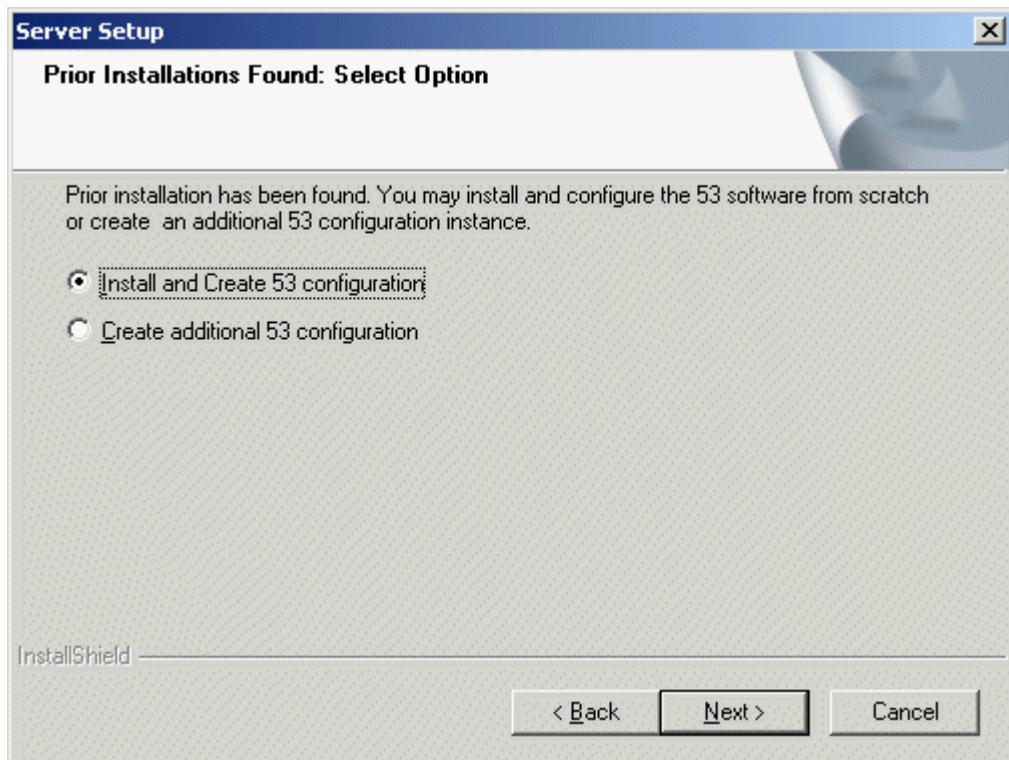


5. Click *Next*.

   When prompted for a Program Folder, be sure to provide a unique name so you do not overwrite an existing configuration.

6. When prompted for directories, be sure to provide unique locations so you do not overwrite an existing configuration. For example:

   `C:\ibi\srv53\ffs2`

7. When prompted for the Base TCP/IP Number, be sure to specify ports that are not used by another configuration. Each configuration can use up to six ports, so make sure the six consecutive ports for your new configuration are available.

## Procedure: How to Refresh or Upgrade a Server Installation

Refreshing the server reinstalls the server's files in the server installation directory, without changing any configuration information in the configuration directory. However, this does remove any patches that have been applied to the server.

If it becomes necessary to refresh the server, or if you want to upgrade to a new release:

1. Execute the installation program.

   The Choose Setup Language window opens.

2. Select the language to be used during installation and click *Next*.

   When an existing 5.3 server is found, you are asked if you would like to refresh the installation.

3. Click *Yes*.

   The installation begins without prompting you for parameters. The EDAHOME directory is replaced in its entirety, but any EDACONF directories remain.

## Procedure: How to Uninstall a Server

To uninstall a server:

1. Ensure that the server is stopped.

2. Using the Windows Start menu, select *Programs*, the server's program group (for example, *iWay 53 Full-Function Server*), and *Uninstall*. This program removes the EDAHOME and EDACONF directories of this server instance.

If more than one configuration uses the same EDAHOME directory, the additional configurations contain unconfigure icons instead of uninstall icons. If you want to uninstall your initial configuration, you must unconfigure the additional configurations first. If you do not unconfigure these instances before uninstalling the EDAHOME directory, you disable the additional configurations, including their unconfigure utilities. A manual cleanup is then required.

# Troubleshooting for Windows

**How to:**

Troubleshoot Your Problem

Add Your Problem to the Troubleshooting Guide

Activate the Server's Troubleshooting Tools

If you encounter problems while installing and configuring the server:

1.  Try to resolve your problem as described in *How to Troubleshoot Your Problem* on page 2-22.

2.  If you cannot resolve your problem by troubleshooting it yourself, contact iWay Software customer support as described in *Information You Should Have* and *Customer Support* in the *Preface*.

## Procedure: How to Troubleshoot Your Problem

You can troubleshoot installation problems by matching the problem with a symptom, and then reading the reason and solution associated with that symptom.

If you have troubleshooting suggestions that are not described here, and that you think others will find helpful, we invite you to send them to us, as described in *How to Add Your Problem to the Troubleshooting Guide* on page 2-23. We will consider including your problems in a future release of this manual.

**Symptom: The server starts in safe mode (as indicated at the top of the right panel).**

·   **Reason:** A common reason for the server starting in safe mode is a problem with the server administrator ID's password. For example, the password may have been updated on the operating system but not on the server, so that the encrypted copy of the password stored by the server is out of synchronization with the password on the operating system.

**Solution:** The server administrator can connect to the Web Console to fix the problem. When the Web Console is started the reason the server is in safe mode is listed on the home page.

1.  Click the *fix* hyperlink displayed under the problem description and correct the problem. (For example, if the problem is that the server administrator's password is out of synchronization, update the password on the server.)

2.  Save and restart the server.

**Procedure: How to Add Your Problem to the Troubleshooting Guide**

If you have troubleshooting suggestions that you think others will find helpful, we invite you to send them to us so that we can consider including them in a future release. You can:

- **E-mail them** to *books_info@iwaysoftware.com*. Please include your name and phone number, and put *iWay Server Installation for Windows Troubleshooting* in the subject line.

- **Send them** to:

  Documentation Services
  Attn: iWay Group
  Information Builders
  Two Penn Plaza
  New York, NY 10121-2898

  Please include your name, phone number, e-mail address, and postal address.

**Procedure: How to Activate the Server's Troubleshooting Tools**

If instructed by iWay Software customer support, you can activate the server's troubleshooting tools to help troubleshoot a problem. .

*Do not* activate the troubleshooting tools unless explicitly requested by iWay Software customer support.

To activate the troubleshooting tools:

1. Log on with the server administrator ID.

2. Mount the installation CD.

3. Run the isetup installation program from the CD.

4. At the main menu, select option 4, *Install Debuggables to the Installation Directory*.

# CHAPTER 3

# Server Installation for UNIX

**Topics:**

- Installation Requirements
- Installation Directories
- Installing a Server
- Verifying Server Installation
- Configuring Server Security
- Starting and Using a Server
- Troubleshooting for UNIX

This document describes the requirements and procedures for proper installation of the iWay Server for UNIX.

# Installation Requirements

**In this section:**

Platform and Operating Environment Requirements

Disk Space Requirements

Memory Requirements

Communications Requirements

User ID Requirements

**Reference:**

Software Release Requirements for SNA (LU6.2)

Before you install the server, review the requirements in the following topics.

## Platform and Operating Environment Requirements

The following list specifies supported platforms and operating system releases. Confirm that your platform and operating system release are supported and that the label on the CD identifies the correct software.

**Important:** The CD label displays the platform and operating system release on which the software was built. The software will run on the designated, or higher, release. However, you must take DBMS support into consideration when selecting software. Please consult your local iWay Software branch if you have any questions.

The supported operating system releases, as identified on their CD labels, are:

- Compaq Tru64 V4.0D
- Compaq Tru64 V5.0A
- HP-UX 11 (32 Bit)
- HP-UX 11 (64 Bit)
- IBM AIX 4.2.1
- IBM AIX 4.3.3
- IBM AIX 4.3.3 (64 Bit)
- IBM/z Series OS/390 Linux (2.49 Kernel)
- NCR MP-RAS 3.02
- RedHat Linux 6.2 (2.2.14 Kernel) for Intel
- RedHat Linux 7.2 (2.4.7 Kernel) for Intel

- Sequent Dynix/ptx 4.5.1
- Siemens Reliant 5.45
- SUN Solaris 2.6
- SUN Solaris 7 (64 bit)
- SUN Solaris 8 (64 bit)

For the following platforms, use the indicated software:

- Bull Escala: use software for IBM AIX.
- Siemens-Fujitsu PRIMEPOWER: use software for SUN Solaris.

**Other operating environment requirements.** The Korn Shell (ksh) must be installed on your system. Because Korn Shell is not installed with Linux, Linux sites must install the Public Domain Korn Shell (pdksh) package from their respective Linux vendor.

The server supports a range of adapters, including adapters for Adabas/C, DB2 UDB, C-ISAM (Informix), Essbase, Informix (SDK), Ingres II, Oracle, Progress, Red Brick, Sybase (ASE and IQ), Teradata, Nucleus, and UniVerse. See the DBMS support chart for specific combinations on any given platform. Specific DBMS information (such as release levels, user IDs, and passwords) is not needed during installation, but is needed later, during configuration.

## Disk Space Requirements

The following are approximate disk space requirements. Specific sizes may vary slightly with options selected during configuration. The usage numbers do not include space for actual applications, databases, sort space, output preparation, or logs.

| Platform | Version | After Installation |
|----------|---------|--------------------|
| HP HP-UX | 11 (32Bit) | 122 megabytes |
| IBM AIX | 4.2.1 | 37 megabytes |
| Sun Solaris | 2.6 (32-bit) | 120 megabytes |

# Memory Requirements

Memory and shared memory usage depend on:

- Number of data access agents.

- Type of access performed (for example, joins, large-scale retrieval, and so on).

- Connection queue.

Actual memory usage differs between the various UNIX implementations and the server load. The following table shows the shared memory requirements for installing and running the server.

| Platform | Workspace Memory | Memory Per Agent | Listener Memory |
|---|---|---|---|
| HP HP-UX 11 (32bit) | .7 Megabytes | 1.7 Megabytes | Any .7 Megabytes |
| IBM AIX 4.2.1 | 1 Megabyte | 2.2 Megabytes | Any .6 Megabytes |
| Sun Solaris 2.6 (32bit) | 2 Megabytes | 18 Megabytes | Any 5 Megabytes |

## Communications Requirements

The TCP/IP transport protocol is supported on all platforms and is the primary method of communicating between iWay-enabled connector applications and iWay Servers. The SNA (LU6.2) protocol is also supported on a limited set of platforms. The following topics describe specific protocol requirements.

| Communications Protocol | Requirements |
|---|---|
| TCP/IP | The system needs up to six consecutive open ports for each server you want to run. An initial installation also yields an initial configuration, so a set of port numbers must be available at installation time. |
| SNA (LU6.2) | The System Administrator should confirm that:<br><br>• The System Network Architecture (SNA) software is configured on both target nodes in the network.<br><br>• An SNA configuration for intra-node communications exists. This is required in order to directly test the configuration locally.<br><br>For information on supported versions of SNA software, see *Software Release Requirements for SNA (LU6.2)* on page 3-5. |

**Reference: Software Release Requirements for SNA (LU6.2)**

The following software releases are supported for SNA (LU6.2):

| Platform | Software | Version |
|---|---|---|
| HP | SNAplus | Version 4.0 |
| IBM | Communications Server | Version 5 |
| NCR | SNA Services | Version 3.01 |
| Sun | SunLink SNA/PTP | Version 9.1 |

## User ID Requirements

When installing and using the server, you need two types of operating system user IDs:

- **Server administrator IDs** (iadmin). Server administrators start and configure the server.

  The operating system ID you use when installing the server owns the server's files and is the default server administrator. You can create a new operating system ID to run and own the server files, or use any ordinary (non-superuser) ID. However, you should not install the server as root. The server administrator ID should have a Korn or Bourne shell as the default logon shell.

  Note that the name iadmin is used to refer to the server administrator ID and group throughout this manual, but you may use any name for this ID.

  For security purposes, you should not allow users and applications to use the iadmin ID; it should be available only to users who require server administrative privileges.

- **User and application IDs.** When users and applications try to access the server while it is running in secure mode, they are authenticated against the operating system. You need to make available to them operating system IDs that can access the server. Server data access agents impersonate these IDs before performing any file access on their behalf.

  For more information about running the server in secure mode, see *Configuring Server Security* on page 3-18.

# Installation Directories

The installation process creates these high-level directories:

- **Home directory.** This installation directory stores the iWay Server's executable and binary files. The path is stored in the environment variable EDAHOME. The default directory is

  *drive*:/ibi/srv53/home

  where:

  *drive*

      Is the hard drive on which the directory resides.

- **Configuration directory.** The files that control the behavior of each server instance reside here. The path is stored in the environment variable EDACONF. The default directory is

  *drive*:/ibi/srv53/*servertype*[*suffix*]

  where:

  *drive*

      Is the hard drive on which the directory resides.

  *servertype*

      Designates the type of server. The default values are:

      ffs for a Full-Function Server.

      dm for a DataMigrator Server.

      wfs for a WebFOCUS Reporting Server.

      cgw for a Communications Gateway.

  *suffix*

      Optional with the initial default installation and configuration. Required for additional instances of the iWay Server configuration. You must add a suffix to the directory name to ensure that each configuration is unique.

  For example:

  c:/ibi/srv53/ffs002

- **Application directory.** This is the default location for storing applications. The path of the application directory is stored in the environment variable APPROOT. This directory may be shared by applications created with other iWay Software and Information Builders products. It defaults to

  *drive*:/ibi/apps

  where:

  *drive*

      Is the hard drive on which the directory resides.

  Security for application directories is handled at the operating system level. To avoid any possibility of these directories being accessed inappropriately by means of APP commands (such as APP DELETE *AppDirName*), use directory security to set the appropriate permissions on these directories.

## Installing a Server

**How to:**

Mount the Installation CD

Access the Installation Files on Computers Without a CD-ROM Drive

Install a Server

Dismount the Installation CD-ROM

Configure an Additional Server Instance

Refresh or Upgrade a Server Installation

**Example:**

Full-function Server Installation Prompts and Responses

To install a server:

**1.** Mount the installation CD.

If the computer on which you want to install the server does not have a CD drive, you can transfer the installation files there from a computer with a CD drive. You must check the files' properties after the transfer.

**2.** Install and configure the server.

**3.** Dismount the installation CD.

If your license permits you to install multiple server instances, see *How to Configure an Additional Server Instance* on page 3-16.

If you ever need to refresh the server's software, see *How to Refresh or Upgrade a Server Installation* on page 3-17.

**Procedure: How to Mount the Installation CD**

If the computer on which the server is being installed does not have a CD drive, see *How to Access the Installation Files on Computers Without a CD-ROM Drive* on page 3-11.

1. Log on as root. (This is usually required by the mount command.)

2. If you do not have a standard location for mounting CDs, create a directory to which you will mount it; for example, /cdrom.

3. After inserting the software CD into the CD drive, mount the CD by issuing the following command:

| For Operating System | Type |
|---|---|
| Compaq Tru64 | `mount -t cdfs -o noversion `*`device_name`*` `*`/cdrom_directory`* |
| HP HP-UX | `mount -F cdfs `*`device_name /cdrom_directory`* |
| IBM AIX and Bull Escala | `mount -r -v cdrfs `*`device_name /cdrom_directory`* |
| Linux (Any vendor) | Linux will usually auto mount your CD as /cdrom or /mnt/cdrom. If it is not mounted, you can use: `mount `*`device_name /cdrom_directory`* |
| IBM Dynix/ptx, NCR MP-RAS and UnixWare | `mount -F cdfs -r `*`device_name /cdrom_directory`* |
| Siemens Reliant | `mount -F hs `*`device_name /cdrom_directory`* |
| Solaris (without volume management) | `mount -F hsfs -r `*`device_name /cdrom_directory`* |
| Solaris (with volume management) | A CD is auto mounted as: *`/cdrom_directory/iWay`* **Note:** iWay is the standard volume label for iWay CDs. |

where:

*device_name*

Is the system name for your CD device. Consult your UNIX System Administrator for the name of the device on your platform.

*cdrom_directory*

Is the directory to which you will be mounting the CD.

For Solaris Volume Management, this is a static directory.

The CD will be accessible to the ID performing the installation.

You can run the installation program directly from the CD; you do not need to copy any files to disk.

**Procedure: How to Access the Installation Files on Computers Without a CD‑ROM Drive**

If the computer on which you want to install the server does not have a CD drive, perform these steps prior to installation:

1. Unload the CD to a computer on your network that has a CD drive. You can use any UNIX or Windows computer.

2. Transfer the CD files (for example, FTPing them in binary mode) to a temporary directory on the computer on which you wish to install the server.

3. If the names of any of the transferred files include uppercase characters, convert those names to lowercase. (The FTP process sometimes converts file names to uppercase.)

4. Ensure that the transferred files have the following permissions. If necessary, use the chmod command to reset them.

   | Permissions | File |
   |-------------|------|
   | -rwxr-xr-x | inu.out |
   | -rw-r--r-- | iserver.tar |
   | -rwxr-xr-x | isetup |

5. Continue with the next procedure, *How to Install a Server* on page 3-12, as though the computer you are using has a CD drive. When prompted, specify actual disk drive locations.

## Procedure: How to Install a Server

For performance reasons, the software should not be installed on, or accessed using, NFS-mounted disks; a directly connected disk is always preferable.

To install the server:

1. Log on as the iadmin user ID.

   Logging on with the iadmin ID is recommended (rather than with "su"; from root).

2. Set the default protection mask to, at a minimum, read/execute (if it is not already set to that). For example:

   `umask 022`

   Ensure that you have write privileges to the directory from which you are running the command. To test this, type:

   `touch xxxx`

3. Run the installation procedure, isetup, specifying its full path (including the CD or disk drive). You can run the installation procedure from any location; you do not need to switch the current directory to the location of isetup.

   For example:

   `/cdrom/isetup`

4. Type option *1*, *Install and Configure*.

   You are prompted for your license key.

5. Type your license key in the format indicated on the screen.

   Your server attributes are displayed, and the license key is confirmed.

   You are then prompted for the location of the installation file iserver.tar.

6. Type the full path (including the CD or disk drive) of iserver.tar, or press *Enter* to accept the default.

   You are prompted for the password of the server administration (iadmin) ID.

7. Type the password.

   You are now shown the default values of some basic server properties, and given an opportunity to change them.

**8.** If you want to accept the default values, type *Y* and skip to Step 9. Otherwise, change any properties that you wish.

The properties are:

| Parameter | Description |
|-----------|-------------|
| EDAHOME | Location for actual software. The default location is the iadmin ID's home directory. The EDAHOME directory path name must conform to the pattern */ibi/srv53*/home*. |
| EDACONF | Location for default configuration.<br><br>If you changed the EDAHOME value, the default EDACONF value changes to conform to EDAHOME. EDACONF must be in the same path as EDAHOME, with the exception of the lowest-level directory ("home" directory in EDAHOME becomes the server type directory in EDACONF). |
| APPROOT | Location of default applications and sample applications. |
| TCP Base Port | Port number on which the server's TCP Listener listens. This must be the first of a sequence of six port numbers that the server can use for other TCP-based services. |

If you decide to change a default, you are prompted for the replacement value.

**9.** Review the configuration options displayed on the screen, and type *Y* if you accept them.

Several progress messages display while the server is being installed. You are then asked if you want to start the server.

**10.** Type *Y* to start the server or *N* to exit.

You should now verify your installation, as described in *Verifying Server Installation* on page 3-17.

## Example: Full-function Server Installation Prompts and Responses

The following is an example of a Full-Function Server installation that accepts the default settings.

```
$ /cdrom/isetup

-----------------------------------------------------------------------

              Welcome to the Product Set Up Facility
      Please respond to the prompts or enter Q to quit at any prompt.

-----------------------------------------------------------------------

Select an options:

   1. Install and Configure
   2. Add Additional Configuration Instance
   3. Refresh Installation (Reinstall, Keep Configurations)
   4. Install Debuggables to the Installation Directory

Enter a selection (Default=1) : 1

-----------------------------------------------------------------------

Enter your License Key (Format 999-999-9999) :   xxx-xxx-xxxx

   License Key has been checked

   Product: Full Function Server
   Maximum Number of Users: 2
   Maximum Number of CPUs: 2

ISETUP: License xxx-xxx-xxxx has been accepted

-----------------------------------------------------------------------

Please enter the full path name of the media for the product

(Default=/cdrom/iserver.tar)

Please supply media or <Enter> :

-----------------------------------------------------------------------

Enter the Server Administrator (iadmin) Password:

-----------------------------------------------------------------------
```

```
Please review the default settings.

EDAHOME =/home/iadmin/ibi/srv53/home
EDACONF =/home/iadmin/ibi/srv53/ffs
APPROOT =/home/iadmin/ibi/apps
TCP_BASE_PORT = 8100

If you are satisfied with the default settings you may proceed to
final confirmation else you will be prompted for individual values.
Proceed with defaults? (Y/N Default=Y)        :  y

The following selections have been made for ...

Install Options ...
   INSTALLATION_DEVICE = /cdrom/iserver.tar
   PRODUCT = server
   EDAHOME = /home/iadmin/ibi/srv53/home

Configure Options ...
   EDACONF = /home/iadmin/ibi/srv53/ffs
   EDAHOME = /home/iadmin/ibi/srv53/home
   LICENSE = xxx-xxx-xxxx
   APPROOT = /home/iadmin/ibi/apps
   SERVER_TYPE = ffs
   SERVER_NAME = "IWay 53 Full Function Server"
   SERVER_ADMIN_ID = iadmin
   SERVER_ADMIN_PASSWORD = 2E17EEB1CF514BA4
   TCP_BASE_PORT = 8100

Please confirm these values with one of the following responses ...

   Y = Accept and Proceed
   N = Start Over
   Q = Quit

Please supply confirmation: Y

Please, wait while we are installing the server ...

ISETUP: Installation Step completed

Please, wait while we are configuring the server ...


ISETUP: Configuration Step completed

----------------------------------------------------------------------
```

```
Would you like to start the server (Y/N Default=Y)? : Y

ISETUP: The server has been started

--------------------------------------------------------------------

To administer the server go to a web browser
and open the URL http://hostname:8101
$
```

## Procedure: How to Dismount the Installation CD-ROM

When you have finished accessing the installation CD, dismount and store it. All UNIX vendors use the following command to dismount:

umount */cdrom*

where:

*cdrom*

    Is the mount point directory used in the original mount command.

Normally you will not need the CD again unless a support situation requires debuggable versions of the software to be installed. A set of debuggable versions matching the original software is provided on the CD for this situation if it should arise.

## Procedure: How to Configure an Additional Server Instance

If you have additional licenses and need to configure additional server instances:

1. Log on with the iadmin ID.

2. Run EDAHOME/bin/isetup, where EDAHOME is the directory in which the server was installed.

3. At the main menu, select option 2, *Add Additional Configuration Instance.*

    The prompts for adding a configuration are similar to those for an original installation. However, you usually will want to change EDAHOME and EDACONF settings so that you do not overwrite your current configuration.

    If the supplied EDACONF already exists, the installation process copies it to a directory named BACKUP.

**Procedure: How to Refresh or Upgrade a Server Installation**

Refreshing the server reinstalls the server's files in the server installation directory, without changing any configuration information in the configuration directory. However, this does remove any patches that have been applied to the server.

If it becomes necessary to refresh the server, or if you want to upgrade to a new release:

1. Run isetup from EDAHOME/bin, where EDAHOME is the directory in which the server was installed.

2. At the main menu, select option 3, *Refresh Installation (Reinstall, Keep Configuration)*.

# Verifying Server Installation

After installing a server, verify that it is functioning properly.

**Procedure: How to Verify Server Installation**

To verify that you have successfully installed the server, use the initial configuration that is created by the installation. You can verify the server installation by bringing up, checking, connecting to, testing, disconnecting from, and shutting down the server:

1. Log on using the iadmin ID.

2. Start the server with the appropriate path to edastart and the -start option:

   `/home/iadmin/ibi/srv53/ffs/edastart -start`

3. Check to ensure that the processes are up by specifying the -show option:

   `/home/iadmin/ibi/srv53/ffs/edastart -show`

4. Start the Web Console by starting a browser pointed at the server's HTTP Listener port. The HTTP Listener port number is one higher than the TCP Listener port specified during installation. The URL format is http://host:port.

   For example, if default ports were used during installation, use http://host:8101 for a Full-function Server and http://host:8121 for a WebFOCUS Server.

5. If the server is running in secure mode, you will receive a logon screen. Log on using the iadmin ID. For information about configure the server's security, see *Configuring Server Security* on page 3-18.

   The Web Console's home page opens. The Home Page is arranged in a menu-like context for the various features it supports. Detailed use of the Web Console for configuration or general operation of the server is available by clicking *Help* in the left navigation menu and in the *iWay Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

6. Click the *Step 1* link to test the server by running a sample report.

7. When you are done using the server, you can stop it using the Web Console by clicking *Workspace* on the left and then *Stop.*

8. If you experience any startup problems, examine the /home/iadmin/ibi/srv53/ffs/edaprint.log file.

Now that you have successfully verified your server installation, you can:

- **Dismount the installation CD,** as described in *How to Dismount the Installation CD-ROM* on page 3-16.

- **Configure server security,** as described in *Configuring Server Security* on page 3-18.

- **Configure additional server properties,** such as outbound communication nodes and adapter support, using the Web Console.

  For more information about using the Web Console and configuring outbound nodes, see the *Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual. For more information about configuring adapter support, see the *Adapter Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

# Configuring Server Security

**How to:**

Configure the Server's Security Using the EDAEXTSEC Variable

Set the Server to Secure Mode

You can set a server's security to:

- **Off.** Users do not provide a password when logging on the server.

  This is the default, unless security is set to secure mode.

- **On.** Users must either send a password to connect to the server or use some other form of verification.

**Syntax:** **How to Configure the Server's Security Using the EDAEXTSEC Variable**

You can configure the server's security by setting and exporting the EDAEXTSEC variable before starting the server

```
export EDAEXTSEC={ON|OFF}
```

where:

ON

Requires a user to provide his or her operating system user ID and password when logging on to the server.

Each connecting user is defined to UNIX. The server uses UNIX services to authenticate connecting users, impersonate them, and ensure access control to resources like files and DBMS objects. Access to the Web Console's administrative functions is protected via user authentication at the operating system level.

ON is the default value if the server has been set to secure mode.

OFF

Enables users to log on to the server without providing a password.

OFF is the default value if the server has *not* been set to secure mode.

**Procedure:** **How to Set the Server to Secure Mode**

To set the server to secure mode:

1. If the server is running, bring it down.

2. Logon to the system as root, or issue the su root command.

3. Change your current directory to the bin directory of the home directory created during the installation procedure.

   For example, type the following command:

   ```
   cd /home/iadmin/ibi/srv53/home/bin
   ```

4. Change file ownership permissions by typing the following commands:

   ```
   chown root tscom300.out
   chmod 4555 tscom300.out
   ```

5. Verify your changes by issuing the following command:

   ```
   ls -l tscom300.out
   ```

   The output should be similar to the following:

   ```
   -r-sr-xr-x 1 root iadmin 123503 Aug 23 04:45 tscom300.out
   ```

   Note the permissions and ownerships.

When you start the server, it will run in secure mode.

# Starting and Using a Server

For information about starting a server, see *Verifying Server Installation* on page 3-17.

For information about using and managing a server, see the *iWay Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

**Reference: Commonly Used Server Start Options and Functions**

| Command and Option | Function |
|---|---|
| edastart | Starts the server with the line mode console, which enables you to view the server log and to dynamically issue edastart options such as show, traceon, and stop.<br><br>To display the console's command prompt, press Ctrl + C. |
| edastart -start | Starts the server without the line mode console. |
| edastart -sstart *n* | Starts the server, but waits *n* seconds for actual start up. |
| edastart -show | Shows general status of server and agents. |
| edastart -stop | Stops the server. |
| edastart -cleardir | Removes all temporary directories and files created by the server. |
| edastart -traceon | Turns on tracing. May be used at startup or afterward. It is preferable to run traces at startup, unless instructed otherwise.<br><br>Turn tracing on *only* when there is a problem that needs to be traced, to avoid incurring the associated overhead. |
| edastart -traceoff | Turns off tracing. |
| edastart -? | Displays edastart options. |
| edastart -?s | Displays support information and support-related options. |

# Troubleshooting for UNIX

**How to:**

Troubleshoot Your Problem

Add Your Problem to the Troubleshooting Guide

Activate the Server's Troubleshooting Tools

If you encounter problems while installing and configuring the server:

1. Try to resolve your problem as described in *How to Troubleshoot Your Problem* on page 3-21.

2. If you cannot resolve your problem by troubleshooting it yourself, contact iWay Software customer support as described in *Information You Should Have* and *Customer Support* in the *Preface*.

**Procedure: How to Troubleshoot Your Problem**

You can troubleshoot installation problems by matching the problem with a symptom, and then reading the reason and solution associated with that symptom.

If you have troubleshooting suggestions that are not described here, and that you think others will find helpful, we invite you to send them to us, as described in *How to Add Your Problem to the Troubleshooting Guide* on page 3-22. We will consider including your problems in a future release of this manual.

**Symptom: The server starts in safe mode (as indicated at the top of the right panel).**

- **Reason:** A common reason for the server starting in safe mode is a problem with the server administrator ID's password. For example, the password may have been updated on the operating system but not on the server, so that the encrypted copy of the password stored by the server is out of synchronization with the password on the operating system.

  **Solution:** The server administrator can connect to the Web Console to fix the problem. When the Web Console is started the reason the server is in safe mode is listed on the home page.

  1. Click the *fix* hyperlink displayed under the problem description and make the correction. (For example, if the problem is that the server administrator's password is out of synchronization, update the password on the server.)

  2. Save and restart the server.

**Procedure: How to Add Your Problem to the Troubleshooting Guide**

If you have troubleshooting suggestions that you think others will find helpful, we invite you to send them to us so that we can consider including them in a future release. You can:

- **E-mail them** to *books_info@iwaysoftware.com*. Please include your name and phone number, and put *iWay Server Installation for UNIX troubleshooting* in the subject line.

- **Send them** to:

  Documentation Services
  Attn: iWay Group
  Information Builders
  Two Penn Plaza
  New York, NY 10121-2898

  Please include your name, phone number, e-mail address, and postal address.

**Procedure: How to Activate the Server's Troubleshooting Tools**

If instructed by iWay Software customer support, you can activate the server's troubleshooting tools to help troubleshoot a problem.

*Do not* activate the troubleshooting tools unless explicitly requested by iWay Software customer support.

To activate the troubleshooting tools:

1. Log on with the server administrator ID.

2. Mount the installation CD.

3. Run the isetup installation program from the CD.

4. At the main menu, select option 4, *Install Debuggables to the Installation Directory*.

# Server Installation for OS/390 and z/OS

**Topics:**

- Installation Requirements
- Installing a New Server for OS/390 and z/OS
- Server Startup and Use
- DB2 Security Exit Configuration
- Adding a Configuration Instance
- Upgrading Your Server Release
- Migrating From an MVS Server
- Performance Considerations
- Frequently Asked Questions
- Troubleshooting for OS/390 and z/OS

This document describes the requirements and procedures for:

- Installing a new Server for OS/390 and z/OS (see *Installation Requirements* on page 4-2 and *Installing a New Server for OS/390 and z/OS* on page 4-4, and follow them in sequential order).
- Adding a configuration instance (see *Adding a Configuration Instance* on page 4-45).
- Upgrading your Server for OS/390 and z/OS from an earlier Version 5, Release 2.x (see *Upgrading Your Server Release* on page 4-51).
- Migrating from the Server for MVS (see *Migrating From an MVS Server* on page 4-61).

The Server for OS/390 and z/OS supports data adapters for the following Database Management Systems (DBMSs):

| | | |
|---|---|---|
| Adabas | CA-IDMS/SQL | SAP |
| Datacom | IMS | Siebel |
| DB2 CLI | JDBC | Supra |
| DB2 CAF | Millennium | Teradata |
| EJB | MODEL 204 | Total |
| flat files | MQSeries | VSAM |
| FOCUS | MS SQL Server | XML |
| CA-IDMS/DB | Oracle | |

You do not need specific DBMS information (such as release levels, user IDs, and passwords) for installation. This information will be needed later for configuration.

# Installation Requirements

Before beginning server installation, review all requirements.

## Operating System Requirements

The server requires the following operating system levels.

| Operating System | Release |
|---|---|
| OS/390 | 2.10 |
| z/OS | 1.1 or higher |

## Disk Space Requirements

The following table lists approximate disk space requirements for each platform. Specific sizes may vary slightly with options selected during configuration. The usage numbers do not include space for actual applications, databases, sort space, output preparation, or logs.

| Platform | Version | During Installation | After Installation |
|---|---|---|---|
| OS/390 | 2.10 | 1 Gigabyte | 750 Megabytes |
| z/OS | 1.1 through 1.4 | 1 Gigabyte | 750 Megabytes |

## Memory Requirements

Memory usage of a configured environment consists of the following elements:

- Workspace Manager

- Listeners

- Concurrently running application agents

Actual memory usage depends on application features, and varies depending on the application. The SHRLIBRGNSIZE parameter (defined on SYS1.PARMLIB, member BPXPRMxx) can affect the amount of memory that the server address space will allocate. We recommend that you use the default MVS installation value of 64M:

SHRLIBRGNSIZE(67108864)

The following table lists memory usage values:

| Platform | Workspace Memory | Memory Per Agent |
|----------|------------------|------------------|
| OS/390   | 50 Megabytes     | 1.2 Megabytes    |
| z/OS     | 50 Megabytes     | 1.2 Megabytes    |

## Communication Requirements

The TCP/IP transport protocol is supported on all platforms and is the primary method of communication between connector applications and servers. Up to four consecutive open ports for each server you want to run will be used. The starting number of consecutive ports is required for installation.

The server supports only IBM's TCP/IP. It does not support Interlink or any other third-party TCP/IP.

# Installing a New Server for OS/390 and z/OS

**In this section:**

Step 1. Establish the HFS Directory for the Server

Step 2. Set Up User IDs

Step 3. Collect Required Information for Adapters

Step 4. Copy the Installation Software From Tape or FTP

Step 5. Run ISETUP

Step 6. Test the Server Installation

Step 7. Configure Server Security

To install a new Server for OS/390 and z/OS, perform the following steps.

## Step 1. Establish the HFS Directory for the Server

**In this section:**

Step 1a. Define the HFS Data Set

Step 1b. Mount the File System

The server installation requires a set of HFS directories where the product executable files, configuration files and sample applications are loaded. The server also use HFS directories for temporary files during the server operation by default. Application files (MFD/FEX) can be kept in the HFS directories or in PDS.

To better control the space allocated to server software, we recommend defining a separate HFS data set, OMVS.IADMIN, and mounting it as /u/iadmin for the exclusive use of the server. Note that both names can be changed and existing HFS data sets used as an alternative.

The sample JCL in step 1a is for 1 gigabyte of space. The total space that can be allocated to an HFS data set is dependent on the operating system release and the physical device type. Please refer to IBM documentation for more information about HFS allocation. For an SMS-managed data set, add the appropriate parameters.

### Step 1a. Define the HFS Data Set

Create the JCL to define the HFS data set, add a job card, and submit.

```
//********* JOB CARD GOES HERE ************//
//
//************DEFINE HFS *****************//
//DEFWEB EXEC PGM=IEFBR14
//DD1 DD DISP=(NEW,CATLG),DSN=OMVS.IADMIN,DSNTYPE=HFS,
// VOL=SER=VPWRKC,DCB=(DSORG=PO),
// SPACE=(CYL,(1200,5),,CONTIG,ROUND)
```

### Step 1b. Mount the File System

At the command line in Option 6 of ISPF, issue the following commands

```
MOUNT FILESYSTEM('OMVS.IADMIN')
MOUNTPOINT ('/u/iadmin') TYPE (HFS) MODE (RDWR)
```

where:

*OMVS.IADMIN*

> Is the name associated with the file system defined in Step 1a.

*/u/iadmin*

> Is the mount entry point for the file system. Specify a directory appropriate for your site.

> The specified directory must exist before you issue the MOUNT command. Once the directory is created, the minimum permissions for all directory levels leading to idamin must be 755.

Update your BPXPRMXX member of SYS1.PARMLIB to permanently mount the file system.

## Step 2. Set Up User IDs

**In this section:**

User ID Installation Scenarios

Step 2a. Define the Server Installation User ID

Step 2b. Define the Server Administrator ID

Step 2c. Define the Server System User ID

Step 2d. Add OMVS Segment to General User IDs

To install and run the server, the following types of user IDs are required:

- Installation

- Administrator

- Security

- General IDs (for connecting users).

The number of IDs and their names depend on your site's needs and configuration. You need IDs for performing the following functions:

- **Server installation (iinstal).**

  An ID is required to unload the server installation from tape and to create PDSs and HFS directories. Many sites already have a suitable ID that they use for installing vendor software.

  The sample ID name *install* is used throughout the installation procedure to refer to this ID, but you can choose any name. (We have omitted the second "l" from "install" due to a 7-character length restriction in some RACF and *e*Trust™ CA-Top Secret® environments.)

- **Server administrator (iadmin).**

  An ID is required to administer the server. It will own and have full access to server files installed in the HFS directory that you specify during installation. This ID should be available only to users who require administrative server privileges, such as starting and stopping the server, adding adapters, and changing run-time parameters.

  The sample ID name *iadmin* and group *isrvgrp* are used throughout the installation procedure to refer to this ID, but you can choose any names.

- **Server system ID (iserver).**

  If you plan to run the server with security on, you must create a single superuser ID for internal use by the server. This ID must have UID(0) specified in its security definition. The server will use this ID when it needs superuser privileges, for example to impersonate a connected user when the user's server agent is created. This ID does not need TSO logon privileges. All IDs require an OMVS segment.

  The sample ID name *iserver* is used throughout the installation procedure to refer to this ID, but you can choose any name. Be sure never to delete this ID: doing so would cause server administration problems.

- **General IDs (connecting users).**

  Any user requiring access to the server must have a non-superuser ID (that is, it must have a unique UID other than 0) and have an OMVS segment.

## User ID Installation Scenarios

There are two user ID installation scenarios:

- **Installation and administrator IDs are the same.**

  The user ID must have a unique non-zero UID. It cannot be a superuser. For this scenario, logon to TSO with this ID and do not change the default administrator ID that is presented on the first full panel of the ISETUP installation process.

- **Installation and administrator IDs are different.**

  The installation ID can be a superuser or non-superuser, and must have authority over the administrator ID so that it can change ownership of the server's directory structure from the installation ID to the administrator ID. The command issued during the installation process to change ownership is shown.

  The administrator must have a unique non-0 UID. It cannot be a superuser.

## Step 2a. Define the Server Installation User ID

The installation ID requires read access to the BPX.FILEATTR.APF facility class.

The server installation ID can be any existing user ID. If it is the same as the administrator ID, see *Step 2b. Define the Server Administrator ID* for an example definition.

## Step 2b. Define the Server Administrator ID

To define the server administrator ID (iadmin), follow the instructions in the section labeled for your security package: RACF, *e*Trust CA-Top Secret, or *e*Trust™ CA-ACF2®. Then follow the instructions in the section labeled "For All Security Packages."

### For RACF:

The following sample definition of a server administration ID is created using RACF commands that only the Security Administrator can issue.

```
ADDUSER iadmin PASSW(xxxx)
DFLTGRP(ISRVGRP)
OMVS(UID(8) HOME('/u/iadmin') PROGRAM('/bin/sh)')
TSO(ACCTNUM(12345) PROC(PROC01))
```

Verify that the above ADDUSER command completed successfully. To do so, issue the following command:

```
[TSO] LISTUSER iadmin OMVS NORACF
```

Be sure that this command is available to the iadmin ID.

You should receive the following response:

```
USER=iadmin
OMVS INFORMATION
-----------------------------
UID=0000000008
HOME=/u/iadmin
PROGRAM=/bin/sh
```

A Security Administrator must update the Facility classes of RACF, as shown below. The following commands are issued with ISPF Option 6:

```
RDEFINE FACILITY BPX.FILEATTR.APF  UACC(NONE)
PERMIT BPX.FILEATTR.APF CL(FACILITY) ID(iadmin) ACCESS(READ)
```

For the above commands to take effect, the RACF Facility class will have to be refreshed.

```
SETROPTS RACLIST(FACILITY) REFRESH
```

**For *e*Trust CA-Top Secret:**

Create a department ID for everyone defined to *e*Trust CA-Top Secret who will be using the iWay Server, by issuing the command

```
TSS CRE(iway) TYPE(DEPT) NAME('iway department')
```

where:

*iway*

Is the name of the department you are creating.

*iway department*

Is the label you want to associate with the new department.

For users within the department you just created for iWay, you can define resource access within a group. All users require an OMVS segment. To define an ID for that group, issue the command

```
TSS CRE(iwaygrp) NAME('iway group') DEPT(iway) TYPE(GROUP) GID(n)
```

where:

*iwaygrp*

Is the name of the group you are creating.

*iway group*

Is the label you want to associate with the new group.

*iway*

Is the name of the department you created.

*n*

Is the number you want to assign to the new group.

Create the iadmin ID and attach it to the new iWay department by issuing the following commands

```
TSS CRE(iadmin) NAME('iadmin id') TYPE(USER) DEPT(iway) PASSWORD(pass)
GROUP(iwaygrp) DFLTGRP(iwaygrp)
```

where:

*iadmin*

> Is the ID you are creating to administer the server.

*iadmin id*

> Is the label you want to associate with the new ID.

*iway*

> Is the name of the department that you created.

*pass*

> Is the password for the ID you are creating.

*iwaygrp*

> Is the group you created.

Issue the following command to define the user's USS shell program (using OMVSPGM), facility access (using FAC), and, optionally, the initial directory (using HOME)

```
TSS ADD(iadmin) UID(n) [HOME(/u/dir)] OMVSPGM(/bin/sh) FAC(BATCH,TSO)
```

where:

*iadmin*

> Is the ID you created to administer the server.

*n*

> Is the ID's UID. It cannot be 0 (zero).

HOME

> Defines the initial directory pathname. If it is omitted, USS sets the user's initial directory to the root directory.

*dir*

> Is the ID's home directory.

Issue the following command

```
TSS PER(iadmin) IBMFAC(BPX.FILEATTR.APF) ACC(READ)
```

where:

*iadmin*

> Is the ID you created to administer the server.

**For *e*Trust CA-ACF2:**

To define the ID that will administer the server, issue the following commands

```
SET LID
INSERT iadmin GROUP(admin) PASSWORD(pass)
SET PROFILE(USER) DIV(OMVS)
INSERT iadmin UID(n) HOME(/) OMVSPGM(/bin/sh)
```

where:

*iadmin*

Is the ID you are creating to administer the server.

*admin*

Is the group in which iadmin will reside.

*pass*

Is the password for iadmin.

*n*

Is the UID.

**For All Security Packages:**

Verify that the home directory of the server administrator ID is correct. To do so, logon to the server administrator ID (if not already logged on) and issue the following command from ISPF option 6:

```
OSHELL pwd
```

You should receive the following response:

```
/u/iadmin
```

This directory should be the home directory specified in the UID definition for iadmin.

For a second confirmation, issue the following command:

```
OSHELL echo $HOME
```

You should receive the following response:

```
/u/iadmin
```

Verify that the server administrator ID has a unique UID and the correct GID defined by issuing the following command and press *Enter*:

```
OSHELL id
```

You should receive the following response:

```
uid=8(IADMIN) gid=50(ISRVGRP)
```

This UID and GID should match what is defined in the OMVS segment.

## Step 2c. Define the Server System User ID

To define the server system ID (iserver), follow the instructions in the section labeled for your security package: RACF, *e*Trust CA-Top Secret, or *e*Trust CA-ACF2.

### For RACF:

The following sample definition of a server system user ID is created using RACF commands that only the Security Administrator can issue. The user ID does not require logon authority.

```
ADDUSER iserver DFLTGRP(OMVSGRP) OMVS(UID(0)) NOPASSWORD
```

where:

*iserver*

Is the account you use for the system server ID.

Verify that the above ADDUSER command completed successfully by issuing the following command:

```
[TSO] LISTUSER iserver OMVS NORACF
```

You should receive the following output:

```
USER=iserver
OMVS INFORMATION
------------------------------
UID=0000000000
HOME=/u/iserver
PROGRAM=/bin/sh
```

### For *e*Trust CA-Top Secret:

Define the server system ID by issuing the following command

```
TSS CRE(iserver) TYPE(USER) NAME('iway system ID') DEPT(iway)
PASS(pass,0) SOURCE(INTRDR)
```

where:

*iserver*

Is the name you wish to assign to the server system ID you are defining.

*iway*

Is the name of the department you created in step 2b.

*iway system ID*

Is the label you want to associate with the new ID.

*pass*

Is the ID's password.

This password never expires.

Note that the SOURCE(INTRDR) setting prevents this ACID from logging on.

Define the required access for the server system ID by issuing the following command

```
TSS ADD(iserver) UID(0) HOME(/) OMVSPGM(/bin/sh) GROUP(iwaygrp)
DFLTGRP(iwaygrp)
```

where:

*iserver*

>    Is the server system ID.

*iwaygrp*

>    Is the name of the group you created in step 2b.

You can choose to audit the server system ID. Each time the ACID is used, an audit record will be written to *e*Trust CA-Top Secret's audit tracking file. To set this option, issue the following command

```
TSS ADD(iserver) AUDIT
```

where:

*iserver*

>    Is the server system ID.

**For *e*Trust CA-ACF2:**

To define the ID that will administer the server, issue the following commands:

```
SET LID
INSERT iserver NAME(iserverID) GROUP(pgm) STC
SET PROFILE(USER) DIV(omvs)
INSERT iserver UID(0) HOME(/) PROGRAM(/bin/sh)
SET PROFILE(GROUP) DIV(omvs)
INSERT pgm GID(n)
```

where:

*iserver*

>    Is the ID you are defining for the server system ID.

*iserverID*

>    Is the description you want to associate with the system server ID.

*pgm*

>    Is the ID's group.

*omvs*

>    Is the name of your OMVS division.

*n*

>    Is the group ID.

### Step 2d. Add OMVS Segment to General User IDs

For server users, ensure that each user ID has an OMVS segment (or is setup to use a default user ID as documented in the IBM manual *UNIX System Services Planning*). To modify an existing TSO user ID profile, from ISPF Option6, issue the following command

```
ALTUSER user_ID OMVS(UID(nnn) HOME('/u/user_ID') PROGRAM('/bin/sh'))
```

where:

`user_ID`

Is the user ID you are modifying.

## Step 3. Collect Required Information for Adapters

You must provide information to configure the adapters that you are licensed to install. The installation procedure automatically prompts you for this information. When you are prompted for a steplib, ddname, or environment variable that is optional, the installation procedure will indicate this with an OPT> prompt.

If you are using non-APF-authorized DBMS libraries, you must allocate the libraries to the ddname TASKLIB in IRUNJCL. The installation routine collects the information and allocates the required libraries in STEPLIB.

After you have installed and configured the server, you will be able to further configure your adapters using a Web-based server configuration tool called the Web Console.

The following table describes what information you need to provide for each adapter that you have. (If an adapter is not listed, no information needs to be provided for it.) Note that the table refers to:

- **EDAENV.** This parameter file is a member of

  `qualifier.server_type.DATA`

- **IRUNJCL.** This procedure starts the server, and is a member of the configuration library

  `qualifier.server_type.DATA`

  where:

  `server_type`

  Is one of the following:

  `ffs`   Full-Function Server
  `wfs`   WebFOCUS Reporting Server
  `dm`    DataMigrator Server
  `wfm`   WebFOCUS Maintain Server
  `cgw`   Communications Gateway

| Adapter | Information you must provide |
|---------|------------------------------|
| Adabas | Provide the data set name for the following STEPLIB allocation:<br><br>• load library<br><br>This is required only for the synonym creation process. For example, in a production environment in which all synonyms already exist, you can omit this.<br><br>When you configure the adapter, you will need to provide the name of the Adabas source library and the associated data set name. |
| CA-DATACOM | Provide the data set names for the following STEPLIB allocations:<br><br>• CUSLIB load library<br><br>• CAILIB load library<br><br>• utility library<br><br>• URT library |
| CA-IDMS<br><br>(both DB and SQL) | Provide the data set names for the following STEPLIB allocations:<br><br>• load library<br><br>• DBA load library<br><br>Provide the data set names to which the following ddnames are allocated:<br><br>• SYSIDMS. Check with your CA-IDMS DBA regarding this ddname.<br><br>• SYSCTL. Is the library corresponding to the central version you want to use. |
| Call Java | You must have the JDK installed.<br><br>Provide a value for the following environment variables:<br><br>• CLASSPATH. Provide the paths of the .jar files that you want to access; these paths will be appended to CLASSPATH.<br><br>• LIBPATH. Provide the path of the JVM; this path will be appended to LIBPATH. You will be prompted for this only once, regardless of how many Java-based adapters (EJB, Call Java, JDBC, MS SQL Server) you are installing. |

| Adapter | Information you must provide |
|---------|------------------------------|
| DB2 CAF | Provide the data set names for the following STEPLIB allocations:<br><br>• DSNLOAD load library (unless it's already in linklist).<br><br>  For security information, see *DB2 Security Exit Configuration* on page 4-41.<br><br>• DSNEXIT load library |
| DB2 CLI | Provide the data set names for the following STEPLIB allocations:<br><br>• DSNLOAD load library (unless it's already in linklist).<br><br>  For security information, see *DB2 Security Exit Configuration* on page 4-41.<br><br>• DSNEXIT load library<br><br>Provide a value for the following environment variable:<br><br>• DSNAOINI, which contains the full path and file name of the DB2 CLI .ini file. |
| EJB | You must have the JDK installed.<br><br>Provide a value for the following environment variables:<br><br>• CLASSPATH. Provide the paths of the .jar files that you want to access; these paths will be appended to CLASSPATH.<br><br>  If you are deploying the adapter to access an EJB on a:<br><br>  • WebLogic server, specify the following path:<br><br>    */pathspec*/weblogic.jar<br><br>  • WebSphere server, specify the following paths:<br><br>    */pathspec*/websphere.jar<br>    */pathspec*/ejbcontainer.jar (one for each EJB container)<br><br>• LIBPATH. Provide the path of the JVM. You will be prompted for this only once, regardless of how many Java-based adapters (EJB, Call Java, JDBC, MS SQL Server) you are installing. |
| IMS | Provide the data set names for the following STEPLIB allocations:<br><br>• DFSPZP load library<br><br>• DFSRESLB load library |

| Adapter | Information you must provide |
|---|---|
| InfoMan | Provide the data set name for the following STEPLIB allocation:<br><br>• SBLMMOD1 load library |
| JDBC | You must have the JDK installed.<br><br>Provide a value for the following environment variables:<br><br>• CLASSPATH. Provide the paths of the .jar files that you want to access; these paths will be appended to CLASSPATH.<br><br>• LIBPATH. Provide the path of the JVM; this path will be appended to LIBPATH. You will be prompted for this only once, regardless of how many Java-based adapters (EJB, Call Java, JDBC, MS SQL Server) you are installing. |
| Millennium | Provide the data set name for the following STEPLIB allocation:<br><br>• load library |
| MODEL 204 | Provide the data set name for the following STEPLIB allocation:<br><br>• load library |
| MQSeries | Provide the data set names for the following STEPLIB allocations:<br><br>• SCSQLOAD load library<br><br>• SCSQAUTH load library |
| MS SQL Server | Select the Call Java adapter—in addition to the MS SQL Server adapter—in Step 9 of *Step 5. Run ISETUP* on page 4-22.<br><br>Provide a value for the following environment variables:<br><br>• CLASSPATH. Provide the paths to the following files; these paths will be appended to CLASSPATH.<br><br>   • msbase.jar<br><br>   • mssqlserver.jar<br><br>   • msutil.jar<br><br>• LIBPATH. Provide the path of the JVM; this path will be appended to LIBPATH. You will be prompted for this only once, regardless of how many Java-based adapters (EJB, Call Java, JDBC, MS SQL Server) you are installing. |

| Adapter | Information you must provide |
|---|---|
| Oracle | Provide the data set name for the following STEPLIB allocation:<br><br>• CMDLOAD load library<br><br>Provide the data set name to which the following ddname is allocated:<br><br>• ORA$LIB message library<br><br>Provide values for the following environment variables:<br><br>• ORACLE_SID, which contains the Oracle SID.<br><br>• ORACLE_HOME, which contains the Oracle home directory.<br><br>• LIBPATH, which contains the Oracle lib directory's location. This is usually $ORACLE_HOME/lib.<br><br>The installation procedure adds the following DD statement to IRUNJCL<br><br>• `//ORA@osid  DD  DUMMY`<br><br>where:<br><br>`osid`<br><br>Is the Oracle SID that is specified in the ORACLE_SID environment variable. |
| Supra | Provide the data set names for the following STEPLIB allocations:<br><br>• LINKLIB load library<br><br>• INTERFLM load library<br><br>• ENVLIB load library<br><br>Provide the data set name to which the following ddname is allocated:<br><br>• CSIPARM. Sequential file or PDS member.<br><br>This file points to the data set that contains the CSIPARM definition, which in turn points to the Central PDM you are accessing. For the name of this file, contact your Supra Database Administrator.<br><br>• CSISYSIN. Sequential file or PDS member. |
| VSAM CICS | Provide the data set name for the following STEPLIB allocation:<br><br>• SDFHEXCI load library |

# Step 4. Copy the Installation Software From Tape or FTP

**In this section:**

Unloading From Tape

Copying From FTP/Disk

There are two ways to unload the installation media:

- **From Tape.** The software is provided on a cartridge in 3480 or 3490 format with both MVS PDSs and HFS tar files. You must unload the installation data set from the tape before you can run the installation as explained below in *Unloading From Tape* on page 4-19. This is how most installations are performed.

- **From FTP/Disk.** The software can be downloaded from a special FTP site and includes both an MVS data set and HFS files. You must allocate space and ensure that the MVS data set and HFS files are in the appropriate locations as explained below in *Copying From FTP/Disk* on page 4-21. You must contact your Information Builders representative if you wish to use this option.

## Unloading From Tape

The software is provided on a cartridge in 3480 or 3490 format with both MVS PDSs and HFS tar files. Perform the following to unload the installation data set from the tape:

1. Log on to TSO with the iadmin user ID. This user ID must have an OMVS segment defined and access to the HFS directory where the product will be installed.

2. Run an IEBCOPY job to allocate and unload the *qualifier*.HOME.DATA data set. This PDS contains the members needed for the actual installation.

   It is recommended that you use HOME.DATA as the low-level qualifier for the target data set. Although you can specify any low-level qualifier, HOME.DATA enables the installation procedure to generate default data set names, simplifying your installation.

The following sample JCL is for the initial unload to a new data set:

```
//IEBCOPY  EXEC PGM=IEBCOPY,REGION=0M
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD UNIT=workunit,SPACE=(CYL,(5,1))
//OUT1     DD DISP=(NEW,CATLG,DELETE),
//           DSN=qualifier.HOME.DATA,
//           DCB=(RECFM=FB,LRECL=80,BLKSIZE=3200),
//           SPACE=(CYL,(1,5,25)),
//           UNIT=SYSDA
//IN1      DD DISP=(OLD,PASS),
//           DSN=HOME.DATA,
//           UNIT=cart,
//           VOL=(,RETAIN,,SER=volser),
//           LABEL=(1,SL)
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
  COPY INDD=IN1,OUTDD=OUT1
```

where:

*workunit*

> Is the unit for the work data set.

*qualifier*

> Is the high-level qualifier for HOME.DATA and for all other MVS data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server (for example, IADMIN.SRV53). However, you can use any site specific value.

> **Note:** Using a low-level qualifier such as HOME.DATA is recommended, but any site specific value can be used.

*cart*

> Is the unit type of the tape drive. Common names include 3480, TAPE, or 3490. Change as needed.

*volser*

> Is the value shown on the media label.

After this job has run, *qualifier*.HOME.DATA is allocated, cataloged, and populated with the members needed to continue the product installation.

Proceed to *Step 5. Run ISETUP* on page 4-22.

## Copying From FTP/Disk

This section only applies when installing from FTP/Disk. You must contact your Information Builders representative before attempting this.

1.  Log on to TSO with the iadmin user ID. This user ID must have an OMVS segment defined and access to the HFS directory where the product will be installed.

2.  Allocate a temporary sequential data set with a name such as the following:

    `qualifier.ISERVER.DATA`

    and the following attributes:

    `LRECL(80),RECFM(F,B),BLKSIZE(3120),SPACE=(TRK,(5,5))`

    **Note:** Substitute the name you use for *qualifier*.ISERVER.DATA in the steps below.

3.  Create a temporary HFS directory to hold the installation files. For example:

    `/u/iadmin/download.`

4.  Using TSO or ISPF option 6, connect to the FTP site using the information provided by your Information Builders representative.

5.  Once connected, type the following to indicate a binary transfer:

    `binary`

6.  Type the following to get the MVS installation software:

    `get iserver.data 'qualifier.ISERVER.DATA' (replace`

7.  Type the following to indicate the location for the HFS files:

    `lcd /u/iadmin/download`

8.  Type the following to get the HFS files:

    `mget *`

    You will be prompted to accept the transfer of 7 files (6 HFS files and 1 MVS data set).

    `Mget inu.out (Yes|No|Quit|Stop prompting)?`

9.  Enter:

    `Yes`

    to accept the transfer of all **except for** the iserver.data data set indicated by a prompt such as the following:

    `Mget iserver.data (Yes|No|Quit|Stop prompting)?`

10. When you receive the above prompt, enter:

    `No`

**11.** When all 6 HFS files have been transferred, type the following to exit FTP:

```
quit
```

**12.** Under TSO, explode the sequential file *qualifier*.ISERVER.DATA created above into a PDS using the following command:

```
RECEIVE INDSN('qualifier.ISERVER.DATA')
```

**13.** At the restore parameters prompt, type the following to create the *qualifier*.HOME.DATA PDS:

```
DSNAME('qualifier.HOME.DATA')
```

**Note:** Using a low-level qualifier such as HOME.DATA and a high-level qualifier that reflects the release of the server (for example, IADMIN.SRV53) is recommended. However, you can use any site specific value.

In the ISETUP procedure below, be sure to specify *(D)isk* for the Input Source and provide the HFS directory into which you transferred the installation files.

## Step 5. Run ISETUP

Server installation consists of a series of ISPF panels, which gather the required information. After the panel dialog is complete, JCL is created and submitted to install the server on OS/390 and z/OS. This JCL job retrieves the remainder of the MVS libraries and HFS files from the media and configures a basic working server.

**1.** Execute the ISETUP member of your *qualifier*.HOME.DATA using ISPF option 6.

The first Installation and Configuration panel opens.

```
IWay Software              Installation and Configuration         OS/390 and z/OS
Command ===>                                                                   P1

Welcome to the Product Set Up Facility
Please respond to the following selection
Select an option:

         1. Install and Configure
         2. Add Additional Configuration Instance
         3. Refresh Installation (Reinstall, Keep Configurations)

Enter selection (Default=1) ===>
Enter License Key              ===>     -      -       Last License key processed
Input source (Option 1 or 3)===> T                     (T)ape or (D)isk
Installation Userid            ===> IADMIN             Logged on Userid
Administrator Userid           ===> IADMIN             Server install only
Umask setting to use           ===> 0022

Enter Job Card information                 Override JOB name checking ===> N
===> //IADMIN JOB (ACCT INFO),_____
===> //*_____
===> //*_____
Press Enter to continue, PF3 to END
```

**2.** Complete the panel as follows.

| | |
|---|---|
| *Enter selection* | Accept the default value 1, *Install and Configure*, for a new installation.<br><br>**Note:**<br><br>• For option 2, *Add Additional Configuration Instance*, see *Adding a Configuration Instance* on page 4-45.<br><br>• For option 3, *Refresh Installation*, see *Upgrading Your Server Release* on page 4-51. |
| *Enter License Key* | Enter the 10-digit License Key that was provided with the software. Be sure to store this key in a safe place for future reference. |
| *Input source* | Choose the input source, T for Tape or D for Disk. The default value is T.<br><br>**Note:** If you downloaded the server software via FTP, choose D and, on the next panel, provide the directory name where the transferred files reside. |
| *Installation Userid* | Shows the current logon ID. It cannot be changed. |
| *Administrator Userid* | Initially, this field shows the same ID as the installation user ID.<br><br>If the installation user ID is a superuser (UID=0), you must specify a non-superuser ID to administer the server. Specify this ID here. |
| *Umask setting to use* | Shows the current umask setting for the iadmin ID. The JCL passes this setting to the server for use at run time.<br><br>Every time the server creates a file in the ../ibi/profiles or ../ibi/apps directory structures (usually in response to Web Console activity), the server assigns to the file the default permissions 666 filtered by the umask value. You specify whichever umask value is necessary to "mask out" the permissions you don't want to grant.<br><br>For example, if you specify a umask value of 0022, the server create files with the permissions 644: umask's 0022 is subtracted from the default 666, disallowing the group and world write permissions. |

| | |
|---|---|
| *Enter Job Card information* | To provide JOB card information for submitting jobs to the JES queue, provide a valid job name (a maximum of seven characters following the // on the first JCL line), which defaults to the user ID that you are currently using. |
| | This job name is used for multiple submissions (for example, *jobname*A, *jobname*B, *jobname*C, and so on) in the JCL generated by the installation procedure. |
| *Override JOB name checking* | To provide your own JOB card information, including JOB name, enter *Y* and provide valid JOB card information in the *Enter Job Card information* field. The JOB card information that you enter will be used for each job that is submitted. |

**3.** If you used the same user ID for both installation and administration, skip to Step 6. Otherwise, continue with Step 4.

**4.** Press *Enter* to continue to the next panel.

```
IWay Software           Installation and Configuration        OS/390 and z/OS
Command ===>                                                                P5

                 Please read the following information carefully.

The installation userid and the administrator userid provided are different.
Therefore at the end of the installation process, which will run under the
installation userid, the ownership of the server files in the HFS file system
will be changed from userid IINSTAL  to userid IADMIN

(If IINSTAL  is not a super user or does not have the authority to perform
this change, the installation will fail.)

An installation PDS will also be created with install and runtime JCL members.
The install JCL will use the JCL previously provided. The runtime JCL (to be
submitted by IADMIN   userid) may require different JOB card information. If
so, please provide it below otherwise the previously entered JCL will be used.

Enter Job Card information (runtime JCL)   Override JOB name checking ===> N
===> //IINSTAL JOB (ACCT INFO),_____
===> //*_____
===> //*_____
Press Enter to continue, PF3 to return to previous menu
```

This panel is displayed only if you provided two different user IDs in the previous panel.

The installation process will change ownership of HFS server files from the installation ID (iinstal) to the administrator ID (iadmin). The installation ID must have authority to issue the chown command to make this change of ownership. This action is taken at the end of the installation process.

**5.** Complete the panel as directed in the following table.

| | |
|---|---|
| *Enter Job Card information* | To provide JOB card information for submitting the run-time jobs to the JES queue, provide a valid job name (a maximum of seven characters following the // on the first JCL line), which defaults to the user ID that you are currently using. |
| | This job name is used for multiple submissions (for example, *jobname*A, *jobname*B, *jobname*C, and so on) in the JCL generated by the installation procedure. |
| *Override JOB name checking* | To provide your own JOB card information, including JOB name, enter *Y* and provide valid JOB card information in the *Enter Job Card information* field. The JOB card information that you enter will be used for each run-time job that is created. |

**6.** Press *Enter* to continue to the next panel.

```
IWay Software            Installation and Configuration      OS/390 and z/OS
Command ===>                                                             P2
                              New Installation

Please enter the following information for Full Function Server
(blank any field for default)
 Input Media
    Volume serial number       ===> A5300U
    Volume unit type           ===> 3480
    Work unit type             ===> SYSDA
 Installation parameters
    HFS Base Directory         ===> /u/iadmin
    HFS APPROOT Directory      ===> /u/iadmin/ibi/apps
    Server System Userid       ===> ISERVER
    TCP Base Port              ===> 8100_
    Time Zone setting          ===> EST5EDT
 MVS Installation Libraries
    EDACONF Library            ===> IADMIN.SRV53.FFS.DATA
    EDACONF Library Unit       ===> SYSDA        Volume ===>
    EDAHOME Library            ===> IADMIN.SRV53.HOME.LOAD
    EDAHOME Library Unit       ===> SYSDA        Volume ===>

Press Enter to continue, PF3 to return to previous menu
```

Note that in the current panel (and in some later panels):

- If you are running ISETUP from qualifier.HOME.DATA, the panel will display default values for some fields.

- If you are running ISETUP from **any other library**, fields will not display default values.

In this and some later panels, you can see a field's default value (if one exists) by blanking out the field and pressing *Enter*.

**7.** Complete the panel as directed in the following table.

| **Input Media (installing from tape)** | |
| --- | --- |
| *Volume serial number* | Provide the volume serial number of the server media (for example, A5320U). The number is located on the tape supplied in you server package. |
| *Volume unit type* | Review the default value and change it if necessary. |
| *Work unit type* | Review the default value and change if necessary.<br><br>You can specify a UNIT= *type* value (for example, SYSDA), or you can direct work files to a specific volume serial number by specifying, in single quotation marks ('), 'SYSDA,VOL=SER=*volume*'. |
| **Input Media (installing from disk)** | |
| *Directory name of input* | Provide the name of the directory in which the installation files reside. |

| **Installation parameters** | |
| --- | --- |
| *HFS Base Directory* | This indicates where to install the server. The default value is the home directory of the user ID you are using to install the product. Change this value, if necessary, to a valid directory that has space for the installation. The installation procedure checks whether this directory exists and has enough space. If either test fails, you will receive a message indicating the failure and available options. |
| *HFS APPROOT Directory* | This indicates where application components will reside. The default value is based on the value specified for *HFS Base Directory*. To specify another location for application components, change the value for this field. |
| *Server System Userid* | This shows the default value, ISERVER. To change this value, see the requirements in *Step 2. Set Up User IDs* on page 4-6. |

| Installation parameters | |
|---|---|
| *TCP Base Port* | This indicates the first of four consecutive ports that must be available for the listeners and other internal needs. For example, if you choose port 8100, then ports 8100, 8101, 8102, and 8103 are used by the server. Ensure that you choose ports that are not currently being used. |
| *Time Zone setting* | This is a string representation of the time zone. It defaults to the current setting under Unix System Services, or to the value EST5EDT. For more information about time zone values, see the IBM *UNIX System Services Command Reference* and search for *TZ*. |

| MVS Installation Libraries | |
|---|---|
| *EDACONF Library* | This is the full data set name the installation procedure will use to allocate the EDACONF configuration library on MVS. If you are running from *qualifier*.HOME.DATA, this field will have the default value *qualifier.server_type*.DATA (where *server_type* is based on License key). If you used another name to unload the first data set, this field will be blank. On subsequent running of ISETUP, the previous value used will be displayed. Change the value as necessary. |
| *EDACONF Library Unit/Volume* | These show the values that the installation process will use to allocate the EDACONF load library on MVS. If necessary, you can change these to site specific values. |
| *EDAHOME Library* | This is the full data set name the installation procedure will use to allocate the EDAHOME load library on MVS. If you are running from *qualifier*.HOME.DATA, this field will have the default value *qualifier*.HOME.LOAD. If you used another name to unload the first data set, this field will be blank. On subsequent running of ISETUP, the previous value used will be displayed. Change the value as necessary. |
| *EDAHOME Library Unit/Volume* | These show the values that the installation process will use to allocate the EDAHOME load library on MVS. If necessary, you can change these to site specific values. |

8. Press *Enter*.

   Depending on your license key, the Data Adapter panel may open before the Demonstration Files panel. If the Data Adapter panel opens, continue with Step 9; otherwise, skip to Step 10.

9. The Data Adapter panel lists adapters that require the allocation of MVS libraries in IRUNJCL or environment variables in the EDAENV member.

   To select specific adapters:

   a. Type *Y* next to the required adapters and press *Enter*.

   b. Supply the requested information, which is described in *Step 3. Collect Required Information for Adapters* on page 4-14.

      After you have finished installing and configuring the server, you can use the Web Console to finish configuring these adapters, and to configure adapters that do not have MVS JCL requirements.

   c. Press *Enter*.

      The New Century Corporation Demonstration Files panel opens.

10. In the New Century Corporation Demonstration Files panel, type *Y* next to each desired language. If you do not want to install any New Century demo files, retain the default value of N next to all language choices.

11. Press *Enter*.

    The confirmation panel opens.

```
iWay Software              Installation and Configuration          OS/390 and z/OS
Command ===>                                                                    P4
                             New Installation

Please confirm the following information for Full Function Server
  Input Media
    Volume serial number      ===> A5300U     Unit type ===> 3480
    Work unit type            ===> SYSDA
  Installation parameters
    Installation userid       ===> IADMIN    Administrator userid ===> IADMIN
    HFS EDACONF Directory     ===> /u/iadmin/ibi/srv53/ffs
    HFS EDAHOME Directory     ===> /u/iadmin/ibi/srv53/home
    HFS APPROOT Directory     ===> /u/iadmin/ibi/apps
    Server System Userid      ===> ISERVER
    TCP Base Port             ===> 8100
    Time Zone setting         ===> EST5EDT
    EDACONF Library           ===> IADMIN.SRV53.FFS.DATA
    EDACONF Library Unit      ===> SYSDA     Volume ===>
    EDAHOME Library           ===> IADMIN.SRV53.HOME.LOAD
    EDAHOME Library Unit      ===> SYSDA     Volume ===>

Continue ? (N)o, (C)reate JCL only, (S)ubmit JCL  ===> N    (Enter N, C or S)
Press Enter to process, PF3 to return to previous menu
```

**12.** Ensure that all values on the Confirmation panel are correct, then select one of the following options:

- **N** to return to the initial screen so that you can change installation values.

- **C** to create JCL which you can submit at a later time. The JCL is placed in your *qualifier.servertype*.DATA configuration library.

- **S** to create JCL and submit the job immediately.

**13.** As the job is processed, in SDSF, check JESLOG for errors and return codes.

Following is a table of the jobs created. All members are created in the configuration library (EDACONF).

| ISETUPJ1 | Main JCL Job stream that is used to install the server. |
|----------|---------------------------------------------------------|
| ISOPTS1  | Options used to install the server.                     |

The following members all call procedure IRUNJCL, which is the main server JCL. If you need to change the server JCL, change member IRUNJCL.

| ISTART   | Starts the server. |
|----------|--------------------|
| ISTOP    | Stops the server. |
| ICLEAR   | Clears server resources after abnormal end. |
| ICLRDIR  | Clears superuser-owned directories from a previously run secure server. |
| ISAVEDIA | Creates a directory called sd*nnnnnn* and populates it with full diagnostic information. |
| ISHOW    | Shows current workspace status. |
| ITRCON   | Turns on dynamic tracing (server will be started if not already running). |
| ITRCOFF  | Turns off dynamic tracing (server will be started if not already running). |

The following members contain sample batch JCL, and are also created in the configuration library.

| CMRUN | JCL to run DataMigrator batch jobs. |
|-------|-------------------------------------|
| IBATCH | JCL to run batch request jobs. |

The following members contain sample started task JCL, and are also created in the configuration library.

| IWAYS | A started task that starts the server. |
|-------|-----------------------------------------|
| IWAYP | A started task that stops the server. |
| EDAPARMP | A parameter file used by IWAYP. |
| EDAENV | A parameter file used by IWAYS, IWAYP, ISTART, and ISTOP. |

The following table shows the HFS directory structures created during the installation process.

| /u/iadmin/ibi/srv53/tape | Contains HFS files from the input media. |
|--------------------------|------------------------------------------|
| /u/iadmin/ibi/srv53/install | Working directory for the installation process. Log and error files reside here. |
| /u/iadmin/ibi/apps | The installation creates *baseapp* and one or more sample application directories under this directory. |
| /u/iadmin/ibi/profiles | This is where the server profiles are created. |
| /u/iadmin/ibi/srv53/home | Server system directories are created under this directory. |
| `/u/iadmin/ibi/srv53/`*server_type*<br><br>where:<br><br>*server_type*<br><br>    Is one or more of the following:<br><br>    `ffs`   Full-Function Server<br>    `wfs`   WebFOCUS Reporting Server<br>    `dm`   DataMigrator Server<br>    `wfm`   WebFOCUS Maintain Server<br>    `cgw`   Communications Gateway | Configuration directories are created under this directory. The license key specified in the ISETUP procedure determines *server_type*. |

## Step 6. Test the Server Installation

To test the server installation:

1. Log on to TSO as iadmin.

2. Submit the ISTART JCL to start the server. This executes the IRUNJCL proc.

3. Check the job output for errors. Look for the EDAPRINT message:

   `Workspace initialization completed`

4. Start the Web Console by opening a browser pointed at the listener port of the server. The URL format is

   `http://host:port`

   where:

   *host*

   Is the name of the machine on which the server is installed.

   *port*

   Is one port higher than the port specified when installing the server. For example, if you specified port 8100 during installation, then use port 8101 to access the Web Console.

   The Web Console opens.

5. Click *Step 1* to run a sample report.

When you are finished using the server, you can use the Web Console to stop the server by selecting the Workspace link on the left and then choosing Stop.

If you experience problems at start up, examine the job output for more information.

# Step 7. Configure Server Security

**In this section:**

Configuring Security in All Environments

Configuring Security With eTrust CA-Top Secret

Configuring Security With eTrust CA-ACF2

Turning Security OFF

All installers must read *Configuring Security in All Environments*, regardless of the security product in use. If you use *e*Trust CA-Top Secret or *e*Trust CA-ACF2, you should also read the topic for that product.

## Configuring Security in All Environments

The server runs in one of the following security modes:

- **Security OFF.** This is the default unless security is configured.

- **Security ON.** All connecting users are authenticated against the security package (RACF, *e*Trust CA-ACF2, *e*Trust CA-Top Secret), and the data agents are impersonated according to the deployment mode to control access rights to data files and dbms objects.

To configure server security:

1. Log on to TSO using an ID with read access to the BPX.FILEATTR.APF facility class.

2. Using the name of the actual EDAHOME directory, change file attributes by entering the following TSO commands in ISPF Command Shell (option 6):

   ```
   OSHELL extattr +a /u/iadmin/ibi/srv53/home/bin/tscom300.out
   OSHELL extattr +a /u/iadmin/ibi/srv53/home/bin/tsqprx.out
   ```

3. Verify your changes by issuing the following command:

   ```
   OSHELL ls -E /u/iadmin/ibi/srv53/home/bin/tscom300.out
   OSHELL ls -E /u/iadmin/ibi/srv53/home/bin/tsqprx.out
   ```

   The extended attributes portion of the output should be a-s-.

4. The libraries allocated to STEPLIB in IRUNJCL must be APF-authorized. Any non-APF-authorized libraries must be allocated to the TASKLIB DDNAME.

5. Test server security by repeating the process described in *Step 6. Test the Server Installation* on page 4-31.

## Configuring Security With eTrust CA-Top Secret

If you use Computer Associates *e*Trust CA-Top Secret, follow these guidelines and refer to the security vendor's manual for implementing user-level security.

The TSS PERMIT command for BPX.FILEATTR.APF facility class access is:

```
TSS PER(user_acid) IBMFAC(BPX.FILEATTR.APF) ACC(READ)
```

This allows users to turn on the APF-authorized attribute for an HFS file. Please refer to *z/OS UNIX System Services Support* in the *eTrust CA-Top Secret Security Cookbook* for more information.

To use *e*Trust CA-Top Secret, perform the following steps:

1. Create a *e*Trust CA-Top Secret facility entry called IWAY for the server security module, \*PATHNAM.

   This is an example of a facility entry defining the server to *e*Trust CA-Top Secret:

   ```
   FACILITY DISPLAY
   INITPGM=*PATHNAM ID=9 TYPE=26
   ATTRIBUTES=IN-USE,ACTIVE,SHRPRF,ASUBM,TENV,NOABEND,MULTIUSER,NOXDEF
   ATTRIBUTES=LUMSG,STMSG,SIGN(M),NOPSEUDO,INSTDATA,NORNDPW,AUTHINIT
   ATTRIBUTES=NOPROMPT,MENU,NOAUDIT,RES,NOMRO,WARNPW,NOTSOC
   ATTRIBUTES=NOTRACE,NOLAB,NODORMPW,NONPWR,NOIMSXTND
   MODE=IMPL
   LOGGING=ACCESS,INIT,SMF,MSG,SEC9
   UIDACID=8 LOCKTIME=000 DEFACID=*NONE* KEY=8
   ```

   For more information, see *How to Define z/OS UNIX System Services Users* in Computer Associates' *eTrust CA-Top Secret Security for OS/390 and z/OS Cookbook*.

2. Within this entry, include *e*Trust CA-Top Secret parameters to establish the proper operating characteristics.

   The ISERVER and IADMIN ACIDs must have authority to the facility you have defined for the server and to the resources within the facility:

   ```
   TSS ADD(region_acid) MASTFAC(IWAY)
   ```
   <- defines the facility to CA-Top Secret

   ```
   TSS ADD(user_acid) FAC(IWAY)
   ```
   <- adds the facility to users requiring server access

3. Each user of the server must be defined to *e*Trust CA-Top Secret and given access to the appropriate system resources, including the facility you have defined for the server.

   Each user requires an OMVS segment and HFS directories.

The following is an example of a facility entry that defines the server to *e*Trust CA-Top Secret:

```
FACILITY DISPLAY
INITPGM=*PATHNAM ID=9 TYPE=26
ATTRIBUTES=IN-USE,ACTIVE,SHRPRF,ASUBM,TENV,NOABEND,MULTIUSER,NOXDEF
ATTRIBUTES=LUMSG,STMSG,SIGN(M),NOPSEUDO,INSTDATA,NORNDPW,AUTHINIT
ATTRIBUTES=NOPROMPT,MENU,NOAUDIT,RES,NOMRO,WARNPW,NOTSOC
ATTRIBUTES=NOTRACE,NOLAB,NODORMPW,NONPWR,NOIMSXTND
MODE=IMPL
LOGGING=ACCESS,INIT,SMF,MSG,SEC9
UIDACID=8 LOCKTIME=000 DEFACID=*NONE* KEY=8
```

Following is an example of an ISERVER ACID definition for *e*Trust CA-Top Secret. Note that:

- UID is zero.

- The facility of the server is set to IWAY as an example; it can differ at your site.

- The SOURCE = INTRDR setting prevents this ACID from logging on.

```
TSS LIST(ISERVER) DATA(ALL,PROFILE)
ACCESSORID = ISERVER          NAME = IWAY ID
TYPE       = USER             SIZE = 512 BYTES
SOURCE     = INTRDR
DEPT ACID  = IWAY             DEPARTMENT = IWAY DEPT
DIV ACID   = IWAYDIV          DIVISION = IWAYDIV
GROUPS     = IWAYGRP
DFLTGRP    = IWAYGRP
----------- SEGMENT OMVS
HOME       = /
OMVSPGM    = /bin/sh
UID        = 0000000000
```

Following is an example of an IADMIN ACID definition for *e*Trust CA-Top Secret. Note that UID is *not* zero. The facility of the server is set to IWAY as an example; it can differ at your site.

```
TSS LIST(IADMIN) DATA(ALL,PROFILE)
ACCESSORID = IADMIN           NAME = IWAY ADMIN ID
TYPE       = USER             SIZE = 512 BYTES
FACILITY   = TSO
FACILITY   = BATCH
DEPT ACID  = IWAY             DEPARTMENT = IWAY DEPT
DIV ACID   = IWAYDIV          DIVISION = IWAY DIVISION
GROUPS     = IWAYGRP
DFLTGRP    = IWAYGRP
----------- SEGMENT OMVS
HOME       = /u/iadmin
OMVSPGM    = /bin/sh
UID        = 0000000008
```

**Important:** If you are operating with *e*Trust CA-Top Secret HFSSEC=ON, you must also do the following:

1. In the definitions for IADMIN and ISERVER ACIDs (shown in the previous examples), set up the following security authorization:

```
XA HFSSEC = /u.iadmin
ACCESS = ALL
```

2. *e*Trust CA-Top Secret provides superuser granularity with separate definitions for the following resource names:

```
SUPERUSER.FILESYS.FILE (CONTROL access)
SUPERUSER.FILESYS.CHOWN
SUPERUSER.FILESYS.MOUNT
SUPERUSER.FILESYS.PFSCTL
SUPERUSER.FILESYS.VREGISTER
SUPERUSER.IPC.RMID
SUPERUSER.PROCESS.GETPSENT
SUPERUSER.PROCESS.KILL
SUPERUSER.PROCESS.PTRACE
SUPERUSER.SETPRIORITY
```

Ensure that the server system ID, ISERVER, which has UID=0, is granted full access to all these resources. Grant access to the superuser-listed resources by means of the UNIXPRIV resource class. For example:

```
TSS ADD(owning_acid) UNIXPRIV(SUPERUSE)
TSS PER(acid) UNIXPRIV(SUPERUSER.FILESYS.FILE) ACC(CONTROL)
```

For details see the *Superuser Granularity* topic in Computer Associates' *eTrust CA-Top Secret Security for OS/390 and z/OS Cookbook*.

After you create a new user ID or change a user's UID or GID, you must issue the following command to reflect the updates in Top-Secret's in-storage tables:

```
TSS MOD(OMVSTABS)
```

The following commands can also be used to list all UIDs, GIDs and their owners:

```
TSS WHOOWNS UID(*)
TSS WHOOWNS GID(*)
```

This information can be used for diagnostic purposes.

For more information, see Computer Associates' *eTrust CA-Top Secret Security for OS/390 and z/OS Cookbook*.

## Configuring Security With eTrust CA-ACF2

If you are installing the server to run with *e*Trust CA-ACF2 security package, please be advised that you may have to apply fix number QO53249 for *e*Trust CA-ACF2 6.4 or QO51462 for *e*Trust CA-ACF2 6.5. For more information about these fixes, contact Computer Associates.

The MVS address space must have access to those system resources that are required by each user. *e*Trust CA-ACF2 will check for job-level access as well as user-level access. Therefore, the job-level user ID must have access to all data sets. For example, this can be done by setting the MAINT attribute on the *e*Trust CA-ACF2 record for the job-level user ID. Refer to *e*Trust CA-ACF2 technical reference guides for further information.

The job-level user ID of the server should have the Multiple User, Single Address Space (MUSSAS) attribute set to on. If the server is run as a started task, you must enable the started task attribute for the job-level user ID. You must also use the Web Console to define this user ID with OPER authority. For more information, see the *iWay Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390, and z/OS* manual.

Each user ID must be defined to *e*Trust CA-ACF2.

To create the necessary logon IDs and profile records, issue the following commands:

```
ACF
SET LID
INSERT OMVS GROUP(OMVSGRP) STC UID(0)
INSERT INETD GROUP(OMVSGRP) STC UID(0) HOME(/) OMVSPGM(/bin/sh)
INSERT TCPIP GROUP(OMVSGRP) STC UID(0)
```

For more information, see the following sections in Computer Associates' *eTrust CA-ACF2 Security for z/OS and OS/390 Cookbook*:

- *Defining USS Users*

- *Superusers*

- *HTTP Server*

- *Installation Steps*

# Turning Security OFF

In the event that security must be removed from the server, perform the following steps:

1. In the *qualifier.servertype*.DATA(IRUNJCL) JCL, add the following setting under the EDAENV DDNAME:

```
EDAEXTSEC=OFF
```

2. Submit the JCL for

   `qualifier.servertype.DATA(ICLRDIR)`

   where:

   `server_type` is one of the following:

   `ffs`  Full-Function Server
   `wfs`  WebFOCUS Reporting Server
   `dm`   DataMigrator Server
   `wfm`  WebFOCUS Maintain Server
   `cgw`  Communications Gateway

   This will clean any remaining files from when the server was running with security on.

3. Submit `qualifier.servertype.DATA(ISTART)`. The server will now be running with security turned off.

# Server Startup and Use

**In this section:**

Starting and Stopping the Server Using a Batch Job

Starting and Stopping the Server Using a Started Task

Server Startup and Operation Using MVS Operator MODIFY Commands

Batch Execution

**Example:**

Sample IWAYS Started Task

Sample IWAYP Started Task

This section provides information on operation and use of the server. Additional information on the server and how to configure adapters is available in the Web Console help. The Web Console help is also available as the *iWay Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

## Starting and Stopping the Server Using a Batch Job

To start the server, submit the ISTART member of the MVS configuration library (*qualifier.servertype*.DATA) for your server.

To stop a server, submit the ISTOP member of the MVS configuration library or use the Web Console. For information about using the Web Console, see the *iWay Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

## Starting and Stopping the Server Using a Started Task

ISETUP creates started task JCL to start and stop the server. These started task members of the MVS configuration library are:

- **IWAYS,** which starts the server.
- **IWAYP,** which stops the server.

In order to execute the started tasks, you must:

- **Copy them** into SYS1.PROCLIB or any other JES2 Proclib data set.
- **Satisfy security requirements.** All external security-related permissions must exist for both the datasets and the started tasks. In order to issue the started tasks, the user must satisfy both of the following requirements:
  - Have at least OPERATOR authority defined within the Web Console.
  - Be in the same security group, or associated with the same security group, as the owner of the server directory structure (for example, as iadmin).

To issue the started tasks from the MVS console, issue the following command:

```
S IWAYS
S IWAYP
```

You can add the started tasks to any automation product that you run.

### Example: Sample IWAYS Started Task

This is an example of iWAYS, the started task that starts the server:

```
//* This started task JCL is used to start the server.
//*
//* Generated on 28 Apr 2004 at 12:34:56
//* From release (Full) 530 (Gen)  06.05
//*
//IWAYS       PROC
//TSCOM300    EXEC PGM=TSCOM300
//STEPLIB     DD   DSN=IADMIN.SRV53.HOME.DATA,DISP=SHR
//EDAPRINT    DD   SYSOUT=A
//SYSPRINT    DD   SYSOUT=A
//SYSOUT      DD   SYSOUT=A
//EDAPARM     DD   DUMMY
//EDAENV      DD   DSN=IADMIN.SRV53.DATA(EDAENV),DISP=SHR
```

**Example:** **Sample IWAYP Started Task**

This is an example of iWAYP, the started task that stops the server:

```
//* This started task JCL is used to stop the server.
//*
//* Generated on 28 Apr 2004 at 12:34:56
//* From release (Full) 530 (Gen)  06.05
//*
//IWAYP       PROC
//TSCOM300    EXEC PGM=TSCOM300
//STEPLIB     DD   DSN=IADMIN.SRV53.HOME.DATA,DISP=SHR
//EDAPRINT    DD   SYSOUT=A
//SYSPRINT    DD   SYSOUT=A
//SYSOUT      DD   SYSOUT=A
//EDAPARM     DD   DSN=IADMIN.SRV53.DATA(EDAPARMP),DISP=SHR
//EDAENV      DD   DSN=IADMIN.SRV53.DATA(EDAENV),DISP=SHR
```

## Server Startup and Operation Using MVS Operator MODIFY Commands

On MVS, you can start the server using MODIFY commands either from the MVS Console or SDSF. You can use MODIFY commands to pass options to an already running job:

Use MVS Operator MODIFY commands in the following format:

```
F jobname, parameters
```

For instance:

```
F IWAY532,-SHOW
```

**Note:** If the server job is cancelled or it abends, submit the ICLEAR job in the configuration data set before restarting the server.

## Batch Execution

The following sample JCL allows you to access data via an individual access agent, TSCOM3 batch execution. This JCL can be found in member IBATCH of the MVS configuration library.

```
//TSCOM300    EXEC PGM=TSCOM300
//STEPLIB     DD   DSN=IADMIN.SRV53.HOME.LOAD,DISP=SHR
//EDAPRINT    DD   SYSOUT=*
//SYSPRINT    DD   SYSOUT=*
//SYSOUT      DD   SYSOUT=*
//INPUT       DD   *
Put your input here in uppercase eg EX FEXNAME or SQL or TABLE etc
//OUTPUT      DD   SYSOUT=*
//EDAPARM     DD   *
-t
//EDAENV      DD   *
TZ=EST5EDT
EDACONF=/u/iadmin/ibi/srv53/ffs
PATH=/bin
SHELL=/bin/sh
TRMIN=//DD:INPUT
TRMOUT=//DD:OUTPUT
//*EDACURDIR=/u/iadmin/ibi/srv53/ffs/edatemp
```

**Note:**

- The INPUT and OUTPUT DDNAMEs are arbitrary and can be any valid DDNAME except for TRMIN and TRMOUT. You can also allocate the INPUT and/or OUTPUT DDNAMEs to a data set if so desired.

- If the keyword EDACURDIR is not specified, then the output will be placed in the home directory of the user ID that is executing the request.

- The input code must always be UPPERCASE (except for user data).

- Any parameters used in EDAPARM must start in Column 1 or the parameter will be ignored. Also, only one parameter can be used per line as shown below:

```
//EDAPARM
-t
-traceon
/*
```

# DB2 Security Exit Configuration

**Example:**

Changing DSN3SATH for RACF (Version 6.1) and eTrust CA-Top Secret Sites

Changing DSN3SATH for eTrust CA-ACF2 Sites

Modifying the Link JCL for DSN3SATH

Customize the DB2 security exit to allow the Data Adapter for DB2 to run with user-level security enabled. If you do so, users will connect to DB2 with the authorization of the user ID with which they logged on to the server. The server must also be running with security turned on.

If you do not customize the DB2 security exit, all users will be assigned the connect ID to DB2 that is associated with the region, job submitter, or started task.

The changes that must be made to the IBM DB2 signon exit, DSN3SATH, differ for RACF and *e*Trust CA-Top Secret sites and *e*Trust CA-ACF2 sites.

- For an example of the changes that must be made in DSN3SATH for RACF and *e*Trust CA-Top Secret sites, see *Changing DSN3SATH for RACF (Version 6.1) and eTrust CA-Top Secret Sites* on page 4-42.

- For an example of the changes that must be made in DSN3SATH for *e*Trust CA-ACF2 sites, see *Changing DSN3SATH for eTrust CA-ACF2 Sites* on page 4-44.

The arrows shown in the examples indicate the lines containing the recommended modification of DSN3SATH, which calls the module FOCDSN3 the supplied exit.

After you finish the edits, assemble the exit into an object file. This object file is input to the link JCL found in *Modifying the Link JCL for DSN3SATH* on page 4-45.

**Note:**

- The positioning of these lines is appropriate, assuming that no other changes or additions have already been made to DSN3SATH. If any changes have been made, you should decide on the most appropriate location for this call to FOCDSN3.

- FOCDSN3 is used to set the proper primary (individual user ID) authorization.

- Another program, FOCDSN4, is used to set the proper secondary (group ID) authorization for RACF and *e*Trust CA-Top Secret. FOCDSN4 is not needed with *e*Trust CA-ACF2; the secondary authorization ID(s) will be set correctly without it.

## Example:  Changing DSN3SATH for RACF (Version 6.1) and *e*Trust CA-Top Secret Sites

```
SATH001   DS    0H
          USING WORKAREA,R11      ESTABLISH DATA AREA ADDRESS ABILITY
          ST    R2,FREMFLAG       SAVE FREEMAIN INDICATOR
          XC    SAVEAREA(72),SAVEAREA CLEAR REGISTER SAVE AREA
          LA    R15,SAVEAREA      GET ADDRESS OF CSECT'S SAVE AREA
          ST    R13,FOUR(,R15)    CHAIN THE SAVE AREA BACK POINTER
          ST    R15,EIGHT(,R13)   CHAIN SAVEAREA FORWARD
          LR    R13,R15           ADDRESS OF CSECT'S SAVE AREA SPACE
          XC    EXPLARC,EXPLARC   INIT RETURN CODE TO NORMAL RETURN
          XC    SECCOUNT,SECCOUNT CLEAR GROUP NAME COUNTER FIELD
          L     R8,PSAAOLD-PSA    GET CURRENT ASCB ADDRESS AND
                                  USING ASCB,R8 SET MAPPING
                                  ADDRESS ABILITY

          EJECT
**********SECTION 1:  DETERMINE THE PRIMARY AUTHORIZATION ID  *********
*                                                                     *
*    IF THE INPUT AUTHID IS NULL OR BLANKS, CHANGE IT TO THE AUTHID   *
*    IN EITHER THE JCT OR THE FIELD POINTED TO BY ASCBJBNS.           *
*                                                                     *
*    THE CODE IN THIS SECTION IS AN ASSEMBLER LANGUAGE VERSION OF     *
*    THE DEFAULT IDENTIFY AUTHORIZATION EXIT. IT IS EXECUTED ONLY     *
*    IF THE FIELD ASXBUSER IS NULL UPON RETURN FROM THE RACROUTE      *
*    SERVICE. FOR EXAMPLE, IT DETERMINES THE PRIMARY AUTH ID FOR      *
*    ENVIRONMENTS WITH NO SECURITY SYSTEM INSTALLED AND ACTIVE.       *
*                                                                     *
**********************************************************************
          SPACE
--->      LA    R1,AIDLPRIM       LOAD PARM REG1
--->      CALL  FOCDSN3           GO GET EXIT
          CLI   AIDLPRIM,BLANK    IS THE INPUT PRIMARY AUTHID NULL
          BH    SATH020           SKIP IF A PRIMARY AUTH ID EXISTS
          L     R7,ASCBCSCB       GET CSCB ADDRESS
          CLI   CHTRKID-CHAIN(R7),CHTSID IS IT TSO FOREGROUND ADDR SPACE
          BNE   SATH010           BRANCH IF NOT
          L     R7,ASCBJBNS       GET ADDRESS OF LOGON ID
          MVC   AIDLPRIM,0(R7)    MAKE IT THE PRIMARY AUTH ID
          B     SATH019           TO END OF THIS ROUTINE
SATH010   DS    0H                NOT TSO, BUT BATCH OR STC SPACE
          L     R6,PSATOLD-PSA    CURRENT TCB ADDRESS
          L     R7,TCBJSCB-TCB(,R6) CURRENT JSCB ADDRESS
          L     R5,JSCBJCT-IEZJSCB(,R7) CURRENT JCT ADDRESS
          LA    R5,X'10'(,R5)     ADJUST FOR CORRECT DSECT MAPPING
          CLI   JCTUSER-INJMJCT(R5),X'4E' IF JCTUSER PLUS SIGN OR LESS
          BNH   SATH019           THEN LEAVE AIDLPRIM BLANK KEB0026
          MVC   AIDLPRIM(7),JCTUSER-INJMJCT(R5) COPY JOB USER ID
          MVI   AIDLPRIM+7,BLANK  ASSURE BLANK PADDING
```

```
SATH019  DS    0H                  END OF ROUTINE
         EJECT
*****SECTION 2:  DETERMINE THE LIST OF SECONDARY AUTHORIZATION IDS*****
*                                                                     *
*    THIS SECTION IS WRITTEN SPECIFICALLY FOR THE RACF ENVIRONMENT.   *
*    IT CAN/SHOULD BE REPLACED FOR OTHER SECURITY PRODUCTS.           *
*                                                                     *
***********************************************************************
*                                                                     *
*    IF RACF IS ACTIVE AND THE LIST OF GROUPS OPTION IS ALSO ACTIVE,  *
*    USE THE CGRP AREA TO GET THE CONNECTED GROUP NAMES.              *
*    COPY THEM TO THE SECONDARY ID LIST IN THE AIDL.                  *
*                                                                     *
***********************************************************************
         SPACE
         CLI   AIDLPRIM,BLANK     IS THE INPUT PRIMARY AUTHID NULL
         BNH   SATH090            EXIT IF PRIMARY AUTH ID NULL
SATH020  DS    0H                 BRANCH TO HERE IF PRIMARY EXISTS

*****OPTIONAL CHANGE @CHAR7:  FALLBACK TO SEVEN CHAR PRIMARY AUTHID****
*                                                                     *
*    IF YOUR INSTALLATION REQUIRES ONLY SEVEN CHARACTER PRIMARY       *
*    AUTHORIZATION IDS (POSSIBLY TRUNCATED) DUE TO DB2 PRIVILEGES     *
*    GRANTED TO TRUNCATED AUTHORIZATION IDS, THEN YOU MUST BLANK OUT  *
*    COLUMN 1 OF THE ASSEMBLER STATEMENT IMMEDIATELY FOLLOWING THIS   *
*    BLOCK COMMENT. THEN ASSEMBLE THIS PROGRAM AND LINK-EDIT IT INTO  *
*    THE APPROPRIATE DB2 LOAD LIBRARY AS EXPLAINED IN AN APPENDIX     *
*    OF "THE DB2 ADMINISTRATION GUIDE".                               *
*                                                                     *
*    OTHERWISE, YOU NEED DO NOTHING.                                  *
*                                                          @KYD0271*
***********************************************************************
*        MVI   AIDLPRIM+7,BLANK   BLANK OUT EIGHTH CHARACTER   @CHAR7
         SPACE
         L     R5,CVTPTR          ADDRESS MVS CVT
         L     R7,CVTRAC-CVT(,R5) RACF CVT ADDRESS
         LTR   R7,R7              IF RACF CVT ADDRESS ZERO,
         BZ    SATH049            RACF IS NOT EVEN INSTALLED
         USING RCVT,R7            SET BASE FOR RACF CVT
         TM    RCVTSTAT,RCVTRNA   IS RACF ACTIVE
         BO    SATH049            SKIP AROUND IF NOT
         SPACE 1
*   RACF IS ACTIVE ON THIS MVS
         USING ACEE,R6            ESTABLISH BASE FOR ACEE     @KYL0108
         ICM   R6,B'1111',AIDLACEE CALLER PASSED ACEE ADDRESS? @KYL0108
         BZ    SATH024            NO, USE ADDRESS SPACE ACEE  @KYL0108
         CLC   ACEEACEE,EYEACEE   IS IT REALLY AN ACEE?       @KYL0108
         BE    SATH027            YES, PROCEED NORMALLY       @KYL0108
         SPACE 1
```

```
        SATH024  DS    0H                    USE ADDRESS SPACE ACEE    @KYL0108
                 L     R6,ASCBASXB       GET ADDRESS SPACE EXTENSION BLOCK
                 L     R6,ASXBSENV-ASXB(,R6)  GET ACEE ADDRESS
        --->     CALL  FOCDSN4               GO GET EXIT (4=GROUP AUTH)
                 LTR   R6,R6                 DOES AN ACEE EXIST? IF NOT,
                 BZ    SATH049               SKIP AROUND CONNECTED GROUP NAME
                 CLC   ACEEACEE,EYEACEE      DOES IT LOOK LIKE AN ACEE?
                 BNE   SATH049               NO, THEN CAN'T DO GROUPS
                 DROP  R8                    DROP ASCB BASE REG         @TU25003
                 SPACE 1
        SATH027  DS    0H                    CHECK LIST OF GROUPS OPTION @KYL0108
                 TM    RCVTOPTX,RCVTLGRP     IS LIST OF GROUPS CHECKING ACTIVE
                 BZ    SATH040               SKIP TO SINGLE GROUP COPY IF NOT
                 DROP  R7                    DROP RCVT BASE REG         @TU25003
                 SPACE 1
        *   RACF LIST OF GROUPS OPTION IS ACTIVE
```

**Example:** **Changing DSN3SATH for *eTrust* CA-ACF2 Sites**

```
        **************************************************************
        *        PRIMARY AUTHORIZATION ID                           *
        **************************************************************
        *
        -->      LA    R1,AIDLPRIM           POINT TO AUTH FIELD
        -->      CALL  FOCDSN3               CALL TASK-LEVEL-EXIT
                 CLI   AIDLPRIM,C' '         PRIMARY AUTHID THERE?
                 BH    PRIMTSO               ..YES, EVERYTHING OK HERE
                 L     R3,PSAAOLD-PSA(0)     CURRENT ASCB ADDRESS
```

**Example:** **Modifying the Link JCL for DSN3SATH**

This is sample link JCL for the IBM exit DSN3SATH. Modify the JCL to link the modules into the DB2 security exit as follows.

```
//LKED   EXEC PGM=IEWL,PARM='LIST,XREF,LET,RENT,AMODE=31'
//OBJECT     DD DSN=db2pref.SDSNSAMP.OBJ,DISP=SHR <--OUTPUT OF ASSEMBLE
STEP
//EDAMOD     DD DSN=qualifier.HOME.LOAD,DISP=SHR
//SYSLMOD    DD DSN=db2pref.DSNEXIT,DISP=SHR
//SYSPRINT  DD SYSOUT=*
//SYSUT1     DD UNIT=SYSDA,SPACE=(100,(50,50))
//SYSLIN     DD *
  INCLUDE OBJECT
  INCLUDE EDAMOD(FOCDSN3)
  INCLUDE EDAMOD(FOCDSN4)       <---OMIT FOR eTrust CA-ACF2
          ENTRY DSN3@ATH
  NAME DSN3@ATH(R)
/*
```

where:

*db2pref*

Is the prefix for the DB2 data sets.

*qualifier*

Is the high-level qualifier for the data sets.

Once this job finishes successfully, you must recycle the DB2 subsystem in order for the changes to take effect.

# Adding a Configuration Instance

To add a configuration instance, perform the following steps.

**Note:** Adding a configuration instance allows you to run different server configuration instances using the same server binaries. For example, if you installed using a Full Function Server license code, you can use a WebFOCUS license to add a second configuration for a WebFOCUS Reporting Server. You can also add up to nine additional servers of the same type.

**1.** Execute ISETUP again. You should have a *qualifier*.HOME.DATA PDS unloaded from the installation tape. Use option 6 in ISPF to execute the ISETUP member of this PDS.

   **Note:** If this PDS is not available, run an IEBCOPY job to allocate and unload it from the installation tape.

**2.** Complete the first Installation and Configuration panel as follows:

| | |
|---|---|
| *Enter selection* | Choose option 2, *Add Additional Configuration Instance*. |
| *Enter License Key* | Enter the 10-digit License Key that was provided with the software. |
| *Input source* | This is ignored for option 2. |
| *Installation Userid* | Shows the current logon ID. It cannot be changed. |
| *Administration Userid* | Initially, this field shows the same ID as the installation user ID.<br><br>If the installation user ID is a superuser (UID=0), you must specify a non-superuser ID to administer the server. Specify this ID here. |
| *Enter Job Card information* | To provide JOB card information for submitting jobs to the JES queue, provide a valid job name (a maximum of seven characters following the // on the first JCL line), which defaults to the user ID that you are currently using.<br><br>This job name is used for multiple submissions (for example, *jobname*A, *jobname*B, *jobname*C, and so on) in the JCL generated by the installation procedure. |
| *Override JOB name checking* | To provide your own JOB card information, including JOB name, enter *Y* and provide valid JOB card information in the *Enter Job Card information* field. The JOB card information that you enter will be used for each job that is submitted. |

**3.** If you used the same user ID for both installation and administration, skip to Step 6. Otherwise, continue with Step 4.

**4.** Press *Enter* to continue to the next panel.

This panel is displayed only if you provided two different user IDs in the previous panel.

The installation process will change ownership of HFS server files from the installation ID (iinstal) to the administrator ID (iadmin). The installation ID must have authority to issue the chown command to make this change of ownership. This action is taken at the end of the installation process.

**5.** Complete the panel as directed in the following table.

| | |
|---|---|
| *Enter Job Card information* | To provide JOB card information for submitting the run-time jobs to the JES queue, provide a valid job name (a maximum of seven characters following the // on the first JCL line), which defaults to the user ID that you are currently using. |
| | This job name is used for multiple submissions (for example, *jobname*A, *jobname*B, *jobname*C, and so on) in the JCL generated by the installation procedure. |
| *Override JOB name checking* | To provide your own JOB card information, including JOB name, enter *Y* and provide valid JOB card information in the *Enter Job Card information* field. The JOB card information that you enter will be used for each run-time job that is created. |

**6.** Press *Enter* to continue to the next panel, and enter the following parameter.

| | |
|---|---|
| *HFS Base Directory* | This indicates where to install the configuration (EDACONF) and where the binaries (EDAHOME) are installed. The installation procedure checks whether this directory exists and if a server is already installed. If either test fails, you receive a message indicating the failure and available options. |

**7.** Press *Enter* to continue to the next panel, and complete the panel as follows.

| **Configuration Parameters** | |
|---|---|
| *HFS APPROOT Directory* | This indicates where application components will reside for the configuration. The default value is based on the value specified for *HFS Base Directory* on the previous panel. To specify another location for application components, change the value for this field. |
| *EDACONF suffix* | You are prompted for this field *only* if you are adding a configuration for a server type that has already been configured. |
| | Enter a digit between 1 and 9. This will be added to the server type in the directory name and library name to distinguish it from other configuration instances. |

| Server System Userid | This shows the default value, ISERVER. To change this value, see the requirements in *Step 2. Set Up User IDs* on page 4-6. |
|---|---|
| TCP Base Port | This indicates the first of four consecutive ports that must be available for the listeners and other internal needs. For example, if you choose port 8100, then ports 8100, 8101, 8102, and 8103 are used by the server. Ensure that you choose ports that are not currently used by another configuration or process. |
| Time Zone setting | This is a string representation of the time zone. It defaults to the current setting under Unix System Services, or to the value EST5EDT. For more information about time zone values, see the IBM *UNIX System Services Command Reference* and search for *TZ*. |

Do not change the values of EDAHOME Library or, if displayed, Base EDACONF Library, unless you are sure they do not reflect the correct values.

| **MVS Installation Libraries** | |
|---|---|
| EDACONF Library | This is the full data set name the installation procedure will use to allocate the EDACONF configuration library on MVS. If you are running from *qualifier*.HOME.DATA, this field will have the default value *qualifier.server_type*.DATA (where *server_type* is based on License key). |
| | If you are adding a configuration for a server type that has already been configured, the default value will reflect the EDACONF suffix value. |
| | If you used another name to unload the first data set, this field will be blank. |
| | On subsequent running of ISETUP, the previous value used will be displayed. Change the value as necessary. |

**8.** Press *Enter*.

Depending on your license key, the Data Adapter panel may open before the Demonstration Files panel. If the Data Adapter panel opens, continue with Step 9; otherwise, skip to Step 10.

9. The Data Adapter panel lists adapters that require the allocation of MVS libraries in IRUNJCL or environment variables in the EDAENV member. To select specific adapters:

   a. Type *Y* next to the required adapters and press *Enter*.

   b. Supply the requested information, which is described in *Step 3. Collect Required Information for Adapters* on page 4-14.

      After you have finished installing and configuring the server, you can use the Web Console to finish configuring these adapters, and to configure adapters that do not have MVS JCL requirements.

   c. Press *Enter*.

      The New Century Corporation Demonstration Files panel opens.

10. In the New Century Corporation Demonstration Files panel, type *Y* next to each desired language. If you do not want to install any New Century demo files, retain the default value of N next to all language choices.

11. Ensure that all values on the Confirmation panel are correct, then select one of the following options:

    • **N** to return to the initial screen so that you can change installation values.

    • **C** to create JCL which you can submit at a later time. The JCL is placed in your configuration library.

    • **S** to create JCL and submit the job immediately.

12. As the job is processed, in SDSF, check JESLOG for errors and return codes.

    Following is a table of the jobs created. All members are created in the configuration library (EDACONF).

    | ISETUPJ2 | Main JCL Job stream that is used to install the server. |
    |----------|--------------------------------------------------------|
    | ISOPTS2  | Options used to install the server.                    |

    The following members all call procedure IRUNJCL, which is the main server JCL. If you need to change the server JCL, change member IRUNJCL.

    | ISTART | Starts the server. |
    |--------|--------------------|
    | ISTOP  | Stops the server. |
    | ICLEAR | Clears server resources after abnormal end. |
    | ICLRDIR | Clears superuser-owned directories from a previously run secure server. |

| ISAVEDIA | Creates a directory called sd*nnnnnn* and populates it with full diagnostic information. |
|----------|------------------------------------------------------------------------------------------|
| ISHOW    | Shows current workspace status. |
| ITRCON   | Turns on dynamic tracing (server will be started if not already running). |
| ITRCOFF  | Turns off dynamic tracing (server will be started if not already running). |

The following members contain sample batch JCL, and are also created in the configuration library.

| CMRUN  | JCL to run DataMigrator batch jobs. |
|--------|-------------------------------------|
| IBATCH | JCL to run batch request jobs. |

The following members contain sample started task JCL, and are also created in the configuration library.

| IWAYS    | A started task that starts the server. |
|----------|----------------------------------------|
| IWAYP    | A started task that stops the server. |
| EDAPARMP | A parameter file used by IWAYP. |
| EDAENV   | A parameter file used by both IWAYS and IWAYP. |

The following table shows the HFS directory structures created during the installation process.

| /u/iadmin/ibi/srv53/tape | Contains HFS files from the input media. |
|--------------------------|------------------------------------------|
| /u/iadmin/ibi/srv53/install | Working directory for the installation process. Log and error files reside here. |
| /u/iadmin/ibi/apps | The installation creates *baseapp* and one or more sample application directories under this directory. |
| /u/iadmin/ibi/profiles | This is where the server profiles are created. |
| /u/iadmin/ibi/srv53/home | Server system directories are created under this directory. |

| `/u/iadmin/ibi/srv53/`*`server_type`*<br><br>where:<br><br>*`server_type`*<br><br>    Is one or more of the following:<br><br>    `ffs`  Full-Function Server<br>    `wfs`  WebFOCUS Reporting Server<br>    `dm`    DataMigrator Server<br>    `wfm`  WebFOCUS Maintain Server<br>    `cgw` Communications Gateway | Configuration directories are created under this directory. The license key specified in the ISETUP procedure determines *server_type*. |

# Upgrading Your Server Release

**In this section:**

Step 1. Copy the Installation Software From Tape or FTP

Step 2. Run ISETUP

Step 3. Test the Server Installation

Step 4. Reconfigure Server Security

Step 5. Reconfigure Adapters

Upgrading a server release requires some steps similar to installing a new release, but is a briefer process.

## Step 1. Copy the Installation Software From Tape or FTP

**In this section:**

Unloading From Tape

Copying From FTP/Disk

There are two ways to unload the installation media:

- **From Tape.** The software is provided on a cartridge in 3480 or 3490 format with both MVS PDSs and HFS tar files. You must unload the installation data set from the tape before you can run the installation as explained below in *Unloading From Tape* on page 4-53. This is how most installations are performed.

- **From FTP/Disk.** The software can be downloaded from a special FTP site and includes both an MVS data set and HFS files. You must allocate space and ensure that the MVS data set and HFS files are in the appropriate locations as explained below in *Copying From FTP/Disk* on page 4-54. You must contact your Information Builders representative if you wish to use this option.

## Unloading From Tape

The software is provided on a cartridge in 3480 or 3490 format with both MVS PDSs and HFS tar files. Perform the following to unload the installation data set from the tape:

1. Log on to TSO with the iadmin user ID. This user ID must have an OMVS segment defined and access to the HFS directory where the product will be installed.

2. Run an IEBCOPY job to allocate and unload the *qualifier*.HOME.DATA data set. This PDS contains the members needed for the actual installation.

The following is sample JCL for overwriting an existing *qualifier*.HOME.DATA:

```
//IEBCOPY  EXEC PGM=IEBCOPY,REGION=0M
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD UNIT=workunit,SPACE=(CYL,(5,1))
//OUT1     DD DISP=SHR,
//         DSN=qualifier.HOME.DATA
//IN1      DD DISP=(OLD,PASS),
//            DSN=HOME.DATA,
//            UNIT=cart,
//            VOL=(,RETAIN,,SER=volser),
//            LABEL=(1,SL)
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
  COPY INDD=IN1,OUTDD=OUT1
```

where:

*workunit*

Is the unit for the work data set.

*qualifier*

Is the high-level qualifier for HOME.DATA and for all other MVS data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server (for example, IADMIN.SRV53). However, you can use any site-specific value.

**Note:** Using a low-level qualifier such as HOME.DATA is recommended, but any site specific value can be used.

*cart*

Is the unit type of the tape drive. Common names include 3480, TAPE, or 3490. Change as needed.

*volser*

Is the value shown on the media label.

After this job has run, *qualifier*.HOME.DATA is allocated, cataloged, and populated with the members needed to continue the product installation.

Proceed to

## Copying From FTP/Disk

This section only applies when installing from FTP/Disk. You must contact your Information Builders representative before attempting this.

1. Log on to TSO with the iadmin user ID. This user ID must have an OMVS segment defined and access to the HFS directory where the product will be installed.

2. Allocate a temporary sequential data set with a name such as the following:

   `qualifier.ISERVER.DATA`

   and the following attributes:

   `LRECL(80),RECFM(F,B),BLKSIZE(3120),SPACE=(TRK,(5,5))`

   **Note:** Substitute the name you use for *qualifier*.ISERVER.DATA in the steps below.

3. Create a temporary HFS directory to hold the installation files. For example:

   `/u/iadmin/download.`

4. Using TSO or ISPF option 6, connect to the FTP site using the information provided by your Information Builders representative.

5. Once connected, type the following to indicate a binary transfer:

   `binary`

6. Type the following to get the MVS installation software:

   `get iserver.data 'qualifier.ISERVER.DATA' (replace`

7. Type the following to indicate the location for the HFS files:

   `lcd /u/iadmin/download`

8. Type the following to get the HFS files

   `mget *`

   You will be prompted to accept the transfer of 7 files (6 HFS files and 1 MVS data set).

   `Mget inu.out (Yes|No|Quit|Stop prompting)?`

9. Enter:

   `Yes`

   to accept the transfer of all *except for* the iserver.data data set indicated by a prompt such as the following:

   `Mget iserver.data (Yes|No|Quit|Stop prompting)?`

10. When you receive the above prompt, enter:

    `No`

**11.** When all 6 HFS files have been transferred, type the following to exit FTP:

```
quit
```

**12.** Under TSO, explode the sequential file *qualifier*.ISERVER.DATA created above into a PDS using the following command:

```
RECEIVE INDSN('qualifier.ISERVER.DATA')
```

**13.** At the restore parameters prompt, type the following to create the *qualifier*.HOME.DATA PDS:

```
DSNAME('qualifier.HOME.DATA')
```

**Note:** Using a low-level qualifier such as HOME.DATA and a high-level qualifier that reflects the release of the server (for example, IADMIN.SRV53) is recommended. However, you can use any site specific value.

In the ISETUP procedure below, be sure to specify *(D)isk* for the Input Source and provide the HFS directory into which you transferred the installation files.

## Step 2. Run ISETUP

**Caution:** Ensure that all server processes are stopped before upgrading.

Server upgrade consists of a series of ISPF panels, which gather information for the upgrade. After the panel dialog is complete, JCL is created and submitted (if required) to upgrade the server on OS/390 and z/OS. This JCL job retrieves the remainder of the MVS libraries and HFS files from the media and configures a basic working server.

**1.** Execute the ISETUP member of your *qualifier*.HOME.DATA using ISPF option 6.

The first Installation and Configuration panel opens.

**2.** Complete the panel as follows.

| *Enter selection* | Choose option 3, *Refresh Installation*. |
|---|---|
| *Enter License Key* | Enter the 10-digit License Key that was provided with the software. |
| *Input source* | Choose the input source, T for Tape or D for Disk. The default value is T. |
| | **Note:** If you downloaded the server software via FTP, choose D and, on the next panel, provide the directory name where the transferred files reside. |
| *Installation Userid* | Shows the current logon ID. It cannot be changed. |

| Administration Userid | Initially, this field shows the same ID as the installation user ID. |
| | If the installation user ID is a superuser (UID=0), you must specify a non-superuser ID to administer the server. Specify this ID here. |
| Enter Job Card information | To provide JOB card information for submitting jobs to the JES queue, provide a valid job name (a maximum of seven characters following the // on the first JCL line), which defaults to the user ID that you are currently using. |
| | This job name is used for multiple submissions (for example, *jobname*A, *jobname*B, *jobname*C, and so on) in the JCL generated by the installation procedure. |
| Override JOB name checking | To provide your own JOB card information, including JOB name, enter *Y* and provide valid JOB card information in the *Enter Job Card information* field. The JOB card information that you enter will be used for each job that is submitted. |

**3.** If you used the same user ID for both installation and administration, skip to Step 6. Otherwise, continue with Step 4.

**4.** Press *Enter* to continue to the next panel.

This panel is displayed only if you provided two different user IDs in the previous panel.

The installation process will change ownership of HFS server files from the installation ID (iinstal) to the administrator ID (iadmin). The installation ID must have authority to issue the chown command to make this change of ownership. This action is taken at the end of the installation process.

**5.** Complete the panel as directed in the following table.

| | |
|---|---|
| *Enter Job Card information* | To provide JOB card information for submitting the run-time jobs to the JES queue, provide a valid job name (a maximum of seven characters following the // on the first JCL line), which defaults to the user ID that you are currently using.<br><br>This job name is used for multiple submissions (for example, *jobname*A, *jobname*B, *jobname*C, and so on) in the JCL generated by the installation procedure. |
| *Override JOB name checking* | To provide your own JOB card information, including JOB name, enter *Y* and provide valid JOB card information in the *Enter Job Card information* field. The JOB card information that you enter will be used for each run-time job that is created. |

**6.** Press *Enter* to continue to the next panel, and complete the panel as follows.

| | |
|---|---|
| *HFS Base Directory* | This indicates where to install the server. The default value is the home directory of the user ID you are using to install the product. Change this value, if necessary, to a valid directory that has space for the installation. The installation procedure checks whether this directory exists and has enough space. If either test fails, you will receive a message indicating the failure and available options. |

**7.** Press *Enter* to continue to the next panel, and complete the panel as follows.

| **Input Media (installing from tape)** | |
|---|---|
| *Volume serial number* | Provide the volume serial number of the server media (for example, A5320U). The number is located on the tape supplied in you server package. |
| *Volume unit type* | Review the default value and change it if necessary. |
| *Work unit type* | Review the default value and change if necessary.<br><br>You can specify a UNIT= *type* value (for example, SYSDA), or you can direct work files to a specific volume serial number by specifying, in single quotation marks ('), 'SYSDA,VOL=SER=*volume*'. |

| Input Media (installing from disk) | |
|---|---|
| *Directory name of input* | Provide the name of the directory in which the installation files reside. |

| MVS Installation Libraries | |
|---|---|
| *EDACONF Library* | This is the full data set name the installation procedure will use to allocate the EDACONF configuration library on MVS. If you are running from *qualifier*.HOME.DATA, this field will have the default value *qualifier.server_type*.DATA (where *server_type* is based on License key). If you used another name to unload the first data set, this field will be blank. On subsequent running of ISETUP, the previous value used will be displayed. Change the value as necessary. |
| *EDAHOME Library* | This is the full data set name the installation procedure will use to allocate the EDAHOME load library on MVS. If you are running from *qualifier*.HOME.DATA, this field will have the default value *qualifier*.HOME.LOAD. If you used another name to unload the first data set, this field will be blank. On subsequent running of ISETUP, the previous value used will be displayed. Change the value as necessary. |
| *EDAHOME Library Unit/Volume* | These show the values that the installation process will use to allocate the EDAHOME load library on MVS. If necessary, you can change these to site specific values. |

8. Ensure that all values on the panel are correct, then select one of the following options:

   - **N** to return to the initial screen so that you can change installation values.

   - **C** to create JCL which you can submit at a later time. The JCL is placed in your configuration library.

   - **S** to create JCL and submit the job immediately.

9. As the job is processed, in SDSF, check JESLOG for errors and return codes.

   The following jobs are added to the configuration library:

| ISETUPJ3 ISOPTS3 | Main JCL Job stream that is used to install the server. |
|---|---|

The following directories are added to the HFS directory structure of the existing server:

| | |
|---|---|
| /u/iadmin/ibi/srv53/tape | Contains HFS files from the input media. |
| /u/iadmin/ibi/srv53/install | Working directory for the installation process. Log and error files reside here. |

## Step 3. Test the Server Installation

To test the server installation:

1. Log on to TSO as iadmin.

2. Submit the ISTART JCL to start the server.

3. Check the job output for errors. Look for the EDAPRINT message:

   ```
   Workspace initialization completed
   ```

4. Start the Web Console by opening a browser pointed at the listener port of the server. The URL format is

   ```
   http://host:port
   ```

   where:

   *host*

   Is the name of the machine on which the server is installed.

   *port*

   Is one port higher than the port specified when installing the server. For example, if you specified port 8100 during installation, then use port 8101 to access the Web Console.

   The Web Console opens.

5. Click *Test* to run a sample report.

When you are finished using the server, you can use the Web Console to stop the server by selecting the Workspace link on the left and then choosing Stop.

If you experience problems at start up, examine the job output for more information.

## Step 4. Reconfigure Server Security

The server runs in one of the following security modes:

- **Security OFF.** This is the default unless security is configured.

- **Security ON.** All connecting users are authenticated against the security package (RACF, *e*Trust CA-ACF2, *e*Trust CA-Top Secret), and the data agents are impersonated according to the deployment mode to control access right to data files and dbms objects.

To reconfigure server security:

1. Log on to TSO using an ID with read access to the BPX.FILEATTR.APFfacility class.

2. Using the name of the actual EDAHOME directory, change file attributes by entering the following TSO commands in ISPF Command Shell (option 6):

```
OSHELL extattr +a /u/iadmin/ibi/srv53/home/bin/tscom300.out
OSHELL extattr +a /u/iadmin/ibi/srv53/home/bin/tsqprx.out
```

3. Verify your changes by issuing the following command:

```
OSHELL ls -E /u/iadmin/ibi/srv53/home/bin/tscom300.out
OSHELL ls -E /u/iadmin/ibi/srv53/home/bin/tsqprx.out
```

The extended attributes portion of the output should be a-s-

4. The libraries allocated to STEPLIB in IRUNJCL must be APF-authorized. Any non APF-authorized libraries must be allocated the TASKLIB DDNAME.

5. Test server security by repeating the process described in *Step 3. Test the Server Installation* on page 4-59.

## Step 5. Reconfigure Adapters

While most adapters do not require additional steps after updating binary files, the following table notes the adapters that do require some consideration:

| Data Adapter | Steps After Updating Binaries |
|---|---|
| Adabas | • Re-enable the module containing SVC using the Web Console adapter configuration page.<br><br>• Test the adapter from the adapter page before running your applications. |
| DB2 | • Rebind the DB2 plan using the Web Console adapter configuration page.<br><br>• Test the adapter from the adapter page before running your applications. |

# Migrating From an MVS Server

Applications running on a traditional MVS server will not require any changes when migrated. The server supports read and write access to all PDSs, such as Master, Access, FOCEXEC, and data. DYNAM is fully supported in release 5.3 of the server. The server can read and write sequential files and FOCUS files, both locally and using the FOCUS Database Server (FDS).

To migrate application components (Master Files, Access Files, and FOCEXECs):

1. Transfer the following allocations from your MVS server JCL to IRUNJCL: MASTER, FOCEXEC, ACCESS, HTML, GIF, and data files (if DYNAM is not to be used). Note that you may not have all of them.

2. Edit edaserve.cfg using the OS/390 and z/OS equivalents of MVS parameters as described in the following sections.

For new applications, your files (Master, Access, and FOCEXEC) are placed in a pre-specified directory on HFS. All temporary files (such as FOCSORT) are written to the EDATEMP directory on HFS by default.

## Installation and Configuration

- **MVS**

  1. **IEBCOPY** - Unload EDALIB.DATA.

  2. **EDAJINS2** - Unload and allocate PDSs.

  3. **EDACFGF** - Configuration Routine.

  4. Add Jobcard to server JCL and submit.

- **OS/390 and z/OS**

  1. **IEBCOPY** - Unload HOME.DATA.

  2. **ISETUP** - An ISPF panel-driven installation which unloads and allocates the Load library, creates the server directory structure, and copies the files to HFS.

  3. Submit the ISTART server JCL.

## Server JCL

- **MVS**

```
//**********************************************************
//**   Sample Server JCL                                 **
//**********************************************************
//*
//* Supply a proper job card.
//*
//EDASERVE  EXEC PGM=SSCTL
//STEPLIB    DD  DISP=SHR,DSN=qualifier.EDALIB.LOAD
//*
//*
//*
//*
//EDASERVE   DD  DISP=SHR,DSN=qualifier.INSTALL.DATA(FFSSERV)
//ERRORS     DD  DISP=SHR,DSN=qualifier.EDAMSG.DATA
//IBIFEX     DD  DISP=SHR,DSN=qualifier.EDARPC.DATA
//IBIMFD     DD  DISP=SHR,DSN=qualifier.EDAMFD.DATA
//FOCEXEC    DD  DISP=SHR,DSN=USERID.FOCEXEC.DATA
//SYSMDUMP   DD  DISP=SHR,DSN=qualifier.DUMP.DATA
//MASTER     DD  DISP=SHR,DSN=USERID.MASTER.DATA
//*
//ACCESS     DD  DISP=SHR,DSN=USERID.ACCESS.DATA
//           DD  DISP=SHR,DSN=qualifier.EDAAFD.DATA
//EDAPRINT   DD  SYSOUT=*
//IBISNAP    DD  SYSOUT=Q
//EDACSG     DD  DISP=SHR,DSN=qualifier.INSTALL.DATA(FFSCSG)
//**********************************************************
//**   Optional Console Configuration File.              **
//**********************************************************
//*
//*EDACONS   DD  DISP=SHR,DSN=qualifier.INSTALL.DATA(FFSCONS)
//*
//**********************************************************
//**   Optional ECC Restart File.                        **
//**********************************************************
//*
//*EDASTART  DD  DISP=SHR,DSN=qualifier.INSTALL.DATA(FFSJCL)
//*
```

- **OS/390 and z/OS**

```
//* ......
//IRUNJCL      PROC
//TSCOM300     EXEC PGM=TSCOM300,
//       PARM='ENVAR("_EDC_UMASK_DFLT=0022")/'
//STEPLIB DD DISP=SHR,DSN=qualifier.HOME.LOAD
//*
//*
//FOCEXEC      DD   DISP=SHR,DSN=USERID.FOCEXEC.DATA
//MASTER       DD   DISP=SHR,DSN=USERID.MASTER.DATA
//ACCESS       DD   DISP=SHR,DSN=USERID.ACCESS.DATA
//EDAPRINT     DD   SYSOUT=*
//SYSPRINT     DD   SYSOUT=*
//SYSOUT       DD   SYSOUT=*
//EDAPARM      DD   DUMMY
//EDAENV       DD   DSN=qualifier.FFS.DATA(EDAENV),
//       DISP=SHR
//* ......
//IRUNJCL      PEND
```

## Data File Allocations

- **MVS**

  Allocations for all file types supported via DYNAM or JCL.

- **OS/390 and z/OS**

  PDS+

  Existing Master Files and Access Files can be read from existing JCL or DYNAM allocations.

  New applications will reside on UNIX System Services.

  VSAM, FIXED, and FOCUS

  R/W Access to files via DYNAM works are unchanged.

  All DYNAM options are supported with the exception of HIPER/NOHIPER.

  HIPER/NOHIPER

  These keywords will be ignored.

## FOCUS Files on a FOCUS Database Server

**Example:**

Legacy FOCUS Database Server Under OS/390 and z/OS

The iWay Server for OS/390 and z/OS comes with its own FOCUS Database Server (sometimes called a Sink Machine). You can use either this current version of the FOCUS Database Server, or continue to manage your FOCUS databases using the legacy version. The legacy version of the FOCUS Database Server runs as a separate batch job from the iWay Server.

You cannot manage the same file using both the legacy and current versions of the FOCUS Database Server, as it will cause enqueue conflicts.

Comparing the iWay Servers from which, and to which, you are migrating:

* **MVS** (iWay Server *from* which you are migrating)

  A DDNAME was allocated in the server JCL to point to the communications data set to be used to identify the FOCUS Database Server job on which the FOCUS files reside.

  A USE statement was then issued to connect the FOCUS Master File to the DDNAME allocated to the communications file.

  For example:

  ```
  //FOCSU01  DD  DSN=X.Y.Z,DISP=SHR
  ```

  The USE statement in a FOCEXEC:

  ```
  USE
  CAR ON FOCSU01
  END
  ```

* **OS/390 and z/OS** (iWay Server *to* which you are migrating)

  The USE command is employed the same way for both the current and legacy versions of the FOCUS Database Server, except that, in the current version, the name of the FOCUS Database Server in the USE command is the name of a node in the iWay server's communication configuration file (odin.cfg).

  The node name FOCSU01, which is automatically defined in odin.cfg during iWay Server installation, is reserved for the current version of the FOCUS Database Server.

  If you want a FOCUS database to be managed by the current version of the FOCUS Database Server, you can allocate its data file in several ways:

  * **JCL in the IRUNJCL procedure.** Add a JCL statement for the file to be managed. For example:

    ```
    //CAR        DD DISP=SHR,DSN=dsname
    ```

- **DYNAM ALLOC statements in suprof.prf or edasprof.prf.** Using the Web Console, edit the suprof.prf or edasprof.prf profiles to add DYNAM ALLOC allocations for each file to be managed. For example:

```
DYNAM ALLOC FI CAR DA dsname SHR REU
```

- **DYNAM ALLOC statements in user profiles or in a procedure** (focexec).

  Add a DYNAM ALLOC statement to the user profile of each user that wants to access the database in question. Alternatively, you can add the same statement to a procedure (that is, a focexec) which you execute before anyone accesses the database.

  Use the NOALIAS keyword; this makes the statement equivalent to an allocation performed from IRUNJCL, and it makes a global server allocation available to the FOCUS Database Server. For example:

```
DYNAM ALLOC FI CAR DA dsname SHR REU NOALIAS
```

You can issue the following USE command in association with any of these allocation methods:

```
USE CAR ON FOCSU01
END
```

## Example: Legacy FOCUS Database Server Under OS/390 and z/OS

The following USE command declares that the CAR database will be managed by the legacy version of the FOCUS Database Server, here named FOCSBS, which runs as a batch job separate from the current version of the FOCUS Database Server:

```
USE
CAR ON FOCSBS
END
```

The FOCUS Database Server name that you specify in the USE command must be identical to the name defined in the FOCUS Database Server's node block in the iWay server's communication configuration file (odin.cfg):

```
NODE=FOCSBS          <===== node name of legacy FOCUS Database Server
BEGIN
  PROTOCOL=SBS
  CLASS=SUCLIENT
  PORT=X.Y.Z         <===== communications data set
END
```

## Global Configuration Settings

In configuration file, EDASERVE.CFG.

- **MVS**

  *qualifier*.install.data(EDASERVE)

  ```
  EXTSEC = OFF|ON
  SMFNUM = 254
  FASTLOAD = **AUTO**
  LONGSYNM= ON (in release 5.3, this is the default)
  LICENSE = 100-111-1231
  STORAGEABOVE = 4096
  STORAGEBELOW= 512
  SZERO=YES
  APFAUTH=INTERNAL
  ```

- **OS/390 and z/OS**

  **/ibi/srv53/ffs/bin/edaserve.cfg**

  ```
  edahome = /u/iadmin
  server_admin_id = EDADMA
  license = 100-111-1231
  approot = /ibi/edauss/TEST/apps
  server_name = "IWAY 53 Full Function Server"
  cfg_date = 07/24/2002 19:14:46
  smf_recno=255
  ```

  Currently not applicable:

  ```
  STORAGEABOVE = 4096
  STORAGEBELOW = 512
  FASTLOAD=**AUTO**
  ```

# Service Settings

- **MVS**

  *qualifier*.install.data(EDASERVE)

  ```
  SERVICE             = EDAUSER
  PROGRAM             = TSCOM3
  NUMBER_READY        = 0
  DEPLOYMENT          = PRIVATE
  REFRESH_LIMIT       = 100
  MAXIMUM             = 3
  IDLELIM             = -1
  CPU_LIMIT           = 15
  MEMORY_LIMIT_ABOVE  = nnn
  MEMORY_LIMIT_BELOW  = nnn
  PRTYGROUP           = 10
  SERVINIT            = *,++
  DYNAM ALLOC FILE EDASPROF -
    DA EDADMA.P513.EDAPROF.DATA(FEDADMA) SHR REU
  DYNAM ALLOC FILE EDAPROF -
    DA EDADMA.P513.EDAPROF.DATA SHR REU
  DYNAM ALLOC FILE IBITRACE -
    DA EDADMA.P513.INSTALL.DATA(IBITRACE) SHR REU
  ```

  *Multiple Service Blocks are supported.

- **OS/390 and z/OS**

  **/ibi/srv53/ffs/bin/edaserve.cfg**

  ```
  SERVICE = DEFAULT
  BEGIN
    maximum = 10
    number_ready = 2
    deployment = private
    queueing = off
    idle_session_limit = -1
    idle_agent_limit = 120
    profile = profile.fex
    cpu_limit = -1
    memory_limit = -1
    wlm_enclave_trname = wlm_transaction_name
    max_connection_per_user = -1
    agent_refresh = 100
    owner_control_request = no
  END
  ```

  *Multiple Services are supported.

  Note that wlm_enclave_trname performs the same function as PRTYGRP.

## Enabling Tracing on the Server

- **MVS**

  Allocate IBITRACE in the EDASERVE member. Read the TRACE output from SDSF or send to a file.

  ```
  DYNAM ALLOC FILE IBITRACE -
    DA EDADMA.P513.INSTALL.DATA(IBITRACE) SHR REU
  ```

- **OS/390 and z/OS**

  IBITRACE allocation is not needed. There are two ways to enable tracing:

  1. On the Web Console under DIAGNOSTICS.

  2. Submit the ITRCON JCL job.

  For additional diagnostics, see *Troubleshooting for OS/390 and z/OS* on page 4-79.

## Server Profiles

- **MVS**

  *qualifier*.EDAPROF.DATA(Fuserid)

  Metadata Allocations:

  ```
  DYNAM ALLOC FILE EDASYNA SHR REU -
    DATASET EDADMA.V5R3M02.EDADMA.EDASYNA.DATA
  DYNAM ALLOC FILE EDASYNM SHR REU -
    DATASET EDADMA.V5R3M02.EDADMA.EDASYNM.DATA
  DYNAM ALLOC FILE EDASYNR SHR REU -
    DATASET EDADMA.V5R3M02.EDADMA.EDASYNR.DATA

  SQL EDA SET USER server/userid,password
  SQL EDA SET SERVER server
  SQL [EDA] SET AUTOCLOSE ON FIN|COMMIT
  SQL EDA SET JOINTYPE ={NestedLoop|SortMerge}
  ```

HIPER Settings:

```
SET HIPERINSTALL={ON|OFF}
SET HIPEREDA={ON|OFF}
SET HIPEREXTENTS=nnn
SET HIPERFILE=nnn
SET HIPERLOCKED={ON|OFF}
SET HIPERSPACE=nnn

SET BLIM=buffersize
SET SLIM=n
SET CACHE={0|n}
SET EXTSORT={ON|OFF}
SET CDN={ON|OFF}
SET LANGUAGE=language
SET SMARTMODE={ON|OFF}
SET SQLENGINE=sqlengine
```

- **OS/390 and z/OS**

   **/ibi/srv53/ffs/etc/.prf**

   ```
   APP ENABLE
   APP PATH IBISAMP
   ```

   **Note:** The settings below are generated in the server profile, edasprof, as defaults to access MVS existing applications and metadata.

   ```
   APP MAP MVSAPP
   mas=//dd:master;fex=//dd:focexec;acx=//dd:access;htm=//dd:html
   APP APPENDPATH MVSAPP

   SQL EDA SET USER server/userid,password
   SQL EDA SET SERVER server
   SQL [EDA] SET AUTOCLOSE ON FIN|COMMIT
   SQL EDA SET JOINTYPE ={NestedLoop|SortMerge}
   ```

   HIPER Settings:

   ```
   DYNAM SET TEMP MVS   (temporary files will be allocated on MVS)
   DYNAM SET TEMP HFS   (default-temporary files will be allocated on HFS)
   DYNAM SET TEMP HIPER  (temporary files will go to HIPERSPACE memory)
   DYNAM SET TEMP MEMORY (temporary files will use main storage for I/O)

   SET BLIM=buffersize
   SET SLIM=n
   SET CACHE={0|n}
   SET EXTSORT={ON|OFF}
   SET CDN={ON|OFF}
   SET LANGUAGE=language
   SET SMARTMODE={ON|OFF}
   SET SQLENGINE=sqlengine
   ```

## Configuring Adapters

In OS/390 and z/OS, you configure all adapters using the Web Console.

| | **MVS** | **OS/390 and z/OS** |
|---|---|---|
| **Adabas** | Edit and run *qualifier*.EDALIB.DATA(GENEADL) to re-link ADALNK into FADALINK, which will be called by the server. The JCL must be edited with the appropriate values. Add Jobcard and submit. | During installation, you will be prompted for the fully qualified data set name for the Adabas source library. |
| **CA-DATACOM** | Allocate the CA-DATACOM load library to your STEPLIB in IRUNJCL.<br><br>Create a DATACOM URT.<br><br>Create a server-side URT.<br><br>Create synonyms using the Auto tool. | Allocate the CA-DATACOM load library to your STEPLIB in IRUNJCL.<br><br>Create a DATACOM URT.<br><br>Create a server-side URT.<br><br>Create synonym using the Web Console. |
| **DB2 CAF** | Edit and run *qualifier*.EDALIB.DATA(RELJINS) to link and bind the DB2 interface, which will be called by the server. The JCL must be edited with the appropriate values. Add Jobcard and submit. | |
| **DB2 CLI** | NO DB2 CLI available for SSCTL | During the installation, you must provide the location of the db2cli.ini file. |
| **CA-IDMS/DB** | Allocate the CA-IDMS/DB:<br><br>• Load library.<br><br>• DBA load library.<br><br>• SYSIDMS library.<br><br>• SYSCTL library. | Allocate the CA-IDMS/DB:<br><br>• Load library.<br><br>• DBA load library.<br><br>• SYSIDMS library.<br><br>• SYSCTL library. |

| | MVS | OS/390 and z/OS |
|---|---|---|
| **CA-IDMS/SQL** | Allocate the CA-IDMS/DB:<br><br>• Load library.<br><br>• DBA load library.<br><br>• SYSIDMS library.<br><br>• SYSCTL library.<br><br>Edit and run *qualifier*.EDALIB.DATA(GENEIDQ) to link module IDQFOC. | Allocate the CA-IDMS/DB:<br><br>• Load library.<br><br>• DBA load library.<br><br>• SYSIDMS library.<br><br>• SYSCTL library. |
| **IMS** | Allocation of IMS loadlibs in STEPLIB. | Allocate the IMS loadlibs in STEPLIB. |
| **MODEL 204** | Edit and run *qualifier*.EDALIB.DATA(GENE204). | Edit and run *qualifier*.EDALIB.DATA(GENE204).<br><br>Allocate the MODEL 204 loadlibs in STEPLIB. |
| **Oracle** | Edit and run *qualifier*.EDALIB.DATA(GENEORA) to link and bind the Teradata interface, which will be called by the server. The JCL must be edited with the appropriate values. Add Jobcard and submit.<br><br>Add appropriate load libraries to server JCL. | Add the following EXPORT variables to IRUNJCL:<br><br>`ORACLE_SID=ORAT`<br>`ORACLE_HOME=/usr/lpp/oracle9`<br>`LIBPATH=$ORACLE_HOME/lib` |
| **Supra** | Edit and run *qualifier*.EDALIB.DATA(GENEFSP)<br><br>Allocate the SUPRA loadlibs in STEPLIB. | Allocate the SUPRA loadlibs in STEPLIB. |
| **Teradata** | Edit and run *qualifier*.EDALIB.DATA(GENEDBC) to link and bind the Teradata interface, which will be called by the server. The JCL must be edited with the appropriate values. Add Jobcard and submit. | |

## Metadata

- **MVS**

  ADABAS, VSAM, IMS and IDMS use AUTOTOOLS to create Master File Descriptions (metadata). DB2, Oracle, Teradata metadata is created via CREATE SYNONYM.

- **OS/390 and z/OS**

  Metadata for the following DBMS is created via the Web Console using Create synonym: Adabas, DB2 CAF and DB2 CLI, Fixed, CA-IDMS/DB and CA-IDMS/SQL, IMS, Oracle, Teradata, VSAM.

## Starting the Server Console

- **MVS**

  Type the following command at the prompt

  ```
  LOGON APPLID(consoleapplid)
  ```

  where:

  *consoleapplid*

  Is the LU2 applid used to communicate with the console. Its value can be found in the adapter JCL file (EDACONS).

- **OS/390 and z/OS**

  Open the Web Console by starting a browser pointed at the HTTP Listener Port of the server. The URL format is http://host:port. For example, http://host:8101 for the full-function server (if the default ports were used during installation). The actual HTTP Listener port number is one higher than the TCP Listener Port specified during the installation.

## Media

- **MVS**

  The server software is provided on a cartridge in 3480 or 3490 format with MVS PDSs.

- **OS/390 and z/OS**

  The server software is provided on a cartridge in 3480 or 3490 format with both MVS PDSs and HFS tar files.

## Configuring a Secured Server

- **MVS**

  In EDASERVE member, set EXTSEC=ON.

  The *qualifier*.EDALIB.LOAD library used by the JCL must be APF-authorized.

- **OS/390 and z/OS**

  Logon to TSO with a user ID that has read access to the BPX.FILEATTR.APF facility class. This is for the security internal which is the default. See the documentation for the MVS security setting.

  Substituting in the actual EDAHOME directory, change the file attributes by entering the following commands in TSO or in ISFP Command Shell (option 6):

  ```
  OSHELL extattr +a /u/iadmin/ibi/srv53/ home/bin/tscom300.out
  OSHELL extattr +a /u/iadmin/ibi/srv53/home/bin/tsqprx.out
  ```

  Verify your changes by issuing the following commands:

  ```
  OSHELL ls -E /u/iadmin/ibi/srv53/home/bin/tscom300.out
  OSHELL ls -E /u/iadmin/ibi/srv53/home/bin/tsqprx.out
  ```

  The *qualifier*.HOME.LOAD library used by the JCL must be APF authorized.

## GETUSER Subroutine

- **MVS**

  Fully supported.

- **OS/390 and z/OS**

  Supported with minor adjustments.

## WLM Enclave Feature

- **MVS**

  This parameter is placed in the service block of the EDASERVE configuration file so that an enclave name can be specified. This enclave is a feature of Workload Manager (WLM).

  ```
  WLM_ENCLAVE_TRNAME = wlm_transaction_name
  ```

- **OS/390 and z/OS**

  A parameter is available in the service block of the edaserve.cfg configuration file so that an enclave transaction name can be specified. This enclave transaction is a feature of Workload Manager (WLM).

For more information about Workload Manager, see *Workload Manager* on page 4-76.

## Agent Services

The server has the ability in the edaserve.cfg configuration file to divide its agents into different services. This is very similar to the service blocks found in the EDASERVE member for the Server for MVS. Each agent is running for a specific service, and each service can have different values for some of the configuration parameters. During installation, the "DEFAULT" service block will be configured in edaserve.cfg. Additional services can be configured as required, using the Web Console.

## SMF Records

The server can write SMF records for each connect and disconnect. Accounting reports can be viewed through the Web Console. The recommended integer value is in an inclusive range from 128 to 255. This number represents the SMF number used by the accounting facility when it sends records to the SMF system. Numbers from 1 to 128 are not recommended. To activate usage accounting, place the smf_recno parameter in the edaserve.cfg before any service block entries.

**Syntax:**    **How to Activate SMF Records**

To activate SMF records, use the following syntax:

```
smf_recno=255
```

# Performance Considerations

There are several ways in which you can improve the server's performance:

- **Non-swappable address space.** We recommend that you run the server in a non-swappable address space. For more information, see *Running the Server in a Non-swappable Address Space* on page 4-76.

- **Workload Manager (WLM).** You can balance server workload by using Workload Manager. For more information, see *Workload Manager* on page 4-76.

## Running the Server in a Non-swappable Address Space

We recommend that you run the server in a non-swappable address space. In order to make the server address space permanently non-swappable, add the following entry to SYS1.PARMLIB(SCHED*xx*):

```
PPT PGMNAME(TSCOM300)          /* PROGRAM NAME
KEY(8)                         /* PROTECTION KEY
CANCEL                         /* CAN BE CANCELLED
NOPASS                         /* PASSWORD BYPASS
AFF(NONE)                   /* NO PROCESSOR AFFINITY
```

All local spawn transactions will perform in the mode of the server. For example, if the server address space is non-swappable, all local spawn execute as non-swappable.

The server executes limited non-local spawn, such as when the user executes a UNIX system command. Non-local spawn execute as swappable.

The server never executes a fork subroutine. (A fork subroutine creates a new process. The new process, called the child process, is an almost exact copy of the calling process, which is called the parent process.)

## Workload Manager

Although the server may run in a specific performance group, transactions submitted by agents may perform differently than the server by adding the following keyword to edaserve.cfg:

```
wlm_enclave_trname = WLM_transaction_name
```

WLM_transaction_name can be up to 8 characters.

This is a service level keyword.

Using this setting, the task will join a Workload Manager (WLM) enclave when a request starts, and leave the enclave when the request finishes. This gives WLM control of the task's dispatching priority. The transaction rules defined on WLM will determine the default service class assigned to this transaction, and that service class will determine how the request runs.

Using this setting, the task will join a Workload Manager (WLM) enclave when a request starts, and leave the enclave when the request finishes. This gives WLM control of the task's dispatching priority. The transaction rules defined on WLM will determine the default service class assigned to this transaction, and that service class will determine how the request runs.

This feature helps to balance a workload so that a long request will not affect a short request. This can be achieved through WLM rules designed to lower the priority of a long request after a certain period of time. Without this feature, all requests share the region's priority.

The transaction name passed in this keyword must match one defined in the WLM Classification Rules for the Job Entry Subsystem(JES). A corresponding WLM Service Class pointed to by this rule will then be associated with this service.

The classification rules for JES must be used even if the server is started as a started task. The subtasks are always run under JES.

For example, you would include the following in edaserve.cfg:

```
SERVICE = DEFAULT

BEGIN
wlm_enclave_trname = IWAYFAST
.
.
.
END
```

The WLM definition is:

```
Subsystem Type JES - Batch Jobs

Classification:

Default service class is PRDBATLO
There is no default report class.

  Qualifier  Qualifier       Starting       Service   Report
# type       name            position       Class     Class
- ---------- -------------- ---------       --------- --------
1 TN         IWAYFAST                        EDAQRYHI
```

Note that currently, only main rules (Level 1) are supported.

# Frequently Asked Questions

**Q: How do I execute server user profiles from a PDS?**

**A:** We recommended that you copy the server user profiles from the PDS to the HFS directory /ibi/profiles, and rename them to add the extension .prf (for example, *user_id*.prf). Alternatively, you can use the following technique to execute user profiles from a PDS:

1.  In the IRUNJCL member, allocate DDNAME //MVSPROF to the PDS containing user profiles. For example:

    ```
    //MVSPROF DD DISP=SHR,DSN=qualifier.EDAPROF.DATA
    ```

2.  Add the lines highlighted in **bold** to the global server profile, edasprof.prf:

    ```
    APP PATH IBISAMP
    APP MAP MVSPROF fex=//dd:mvsprof
    APP MAP MVSAPP mas=//dd:master;fex=//dd:focexec;acx=//dd:access; ...
    APP MAP MVSMETA mas=//dd:holdmast;acx=//dd:holdacc
    APP APPENDPATH MVSAPP
    -SET &USERID='12345678';
    -SET &USERID=GETUSER(&USERID);
    EX MVSPROF/&USERID
    ```

**Q: What permissions are specified for application component files?**

**A:** Application component files—such as FOCEXEC procedures (.FEX), Master Files (.MAS), and Access Files (.ACX)—reside in the `/ibi/apps/applicationname` directory, where they are created with a permission of 666 minus the UMASK setting.

For example, if the UMASK value is 022, each application component is created with a permission of 644.

**Caution:** When using the above UMASK values, if one user ID creates an application's components, all other users will be able to read them, but not to write, update, or refresh.

You can provide write access by changing the value of UMASK in IRUNJCL. For example:

```
//TSCOM300  EXEC PGM=TSCOM300,
//        PARM='ENVAR("_EDC_UMASK_DFLT=0022")/'
//STEPLIB   DD DISP=SHR,DSN=EDABXV.SRV53.HOME.LOAD
```

# Troubleshooting for OS/390 and z/OS

**How to:**

Troubleshoot Your Problem

Generate a Server Trace

Generate a System Dump

Add Your Problem to the Troubleshooting Guide

If you encounter problems while installing and configuring the server:

1. Try to resolve your problem as described in *How to Troubleshoot Your Problem* on page 4-79.

2. If you cannot resolve your problem by troubleshooting it yourself, contact iWay Software customer support:

   a. Get the following information:

      Server trace (see *How to Generate a Server Trace* on page 4-80).

      JCL for IRUNJCL.

      Job output.

      System dump, if needed (see *How to Generate a System Dump* on page 4-81).

      Any additional information regarding how the problem occurred.

   b. Get the information described in *Information You Should Have* in *Preface*.

   c. Contact Customer Support as described in *Customer Support* in *Preface*.

## Procedure: How to Troubleshoot Your Problem

You can troubleshoot installation problems by matching the problem with a symptom, and then reading the reason and solution associated with that symptom.

If you have troubleshooting suggestions that aren't described here, and that you think others will find helpful, we invite you to send them to us, as described in *Add Your Problem to the Troubleshooting Guide* on page 4-81. We will consider including your problems in a future release of this manual.

**Symptom: The server abends with a U4039 code.**

- **Reason:** This is a generic abend.

- **Solution:** Find out what caused the abend by checking the edaprint.log file, SYSOUT *ddname*, and the MVS system log.

**Symptom: INSUFFICIENT AUTHORITY TO GETPSENT messages appearing in JESLOG.**

- **Reason:** See IBM's APAR II11813.

- **Solution:** The APAR recommends issuing one of the following RACF commands:

```
SETROPTS LOGOPTIONS (NEVER(PROCACT))
SETOPTS LOGOPTIONS (DEFAULT(PROCACT))
```

However, when a non-superuser in the OMVS shell issues the command ps -ef, the following security message is repeated in SYSLOG:

```
ICH408I USER(default) GROUP(dgltgrp) NAME(bpxdefaultuser) 060
CL(PROCACT) INSUFFICIENT AUTHORITY TO GETPSENT
```

This does not indicate an error: it is an informational message issued because of RACF LOGOPTIONS settings. The ps -ef command is a request to show all processes that the requester is authorized to see, but a non-superuser is allowed to see only his or her own processes.

## Procedure: How to Generate a Server Trace

To generate a server trace:

1. Turn tracing on from the Web Console or by running the ITRCON JCL member.

2. Reproduce the problem.

3. Stop the server.

4. Submit the ISAVEDIA member to produce the diagnostic information.

   A directory called sd*nnnnnn* is created under your configuration directory (for example, /ibi/server53/ffs/sd123456). Diagnostic information is placed in this directory. Make sure you have access to this directory.

Do not change anything in the EDAENV member: changes could prevent the correct information from being copied to your directory.

## Procedure: How to Generate a System Dump

To generate a system dump:

1. Allocate DDNAME SYSMDUMP pointing to the data set with the following DCB parameters:

   ```
   RECFM=FB,LRECL=4160,BLKSIZE=4160.
   ```

2. To get the first dump, add the parameter FREE=CLOSE to your DD statement. The DD statement should appear as follows:

   ```
   //SYSMDUMP DD DISP=SHR,DSN=MYID.EDAPTH.SYSMDUMP,FREE=CLOSE
   ```

3. To get the last dump, the statement should appear as follows:

   ```
   //SYSMDUMP DD DISP=SHR,DSN=MYID.EDAPTH.SYSMDUMP
   ```

   Only two IDs must have privileges to write into this data set: ISERVER and IADMIN. General server users DO NOT need read or write access to the SYSMDUMP data set.

4. To prevent abendaid from intercepting the dump, add:

   ```
   //ABNLIGNR DD DUMMY
   ```

5. To prevent Language Environment from intercepting the dump, specify:

   ```
   EDADUMPOPT=UAIMM in EDAENV DD
   ```

   This enables you to get more accurate information reflecting the moment the abend actually occurs.

6. Save the entire job output for the server (including JES logs).

## Procedure: How to Add Your Problem to the Troubleshooting Guide

If you have troubleshooting suggestions that you think others will find helpful, we invite you to send them to us so that we can consider including them in a future release. You can:

- **E-mail them** to books_info@iwaysoftware.com. Please include your name and phone number, and put *iWay Server Installation for Windows Troubleshooting* in the subject line.

- **Send them** to:

  Documentation Services
  Attn: Classic iWay Group
  Information Builders
  Two Penn Plaza
  New York, NY 10121-2898

  Please include your name, phone number, e-mail address, and postal address.

# CHAPTER 5

# Server Installation for MVS

**Topics:**

- Installation Requirements
- Unloading the Media

This topic describes the requirements and procedures for proper installation of the Server for MVS.

# Installation Requirements

Before beginning the server installation, review the requirements in the following topics.

- Supported Platforms and Operating Systems
- Disk Space Requirements
- Memory Requirements

## Supported Platforms and Operating Systems

The following software must be installed and operational before installing the server:

- OS/390 1.3 (or higher) or z/OS 1.1 (or higher).
- VTAM V3.2 or higher.
- An external security manager, if security is required.

## Disk Space Requirements

Certain baseline data sets are required for the software, regardless of configuration (in addition to those data sets that depend upon actual configuration). The disk space requirements are as follows:

| Baseline | |
|---|---|
| **Data Set** | **3380 or 3390 Cylinders** |
| *qualif*.EDALIB.DATA | 5 |
| *qualif*.EDALIB.LOAD | 100 |
| *qualif*.EDARPC.DATA | 60 |
| *qualif*.EDAMSG.DATA | 20 |
| *qualif*.EDACTL.DATA | 16 |
| *qualif*.EDA.DBRMLIB | 1 |
| *qualif*.EDAPROF.DATA | 1 |
| *qualif*.INSTALL.DATA | 1 |
| *qualif*.EDAREXX.DATA | 1 |

| Hub, Full-Function, and WebFOCUS Reporting Servers | |
|---|---|
| **Data Set** | **3380 or 3390 Cylinders** |
| *qualif*.EDAAFD.DATA | 1 |
| *qualif*.EDAMFD.DATA | 2 |
| *qualif*.owner.REMTRANS.LOG | 1 |
| *qualif*.owner.SYSCOLLN.FOCUS | 1 |
| *qualif*.owner.SYSCOLLT.FOCUS | 1 |
| *qualif*.owner.SYSRPC.FOCUS | 1 |
| *qualif*.owner.EDASYNA.DATA | 1 |
| *qualif*.owner.EDASYNM.DATA | 1 |

| WebFOCUS Reporting Servers Only | |
|---|---|
| **Data Set** | **3380 or 3390 Cylinders** |
| *qualif*.HTML.DATA | 1 |
| *qualif*.GIF.DATA | 1 |
| *qualif*.STY.DATA | 1 |

| IBM and OCS TCP/IP Only | |
|---|---|
| **Data Set** | **3380 or 3390 Cylinders** |
| *qualif*.EDASASC.LINKLIB | 5 |

| National Language Support (NLS) Only | |
|---|---|
| **Data Set** | **3380 or 3390 Cylinders** |
| *qualif*.EDANLS.DATA | 40 |

**Note:** Retaining the full installation is recommended, in case other services are to be installed on the same system.

## Memory Requirements

The following virtual memory is required for operation of the server.

| Type of use | Virtual Memory Needed |
|---|---|
| Base | 10 MB |
| Per Relational Gateway user | 850 K |
| Per Automatic Passthru-only user | 1.4 MB |
| Per Full-Function Server user | 3.4 MB |

# Unloading the Media

**In this section:**

Step 1. Unload the Install Tools Data Set From the Media

Step 2. Customize Low-level Qualifiers (Optional)

Step 3. Allocate the Software Data Sets and Unload the Media

Step 4. Unload the NLS Data Set From the Media (Optional)

**Example:**

Unloading the Install Tools Data Set From the Media

Allocating and Unloading the Software Data Sets From the Media

Unloading the NLS Data Set From the Media

Complete the following steps to unload data sets from the distribution media.The Server for MVS is supplied on either a single 3490 cartridge (default installation) or on two 3480 cartridges.

## Step 1. Unload the Install Tools Data Set From the Media

Choose a high-level qualifier to store the software under and run an IEBCOPY job to allocate and initialize the *qualif*.EDALIB.DATA PDS. This PDS contains the JCL procedures needed for the actual software installation process. When using two 3480 cartridges, this PDS is on the first cartridge.

The following JCL can be edited to unload this PDS:

```
//COPYEM    EXEC PGM=IEBCOPY
//SYSUT1     DD UNIT=workunit,SPACE=(CYL,(5,1))
//OUT        DD DISP=(NEW,CATLG,DELETE),DSN=qualif.EDALIB.DATA,
//             DCB=(RECFM=FB,LRECL=80,BLKSIZE=1600),
//             SPACE=(CYL,(5,1,100)),UNIT=SYSDA
//IN         DD DISP=(OLD,PASS),DSN=EDALIB.DATA,
//             UNIT=CART,
//             VOL=(,RETAIN,,SER=tapvol),
//             LABEL=(1,SL)
//SYSPRINT   DD SYSOUT=*
//SYSIN      DD *
      COPY OUTDD=OUT,INDD=IN
//
```

where:

*workunit*

Is the unit for the work data set.

*qualif*

Is the selected high-level qualifier for EDALIB.DATA, and the subsequent data sets to be unloaded.

UNIT=CART

Is the unit type of the drive where the media is mounted. The default is CART, but other common names include 3480, TAPE, 3420, or 3490; names can be changed as needed.

*tapvol*

Is the volser label value as shown on the actual physical installation media.

After the job has run, the *qualif*.EDALIB.DATA Install Tools PDS will be allocated, cataloged, and populated with the procedures and jobs needed to continue the install.

## Example: Unloading the Install Tools Data Set From the Media

This sample JCL specifically allocates and unloads the Install Tools PDS into a high-level qualified PDS of IWAY.V5R3M02.EDALIB.DATA. The IWAY.V5R3M02 qualifier was used to indicate a specific product and release, but any qualifier-naming convention may be used.

```
//COPYEM   EXEC PGM=IEBCOPY
//SYSUT1    DD UNIT=SYSDA,SPACE=(CYL,(5,1))
//OUT       DD DISP=(NEW,CATLG,DELETE),
//            DSN=IWAY.V5R3M02.EDALIB.DATA,
//               DCB=(RECFM=FB,LRECL=80,BLKSIZE=1600),
//               SPACE=(CYL,(5,1,100)),UNIT=SYSDA
//IN        DD DISP=(OLD,PASS),DSN=EDALIB.DATA,UNIT=CART,
//               VOL=(,RETAIN,,SER=D5320E),LABEL=(1,SL)
//SYSPRINT  DD SYSOUT=*
//SYSIN     DD *
     COPY OUTDD=OUT,INDD=IN
//
```

## Step 2. Customize Low-level Qualifiers (Optional)

You can optionally complete this step to change the default low-level data set qualifiers to meet a corporate standard. Otherwise, proceed to *Step 3. Allocate the Software Data Sets and Unload the Media* on page 5-8.

**Note:** Changing low-level qualifier names is not recommended (unless necessary).

Edit the *qualif*.EDALIB.DATA(EDASNAME) member and change the low-level data set qualifiers to reflect corporate naming standards.

```
//   SET  EDALIBD='EDALIB.DATA'      Server installation library
//   SET  EDALIBL='EDALIB.LOAD'      Server base load library
//   SET  EDAAFDD='EDAAFD.DATA'      Server access files
//   SET  EDAMFDD='EDAMFD.DATA'      Server master files
//   SET  EDARPCD='EDARPC.DATA'      Server procedures
//   SET  EDAMSGD='EDAMSG.DATA'      Server messages
//   SET  EDACTLD='EDACTL.DATA'      Server base samples
//   SET  EDACICD='EDACICS.DATA'     Server CICS samples
//   SET  EDACICL='EDACICS.LOAD'     Server CICS load library
//   SET  EDASASC='EDASASC.LINKLIB'  Server sockets run-time lib
//   SET  EDADBRM='EDA.DBRMLIB'      Server plan library
//   SET  EDAPROF='EDAPROF.DATA'     Server profiles
//   SET  EDANLSD='EDANLS.DATA'      Server NLS library
//   SET  EDAINST='INSTALL.DATA'     EDA installation O/P Library
//   SET  EDAREXX='EDAREXX.DATA'     ECC REXX RPC Library
//   SET  WFRHTMD='HTML.DATA'        WebFocus HTML library
//   SET  WFRSTYD='STY.DATA'         WebFocus Style Sheet library
//   SET  WFRGIFD='GIF.DATA'         WebFocus GIF library
//   SET  WFRQUED='REQUESTS.DATA'    WebFocus Deferred requests Q
//   SET  WFRRESD='RESULTS.DATA'     WebFocus Deferred results
//   SET  WFRWFMD='WINFORMS.DATA'    Maintain screen library
//   SET  WFRFCMD='FOCCOMP.DATA'     Maintain compile library
```

Any given name on the list may be used in the install process, the configuration process, or both; it is a single control list for any creation.

## Step 3. Allocate the Software Data Sets and Unload the Media

The following steps allocate the actual software data sets and unload them from the media.

Edit and then submit the *qualif*.EDALIB.DATA(EDAJINS2) member making sure to do the following:

1.  Add a job card for your site.

2.  Provide the high-level qualifier in place of *qualif*.

3.  Provide the volser in place of *tapvol*.

    When using two 3480 cartridges, provide the volsers of both cartridges in parenthesis surrounded by single quotes and separated by a comma:

    ```
    '(tapvol1,tapvol2)'
    ```

4.  Modify any additional parameters as required by your site.

5.  If you are installing a WebFOCUS Reporting Server, uncomment the two *WFRALL lines and the two *WFRUNL lines.

6.  If you are rerunning the installation uncomment the *EDADEL line so the current install is removed first. For WebFOCUS also uncomment the *WFRDEL line to remove WebFOCUS data sets.

The EDAJINS2 JCL parameters are as follows:

```
//EDAPROCS JCLLIB ORDER=qualif.EDALIB.DATA
//*EDADEL   EXEC PROC=EDAQDEL,PREFIX='qualif'
//*WFRDEL   EXEC PROC=WFRQDEL,PREFIX='qualif'
//EDAALL    EXEC PROC=EDAQALL,PREFIX='qualif',
//          DUNIT=SYSDA
//*WFRALL   EXEC PROC=WFRQALL,PREFIX='qualif',
//*         DUNIT=SYSDA
//EDAUNL    EXEC PROC=EDAQUNL,PREFIX='qualif',
//          TUNIT=CART,TVOL=tapvol,WORK=SYSDA
//*WFRUNL   EXEC PROC=WFRQUNL,PREFIX='qualif',
//*         TUNIT=CART,TVOL=tapvol,WORK=SYSDA
```

where:

*qualif*

> Specifies the high-level qualifier for the data sets.

DUNIT

> Specifies the disk unit used when allocating the data sets. In this JCL, the default is SYSDA. To specify volume and unit when allocating the data sets, use the following

> `DUNIT='myunit,VOL=SER=myvol'`

> For example:

> `DUNIT='SYSDA,VOL=SER=USERM1'`

TUNIT=CART

> Is the unit type of the drive where the media is mounted. The default is CART; other common names include 3480, TAPE, 3420, or 3490. Change as needed.

*tapvol*

> Is the volser label value as shown on the actual physical installation media. If you are installing from two 3480 cartridges, provide the volsers of both cartridges in parenthesis:

> `TUNIT=CART,TVOL='(tapvol1,tapvol2)',WORK=SYSDA`

WORK

> Specifies a DASD work unit. The default is SYSDA. Change as needed.

**Example: Allocating and Unloading the Software Data Sets From the Media**

The following JCL samples (for a modified EDAJINS2) allocate and unload the remaining required data sets with a high-level qualifier of IWAY.V5R3M02. The IWAY.V5R3M02 qualifier indicates a specific product and release, but any qualifier-naming standard may be used. Follow the example for your media type.

- An example for using a **single 3490 cartridge** is the following:

```
//EDAPROCS JCLLIB ORDER=IWAY.V5R3M02.EDALIB.DATA
//*EDADEL  EXEC PROC=EDAQDEL,PREFIX='IWAY.V5R3M02'
//*WFRDEL  EXEC PROC=WFRQDEL,PREFIX='IWAY.V5R3M02'
//EDAALL   EXEC PROC=EDAQALL,PREFIX='IWAY.V5R3M02',
//         DUNIT=SYSDA
//*WFRALL  EXEC PROC=WFRQALL,PREFIX='IWAY.V5R3M02',
//*        DUNIT=SYSDA
//EDAUNL   EXEC PROC=EDAQUNL,PREFIX='IWAY.V5R3M02',
//         TUNIT=CART,TVOL=D5320E,WORK=SYSDA
//*WFRUNL  EXEC PROC=WFRQUNL,PREFIX='IWAY.V5R3M02',
//*        TUNIT=CART,TVOL=D5320E,WORK=SYSDA
```

Add a job card and submit to start the actual unload.

- An example for using **two 3480 cartridges** is the following:

```
//EDAPROCS JCLLIB ORDER=IWAY.V5R3M02.EDALIB.DATA
//*EDADEL  EXEC PROC=EDAQDEL,PREFIX='IWAY.V5R3M02'
//*WFRDEL  EXEC PROC=WFRQDEL,PREFIX='IWAY.V5R3M02'
//EDAALL   EXEC PROC=EDAQALL,PREFIX='IWAY.V5R3M02',
//         DUNIT=SYSDA
//*WFRALL  EXEC PROC=WFRQALL,PREFIX='IWAY.V5R3M02',
//*        DUNIT=SYSDA
//EDAUNL   EXEC PROC=EDAQUNL,PREFIX='IWAY.V5R3M02',
//         TUNIT=CART,TVOL='(A5320E,B5320E)',WORK=SYSDA
//*WFRUNL  EXEC PROC=WFRQUNL,PREFIX='IWAY.V5R3M02',
//*        TUNIT=CART,TVOL='(A5320E,B5320E)',WORK=SYSDA
```

Add a job card and submit to start the actual unload.

The JCL will allocate and load the following data sets:

| Data Set | Description |
|----------|-------------|
| *qualif*.EDALIB.LOAD | Server base load library. |
| *qualif*.EDAAFD.DATA | Server Access Files. |
| *qualif*.EDAMFD.DATA | Server Master Files. |
| *qualif*.EDARPC.DATA | Server procedures. |
| *qualif*.EDAMSG.DATA | Server messages. |
| *qualif*.EDACTL.DATA | Server base samples. |
| *qualif*.EDASASC.LINKLIB | Server sockets run-time library. |
| *qualif*.EDA.DBRMLIB | DB2 installation library. |
| *qualif*.EDAPROF.DATA | Server profile. |
| *qualif*.INSTALL.DATA | EDA installation O/P library. |
| *qualif*.EDAREXX.DATA | ECC REXX RPC library. |

**Note:** When running EDAJINS2, a member named EDAPREFX will be generated in *qualif*.EDALIB.DATA. This member contains the following line

```
//  SET PREFIX='qualif'
```

where:

*qualif*

    Specifies the high-level qualifier for the data sets.

This member is used by subsequent routines to provide the high-level qualifier information for data sets (such as catalogs). However, the JCL used in the actual configuration process requires that the qualifier is edited for actual use. See the *iWay Server for MVS Configuration* manual for more information on the configuration routines.

## Step 4. Unload the NLS Data Set From the Media (Optional)

Complete this step when using National Language Support (NLS) features.

The following JCL steps allocate the data sets needed for NLS. Edit the
*qualif*.EDALIB.DATA(NLSJINS2), add a job card, and submit the job. The JCL parameters to
change are:

```
//EDAPROCS JCLLIB ORDER=qualif.EDALIB.DATA
//*NLSDEL   EXECPROC=NLSQDEL,PREFIX='qualif'   '  (remove * for job rerun)
//NLSALL    EXECPROC=NLSQALL,PREFIX='qualif',',
//          DUNIT=SYSDA
//NLSUNL    EXECPROC=NLSQUNL,PREFIX='qualif',
//          TUNIT=CART,TVOL=tapvol
```

where:

*qualif*

Specifies the high-level qualifier for the data sets.

DUNIT

Specifies the disk unit used when allocating the data sets. In this JCL, the default is
SYSDA. To specify a volume and unit when allocating the data sets, use the following
form:

```
DUNIT='myunit,VOL=SER=myvol'
```

For example,

```
DUNIT='SYSDA,VOL=SER=USERM1'
```

TUNIT=CART

Is the unit type of the drive which the media is mounted. The default is CART, but other
common names include 3480, TAPE, 3420, or 3490. Change as needed.

*tapvol*

Is the volser label value as shown on the actual physical installation media. If you are
installing from two 3480 cartridges, provide the volsers of both cartridges as follows:

```
TUNIT=CART,TVOL='(tapvol1,tapvol2)'
```

### Example:   Unloading the NLS Data Set From the Media

This sample JCL (of a modified NLSJINS2) allocates and unloads, from a single 3490 cartridge, the NLS data sets with a high-level qualifier of IWAY.V5R3M02. The actual qualifier must match the qualifier used in prior steps.

```
//EDAPROCS JCLLIB ORDER=IWAY.V5R3M02.EDALIB.DATA
//*NLSDEL   EXECPROC=NLSQDEL,PREFIX= IWAY.V5R3M02'
//NLSALL    EXECPROC=NLSQALL,PREFIX='IWAY.V5R3M02,
//          DUNIT=SYSDA
//NLSUNL    EXECPROC=NLSQUNL,PREFIX='IWAY.V5R3M02',
//          TUNIT=CART,TVOL=D5320E
```

If you are using two 3480 cartridges, you must provide both volsers for the TVOL:

```
//          TUNIT=CART,TVOL='(A5320E,B5320E)'
```

**Note:** To rerun this job, remove the * before NLSDEL. This will delete the data set before reallocating it.

The JCL will allocate and load the following data set:

| Data Set | Description |
|---|---|
| qualif.EDANLS.DATA | National Language Support library. |

This concludes the software installation process. Configuration is covered in the *iWay Server Configuration for MVS* manual. If a separate administrator performs the configuration, the high-level qualifier selected and used in the installation should be provided for configuration purposes.

# Server Installation for OS/400

**Topics:**

This document describes the requirements and procedures for proper installation of the Server for OS/400.

# Step 1. Reviewing System Requirements

**In this section:**

Operating System Release Requirements

Shell Requirements

Disk Space Requirements

Memory Requirements

Communications Requirements

MQ XML Listener Requirements

Before beginning server installation, review the requirements in the following topics.

## Operating System Release Requirements

The following table lists supported platforms and operating system releases. Confirm that the platform and the intended operating system releases are supported combinations on the chart. In addition, confirm that the label on the actual media indicates the correct software for the given OS level you are using.

| Hardware / Operating System Vendor | Operating System Release | CD-ROM Label |
|---|---|---|
| IBM iSeries (RISC) | OS/400 V4R4 | OS400 V04R04M00 |
| | OS/400 V4R5 | OS400 V04R05M00 |
| | OS/400 V5R1 or Higher (required for DBCS) | OS400 V05R01M00 |

The software also supports data adapters. See the DBMS support chart for specific combinations. Specific DBMS information (such as release levels, user IDs, and passwords) is not used during the basic installation, but will be used later during configuration.

To use the server for DBCS language code page configurations (i.e. Japanese), you must be running OS/400 V5R1 or higher. The installation process for this level of software includes an additional prompt (as shown in the example below) to select the initial installation code page. Due to the limitations of the OS/400 V5R1 operating system, if you intend to configure for one of the listed DBCS code pages, you must select the initial code page during initial server installation, so that certain files will be unloaded properly. In all cases, the specific language and code page (both DBCS pages and non-DBCS pages) must then also be configured on the Web Console. If your DBCS language is not listed, please contact customer support.

The operating system should also have the latest cumulative patch levels applied.

## Shell Requirements

The OS/400 - QShell Interpreter (OS/400 Installation Option 30) must be installed to use the server. The QShell Interpreter is a free, but optionally installable feature of OS/400. The easiest way to check if this feature is installed is to enter QSH on the OS/400 command line. If it is installed, a Unix like environment starts (F3 to exit). If it is not installed, you receive a "Command QSH in library *LIBL not found" message. If it is not installed, install it before proceeding.

## Disk Space Requirements

The following are approximate disk space requirements. Specific sizes may vary slightly with options selected during configuration. The usage numbers do not include space for actual applications, data sources, sort space, output preparation, or logs.

| Platform | Version | During Install | After Install |
|---|---|---|---|
| IBM iSeries OS/400 | V4R4 | 1200 Megabytes | 600 Megabytes |
| | V4R5 | 1200 Megabytes | 600 Megabytes |
| | V5R1 | 1200 Megabytes | 600 Megabytes |

## Memory Requirements

Memory and shared memory usage depend on the following elements:

- Number of data access agents.
- Type of access that is performed: joins, large retrieval, etc.
- Connection queue.

Actual memory usage differs between applications and the server load.

## Communications Requirements

The TCP/IP transport protocol is supported on all platforms and is the primary method of communications between iWay-enabled connector applications and servers. Up to 6 consecutive open ports for each server you want to run are required. The starting port number (of the consecutive ports) is required as a parameter during the installation process, since the initial installation also yields an initial configuration.

## MQ XML Listener Requirements

OS/400 System Administrators, note the following PTFs must be installed for access to the MQ XML listener.

| OS400 V4R4 | OS400 V4R5 | OS400 V5R1 |
|---|---|---|
| SF66797 | SF66797 | no PTFs required |
| SF66796 | SF66796 | |
| SF66621 | SF66715 | |
| SF66573 | SF66714 | |
| SF66572 | SF66621 | |
| SF66428 | SF66573 | |
| SF66322 | SF66572 | |
| SF66304 | SF66495 | |
| SF66102 | SF66428 | |
| SF66101 | SF66322 | |
| SF66073 | SF66304 | |
| SF66071 | SF66287 | |
| SF65944 | SF66102 | |
| SF65919 | SF66101 | |
| SF65823 | SF66100 | |
| SF65822 | SF66073 | |
| SF65805 | SF66071 | |
| SF65128 | SF65944 | |
| SF65127 | SF65939 | |
| SF65088 | SF65919 | |
| SF64746 | SF65823 | |
| SF64739 | SF65822 | |
| SF64735 | SF65814 | |
| | SF65810 | |
| | SF65805 | |
| | SF65791 | |
| | SF65260 | |
| | SF65165 | |
| | SF65128 | |
| | SF65127 | |
| | SF65088 | |
| | SF65076 | |
| | SF64746 | |
| | SF64739 | |
| | SF64735 | |
| | SF63984 | |

# Step 2. Creating User IDs

The installation of an iWay server requires an ID to install and own the files as well as to administer the server; this is also known as the "iadmin" ID. The iadmin ID should:

- Not be QSECOFR, have a group of QSECOFR, or have other special authorities.

- Have a message queue delivery of *NOTIFY if this is not the default for the system.

- Have a HOMEDIR other than the OS/400 default of "/" and the directory should exist.

- Have code page 37 (EBCDIC 8-bit West European), or have a code page that is compatible with 37.

  To determine if the code page you use is compatible with code page 37, check if the square brackets ( [ ] ) in your code page are in the same position as on code page 37.

  - If square brackets are in the same position, your code page is compatible with 37. You need do nothing else.

  - If square brackets are *not* in the same position, change the code page that is specified in the OS/400 iadmin profile to 37 (or to a code page compatible with 37). Then log iadmin off the system, and log it on again to install the server.

  You can find code page descriptions at:

  http://www.ibm.com/servers/eserver/iseries/software/globalization/codepages.html

In addition to the ID you assigned to administer the server, referred to as *iadmin*, which can have any value you assign, you will need a second ID literally called iadmin to properly unload the CD-ROM library. If this literal iadmin ID is not being used to install and own the files, you can remove it after installation.

To properly create the real iadmin ID and home directory (as QSECOFR), issue the following:

```
CRTUSRPRF USRPRF(IADMIN) PASSWORD(MYPASS) HOMEDIR('/home/iadmin')
 TEXT('Server Administrator ID') DLVRY(*NOTIFY)
QSH CMD('mkdir /home/iadmin')
QSH CMD('chmod 755 /home/iadmin')
QSH CMD('chown iadmin /home/iadmin')
```

Running the server in secured mode also requires that particular files have their ownership changed to QSECOFR (this step is done after installation).

End users of the server will also require an ID for access if the server is running in secured mode. The data access agents of the server will impersonate these user IDs before performing any file access on their behalf. No special authorities or setup are needed for these IDs.

In this documentation, iadmin user ID names and group associations are "iadmin;" this name is only suggested for easier reference. You may use any actual name for the administrator ID.

**Note:** The iadmin ID should only be available to users who require administrative privileges to the server for security purposes.

# Step 3. Acquiring the Installation Library

Software must be installed from a library that is restored either from a CD or an FTPed save file.

- **From CD.** The software is provided on CD. This is how most installations are performed. For CD installation, see *Acquiring the Installation Library From CD* on page 6-6.

- **From FTP.** The software can be downloaded from a special FTP site. You must contact your Information Builders representative for FTP site information if you wish to use this option. For FTP installation, see *Acquiring the Installation Library From the FTP Site* on page 6-7.

## Acquiring the Installation Library From CD

1. Log on as a QSECOFR authorized ID.

2. Place the CD in the CD drive.

3. Restore the product library from the CD to disk with:

   ```
   RSTLIB SAVLIB(R720532BTP) DEV(OPT01)
   ```

   **Note:** The actual device name may differ. To view available devices, use the command:

   ```
   WRKCFGSTS CFGTYPE(*DEV) CFGD(*OPT)
   ```

   If you have an existing library that you do not want to overwrite, use the following syntax, which assigns the name ABC:

   ```
   RSTLIB SAVLIB(R720532BTP) DEV(OPT01) RSTLIB(ABC)
   ```

   and substitute this alternate library name (ABC in the above example) wherever R720532BTP is used in these instructions.

   The actual library name will also differ when you install a service pack (e.g., 5.3.3 versus 5.3.2). The numeric portion of the library name will match the service pack number; for instance, the library name for 5.3.2 would be R720532BTP, while for 5.3.3 it would be R720533BTP, and so forth. In the case of a service pack, the appropriate library name must be substituted as the product library name in these instructions.

4. If you are not using the real iadmin as the iadmin ID to own the files and manage the server, issue (as QSECOFR):

   ```
   CHGOBJOWN OBJ(R720532BTP/INU) OBJTYPE(*PGM) NEWOWN(QSECOFR)
   ```

5. Log off the QSECOFR user ID and proceed to *Step 4. Running the Installation Program* on page 6-9.

After you complete the installation, you can delete the installation library.

## Acquiring the Installation Library From the FTP Site

If you are downloading software from the FTP site, you must follow these instructions for creating save files and restoring libraries from save files.

1. Log on as any ID.

2. If your FTP connection is from an OS400 machine to either the Information Builders FTP site or a local site where the .savf was already downloaded, transfer the file in binary mode as follows:

```
ftp {node}
{id}
{password}
cd {target_directory}
syscmd crtsavf file(*curlib/iserver)
binary
get iserver.savf iserver (replace
quit
```

where:

*target_directory*

Is the URL to which you were directed for downloading the software, or the directory to which you have already downloaded the file.

A copy of the installation instructions is available in this directory.

If your FTP connection is from a PC or UNIX machine on which you already downloaded a .savf file from the Information Builders FTP site to the OS400 machine, transfer the file in binary mode as follows:

```
ftp {node}
{id}
{password}
cd {target_directory}
quote rcmd crtsavf file(*curlib/iserver)
binary
put iserver.savf iserver (replace
quit
```

where:

*target_directory*

Is the directory to which you have already downloaded the file.

A copy of the installation instructions is available in this directory.

**Note:** UNIX is case-sensitive. FTP commands must be lowercase. File names, which are generally lowercase, must match the case of the file being referenced.

3. Log on to OS400 as a QSECOFR authorized ID.

**4.** Restore the installation library from the save file:

```
RSTLIB SAVLIB(R720532BTP) DEV(*SAVF) SAVF(IADMIN/ISERVER) MBROPT(*ALL)
```

If you have an existing library that you do not want to overwrite, use the following syntax, which assigns the name ABC:

```
RSTLIB SAVLIB(R720532BTP) DEV(*SAVF) SAVF(IADMIN/ISERVER) MBROPT(*ALL)
   RSTLIB(ABC)
```

and substitute this alternate library name (ABC in the above example) wherever R720532BTP is used in these instructions.

The actual library name will also differ when you install a service pack (e.g., 5.3.3 versus 5.3.2). The numeric portion of the library name will match the service pack number; for instance, the library name for 5.3.2 would be R720532BTP, while for 5.3.3 it would be R720533BTP, and so forth. In the case of a service pack, the appropriate library name must be substituted as the product library name in these instructions.

**5.** Log off the QSECOFR user ID and proceed to *Step 4. Running the Installation Program* on page 6-9.

After you complete the installation, you can delete the iserver save file and the R720532BTP installation library.

# Step 4. Running the Installation Program

**In this section:**

Additional Configurations

Refreshing an Installation

Debuggable Version

**Example:**

Full-Function Installation

1. Log on with the IADMIN user ID.

2. On the OS/400 command line, call the installation procedure. For example:

   `CALL R720532BTP/ISETUP`

   The ISETUP program requires a license key (see the shipping manifest for the actual key) plus a few basic parameters. The ID being used to install the software is the server administrator ID (iadmin); its password is prompted for and required to accomplish certain operations.

   All other parameters have defaults and are displayed. Responding "yes" to this list of defaults skips the process to the final confirmation step; otherwise, you are prompted individually for each of the values.

   NLS on a server is set to "off" by default. It is configured using the Web Console.

   The parameters are:

   | Parameter | Description |
   | --- | --- |
   | License Key | Installation Key (actual key will be on shipping documents). |

| Parameter | Description |
|---|---|
| Initial Code Page | The code page to be used by the server. |
| | Option 1, the default, is the default code page of iadmin (that is, of the user ID that is performing this installation). Note that a user's profile may specify a specific page or the system default. |
| | **If your default code page is not 37** (EBCDIC 8-bit West European), determine if the code page you use is compatible with code page 37: check if the square brackets ( [ ] )in your code page are in the same position as on code page 37. |
| | • If square brackets are in the same position, your code page is compatible with 37. When prompted for a code page, accept the default option (1). |
| | • If square brackets are not in the same position: |
| | **1.** Change the code page that is specified in the OS/400 iadmin profile (that is, the profile of the user ID installing the server) to 37, or to a code page that is compatible with 37. |
| | **2.** iadmin must log off and then log on again. |
| | **3.** The iadmin code page must remain 37 for the duration of the installation and configuration process. |
| | **After installing the server, you can configure it for National Language Support (NLS),** specifying any language you want, regardless of the code page you choose now at this prompt. The server will use the appropriate code page for the language you specify during NLS configuration. You configure NLS using the Web Console. |
| | **Under OS/400 Version 5 Release 1 and higher,** there is an additional prompt for the DBCS code page. Lower release numbers do not have this prompt. |
| Media for Product | Installation library name. For example: R720532BTP. |
| EDAHOME | IFS Directory location for files. Any changes in the EDAHOME location must follow the pattern *ibi.srv53*.home* in its declaration. |
| EDAHOMELIB | QSYS library location for programs. |

| Parameter | Description |
|---|---|
| EDACONF | Location for the default configuration. The default value is based on the license key and any change in the EDAHOME directory pattern. The default will be a sibling directory to the EDAHOME directory in terms of its location, and have a name such as ffs, wfm, dm, spg or wfs (based on the key and on any change in the EDAHOME pattern). |
| APPROOT | Location for default applications and sample applications. |
| Server Admin Password | Server Administrator password. It is recommended to supply a password. |
| TCP Base Port | The port number on which the server's TCP listener listens. Also the start of the set of port numbers used by the server for other TCP based services. |

### Example: Full-Function Installation

The example below shows a Full-Function Server installation using the defaults. The prompts are self-explanatory.

From the command line on the OS/400 Menu:

```
CALL R720532BTP/ISETUP
```

```
----------------------------------------------------------------------

              Welcome to the Product Set Up Facility
    Please respond to the prompts or enter Q to quit at any prompt.

----------------------------------------------------------------------


Select an initial code page:

     1. Generic     37 (Configure Specific Code Page via Web Console)
     2. Japanese   939
     3. Japanese  5035

Enter a selection (Default=1) : 1
```

```
        ------------------------------------------------------------------------


        Select an option:

            1. Install and Configure
            2. Add Additional Configuration Instance
            3. Refresh Installation (Reinstall, Keep Configurations))
            4. Install Debuggables to the Installation Directory

        Enter a selection (Default=1) : 1

        ------------------------------------------------------------------------

        Enter your License Key (Format 999-999-9999) : xxx-xxx-xxxx

            License Key has been checked

            Product: Full Function Server
            Maximum Number of Users: 2
            Maximum Number of CPUs: 2

        ISETUP: License xxx-xxx-xxxx has been accepted

        ------------------------------------------------------------------------

        Please enter the media library name

        (Default=R720532BTP)

        Please supply media or <Enter> :

        ------------------------------------------------------------------------

        Enter the Server Administrator (IADMIN) Password: XXXXXXX

        ------------------------------------------------------------------------

        Please review the default settings.

        EDAHOME = /home/iadmin/ibi/srv53/home
        EDAHOMELIB = srv53
        EDACONF = /home/iadmin/ibi/srv53/ffs
        APPROOT = /home/iadmin/ibi/apps
        TCP_BASE_PORT = 8100
```

```
If you are satisfied with the default settings you may proceed to
final confirmation else you will be prompted for individual values.
Proceed with defaults? (Y/N Default=Y) : Y

The following selections have been made for ...

Install Options ...
      INSTALLATION_DEVICE = R720532BTP
      PRODUCT = server
      EDAHOME = /home/iadmin/ibi/srv53/home
      EDAHOMELIB = srv53
      APPROOT = /home/iadmin/ibi/apps

Configure Options ...
      EDACONF = /home/iadmin/ibi/srv53/ffs
      EDAHOME = /home/iadmin/ibi/srv53/home
      EDAHOMELIB = srv53
      LICENSE = xxx-xxx-xxxx
      APPROOT = /home/iadmin/ibi/apps
      SERVER_TYPE = ffs
      SERVER_NAME = "IWAY 53 Full Function Server"
      SERVER_ADMIN_ID = iadmin
      SERVER_ADMIN_PASSWORD = ECECC5B1F12E735A
      TCP_BASE_PORT = 8100

Please confirm these values with one of the following responses ...

    Y = Accept and Proceed
    N = Start Over
    Q = Quit

Please supply confirmation: Y

Please, wait while we are installing the server ...

ISETUP: Installation Step completed

Please, wait while we are configuring the server ...

ISETUP: Configuration Step completed

---------------------------------------------------------------------

Would you like to start the server (Y/N Default=Y)? : Y

ISETUP: The server has been started
```

```
--------------------------------------------------------------------

To administer the server go to a web browser
and open the URL http://myhost.mycompany.com:8101

Press ENTER to end terminal session.
```

After pressing the ENTER key, control returns to the command prompt of the OS/400 Menu.

If you are satisfied with the selections, answer "yes" to the final prompt and wait for the return of the command prompt before proceeding to the next step.

If any of the target locations exist, they will be marked with "(*EXISTS*)" on the display line. This gives you the opportunity to change a location if you do not want to overwrite it by changing the default values.

If you decide to change a default, you will be prompted for the individual values. However, you must follow some rules about directory locations. The default root location is the iadmin user ID home directory. The EDAHOME directory path name is locked into the pattern *ibi/srv53*/home*. If you change EDAHOME, the default EDAHOMELIB and EDACONF follow the change in the pattern. The EDAHOMELIB and EDACONF may also be changed, but they are locked into a similar pattern (except for the lowest portion of the EDACONF directory name, which reflects the type of server).

## Additional Configurations

If you have additional licenses and need to configure an additional server, log on with the iadmin ID, start QSH, and run EDAHOME bin/isetup, where EDAHOME is the directory on which the software was installed (ibi/srv53/home by default). At the main menu, select option 2, Add Additional Configuration Instance.

The prompts for adding a configuration are similar to those for an installation, but EDAHOME is the directory where the software was originally installed. Typically, you would not want to accept the defaults, as doing so will cause your current configuration to be overwritten. If the supplied EDACONF already exists, the installation will copy it to a directory called BACKUP.

## Refreshing an Installation

Sometimes it is desirable to refresh the server software's installation directory (EDAHOME) because it has become accidentally damaged, populated with unwanted files, or needs updating with a service pack. To do this, run the ISETUP program on the CD-ROM from which the software was originally installed, or from a service pack CD-ROM. At the main menu, select option 3, Refresh Installation (Reinstall, Keep Configuration). This refreshes programming files under the server installation directory (EDAHOME) and does not affect any configuration directories. The complete directory tree (EDAHOME) and library (EDAHOMELIB) are removed and re-created; if any files need to be retained, they should be copied elsewhere beforehand.

## Debuggable Version

As with any complex software product, there is sometimes a need to produce traces and other information in order to identify problems; thus debuggable software is needed. Whether the original software CD-ROM has these debuggables is generally dependent on disk space. The debuggable version should not be installed and activated unless explicitly requested by customer support for problem resolution. If a separate CD-ROM is required, it will be shipped as needed. When necessary, install the debuggable version by running ISETUP from the appropriate CD-ROM and selecting option 4, Install Debuggables to the Installation Directory, from the main menu.

# Step 5. Verifying the Server Installation

To test the installation, use the initial configuration created by the installation. The server may be brought up, checked, connected to, tested, disconnected, and shut down using the following steps.

1. Log on with the iadmin user ID.

2. There are several methods to start a server and options that may be used. The following method for starting a server (using the appropriate library name and TSCOM300 options) would be the most familiar to an OS/400 Administrator:

```
CALL SRV53/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv53/ffs -start')
```

Alternate startup methods and batch examples are noted below.

3. Check to ensure that the processes are up with -show:

```
CALL SRV53/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv53/ffs -show)
```

4. Start the Web Console by starting a browser pointed at the listener port of the server. The URL format is http://host:port. For example, http://host:8101 for the iWay Server and http://host:8121 for the WebFOCUS Server (if the default ports were used during installation). The actual listener port number is one higher than the TCP listener port specified during the installation.

5. If the server is running in secured mode, you will receive a logon screen. Log on with the iadmin user ID.

6. The home page of the Web Console will open. The home page is arranged in a menu like context for the various features it supports. Use of the server admin ID (iadmin) to log on will display server administration features that non admin IDs would not normally see.

   Information on how to use the Web Console is available as a drill-down on the Console itself and in the *Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

7. The home page has a drill-down for testing the server. Click the test drill-down to run a sample report.

8. If you are done using the server, use the Stop Server drill-down on the Web Console Menu.

9. If there are startup problems, examine the IFS/ home/iadmin/ibi/srv53/ffs/edaprint.log file.

# Step 6. Configuring the Server With Different Security Modes

There are two security modes for a Server.

- **Security OFF.** This is the default unless security was configured.

- **Security ON.** With security ON, users must either send a password to connect to the server or use some other form of verification.

Each of these security options can be set with the EDAEXTSEC variable, as follows.

```
export EDAEXTSEC={ON|OFF}
```

The default is OFF unless the server has been configured for Secured Mode, as described below; then the default is ON.

## Procedure: How to Configure the Server for Secured Mode

To run a server in secured mode on OS/400, certain files must claim ownership by QSECOFR or a QSECOFR authorized ID. Running with security ON forces users to send a password to connect to the server, or to use some other form of verification. While general installation of the server software is done by iadmin (an ordinary user ID), this step requires QSECOFR authority.

To change ownerships, do the following:

1. Log on as QSECOFR.

2. Using the library specified during the installation, change the file ownership by entering the following commands:

```
CHGOBJOWN OBJ(SRV53/TSCOM300) OBJTYPE(*PGM)    NEWOWN(QSECOFR)

CHGOBJOWN OBJ(SRV53/R1SEC)    OBJTYPE(*SRVPGM) NEWOWN(QSECOFR)
```

Your software is now installed along with an initial configuration.

# General Server Start Up and Use

After configuring for secured mode (if desired), the server is started and managed using the same server startup and Web Console startup steps used for validating the server (steps 1 - 6). If the server has not been configured for adapters, now is an appropriate time to do so, using the Web Console and the *Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

To ensure that the Web Console is accessible, the ID that starts the server must be iadmin (the ID that installed the server), or else have code page 37, or a code page compatible with 37. For more information, see *Step 2. Creating User IDs* on page 6-5.

OS/400 Sites have the option of using QSH commands that run "edastart" or a CALL to TSCOM300 to start and manage a server.

The chart below lists commonly used "edastart" options and functions (the parameters are the same for TSCOM300 usage).

| Command and Option | Function |
|---|---|
| edastart | (No parameters) Starts the server with the line mode console to actively view the server log (edaprint). Also allows dynamically issuing edastart options, such as show, traceon, traceoff, quit, stop, etc. Use your 5250 SysReq key and enter "2" to receive the console command prompt to enter commands. |
| | If you are using a PC and 5250 emulator software, see your emulator keyboard map for the PC's equivalent key or use your emulator's help instructions on how to create mapping for the SysReq key. |
| edastart -start | Starts the server in background; only a short message appears. |
| edastart -sstart n | Starts the server, but waits n seconds for actual startup. |
| edastart -show | Shows general status of server and agents. |
| edastart -stop | Stops the server. |

| Command and Option | Function |
|---|---|
| `edastart -quit` | Exits the server's line mode console log (edaprint) and returns to the operating system command prompt, but leaves the server running. |
| `edastart -console` | Reenters the server's line mode console log (edaprint). |
| `edastart -traceon` | Turns on tracing. May be used at initial startup or after. Tracing should not be turned on (due to overhead) unless there is a problem that needs to be traced. It is always preferable to start traces at initial startup time unless instructed otherwise. |
| `edastart -traceoff` | Turns off tracing. |
| `edastart -?` | Displays edastart options (this list, plus more). |
| `edastart -?s` | Displays support information and support related options. |

**Note:** The OS/400 commands WRKACTJOB and WRKSBMJOB should not be used to shutdown a running server.

Alternate startup methods, which start the server either with command line options or as a submitted job, are detailed in *Other OS/400 Start Up Options* on page 6-19.

# Other OS/400 Start Up Options

**In this section:**

CL and CMD Programs

The methods below may be used to start or manage the server environment using either native OS/400 CALL syntax or QSH syntax. (The directory and library names specified during the installation process are used in these examples.)

- To start the server from the native OS/400 menu command line, use:

```
CALL SRV53/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv53/ffs -start')
```

- To start the server from the native OS/400 menu command line with traces, use:

```
CALL SRV53/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv53/ffs -start
-traceon')
```

- To stop the server from the native OS/400 menu command line, use:

```
CALL SRV53/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv53/ffs -stop')
```

- To clear all server resources after a malfunction or after server termination using WRKACTJOB or WRKSBMJOB from the native OS400 menu command line, use:

```
CALL SRV53/TSCOM300 PARM('-edaconf /home/iadmin/ibi/srv53/ffs -clear')
```

- To start the server from the command line of a QSH session, use:

```
QSH (starts QSH)
/home/iadmin/ibi/srv53/ffs/bin/edastart -start
```

- To stop the server from the command line of a QSH session, use:

```
QSH (starts QSH)
/home/iadmin/ibi/srv53/ffs/bin/edastart -stop
```

- To start the server as a QSH session, but from the OS/400 command line, use:

```
QSH CMD('/home/iadmin/ibi/srv53/ffs/bin/edastart -start &')
```

- To stop the server as a QSH session, but from the OS/400 command line, use:

```
QSH CMD('/home/iadmin/ibi/srv53/ffs/bin/edastart -stop')
```

- To start the server as a submitted QSH session on the OS/400 command line with a code page (Belgium), use:

```
SBMJOB CMD(QSH CMD('/home/iadmin/ibi/srv53/ffs/bin/edastart -start
&'))
JOB(MYJOB) LANGID(NLB) CNTRYID(BE) CCSID(500)
```

- To start the server as a submitted job on the OS/400 command line with a code page (Belgium) and specific job queue, use:

```
SBMJOB CMD(CALL SRV53/TSCOM300 PARM('-edaconf
/home/iadmin/ibi/srv53/ffs'))
JOB(MYJOB) LANGID(NLB) CNTRYID(BE) CCSID(500) JOBQ(MYQUEUE)
```

**Note:** The -start and -sstart options should not be used for submitted jobs. These options close the job log file, which causes the submitted job to end immediately.

You can issue other combinations of standard server control parameters by replacing the option in one of the examples above with another "edastart" option, such as -stop, -show, -traceon, and -traceoff.

**Note:** It is important in a submitted job to include "-start" and a trailing "&" in the QSH command (as shown above) when using this form of SBMJOB. Failure to do so will cause ENDSBS or ENDSYS to fail in shutting down the spawning processes.

## CL and CMD Programs

The process of installing a server will also create and compile CL and CMD sources so that server functions such as start, stop, show and tracing may be activated on the OS/400 menu command line. The start command starts the server as a batch job issued to a specified job queue, and is particularly useful for automatically starting a server at boot time or with minimal effort.

The source is created and permanently assigned to a configuration's bin directory, then copied into QTEMP and compiled. If the ID being used to install the server has an explicit current library, the compiled programs will reside in *CURLIB; otherwise, they will go to QGPL. The user ID should have a current library (CURLIB). The core EDASTART program is generic for any installation and is driven by the defaults within the command files. If you want to have more than one configuration, use separate libraries or rename the programs to prevent overwriting. The basic commands and functions are listed in the table below.

| Command | Function |
|---------|----------|
| ISTART | edastart |
| ISTOP | edastart -stop |
| ISHOW | edastart -show |
| ISHOWLOG | edastart -showlog |
| ITRCON | edastart -traceon |
| ITRCOFF | edastart -traceoff |

| Command | Function |
|---------|----------|
| ICLEAR | edastart -clear |
| ICLRDIR | edastart -cleardir |
| ISAVEDIA | edastart -savediag |

To use any of the commands, type the command at the OS/400 Menu command line. You may change any of the following settings by using the OS/400 F4 Prompt mode:

- EDACONF Directory EDASTART Parameter

- Subsystem Name

- Subsystem Library Name

- Language ID

- Country ID

- Coded Character Set ID

- Job Name Prefix

The CL and CMD script may be further customized, or the defaults may be changed, by manually copying the desired file to a library and then changing and recompiling it. Detailed instructions for all steps are contained within the EDASTART CL source. Configuration of a particular language on the Web Console does not currently change the defaults with the file sources; these must be changed manually.

# Accessing IFS Files and QSYS Libraries

**In this section:**

Using Conventions for QSYS

**How to:**

Use Conventions for IFS

**Example:**

Accessing QSYS Libraries

**Reference:**

Environment Variables

The location of FOCEXEC, MASTER, and FOCUS application files starting with release 5.x may be QSYS, IFS, or both. IFS is the preferred location, and is the location used for files created by the HTTP Web Console.

**Syntax:** **How to Use Conventions for IFS**

IFS access follows the standards of a number of other platforms for EDAPATH, FILEDEF, USE, and APPS, but is most like UNIX because the file names follow the same rules. The following is a summary of the respective commands and conventions

```
SET EDAPATH = directory  [: directory ]

FILEDEF ddname DISK filename [ ( options ]

USE
filename [AS name ]
END

APP MAP MYAPP directory
```

where:

*directory*

Is the full path directory name (for example, /home/iadmin/acctng).

*ddname*

Is the reference name for the file being opened.

*filename*

Is either the relative or full path file name (for example, myfile.dat, acctng/myfile.dat or /home/iadmin/acctng/myfile.dat).

*options*

Are the available access options such as LRECL or RECFM.

*name*
>    Is the alternate name for the Master File.

Use of a relative path name is not recommended, since this varies with any given connection to the server. Use of environment variables or shortcuts (for example, $HOME or ~) are not supported in any context.

## Using Conventions for QSYS

QSYS access works with libraries and has the following EDAPATH, FILEDEF, USE, and APP support for accessing existing applications.

iWay 5.x has two application search methodologies, APP and EDAPATH. The 5.1 default was EDAPATH and the 5.3 default is APP. APP is enabled by the APP ENABLE command in the server profile.

The EDAPATH command is used to access IFS. It is also used to access QSYS Libraries with an IFS style of references. The option to use IFS references to QSYS Libraries is a native feature of OS/400. IFS references to QSYS names, such MYLIB, use IFS style references such as /QSYS.LIB/MYLIB.LIB, which are clearly recognizable as a QSYS reference. IFS QSYS references used in EDAPATH or APP MAP must be capitalized for proper utilization.

EDAPATH searches recognize these QSYS type of specifications and make the application library members (for example, EDAMAS(*), EDAACX(*), FOCEXEC(*)) available.

### Example:   Accessing QSYS Libraries

In APP mode, the APP MAP command supports use of IFS QSYS Library references so the MAP NAME may be used for path search purposes in applications via the APP PATH command. However, the contents of a QSYS mapping are not available from the Web Console.

The syntax for APP MAP to a QSYS Library is:

```
APP MAP ACCTNG /QSYS.LB/ACCTNG.LIB
```

In EDAPATH mode, if accounting and shipping libraries, respectively named ACCTNG and SHIP, were created from applications built with Version 4.3.1, you would access them by issuing the following:

```
SET EDAPATH = /QSYS.LIB/ACCTNG.LIB : /QSYS.LIB/SHIP.LIB
```

The FILEDEF syntax to used access files that were created as single member source physical files of a QSYS Library is:

```
FILEDEF ddname DISK library/file
```

**Note:** The source physical does not need to pre-exist for file creation purposes.

The FILEDEF syntax used to access files that were created as members in a source physical file of a QSYS Library is:

```
FILEDEF ddname DISK library/file(member)
```

The source physical needs to pre-exist for file creation purposes.

The USE syntax used to access FOCUS database files, created as members in a source physical file starting with "F$" of a QSYS Library, is

```
USE
library/file(member name) [AS name ] [NEW]
END
```

where:

*member name*

Is assumed as the FOCUS file name unless an AS phrase is explicitly issued. If the member name is left off the specification, then the member and file name are assumed to be the same. The NEW option allows new files to be created if they do not exist already.

This construction allows you to organize multiple FOCUS data sources within a single QSYS source physical name with a functionally name, such as FOCUS, ACCTG, SHIPPING, AR, or AP; or as individual QSYS source physical names, such as SHIP(SHIP), AR(AR), AP(AP), or SHIP(FOCUS).

Prior 3.x and 4.x Versions created FOCUS databases with an arbitrary "F$" added to the beginning of the source physical name and used "FOCUS" as the member name. Therefore, the name on the disk was in the form CURLIB/F$MYDB(FOCUS). The 5.x release does not assume this is a default, and therefore requires either a USE command with an explicit AS; or that the files are renamed to fit the 5.x conventions.

The source physical does not need to pre-exist for file creation purposes.

**Reference: Environment Variables**

EDAPATH may also be set as an environment variable before server startup using appropriate syntax for WRKENVVAR or OSH export and a list of desired (colon separated) directories.

# Creating J.D. Edwards Metadata

Creation of J.D. Edwards Metadata requires the use of the following iWay tools: AUTOTOOL and JDECONV. These tools are available on a separate CD entitled *iWay 5.3 OS/400 Tools*. The output from these tools will be in QSYS. You need to either map to this location or copy the files to an IFS location.

# Troubleshooting for OS/400

**How to:**

Troubleshoot Your Problem

Add Your Problem to the Troubleshooting Guide

If you encounter problems while installing and configuring the server:

1. Try to resolve your problem as described in *How to Troubleshoot Your Problem* on page 6-25.

2. If you cannot resolve your problem by troubleshooting it yourself, contact iWay Software customer support as described in *Information You Should Have* and *Customer Support* in the *Preface*.

## Procedure: How to Troubleshoot Your Problem

You can troubleshoot installation problems by matching the problem with a symptom, and then reading the reason and solution associated with that symptom.

If you have troubleshooting suggestions that are not described here, and that you think others will find helpful, we invite you to send them to us, as described in *How to Add Your Problem to the Troubleshooting Guide* on page 6-26. We will consider including your problems in a future release of this manual.

**Symptom: The server starts in safe mode (as indicated at the top of the right panel).**

- **Reason:** A common reason for the server starting in safe mode is a problem with the server administrator ID's password. For example, the password may have been updated on the operating system but not on the server, so that the encrypted copy of the password stored by the server is out of synchronization with the password on the operating system.

  **Solution:** The server administrator can connect to the Web Console to fix the problem. When the Web Console is started the reason the server is in safe mode is listed on the home page.

  1. Click the *fix* hyperlink displayed under the problem description and make the correction. (For example, if the problem is that the server administrator's password is out of synchronization, update the password on the server.)

  2. Save and restart the server.

## Procedure: How to Add Your Problem to the Troubleshooting Guide

If you have troubleshooting suggestions that you think others will find helpful, we invite you to send them to us so that we can consider including them in a future release. You can:

- **E-mail them** to *books_info@iwaysoftware.com*. Please include your name and phone number, and put *iWay Server Installation for OS/400 troubleshooting* in the subject line.

- **Send them** to:

  Documentation Services
  Attn: iWay Group
  Information Builders
  Two Penn Plaza
  New York, NY 10121-2898

  Please include your name, phone number, e-mail address, and postal address.

# Server Installation for OpenVMS

**Topics:**

- Step 1. Check System Requirements
- Step 2. Create User IDs
- Step 3. Copy the Installation Software From FTP or Mount the CD
- Step 4. Run the Setup Procedure
- Step 5. Verify the Server Installation
- Step 6. Configure the Server With Different Security Modes
- General Server Startup and Use
- Troubleshooting for OpenVMS

This document describes the requirements and procedures for proper installation of the Server for OpenVMS.

# Step 1. Check System Requirements

**In this section:**

Operating System Level and Patch Requirements

Disk Space Requirements

Memory Requirements

Workspace Manager Shared Memory Resources Requirements

Communications Requirements

Before beginning server installation, review the requirements in the following topics.

## Operating System Level and Patch Requirements

The following table lists supported platforms and operating system releases. Confirm that the platform and the intended operating system release are supported combinations on the chart. In addition, confirm that the label on the actual media indicates the correct software for the given OS level you are using.

| OpenVMS for Alpha Operating System Release | CD-ROM Label | Patches |
|---|---|---|
| 7.2-2 (Not 7.2 or 7.2-1) | OpenVMS V7.2-2 | VMS722_UPDATE V 1.0 |
| | | VMS722_LAN V3.0 |
| | | VMS722_RMS V4.0 |
| | | VMS722_PTHREAD V1.0 |
| | | Compaq TCP/IP Services V5.3 ECO 2 |
| | | VMS722_ACRTL V2.0 |
| | | VMS722_SYS V1.0 |
| | | VMS722_IPC V1.0 |

| OpenVMS for Alpha Operating System Release | CD-ROM Label | Patches |
|---|---|---|
| 7.3-1 | OpenVMS V7.3-1 | VMS731_RMS V3.0 |
| | | Compaq TCP/IP Services V5.3 ECO 2 |
| | | VMS731_ACRTL V1.0 |
| | | VMS731_F11X V1.0 |
| | | VMS731_PTHREAD V1.0 |
| | | VMS731_SYS V3.0 |

The software also supports a range of data adapters for ADABAS/C, Oracle, Progress, RDB and RMS; see the DBMS support chart for specific combinations on any given platform. Specific DBMS information (such as release levels, user IDs, and passwords) is not used during the basic installation, but will be used later during configuration.

To run a server, OpenVMS requires certain operating system patches to be installed. The chart above is based on operating system release levels.

Third party TCP/IP packages from Process Software have also been tested at the Multinet 4.4 and TCPWare 5.6 levels for basic connect and data retrieval, and are known to be operational and require no special configuration. If you have a problem using third party TCP/IP products, be sure to specify the product, the release, and any installed patches when contacting Customer Support.

## Disk Space Requirements

The following are approximate disk space requirements. Specific sizes may vary slightly according to the options that were selected during configuration. The usage numbers do not include space for actual applications, databases, sort space, output preparation, or logs.

| Platform | Version | After Install |
|---|---|---|
| OpenVMS for Alpha | 7.2-2 | 270,000 blocks |
| | 7.3-1 | 270,000 blocks |

## Memory Requirements

Memory usage in a configured environment is determined by the following factors:

- Workspace Manager.

- Listeners.

- Concurrently running application agents.

Actual memory usage varies depending on the features used by the application, and will increase or decrease as agents change between active and idle states.

## Workspace Manager Shared Memory Resources Requirements

The Workspace Manager makes use of a specific system resource known as shared memory. Each individually configured Full-Function Server with or without Data Adapters uses one shared memory. The size of this memory varies based upon the sizes of the agents table and the queue.

Generally, shared memory use does not require special configuration; it is just a resource that system administrators like to know is being used so they can monitor it with the SHOW MEMORY/POOLED command (non-paged section).

## Communications Requirements

The TCP/IP Transport protocol is the primary method of communications between iWay-enabled connector applications and iWay servers. The System Administrator should make sure that TCP/IP is communicating properly by using the ping command between the desired platforms.

Up to 6 consecutive open ports for each server you want to run are required. However, on OpenVMS, only the first four are currently used. The starting port number (of the consecutive ports) is required as a parameter during the installation process, since the initial installation also yields an initial configuration.

# Step 2. Create User IDs

The installation of an iWay server requires an ID to install and own the files as well as to administer the server; this is also known as the "iadmin ID". The same ID should be used for both functions (installation and administration) and should not be the SYSTEM ID. The iadmin ID is an any user ID with a set of privileges and quotas for secured or non-secured mode. Running the server in secured mode will require more privileges than running in non-secured mode. If you are planning to run a secured server, see *Step 6. Configure the Server With Different Security Modes* on page 7-16 and configure for that mode at this time.

The iadmin privileges for non-secured servers are:

| Privilege | Function | Required for |
|-----------|----------|--------------|
| NETMBX | May create network device | Mailboxes |
| PRMGBL | May create permanent global sections | IPC Shared Memory |
| PRMMBX | May create permanent mailbox | IPC Control Pipes |
| SYSGBL | May create system wide global sections | IPC Shared Memory |
| SYSNAM | May insert in system logical name table | IPC Control Pipes |
| SYSPRV | May access objects using system protection | Creating system logical tables |
| TMPMBX | May create temporary mailbox | Mailboxes |
| SYSLCK | May lock system wide resources | Progress Data Adaptor only |

Any additional privileges required by particular underlying databases must also be authorized.

Running OpenVMS servers in secured mode is always recommended. This is because non-secured servers also run as an account with elevated privileges and connecting end-user requests run as the privileged account, thus presenting a security risk. Non-secured mode should only be used when adequate safeguards have been taken so that the required privileges do not present a risk, or for short periods of time only (such as while debugging an issue).

The following OpenVMS minimal quota resources are also required for the iadmin ID:

| Quota Resources | UAF Keyword | Value |
|---|---|---|
| PAGE_FILE | Pgflquo | 1000000 |
| BUFFER_LIMIT | Bytlm | 800000 |
| IO_BUFFERED | BIOlm | 200 |
| IO_DIRECT | DIOlm | 200 |
| AST_LIMIT | ASTlm | 300 |
| QUEUE_LIMIT | TQElm | 50 |
| PRIORITY | Prio | 4 |
| WORKING_SET | WSdef | 3076 |
| MAXIMUM_WORKING_SET | WSquo | 8192 |
| EXTENT | WSextent | 10240 |
| FILE_LIMIT | Fillm | 300 |
| ENQUEUE_LIMIT | Enqlm | 2000 |
| JOB_TABLE_QUOTA | JTquota | 10000 |

**Note:** The IMPERSONATE privilege (one of the requirements for secured mode operation) allows dynamic setting of quota levels and uses the above table of values. If the configuration is run in secured mode, the initial default values for server validation purposes need not be a concern unless the defaults are unusually low.

The iadmin ID must also have a UIC group associated with the ID (so the calls for ID information under OpenVMS 7.x are returned in standard OpenVMS 6.x [group,member] format).

To check the UIC, issue the following

```
WRITE SYS$OUTPUT F$USER()
```

**Note:** The iadmin ID should only be available to users who require administrative privileges to the server for security purposes.

End-users connecting to a server will also require an ID with specific set up for access. See the *End-User Requirements* on page 7-22 for details.

# Step 3. Copy the Installation Software From FTP or Mount the CD

There are two ways to access the installation media:

- **From CD.** The software is provided on CD in OSD-2 format. This is how most installations are performed. You must mount the CD as explained below in *Mounting the Software CD* on page 7-7. Once mounted, you can execute the installation procedure directly from the CD, or you can copy the CD contents to disk and execute the installation procedure from there.

- **From FTP.** The software can be downloaded from a special FTP site. Installing via FTP is similar to copying the CD contents to disk and then installing from disk. You must contact your Information Builders representative for site information if you wish to use this option. For more information, see *Copying From FTP* on page 7-8.

## Mounting the Software CD

To make the software on the CD accessible to the user performing the actual installation, the media must be mounted. After mounting, the set up program can be directly accessed, or the contents can be copied to disk for future access.

1. Log on as the iadmin user ID.

2. Insert the CD into the CD-ROM drive.

3. Issue the following command:

   ```
   MOUNT /OVER=ID device_name:
   ```

   where:

   `device_name`

   Is the system name for your CD-ROM device. Consult your OpenVMS System Administrator for the name of the device for your platform. This document uses "CDROM:" to generically refer to this device for OpenVMS purposes.

   The CD will now be accessible for the ID doing the actual installation and will have a root directory of:

   ```
   [IWAY]
   ```

   The installation process can be run directly from CD without copying any files to disk.

4. If you wish to run the installation directly from CD, proceed to *Step 4. Run the Setup Procedure* on page 7-9. However, it may be advantageous to copy all files to disk in order to speed installation.

   If you are not installing directly from CD, create an empty subdirectory under the ID you are using for installation. For example:

   ```
   CREATE /DIRECTORY [.TMP]
   ```

5. Copy the CD's contents to the [.TMP] directory:

   `COPY CDROM:[IWAY]*.* IWAY:[IADMIN.TMP]`

6. Ensure that you are in the parent directory and not the [.TMP] directory:

   `SET DEFAULT SYS$LOGIN`

   **Note:** Do not run the installation procedure from the [.TMP] directory in which ISETUP resides as this will cause errors in the installation process.

7. Proceed to *Step 4. Run the Setup Procedure* on page 7-9.

   After you complete the installation, you can later delete the [.TMP] directory.

## Copying From FTP

This section only applies when installing from FTP download. You must contact your Information Builders representative for FTP site information before attempting this.

1. Log on as the iadmin user ID.

2. Create an empty subdirectory under the ID you are using for installation:

   `CREATE /DIRECTORY [.TMP]`

3. Download all files, in binary mode, from the Information Builders FTP site to the [.TMP] directory you just created.

   ```
   SET DEFAULT [.TMP]
   ftp {node}
   {id}
   {password}
   cd {target_directory}
   binary
   mget *.*
   quit
   ```

   where:

   *target_directory*

   > Is the URL to which you were directed for downloading the software.
   >
   > A copy of the installation instructions is available in this directory.

4. Adjust saveset file attributes, which are lost during the file transfer, as follows:

   `SET FILE /ATTRIBUTE=(RFM:FIX,LRL:32256) *.BCK`

5. Switch to the parent directory:

   `SET DEFAULT SYS$LOGIN`

   **Note:** Do not run the installation procedure from the [.TMP] directory in which ISETUP resides as this will cause errors in the installation process.

After you complete the installation, you can delete the [.TMP] directory.

# Step 4. Run the Setup Procedure

**In this section:**

Configuring an Additional Server

Refreshing an Installation

Debuggable Version

Dismounting the Software CD

**Example:**

Installing and Starting a Full-Function Server

The installation procedure name is called ISETUP. Perform the following to run it.

1. Log on with the iadmin user ID.

2. Set the default protection mask to minimally read/execute (if it has not already been set this way). For example:

   ```
   SET PROTECTION=(S:RWED,O:RWED,G:RE,W:RE)/DEFAULT
   ```

3. Ensure that you are NOT in a directory containing the installation files:

   ```
   SET DEFAULT SYS$LOGIN
   ```

4. Ensure that you have write privileges to the directory in which you execute the installation. You can test whether you have write permissions as follows:

   ```
   CREATE [.XXX] /DIRECTORY
   ```

5. Execute the ISETUP procedure either:

   - from CD:

     ```
     RUN CDROM:[IWAY]ISETUP
     ```

   - or hard disk location:

     ```
     RUN [.TMP]ISETUP
     ```

6. Use the information below to complete the installation prompts.

The ISETUP program requires a license key (see the shipping manifest for the actual key) plus a few basic parameters. The ID being used to install the software is the server administrator ID (iadmin); its password is prompted for and required for certain operations. All other parameters have defaults and are displayed. Responding yes to this list of defaults skips the process to the final confirmation step; otherwise, you are prompted individually for each of the values.

NLS on a server is set to "off" by default. It is configured using the Web Console as of 5.3.x (unlike previous releases, which required individual prompting for NLS values during ISETUP).

The parameters are:

| Parameter | Description |
|-----------|-------------|
| License Key | Installation Key (actual key will be on shipping documents). |
| Media for Product | Full path directory name of iserver.bck. For example:<br><br>• From CD:<br><br>    `CDROM:[IWAY]iserver.bck`<br><br>• From hard disk location:<br><br>    `[.TMP]iserver.bck` |
| EDAHOME | Directory location for files. Any changes in the EDAHOME location must follow the pattern *ibi.srv53*.home* in its declaration. |
| EDACONF | Location for the default configuration. The default value is based on the license key and any change in the EDAHOME directory pattern. The default will be a sibling directory to the EDAHOME directory in terms of its location, and will have a name such as ffs, wfm, dm, spg or wfs (based on the key and on any change in the EDAHOME pattern).<br><br>When EDASTART is used to control the server, if the full path name of the EDACONF directory exceeds 31 characters, the directory is automatically aliased as EDASHARE=EDAn where n is the starting TCP port number of the server.<br><br>When aliasing occurs, a message similar to the following appears:<br><br>`Warning: WSM id`<br>`'DISK$SOFTWARE:[IWAY.IBI.SRV53.FFS]`<br>`has been aliased to EDASHARE=EDA8100 due to`<br>`length.`<br><br>In 5.1 releases, EDASHARE had to be declared manually. Manual declarations will continue to be respected. However, we recommend removing manual declarations. |
| APPROOT | Location for default applications and sample applications. |

| Parameter | Description |
|---|---|
| Server Admin Password | Server Administrator password. There is no default. |
| TCP Base Port | The port number on which the server's TCP Listener listens. It is also the start of the set of port numbers used by the server for other TCP based services. |

**Note:** For performance reasons, you should not install to an FSD or NFS-mounted disks.

**Example:** **Installing and Starting a Full-Function Server**

The example below shows a Full-Function Server installation from CD using the defaults. The prompts are self-explanatory.

The following steps detail the procedure for installation.

From the OpenVMS command prompt:

```
$ RUN CDROM:[IWAY]ISETUP
------------------------------------------------------------------------


             Welcome to the Product Set Up Facility
     Please respond to the prompts or enter Q to quit at any prompt.


------------------------------------------------------------------------


Select an options:

   1. Install and Configure
   2. Add Additional Configuration Instance
   3. Refresh Installation (Reinstall, Keep Configurations)
   4. Install Debuggables to the Installation Directory

Enter a selection (Default=1) : 1


------------------------------------------------------------------------


Enter your License Key (Format 999-999-9999) :   xxx-xxx-xxxx

   License Key has been checked

   Product: Full Function Server
   Maximum Number of Users: 2
   Maximum Number of CPUs: 2

ISETUP: License xxx-xxx-xxxx has been accepted

------------------------------------------------------------------------
```

```
Please enter the full path name of the media for the product

(Default=CDROM:[IWAY]iserver.bck)

Please supply media or <Enter> :

-----------------------------------------------------------------------

Enter the Server Administrator (IADMIN) Password: XXXXXXX

-----------------------------------------------------------------------
Please review the default settings.

EDAHOME = IWAY:[iadmin.ibi.srv53.home]
EDACONF = IWAY:[iadmin.ibi.srv53.ffs]
APPROOT = IWAY:[iadmin.ibi.apps]
TCP_BASE_PORT = 8100

If you are satisfied with the default settings you may proceed to
final confirmation else you will be prompted for individual values.
Proceed with defaults? (Y/N Default=Y)          :  y

The following selections have been made for ...

Install Options ...
   INSTALLATION_DEVICE = CDROM:[IWAY]iserver.bck
   PRODUCT = server
   EDAHOME = IWAY:[iadmin.ibi.srv53.home]

Configure Options ...
   EDACONF = IWAY:[iadmin.ibi.srv53.ffs]
   EDAHOME = IWAY:[iadmin.ibi.srv53.home]
   LICENSE = xxx-xxx-xxxx
   APPROOT = IWAY:[iadmin.ibi.apps]
   SERVER_TYPE = ffs
   SERVER_NAME = "IWAY 53 Full Function Server"
   SERVER_ADMIN_ID = iadmin
   SERVER_ADMIN_PASSWORD = ECECC5B1F12E735A
   TCP_BASE_PORT = 8100

Please confirm these values with one of the following responses ...

   Y = Accept and Proceed
   N = Start Over
   Q = Quit

Please supply confirmation: Y
```

```
Please, wait while we are installing the server ...

ISETUP: Installation Step completed

Please, wait while we are configuring the server ...


ISETUP: Configuration Step completed

----------------------------------------------------------------------

Would you like to start the server (Y/N Default=Y)? : Y

ISETUP: The server has been started

----------------------------------------------------------------------

To administer the server go to a web browser
and open the URL http://myhost.mycompany.com:8101

$
```

If you are satisfied with the selections, answer yes to the final prompt and wait for the return of the command prompt before proceeding to the next step.

If any of the target locations exist, they will be marked with "(*EXISTS*)" on the display line. This gives you the opportunity to change a location if you do not want to overwrite it by changing the default values.

If you decide to change a default, you will be prompted for the individual values. However, you must follow some rules about directory locations. The default root location is the iadmin user ID home directory. The EDAHOME directory path name is locked into the pattern *ibi.srv53*.home*. If you change EDAHOME, EDACONF follows the change in the pattern. The EDACONF may also be changed, but it is locked into a similar pattern (except for the lowest portion of the EDACONF directory name, which reflects the type of server).

Your software is now installed along with an initial configuration.

## Configuring an Additional Server

If you have additional licenses and need to configure an additional server, log on with the iadmin ID and run EDAHOME [.BIN]ISETUP.EXE, where EDAHOME is the directory on which the software was installed ([.IBI.SRV53.HOME] by default). At the main menu, select option 2, *Add Additional Configuration Instance*.

The prompts for adding a configuration are similar to those for an installation, but EDAHOME is the directory where the software was originally installed. Typically, you would not want to accept the defaults, as doing so will cause your current configuration will be overwritten. If the supplied EDACONF already exists, the installation will copy it to a directory called BACKUP.

## Refreshing an Installation

Sometimes it is desirable to refresh the server software's installation directory (EDAHOME) because it has become accidentally damaged, polluted with unwanted files, or needs updating with a service pack. To do this, run the ISETUP program on the CD-ROM from which the software was originally installed, or from a service pack CD-ROM. At the main menu, select option 3, Refresh Installation (Reinstall, Keep Configuration). This refreshes programming files under the server installation directory (EDAHOME) and does not affect any configuration directories. The complete directory tree (EDAHOME) is removed and re-created; if any files need to be retained, they should be copied elsewhere beforehand.

## Debuggable Version

As with any complex software product, there is sometimes a need to produce traces and other information in order to identify problems; thus debuggable software is needed. Whether the original software CD-ROM has these debuggables is generally dependent on disk space. The debuggable version should not be installed and activated unless explicitly requested by customer support for problem resolution. If a separate CD-ROM is required, it will be shipped as needed. When necessary, install the debuggable version by running ISETUP from the appropriate CD-ROM and selecting option 4, *Install Debuggables to the Installation Directory*, from the main menu.

## Dismounting the Software CD

When you have finished accessing the CD-ROM, dismount it with the following command:

`DISMOUNT device_name:`

where:

`device_name:`

Is the device name used in the original mount command.

Normally the CD-ROM will not be needed again unless a support situation requires debuggable versions of the software to be installed. A set of debuggables matching the original software is on the CD-ROM for this purpose. You will also need the CD-ROM if you refresh the installation.

# Step 5. Verify the Server Installation

To test the installation, use the initial configuration created during installation. The server may be brought up, checked, connected to, tested, disconnected, and shut down using the following steps.

1. Log on with the iadmin user ID.

2. Activate the account privileges (if they are not yet activated) by issuing the command:

   `SET PROCESS /PRIV=ALL`

   This is typically done by using AUTHORIZE to set privileges to be active by default, or by putting the SET PROCESS command in the ID's login profile (LOGIN.COM).

3. Start the server with the appropriate path to edastart and the -start option

   `@IWAY:[IADMIN.IBI.SRV53.FFS.BIN]EDASTART.COM -START`

4. Check to see whether the processes are active using -show

   `@IWAY:[IADMIN.IBI.SRV53.FFS.BIN]EDASTART.COM -SHOW`

5. Start the Web Console by starting a browser pointed at the Listener Port of the server. The URL format is http://host:port. For example, for the iWay Server, the URL is: http://host:8101; for the WebFOCUS server, the URL is http://host:8121 (if the default ports were used during installation). The actual Listener Port number is one higher than the TCP Listener Port specified during the installation.

6. If the server is running in secured mode, you will receive a logon screen. Log on with the iadmin user ID.

**7.** The home page of the Web Console will open. The home page is arranged in a menu-like context for the various features it supports. Use of the server admin ID (iadmin) to log on will display server administration features that non admin IDs would not normally see.

Information on how to use the Web Console is available as a drill-down on the console itself and in the *Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

**8.** The home page has a drill-down for testing the server. Click the test drill-down to run a sample report.

**9.** If you are done using the server, use the Stop Server drill-down on the Web Console Menu.

**10.** If there are startup problems, examine the IWAY:[IADMIN.IBI.SRV53.FFS]EDAPRINT.LOG file.

# Step 6. Configure the Server With Different Security Modes

**In this section:**

Configuring the Server for Secured Mode

**How to:**

Add/Change Privileges and Quotas (EDAENV.PRM)

**Reference:**

Server ID (iadmin) Requirements

There are two security modes for a Server.

- **Security OFF.** This is the default unless security was configured.

- **Security ON.** With security ON, users must either send a password to connect to the server or use some other form of verification.

Each of these security options can be set with the EDAEXTSEC variable, as follows.

```
DEFINE EDAEXTSEC {ON|OFF}
```

The default is OFF unless the server has been configured for Secured Mode, as described below; then the default is ON.

## Configuring the Server for Secured Mode

In order to run the server with security on, various privileges are required (depending upon the ID being used to connect to the server).

### Reference: Server ID (iadmin) Requirements

To connect to the server, users must either send a password or use some other form of verification. While actual installation can be done by an ordinary user, the changes listed here require the SYSTEM ID.

Run MCR AUTHORIZE to add the following privileges to the iadmin ID.

| Privilege | Function | Required for |
|---|---|---|
| CMKRNL | May change mode to kernel | Server impersonation features |
| IMPERSONATE | May impersonate another user | Server impersonation features |
| NETMBX | May create network device | Mailboxes * |
| PRMGBL | May create permanent global sections | IPC Shared Memory * |
| PRMMBX | May create permanent mailbox | IPC Control Pipes * |
| SYSGBL | May create system wide global sections | IPC Shared Memory * |
| SYSNAM | May insert in system logical name table | IPC Control Pipes * |
| SYSPRV | May access objects using system protection | Creating system logical tables* and server security features |
| TMPMBX | May create temporary mailbox | Mailboxes * |
| WORLD | May affect other processes in the world | Control of impersonated processes |
| SYSLCK | May lock system wide resources | Progress Data Adaptor only * |

* Also required for non-secured servers.

Any additional privileges or changes in quota required by particular underlying databases must also be authorized and customized in the EDAENV.PRM file, as described in *Add/Change Privileges and Quotas (EDAENV.PRM)* on page 7-18.

The default minimal quota resources are also contained in the default EDAENV.PRM file. You do not need to have values explicitly declared in the UAF or SYSTEM tables, provided the iadmin user ID has IMPERSONATE privileges. However, some situations may require quotas to be increased (for instance, if there are problems accessing very large databases). This is also done by customizing the EDAENV.PRM file, as described below.

**Procedure: How to Add/Change Privileges and Quotas (EDAENV.PRM)**

You can create privilege and quota settings using a configuration file (EDAENV.PRM). To customize the settings:

- Copy the default EDAHOME [.BIN]EDAENV.PRM file to EDACONF [.BIN].

- Edit and customize the EDACONF [.BIN]EDAENV.PRM file as needed (for edit rules, see below).

- Recycle the server.

- Repeat as needed until the desired effect is achieved (e.g., until the page file quota is large enough to access large files).

EDAENV.PRM edit rules:

- Changing quota values are simply edited values.

- To add a quota, use the form name=value with one declaration per line. Actual names follow the standard OpenVMS names for resources.

- Privilege declarations lines have the format Privilege_n : privilege [, privilege, ...], where n is any integer from 1 to 99. The value for n must be unique among the Privilege_n lines. Any number of comma-separated privilege names per line may be declared, but each Privilege_n line must be on separate lines. Privilege names follow the standard OpenVMS names for these privileges.

The EDAENV.PRM file should not be confused with the EDAENV.COM file, which is used for running additional OpenVMS commands (typically logical declarations) at startup. An example of EDAENV.PRM follows:

```
io_direct = 200
queue_limit = 50
page_file = 1000000
buffer_limit = 800000
io_buffered = 200
ast_limit = 300
working_set = 3076
maximum_working_set = 8192
extent = 10240
file_limit = 300
enqueue_limit = 2000
job_table_quota = 10000
priority = 4
privilege_1 : TMPMBX, NETMBX, PRMMBX
privilege_2 : PRMGBL, SYSGBL, SYSNAM
privilege_3 : SYSPRV, CMKRNL, WORLD
privilege_4 : SYSLCK, IMPERSONATE
```

# General Server Startup and Use

After configuring for secured mode (if desired), the server is started and managed using the same server startup and Web Console startup steps used for validating the server (steps 1 - 6 in the *Step 5. Verify the Server Installation* on page 7-15). If the server has not been configured for adapters, now is an appropriate time to do so using the Web Console and *Server Administration for UNIX, Windows, OpenVMS, OS/400, OS/390 and z/OS* manual.

Commonly used edastart options and functions are as follows:

| Command and Option | Function |
|---|---|
| edastart | (No parameters) Starts the server with the line mode console to actively view the server log (edaprint). Also allows dynamically issuing edastart options, such as show, traceon, traceoff, quit, and stop. Use Ctrl+C to receive the console command prompt to enter commands. |
| edastart -start | Starts the server in background; only a short message appears. |
| edastart -sstart n | Starts the server, but waits n seconds for actual startup. |
| edastart -show | Shows general status of the server and agents. |
| edastart -stop | Stops the server. |
| edastart -quit | Exits the server's line mode console log (edaprint) and returns to the operating system command prompt, but leaves the server running. |
| edastart -console | Reenters the server's line mode console log (edaprint). |
| edastart -traceon | Turns on tracing. May be used at initial startup or after start. Tracing should not be turned on (due to overhead) unless there is a problem that needs to be traced. It is always preferable to start traces at initial startup time unless instructed otherwise. |

| Command and Option | Function |
|---|---|
| edastart -traceoff | Turns off tracing. |
| edastart -? | Displays edastart options (those on this list, and more). |
| edastart -?s | Displays support information and support-related options. |

## Other DCL Programs

The commands below may be used to start or manage the server environment in a batch mode using DCL.

The process of installing a server also creates DCL sources so that server functions such as start, stop, show, and tracing may be activated with a single keyword. The start command starts the server as a batch job (SUBMIT) issued to the SYS$BATCH queue, and is particularly useful for automatically starting a server at boot time or with minimal effort.

The sources are created and permanently assigned to a configuration's bin directory. The core EDASTART program is generic for any installation and is driven by the defaults within the command files. The basic commands and functions are listed in the table below.

| Command | Function |
|---|---|
| ISTART [ID] | edastart |
| ISTOP [ID] | edastart -stop |
| ISHOW [ID] | edastart -show |
| ISHOWLOG [ID] | edastart -showlog |
| ITRCON [ID] | edastart -traceon |
| ITRCOFF [ID] | edastart -traceoff |
| ICLEAR [ID] | edastart -clear |
| ICLRDIR [ID] | edastart -cleardir |
| ISAVEDIA [ID] | edastart -savediag |

To use any of the commands, type an "@" and the full path name of any of the DCL scripts.

- The DCL scripts may be further customized, or the defaults may be changed, by manually editing the files. Detailed instructions for all steps are contained within the sources.

- System symbols for the DCL scripts may be created, but this is left to OpenVMS administrators.

- A user ID may be supplied as an optional parameter and is used as the SUBMIT /USER= value. This is particularly useful when starting the server with the system boot script to ensure the server starts under the proper ID.

## Adding JOB, GROUP or Other Defined Environment Values (EDAENV.COM)

At server startup, all Process level logicals are copied to the startup job stream; System level logicals are present by default. If a server must be configured to "see" Job or Group level logicals, or there are Process level logicals that should only be declared for the server, they must be individually declared in an EDACONF [.BIN]EDAENV.COM file. The contents of this file must be valid DCL syntax (typically just consisting of logical declarations). An example of EDAENV.COM follows:

```
$ DEFINE /GROUP ORASID MYORASID
```

**Note:** If EDAENV.COM is needed, you must create it. An empty template is not supplied.

## End-User Requirements

IDs connecting to a server (secured or unsecured) have requirements in terms of specific setup and privileges. The requirements are as follows:

- An ID must have a UIC group associated with the ID, so the calls for ID information under OpenVMS 7.x are returned in standard OpenVMS 6.x [group,member] format.

  To check the UIC, issue the following:

  ```
  WRITE SYS$OUTPUT F$USER()
  ```

- An ID must have QUOTA on the same disk where the server writes its temp files (typically EDACONF [.EDATEMP]).

- An ID must have following privileges:

  - NETMBX, may create network device, required for use of mailboxes.

  - TMPMBX, may create temporary mailbox, required for use of mailboxes.

  - SYSLCK, may lock system wide resources, required for use of Progress Data Adaptor only.

# Troubleshooting for OpenVMS

**How to:**

Troubleshoot Your Problem

Add Your Problem to the Troubleshooting Guide

If you encounter problems while installing and configuring the server:

1. Try to resolve your problem as described in *How to Troubleshoot Your Problem* on page 7-23.

2. If you cannot resolve your problem by troubleshooting it yourself, contact iWay Software customer support as described in *Information You Should Have* and *Customer Support* in the *Preface*.

## Procedure: How to Troubleshoot Your Problem

You can troubleshoot installation problems by matching the problem with a symptom, and then reading the reason and solution associated with that symptom.

If you have troubleshooting suggestions that are not described here, and that you think others will find helpful, we invite you to send them to us, as described in *How to Add Your Problem to the Troubleshooting Guide* on page 7-24. We will consider including your problems in a future release of this manual.

**Symptom: The server starts in safe mode (as indicated at the top of the right panel).**

- **Reason:** A common reason for the server starting in safe mode is a problem with the server administrator ID's password. For example, the password may have been updated on the operating system but not on the server, so that the encrypted copy of the password stored by the server is out of synchronization with the password on the operating system.

  **Solution:** The server administrator can connect to the Web Console to fix the problem. When the Web Console is started the reason the server is in safe mode is listed on the home page.

  1. Click the *fix* hyperlink displayed under the problem description and make the correction. (For example, if the problem is that the server administrator's password is out of synchronization, update the password on the server.)

  2. Save and restart the server.

## Procedure: How to Add Your Problem to the Troubleshooting Guide

If you have troubleshooting suggestions that you think others will find helpful, we invite you to send them to us so that we can consider including them in a future release. You can:

- **E-mail them** to *books_info@iwaysoftware.com*. Please include your name and phone number, and put *iWay Server Installation for OpenVMS troubleshooting* in the subject line.

- **Send them** to:

  Documentation Services
  Attn: iWay Group
  Information Builders
  Two Penn Plaza
  New York, NY 10121-2898

  Please include your name, phone number, e-mail address, and postal address.

# CHAPTER 8

# Server Installation for VM

**Topics:**

- Operating System Release Levels
- Disk Space Requirements
- Installation Overview
- Installation Worksheet
- Installation Personnel
- Requirements for TCP/IP
- Installing the Server

This document describes the requirements and procedures for proper installation of the server software for VM. The process is described in two parts:

- **Installation.** Installation involves several required and optional steps. These include unloading the tape onto the disk (referred to as the maintenance disk); executing the GENEDAVM EXEC, which installs the NSS segments and copies the run-time files onto another disk (referred to as the production disk); linking the data adapter(s) used at your site; and optionally configuring Resource Governor and National Language Support.

- **Configuration.** Each client connecting to a Server for VM connects to a separate server instance. A server instance is a VM ID configured for TCP/IP communications. The steps you follow to configure a server instance depend on the protocol used at your site. See the *Server Configuration for VM* manual for details.

**Note:** The 5.x release of the Server for VM only supports the TCP/IP protocol. The LU2 and LU6.2 protocols are not supported.

# Operating System Release Levels

The server runs on all VM operating system release levels supported by IBM.

**Note:** The server does not run in VM/ESA 370 mode.

# Disk Space Requirements

**In this section:**

The Production Disk

The Maintenance Disk

The total disk space requirements for the server are summarized below.

| Disk Type | 3380 (in Cylinders) | 3390 (in Cylinders) |
|---|---|---|
| Production | 130 | 110 |
| Maintenance (Version 5 Release 2 and higher) | 500 | 400 |

## The Production Disk

After installation, the server production minidisk will contain an executable copy of the server. This is the disk to which all server IDs must be linked when they start the server. It contains all the files necessary for running the server.

Most of the files on this disk are created by the CMS EXECs that generate the installed version of the server (which includes, for example, the server load modules and the text of server error messages). You can add your own locally created files, such as the text of user-written subroutines, or CMS EXECs of interest to users. The files created by the installation procedure on the production disk may vary from version to version.

The software does not explicitly use the CMS label for the production disk. However, we suggest that you use IWP as the label for the production disk of the current version of the server to which all users should be linked by default. If more than one version of the server is installed, we suggest a descriptive label for the server production disk, such as

*IWPnnn*

where:

*nnn*

Represents the version, release, and maintenance level. For example, IWP532 for the production disk of Version 5, Release 3, Maintenance Level 2 (5.3.2).

## The Maintenance Disk

The maintenance disk is the CMS minidisk onto which you unload the distribution tape. Initially this disk should be empty; you should not store any other files on it.

**Important:** You must have different maintenance disks for different server versions. This requirement is critical. You may generate a defective copy of the server if you load the maintenance tape for one version onto the maintenance disk for another version.

When you phase out an older server version and want to reuse its maintenance disk for the next version, you must erase all the files on it. A simple way to do this is to use the CMS FORMAT command. It erases all of the files on the disk, and assigns a CMS label to it. Although you can label the disk any way you like, we suggest a name such as

*IWMnnn*

where:

*nnn*

Is the version, release, and maintenance level. For example, IWM532 for the maintenance disk of Version 5, Release 3, Maintenance Level 2 (5.3.2).

**Note:**

- When calling for support, always specify whether you are referring to an issue with the production disk or the maintenance disk.

- Client applications and servers should access only the current production disk, not the maintenance disk.

## Installation Overview

Installation of the Server for VM requires planning and coordination. The following is an overview of the tasks you must complete to successfully install the VM server.

1. Review hardware and software requirements as described in this chapter.

2. Fill out the information requested in the following Installation Worksheet.

# Installation Worksheet

The information requested on the following worksheet applies to your hardware and software environment and will help you during the installation procedure. It may also be useful for reference in the future, when you update your server software or tune your operating system.

1.  Which release and PUT level of VM and network software will be used to support the Server for VM?

    _____     VM     _____     VTAM     _____     TCP/IPVTAM

2.  Which security subsystem, if any, is used on the server?

    _____     CA-ACF2     _____     VMSECURE     _____     Other

    _____     RACF     _____     CA-TOPSECRET

3.  Which types of mainframe data sources are available and how will they be accessed?

    |              | Data Source | Read Only    | Read/Write   |
    |--------------|-------------|--------------|--------------|
    | _____  | ADABAS      | _____  | _____  |
    | _____  | FOCUS       | _____  | _____  |
    | _____  | NOMAD       | _____  | _____  |
    | _____  | SQL/DS      | _____  | _____  |
    | _____  | VSAM        | _____  | _____  |

# Installation Personnel

The following personnel are needed to install the Server for VM:

| Network Systems Programmer | Describes the network layout, defines the VTAM node definitions for the Server for VM, and sets up the AVS virtual machine for TCP/IP communications. |
|---|---|
| VM Systems Programmer | Performs the installation of the Data Access Engine and data adapters. Optionally, this programmer also installs National Language Support. |

1.  The following general requirements are necessary in order to configure the server: One user ID for the Attach Manager. This ID requires:

    •   Class "B" and "E" privilege.

    •   IUCV allow.

    •   XAutolog.

2.  One user ID for the server. This ID requires:

    •   Class "G" privilege.

    •   IUCV allow.

# Requirements for TCP/IP

The following sections describe the hardware and software requirements for configuring a server for the TCP/IP communications protocol.

## Hardware Requirements

To install a server using TCP/IP, you need any one of the following network processors and associated components:

•   IBM 3172 Interconnect Controller Model 001, 002, or 003.

•   IBM 8232 LAN Channel Station.

•   IBM 3720 or 3745 Communications Controller.

•   HYPERchannel A220 Processor Adapter 42990007.

## Software Requirements

The following software must be functional on your mainframe before you can install and operate the server using TCP/IP:

- A VM operating system release level supported by IBM.

- IBM TCP/IP for VM Version 2 Release 3 or higher.

- Server Communications Protocol Interface for TCP/IP.

- A unique service port designation for the Server for VM.

# Installing the Server

**In this section:**

Configuring the Server

**How to:**

Unload the Distribution Tape

Modify the IBIDFSEG EXEC File (Optional)

Generate the Server

Add Your License Key to EDASTART EXEC

**Example:**

Modifying IBIDFSEG EXEC

Generating the Console Spool

This list outlines the steps in the server installation procedure. Certain steps are optional depending on your site requirements; these are noted.

1. Unload the server distribution tape onto the maintenance disk.

2. Modify the IBIDFSEG EXEC.

3. Generate the server.

4. Install the applicable data adapter(s).

Once you have completed the above steps, you can proceed to the *Server Configuration for VM* manual for instructions on setting up your server for TCP/IP communications.

**Procedure: How to Unload the Distribution Tape**

The distribution tape is an unlabeled 1600 or 6250 BPI 9-track tape, or a 3480 cartridge, created by the VMFPLC2 command.

**Note:** The National Language Support (NLS) feature enables your site to provide messages in a variety of languages. The scope of NLS support (messages, data display, menus, and help files) varies from language to language. Contact your software representative for details on the support provided for a particular language.

1. Mount the tape on a 1600 BPI drive as virtual 181, or mount the cartridge on a 3480 drive as virtual 181.

2. Access the maintenance disk as your A disk, in read/write mode.

3. Issue the VMFPLC2 commands to unload all the files from the tape or cartridge onto the maintenance disk:

```
VMFPLC2 LOAD * * A
VMFPLC2 REW
VMFPLC2 FSF 2
VMFPLC2 LOAD * * A
```

4. If you are implementing NLS and using a 6250 BPI tape, issue the following commands immediately after unloading the files from the distribution tape:

```
VMFPLC2 REW
VMFPLC2 FSF 6
VMFPLC2 LOAD * * A
```

5. Once the tape or cartridge is unloaded, detach virtual 181.

**Procedure: How to Modify the IBIDFSEG EXEC File (Optional)**

The IBIDFSEG EXEC defines the TRW, HLI, DLL, and RLM NSS segments to VM. By default, the NSS segments are called TRWSEGXA, HLISEGXA, DLLSEGXA, and RLMSEGXA.

The shared part of each NSS segment is defined by the SR attribute of the DEFSEG command; the nonshared part is defined by one or more EW attributes.

In this step, you may optionally modify the sample IBIDFSEG EXEC supplied on the server distribution tape. IBIDFSEG EXEC is shown in the following pages.

### Example: Modifying IBIDFSEG EXEC

The following copy of the IBIDFSEG EXEC illustrates the current version of this routine. Note that it now contains four requirements, with the latest being TRWSEGXA:

```
/*------------------------------------------------------------------*/
/* IBIDFSEG EXEC                (c) Copyright IBI 1996              */
/*------------------------------------------------------------------*/
/* No arguments. Exec set GLOBALV variables in IBIGEN group         */
/*------------------------------------------------------------------*/

/****************************************************************

    NSS names and addresses.

    TRW - Table, Report Writer segment
    HLI - Host Language interface
    DLL - Dynamic Load Libraries

    Please modify the next 4 pairs of statements with:
    -->  your chosen segment names
    -->  the addresses selected for the segments

****************************************************************/

    trwname = 'TRWSEGXA'
    trwaddr = '4000-42FF SR 4300-48FF EW'

    hliname = 'HLISEGXA'
    hliaddr = '4900-49FF SR 4A00-50FF EW'

    dllname = 'DLLSEGXA'
    dlladdr = '5100-63FF SR 6400-72FF EW'

/****************************************************************
 * * * * * * End of user modifications * * * * * * * * * * * * *
****************************************************************/

Address 'COMMAND'
Trace 'O'

'GLOBALV SELECT IBIGEN GET LOADNSHR'           /* get LOADNSHR setting */

'GLOBALV SELECT IBIGEN SET  TRWNAME' trwname
'GLOBALV SELECT IBIGEN SETL TRWADDR' trwaddr loadnshr

'GLOBALV SELECT IBIGEN SET  HLINAME' hliname
'GLOBALV SELECT IBIGEN SETL HLIADDR' hliaddr loadnshr
```

```
'GLOBALV SELECT IBIGEN SET  DLLNAME' dllname
'GLOBALV SELECT IBIGEN SETL DLLADDR' dlladdr loadnshr

'GLOBALV SELECT IBIGEN SET  GENTYPE NOTXFOC'

Exit 0
```

The above NSS segments must reside above the 16M line and may not overlay any other NSS used during a session or the execution of an HLI program.

During the installation procedure, the mode is checked and the appropriate values from the XA variables are used. Remember, the server does not support VM/ESA 370 mode.

**Note:** You can change the values TRWSEGXA, HLISEGXA, DLLSEGXA, and RLMSEGXA. You can also change the NSS addresses in the IBIDFSEG EXEC, but do not change the size. The record format must remain F, and the record length must remain 80. Do not change any other lines in IBIDFSEG EXEC.

## Procedure: How to Generate the Server

This step creates a core of server load modules on the production disk. The majority of code in the NSS segments is defined in *Modify the IBIDFSEG EXEC File (Optional)* on page 8-7. This step also inserts your site code into the release information that appears. The GENEDAVM EXEC, which you execute in this step, installs the NSS segments and copies the run-time files onto the production disk.

Before completing the instructions below, log on to a virtual machine with Class E privilege. You cannot generate the server from a general user virtual machine with only Class G privilege.

1.  Spool the console for documentation purposes by entering the following command:

    ```
    CP SPOOL CON START
    ```

2.  Use the DEF STOR command to set the virtual machine size. Define storage (DEF STOR *xx*M) for your virtual machine to at least 10M higher than the ending address of the highest of the four segments. For example, referring to the IBIDFSEG EXEC supplied, the highest ending address is 72FF (hex), which equates to 66 (decimal); therefore, storage should be set to 128M.

3.  Set the machine mode by entering the following command:

    ```
    SET MACHINE ESA
    ```

    **Note:** The server does not support VM/ESA 370 mode.

4.  IPL CMS by entering the following command:

    ```
    IPL CMS
    ```

5. Release all unused CMS minidisks, including minidisks that are not required for the installation of the server. The server maintenance disk and the CMS system disks are required. The maintenance disk must be accessed as A, in read/write mode. The CMS system disks will most likely be 190 and 19E, accessed as S and Y/S, respectively.

6. The Attach Manager ID needs the privilege DIAGPCHK.

7. Prior to executing the GENEDAVM EXEC, it is recommended that you issue the following command to allow the console to scroll automatically:

   ```
   CP TERM MORE 0 0 HOLD OFF
   ```

   If you do not enter this command, the screen will have to be cleared every time it becomes full of messages. To reset this setting, enter the following command:

   ```
   CP TERM MORE 50 10 HOLD ON
   ```

   Additionally, verify that the maintenance disk is accessed as the "A" disk in R/W mode, and that the production disk is accessed as the "C" disk in R/W mode.

   The NSS and other files needed by the server are generated by the GENEDAVM EXEC on the maintenance disk.

   Execute the GENEDAVM EXEC:

   ```
   GENEDAVM
   ```

   The GENEDAVM EXEC writes messages to the terminal as it proceeds. If you receive any CMS error messages during this procedure (with the exception of "File Already Exists" messages), call Customer Support Service (CSS) or your software representative.

8. Close the terminal console spool by entering:

   ```
   CP SPOOL CON CLOSE STOP
   ```

   The terminal console input and output commands will be printed on a printer unless directed elsewhere by the CP SPOOL CON START command. Save this output for your own documentation and have it available if you call for support regarding installation problems.

## Example:  Generating the Console Spool

The following is a sample console spool. It has been modified to show the most useful system prompts and user responses. User responses are in boldface type, to distinguish them from system prompts.

```
Ready; T=0.01/0.01 16:01:49
q stor
STORAGE = 0522112K
Ready; T=0.01/0.01 16:01:54
genedavm
->EDM191  333   A    R/W ( EDASQL 191 )
->EDP192  192   C    R/W ( EDASQL 192 )
  DSK190  190   S    R/O
  CMSLIB  19E   Y/S  R/O
+GENEDAVM Check the minidisks accessed. Is it true that:
          The Product Maintenance Disk,
          is accessed as 'A' and in Read/Write mode
          The Product Production Support disk,
          is accessed as 'C' and in Read/Write mode
          Enter 'YES' to proceed. Any other response will stop this exec.
yes
+GENEDAVM Product Generation Phase I...
+GENEDAVM Generating Product Segment, Modules, and Execs...
Initializing...
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
DMSLGT002I File CLI TXTLIB not found
DMSLGT002I File FUSELIB TXTLIB not found
Creating FUSELIB LOADLIB.
DMSXIN571I Creating new file:
DMSOPN002E File CLI TXTLIB * not found
DMSOPN002E File FUSELIB TXTLIB * not found
FUSELIB LOADLIB created successfully.
+GENEDAVM Defining the Product Support segment.
+GENEDAVM CP DEFSEG TRWSEGXA 2000-22FF SR 2300-27FF EW LOADNSHR
HCPNSD440I Saved segment TRWSEGXA was successfully defined in fileid
4177.
+GENEDAVM CP DEFSEG HLISEGXA 2800-28FF SR 2900-2AFF EW LOADNSHR
HCPNSD440I Saved segment HLISEGXA was successfully defined in fileid
4178.
+GENEDAVM CP DEFSEG DLLSEGXA 2B00-31FF SR 3200-41FF EW LOADNSHR
```

```
HCPNSD440I Saved segment DLLSEGXA was successfully defined in fileid
4179.

+GENEDAVM CP DEFSEG RLMSEGXA 4200-44FF SR 4500-5CFF EW LOADNSHR
HCPNSD440I Saved segment RLMSEGXA was successfully defined in fileid
4180.
+GENEDAVM Loading the Product Support Segment...
DMSLIO201W The following names are undefined:
 #C#EXIT  $FPUTC   FILLB     VIEWRD
@@@@@@ Return code 4 from GENFS1XA before autocall
DMSLIO201W The following names are undefined:
 #C#EXIT  $FPUTC   FILLB     VIEWRD
@@@@@@ Return code 4 from GENFS1XA after autocall
Creating $FOET...
+GENEDAVM Saving the Product Support Segment...
HCPNSS440I Saved segment TRWSEGXA was successfully saved in fileid 4177.
+GENEDAVM Product Support Segment TRWSEGXA Created and saved...

GENLLSEG 07/16/00 16:22:00 V306
HCPNSS440I Saved segment DLLSEGXA was successfully saved in fileid 4179.
GENLLSEG COMPLETED SUCCESSFULLY
Checking whether Segment boundaries have been exceeded...
+GENEDAVM Generation of Product Support Segment completed...
Creating Support EDA EXEC...
DMSXCG517I 1 occurrence(s) changed on 1 line(s)
DMSXCG517I 1 occurrence(s) changed on 1 line(s)
Generating HLI segment and Sink Machine...
Generating HLI named saved segment and modules...
+GENEDAVM Initializing...
Defining the HLI segment...
+GENEDAVM Segment Skeleton Found for HLISEGXA
Loading the HLI Segment...
DMSLIO201W The following names are undefined:
 HBTCLR   HBTCHK   HBTCLO   DNINIT   FILLEXT DELEXT   COMCTL   XBKATT
 XFNDBK   XDXCTF
@@@@@@ Return code 4 from GENHS1
Creating $HLIET DATA file...
Saving the HLI Segment.
HCPNSS440I Saved segment HLISEGXA was successfully saved in fileid 4178.
Checking whether HLI Segment boundaries have been exceeded...
Creating HLINFO DATA file...
Generation of HLI segment HLISEGXA completed...
HLI module "HLIMAIN" created successfully.
+GENEDAVM Completed...

+GENEDAVM Copying Product Support Files to Production mini-disk...
=====> Many files copied <=====
+GENEDAVM Product Generation Phase II...
```

```
DMSCPY721I Copy EDAMAIN MODULE A1 to EDAMAIN MODULE C1 (new file)
DMSCPY721I Copy FRSP15 MODULE A1 to FRSP15 MODULE C1 (new file)
DMSCPY721I Copy GENLLSEG MODULE A1 to GENLLSEG MODULE C1 (new file)
+GENEDAVM Bypassing LoadLib Segment Generation,
Already Completed During Phase I Generation...
+GENEDAVM Checking Segment Boundaries...
+GENEDAVM Generation of Product Segment completed...
+GENEDAVM Creating EDASTART EXEC...
DMSXCG517I 1 occurrence(s) changed on 1 line(s)
+GENEDAVM Bypassing File Copying To Production minidisk,
Already Completed During Phase I Generation...
+GENEDAVM Completed, ReturnCode 0
Ready; T=38.66/44.
```

Additional font files must be copied from the maintenance disk to the production disk. To accomplish this, issue the following commands:

```
COPY * AFM A = = C (REPL OLDD TYPE

COPY PSHDR ERRORS A PSHDR ERRORS C (REPL OLDD TYPE

COPY FOCFONT TXT A FOCFONT TXT C (REPL OLDD TYPE
```

**Procedure: How to Add Your License Key to EDASTART EXEC**

To add your license key to the file EDASTART EXEC:

1. Open EDASTART EXEC on your production disk.

2. Find the following two lines:

   ```
   /* Uncomment and enter correct LICENSE key for license management */
   /* 'GLOBALV SELECT IBIR1ENV SET LICENSE 000-000-0000' */
   ```

3. Uncomment the second line.

4. In the second line, change "000-000-0000" to the license key that came with your server.

5. Save and close the file.

## Configuring the Server

After you have completed all the installation steps, you are ready to configure the server. The Server Administration manual for VM contains instructions on setting up your server for TCP/IP and data adapters.

# Index

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