

# **WebFOCUS**

Server Installation  
WebFOCUS Reporting Server  
DataMigrator Server

Version 7 Release 7.03

DN4501055.0511

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# Preface

This manual is intended for system administrators responsible for installing the server. It lists installation requirements, describes how to install the server, and addresses post-installation tasks such as configuring adapters and securing the server.

## How This Manual Is Organized

This manual includes the following chapters:

	<b>Chapter/Appendix</b>	<b>Contents</b>
<b>1</b>	Introduction to Server Installation	Lists the necessary terminology and prerequisites for general server installation.
<b>2</b>	Server Installation for Windows	Describes the requirements and step-by-step instructions for installing a server on Windows.
<b>3</b>	Server Installation for UNIX	Describes the requirements and step-by-step instructions for installing a server on UNIX. This includes all UNIX platforms such as HP-UX, AIX®, Solaris™, and Linux®.
<b>4</b>	Server Installation for z/OS	Describes the requirements and step-by-step instructions for installing a server on z/OS, deployed using either the Hierarchical File System/UNIX System Services (HFS/USS) or partitioned data sets (PDS).
<b>5</b>	Server Installation for IBM i	Describes the requirements and step-by-step instructions for installing a server on IBM i.
<b>6</b>	Server Installation for OpenVMS	Describes the requirements and step-by-step instructions for installing a server on OpenVMS.
<b>A</b>	Information Builders and Third-Party Licenses	Contains the license for Information Builders and licenses required by third party software used by Information Builders.

## Documentation Conventions

The following table lists and describes the conventions that apply in this manual.

Convention	Description
THIS TYPEFACE or this typeface	Denotes syntax that you must enter exactly as shown.
<i>this typeface</i>	Represents a placeholder (or variable) in syntax for a value that you or the system must supply.
<u>underscore</u>	Indicates a default setting.
<i>this typeface</i>	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.
<b>this typeface</b>	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 is 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

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## Customer Support

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Join the Focal Point community. Focal Point is our online developer center and more than a message board. It is an interactive network of more than 3,000 developers from almost every profession and industry, collaborating on solutions and sharing tips and techniques, <http://forums.informationbuilders.com/eve/forums>.

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](http://www.informationbuilders.com) also provides usage techniques, diagnostic tips, and answers to frequently asked questions.

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 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 number (xxxx.xx) when you call.

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 effectively, be prepared to provide the following information when you call:

- Your six-digit site code (xxxx.xx).
- Your WebFOCUS configuration:
  - The front-end you are using, including vendor and release.
  - The communications protocol (for example, TCP/IP or HLLAPI), including vendor and release.
  - The software release.

- Your server version and release. You can find this information using the Version option in the Web Console.
- The stored procedure (preferably with line numbers) or SQL statements being used in server access.
- 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 communicate suggestions for improving this publication or to alert us to corrections. You can also use the Documentation Feedback form on our Web site, <http://documentation.informationbuilders.com/feedback.asp>.

Thank you, in advance, for your comments.

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# 1 Introduction to Server Installation

This chapter introduces the server, describes its different versions, and suggests where to go for more information once you have installed the server.

Instructions for installing the server on Windows, UNIX, z/OS, IBM i, and OpenVMS are in the chapters that follow. Instructions for installing the server on MVS are in the *Server Installation, Configuration, and Operations for MVS* manual.

## Topics:

- ❑ Server Versions
- ❑ What to Read After You Install the Server

## Server Versions

The server enables applications to access data without concern for the complexities and incompatibilities of different operating systems, DBMSs, file systems, and networks. Servers provide access to both local and remote data on over 35 platforms from more than 65 database formats, including DB2, FOCUS, Informix, Oracle, and SAP BW.

The server installs as one of the following versions, depending upon your license:

- ❑ **WebFOCUS Reporting Server**, which provides data access, number crunching, and report generation functionality for WebFOCUS.

The WebFOCUS Reporting Server (sometimes referred to simply as a WebFOCUS Server) is a component of the WebFOCUS environment, which includes the WebFOCUS client and a Web server. It may also include other components, such as a ReportCaster Distribution Server, application servers, and servers used for accessing remote data.

For information about the different ways in which you can choose to deploy a WebFOCUS server in the WebFOCUS environment, see the *WebFOCUS and ReportCaster Installation and Configuration* manual for your platform.

- ❑ **Full-Function Server**, which provides transparent access to data from your own applications and third-party systems.
- ❑ **DataMigrator Server**, which hosts and executes the data and process flows that automate your creation and maintenance of a data warehouse or data mart.
- ❑ **Shared Application Server**, which runs WebFOCUS Maintain production applications.

The server includes the Web Console, with which you can administer the server once it has been installed.

## What to Read After You Install the Server

After you have installed the server, for more information about:

- ❑ **Managing the server**, see the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.
- ❑ **Using adapters for accessing data**, see the *Adapter Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

To find out more about administering a particular version of the server, for:

- ❑ **WebFOCUS Reporting Server or Shared Application Server**, see the *WebFOCUS Security and Administration* manual.
- ❑ **DataMigrator Server**, see the *DataMigrator User's Guide*.



# 2 | Server Installation for Windows

This chapter describes how to install a server, or to configure an additional instance of an existing server, on a system running Microsoft® Windows.

## Topics:

- ❑ Installation Requirements
- ❑ Installation and Configuration Directories
- ❑ Accessing the Installation Software
- ❑ Installing a Server
- ❑ Verifying Server Installation
- ❑ Choosing a Security Mode
- ❑ Additional Server Installation Options
- ❑ Generating a Trace
- ❑ Third-Party Software and Licenses
- ❑ General Information for a Windows Installation
- ❑ Troubleshooting for Windows

## Installation Requirements

### **In this section:**

Platform and Operating Environment Requirements

JVM Requirements for the Listener for Java

Browser Requirements

Disk Space Requirements

Memory Requirements

Communications Requirements

User ID Requirements

Choosing Between Interactive and Silent Installation

Choosing Between Private and Shared Access to the Data Management Console

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

### Platform and Operating Environment Requirements

**Processor.** The server runs on all Intel® Pentium®-based computers 400 MHz and higher.

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

**Supported Software Releases.** The server is supported on most major releases of Microsoft Windows. For current information about supported releases:

1. Go to <http://techsupport.informationbuilders.com>.

The Information Builders Technical Support home page opens.

2. In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.

The Supported Systems and Adapters page opens.

3. Click the link for the server release you want.

The Supported Systems and Adapters page for that release opens.

4. Click the link for your platform.

The support chart for that platform opens.

In general, the operating system should have the latest cumulative patch levels applied. Confirm that your server installation software is labeled for your operating system level.

## JVM Requirements for the Listener for Java

If JVM-based adapters, server-side graphics, XBRL, or user-written CALLJAVA applications are to be used, a Java Runtime Environment (JRE) JVM must be installed on the machine, and the server must be configured to use it. As of 77x, the general minimum JVM level is 1.5 or higher, since a number of components require 1.5. In narrow cases, a lower JVM level may be used, but is not advised nor has it been specifically tested. This section discusses JVM installation and configuration.

You may install a Java JRE or a Java SDK. When you install the Java SDK, the JRE is included. If using servlet, the Java SDK is required for the jar command so is generally preferred over Java JRE. The SDK or JRE build type in use must also match in terms of 32-bit or 64-bit to the bit type of the server in use. If a JVM is not on the library path or is an inappropriate bit type, a *Failed to find JVM* message, as well as debugging information will be written to the start log, which will indicate a failed JSCOM3 service.

The current default/preferred JRE for the server is JRE 1.5, since this is the minimum requirement for some server components and JRE 1.4 is past its EOSL date. The following URL has Java EOL and EOSL information:

<http://java.sun.com/products/archive/eol.policy.html>

You can revert to using JRE 1.4 from the Web Console by selecting *Configuration/Monitor* from the *Workspace* menu, opening the *Java Services* folder, right-clicking *Default*, and selecting *Properties*.

There are several ways to specify the JVM location:

- ❑ For Java JDK set JDK\_HOME (to the install home location) in system wide environment or server environment start up file (edaenv.cfg).
- ❑ For Java JRE set JAVA\_HOME (to the install home location) in system wide environment or server environment start up file (edaenv.cfg).
- ❑ Use PATH or IBI\_JNIPATH to set explicit pathing. Use of JDK\_HOME or JAVA\_HOME is preferred as they are less prone to error. If the same JVM is used for all applications on a machine, then use of PATH may be simpler. The JRE bin and server (or client) subdirectories must be specified in a path-based environment variable and a server restart is required.

The IBI\_JNIPATH variable may be set as a system-wide environment variable or as a server variable in the environment start-up file (edaenv.cfg). If using PATH, the JVM directory should be set as part of the system-wide PATH environment variable. The environment start-up file (edaenv.cfg) is not recommended for PATH, since it does not support %PATH% syntax. In addition, an expanded %PATH% string effectively locks PATH separately from any machine changes to %PATH%.

To change or add an environment variable, perform these steps:

1. Right-click *My Computer* and select *Properties*.

The System Properties window opens.

2. Select the *Advanced* tab and click *Environment Variables...*

The Environment Variables window opens.

3. In the System variables list, select *Path* and click *Edit* or *Add*.

The Edit System Variable window opens.

4. Set or append the JRE bin and client subdirectories in the Variable Value field, and then click *OK* three times.

To add classes to the JVM class path for customer-written CALLJAVA applications, set the CLASSPATH variable at the operating system level before server start-up or use the Web Console to set the Java Listener IBI\_CLASSPATH property.

If JVM-based adapters or features are not required, the message *Failed to find JVM* is normal and can be ignored.

## Browser Requirements

The Web Console server requires one of the following Web browsers:

- Microsoft Internet Explorer® 7 or higher.
- Mozilla Firefox® 3.5 or higher.
- Google Chrome® 10.0 or higher.
- Apple Safari® 5.0 or higher.

The Opera™ browser does not support RIA (Rich Internet Application), the default appearance mode of the 7.7.x Web Console. Opera 5.0 or higher seems to operate properly in HTML mode, and the Web Console detects this and switches modes automatically. Since HTML mode is less extensively tested, Opera is considered unofficially supported at this time. Please report any issues you find to customer service.

## Disk Space Requirements

The installation of the server requires 40MB of temporary disk space on your Windows %HOME% drive and 340 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:

- ❑ General memory: 3K  
(This includes memory used by the primary one-per-server-instance processes such as Workspace Manager, the print log, Deferred Listener, HTTP Listener, and TCP Listener.)
- ❑ Memory per active agent: 8K.

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

## Communications Requirements

You need four TCP/IP ports for each server instance that you configure. Three of these ports must be consecutive. You specify these port numbers during installation. You may require additional ports depending on which options you configure later.

## 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 use this ID to start, configure, and stop the server.

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

Although Administrative privileges are required only during installation, a Server Administrator needs to have at least Power User privileges in order to run the server as a service.

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 ID and password are encrypted and stored in the server configuration file. You must keep these IDs and passwords synchronized with Windows IDs and passwords to start the server with security set to OPSYS. When starting the server with security set to OPSYS, 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 55 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 group user ID. The 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 OPSYS, they are authenticated against the operating system. You need to make Windows IDs available to them so that they can access the server. Server data access agents will impersonate these IDs before performing any file access on their behalf. No special authorities or setup parameters are needed for these IDs.

For more information about running the server in secure mode, see [Choosing a Security Mode](#) on page 45.

## 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 27.
- ❑ **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 and Configuring a Server Silently](#) on page 49.

## Choosing Between Private and Shared Access to the Data Management Console

There are several tools available for administering the server:

- ❑ **Web Console**, which is installed with the server on all platforms, and is available to all authorized users with a TCP/IP connection.

For more information about the Web Console, see the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

- ❑ **Developer Studio**, a WebFOCUS component that is available to users who have installed it on their Windows computer.

For more information about Developer Studio, see the *Developer Studio Application Development Getting Started* manual.

- ❑ **Data Management Console**, which is installed with the server on Windows, and is used primarily with DataMigrator.

For more information about the Data Management Console, see the *DataMigrator User's Guide*.

You can install the server in a way that makes the Data Management Console available to remote users as a shared tool. You can choose between:

- ❑ **Private access.** You install the server in a standard Windows folder. The server's Data Management Console is available locally to users on that computer.
- ❑ **Shared access.** You install the server in a shared network folder specified using the Universal Naming Convention (UNC). The server's Data Management Console is available to remote users who access that shared folder.

Before installing the server, you need to create a shared folder on the computer on which you will install the server.

Access to the server by means of the Data Management Console (DMC) is limited by system security. To use the DMC, you can open it in several ways, such as:

- ❑ Mapping a drive to the location of dmcstart.bat.
- ❑ Creating a shortcut to dmcstart.bat on the user machine.

The location of dmcstart.bat defaults to `ibi\svr77\dm\bin`.

The Data Management Console is maintained locally on each client machine in Documents and Settings\*UserID*\Application Data\Information Builders. This requires 2M of disk space.

To use the loopback node, reconfigure it to connect to the share server host name, replacing the host name, localhost.

## Installation and Configuration Directories

Directory names related to the server installation and configuration cannot include spaces, since that can cause incorrect operation, such as files not being found. The recommended default is `drive:\ibi` as a top-level directory. If your organization has an establish, alternate top-level directory for third-party software with this same requirement, it is valid to install under that location. For example, you could use `drive:\thirdparty\ibi` as a top-level directory.

The installation process creates these high-level directories:

- **Home directory.** This installation directory stores the server programs and other files. We refer to this as EDAHOME, and when the server is running, the full path is stored in the environment variable EDAHOME. The default directory is

`drive:\ibi\srv77\home[suffix]`

where:

*drive*

Is the hard drive on which the directory resides.

*suffix*

Is optional when installing and maintaining a single copy of the server. It is required if installing and maintaining multiple copies (for example, multiple server maintenance releases) to ensure that each installed server has a uniquely-named home directory.

- **Configuration directory.** The files that control the behavior of each server instance reside here. We refer to this as EDACONF, and when the server is running, the full path is stored in the environment variable EDACONF. The default directory is

`drive:\ibi\srv77\server_type[suffix]`

where:

*drive*

Is the hard drive on which the directory resides.

*server\_type*

Designates the type of server. The default values are:

<code>FFS</code>	for a Full-Function Server.
<code>DM</code>	for a DataMigrator Server.
<code>WFS</code>	for a WebFOCUS Reporting Server.
<code>WFM</code>	for a Shared Application Server for WebFOCUS Maintain.

*suffix*

Is optional for an initial default installation and configuration. This is required when configuring additional instances of the server. You must add a suffix to the directory name to ensure that each server instance has a uniquely-named configuration directory. In the following example, for an additional instance of a Full-Function Server, the suffix 002 has been added:

`c:\ibi\srv77\ffs002`



- ❑ **Application directory.** This is the default location for storing applications. We refer to this as APPROOT, and when the server is running, the full path is stored in the environment variable APPROOT. This directory may be shared by applications created with other Information Builders products and 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.

- ❑ **Profiles directory.** The user and group profiles reside here, as does the admin.cfg file, which specifies the server administrator. We refer to this as EDAPRFU, and when the server is running, the full path is stored in the environment variable EDAPRFU. This directory defaults to

`drive:\ibi\profiles`

where:

`drive`

Is the hard drive on which the directory resides.

**Multiple WebFOCUS Reporting Servers.** If you plan to install multiple copies of WebFOCUS on the same computer, and you want to provide each copy with its own WebFOCUS Reporting Server, you may wish to maintain a separate ibi root directory for each copy, so that you can keep the components of each copy (including the server) together in the same path.

For example, if you want to install two copies of WebFOCUS, one for testing and one for production, you could create a wfTest directory and a wfProd directory. They would include the following subdirectories (this is a partial list):

- ❑ **The test copy of WebFOCUS** would include:

`c:\wfTest\ibi\srv77\home` (server home directory)

`c:\wfTest\ibi\srv77\wfs` (server configuration directory)

`c:\wfTest\ibi\WebFOCUS77` (WebFOCUS product components directory)

- ❑ **The production copy of WebFOCUS** would include:

`c:\wfProd\ibi\srv77\home` (server home directory)

`c:\wfProd\ibi\srv77\wfs` (server configuration directory)

`c:\wfProd\ibi\WebFOCUS77` (WebFOCUS product components directory)

You could provide a separate apps directory for each copy of WebFOCUS, or specify a single apps directory to be shared by all copies of WebFOCUS.

## Accessing the Installation Software

### In this section:

#### Downloading the Installation Software Using FTP

You can choose to access the server installation software using either:

- ❑ **CD.** This is how most installations are performed. Log on using the iadmin ID or the Windows administrator ID before you insert the CD. 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.

Run the installation procedure, as described in *Installing a Server* on page 27.

- ❑ **FTP.** Download the installation software from the Information Builders FTP site. Downloading the installation software involves:

- 1. Registering** at the Information Builders FTP site.
- 2. Downloading** the server installation software from the site.
- 3. Unzipping** the downloaded file.
- 4. Running** the isetup procedure to begin installing the server.

For instructions, see *Downloading the Installation Software Using FTP* on page 26.

## Downloading the Installation Software Using FTP

To download the installation software:

- 1.** Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
- 2.** Click *My Downloads* in the My Account section on the right side of the page.  
The Downloads, Upgrades, Service Packs, and PTFs page opens.
- 3.** Click the link for your product (for example, WebFOCUS and iWay Server and iWay Client).  
The Downloads by Release page for your product opens.
- 4.** Click your release from the Current Production Releases list.  
The Software Downloads page for your release opens.

5. Scroll down and find the platform on which you want to install the server, and then click *Download* to the right of the platform name.
6. Fill in the registration form and then click *Continue*.  
The Software Download Agreement page opens.
7. Select *I agree...* to consent to the Download Agreement, and then click *Continue*.  
The Download Instructions page opens. Select AUTOMATIC or MANUAL and follow the relevant instructions.  
A copy of the instructions is automatically emailed to you for later reference.
8. Follow the instructions on the Download Page.
9. Run the installation procedure as described in [Installing a Server](#) on page 27.

After you have completed the installation, you can delete the download directory in which you had unzipped the installation archive.

## Installing a Server

### How to:

Install and Configure a Server

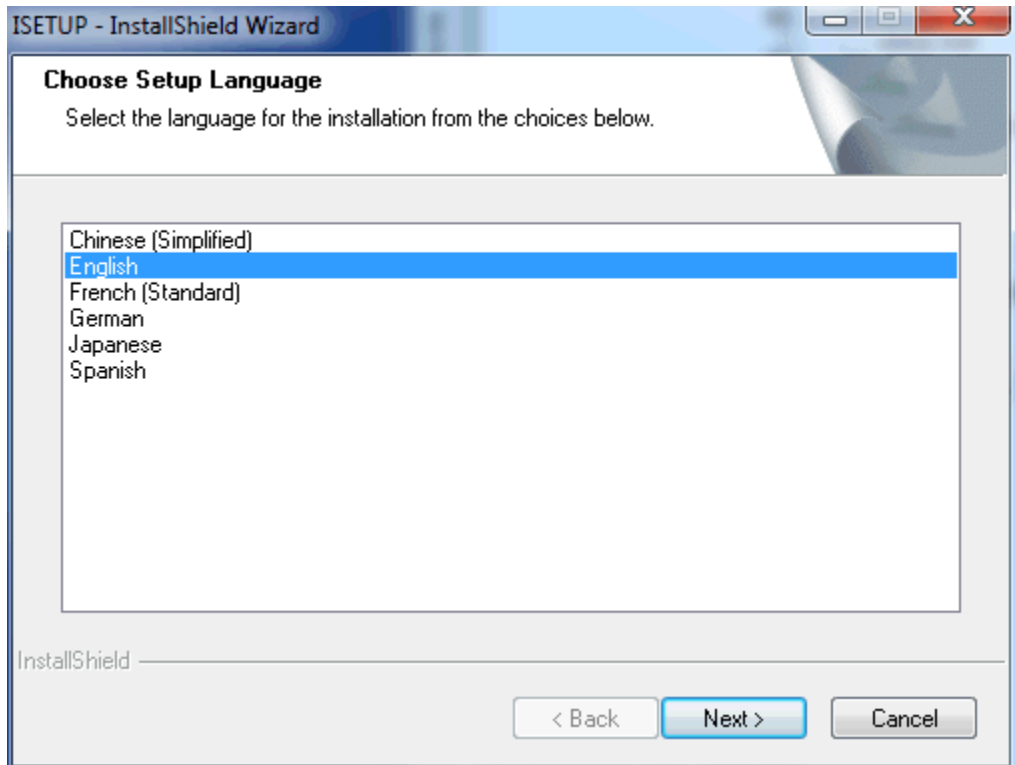
When you install a server, you configure several server properties. After installation, you can configure additional properties using the Web Console.

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

1. Exit all programs before continuing.
2. If you installed from the CD and the autorun feature has begun the installation, the screen below is displayed. Otherwise, execute the following file in the CD root folder, or from where you saved the installation software on disk:

`setup.exe`

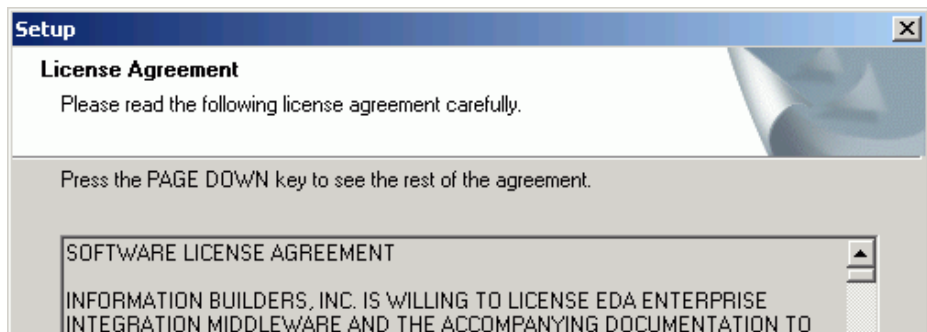
The Choose Setup Language window opens.



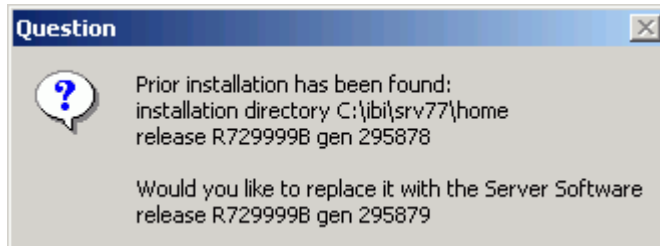
3. Select the language to be used during installation and click *Next*.

One of three of the following windows opens:

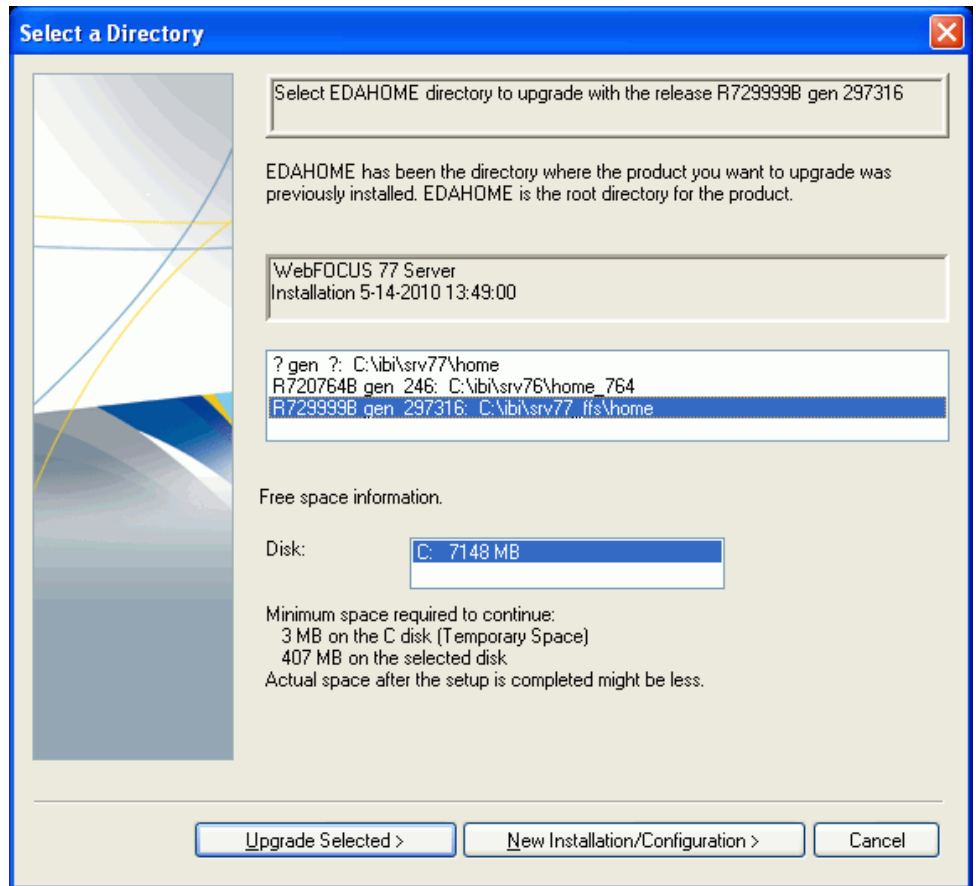
- **Setup/License Agreement window.** If this opens, your computer does not have a 7.7 server or client from a prior installation. This will be its first. Skip to Step 6.



- ❑ **Question/Prior installation has been found window.** If this opens, your computer already has a 7.7 server or client. You will choose between configuring an additional instance of the server or client, or refreshing the existing server software. Go to Step 4.



- ❑ **Select a Directory/Select EDAHOME directory window.** If this opens, your computer already has multiple instances of servers and/or clients configured. You will choose between configuring an additional instance of the server, and refreshing an existing server or client software. Skip to Step 5.



**4.** If you want to:

- ❑ **Configure an additional server instance,** click *No*.

(If your existing 7.7 installation is a client, this option installs and configures your first server instance, not an additional one.)

The Software License Agreement window opens. Continue with Step 6.

- ❑ **Refresh the existing server or client software**, click *Yes*. You will get new server software (or new client software, if your existing 7.7 installation is a client). It will overwrite your existing installation directory (EDAHOME), and will use your existing configuration information in your current configuration directory (EDACONF).

The installation begins without prompting you for parameters.

When installation is finished, the Setup Complete window opens.

For a server, select *Start Server Workspace and Web Console* and click *Finish* to exit the setup program. Continue with [Verifying Server Installation](#) on page 43.

For a client, select *Start Client Workspace and Web Console* and click *Finish* to exit the setup program. For more information, see the *Client and Connector Installation and Configuration* manual.

**5.** If you want to:

- ❑ **Configure an additional server instance**, select the directory of the server for which you want to create a new instance, and then click *New Installation/Configuration*.

The Software Registration window opens. Skip to Step 7.

- ❑ **Refresh existing server or client software**, select the directory of the server or client which you want to refresh, and then click *Upgrade Selected*.

You will get new server software (or new client software, if you selected a client directory). It will retain the existing configuration information.

The refresh begins without prompting you for parameters.

When the refresh is finished, the Setup Complete window opens.

For a server, select *Start Server Workspace and Web Console* and click *Finish* to exit the setup program. Continue with [Verifying Server Installation](#) on page 43.

For a client, select *Start Client Workspace and Web Console* and click *Finish* to exit the setup program. For more information, see the *Client and Connector Installation and Configuration* manual.

- 6.** Click *Yes* to accept the terms of the agreement. Otherwise, click *No* to reject the agreement and exit the setup program.

The Software Registration window opens.

**Setup**

**Software Registration**

Please enter the user name, the company name and the license key. The license key is printed on a label inside the package. Current number of CPUs/Cores = 2.

User Name

Company

License

InstallShield

< Back   Next >   Cancel

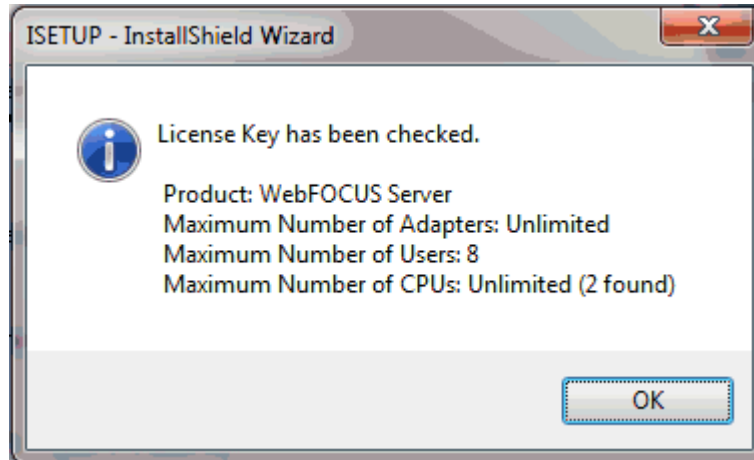
7. In the Software Registration window, type your user name, company, and license key.  
**The license key** is printed on a form included with the software and should be saved for future reference. You must include the hyphens.

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, are determined by the license key. The screens that follow are for a Full-Function Server.

8. Click Next.
  - ❑ **If you typed 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, similar to the following.



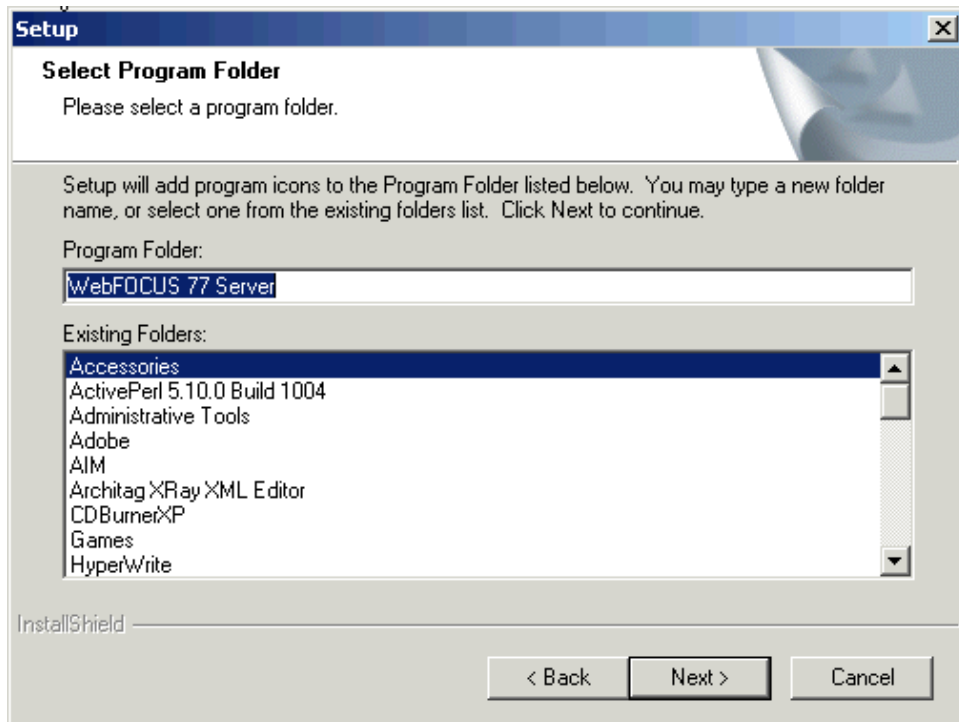
- ❑ **If the License Key's CPU portion is for less than the actual CPUs/cores found**, a CPU violation message will occur. The user can:
  - ❑ Continue the installation and virtualize the PC to a correct quantity afterwards.
  - ❑ Discontinue the installation and reattempt the installation in an environment that is already virtualized correctly.

For more information, see [Limiting CPU/Core Use on Machines With Multiple CPUs and Cores](#) on page 54.

9. Click OK to continue.

The next window varies depending on whether there is a 7.7 server currently installed on the computer.

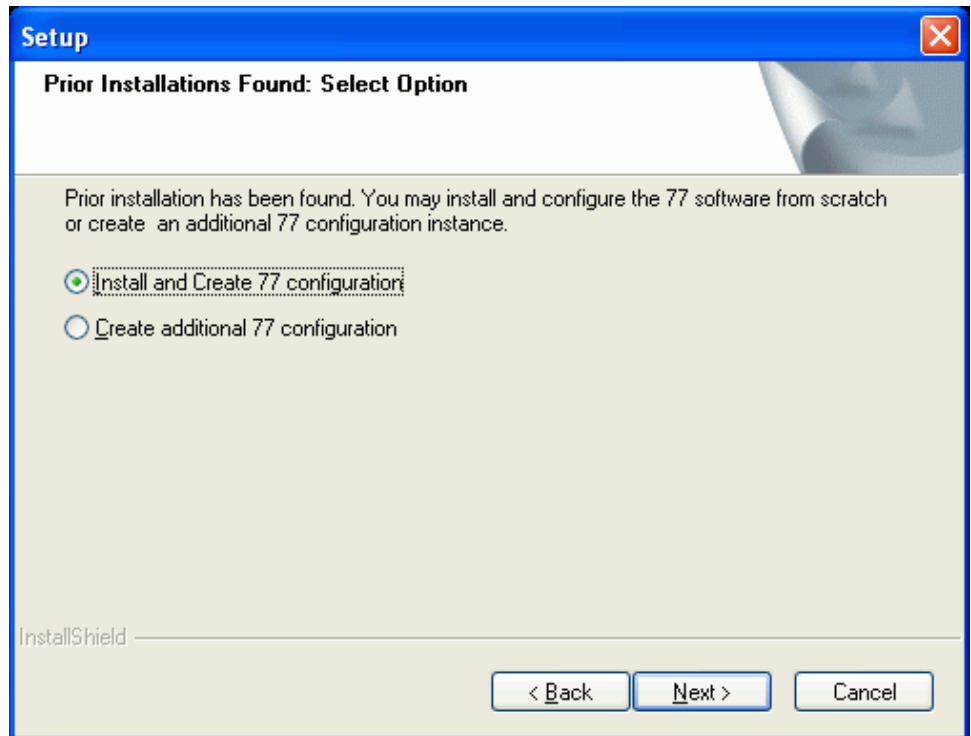
- If a 7.7 server **is not** currently installed, the Select Program Folder window opens.



The type of server you are installing determines the program folder default name. You can change the name.

Skip to Step 11.

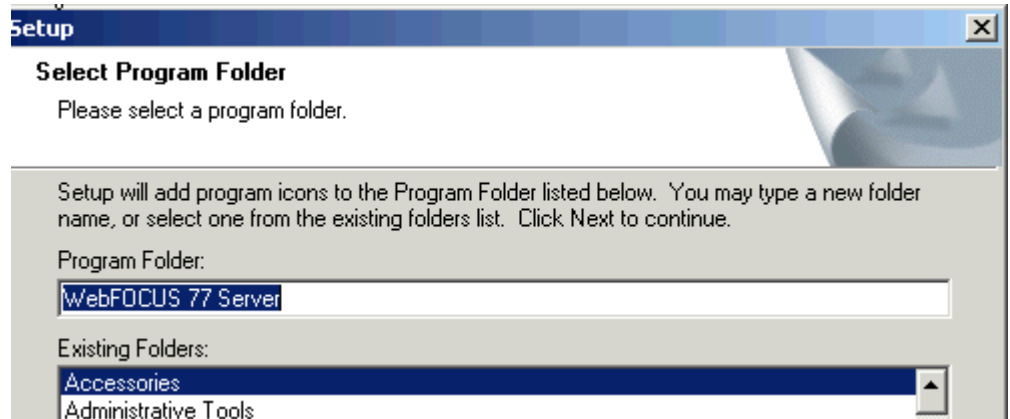
- ❑ If a 7.7 server **is** currently installed, the Prior Installations Found: Select Option window opens. Continue with Step 10.



**10.** If you want to:

- ❑ **Install** an additional server, select *Install and Create 77 configuration*.  
This will install new server software in a new installation directory (EDAHOME) and enable you to specify new configuration information in a new configuration directory (EDACONF).
- ❑ **Configure** an additional server instance, select *Create additional 77 configuration*.  
This will use the *existing* server software in your current installation directory (EDAHOME), and enable you to specify new configuration information in a new configuration directory (EDACONF).  
  
This option enables you to run multiple instances of the server, but requires space for just a single set of server software. It also makes maintenance easier, because if you apply upgrades to the server, you need to do so in only one location.

The Select Program Folder window opens:



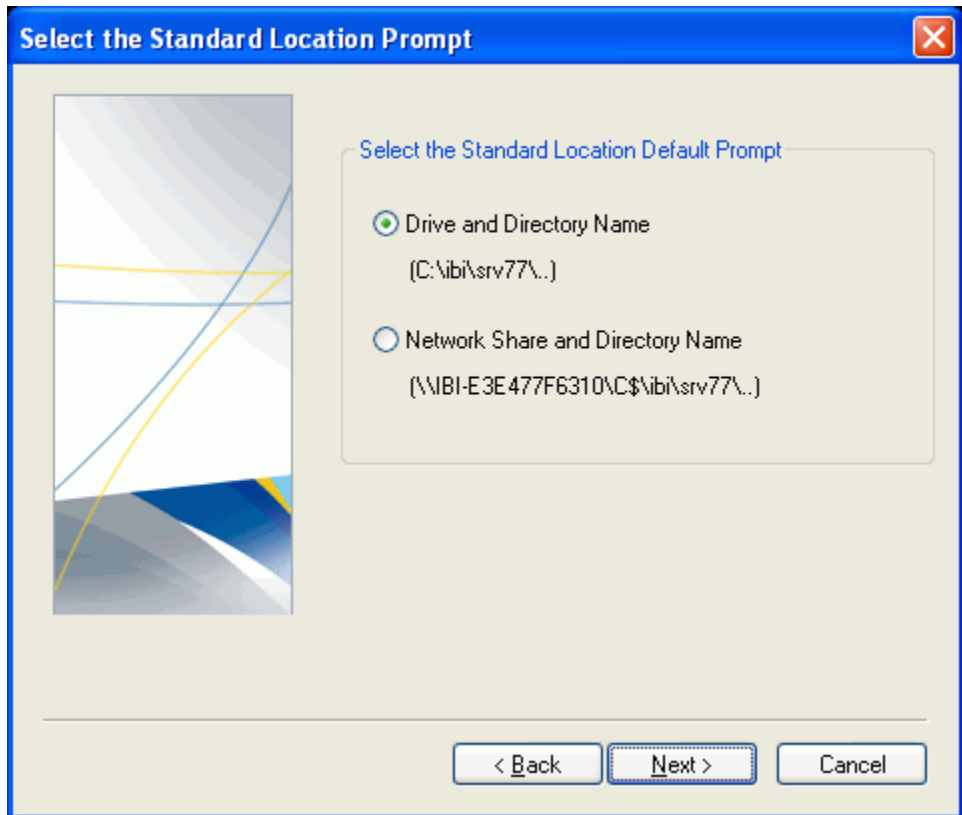
The type of server you are configuring determines the program folder default name. You can change the name.

Each server program folder name must be unique. If you need to distinguish between multiple instances of a server and want to use the default name, add a suffix (for example, WebFOCUS 77 Server 2).

- 11.** Accept the default program folder, or specify a new one, and click *Next*.

The setup program adds this new folder to the Windows Start menu, and creates a new Windows service with the same name as the folder.

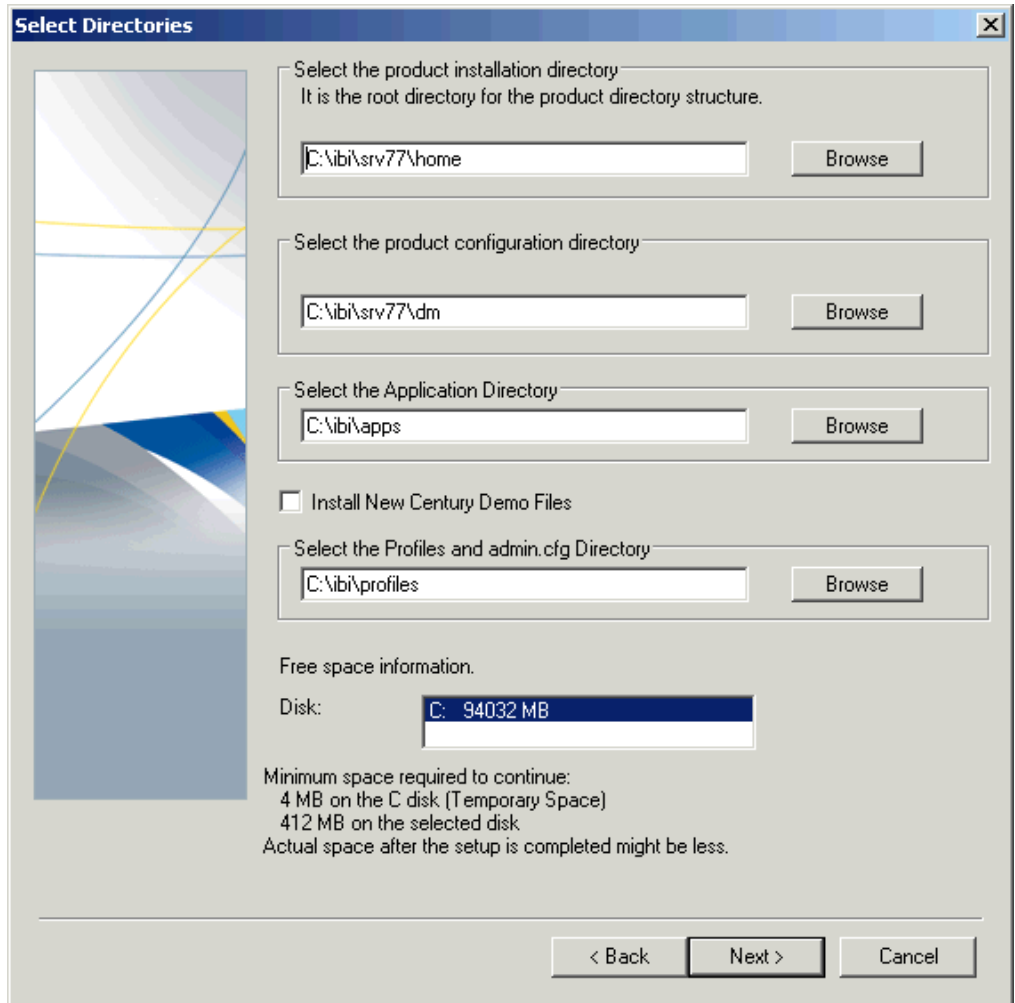
The Select the Standard Location Prompt window opens.



- 12** Choose between using a drive and directory, or a shared network folder, as the location prompt, and then click Next.

Using a drive is standard. Using a shared network folder makes the Data Management Console available to remote users. Choose the drive option, unless you are installing a DataMigrator Server, in which case you can choose either option. For more information, see [Choosing Between Private and Shared Access to the Data Management Console](#) on page 22.

The Select Directories window opens.



**13.** Specify the following locations, or accept the default values:

**a. Product installation directory.** This contains the server executable files. We refer to this location as EDAHOME. It must conform to the pattern:

`*\ibi\srv77*\home*`

If you are **installing** a new server, accept the default directory, or specify a different directory. The new server software will be placed in this directory.

If you are **configuring** an additional server instance, using your existing server software, accept the default EDAPROFILE directory. If several 7.7 installation directories exist, select the one that corresponds to the server for which you are configuring a new instance.

- b. Product configuration directory.** This contains configuration information for this server instance. We refer to this location as EDACONF.

If you changed the EDAPROFILE value, the default EDACONF value changes to conform to EDAPROFILE.

EDACONF must be in the same `srv77` path as EDAPROFILE. The lowest-level EDAPROFILE directory (home) becomes the server type directory in EDACONF. For example, if EDAPROFILE is

```
ibi\srv77\home
```

then EDACONF for a WebFOCUS Reporting Server defaults to:

```
ibi\srv77\wfs
```

Each server instance must have its own configuration directory. If you are configuring an additional server instance, be sure to append characters to the default name of the server type directory. (Otherwise, the installation will overwrite the existing configuration directory.) For example:

```
ibi\srv77\wfs2
```

Accept the default value, or click *Browse*, or type a name to specify a different directory.

- c. Application directory.** This contains the server applications. We refer to this location as APPROOT.

Accept the default value, or click *Browse* to select a different directory.

- d. Profiles directory.** This contains the user and group profiles and the `admin.cfg` file, which specifies the server administrator. We refer to this location as EDAPRFU.

Accept the default value, or click *Browse* to select a different directory.

- e. Disk.** If there is more than one disk or shared folder to which the server can be installed, select the one on which you want to install.

- f.** Click *Next*.

The Configure Server Administrator ID/Password and Inbound Communications window opens.

Configure Server Administrator ID/Password and Inbound Communications

Server Administrator ID and Password

Server Administrator ID: MN01201

Server Administrator Password:

The Server Administrator Password is required for 'secured', 'pth' and 'dbms' security modes. It can be omitted for 'unsecured' security mode.

HTTP and TCP/IP Services

HTTP Listener Port: 8101

This is the first of three consecutive port numbers that are open and dedicated to the HTTP Listener and other IP based services.

TCP Listener Port: 8100

The TCP Listener Port number must be outside the 8101 - 8103 range.

< Back    Next >    Cancel

**14.** Specify the following information and then click Next.

- ❑ **Server Password.** Type the password of the account you are using to install the software.

Note that if you leave the password blank, or if you enter an incorrect password, the server will start in safe mode. For more information about starting in safe mode, see [Troubleshooting for Windows](#) on page 55.

You can change the ID and the password after installation using the Web Console.



- ❑ **HTTP Listener Port.** Type the base HTTP port number that the server is using for HTTP. The server requires three consecutive ports for the HTTP Listener and other IP-based services.

If you are configuring multiple server instances, be sure to specify a different range of ports for each server instance.

The default port automatically varies by product to support multiple servers on a particular computer:

**For a Full-Function Server,** 8101 is the default value, which reserves ports 8101-8103.

**For a WebFOCUS Reporting Server,** 8121 is the default value, which reserves ports 8121-8123.

**For a DataMigrator Server,** 8117 is the default value, which reserves ports 8117-8119.

**For a Shared Application Server** (for WebFOCUS Maintain), 8113 is the default, which reserves ports 8113-8115.

- ❑ **TCP Listener Port.** Type the TCP/IP port number that the server is using for TCP/IP. The port should be the one immediately preceding the first HTTP port.

If you are configuring multiple server instances, be sure to specify a different port for each server instance.

The default port varies by product to support multiple servers on a particular computer:

**For a Full-Function Server,** 8100 is the default value.

**For a WebFOCUS Reporting Server,** 8120 is the default value.

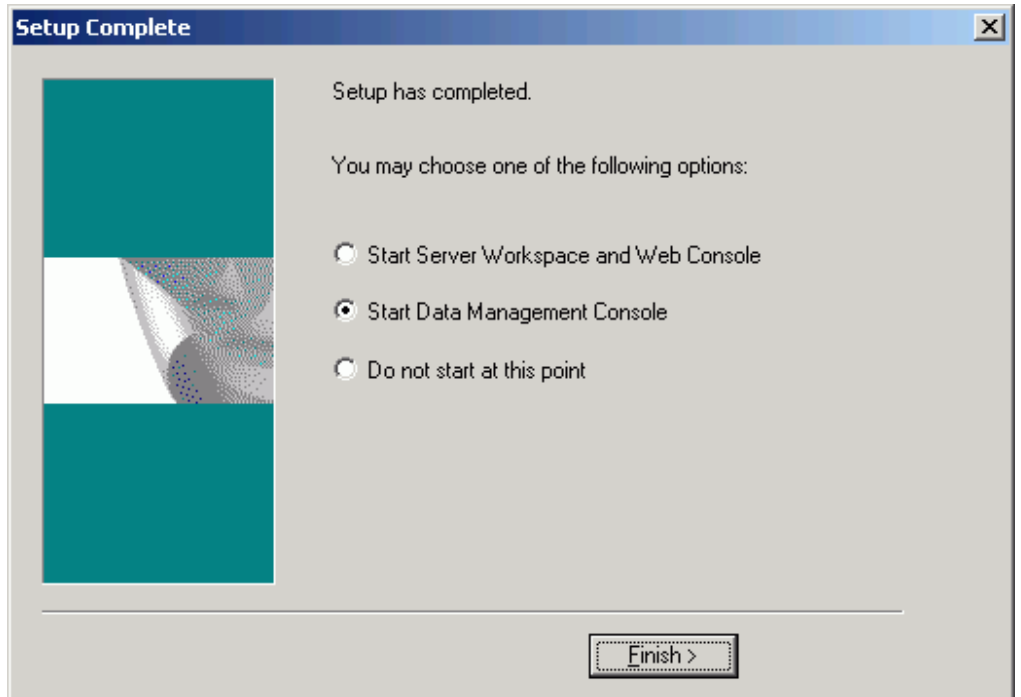
**For a DataMigrator Server,** 8116 is the default value.

**For a Shared Application Server** (for WebFOCUS Maintain), 8112 is the default.

**15.** 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.



**16.** If, in Step 14, you:

- ❑ **Provided a Server Administrator password,** select *Start Server Workspace and Web Console* and click *Finish* to exit the setup program.
- ❑ **Left the Server Administrator password blank,** the console will automatically start in safe mode. For more information about starting in safe mode, see [Troubleshooting for Windows](#) on page 55.

You should now verify your installation, as described in [Verifying Server Installation](#) on page 43.

## Verifying Server Installation

### How to:

Verify Server Installation

Determine Which Adapters Are Supported on Windows

Register a License Code With the Server

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

### Procedure: How to Verify Server Installation

1. If the server is not already running, start it using whichever security mode you prefer:
  - ❑ **Security OPSYS.** From the Windows Start menu, select *Programs*, the server program group (for example, *WebFOCUS 77 Server*), and *Start Security OPSYS*.
  - ❑ **Security OFF.** From the Windows Start menu, select *Programs*, the server's program group (for example, *WebFOCUS 77 Server*), *Start With Alternative Security Modes*, and then *Start Security OFF*.

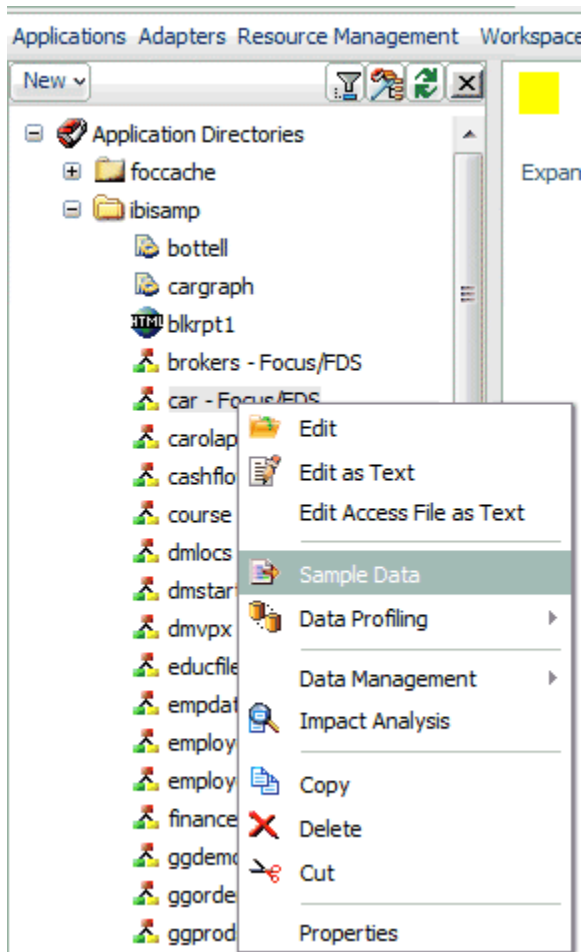
Additional security modes (DBMS, PTH, and LDAP) are available once you configure them, as described in the *Adapter Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

For information about security modes, see [Choosing a Security Mode](#) on page 45 and the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

2. Open the Web Console if it is not already running. From the Windows Start menu, select *Programs*, the server program group (for example, *WebFOCUS 77 Server*), and *Web Console*.

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

3. To test the server, open the ibisamp folder on the Applications tree, right-click a synonym, such as CAR or EMPLOYEE, and select *Sample Data*.



A sample report is executed and the result is displayed.

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

- ❑ **Configure server security**, as described in [Choosing a Security Mode](#) on page 45.
- ❑ **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, IBM i, and z/OS* manual.

For more information about configuring adapter support, see the *Adapter Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual. For information about which adapters are supported, see [How to Determine Which Adapters Are Supported on Windows](#) on page 45.

If you license WebFOCUS Active Technologies, you must register your Active Technologies license code with the server, as described in [How to Register a License Code With the Server](#) on page 45.

### **Procedure: How to Determine Which Adapters Are Supported on Windows**

For current information about which adapters are supported:

- 1.** Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
- 2.** In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.  
The Supported Systems and Adapters page opens.
- 3.** Click the link for the server release you want.  
The Supported Systems and Adapters page for that release opens.
- 4.** Click the link for your platform.  
The support chart for that platform opens.

### **Procedure: How to Register a License Code With the Server**

If you license WebFOCUS Active Technologies, you must register its license code with the server before using Active Technologies.

- 1.** In the Web Console menu bar, select *Configuration/Monitor* from the Workspace menu.
- 2.** In the navigation pane, right-click *License* and select *Configure*.  
The License Management pane opens.
- 3.** Type the license code in the *license\_active\_report* field.
- 4.** Click *Save and Restart Server*.

## **Choosing a Security Mode**

You can run the server in any of the following security modes:

- OFF**, in which access to data sources and the Web Console is unrestricted. Users do not need to provide a password.

- ❑ **OPSYS**, in which the server runs as a Windows service. Requires users to provide their operating system user IDs and passwords when logging on to the server. Each connecting user credentials are authenticated using Microsoft Windows Security Services. The server invokes authentication and impersonation services and controls database access.
- ❑ **PTH**, in which access to the Web Console is controlled by authentication against the user list defined at the configuration level.
- ❑ **DBMS**, in which access to data sources and the Web Console is controlled by authentication against the database list of user IDs. Control of data resources can be accomplished by creating different profiles.
- ❑ **LDAP**, in which access to data resources and the Web Console is controlled by authentication through the established directory.

Some security modes need to be configured before you can activate them. You can see a full description of all server security modes in the Web Console Help, and also in the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual. To see it in the Web Console:

1. From the Web Console menu bar, select *Help*, then *Contents and Search*.  
The Web Console Help window opens.
2. In the left pane, expand *Server Administration*.

## Additional Server Installation Options

### In this section:

Installing and Configuring a Server Silently

### 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.

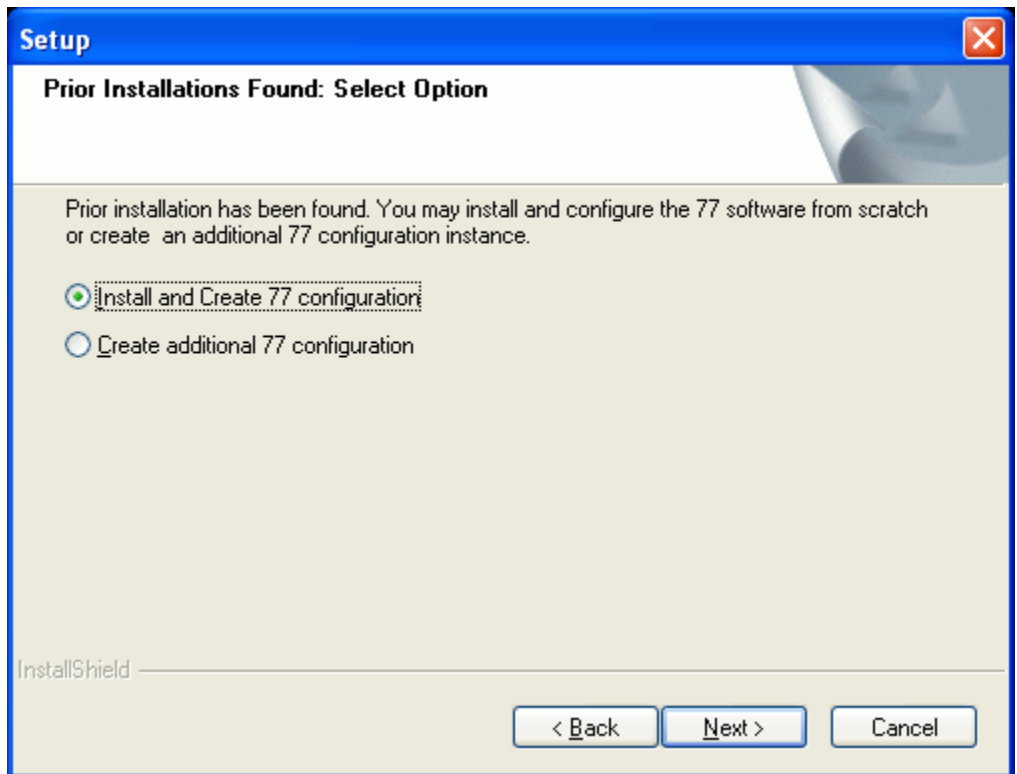
### **Procedure:** How to Configure an Additional Server Instance

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

1. Execute the installation program from the original installation medium, as described in [How to Install and Configure a Server](#) on page 27.

The Choose Setup Language window opens.

2. Select the language to be used during installation and click *Next*:
  - If one 7.7 server is found, you are asked if you would like to refresh the installation. Click *No*.
  - If multiple 7.7 servers are found, select the EDASHOME directory of the server for which you want to create a new instance, and then click *New Installation/Configuration*.
3. Follow the steps for a normal installation, but be sure to select *Create additional 7.7 configuration* at the following window.



4. Click *Next*.

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

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

```
C:\ibi\srv77\ffs2
```

6. When prompted for the Base TCP/IP Number, be sure to specify ports that are not used by another configuration. Each configuration requires four consecutive ports, so make sure the four consecutive ports for your new configuration are available.

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

Refreshing the server reinstalls the server 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 from the original installation medium, as described in [How to Install and Configure a Server](#) on page 27.

The Choose Setup Language window opens.

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

When an existing 7.7 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 EDAPATH 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 program group (for example, *WebFOCUS 77 Server*), and *Uninstall*. This program removes the EDAPATH and EDACONF directories of this server instance.

If more than one configuration uses the same EDAPATH 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 EDAPATH directory, you disable the additional configurations, including their unconfigure utilities. A manual cleanup is then required.



## Installing and Configuring a Server Silently

### How to:

Create the Server Installation Parameters File

Launch a Silent Installation

This is also known as a silent install. The most common form is an initial install which also results in an initial configuration (and is what is documented here). An initial installation and configuration should only be done once per EDHOME (and program folder) and an add product configuration used thereafter.

You can install a server silently, without the installation process prompting for information, if you first create a text file that specifies your server installation parameters. Installing silently can be helpful if, for example, you want to install many servers at once throughout an 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 in [Installing a Server](#) on page 27.

### 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 installation parameters:

```
-inst
-license nnn-nnn-nnnn-nn
-edahome drive:\ibi\srv77\home
-edaconf drive:\ibi\srv77\server_type
-port portnum
-host hostname
-approot drive:\ibi\apps
-programfolder "folder-title"
-pass password
-nostart
```

where:

*nnn-*nnn*-*nnnn*-*nn**

Is the 12-digit license. Include a hyphen (-) following the third, sixth, and tenth digits.

*drive:\ibi\*

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

### *server\_type*

Designates the type of server. The default values are:

<i>FFS</i>	for a Full-Function Server
<i>DM</i>	for a DataMigrator Server
<i>WFS</i>	for a WebFOCUS Reporting Server
<i>WFM</i>	for a Shared Application Server for WebFOCUS Maintain

### *portnum*

Is the base TCP port for the server.

### *hostname*

Is the server hostname.

### *folder-title*

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

```
-programfolder "WebFOCUS 77 Server"
```

### *password*

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

To see a list of additional installation and configuration options:

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

2. Enter the following:

```
setup ?
```

3. Accept a display language and click *Next*.

A help screen with further parameter file options will display.

The user may continue with the install (interactive) or quit at this point to attempt a silent install/configure.

### **Procedure: How to Launch a Silent Installation**

1. Open a command prompt and navigate to the directory containing the software and the setup.exe file for the server.
2. Type the following:

```
setup -lcode -opt drive:\path\srvoptions.txt
```

where:

*code*

Is the code specifying the language of the Web Console 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:

<b>English</b>	0x409
<b>French</b>	0x040c
<b>German</b>	0x407
<b>Japanese</b>	0x411
<b>Spanish</b>	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, type:

```
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 43.

## Generating a Trace

### How to:

Generate a Server Trace

Generate a Non-Server Trace

If you encounter a server problem, you can run a set of traces that will help you assess the problem, and, if necessary, communicate it to Customer Support Services for further troubleshooting. This topic describes trace options and provides instruction for creating the traces.

There are two types of traces you can run to troubleshoot a problem:

- ❑ **A server trace**, in which you trace an agent that is running in a server context.
- ❑ **A non-server trace**, in which you trace an agent that is running outside a server context, that is, an agent that is running standalone.

Under normal conditions, most applications are run in a server context. However, if you run your trace in a non-server context (that is, if you run a non-server trace), you can produce the necessary diagnostic information while significantly reducing the amount of material that needs to be reviewed. Running a non-server trace also rules out server communications as a cause of your problem.

Optionally, you can start traces, turn traces off, and perform the `edastart -savediag` function by selecting options from the Windows Start menu, under the Diagnostics folder, rather than by opening a DOS session to execute these commands.

### **Procedure: How to Generate a Server Trace**

To generate a server trace:

1. Turn tracing on by doing one of the following:

- ❑ Go to the Web Console menu bar, select *Workspace* and then *Enable Traces*.
- ❑ Start the server by issuing the following command:

```
edastart -traceon
```

You must preface `edastart` with the appropriate path, or place the directory in your system PATH variable.

2. Reproduce the problem.
3. Stop the server.
4. Issue the following command:

```
edastart -savediag
```

5. Respond to the prompts to capture, and optionally archive, diagnostic information.

For information about sending the diagnostic information to Customer Support Services, see [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

### **Procedure: How to Generate a Non-Server Trace**

To generate a non-server trace:

1. Create a directory under APPROOT to reproduce the problem.
2. Copy any files required for the reproduction to the directory.
3. Switch to the directory.
4. Reproduce the problem using `edastart -traceon` and one of switches `-t`, `-x`, or `-f`.
5. Switch to a directory other than the problem reproduction directory.

6. Issue the following command:

```
edastart -savediag
```

7. Respond to the prompts to capture, and optionally archive, diagnostic information.

For information about sending the diagnostic information to Customer Support Services, see [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

## Third-Party Software and Licenses

### In this section:

OpenFlex SDK

Zip Archiver

As of Version 7 Release 6.8, to address display of third-party software license requirements, a license option has been added to the Help menu located on the Web Console. This section describes the third-party software used on Windows and includes references to the full licenses included in [Information Builders and Third-Party Licenses](#) on page 413.

### OpenFlex SDK

OpenFlex SDK is included by Information Builders for use with its HOLD FORMAT FLEX feature. This distribution is subject to the terms and conditions of the Mozilla Public License Version 1.1.

For more information, see [OpenFlex SDK License](#) on page 419 or visit our World Wide Web site at, <http://www.informationbuilders.com>.

### Zip Archiver

The server includes a third-party zip.exe archiving utility for use in the save diagnostic feature (edastart -savediag). The utility, located in the EDAPATH bin directory, is provided at no charge. Information Builders makes no claim of ownership, nor charges for the utility or inclusion, nor does it warranty it and is provided solely to assist our customers. To see the software full license statement, issue the command:

```
ZIP -L
```

There are many free and commercial versions of zip based archivers. The one supplied is Info-Zip 3.0 with BSD like licensing. For more information about Info-ZIP, visit their Web site at, [www.info-zip.org](http://www.info-zip.org).

For more information, see [Zip Archiver License](#) on page 427 or visit our World Wide Web site at, <http://www.informationbuilders.com>.

If Winzip WZZIP or PKWare PKZIPC are on the server system path, the first one found will be used instead of zip.exe. If you prefer to not use the supplied version of zip.exe (for example, if your enterprise has a policy against using freeware), you can manually remove it from the EDAHOME bin directory or replace it with any zip version that conforms to these usage rules.

## General Information for a Windows Installation

### In this section:

Limiting CPU/Core Use on Machines With Multiple CPUs and Cores

This section covers general information for a UNIX Installation.

### Limiting CPU/Core Use on Machines With Multiple CPUs and Cores

When the effective number of CPUs (cores) on a computer exceeds the number allowed by the server license, depending upon the license, either the server will not start or users will be given warnings in edaprint.log and at Web Console or Data Management Console login.

To correct the situation, the installation site has two choices:

- ❑ Install the server on a computer with a physical number of CPUs/cores that is less than or equal to the license amount.
- ❑ Create a virtual environment using VMware or Microsoft Virtual PC with a number of cores that matches the license requirement, and run the server instance under one of these virtualization options.

**Note:** Running multiple instances of the server (each under a limited virtual processor set) or adding processors to the virtual set after the server is running, constitutes a license violation.

Microsoft Virtual PC only supports single CPU/core virtualization, while VMware supports multiple CPU/cores. Both offer converter tools to reimage a PC into a virtualization. At server installation time, if a site is in violation, the site has the option of continuing (and converting to virtualization afterwards) or stopping the initial install to reattempt the installation in an environment that is already virtualized correctly.

The specifics of installing and configuring VMware and Microsoft Virtual PC or the use of their respective converter tools are beyond the scope of this document. From the perspective of a server installation, the installation utility does not know that virtualization has occurred and there is no difference. Consult the related virtualization documentation for further information on the use of these features.

## Troubleshooting for Windows

### How to:

Add Your Problem to the Troubleshooting Guide

### Reference:

Problem: The Server Starts in Safe Mode

Problem: Java Listener Fails to Start With JVM not found Messages Written to the Log

Problem: Java Listener Fails to Start in Security OPSYS Mode With JVM not found  
Written to the Log

Problem: Cannot Stop the Server's Windows Service

Add Your Problem to the Troubleshooting Guide

As of the Version 7 Release 7.02, separately installable debuggable versions are no longer required to get a full stack trace of information for a savediag. The *Debuggable Version - Install* and *Debuggable Version - Remove* options have been removed from the Windows menu.

If you have an earlier Version 7.7x release that contains the debug menu options, and have installed service pack upgrades of 7702 (or higher), these menu options should be deleted, since they no longer function or are needed.

To troubleshoot an installation problem, identify your problem in the following list, and follow the link to a description of the solution.

If you cannot find your problem described in the list, and cannot resolve it yourself, contact Customer Support Services as described in [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

If you have a troubleshooting suggestion that is not described in the list, and you think others will find it helpful, we invite you to send it to us, as described in [How to Add Your Problem to the Troubleshooting Guide](#) on page 58. We will consider including your problem in a future release of this manual.

### Problems:

- ❑ The server starts in safe mode (as indicated at the top of the Web Console).  
See [Problem: The Server Starts in Safe Mode](#) on page 56.
- ❑ The listener start request fails with *JVM not found* messages written to edaprint.log.  
See [Problem: Java Listener Fails to Start With JVM not found Messages Written to the Log](#) on page 56.

- ❑ The Java listener start request fails in Security OPSYS mode with *JVM not found* messages written to `edaprint.log`.

See [Problem: Java Listener Fails to Start in Security OPSYS Mode With JVM not found Written to the Log](#) on page 57.

- ❑ The Windows service will not stop.

See [Problem: Cannot Stop the Server's Windows Service](#) on page 58.

### **Reference:** **Problem: The Server Starts in Safe Mode**

**Problem:** The server starts in safe mode. The Web Console home page displays a message stating that the server is in safe mode and describing what triggered it.

**Cause:** A common cause for the server starting in safe mode is a problem with the server administrator ID 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 click the *fix* hyperlink, which is displayed under the problem description, to display the relevant pane and resolve the problem.

For example, if the problem is that the server administrator password is out of synchronization:

1. Click the *fix* hyperlink displayed under the problem description.
2. In the left pane, open the *Users* folder, then the *Server Administrator* folder.
3. Click your user ID and select *Properties* from the pop-up menu.

The Access Control pane is displayed on the right.

4. Type the correct operating system password in the *Password* field, and type it again in the *Confirm Password* field.

5. Click *Save and Restart*.

The Security Mode pane opens on the right.

6. Click the Home icon in the menu bar to return to the Web Console home page.

### **Reference:** **Problem: Java Listener Fails to Start With JVM not found Messages Written to the Log**

**Problem:** The listener start request fails with *JVM not found* messages written to the `edaprint.log` file.

**Cause:** If the server cannot find the Java Virtual Machine (JVM), the JSCOM Listener will not be able to start, and messages will be written to the server log stating that the JVM cannot be found.



The server log is

**On Windows:**

`drive:\ibi\srv77\server_type\edaprint.log`

**On UNIX:**

`ibi/srv77/server_type/edaprint.log`

**On IBM i:**

`/home/iadmin/ibi/srv77/server_type/edaprint.log`

where:

`drive`

Is the hard drive on which the directory resides (on Windows).

`server_type`

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
- `WFM` for a Shared Application Server for WebFOCUS Maintain

**Solution:** Set up the JVM as described *JVM Requirements for the Listener for Java* on page 19.

**Reference: Problem: Java Listener Fails to Start in Security OPSYS Mode With JVM not found Written to the Log**

**Problem:** In the Security OPSYS mode, the listener start request fails with *JVM not found* messages written to the `edaprint.log` file.

**Cause:** Sun Java installation seems to have changed for newer releases. Depending on the ID it was installed by, the "client" directory (that houses `jvm.dll`) may not have Read & Execute permission in relation to the ID that is used to start the server.

**Solution:** Based on the Java locations added to the system PATH variable during initial Java set up for the server, locate these directory folders using Windows Explorer. On each of the folders:

1. Right-click the folder, and select *Properties*.
2. In the Properties window, select the *Security* tab.
3. Select the ID that will be used to start the server, and select *Read & Execute* (which will also set the List Folder Contents and Read attributes).

If the *JVM not found* behavior continues, other intermediate directories for the already changed directories should also be checked for Read & Execute permissions and set in the same way.

### **Reference: Problem: Cannot Stop the Server's Windows Service**

**Problem:** When you try to stop the server, the associated Windows service does not stop.

**Cause:** Any server administrator can stop the server. The ID that installed the server is automatically defined as a server administrator. You can specify additional IDs as server administrators using the Web Console.

If an ID is not a server administrator it will not be able to stop the server, even if that same ID had started the Windows service that started the server.

**Solution:** Specify the ID that was not able to stop the service as a server administrator:

- 1.** In the Web Console menu bar, select *Access Control* from the Workspace menu.

The Security Mode pane opens.

- 2.** Click the *Users* label (to the right of the folder) in the navigation pane.

The New User option appears.

- 3.** Click *New User*.

The Access Control pane opens.

- 4.** Identify the new administrator by filling in the fields in the Access Control pane.

For more information about these fields and about specifying an additional server administrator, see the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

- 5.** Click *Create*, and then click *Save and Restart*.

### **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@ibi.com](mailto:books_info@ibi.com). Include your name and phone number, and include *Server Installation Troubleshooting* in the subject line.

□ **Send them** to:

Documentation Services  
Information Builders  
Two Penn Plaza  
New York, NY 10121-2898

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



# 3 | Server Installation for UNIX

This document describes the requirements and procedures for installing a server on UNIX.

## Topics:

- ❑ Installation Requirements
- ❑ Installation and Configuration Directories
- ❑ Installing a Server
- ❑ Verifying Server Installation
- ❑ Choosing a Security Mode
- ❑ Starting and Using a Server
- ❑ Generating a Trace
- ❑ Third-Party Software and Licenses
- ❑ General Information for a UNIX Installation
- ❑ Troubleshooting for UNIX

## Installation Requirements

### **In this section:**

Platform and Operating Environment Requirements

JVM Requirements for the Listener for Java

Browser Requirements

Disk Space Requirements

Memory Requirements

Communications Requirements

User ID Requirements

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

### **Platform and Operating Environment Requirements**

The server is supported on most major platforms, including AIX, HP-UX, Linux, Solaris, and Tru64. For current information about supported releases:

- 1.** Go to <http://techsupport.informationbuilders.com>.

The Information Builders Technical Support home page opens.

- 2.** In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.

The Supported Systems and Adapters page opens.

- 3.** Click the link for the server release you want.

The Supported Systems and Adapters page for that release opens.

- 4.** Click the link for your platform.

The support chart for that platform opens.

In general, the operating system should have the latest cumulative patch levels applied.

Confirm that your server installation software is labeled for your operating system level.

## JVM Requirements for the Listener for Java

If JVM-based adapters, server-side graphics, XBRL, or user-written CALLJAVA applications are to be used, a Java Runtime Environment (JRE) JVM must be installed on the machine, and the server must be configured to use it. As of 77x, the general minimum JVM level is 1.5 or higher, since a number of components require 1.5. In narrow cases, a lower JVM level may be used, but is not advised nor has it been specifically tested. This section discusses JVM installation and configuration.

When you install the Java SDK, the JRE is included. Some UNIX vendors have standalone JRE packages available, but only full SDK packages are supported. The SDK build type in use must also match in terms of 32-bit or 64-bit to the bit type of the server in use. If a JVM is not on the library path or is an inappropriate bit type, a *Failed to find JVM* message, as well as debugging information will be written to the start log, which will indicate a failed JSCOM3 service.

The current default/preferred JRE for the server is JRE 1.5, since this is the minimum requirement for some server components and JRE 1.4 is past its EOSL date. The following URL has Java EOL and EOSL information:

<http://java.sun.com/products/archive/eol.policy.html>

You can revert to using JRE 1.4 from the Web Console by selecting *Configuration/Monitor* from the *Workspace* menu, opening the *Java Services* folder, right-clicking *Default*, and selecting *Properties*.

There are several ways to specify the JVM location:

- ❑ For Java JDK set JDK\_HOME (to the install home location) in environment or server environment start-up file (edaenv.cfg).
- ❑ For Java JRE set JAVA\_HOME (to the install home location) in environment or server environment start-up file (edaenv.cfg).
- ❑ Use library path or IBI\_JNIPATH to set explicit pathing. Use of JDK\_HOME or JAVA\_HOME is preferred as they are less prone to error. The JRE bin and server (or client) subdirectories must be specified in path-based environment variable and a server restart is required.

The JDK JRE bin and server (or client) subdirectories must be specified in the load library path environment variable. A server restart is required, plus the appropriate JVM must be on the path if switching JRE levels. The load library path may be set by using any of the following methods.

- ❑ Set the JDK\_HOME variable to the name of the Java SDK home directory, and internally the required directories will be added using the library load path (LIBPATH on AIX, SHLIB\_PATH on HP-UX, LD\_LIBRARY\_PATH on all other platforms.)

- ❑ Set the JVM server or client directory (in which libjvm resides) and its parent directory to the IBI\_JNIPATH Java library load path. For example, on Linux:

```
export IBI_JNIPATH=/usr/ jdk1.5.0_11/jre/lib/i386/server:  
/usr/jdk1.5.0_11/jre/lib/i386:$IBI_LIBPATH
```

- ❑ Set or append the JVM server or client directory (in which libjvm resides) and its parent directory to the internal library load path (IBI\_LIBPATH). This is least preferred method and only documented for backward compatibility. For example:

```
export IBI_JNIPATH=/usr/jdk1.5.0_11/jre/lib/i386/server:  
/usr/jdk1.5.0_11/jre/lib/i386:$IBI_LIBPATH
```

To add classes to the JVM class path for customer-written CALLJAVA applications, set and export the CLASSPATH variable to the operating system level before server start-up or use the Web Console to set the Java Listener IBI\_CLASSPATH property.

If JVM-based adapters or features are not required, the message *Failed to find JVM* is normal and can be ignored.

## Browser Requirements

The Web Console server requires one of the following Web browsers:

- ❑ Microsoft Internet Explorer® 7 or higher.
- ❑ Mozilla Firefox® 3.5 or higher.
- ❑ Google Chrome® 10.0 or higher.
- ❑ Apple Safari® 5.0 or higher.

The Opera™ browser does not support RIA (Rich Internet Application), the default appearance mode of the 7.7.x Web Console. Opera 5.0 or higher seems to operate properly in HTML mode, and the Web Console detects this and switches modes automatically. Since HTML mode is less extensively tested, Opera is considered unofficially supported at this time. Please report any issues you find to customer service.

## Disk Space Requirements

The following are approximate disk space requirements in megabytes. Specific sizes may vary slightly depending on the release being used and the options selected during configuration. The usage numbers do not include space for actual applications, databases, sort space, output preparation, or logs.

Platform	After Installation - 32bit	After Installation - 64bit
AIX	350 M	360M



Platform	After Installation - 32bit	After Installation - 64bit
HP-UX	430 M	450M
Linux for pSeries	310 M	Not supported.
Linux for Itanium	Not supported.	385 M
Linux for x86	290 M	310 M
Linux for zSeries	Not supported.	315 M
Solaris Sparc	365 M	345-494 M (depends on OS level)
Solaris x86	315 M	365 M

During installation, the disk space required is approximately 20 megabytes more than double the *After Installation* size. These numbers do not include space for applications. The ibisamp sample application requires an additional six megabytes.

## Memory Requirements

Memory and shared memory usage depends on:

- ❑ Number of data access agents.
- ❑ Type of access performed (for example, joins, large-scale retrieval, and so on).
- ❑ Connection queue.

Memory usage differs depending on your implementation of UNIX and your server load.

The following table shows the approximate memory requirements for installing and running the server.

Platform	Memory Per Agent	Other Memory *
HP-UX	2 M	8 M
AIX (32 bit)	2 M	6 M
AIX (64 bit)	12 M	45 M
Solaris (Sparc)	15 M	60 M
Solaris (Intel)	8 M	30 M

\* Other memory includes memory used by the primary one-per-server daemon processes such as the Workspace Manager, the print log, Deferred Listener, HTTP Listener, and TCP Listener.

## Communications Requirements

You need four TCP/IP ports for each server instance that you configure. Three of these ports must be consecutive. You specify these port numbers during installation. You may require additional ports depending on which options you configure later.

## User ID Requirements

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

- ❑ **Server administrator IDs (iadmin).** Server administrators use this ID to start, configure, and stop the server.

The operating system ID you use when installing the server owns the server 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, Bourne, or Bash 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 UNIX IDs available to them so that they 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 [Choosing a Security Mode](#) on page 85.

## Installation and Configuration Directories

The installation process creates these high-level directories:

- ❑ **Home directory.** This installation directory stores the server programs and other files. We refer to this as `EDAHOME`, and when the server is running, the full path is stored in the environment variable `EDAHOME`. The default directory is

`ibi/srv77/home[suffix]`

where:

*suffix*

Is optional when installing and maintaining a single copy of the server. It is required if installing and maintaining multiple copies (for example, multiple server maintenance releases) to ensure that each installed server has a uniquely-named home directory. For example:

```
/home/iadmin/ibi/srv77/home771
```

- **Configuration directory.** The files that control the behavior of each server instance reside here. We refer to this as EDACONF, and when the server is running, the full path is stored in the environment variable EDACONF. The default directory is

```
ibi/srv77/server_type[suffix]
```

where:

*server\_type*

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
- WFM** for a Shared Application Server for WebFOCUS Maintain

*suffix*

Optional for an initial default installation and configuration. Required when configuring additional instances of the server. You must add a suffix to the directory name to ensure that each server instance has a uniquely-named configuration directory. In the following example, for an additional instance of an Full-Function Server, the suffix 002 has been added:

```
/home/iadmin/ibi/srv77/ffs002
```

- **Application directory.** This is the default location for storing applications. We refer to this as APPROOT, and when the server is running, the full path is stored in the environment variable APPROOT. This directory may be shared by applications created with other Information Builders products. It defaults to

```
ibi/apps
```

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.

- ❑ **Profiles directory.** The user and group profiles reside here, as does the admin.cfg file, which specifies the server administrator. We refer to this as EDAPRFU, and when the server is running, the full path is stored in the environment variable EDAPRFU. This directory defaults to

`ibi/profiles`

**Multiple WebFOCUS Reporting Servers.** If you plan to install multiple copies of WebFOCUS on the same computer, and you want to provide each copy with its own WebFOCUS Reporting Server, you may wish to maintain a separate ibi root directory for each copy, so that you can keep copies of each components, including the server, together in the same path.

For example, if you want to install two copies of WebFOCUS, one for testing and one for production, you could create a wftest directory and a wfprod directory. They would include the following subdirectories (this is a partial list):

- ❑ **The test copy of WebFOCUS** would include:

`home/iadmin/wftest/ibi/srv77/home` (server home directory)

`home/iadmin/wftest/ibi/WebFOCUS77` (WebFOCUS product components directory)

- ❑ **The production copy of WebFOCUS** would include:

`home/iadmin/wfprod/ibi/srv77/home` (server home directory)

`home/iadmin/wfprod/ibi/srv77/wfs` (server configuration directory)

`home/iadmin/wfprod/ibi/WebFOCUS77` (WebFOCUS product components directory)

You could provide a separate apps directory for each copy of WebFOCUS, or specify a single apps directory to be shared by all copies of WebFOCUS.

## Installing a Server

### In this section:

Installing and Configuring a Server Silently

### How to:

Insert and Mount the Installation CD

Download the Installation Software Using FTP

Install a Server

Dismount the Installation CD

Configure an Additional Server Instance

Refresh or Upgrade a Server Installation

### Example:

Full-Function Server Installation Prompts and Responses

Before you can install the server, you must access the server installation software. You can choose to access the installation software using either:

- ❑ **CD.** Most installations access the software from CD. You must first insert and mount the CD, as described below in [How to Insert and Mount the Installation CD](#) on page 70.
 

You can run the installation program directly from the CD, or copy the CD contents to disk and run the installation program from disk. The advantage of running the installation from disk is an increase in speed, as well as having a copy of the installation program available on disk for future use.

Even if there is no CD drive on the computer on which you will be installing the server, you can still install using the CD. Simply insert and mount the CD on a computer with a drive, and then copy the installation software from the CD to the computer on which you will be installing the server, as described in [How to Insert and Mount the Installation CD](#) on page 70.
- ❑ **FTP.** You download the installation software from the Information Builders FTP site. Downloading the installation software involves:
  - 1. Registering** at the Information Builders FTP site.
  - 2. Downloading** the server installation software from the site.
  - 3. Unzipping** the downloaded file.
  - 4. Running** the isetup procedure to begin installing the server.

For instructions, see [How to Download the Installation Software Using FTP](#) on page 72.

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

To insert and mount the installation CD:

1. Log on using the server administrator ID (often referred to as iadmin).
2. Insert the CD into the CD drive.
3. Mount the CD by issuing the following command:

For Operating System	Type
HP-UX	<code>mount -F cdfs device_name /cdrom_directory</code>
AIX	<code>mount -r -v cdrfs device_name /cdrom_directory</code>
Linux (all versions)	Linux will usually auto mount your CD as /cdrom or /mnt/cdrom. If it is not mounted, you can use: <code>mount device_name /cdrom_directory</code>
Solaris (without volume management)	<code>mount -F hsfs -r device_name /cdrom_directory</code>
Solaris (with volume management)	A CD is auto mounted as: <code>/cdrom_directory/iWay</code> 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.

4. If the computer on which you want to install the server does not have a CD drive, perform the following substeps. Otherwise, if you have mounted the CD using a drive on the same computer on which you are installing the server, go to Step 5.

- a. Unload the CD to a computer on your network that has a CD drive. You can use any UNIX or Windows computer.
- b. Transfer the CD files (for example, FTP them in binary mode) to a temporary directory on the computer on which you wish to install the server.
- c. If the names of any of the transferred files include uppercase letters, convert those names to lowercase. (Certain file transfer processes sometimes convert file names to uppercase.)
- d. Ensure that the transferred files have the following permissions. If necessary, use the `chmod` command to reset them.

File	Permissions
inu.out	-rwxr-xr-x
isetup	-rwxr-xr-x
all other files	-rw-r--

- e. Go to [How to Install a Server](#) on page 73.
5. You will now choose between running the installation program directly from the CD, or copying it to disk and running it from the disk.

To run the installation program:

- Directly from the CD**, see [How to Install a Server](#) on page 73.
  - From disk**, continue with the following steps.
6. Create an empty directory under the ID you are using for installation
- ```
mkdir download_directory
```
- where:
- ```
download_directory
```
- Is the name of the directory to which you will copy the contents of the installation CD.
7. Copy the CD contents to the directory you just created:

```
cp /cdrom/* download_directory
```

- a. If the names of any of the copied files include uppercase letters, convert those names to lowercase. (The copy process sometimes converts file names to uppercase.)
- b. Ensure that the copied files have the following permissions. If necessary, use the `chmod` command to reset them.

File	Permissions
inu.out	-rwxr-xr-x
isetup	-rwxr-xr-x
all other files	-rw-r--r--

8. Ensure that you are in the parent directory and not the download directory:

```
cd $HOME
```

**Caution:** Do not run the installation procedure from the download directory in which `isetup` resides, as this will cause errors in the installation process.

9. See *How to Install a Server* on page 73.

After you complete the installation, you can delete the download directory if you wish.

### Procedure: How to Download the Installation Software Using FTP

To download the installation software:

1. Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
2. Click *My Downloads* in the My Account section on the right side of the page.  
The Downloads, Upgrades, Service Packs, and PTFs page opens.
3. Click the link for your product (for example, WebFOCUS and iWay Server and iWay Client).  
The Downloads by Release page for your product opens.
4. Click your release from the Current Production Releases list.  
The Software Downloads page for your release opens.
5. Scroll down and find the platform on which you want to install the server, and then click *Download* to the right of the platform name.



6. Fill in the registration form and then click *Continue*.

The Software Download Agreement page opens.

7. Select *I agree...* to consent to the Download Agreement, and then click *Continue*.

The Download Instructions page opens. Select AUTOMATIC or MANUAL and follow the relevant instructions.

A copy of the instructions is automatically emailed to you for later reference.

8. Follow the instructions on the Download Page.
9. Run the installation procedure as described in [How to Install a Server](#) on page 73.

**Caution:** Do not run the installation procedure from the download directory in which isetup resides as this will cause errors in the installation process.

After you complete the installation, you can delete the download directory if you wish.

### **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 using the iadmin user ID.

Logging on with the iadmin ID is recommended (rather than with the su command).

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 isetup command. To test this, type:

```
touch xxxx
```

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

For example:

```
/cdrom/isetup
```

or

```
/u/iadmin/download/isetup
```

4. Type *1* for the Install and Configure option.

You are prompted for your license key.

5. Type your license key.

Your server attributes are displayed, and the license key is confirmed. Certain license keys will issue a warning that the actual CPU quantity is over the licensed amount. In that case, the server needs to be run using OS commands that limit CPU use. For more information, see [Limiting CPU Use on Machines With Multiple CPUs](#) on page 91.

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

6. Type the full path name of `iserver.tar`, or press *Enter* to accept the default.

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

7. Type the password of the account you are using to install the server.

The password, which does not display, is stored in encrypted form.

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 of the server executable files. The default location is the <code>iadmin</code> ID home directory. The EDAHOME directory path name must conform to the pattern:  <code>*/ibi/srv77*/home*</code>  For more information about EDAHOME, see <a href="#">Installation and Configuration Directories</a> on page 66.

Parameter	Description
EDACONF	<p>Location of the configuration files for this server instance.</p> <p>If you changed the EDAHOME value, the default EDACONF value changes to conform to EDAHOME.</p> <p>EDACONF must be in the same srv77 path as EDAHOME. The lowest-level EDAHOME directory (home) becomes the server type directory in EDACONF.</p> <p>For example, if EDAHOME is</p> <pre>/home/iadmin/ibi/srv77/home</pre> <p>then EDACONF for a WebFOCUS Reporting Server defaults to:</p> <pre>/home/iadmin/ibi/srv77/wfs</pre> <p>If you are configuring an additional server instance, be sure to specify a new configuration directory here; do not use an existing directory. Each server instance must have its own configuration directory. You can append characters to the name of the <i>server_type</i> directory to avoid overwriting the existing directory. For example:</p> <pre>/home/iadmin/ibi/srv77/wfs2</pre> <p>For more information about EDACONF, see <a href="#">Installation and Configuration Directories</a> on page 66.</p>
EDAPRFU	<p>Location of user and group profiles and of admin.cfg, which specifies the server administrator.</p> <p>For more information about EDAPRFU, see <a href="#">Installation and Configuration Directories</a> on page 66.</p>
APPROOT	<p>Location of the server applications.</p> <p>For more information about APPROOT, see <a href="#">Installation and Configuration Directories</a> on page 66.</p>

Parameter	Description
HTTP_BASE_PORT	<p>First of three consecutive port numbers for the HTTP Listener and other IP-based services.</p> <p>The default port automatically varies by product to support multiple servers on a particular computer. For:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>A Full-Function Server</b>, 8101 is the default value, which reserves ports 8101-8103.</li> <li><input type="checkbox"/> <b>A WebFOCUS Reporting Server</b>, 8121 is the default value, which reserves ports 8121-8123.</li> <li><input type="checkbox"/> <b>A DataMigrator Server</b>, 8117 is the default value, which reserves ports 8117-8119.</li> <li><input type="checkbox"/> <b>A Shared Application Server</b> (for WebFOCUS Maintain), 8113 is the default, which reserves ports 8113-8115.</li> </ul>
TCP_BASE_PORT	<p>Port number on which the server TCP Listener listens. It must be outside the range of the three consecutive HTTP Listener ports. It defaults to the port immediately preceding the first HTTP Listener port.</p> <p>For example, if you accept the default HTTP Listener Port value of 8101, the TCP Listener port defaults to 8100.</p>

For more information about EDAPRUFU, EDACONF, EDAPRFU, and APPROOT, see [Installation and Configuration Directories](#) on page 66.

If you decide to change a default, you are prompted for the replacement value, and given another chance to accept the default.

If you entered N at the default settings prompt, you also have the option of installing the Century Corp demo files in one or more languages. (If you entered Y, they will not be installed.) All other demo files are always installed, automatically, in English.

9. Review the configuration options displayed on the screen, and type Y if you accept them. Alternatively, to start over, enter N; to quit the installation procedure, enter Q.

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.

If you start the server, startup messages and the Web Console URL are now displayed.

You should now verify your installation, as described in [Verifying Server Installation](#) on page 82.

**Example: Full-Function Server Installation Prompts and Responses**

This is an example of a Full-Function Server installation that uses 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 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 999-999-9999-99) : xxx-xxx-xxxx-xx
```

```
License Key has been checked
```

```
Product: Full Function Server  
Maximum Number of Adapters: 4  
Maximum Number of Users: 8  
Maximum Number of CPUs: 2
```

```
ISETUP: License xxx-xxx-xxxx-xx 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:  
xxxxxx

-----  
Please review the default settings.

EDAHOME = /home/iadmin/ibi/srv77/home  
EDACONF = /home/iadmin/ibi/srv77/ffs  
EDAPRFU = /home/iadmin/profiles  
APPROOT = /home/iadmin/ibi/apps  
HTTP\_BASE\_PORT = 8101  
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/srv77/home

Configure Options ...

EDACONF = /home/iadmin/ibi/srv77/ffs  
EDAHOME = /home/iadmin/ibi/srv77/home  
LICENSE = 999-999-9999-99  
WORKSPACE\_MANAGER\_NAME = "iWay 77 Full Function Server"  
EDAPRFU = /home/iadmin/profiles  
APPROOT = /home/iadmin/ibi/apps  
SERVER\_TYPE = ffs  
HTTP\_BASE\_PORT = 8101  
TCP\_BASE\_PORT = 8100  
SERVER\_ADMIN\_ID = iadmin  
SERVER\_ADMIN\_PASSWORD = C498X8e60C1ByAF7526E2

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 Workspace (Y/N Default=Y)? : y

05/03/2006 15:29:20 Starting Workspace Manager in  
/home/iadmin/ibi/srv77/ffs  
05/03/2006 15:29:20 Logging startup progress and errors in  
/home/iadmin/ibi/srv77/ffs/edaprint.log  
07/03/2006 15:29:20 Opening PTH context  
07/03/2006 15:29:21 Checking listeners and services  
07/03/2006 15:29:24 TCP started  
07/03/2006 15:29:24 HTTP started  
07/03/2006 15:29:24 JSCOM3 started  
07/03/2006 15:29:24 Workspace Manager started.

ISETUP: The server has been started

-----  
To administer the server go to a web browser  
and open the URL <http://myworld:10901>

### **Procedure: How to Dismount the Installation CD**

If you have installed from a CD and you have finished accessing the installation CD, you may dismount, remove, and store the CD. 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 you need to reinstall.

### **Procedure: How to Configure an Additional Server Instance**

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

- 1.** Log on using 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.

Each server instance must have its own configuration directory. When prompted for the configuration directory, append characters to the default name of the server type directory. Otherwise, the installation will overwrite the existing configuration directory. In the following example, the number 2 has been added to the default name of the WebFOCUS Reporting Server configuration directory:

```
/home/iadmin/ibi/srv77/wfs2
```

If the EDACONF directory you specify already exists, the installation process copies selected files from the current configuration's files to a directory named BACKUP that is a sibling directory to EDACONF, and then deletes the contents of the original directory. For example, if EDACONF is

```
/home/iadmin/ibi/srv77/wfs
```

then the selected configuration files are backed up to:

```
/home/iadmin/ibi/srv77/BACKUP
```



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

Refreshing the server reinstalls the server 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. Log on using the iadmin user ID.

Logging on with the iadmin ID is recommended (rather than with the su command).

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 location). You can run the installation procedure from any location. Do not switch the current directory to the location of `isetup`. For example:

```
/cdrom/isetup
```

or

```
/u/iadmin/download/isetup
```

4. At the main menu, type option 3, *Refresh Installation (Reinstall, Keep Configuration)*, and respond to the prompts.

### Installing and Configuring a Server Silently

This is also known as a silent install. The most common form is an initial install which also results in an initial configuration (and is what is documented here). An initial installation and configuration should only be done once per EDAHOME and an add product configuration used thereafter.

You can install a server "silently," without the installation process prompting for information, if you first create a text file that specifies your server installation parameters. Installing silently can be helpful if, for example, you want to install many servers at once throughout an 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 in [Installing a Server](#) on page 69.

Run `isetup -?` to display information on the setup and use of a parameters file for silent installation and configuration.

## Verifying Server Installation

### How to:

Verify Server Installation

Determine Which Adapters Are Supported on UNIX

Register a License Code With the Server

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 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. (If you started the server as the last step of the installation procedure, skip ahead to Step 4.)

1. Log on using the `iadmin` ID.
2. Start the server with the appropriate path to `edastart` and the `-start` option. For example, for a WebFOCUS Reporting Server, you would type:

```
/home/iadmin/ibi/srv77/wfs/bin/edastart -start
```

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

```
/home/iadmin/ibi/srv77/wfs/bin/edastart -show
```

4. Start the Web Console by starting a browser pointed at the server HTTP Listener port, which was specified during installation. The URL format is `http://host:port`. (The URL is also displayed at the end of the installation procedure.)

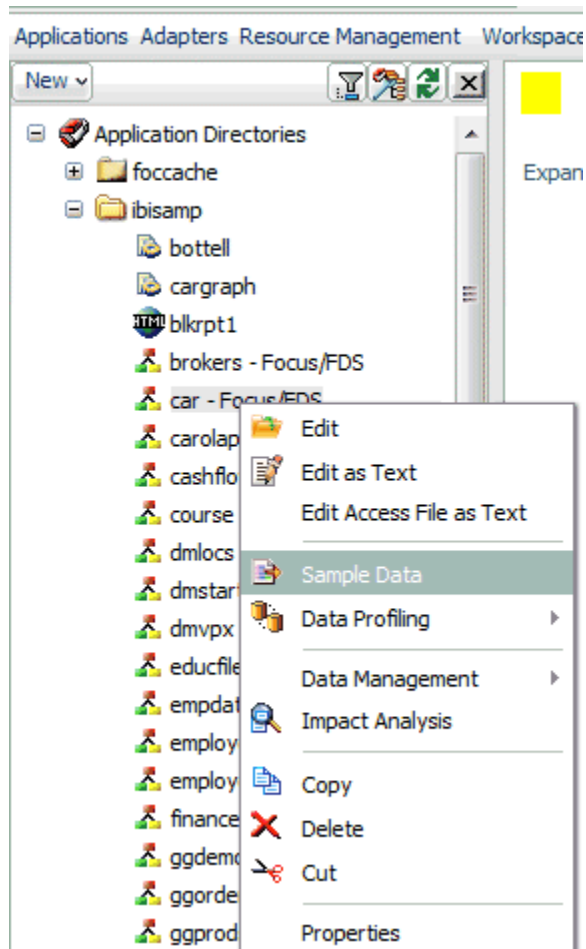
For example, if default ports were used during installation, for:

- ❑ **A Full-Function Server**, use `http://host:8101`.
- ❑ **A WebFOCUS Reporting Server**, use `http://host:8121`.
- ❑ **A DataMigrator Server**, use `http://host:8117`.
- ❑ **A Shared Application Server** (for WebFOCUS Maintain), use `http://host:8113`.

5. If the server is running in secure mode, you will first see a logon screen. Log on using the iadmin ID. For information about server security, see [Choosing a Security Mode](#) on page 85.

The Web Console 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 *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

6. To test the server, open the *ibisamp* folder on the Applications tree, right-click a synonym, such as *CAR* or *EMPLOYEE*, and select *Sample Data*.



A sample report is executed and the result is displayed.

7. When you are done using the server, you can stop it using the Web Console by clicking the *Stop* option on the Web Console toolbar.
8. If you experience any problems, examine the `/home/iadmin/ibi/srv77/server_type/edaprint.log` file.

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

- ❑ **Dismount the installation CD**, as described in [How to Dismount the Installation CD](#) on page 80, if you have not yet dismounted.
- ❑ **Configure server security**, as described in [Choosing a Security Mode](#) on page 85.
- ❑ **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, IBM i, and z/OS* manual.

For more information about configuring adapter support, see the *Adapter Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual. For information about which adapters are supported, see [How to Determine Which Adapters Are Supported on UNIX](#) on page 84.

If you license WebFOCUS Active Technologies, you must register your Active Technologies license code with the server, as described in [How to Register a License Code With the Server](#) on page 85.

### **Procedure: How to Determine Which Adapters Are Supported on UNIX**

For current information about which adapters are supported:

1. Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
2. In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.  
The Supported Systems and Adapters page opens.
3. Click the link for the server release you want.  
The Supported Systems and Adapters page for that release opens.
4. Click the link for your platform.  
The support chart for that platform opens.

### Procedure: How to Register a License Code With the Server

If you license WebFOCUS Active Technologies, you must register its license code with the server before using Active Technologies.

1. In the Web Console menu bar, select *Configuration/Monitor* from the Workspace menu.
2. In the navigation pane, right-click *License* and select *Configure*.

The License Management pane opens.

3. Type the license code in the *license\_active\_report* field.
4. Click *Save and Restart Server*.

## Choosing a Security Mode

### In this section:

Preventing Unsecured Server Starts After Upgrades

### How to:

Configure Security Mode OPSYS

You can run the server in any of the following security modes:

- OFF**, in which access to data sources and the Web Console is unrestricted. Users do not need to provide a password.
- OPSYS**, in which each connecting user is authenticated using UNIX security functions, and the data agents impersonate the user ID to control access rights to data sources and DBMS objects. Access to the Web Console administrative functions is protected by user authentication at the operating system level.
- PTH**, in which access to the Web Console is controlled by authentication against the user list defined at the configuration level.
- DBMS**, in which access to data sources and the Web Console is controlled by authentication against the database list of user IDs. Control of data resources can be accomplished by creating different profiles.
- LDAP**, in which access to data resources and the Web Console is controlled by authentication through the established directory.

The default security mode is OPSYS if you have satisfied the OPSYS requirements. Otherwise, the default mode is OFF. To apply a different security mode, configure server security in the Web Console.

For the requirements for activating security mode OPSYS, see [How to Configure Security Mode OPSYS](#) on page 86.

Some security modes need to be configured before you can activate them. You can see a full description of all server security modes in the Web Console help, and also in the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual. To see it in the Web Console:

1. From the Web Console menu bar, select *Help*, then *Contents and Search*.

The Web Console Help window opens.

2. In the left pane, expand *Server Administration*.

### **Procedure:** How to Configure Security Mode OPSYS

To run a server in security mode OPSYS in UNIX, you must perform the following steps. You must do this once after installing or refreshing the server.

Set up `tscom300.out` as a root-owned SUID program:

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/srv77/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 now run in security mode OPSYS (unless an `EDAEXTSEC` value overrides this).

This step will need to be repeated after any sever upgrade since the file is replaced during upgrade.

## Preventing Unsecured Server Starts After Upgrades

If the explicit environment variable EDAEXTSEC is set to OPSYS (or ON) and the server cannot impersonate users because it lacks platform-specific authorization steps, the server start aborts and error messages are written to the edaprint log.

This feature prevents an unsecured server start after a software upgrade if any of the required post-upgrade, reauthorization steps are missed on a UNIX, IBM i, or z/OS HFS deployment. This is not applicable to other platforms. The setting may be placed in any normal server start-up shell or profile that a site is using or in the server edaenv.cfg configuration file. The messages vary slightly by platform.

The edaprint messages are:

```
Configured security is 'ON' as set by EDAEXTSEC variable.
Server has no root privilege.
Workspace initialization aborted.
(EDA13171) UNABLE TO START SERVER
```

## Starting and Using a Server

### Reference:

Commonly Used Server Start Options and Functions

For information about starting a server, see [Verifying Server Installation](#) on page 82.

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

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

Command and Option	Function
<code>edastart</code>	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. To display the console command prompt, press Ctrl + C.
<code>edastart -start</code>	Starts the server without the line mode console.
<code>edastart -sstart n</code>	Starts the server, but waits <i>n</i> seconds for actual start up.

Command and Option	Function
<code>edastart -show</code>	Shows general status of server and agents.
<code>edastart -stop</code>	Stops the server.
<code>edastart -cleardir</code>	Removes all temporary directories and files created by the server.
<code>edastart -traceon</code>	Turns on tracing. May be used at startup or afterward. It is preferable to run traces at startup, unless instructed otherwise.  Turn tracing on <i>only</i> when there is a problem that needs to be traced, to avoid incurring the associated overhead.
<code>edastart -traceoff</code>	Turns off tracing.
<code>edastart -?</code>	Displays edastart options.
<code>edastart -?s</code>	Displays support information and support-related options.

## Generating a Trace

### How to:

Generate a Server Trace

Generate a Non-Server Trace

If you encounter a server problem, you can run a set of traces that will help you assess the problem, and, if necessary, communicate it to Customer Support Services for further . This topic describes trace options and provides instruction for creating the traces.

There are two types of traces you can run to troubleshoot a problem:

- ❑ **A server trace**, in which you trace an agent that is running in a server context.
- ❑ **A non-server trace**, in which you trace an agent that is running outside a server context, that is, an agent that is running in standalone mode.

Under normal conditions, most applications are run in a server context. However, if you run your trace in a non-server context (that is, if you run a non-server trace), you can produce the necessary diagnostic information while significantly reducing the amount of material that needs to be reviewed. Running a non-server trace also rules out server communications as a cause of your problem.



**Procedure: How to Generate a Server Trace**

To generate a server trace:

1. Turn tracing on by doing one of the following:

- ❑ Go to the Web Console menu bar, select *Workspace* and then *Enable Traces*.
- ❑ Start the server by issuing the following command:

```
edastart -traceon
```

You must preface `edastart` with the appropriate path, or place the directory in your system `PATH` variable.

2. Reproduce the problem.
3. Stop the server.
4. Issue the following command:

```
edastart -savediag
```

5. Respond to the prompts to capture, and optionally archive, diagnostic information.

For information about sending the diagnostic information to Customer Support Services, see [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

**Procedure: How to Generate a Non-Server Trace**

To generate a non-server trace:

1. Create a directory under `APPROOT` to reproduce the problem.
2. Copy any files required for the reproduction to the directory.
3. Switch to the directory.
4. Reproduce the problem using `edastart -traceon` and one of switches `-t`, `-x`, or `-f`.
5. Switch to a directory other than the problem reproduction directory.
6. Issue the following command:

```
edastart -savediag
```

You must preface `edastart` with the appropriate path, or place the directory in your system `PATH` variable.

7. Respond to the prompts to capture, and optionally archive, diagnostic information.

For information about sending the diagnostic information to Customer Support Services, see [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

## Third-Party Software and Licenses

### In this section:

OpenFlex SDK

As of Version 7 Release 6.8, to address display of third-party software license requirements, a license option has been added to the Help menu located on the Web Console. This section describes the third-party software used on UNIX and includes references to the full licenses included in *Information Builders and Third-Party Licenses* on page 413.

### OpenFlex SDK

OpenFlex SDK is included by Information Builders for use with its HOLD FORMAT FLEX feature. This distribution is subject to the terms and conditions of the Mozilla Public License Version 1.1.

For more information, see *OpenFlex SDK License* on page 419 or visit our World Wide Web site, <http://www.informationbuilders.com>.

## General Information for a UNIX Installation

### In this section:

Java Listener JVM Defaults

Limiting CPU Use on Machines With Multiple CPUs

This section covers general information for a UNIX Installation.

### Java Listener JVM Defaults

#### How to:

Tune the Java Listener

The Java Listener on AIX has a pre-set value for Maximum Java Heap Size (JVM\_MAX\_HEAP) because the internal Java default is insufficient (and causes features to fail).

The pre-set value does not reflect any specific tuning, but is simply a known working value. Specific tuning should be done based on application need.

Other UNIX/Linux operating systems have not shown issues with internal defaults, and are not pre-set. However, applications may benefit from tuning, and it should be done based on application need.

Java Listener tuning is accessed from the Web Console.

### **Procedure: How to Tune the Java Listener**

To tune the Java Listener from the Web Console:

- 1.** Select *Configuration/Monitor* from the *Workspace* menu.
- 2.** Open the *Java Services* folder.
- 3.** Right-click *DEFAULT* and select *Properties*.  
The Java Services Configuration pane opens.
- 4.** Expand the *JVM Settings* section.
- 5.** Under *Non-standard JVM options*, enter values in the *Initial Java Heap Size* and *Maximum Java Heap Size* fields.
- 6.** Click *Save and Restart Java Services*.

## **Limiting CPU Use on Machines With Multiple CPUs**

### **How to:**

Start the Server with Limited Effective CPUs for Solaris

Start the Server with Limited Effective CPUs for HP-UX

Start the Server with Limited Effective CPUs for AIX

Start the Server with Limited Effective CPUs for Linux (all vendors)

When the effective number of CPUs (cores) on a computer exceeds the number allowed by the server license, depending upon the license, either the server will not start or users are given warnings in *edaprint.log* and at Web Console or Data Management Console login.

To remediate the situation, the installation site has two choices:

- Install the server on a computer with a physical number of CPUs that is less than or equal to the license amount.
- Create a virtual environment with the number of cores that satisfies the license requirement, and run the server instance under that environment as outlined below.

Note that running multiple instances of the server (each under a limited virtual processor set) or adding processors to the virtual set after the server is running constitutes a license violation.

The virtual environment methods and options depend on the OS vendor. Consult your system documentation for further information on the use of the respective commands.

**Syntax:**     **How to Start the Server with Limited Effective CPUs for Solaris**

The `psrset` operating system command is used to create virtual processor sets and run processes under them, but it also requires ID authorization. Authorization must be done by the root by adding a line to the `/etc/user_attr` file. For example:

```
iadmin::::type=normal;defaultpriv=basic,sys_res_config
```

The server admin decides on and forms a set, and then uses the resulting set number in the `psrset -e` command to start the server. For example:

```
$ psrset -c 2 3
processor 2: was not assigned, now 1
processor 3: was not assigned, now 1
$ cd ibi/srv77/wfs
$ psrset -e 1 bin/edstart -start
```

**Syntax:**     **How to Start the Server with Limited Effective CPUs for HP-UX**

The `psrset` operating system command is used to create virtual processor sets and run processes under them.

The server admin decides on and forms a set, and then uses the resulting set number in the `psrset -e` command to start the server. For example:

```
$ psrset -c 2 3
processor 2: was not assigned, now 1
processor 3: was not assigned, now 1
$ cd ibi/srv77/wfs
$ psrset -e 1 bin/edstart -start
```

**Syntax:**     **How to Start the Server with Limited Effective CPUs for AIX**

The `mkrset` and `execrset` operating system commands are used to create processor/memory region sets and run processes under them, but they also require ID authorization. Authorization must be done by the root by issuing:

```
chuser capabilities=CAP_NUMA_ATTACH,CAP_PROPAGATE iadmin
```

The server admin decides on and forms a set, and then uses the assigned name in the `execrset` command to start the server. For example:

```
$ mkrset -c 2-3 mycorp/mycpus
$ cd ibi/srv77/wfs
$ execrset mycorp/mycpus bin/edstart -start
```

**Syntax:**     **How to Start the Server with Limited Effective CPUs for Linux (all vendors)**

The `taskset` operating system command is used to bond a process to particular processors, in effect creating a virtual environment.

The server admin decides on the processors to use and uses them in the taskset command to start the server. For example:

```
$ cd ibi/srv77/wfs
$ taskset -c 3,4 bin/edstart -start
```

## Troubleshooting for UNIX

### How to:

Add Your Problem to the Troubleshooting Guide

Install and Activate the Debuggable Version of the Server

### Reference:

Problem: The Server Starts in Safe Mode

Problem: Java Listener Fails to Start With JVM not found Messages Written to the Log

Problem: Setting ulimit to Allow Core Dumps

Problem: Forcing Core Dump Information on Solaris

Problem: Forcing Core Dump Information on HP-UX

Problem: Forcing Core Dump Information on AIX

Problem: Forcing Core Dump Information on Linux

Problem: Server Fails to Start With Cannot Create Shared Memory Message Written to edaprint

Problem: Secured Server Starts Unsecured or Does not Start after Upgrade

Add Your Problem to the Troubleshooting Guide

To troubleshoot an installation problem, identify your problem in the following list, and follow the link to a description of the solution.

If you cannot find your problem described in the list, and cannot resolve it yourself, contact Customer Support Services as described in [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

If you have a troubleshooting suggestion that is not described in the list, and you think others will find it helpful, we invite you to send it to us, as described in [How to Add Your Problem to the Troubleshooting Guide](#) on page 98. We will consider including your problem in a future release of this manual.

### Problems:

- ❑ The server starts in safe mode (as indicated at the top of the Web Console).

See [Problem: The Server Starts in Safe Mode](#) on page 94.

- ❑ The request fails, and *JVM not found* messages are written to `edaprint.log`.

See [Problem: Java Listener Fails to Start With JVM not found Messages Written to the Log](#) on page 95.

- ❑ In Linux GLIBC version only, `issetup` gives an immediate error about a GLIBC version not found.

This means that the underlying `glibc` libraries are not high enough for `issetup` (nor the server) to run. Examine the error message to determine which version is missing, and then install that GLIBC RPM version (or higher), and any GLIBC dependencies, before proceeding.

- ❑ Unsecured server crashes do not write core dump information to the `edaprint` log, so I cannot get a full save diagnostic.

See [Problem: Setting ulimit to Allow Core Dumps](#) on page 96.

- ❑ Secured server crashes do not write core dump information to the `edaprint` log, so I cannot get a full save diagnostic.

Many UNIX environments intentionally limit the ability to read core files in `setuid` applications for security reasons. On some platforms, the feature is configurable, but the commands to activate it vary by platform or may not be implemented in earlier OS releases. If the crash can be reproduced in an unsecured server, the core information will be produced. This is the best route to producing a complete save diagnostic. If the server cannot be run unsecured to produce the crash:

See [Problem: Forcing Core Dump Information on Solaris](#) on page 96.

See [Problem: Forcing Core Dump Information on HP-UX](#) on page 97.

See [Problem: Forcing Core Dump Information on AIX](#) on page 97.

See [Problem: Forcing Core Dump Information on Linux](#) on page 97.

## **Reference:** [Problem: The Server Starts in Safe Mode](#)

**Problem:** The server starts in safe mode. The Web Console home page displays a message stating that the server is in safe mode and describing what triggered it.

**Cause:** A common cause for the server starting in safe mode is a problem with the server administrator ID 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 click the *fix* hyperlink, which is displayed under the problem description, to display the relevant pane and resolve the problem.

For example, if the problem is that the server administrator password is out of synchronization:

1. Click the *fix* hyperlink displayed under the problem description.
2. In the left pane, open the *Users* folder, then the *Server Administrator* folder.
3. Click your user ID and select *Properties* from the pop-up menu.

The Access Control pane is displayed on the right.

4. Type the correct operating system password in the *Password* field, and type it again in the *Confirm Password* field.
5. Click *Save and Restart*.

The Security Mode pane opens on the right.

6. Click the Home icon in the menu bar to return to the Web Console home page.

### **Reference: Problem: Java Listener Fails to Start With JVM not found Messages Written to the Log**

**Problem:** The listener start request fails with *JVM not found* messages written to the *edaprint.log* file.

**Cause:** If the server cannot find the Java Virtual Machine (JVM), the JSCOM Listener will not be able to start, and messages will be written to the server log stating that the JVM cannot be found.

The server log is

#### **On Windows:**

`drive:\ibi\srv77\server_type\edaprint.log`

#### **On UNIX:**

`ibi/srv77/server_type/edaprint.log`

#### **On IBM i:**

`/home/iadmin/ibi/srv77/server_type/edaprint.log`

where:

`drive`

Is the hard drive on which the directory resides (on Windows).

`server_type`

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
- `WFM` for a Shared Application Server for WebFOCUS Maintain

**Solution:** Set up the JVM as described in *JVM Requirements for the Listener for Java* on page 63.

**Reference: Problem: Setting ulimit to Allow Core Dumps**

The ulimit value of a process controls how large (in blocks) a core can grow. If the value is set to zero, no dump is produced, and the dump information is not read.

To check the current value, issue:

```
ulimit -c
```

To set a ulimit so that dump information can be produced, stop the server, set a value, and restart:

```
bin/edastart -stop
ulimit -c 99999
bin/edastart -start
```

The actual size value is in blocks and will vary by need, Since the need is unpredictable, select a number and then check the dump information. If the information is incomplete, increase the value.

**Reference: Problem: Forcing Core Dump Information on Solaris**

Solaris uses the **coreadm** command to control the ability to produce core files.

To see the current value, issue:

```
coreadm
```

For secured servers, before the server starts, issue:

```
coreadm -e proc-setid
```

No reboot of OS or service daemons is required, but core files must have a non-zero ulimit -c value.



**Reference: Problem: Forcing Core Dump Information on HP-UX**

As of HP-UX 11.31, the **coreadm** command controls the ability to produce core files. Sites with an operating system prior to HP-UX 11.31 can only use the unsecure server method to produce a complete save diagnostic for a crash.

To see the current value, issue:

```
coreadm
```

For secured server purposes (on HP-UX 11.31 or higher), before the server starts, issue:

```
coreadm -e proc-setid
```

No reboot of OS or service daemons is required, but core files must have a non-zero ulimit `-c` value.

**Reference: Problem: Forcing Core Dump Information on AIX**

AIX uses the **chdev** command to control the ability to produce core files. This command is on by default, so it only needs to be adjusted if it has been turned off.

To see the current value, issue:

```
lsattr -El sys0 -a fullcore
```

For secured server purposes, before the server starts, issue:

```
chdev -l sys0 -a fullcore=true
```

**Reference: Problem: Forcing Core Dump Information on Linux**

While Linux has options to activate core dumps, none currently work in the context of the server. Linux sites can only use the unsecure server method to produce a complete save diagnostic for a crash.

**Reference: Problem: Server Fails to Start With *Cannot Create Shared Memory Message Written to edaprint***

The full message indicates the need to review edapth traces for r1shmpop\* entries with errors. If the server was not started with traces, start it with traces, and then view the edapth trace.

One of the r1shmpop\* entries in the edapth trace will show a specific error, but a common error is "size is greater than system shared memory limit." This particular message indicates that the system kernel value for shared memory needs to be increased. The actual required value is generally a multiple of machine page size (typically 4K, but it can vary). The number of agents a server runs, and other installed software can also be a factor, and the required value may vary (slightly) from release to release.

There are tools, such as `size` and `ps` that will allow an experienced administrator to narrow down the precise shared memory size requirements, considering all of the software in use. However, a good rule of thumb is to increase memory in 10% increments until a working value is found.

Error messages other than "shared memory size" can occur, in which case, the system message is displayed. These other messages may provide an administrator with enough information to determine the appropriate action. If not, call Customer Support Services for a review. Actual kernel change commands/steps vary by vendor, so they are not explicitly outlined here.

**Reference: Problem: Secured Server Starts Unsecured or Does not Start after Upgrade**

A server will implicitly attempt to start unsecured if proper authorization steps have not been completed. Starting the server normally clears `edatemp`. If prior `edatemp` files exist (and authorization has not been done), start up will fail due to an inability to clear the directory. However, if an `edastart -cleardir` command was issued just before the upgrade, there is nothing to clear, no error occurs, and the server starts. If the server starts and is not inspected after the initial start up, the server being in the wrong mode may go unnoticed.

The proper solution is to add proper authorizations after an upgrade, as described in [How to Configure Security Mode OPSYS](#) on page 86, and restart the server. A new safety measure has also been added. If the environment variable `EDAEXTSEC` is set to `OPSYS` explicitly, and a server lacks authorization, it will not start (see [Preventing Unsecured Server Starts After Upgrades](#) on page 87 for details).

**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@ibi.com](mailto:books_info@ibi.com). Include your name and phone number, and include *Server Installation Troubleshooting* in the subject line.

❑ **Send them** to:

Documentation Services  
 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 Install and Activate the Debuggable Version of the Server**

If instructed by Customer Support Services, you can install and activate a debuggable version of the server to help troubleshoot a problem.

**Caution:** Do not activate the debuggable version unless explicitly requested to by Customer Support Services.

To activate the debuggable version of the server:

1. Log on with the server administrator ID (often referred to as iadmin).
2. Download the iserverd compression file (for example, .tar, .zip, or .bck) from the FTP site to a local directory. Debuggables for UNIX environments are not normally shipped on the original CD media, but can be made available on CD by special request to Customer Support Services and requires a lead time of approximately one week. If CD media is being used, mount the media.
3. Run the isetup installation program located in the EDAHOME bin (if download was used) or in the root directory of the CD media.
4. At the main menu, select option 4, *Install Debuggables to the Installation Directory* and follow its steps supplying information similar to when the original install was performed.
5. After completion of isetup the server may be run in debug mode with the following steps.

```
edastart -stop
edastart -dbgon
edastart -start (run until repro is completed)
edastart -stop
edastart -dbgoff
edastart -start
```

6. If the debug version is no longer needed, the debuggables may be removed. If a service pack is being installed, the debuggables *must* be removed to prevent mismatches with the new release. To remove the debuggables, change the directory to the home directory of EDAHOME and issue `rm -f dbg`.

Customer Support Services will provide you with additional instructions as your situation requires.



# 4 Server Installation for z/OS

The unified server for z/OS provides a choice of deployment environments, either:

- ❑ Hierarchical file system (HFS) or z/OS Distributed File Service zSeries File System (zFS) files on UNIX System Services. (This manual uses the term "HFS" generically to refer to both the HFS and the zFS file systems, except where explicitly stated otherwise.)
- ❑ Partitioned data set (PDS) libraries.

To compare their benefits, see [Choosing How to Deploy the Server](#) on page 102.

## Topics:

- ❑ Server Installation for HFS & PDS
- ❑ HFS Deployment
- ❑ PDS Deployment

## Server Installation for HFS & PDS

### In this section:

- Choosing How to Deploy the Server
- Server File Locations
- Step-By-Step Installation Overview

Before installing the server, read the topics in this section for:

- ❑ Guidance on choosing how to deploy your server: HFS in UNIX System Services, or PDS.
- ❑ Configuration information common to both deployments, such as the location of different types of server files.
- ❑ An overview of which steps you will need to perform to install your server.

### Choosing How to Deploy the Server

The unified server for z/OS provides you with a choice of deployment environments. You can deploy the server using either:

- ❑ **The Hierarchical File System (HFS)** on UNIX System Services (USS). The HFS-deployed server stores server code and user data on the HFS. Security is provided by UNIX file security and by your z/OS security package, such as RACF, eTrust™ CA-Top Secret®, or eTrust™ CA-ACF2®. You install the server from ISPF and start it using JCL. All other server processes occur under USS.
- ❑ **Partitioned data sets (PDS)** which deploys server software in partitioned data sets. The PDS-deployed server provides the same rich level of features as the HFS-deployed server, but removes the requirement for interaction with Unix System Services at installation time and run time. Administration of the server, from a systems perspective, has been streamlined to match that of the classic MVS version of the server (also known as the SSCTL server).

The following table compares the benefits of each way of deploying the server on z/OS.

Feature	HFS / USS	PDS
<b>file management:</b> <b>Server</b> run-time and configuration files	In the UNIX Hierarchical file system (HFS).	In partitioned data sets (PDSs).

Feature	HFS / USS	PDS
<p><b>file management:</b> <b>User</b> data, metadata, and procedures</p>	<p>In the UNIX HFS and, optionally, in a PDS.</p>	<p>In a PDS and, optionally, in the UNIX HFS.</p>
<p><b>security</b></p>	<p>Standard security packages are supported (RACF, eTrust™, CA-ACF2®, and eTrust CA-Top Secret).</p> <p>All directories and files must have their user/group/world attributes correctly set.</p> <p>A user ID with a UID of 0 (that is, a superuser) is required when running the server with security set to OPSYS or a special UNIXPRIV userid can be used.</p>	<p>Standard security packages are supported (RACF, eTrust CA-ACF2, and eTrust CA-Top Secret). No additional security is required.</p>
<p><b>user IDs</b></p>	<p>A UID of 0 (that is, a superuser) can install, but not administer or connect to, the server.</p> <p>Each user ID that will install, administer, or connect to the server requires an HFS segment with sufficient space and appropriate file permissions for the tasks that the ID will perform.</p>	<p>Any user ID can install, administer, and connect to the server.</p>
<p><b>adapters</b></p>	<p>Use a mixture of USS-based and MVS-based libraries/APIs.</p>	<p>Use MVS-based libraries/APIs. The exception is DBMSs that support only USS-based libraries/APIs, such as DB2 CLI and Java-based adapters, such as MS SQL Server, which use vendor libraries/APIs residing in the hierarchical file system.</p>

Feature	HFS / USS	PDS
<b>Traces and Server Log</b>	Accessible from Web Console	These are available on the JES output of the server job.
<b>Web Console Stress Tool</b>	Available from Web Console	Feature not available.

PDS deployment also requires each user of the server to be identified to USS by means of a default segment definition. For more information, see [USS Segment Requirements](#) on page 237.

## Server File Locations

### In this section:

- Supplied Files Location (EDAHOME)
- Configuration Files Location (EDACONF)
- Profile Files Location
- Administration Files Location
- Application Files Location (APPROOT)

The server includes several groups of files used for installation, configuration, and administration. These groups are implemented differently in HFS and PDS deployments:

- ❑ **Supplied files (EDAHOME)**, which contains the server programs and related files. For more information, see [Supplied Files Location \(EDAHOME\)](#) on page 105.
- ❑ **Configuration (EDACONF)**, which contains the files that control the behavior of each server instance. For more information, see [Configuration Files Location \(EDACONF\)](#) on page 105.
- ❑ **Applications (APPROOT)**, which is the default location for storing applications. For more information, see [Application Files Location \(APPROOT\)](#) on page 107.
- ❑ **Profiles**, which contains user and group profiles. For more information, see [Profile Files Location](#) on page 106.
- ❑ **Administration**, which includes a file that specifies server administrators. For more information, see [Administration Files Location](#) on page 107.



## Supplied Files Location (EDAHOME)

The server programs and related files are stored in a location referred to as EDAHOME. The server installation process copies the server software into EDAHOME.

- ❑ **In HFS** deployment, EDAHOME defaults to the following directory and several subdirectories:

`ibi/srv77/home`

- ❑ **In PDS** deployment, EDAHOME defaults to the following partitioned data sets:

`high_level_qualifier.P.HOME.component_type`

where:

`high_level_qualifier`

Is the high-level qualifier for HOME.DATA and for all other data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server (for example, IADMIN.SRV77). However, you can use any site-specific value.

`component_type`

Designates the type of server component. The values are:

`ETC` for script and text file.  
`BIN` for binary-based object files.  
`ACX` for the server Access Files.  
`MAS` for the server Master Files.  
`FEX` for the server procedure (FOCEXEC) files.  
`ERR` for error files.  
`LOAD` for the load library.

## Configuration Files Location (EDACONF)

The server configuration files are stored in a location referred to as EDACONF. Each server instance has its own EDACONF, which controls the behavior of that instance.

- ❑ **In HFS** deployment, EDACONF defaults to the following directory and several subdirectories:

`ibi/srv77/server_type`

- ❑ **In PDS** deployment, EDACONF defaults to the following partitioned data sets:

`high_level_qualifier.server_type.CONF.config_type`

where:

*high\_level\_qualifier*

Is the high-level qualifier for HOME.DATA and for all other data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server (for example, IADMIN.SRV77). However, you can use any site-specific value.

*server\_type*

Designates the type of server. There will be one *server\_type* for each type of server that you install. The value is determined by your license key:

**FFS** for a Full-Function Server  
**DM** for a DataMigrator Server  
**WFS** for a WebFOCUS Reporting Server  
**WFM** for a Shared Application Server for WebFOCUS Maintain

*config\_type*

Designates the type of configuration file. The value(s) for:

The server primary configuration file is CFG.

The Report Server deferred execution configuration files are DEL, REQ, RPE, RPF, RPI, RQD, RQF, RQP, and RSP.

## Profile Files Location

Server profiles are stored in the following location:

- ❑ **In HFS** deployment, the location is specified in the environment variable EDAPRFU, and defaults to the following directory:

*ibi\profiles*

- ❑ **In PDS** deployment, the location is the following partitioned data set

*high\_level\_qualifier.server\_type.CONF.PRF*

where:

*high\_level\_qualifier*

Is the high-level qualifier for HOME.DATA and for all other data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server (for example, IADMIN.SRV77). However, you can use any site-specific value.

*server\_type*

Designates the type of server. There will be one *server\_type* qualifier for each type of server that you install. The value is determined by your license key:

<b>FFS</b>	for a Full-Function Server
<b>DM</b>	for a DataMigrator Server
<b>WFS</b>	for a WebFOCUS Reporting Server
<b>WFM</b>	for a Shared Application Server for WebFOCUS Maintain

This PDS is allocated in ddname EDAPROF in the server's JCL.

## Administration Files Location

The file that specifies server administrators is located in:

- **In HFS** deployment, the location is specified in the environment variable EDAPRFU, and defaults to the following directory:

*ibi\profiles*

- **In PDS** deployment, the location is member ADMIN of the following partitioned data set

*high\_level\_qualifier.server\_type.CONF.CFG*

where:

*high\_level\_qualifier*

Is the high-level qualifier for HOME.DATA and for all other data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server (for example, IADMIN.SRV77). However, you can use any site-specific value.

*server\_type*

Designates the type of server. There will be one *server\_type* qualifier for each type of server that you install. The value is determined by your license key:

<b>FFS</b>	for a Full-Function Server
<b>DM</b>	for a DataMigrator Server
<b>WFS</b>	for a WebFOCUS Reporting Server
<b>WFM</b>	for a Shared Application Server for WebFOCUS Maintain

This PDS is allocated to ddname EDACFG in the server's JCL.

## Application Files Location (APPROOT)

The server application files are stored in a location referred to as APPROOT. APPROOT may be shared by applications created with other Information Builders products.

- ❑ **In HFS** deployment, APPROOT defaults to the following directory:

*ibi/apps*

- ❑ **In PDS** deployment, APPROOT defaults to the following partitioned data sets:

*aproot.appname.type.DATA*

where:

*aproot*

Designates the root qualifier for the server applications.

*appname*

Designates the name of the application. There will be one *appname* qualifier for each application.

*type*

Designates the type of application component. The values are:

<i>ACCESS</i>	for Access Files.
<i>ETG</i>	for DataMigrator flow information.
<i>FOCEXEC</i>	for procedure files.
<i>FTM</i>	for temporary files.
<i>GIF</i>	for image files (both GIF and JPG).
<i>HTML</i>	for HTML files.
<i>MAINTAIN</i>	for Maintain files.
<i>MASTER</i>	for Master Files.
<i>WINFORMS</i>	for forms.
<i>DTD</i>	for XML DTD files.
<i>FOCCOMP</i>	for foccomp files.
<i>FOCSTYLE</i>	for stylesheet files.
<i>SQL</i>	for SQL files.
<i>XML</i>	for XML files.
<i>XSD</i>	for XML XSD files.
<i>FOCUS</i>	for FOCUS data files.

Two applications are generated automatically during installation: IBISAMP, which is populated with sample files, and BASEAPP, a default application space.

## Step-By-Step Installation Overview

The installation process differs somewhat, depending on how you are deploying the server for z/OS. To deploy the server using:

### □ **HFS/USS:**

1. [Installation Requirements for HFS](#) on page 111
2. [Installing a New Server for HFS](#) on page 114
3. [Starting and Stopping a Server for HFS](#) on page 158
4. [DB2 Security Exit Configuration for HFS](#) on page 160
5. [MSODDX for DD Translation for User Subroutines](#) on page 165
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7. [Adding a Configuration Instance for HFS](#) on page 166
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9. [Migrating From an MVS Server to a PDS Deployment Server](#) on page 290
10. [Performance Considerations for PDS](#) on page 322
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## HFS Deployment

### **In this section:**

Installation Requirements for HFS

Installing a New Server for HFS

Starting and Stopping a Server for HFS

DB2 Security Exit Configuration for HFS

MSODDX for DD Translation for User Subroutines

Overriding the Time Zone Setting

Adding a Configuration Instance for HFS

Upgrading Your Server Release for HFS

Migrating From an MVS Server for HFS

Performance Considerations for HFS

Frequently Asked Questions for HFS

Third-Party Software and Licenses

Troubleshooting for HFS

The topics in this section describe how to install your server in a Hierarchical File System (HFS) environment on UNIX System Services.

## Installation Requirements for HFS

### In this section:

- Operating System Requirements
- JVM Requirements for the Listener for Java
- Browser Requirements
- Disk Space Requirements
- Memory Requirements
- Communications Requirements

Before beginning the server installation, review all requirements.

### Operating System Requirements

The server runs on any supported release of z/OS. For current information about supported releases:

1. Go to <http://techsupport.informationbuilders.com>.

The Information Builders Technical Support home page opens.

2. In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.

The Supported Systems and Adapters page opens.

3. Click the link for the server release you want.

The Supported Systems and Adapters page for that release opens.

4. Click the link for your platform.

The support chart for that platform opens.

In general, the operating system should have the latest cumulative patch levels applied.

Confirm that your server installation software is labeled for your operating system level.

### JVM Requirements for the Listener for Java

If JVM-based adapters, server-side graphics, XBRL, or user-written CALLJAVA applications are to be used, a Java Runtime Environment (JRE) JVM must be installed on the machine, and the server must be configured to use it. As of 77x, the general minimum JVM level is 1.5 or higher, since a number of components require 1.5. In narrow cases, a lower JVM level may be used, but is not advised nor has it been specifically tested. This section discusses JVM installation and configuration.

When you install the Java SDK, the JRE is included. The SDK build type in use must also match in terms of 32-bit or 64-bit to the bit type of the server in use. If a JVM is not on the library path or is an inappropriate bit type, a *Failed to find JVM* message as well as debugging information will be written to the start log, which will indicate a failed JSCOM3 service.

The default JRE for the server is JRE 1.5, since this is the minimum requirement for some server components and JRE 1.4 is past its EOSL date. The following URL has Java EOL and EOSL information:

<http://java.sun.com/products/archive/eol.policy.html>

You can revert to using JRE 1.4 from the Web Console by selecting *Configuration/Monitor* from the *Workspace* menu, opening the *Java Services* folder, right-clicking *Default*, and selecting *Properties*.

The JDK JRE bin and server (or client) subdirectories must be specified in the load library path environment variable. A server restart is required, plus the appropriate JVM must be on the path if switching JRE levels. The load library path will be prompted at install time if JVM-based adapters or features are required. Otherwise, it can be manually set by editing the EDAENV file using any of the following methods.

- ❑ Set the JDK\_HOME variable to the name of the Java SDK home directory and the required directories will be added internally using the library load path.
- ❑ Set the JVM server or client directory (in which libjvm resides) and its parent directory to the IBI\_JNIPATH Java library load path. For example:

```
IBI_JNIPATH=/usr/lpp/java/J5.0/jre/bin:  
/usr/lpp/java/J5.0/jre/bin/j9vm:  
/usr/lpp/java/J5.0/jre/bin/classic
```

- ❑ Set or append the JVM server or client directory (in which libjvm resides) and its parent directory to the system library load path (LIBPATH). This is the least preferred method and only documented for backward compatibility. For example:

```
LIBPATH=/usr/lpp/java/J5.0/jre/bin:  
/usr/lpp/java/J5.0/jre/bin/j9vm:  
/usr/lpp/java/J5.0/jre/bin/classic:  
/usr/lpp/java/J5.0/
```

If JVM-based adapters or features are not required, the message *Failed to find JVM* is normal and can be ignored.

To add classes to the JVM class path for customer-written CALLJAVA applications, set and export the CLASSPATH variable to the operating system level before server start-up or use the Web Console to set the Java Listener IBI\_CLASSPATH property.



## Browser Requirements

The Web Console server requires one of the following Web browsers:

- ❑ Microsoft Internet Explorer® 7 or higher.
- ❑ Mozilla Firefox® 3.5 or higher.
- ❑ Google Chrome® 10.0 or higher.
- ❑ Apple Safari® 5.0 or higher.

The Opera™ browser does not support RIA (Rich Internet Application), the default appearance mode of the 7.7.x Web Console. Opera 5.0 or higher seems to operate properly in HTML mode, and the Web Console detects this and switches modes automatically. Since HTML mode is less extensively tested, Opera is considered unofficially supported at this time. Please report any issues you find to customer service.

## Disk Space Requirements

The server disk space requirement for:

- ❑ **Installation** is 500 megabytes.
- ❑ **Run time** is a combination of the server software (250 megabytes) plus the space required for applications, databases, sorts, output preparation, and logs. The actual space required will depend on the number and size of the applications and databases that you deploy to the server.

You can divide your space requirements in different ways. For example, you may choose to employ one mount point for the working directory for users and trace files (edatemp), and one mount point for the application directory (apps). Another option is to employ one mount point for edatemp, and one for each individual application.

For more information about using mount points, see the IBM USS documentation.

## 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. For SHRLIBRGNSIZE, we recommend the default MVS installation value of 64Mb:

```
SHRLIBRGNSIZE(67108864)
```

Server memory usage:

- ❑ The workspace (including Listeners) uses 200 megabytes.
- ❑ Each pre-started agent requires 4 megabytes.

The minimum amount of memory for a newly installed server with no workload is 250Mb. However, depending on usage, workload, and configuration options, 500Mb is recommended to start, to be adjusted as needed.

## Communications Requirements

You need four TCP/IP ports for each server instance that you configure. Three of these ports must be consecutive. You specify these port numbers during installation. You may require additional ports depending on which options you configure later.

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

## Installing a New Server for HFS

### **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. Access the Installation Software
- Step 5. Run ISETUP
- Step 6. Test the Server Installation
- Step 7. Configure Server Security

To install a new Server for z/OS deployed using the Hierarchical File System (HFS) and UNIX System Services (USS), perform the following steps.

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

### How to:

Establish the HFS Directory for the Server

The server installation requires a set of HFS directories where the product executable files, configuration files and sample applications are loaded. The server also uses HFS directories for temporary files during the server operation by default. Application files 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. Refer to IBM documentation for more information about HFS allocation. For an SMS-managed data set, add the appropriate parameters.

### Procedure: How to Establish the HFS Directory for the Server

To establish the HFS directory for the server:

1. Create the following JCL to define the HFS data set:

```
//***** 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)
```

2. Add a job card and submit the JCL.
3. Mount the file system by issuing the following commands at the command line in Option 6 of ISPF:

```
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 1.

`/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 iadmin must be 755.

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

## Step 2. Set Up User IDs

### **In this section:**

Server Installation ID (iinstal)

Server Administrator ID (iadmin)

Server System ID (iserver)

General IDs (for Connecting Users)

User ID Installation Scenarios

Step 2A. Define the Server Installation ID

Step 2B/RACF. Define the Server Administrator ID With RACF

Step 2B/ACF2. Define the Server Administrator ID With CA-ACF2

Step 2B/Top Secret. Define the Server Administrator ID With CA-Top Secret

Step 2C/RACF. Define the Server System User ID With RACF

Step 2C/ACF2. Define the Server System User ID With CA-ACF2

Step 2C/Top Secret. Define the Server System User ID With CA-Top Secret

Step 2D. Define the Server System User ID With UNIXPRIV Profiles

Step 2E. Add the OMVS Segment to General User IDs

### **How to:**

Verify the Server Administrator ID

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

- Server installation ID (iinstal).
- Server administrator ID (iadmin).
- Server system ID (iserver).

- ❑ General IDs (for connecting users).

The number of IDs and their names depend on the needs and configuration of your site.

### Server Installation ID (*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 *iinstal* is used throughout the installation procedure to refer to this ID, but you can choose any name. (We have omitted the second "I" from "install" due to a 7-character length restriction in some RACF and eTrust™ CA-Top Secret® environments.) To define *iinstal*, see [Step 2A. Define the Server Installation ID](#) on page 119.

### Server Administrator ID (*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. To define *iadmin*, if you are using:

- ❑ **RACF**, see [Step 2B/RACF. Define the Server Administrator ID With RACF](#) on page 119.
- ❑ **CA-ACF2**, see [Step 2B/ACF2. Define the Server Administrator ID With CA-ACF2](#) on page 120.
- ❑ **CA-Top Secret**, see [Step 2B/Top Secret. Define the Server Administrator ID With CA-Top Secret](#) on page 121.

### Server System ID (*iserver*)

If you plan to run the server with security set to OPSYS, you must create a user ID for internal use by the server. The server will use this server system ID when it needs superuser privileges. For example, to impersonate a connected user when the server agent is created.

This ID does not need TSO logon privileges. All IDs require an OMVS segment. Be sure never to delete this ID: doing so would cause server administration problems.

The sample ID name *iserver* is used throughout the installation procedure to refer to this ID, but you can choose any name.

You can define this server system ID as either:

- ❑ **A superuser ID.** This is an ID whose security definition specifies UID(0), authorizing it to perform all z/OS UNIX functions without restriction.

To define iserver using a superuser ID, if you are using:

**RACF**, see [Step 2C/RACF. Define the Server System User ID With RACF](#) on page 123.

**CA-ACF2**, see [Step 2C/ACF2. Define the Server System User ID With CA-ACF2](#) on page 124.

**CA-Top Secret**, see [Step 2C/Top Secret. Define the Server System User ID With CA-Top Secret](#) on page 124.

- ❑ **An ID employing profiles with UNIXPRIV for authorization**, which is necessary for certain superuser privileges.

By granting limited superuser privileges with a high degree of granularity to an ID that does not have superuser authority, you minimize the number of assignments of superuser authority at your installation and reduce your security risk.

This is supported for sites using RACF, eTrust™ CA-ACF2®, and eTrust CA-Top Secret. Note that global access checking is not used for authorization checking to UNIXPRIV resources.

To define iserver using UNIXPRIV profiles, see [Step 2D. Define the Server System User ID With UNIXPRIV Profiles](#) on page 125.

### General IDs (for 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. For information about this, see [Step 2E. Add the OMVS Segment to General User IDs](#) on page 127.

### 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 directory structure from the installation ID to the administrator ID. The command issued during the installation process to change ownership is shown.

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

## Step 2A. Define the Server Installation ID

When defining the server installation ID:

- ❑ The installation ID requires read access to the BPX.FILEATTR.APF facility class.
- ❑ The server installation ID requires an OMVS segment.
- ❑ The server installation ID can be any existing user ID. If it is the same as the administrator ID (iadmin), see one of the following topics for a sample definition. If you are using:
  - ❑ **RACF**, see [Step 2B/RACF. Define the Server Administrator ID With RACF](#) on page 119.
  - ❑ **CA-ACF2**, see [Step 2B/ACF2. Define the Server Administrator ID With CA-ACF2](#) on page 120.
  - ❑ **CA-Top Secret**, see [Step 2B/Top Secret. Define the Server Administrator ID With CA-Top Secret](#) on page 121.

## Step 2B/RACF. Define the Server Administrator ID With RACF

The server administrator ID requires an OMVS segment.

To define the server administrator ID with RACF:

1. Have the Security Administrator issue the following RACF commands:

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

2. Verify that the ADDUSER command completed successfully by issuing the following command, and be sure that the command is available to the iadmin ID:

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

You should receive the following response:

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

3. A Security Administrator must update the Facility classes of RACF, using the following commands issued with ISPF Option 6:

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

4. Refresh the RACF Facility class so that these commands will take effect.

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

5. Continue by verifying the server administrator ID, as described in [How to Verify the Server Administrator ID](#) on page 123.

## Step 2B/ACF2. Define the Server Administrator ID With CA-ACF2

The server administrator ID requires an OMVS segment.

To define the server administrator ID with eTrust CA-ACF2:

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

```
SET LID
INSERT iadmin GROUP(admin) PASSWORD(pass) STC
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.

2. Continue by verifying the server administrator ID, as described in [How to Verify the Server Administrator ID](#) on page 123.



## Step 2B/Top Secret. Define the Server Administrator ID With CA-Top Secret

The server administrator ID requires an OMVS segment.

To define the server administrator ID with eTrust CA-Top Secret:

1. Create a department ID for everyone defined to eTrust CA-Top Secret who will be using the server, by issuing the command

```
TSS CRE(dept) TYPE(DEPT) NAME('formal department name')
```

where:

*dept*

Is the name of the department you are creating.

*formal department name*

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

2. For users within the department you just created for the server, you can define resource access within a group. To define an ID for that group, issue the command

```
TSS CRE(deptgrp) NAME('dept group') DEPT(dept) TYPE(GROUP) GID(n)
```

where:

*deptgrp*

Is the name of the group you are creating.

*dept group*

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

*dept*

Is the name of the department you created.

*n*

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

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

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

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.

*dept*

Is the name of the department that you created.

*pass*

Is the password for the ID you are creating.

*deptgrp*

Is the group you created.

4. 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).

The OMVS segment of the ACID defines the ACID's UID, the user's home directory, and the initial program that the user will run. The initial program is generally the shell program that the user invokes.

```
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 UID. It cannot be 0 (zero).

HOME

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

*dir*

Is the ID home directory.

5. Issue the following command

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

where:

*iadmin*

Is the ID you created to administer the server.

6. Continue by verifying the server administrator ID, as described in [How to Verify the Server Administrator ID](#) on page 123.

**Procedure: How to Verify the Server Administrator ID**

To verify the server administrator ID:

1. Verify that the home directory of the server administrator ID is correct by logging on to the server administrator ID (if not already logged on) and issuing 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.

2. For a second confirmation, issue the following command:

```
OSHELL echo $HOME
```

You should receive the following response:

```
/u/iadmin
```

3. 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/RACF. Define the Server System User ID With RACF**

The RACF commands in this procedure must be issued by the Security Administrator. The server system user ID does not require logon authority.

To define the server system user ID with RACF:

1. Issue the following RACF command

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

where:

```
iserver
```

Is the account you use for the system server ID.

2. 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
```

## Step 2C/ACF2. Define the Server System User ID With CA-ACF2

To define the server system user ID with eTrust CA-ACF2, issue the following commands:

```
SET LID
INSERT iserver NAME(iserverID) GROUP(pgm)
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 group.

*omvs*

Is the name of your OMVS division.

*n*

Is the group ID.

## Step 2C/Top Secret. Define the Server System User ID With CA-Top Secret

To define the server system user ID with eTrust CA-Top Secret:

1. Issue the following commands

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

where:

*iserver*

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

*dept*

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

*server system ID*

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

*pass*

Is the ID password.

This password never expires.

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

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

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

where:

*iserver*

Is the server system ID.

*deptgrp*

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

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

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

where:

*iserver*

Is the server system ID.

## Step 2D. Define the Server System User ID With UNIXPRIV Profiles

Resource names in the UNIXPRIV class are associated with z/OS UNIX privileges. In order to use authorization to grant z/OS UNIX privileges, you must define profiles in the UNIXPRIV class protecting these resources. The UNIXPRIV class must be active. If you are using RACF, SETROPTS RACLIST must be in effect for the UNIXPRIV class.

To use profiles in the UNIXPRIV class to grant authorization for superuser privileges to a server system ID that does not have superuser authority (UID=0), you must assign:

READ access for `SUPERUSER.FILESYS.CHOWN`

CONTROL access for `SUPERUSER.FILESYS`

**Note:**

- ❑ It is strongly recommended that you do not assign TSO privileges to the UNIXPRIV user ID. This can be done by adding the keyword NOPASSWORD to the RACF command ADDUSER.
- ❑ The installation routine ISETUP will ask for the server system ID (default ISERVER). It will check if the supplied userid has a UID of 0. If it does not, UNIXPRIV authorization is assumed. This will result in an entry in the `ibi/srv77/server_type/bin/edaserve.cfg` file as follows:

```
server_system_id = ISERVER3/PRIV
```

rather than

```
server_system_id = ISERVER
```

If you installed the server with the server system ID pointing to a superuser ID (UID=0), and then decide to use UNIXPRIV userid, the value in the `edaserve.cfg` file must reflect the `/PRIV` syntax. Edit the file manually or using the Web Console, click *Workspace*, *Configuration/Monitor*. Open the *Configuration Files* folder, double-click *Workspace*, and change the `server_system_id` value before starting the server.

For more information about UNIXPRIV authorization, for:

- ❑ RACF, see the *IBM Security Server RACF Security Administrator's Guide*.
- ❑ ACF2, see the *eTrust CA-ACF2 Security Cookbook*.
- ❑ Top Secret, see the *eTrust CA-Top Secret Security Cookbook*.

**Example: Server System User ID With UNIXPRIV**

The server system ID requires different authorities in order to be used with UNIXPRIV. The following RACF example lists the authorities for a system server ID with UNIXPRIV authorization, named ISERVER3. Authorizations for your site may differ.

Occurrences of ISERVER3

In standard access list of general resource profile UNIXMAP U100122

In standard access list of general resource profile TSOAUTH RECOVER

In standard access list of general resource profile TSOAUTH JCL

In standard access list of general resource profile ACCTNUM EDA

In standard access list of general resource profile UNIXPRIV  
SUPERUSER.FILESYS.CHOWN

In standard access list of general resource profile UNIXPRIV  
SUPERUSER.FILESYS

Owner of profile ISERVER3.\* (G)

First qualifier of profile ISERVER3.\* (G)

In access list of group EDA

User entry exists

## Step 2E. Add the OMVS Segment to General User IDs

To add the OMVS segment to general user IDs:

1. For all server users, ensure that each user ID has an OMVS segment (or is set up to use a default user ID as documented in the IBM manual *UNIX System Services Planning*).

For example, to modify an existing RACF 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

For current information about which adapters are supported:

1. Go to <http://techsupport.informationbuilders.com>.

The Information Builders Technical Support home page opens.

2. In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.

The Supported Systems and Adapters page opens.

3. Click the link for the server release you want.

The Supported Systems and Adapters page for that release opens.

4. Click the link for your platform.

The support chart for that platform opens.

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 an optional steplib, ddname, or environment variable, 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

*high\_level\_qualifier.server\_type.DATA*

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

*high\_level\_qualifier.server\_type.DATA*

where:

*high\_level\_qualifier*

Is the high-level qualifier for HOME.DATA and for all other data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server (for example, IADMIN.SRV77). However, you can use any site-specific value.

*server\_type*

Is one of the following:

- FFS** for a Full-Function Server
- DM** for a DataMigrator Server
- WFS** for a WebFOCUS Reporting Server
- WFM** for a Shared Application Server for WebFOCUS Maintain

Adapter	Information you must provide
Adabas	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li>❑ load library</li> </ul> <p>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.</p> <p>When you configure the adapter, you will need to provide the name of the Adabas source library and the associated data set name.</p>



Adapter	Information you must provide
CA-DATACOM	Provide the data set names for the following STEPLIB allocations: <ul style="list-style-type: none"> <li><input type="checkbox"/> CUSLIB load library</li> <li><input type="checkbox"/> CAILIB load library</li> <li><input type="checkbox"/> utility library</li> <li><input type="checkbox"/> URT library</li> </ul>
CA-IDMS (both DB and SQL)	Provide the data set names for the following STEPLIB allocations: <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> <li><input type="checkbox"/> DBA load library</li> </ul> Provide the data set names to which the following ddnames are allocated: <ul style="list-style-type: none"> <li><input type="checkbox"/> SYSIDMS. Check with your CA-IDMS DBA regarding this ddname.</li> <li><input type="checkbox"/> SYSCTL. Is the library corresponding to the central version you want to use.</li> </ul>
Call Java	You must have the JDK installed. Provide a value for the following environment variables: <ul style="list-style-type: none"> <li><input type="checkbox"/> CLASSPATH. Provide the paths of the .jar files that you want to access. These paths will be appended to CLASSPATH.</li> <li><input type="checkbox"/> This adapter requires configuration of the JSCOM3 listener. The path to JVM must be provided using either JDK_HOME or IBI_JNIPATH. The installation will prompt for it.</li> </ul>
CICS Transaction	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> CICS EXCI load library</li> </ul>

Adapter	Information you must provide
DB2 CAF	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNLOAD load library</li> </ul> <p>For security information, see <a href="#">DB2 Security Exit Configuration for HFS</a> on page 160.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNEXIT load library (optional)</li> </ul> <p>Provide the following information for DB2 BIND:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNCLIST dataset name.</li> <li><input type="checkbox"/> DB2 REL type either 8 or 9 or 10.</li> <li><input type="checkbox"/> DB2 plan name.</li> <li><input type="checkbox"/> DB2 SSID.</li> </ul> <p>The installation will generate a fully customized DB2 BIND job and configure the adapter. DB2 CAF will be ready to use once the BIND job is executed. The configuration can be modified later using the Web Console, if necessary.</p>
DB2 CLI	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNLOAD load library</li> </ul> <p>For security information, see <a href="#">DB2 Security Exit Configuration for HFS</a> on page 160.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNEXIT load library (optional; this is needed only for an explicit connection).</li> </ul> <p>Provide a value for the following environment variable:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNAOINI, which contains the full path and file name of the DB2 CLI .ini file.</li> </ul>

Adapter	Information you must provide
EJB	<p>You must have the JDK installed.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li>❑ CLASSPATH. Provide the paths of the .jar files that you want to access. These paths will be appended to CLASSPATH.</li> </ul> <p>If you are deploying the adapter to access an EJB on a:</p> <ul style="list-style-type: none"> <li>❑ WebLogic server, specify the following path: <ul style="list-style-type: none"> <li><code>/pathspec/weblogic.jar</code></li> </ul> </li> <li>❑ WebSphere server, specify the following paths: <ul style="list-style-type: none"> <li><code>/pathspec/websphere.jar</code></li> <li><code>/pathspec/ejbcontainer.jar</code></li> </ul> <p>(one for each EJB container)</p> </li> <li>❑ This adapter requires configuration of the JSCOM3 listener. The path to JVM must be provided using either JDK_HOME or IBI_JNIPATH. The installation will prompt for it.</li> </ul>
IMS	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li>❑ DFSPZP load library (optional; not needed if PZP modules are stored in the DFSRESLB library)</li> <li>❑ DFSRESLB load library</li> </ul>
IMSBMP	<p>Provide the data set names for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li>❑ DFSRESLB load library</li> </ul> <p>Provide the data set names for the following FOCPSB allocation:</p> <ul style="list-style-type: none"> <li>❑ FOCPSB library containing FOCPSB definitions</li> </ul>

Adapter	Information you must provide
JDBC	<p>You must have the JDK installed.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CLASSPATH. Provide the paths of the .jar files that you want to access. These paths will be appended to CLASSPATH.</li> <li><input type="checkbox"/> This adapter requires configuration of the JSCOM3 listener. The path to JVM must be provided using either JDK_HOME or IBI_JNIPATH. The installation will prompt for it.</li> </ul>
Microsoft SQL Server	<p>Select the Call Java adapter, in addition to the Microsoft SQL Server adapter.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CLASSPATH. Provide the paths to the following files. These paths will be appended to CLASSPATH. <ul style="list-style-type: none"> <li><input type="checkbox"/> msbase.jar</li> <li><input type="checkbox"/> mssqlserver.jar</li> <li><input type="checkbox"/> msutil.jar</li> </ul> </li> <li><input type="checkbox"/> This adapter requires configuration of the JSCOM3 listener. The path to JVM must be provided using either JDK_HOME or IBI_JNIPATH. The installation will prompt for it.</li> </ul>
Millennium	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> </ul>
Model 204	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> </ul>
MQSeries	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> SCSQLOAD load library</li> <li><input type="checkbox"/> SCSQAUTH load library</li> </ul>

Adapter	Information you must provide
NATURAL Batch	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> NATURAL load library</li> </ul>
Oracle	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> CMDLOAD load library</li> </ul> Provide the data set name to which the following ddname is allocated: <ul style="list-style-type: none"> <li><input type="checkbox"/> ORA\$LIB message library</li> </ul> Provide values for the following environment variables: <ul style="list-style-type: none"> <li><input type="checkbox"/> ORACLE_SID, which contains the Oracle SID.</li> <li><input type="checkbox"/> ORACLE_HOME, which contains the Oracle home directory.</li> <li><input type="checkbox"/> LIBPATH, which contains the Oracle lib directory location. This is usually \$ORACLE_HOME/lib.</li> </ul> The installation procedure adds the following DD statement to IRUNJCL. <pre>//ORA@osid DD DUMMY</pre> where: <pre>osid</pre> Is the Oracle SID that is specified in the ORACLE_SID environment variable.
SAP (SQL)	Provide values for the following environment variables: <ul style="list-style-type: none"> <li><input type="checkbox"/> LIBPATH, which contains the path to SAP RFC SDK.</li> <li><input type="checkbox"/> SAP_CODEPAGE=0126, or the correct SAP code page for your language environment.</li> </ul>
SAP BW	Provide values for the following environment variables: <ul style="list-style-type: none"> <li><input type="checkbox"/> LIBPATH, which contains the path to SAP RFC SDK.SAP_CODEPAGE=0126, or the correct SAP code page for your language environment.</li> </ul>

Adapter	Information you must provide
Supra	Provide the dataset name for the following STEPLIB allocations: <ul style="list-style-type: none"> <li><input type="checkbox"/> LINKLIB load library.</li> <li><input type="checkbox"/> INTERFLM load library.</li> <li><input type="checkbox"/> ENVLIB load library.</li> </ul> Provide the dataset name to which the following ddname is allocated: <ul style="list-style-type: none"> <li><input type="checkbox"/> CSIPARM containing the CSIPARM definition, which in turn points to the Central PDM you are accessing.</li> <li><input type="checkbox"/> CSISYSIN containing the parameters used for connecting the multi-session adapter to the Central PDM.</li> </ul>
VSAM CICS	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> SDFHEXCI load library</li> </ul>

## Step 4. Access the Installation Software

### How to:

Unload the Installation Software From Tape

Download the Installation Software Using FTP

### Reference:

Optional Low-Level Qualifier Changes

Default Low-Level Qualifiers

You can choose to access the server installation software using either:

- Tape.** The software is provided on a 3490 or 3590 cartridge.  
You must unload the installation data set from the tape before you can run the installation. This is how most installations are performed.
- FTP.** You download the installation software from the Information Builders FTP site.  
Downloading the installation software involves:
  - 1. Registering** at the Information Builders FTP site.

2. **Downloading** the server installation data set from the site.
3. **Running** the isetup procedure to complete the download process and install the server.

### Procedure: How to Unload the Installation Software From Tape

The software is provided on a cartridge in 3490 or 3590 format with MVS PDSs. Perform the following to unload the installation data set from the tape:

1. Log on to TSO.
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.

**Note:** If you do not use HOME.DATA, then change the following line to reflect the value you used.

```
//          SET   EDAUSSD= 'HOME.DATA'
```

Do this before you run ISETUP.

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,(5,5,25)),
// 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 data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server. However, you can use any site-specific value.

For PDS, we recommend retaining the low-level qualifier HOME.DATA, but you can change this to any site-specific value. If you use a low-level qualifier other than HOME.DATA, you must then edit member PDSSNAME to change the string "HOME.DATA" to the low-level qualifier you specify here.

*cart*

Is the unit type of the tape drive. Common names include 3490, TAPE, and 3590. 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.

### **Procedure: How to Download the Installation Software Using FTP**

To download the installation software:

- 1.** Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
- 2.** Click *My Downloads* in the My Account section on the right side of the page.  
The Downloads, Upgrades, Service Packs, and PTFs page opens.
- 3.** Click the link for your product (for example, WebFOCUS and iWay Server and iWay Client).  
The Downloads by Release page for your product opens.
- 4.** Click your release from the Current Production Releases list.  
The Software Downloads page for your release opens.
- 5.** Scroll down and find the platform on which you want to install the server, and then click *Download* to the right of the platform name.
- 6.** Fill in the registration form and then click *Continue*.  
The Software Download Agreement page opens.
- 7.** Select *I agree...* to consent to the Download Agreement, and then click *Continue*.



The Download Instructions page opens. Select AUTOMATIC or MANUAL and follow the relevant instructions.

A copy of the instructions is automatically emailed to you for later reference.

8. Log on to TSO.
9. Follow the instructions on the Download Page in your TSO session.
10. Review [Optional Low-Level Qualifier Changes](#) on page 137. If you did not restore the first data set as HOME.DATA (see download instructions) then change the following line to reflect the data value you used:

```
//          SET  EDAUSSD= 'HOME .DATA '
```

11. Run the ISETUP procedure.

Specify (F)tp for Input Source on the second panel.

Note that after the server is properly installed, you can optionally delete any downloaded temporary files.

Continue with [Step 5. Run ISETUP](#) on page 138.

### Reference: Optional Low-Level Qualifier Changes

We recommend retaining the default low-level qualifiers that are supplied for the installation libraries. However, if you need to change any of them (for example, to conform to site-specific naming conventions), you can do so by editing them in member PDSSNAME of *high\_level\_qualifier*.HOME.DATA. You can see a list of the qualifiers in [Default Low-Level Qualifiers](#) on page 137.

**Caution:** If you change any low-level qualifiers and do not reflect those changes exactly in USSSNAME, you will experience problems with the server installation and operation.

Once you have finished changing any names, continue with [Step 5. Run ISETUP](#) on page 138.

### Reference: Default Low-Level Qualifiers

The following low-level qualifiers are set in *high\_level\_qualifier*.HOME.DATA(PDSSNAME):

```
//          SET  EDAUSSD= 'HOME.DATA '           Server installation library
//          SET  EDAUSSL= 'HOME.LOAD '           Server base load library
//          SET  FFSUSSD= 'FFS.DATA '            Full Function server
//          SET  WFSUSSD= 'WFS.DATA '            WebFocus Reporting server
//          SET  ETLUSSD= 'DM.DATA '             DataMigrator
//          SET  WFMUSSD= 'WFM.DATA '            WebFocus Maintain Server
//          SET  CGWUSSD= 'CGW.DATA '            Communications Gateway
//          SET  CLNUSSD= 'CLN.DATA '            Client
//          SET  EDACICS= 'HOME.CICS.LOAD '      CICS load library
```

## 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 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 *high\_level\_qualifier*.HOME.DATA using ISPF option 6.

The first Installation and Configuration panel opens.

```
IWay Software           Installation and Configuration           Unified Server Install
Command ==>                                                    PO

Unified Server Installation
Please select one of the following options:

    1. USS/HFS Deployment
        . Installation files and temporary files in HFS
        . Application files, like synonyms and procedures, in HFS (or
          optionally in both HFS and PDS)

    2. PDS Deployment
        . Installation files and temporary files in PDS
        . Application files, like synonyms and procedures, in PDS (or
          optionally in both PDS and HFS)

Enter selection (Default=1) ==> 1

Press Enter to continue, PF3 to END
```

2. Enter 1 and press Enter to continue to the next panel.

The following panel opens.

```

Information Builders      Installation and Configuration      z/OS USS Deploy
Command ==>                                                     P1

Please select one of the following options:

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

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

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

```

3. Complete the panel as follows.

Field	Instructions
Enter selection	<p>Accept the default value 1, <i>Install and Configure</i>, for a new installation.</p> <p>For option 2, <i>Add Additional Configuration Instance</i>, see <a href="#">Adding a Configuration Instance for HFS</a> on page 166.</p> <p>For option 3, <i>Refresh Installation</i>, see <a href="#">Upgrading Your Server Release for HFS</a> on page 176.</p>
Enter License Key	<p>Enter the license key that was provided with the software.</p> <p>Be sure to store this key in a safe place for future reference.</p>

Field	Instructions
Input source	Enter the input source: <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>T</i> for Tape - If you received your software on Tape media.</li> <li><input type="checkbox"/> <i>D</i> for Disk - If you selected manual download from the download instructions.</li> <li><input type="checkbox"/> <i>F</i> for FTP - If you selected automatic download from the download instructions.</li> </ul>
Installation Userid	Shows the current logon ID. It cannot be changed.
Number of CPUs online	Shows the current number of general use processors currently online. It cannot be changed. This value is going to be matched with the licensed number of CPUs provided in the License Key, when the installation job is submitted. At this point this verification is not being enforced and if the licensed number does not match the actual number of CPUs currently online, a warning will be issued and the installation job will continue.
Administrator 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.
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.  Every time the server creates a file in the <code>.../ibi/profiles</code> or <code>.../ibi/apps</code> 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 do not want to grant.  For example, if you specify a umask value of 0022, the server create files with the permissions 644: umask 0022 is subtracted from the default 666, disallowing the group and world write permissions.

Field	Instructions
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, <i>jobnameA</i> , <i>jobnameB</i> , <i>jobnameC</i> , 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 <i>Enter Job Card information</i> field. The JOB card information that you enter will be used for each job that is submitted.

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.

The following panel opens.

```

IWay Software           Installation and Configuration           z/02 USS Deployment
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
==> // JOB (ACCT INFO), _____
==> /*
==> /*
Press Enter to continue, PF3 to return to previous menu

```

This panel appears 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 follows.

Field	Instructions
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, <i>jobnameA</i> , <i>jobnameB</i> , <i>jobnameC</i> , 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 <i>Enter Job Card information</i> 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.

This following panel only appears if FTP was previously selected. Otherwise, skip to Step 8.

```

IWay Software           Installation and Configuration           z/02 USS Deployment
Command ==>                                                    PM

                               New Installation

Please enter the following information for WebFocus Reporting Server

FTP download destination and user information

FTP Download Directory    ==> /u/iadmin/download
FTP Userid                ==>
FTP Password              ==>

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

## 7. Complete the panel as follows.

Field	Instructions
FTP Download Directory	This defaults to the current userid home directory plus /download. Change the value to an existing directory name or leave unchanged (/download will be created).
FTP Userid	Cut and paste from the download instructions
FTP Password	Cut and paste from the download instructions

## 8. Press Enter to continue to the next panel.

Note that in the current panel (and some later panels), if you are running ISETUP from:

- high\_level\_qualifier*.HOME.DATA, the panel will display default values for some fields.
- Any other library, the panel will not display any default values.

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

```

IWay Software           Installation and Configuration           z/OS USS Deployment
Command ==>                                                    P2

                               New Installation

Please enter the following information for Full Function Server
(blank any field for default)
Input Media
Volume serial number     ==> _           Unit type ==> 3490
Work unit type           ==> SYSDA

HFS Installation parameters
Base Directory           ==> /u/iadmin
Application Directory    ==> /u/iadmin/ibi/apps
Profile & Admin Directory ==> /ibi/profiles
Server System Userid     ==> ISERVER
HTTP Listener Port       ==> 8101           TCP Listener Port ==> 8100

MVS Installation Libraries
EDACONF Library         ==> IADMIN.SRV77.FFS.DATA
EDACONF Library Unit    ==> SYSDA           Volume ==>
EDAHOME Library         ==> IADMIN.SRV77.HOME.LOAD
EDAHOME Library Unit    ==> SYSDA           Volume ==>

Press Enter to continue, PF3 to return to previous menu

```

Complete the panel as follows.

Field	Instructions
<b>Input Media (installing from tape only)</b>	
Volume serial number	Provide the volume serial number of the server media. The number is located on the tape supplied in you server package.
Work unit type	Review the default value and change if necessary.  You can specify a UNIT= <i>type</i> 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= <i>volume</i> '.
<b>Input Media (installing from disk/FTP only)</b>	
Directory name of input	Provide the name of the directory in which the installation files reside.
<b>General Installation Parameters</b>	
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.
Application Directory	This indicates where application components will reside. The default value is based on the value specified for <i>Base Directory</i> . To specify another location for application components, change the value for this field.
Profile & Admin Directory	This indicates where user profiles and administration files will reside. The default value is based on the value specified for <i>Base Directory</i> . To specify a different 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 <a href="#">Step 2. Set Up User IDs</a> on page 116.



Field	Instructions
HTTP Listener Port	<p>This indicates the port number that the server will use for HTTP. It is the first of three connection ports that must be available to the server.</p> <p>For example, if you choose port 8101, then ports 8101, 8102, and 8103 are used by the server. Ensure that you choose ports that are not currently being used.</p>
TCP Listener Port	<p>This is the port number of the TCP Listener.</p> <p>The default is one less than the port specified for the HTTP Listener, but it can be any port number other than the three reserved for HTTP.</p>
<b>MVS Installation Libraries</b>	
EDACONF Library	<p>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 <i>high_level_qualifier</i>.HOME.DATA, this field will have the default value <i>high_level_qualifier.server_type</i>.DATA (where <i>server_type</i> 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.</p>
EDACONF Library Unit/Volume	<p>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.</p>
EDAHOME Library	<p>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 <i>high_level_qualifier</i>.HOME.DATA, this field will have the default value <i>high_level_qualifier</i>.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.</p>
EDAHOME Library Unit/Volume	<p>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.</p>

- 9.** Press *Enter* to continue to the next panel.

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 10. Otherwise, skip to Step 11.

- 10.** 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 127.

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* to continue to the next panel.

The JSCOM3 Listener configuration panel opens.

- 11.** Configuration of the JSCOM3 Listener is either optional or mandatory depending on which adapters were selected. If any Java-based adapters were selected (EJB, Call Java, JDBC, Microsoft SQL Server), the configuration is mandatory.

- a.** The panel will prompt for the path to the Java environment to be passed to either JDK\_HOME or IBI\_JNIPATH, as described in [JVM Requirements for the Listener for Java](#) on page 111.
- b.** If no Java-based adapters were select, this configuration might still be desirable to enable server-side graphics and Adobe® Flex® features. To skip the configuration, leave the path blank.
- c.** Press *Enter* to continue to the next panel.

The New Century Corporation Demonstration Files panel opens.

- 12.** In the New Century Corporation Demonstration Files panel, type *Y* next to the desired language. (Only English is available.) If you do not want to install any Century Corp demo files, retain the default value of *N* next to the language.

- 13.** Press *Enter* to continue to the next panel.

The confirmation panel opens.

```

IWay Software           Installation and Configuration           z/OS USS Deployment
Command ==>                                                    P4

                               New Installation

Please confirm the following information for WebFocus Reporting Server
Input Media
Volume serial number      ==> C77076   Unit type   ==> 3490
Work unit type           ==> SYSDA
Product Installation parameters
Installation userid       ==> IADMIN   Administrator userid ==> IADMIN
Installation Directory    ==> /u/iadmin/ibi/srv77/home
Configuration Directory   ==> /u/iadmin/ibi/srv77/wfs
Application Directory     ==> /u/iadmin/ibi/apps
Profile & admin directory ==> /ibi/profiles
Server System Userid     ==> ISERVER
HTTP Listener Port       ==> 8121     TCP Listener Port ==> 8120
EDACONF Library          ==> IADMIN.SRV77.WFS.DATA
EDACONF Library Unit     ==> SYSDA   Volume ==>
EDAHOME Library          ==> IADMIN.SRV77.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
  
```

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

- N** to return to the initial panel 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 *high\_level\_qualifier.server\_type.DATA* configuration library.
- S** to create JCL and submit the job immediately.

**Note:** If FTP was selected, JCL will be created to download the server software and run the install and configuration process.

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

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

Job	Description
IS SETUPJ1	Main JCL Job stream that is used to install the server. For FTP processing, this JCL can be restarted at any step due to a previous failure. To do this, add RESTART = procname.stepname to the JOB card and resubmit the IS SETUPJ1 JCL.

<b>Job</b>	<b>Description</b>
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.

<b>Member</b>	<b>Description</b>
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 <i>sdnnnnn</i> 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 batch JCL for auxiliary functions, and are also created in the configuration library.

<b>Member</b>	<b>Description</b>
CMRUN	JCL to run DataMigrator batch jobs.
DB2V8PRM	DB2 version 8 DBRM referenced in GENDB2 JCL.
DB2V9PRM	DB2 version 9 DBRM referenced in GENDB2 JCL.
DB2V10PR	DB2 version 10 DBRM referenced in GENDB2 JCL.
GENDB2	JCL to bind the DB2/CAF plan.
IIMSBMP	Example JCL to run the IMS/XMI server job in BMP mode.

Member	Description
IIMSDLI	Example JCL to run the IMS/XMI server job in DLI mode.

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

Member	Description
IWAYS	A started task that starts the server.
IWAYP	A started task that stops the server.
EDAPRMP	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.

Directory Structure	Description
<code>/u/iadmin/ibi/srv77/tape</code>	Contains HFS files from the input media.
<code>/u/iadmin/ibi/srv77/install</code>	Working directory for the installation process. Log and error files reside here.
<code>/u/iadmin/ibi/apps</code>	The installation creates <i>baseapp</i> and one or more sample application directories under this directory.
<code>/u/iadmin/ibi/profiles</code>	This is where user profiles are created, as well as <i>admin.cfg</i> .
<code>/u/iadmin/ibi/srv77/home</code>	Server system directories are created under this directory.

Directory Structure	Description
<pre>/u/iadmin/ibi/srv77/server_type</pre>	<p>Configuration directories are created under this directory. The license key specified in the ISETUP procedure determines <i>server_type</i>.</p> <p><i>server_type</i> is one or more of the following:</p> <p><b>FFS</b> for a Full-Function Server</p> <p><b>DM</b> for a DataMigrator Server</p> <p><b>WFS</b> for a WebFOCUS Reporting Server</p> <p><b>WFM</b> for a Shared Application Server for WebFOCUS Maintain</p>

## 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:
 

```
(EDA13023) ALL INITIAL SERVERS STARTED
```
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. To test the server, open the ibisamp folder on the Application tree, right-click a synonym, such as CAR or EMPLOYEE, and select *Sample Data*.

A sample report is executed and the result is displayed.

When you are finished using the server, you can use the Web Console to stop the server by going to the Web Console menu bar, selecting *Workspace*, and then *Stop*.

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

## Step 7. Configure Server Security

### How to:

Configure Security With All Security Products

Configure Security With eTrust CA-ACF2

Change the Security Mode From OPSYS to OFF

Change the Security Mode From OPSYS to PTH, DBMS, or LDAP

Configure Security With eTrust CA-Top Secret

### Example:

Facility Entry Defining the Server to CA-Top Secret

ISERVER ACID Definition for CA-Top Secret

IADMIN ACID Definition for CA-Top Secret

You can run the server in any of the following security modes:

- OFF
- OPSYS
- PTH
- DBMS
- LDAP

If you will be configuring your server with security mode OPSYS, you must perform the instructions in the following topics. (For security modes PTH, DBMS, and LDAP, skip these topics.)

- [How to Configure Security With All Security Products](#) on page 152, regardless of which security product you use.
- [How to Configure Security With eTrust CA-ACF2](#) on page 152 if you use eTrust CA-ACF2.
- [How to Configure Security With eTrust CA-Top Secret](#) on page 153 if you use eTrust CA-Top Secret.

You can see a full description of all server security modes in the Web Console help, and also in the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual. To see it in the Web Console:

1. From the Web Console menu bar, select *Help*, then *Contents and Search*.

The Web Console Help window opens.

2. In the left pane, expand *Server Administration*.

### **Procedure: How to Configure Security With All Security Products**

To configure server security with RACF, eTrust CA-ACF2, or eTrust CA-Top Secret:

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 EDHOME directory, change file attributes by entering the following TSO commands in ISPF Command Shell (option 6):

```
OSHELL extattr +a /u/iadmin/ibi/srv77/home/bin/tscom300.out
OSHELL extattr +a /u/iadmin/ibi/srv77/home/bin/tsqprx.out
```

3. Verify your changes by issuing the following command:

```
OSHELL ls -E /u/iadmin/ibi/srv77/home/bin/tscom300.out
OSHELL ls -E /u/iadmin/ibi/srv77/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 150.

### **Procedure: How to Configure Security With eTrust CA-ACF2**

If you are installing the server to run with eTrust CA-ACF2 security package, please be advised that you may have to apply fix number Q071149 for eTrust CA-ACF2 6.4 or Q051462 for eTrust 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. eTrust 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 eTrust CA-ACF2 record for the job-level user ID. Refer to eTrust 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 *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

Each user ID must be defined to eTrust 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*

### **Procedure: How to Configure Security With eTrust CA-Top Secret**

If you use Computer Associates eTrust CA-Top Secret, follow these guidelines and refer to the security vendor 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 eTrust CA-Top Secret, perform the following steps:

- 1.** Create a eTrust CA-Top Secret facility entry for the server security module, \*PATHNAM.

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

```
FACILITY DISPLAY
PGM=*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 eTrust 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(facility) <- defines the facility to CA-Top Secret
TSS ADD(user_acid) FAC(facility) <- adds it to users requiring server access
```

3. Each user of the server must be defined to eTrust 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.

4. If you are operating with eTrust CA-Top Secret HFSSEC=ON, continue with Step 5. Otherwise, skip to Step 7.
5. 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
```

6. eTrust 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.

7. After you create a new user ID or change a user 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.

### **Example: Facility Entry Defining the Server to CA-Top Secret**

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

```
FACILITY DISPLAY
PGM=*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
```

### **Example: ISERVER ACID Definition for CA-Top Secret**

Following is an example of an ISERVER ACID definition for eTrust 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(I SERVER) DATA(ALL,PROFILE)
ACCESSORID = I SERVER          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
```

### **Example: IADMIN ACID Definition for CA-Top Secret**

Following is an example of an IADMIN ACID definition for eTrust CA-Top Secret. Note that UID is *not* zero.

```
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
```

### **Procedure: How to Change the Security Mode From OPSYS to OFF**

To change the security mode from OPSYS to OFF:

1. Make sure the server is not running.
2. Submit the JCL for

```
high_level_qualifier.server_type.DATA(ICLRDIR)
```

where:

*high\_level\_qualifier*

Is the high-level qualifier for HOME.DATA and for all other data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server (for example, IADMIN.SRV77). However, you can use any site-specific value.

*server\_type*

Is one of the following:

- FFS** for a Full-Function Server
- DM** for a DataMigrator Server
- WFS** for a WebFOCUS Reporting Server
- WFM** for a Shared Application Server for WebFOCUS Maintain

This will clean any remaining files from when the server was running with security set to OPSYS.

- 3.** In the *high\_level\_qualifier.server\_type*.DATA(EDAENV) JCL, add the following setting:

**EDAEXTSEC=OFF**

- 4.** Submit *high\_level\_qualifier.server\_type*.DATA(ISTART). The server will now be running with security turned off.

### **Procedure: How to Change the Security Mode From OPSYS to PTH, DBMS, or LDAP**

To switch the security mode from OPSYS to PTH, DBMS, or LDAP:

- 1.** From the Web Console's menu bar select *Workspace* and then *Access Control*.

The Security Mode pane opens.

- 2.** In the Security Mode drop-down list, select the new security mode.

For more information about configuring PTH, DBMS, and LDAP security modes, either:

- Go to the Web Console menu bar, select *Help*, then *Contents and Search*, and in the left pane expand *Server Administration*.
- See the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

- 3.** Click the *Apply and Stop* button.

A message is displayed about restarting the server.

- 4.** Assign the new security setting to EDAEXTSEC by manually editing following server member.

For HFS: `high_level_qualifier.server_type.DATA(EDAENV)`

For PDS: `high_level_qualifier.PDS.server_type.DATA(EDAENV)`

For example:

`EDAEXTSEC=PTH`

5. Restart the server by submitting the ISTART JCL.

## Starting and Stopping a Server for HFS

### In this section:

- Starting and Stopping the Server Using a Batch Job
- Starting and Stopping the Server Using a Started Task
- Server Operations Using MVS Operator Commands

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 *Server Administration for UNIX, Windows, OpenVMS, IBM i, 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 (`high_level_qualifier.server_type.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 *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

### Starting and Stopping the Server Using a Started Task

#### Example:

- Sample IWAYS Started Task
- Sample IWAYP Started Task

ISSETUP 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 data sets 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 submit 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:

```
//IWAYS          PROC
//TSCOM300       EXEC PGM=TSCOM300,
//              PARM=' ENVAR( "_EDC_UMASK_DFLT=0022" ) / '
//STEPLIB        DD   DSN=IADMIN.SRV77.HOME.LOAD,DISP=SHR
//EDAPRINT        DD   SYSOUT=A
//SYSPRINT        DD   SYSOUT=A
//SYSOUT          DD   SYSOUT=A
//EDAPARM         DD   DUMMY
//EDAENV          DD   DSN=IADMIN.SRV77.FFS.DATA(EDAENV),DISP=SHR
```

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

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

```
//IWAYP          PROC
//TSCOM300       EXEC PGM=TSCOM300
//STEPLIB        DD   DSN=IADMIN.SRV77.HOME.LOAD,DISP=SHR
//EDAPRINT        DD   SYSOUT=A
//SYSPRINT        DD   SYSOUT=A
//SYSOUT          DD   SYSOUT=A
//EDAPARM         DD   DSN=IADMIN.SRV77.FFS.DATA(EDAPRMP),DISP=SHR
//EDAENV          DD   DSN=IADMIN.SRV77.FFS.DATA(EDAENV),DISP=SHR
```

## Server Operations Using MVS Operator Commands

On MVS, you can issue operator MODIFY commands against the server job from 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 IWAY77, -SHOW
```

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

## DB2 Security Exit Configuration for HFS

### Example:

Changing DSN3SATH for RACF 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 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 connection ID to DB2 that is associated with the region, job submitter, or started task.

For DB2 CLI adapter, the connection to DB2 must be configured as *trusted* for the exit to be invoked.

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

- ❑ For an example of the changes that must be made in DSN3SATH for RACF and eTrust CA-Top Secret sites, see [Changing DSN3SATH for RACF and eTrust CA-Top Secret Sites](#) on page 161.
- ❑ For an example of the changes that must be made in DSN3SATH for eTrust CA-ACF2 sites, see [Changing DSN3SATH for eTrust CA-ACF2 Sites](#) on page 164.

The highlighted text and comments shown in the examples indicate the lines containing the recommended modification of DSN3SATH, which calls the module FOCDNS3 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 165.

**Note:**

- ❑ The positioning of these lines is approximate, 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 eTrust CA-Top Secret. FOCDSN4 is not needed with eTrust CA-ACF2; the secondary authorization ID(s) will be set correctly without it.

**Example: Changing DSN3SATH for RACF and eTrust CA-Top Secret Sites**

**1. Search for the SATH001 label** - add two lines (FOCDSN3):

```

SATH001 DS      0H
        USING  WORKAREA,R11          ESTABLISH DATA AREA ADDRESSABILITY
        ST     R2,FREMFLAG           SAVE FREEMAIN INDICATOR
        XC     SAVEAREA(72),SAVEAREA CLEAR REGISTER SAVE AREA
        .
        .
        .
*****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          <--ADD
CALL    FOCDSN3              GO GET THE IBI EXIT     <--ADD
CLI     AIDLPRIM,BLANK       IS THE INPUT PRIMARY AUTHID NULL
BH      SATH020              SKIP IF A PRIMARY AUTH ID EXISTS

```

**2. Search for the SATH020 label** - add a comment box, add one line, and comment out four lines:

```

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
*      SPACE
*      .
*      .
*      .
*      RACF IS ACTIVE ON THIS MVS
***** <--ADD
*                                                                 * <--ADD
* The logic was modified because in DB2 V8 AIDLACEE is always not* <--ADD
* NULL. We used to honor AIDLACEE first, FOCDSN4 second and then * <--ADD
* AS ACEE. Now we honor FOCDSN4 first, AIDLACEE second and then  * <--ADD
* AS ACEE.                                                         * <--ADD
*                                                                 * <--ADD
* 03/11/05   ASK0                                                 * <--ADD
***** <--ADD

      USING ACEE,R6                                ESTABLISH BASE FOR ACEE      @KYL0108
L      R6,AIDLACEE      Get => caller ACEE if any      <--ADD
* ICM  R6,B'1111',AIDLACEE CALLER PASSED ACEE ADDRESS? @KYL0108 <--COMMENT
* BZ   SATH024          NO, USE ADDRESS SPACE ACEE    @KYL0108 <--COMMENT
* CLC  ACEEACEE,EYEACEE IS IT REALLY AN ACEE?       @KYL0108 <--COMMENT
* BE   SATH027          YES, PROCEED NORMALLY        @KYL0108 <--COMMENT

      SPACE 1
SATH024 DS      0H                                USE ADDRESS SPACE ACEE      @KYL0108
*
*
*

```

**3. Search for the SATH025 label** - replace sath025 and add sath026 (FOCDNS4):

```

SATH025 DS    0H

        CALL  FOCDSN4                GO GET THE IBI EXIT (4=GROUP AUTH) <--ADD
        LTR   R6,R6                   DOES AN ACEE EXIST? IF NOT, <--ADD
        BZ    SATH026                 CHECK ACEE IN ADDRESS SPACE <--ADD
        CLC   ACEEACEE,EYEACEE       DOES IT LOOK LIKE AN ACEE? <--ADD
        BE    SATH027                 YES, GO DO GROUPS <--ADD
SATH026 DS    0H <--ADD

        L     R6,ASCBASXB             GET ADDRESS SPACE EXTENSION BLOCK <--ADD
        L     R6,ASXBSENV-ASXB(,R6)  GET ACEE ADDRESS <--ADD
        CLC   ACEEACEE,EYEACEE       DOES IT LOOK LIKE AN ACEE? <--ADD
        BNE   SATH049                 NO, THEN CAN'T DO GROUPS <--ADD
        DROP  R8                       DROP ASCB BASE REG <--ADD
        SPACE 1 <--ADD

SATH027 DS    0H                CHECK LIST OF GROUPS OPTION
        TM    RCVTOPTX,RCVTLGRP      IS LIST OF GROUPS CHECKING ACTIVE
        BZ    SATH040                 SKIP TO SINGLE GROUP COPY IF NOT
        DROP  R7                       DROP RCVT BASE REG
        SPACE 1

* RACF LIST OF GROUPS OPTION IS ACTIVE
  EJECT
  .
  .
  .

```

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

\*DSN3SATH source is provided by ACF2.

**1. Search for PRIMARY AUTHORIZATION ID** - add two lines (FOCDN3):

```
*****
*
*          PRIMARY AUTHORIZATION ID
*
*****
*
*   IF THE PRIMARY AUTHORIZATION ID IS NULL OR BLANKS
*   IF CA-ACF2 IS AVAILABLE
*   SET PRIMARY ID FROM ACFASVT (ASVLID)
*   ELSE
*   IF TSO FOREGROUND USER
*   SET PRIMARY ID FROM TSO LOGON ID (ASCBJBNB)
*   ELSE
*   SET PRIMARY ID FROM JOB USER (JCTUSER)
*
*****
SPACE 2                                04260000
LA R1,AIDLPRIM LOAD PARM REG1          <--ADD
CALL FOCDN3 GO GET THE IBI EXIT        <--ADD
CLI  AIDLPRIM,C' ' PRIMARY AUTHID THERE ? 04270000
BH  PRIMWTO ..YES, EVERYTHINGS OK HERE 04280000
L   R3,PSAAOLD-PSA(0) CURRENT ASCB ADDRESS 04290000
USING ASCB,R3 ASCB ADDRESSABILITY 04300000
SPACE 2                                04310000
```

**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=high_level_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 EDAMOD(FOCDNS3)
*****
*** Omit the following line for eTrust CA-ACF2
*****
INCLUDE EDAMOD(FOCDNS4)
ENTRY DSN3@ATH
NAME DSN3@ATH(R)
/*
```

where:

*db2pref*

Is the prefix for the DB2 data sets.

*high\_level\_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.

**MSODDX for DD Translation for User Subroutines**

On z/OS, you can incorporate an additional routine called MSODDX into a user-written subroutine that needs to access ddnames allocated to a WebFOCUS Reporting Server, a Data Migrator Server, or a Full-function Server. MSODDX provides ddname translation services that enable external programs to access files under the ddname used by the Server.

For details, see Chapter 6, *Platform-Specific Commands and Features*, in the *Stored Procedures Reference* manual.

**Overriding the Time Zone Setting**

By default, the server will use the system set value for Time Zone. This can be overridden by setting the TZ in the EDAENV member of the servers configuration library.

*TZ = valid tz string*

For more information about time zone values, see the IBM UNIX System Services Command Reference and search for TZ.

## Adding a Configuration Instance for HFS

### In this section:

- Step 1. Run ISETUP
- Step 2. Validate the Installation

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.

### Step 1. Run ISETUP

To add a configuration instance, perform the following steps.

1. Execute ISETUP again. You should have a *high\_level\_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.

The first Installation and Configuration panel opens.

2. Enter *1* and press *Enter* to continue to the next panel.

The first Installation and Configuration panel for HFS opens.

3. Complete the first Installation and Configuration panel as follows.

Field	Instructions
Enter selection	Choose option 2, <i>Add Additional Configuration Instance</i> .
Enter License Key	Enter the license key that was provided with the software for the type of server instance that you want to configure (for example, the license key for a WebFOCUS Reporting Server or for a Full-Function Server).
Input source	This is ignored for option 2.

Field	Instructions
Number of CPUs online	Shows the current number of general use processors currently online. It cannot be changed. This value is going to be matched with the licensed number of CPUs provided in the License Key, when the installation job is submitted. At this point this verification is not being enforced and if the licensed number does not match the actual number of CPUs currently online, a warning will be issued and the installation job will continue.
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, <i>jobnameA</i> , <i>jobnameB</i> , <i>jobnameC</i> , 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 <i>Enter Job Card information</i> field. The JOB card information that you enter will be used for each job that is submitted.

4. If you used the same user ID for both installation and administration, skip to Step 7. Otherwise, continue with Step 5.
5. Press Enter to continue to the next panel.  
This panel appears 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.

6. Complete the panel as follows.

Field	Instructions
Enter Job Card information	<p>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.</p> <p>This job name is used for multiple submissions (for example, <i>jobnameA</i>, <i>jobnameB</i>, <i>jobnameC</i>, and so on) in the JCL generated by the installation procedure.</p>
Override JOB name checking	<p>To provide your own JOB card information, including JOB name, enter Y and provide valid JOB card information in the <i>Enter Job Card information</i> field. The JOB card information that you enter will be used for each run-time job that is created.</p>

7. Press Enter to continue to the next panel.

The Add Configuration panel opens.

8. Enter the current base high-level qualifier used for EDAHOME.

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.

9. Press Enter to continue to the next panel.



If you are configuring the *first* instance of a given server type, the following panel opens.

```

IWay Software           Installation and Configuration           z/OS USS Deployment
Command ==>                                                    P3

                                Add Configuration

Please enter the following information for WebFocus Reporting Server

Using the following existing information

HFS base Directory           ==> /u/iadmin
EDAHOME Library             ==> IADMIN.SRV77.HOME.LOAD

Product Installation parameters (Blank any field for default)
Application Directory        ==> /u/iadmin/ibi/apps
Profile & Admin Directory    ==> /u/iadmin/ibi/profiles
Server System Userid        ==> ISERVER
HTTP Listener Port          ==> 8121      TCP Listener Port ==> 8120

MVS Installation Library

EDACONF Library             ==> IADMIN.SRV77.WFS.DATA

Press Enter to continue, PF3 to return to previous menu

```

Otherwise, if you are configuring an additional instance of a given server type, the following panel opens.

```

IWay Software           Installation and Configuration           z/OS USS Deployment
Command ==>                                                    PI

                                Add additional Configurations

Please enter the following information for Full Function Server

Using the following existing information
HFS base Directory           ==> /u/iadmin
EDAHOME Library             ==> IADMIN.SRV77.HOME.LOAD
Base EDACONF Library        ==> IADMIN.SRV77.FFS.DATA
Current configurations       ==> ffs

Product Configuration Parameters
Application Directory        ==> /u/iadmin/ibi/apps
Profile & admin Directory    ==> /u/iadmin/ibi/profiles
EDACONF suffix ( ffs plus)  ==> 1          or string suffix ==>
Server System Userid        ==> ISERVER
HTTP Listener Port          ==> 8107      TCP Listener Port ==> 8106

MVS Installation Library

EDACONF Library             ==> IADMIN.SRV77.FFS1.DATA
EDACONF Library Unit        ==> SYSDA          Volume ==>

Press Enter to continue, PF3 to return to previous menu

```

**10.** Complete the panel as follows.

<b>Configuration Parameters</b>	
Application Directory	This indicates where application components will reside for the configuration. The default value is based on the value specified for <i>Base Directory</i> on the previous panel. To specify another location for application components, change the value for this field.
Profile & Admin Directory	This indicates where user profiles and administration files will reside. The default value is based on the value specified for <i>Base Directory</i> . To specify another location for application components, change the value for this field.

<b>Configuration Parameters</b>	
EDACONF suffix	<p>You are prompted for this information <i>only</i> if you are configuring an <i>additional</i> instance of a server type (for example, if you are configuring a second instance of a WebFOCUS Reporting Server).</p> <p>Each server instance must have its own set of configuration libraries. To guarantee this, and to prevent a new set of configuration libraries from overwriting an existing set, the suffix that you specify here will be appended to the name of the server type qualifier. For example, if you are configuring the second instance of a WebFOCUS Reporting Server, you could specify that the suffix "1" be added, so that the EDACONF high-level qualifier would be:</p> <p><code>IADMIN.SRV77.WFS1</code></p> <p>You can add a new configuration as a numeric or string suffix to the base server type. If you supply a string, the installation procedure ignores any numeric suffix. For a:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Numeric suffix, 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.</li> <li><input type="checkbox"/> String suffix, enter a string of between 1 and 5 characters (for example, TEST, PROD, or DEV). The string cannot contain embedded spaces.</li> </ul> <p>You can also use the string suffix to extend the numeric numbering past 9. Just supply a number greater than 9.</p> <p>If you change the suffix value, when you press Enter, the panel refreshes with a new value for EDACONF Library.</p>
Server System Userid	<p>This shows the default value, ISERVER. To change this value, see the requirements in <a href="#">Step 2. Set Up User IDs</a> on page 116.</p>
HTTP Listener Port	<p>This indicates the port number that the server will use for HTTP. It is the first of three connection ports that must be available to the server.</p> <p>For example, if you choose port 8101, then ports 8101, 8102, and 8103 are used by the server. Ensure that you choose ports that are not currently being used.</p>

Configuration Parameters	
TCP Base Port	<p>This is the port number of the TCP Listener.</p> <p>The default is one less than the port specified for the HTTP Listener, but it can be any port number other than the three reserved for HTTP.</p>
EDACONF Library	<p>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 <i>high_level_qualifier</i>.HOME.DATA, this field will have the default value <i>high_level_qualifier.server_type</i>.DATA (where <i>server_type</i> is based on license key).</p> <p>If you are adding a configuration for a server type that has already been configured, the default value will reflect the EDACONF suffix value.</p> <p>If you used another name to unload the first data set, this field will be blank.</p> <p>On subsequent running of ISETUP, the previous value used will be displayed. Change the value as necessary.</p>
Unit/Volume	<p>You are prompted for this information <i>only</i> if you are configuring the <i>first</i> instance of a server type (for example, if you are configuring the first instance of a WebFOCUS Reporting Server).</p> <p>These show the values that the installation process will use to allocate the output libraries. If necessary, you can change these to site-specific values.</p>

- 11.** Press Enter to continue to the next panel.

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 12. Otherwise, skip to Step 13.

**12** 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 127.

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 JSCOM3 Listener configuration panel opens.

**13** Configuration of the JSCOM3 Listener is either optional or mandatory depending on which adapters were selected. If any Java-based adapters were selected (EJB, Call Java, JDBC, MS SQL Server), the configuration is mandatory.

- a. The panel will prompt for the path to the Java environment to be passed to either JDK\_HOME or IBI\_JNIPATH, as described in [JVM Requirements for the Listener for Java](#) on page 111.
- b. If no Java-based adapters were select, this configuration might still be desirable to enable server-side graphics and Adobe® Flex® features. To skip the configuration, leave the path blank.
- c. Press Enter to continue to the next panel.

The New Century Corporation Demonstration Files panel opens.

**14** In the New Century Corporation Demonstration Files panel, type Y next to the desired language. (Only English is available.) If you do not want to install any Century Corp demo files, retain the default value of N next to the language.

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

- N** to return to the initial panel 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.

**16** As the job is processed, validate the installation as described in [Step 2. Validate the Installation](#) on page 174.

## Step 2. Validate the Installation

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).

Job	Description
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.

Member	Description
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 <i>sdnnnnn</i> 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 batch JCL for auxiliary functions, and are also created in the configuration library.

Member	Description
CMRUN	JCL to run DataMigrator batch jobs.
DB2V8PRM	DB2 version 8 DBRM referenced in GENDB2 JCL.

Member	Description
DB2V9PRM	DB2 version 9 DBRM referenced in GENDB2 JCL.
DB2V10PR	DB2 version 10 DBRM referenced in GENDB2 JCL.
GENDB2	JCL to bind the DB2/CAF plan.
IIMSBMP	Example JCL to run the IMS/XMI server job in BMP mode.
IIMSDLI	Example JCL to run the IMS/XMI server job in DLI mode.

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

Member	Description
IWAYS	A started task that starts the server.
IWAYP	A started task that stops the server.
EDAPRMP	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.

Directory Structure	Description
<code>/u/iadmin/ibi/srv77/tape</code>	Contains HFS files from the input media.
<code>/u/iadmin/ibi/srv77/install</code>	Working directory for the installation process. Log and error files reside here.
<code>/u/iadmin/ibi/apps</code>	The installation creates <i>baseapp</i> and one or more sample application directories under this directory.
<code>/u/iadmin/ibi/profiles</code>	This is where user profiles are created, as well as <i>admin.cfg</i> .
<code>/u/iadmin/ibi/srv77/home</code>	Server system directories are created under this directory.

Directory Structure	Description
<p><code>/u/iadmin/ibi/srv77/server_type</code></p>	<p>Configuration directories are created under this directory. The license key specified in the ISETUP procedure determines <code>server_type</code>.</p> <p><code>server_type</code> is one or more of the following:</p> <ul style="list-style-type: none"> <li><code>FFS</code> for a Full-Function Server</li> <li><code>DM</code> for a DataMigrator Server</li> <li><code>WFS</code> for a WebFOCUS Reporting Server</li> <li><code>WFM</code> for a Shared Application Server for WebFOCUS Maintain</li> </ul>

## Upgrading Your Server Release for HFS

### In this section:

- Step 1. Access the Installation Software
- Step 2. Run ISETUP
- Step 3. Test the Server Installation
- Step 4. Reconfigure Server Security
- Step 5. Reconfigure Adapters

Use this option to upgrade a server to a new maintenance level within the same major release. A major release is indicated by the first two digits of the release number.



## Step 1. Access the Installation Software

### How to:

Unload the Installation Software From Tape

Download the Installation Software Using FTP

### Reference:

Optional Low-Level Qualifier Changes

Default Low-Level Qualifiers

You can choose to access the server installation software using either

- ❑ **Tape.** The software is provided on a 3490 or 3590 cartridge.  
You must unload the installation data set from the tape before you can run the installation. This is how most installations are performed.
- ❑ **FTP.** You download the installation software from the Information Builders FTP site.  
Downloading the installation software involves:
  - 1. Registering** at the Information Builders FTP site.
  - 2. Downloading** the server installation data set from the site.
  - 3. Running** the isetup procedure to complete the download process and install the server.

### Procedure: How to Unload the Installation Software From Tape

The software is provided on a cartridge in 3490 or 3590 format with MVS PDSs. Perform the following to unload the installation data set from the tape:

- 1.** Log on to TSO.
- 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.

**Note:** If you do not use HOME.DATA, then change the following line to reflect the value you used.

```
//          SET  EDAUSSD= 'HOME . DATA '
```

Do this before you run ISETUP.

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,(5,5,25)),
// 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 data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server. However, you can use any site-specific value.

For PDS, we recommend retaining the low-level qualifier HOME.DATA, but you can change this to any site-specific value. If you use a low-level qualifier other than HOME.DATA, you must then edit member PDSSNAME to change the string "HOME.DATA" to the low-level qualifier you specify here.

*cart*

Is the unit type of the tape drive. Common names include 3490, TAPE, and 3590. 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 2. Run ISETUP](#) on page 180.

**Procedure: How to Download the Installation Software Using FTP**

To download the installation software:

- 1.** Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
- 2.** Click *My Downloads* in the My Account section on the right side of the page.  
The Downloads, Upgrades, Service Packs, and PTFs page opens.
- 3.** Click the link for your product (for example, WebFOCUS and iWay Server and iWay Client).  
The Downloads by Release page for your product opens.
- 4.** Click your release from the Current Production Releases list.  
The Software Downloads page for your release opens.
- 5.** Scroll down and find the platform on which you want to install the server, and then click *Download* to the right of the platform name.
- 6.** Fill in the registration form and then click *Continue*.  
The Software Download Agreement page opens.
- 7.** Select *I agree...* to consent to the Download Agreement, and then click *Continue*.  
The Download Instructions page opens. Select AUTOMATIC or MANUAL and follow the relevant instructions.  
A copy of the instructions is automatically emailed to you for later reference.
- 8.** Log on to TSO.
- 9.** Follow the instructions on the Download Page in your TSO session.
- 10.** Review [Optional Low-Level Qualifier Changes](#) on page 180. If you did not restore the first data set as HOME.DATA (see download instructions) then change the following line to reflect the data value you used:  

```
//          SET  EDAUSSD= 'HOME.DATA'
```
- 11.** Run the ISETUP procedure.  
Specify *(F)tp* for Input Source on the second panel.  
Note that after the server is properly installed, you can optionally delete any downloaded temporary files.  
Continue with [Step 2. Run ISETUP](#) on page 180.

## Reference: Optional Low-Level Qualifier Changes

We recommend retaining the default low-level qualifiers that are supplied for the installation libraries. However, if you need to change any of them (for example, to conform to site-specific naming conventions), you can do so by editing them in member USSSNAME of *high\_level\_qualifier*.HOME.DATA. You can see a list of the qualifiers in [Default Low-Level Qualifiers](#) on page 180.

**Caution:** If you change any low-level qualifiers and do not reflect those changes exactly in USSSNAME, you will experience problems with the server installation and operation.

Once you have finished changing any names, continue with [Step 2. Run ISETUP](#) on page 180.

## Reference: Default Low-Level Qualifiers

The following low-level qualifiers are set in *high\_level\_qualifier*.HOME.DATA(PDSSNAME):

```
//      SET  EDAUSSD= 'HOME.DATA'           Server installation library
//      SET  EDAUSSL= 'HOME.LOAD'          Server base load library
//      SET  FFSUSSD= 'FFS.DATA'           Full Function server
//      SET  WFSUSSD= 'WFS.DATA'           WebFocus Reporting server
//      SET  ETLUSSD= 'DM.DATA'            DataMigrator
//      SET  WFMUSSD= 'WFM.DATA'           WebFocus Maintain Server
//      SET  CGWUSSD= 'CGW.DATA'           Communications Gateway
//      SET  CLNUSSD= 'CLN.DATA'           Client
//      SET  EDACICS= 'HOME.CICS.LOAD'     CICS load library
```

## 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 z/OS. This JCL job retrieves the remainder of the MVS libraries and HFS files from the media.

1. Execute the ISETUP member of your *high\_level\_qualifier*.HOME.DATA using ISPF option 6.  
The Installation and Configuration panel opens.
2. Select 1 for HFS deployment and press Enter to continue to the next panel.
3. Complete the panel as follows.

Field	Instructions
Enter selection	Choose option 3, <i>Refresh Installation</i> .

Field	Instructions
Enter License Key	Enter the 10-digit license key that was provided with the software.
Input source	<p>Choose the Input source, T for tape, D for disk (see note), or F for automatic FTP download direct to MVS.</p> <p><b>Note:</b> If you downloaded the server software using FTP to another platform and then manually transferred the files to MVS, choose <i>D</i> and, on the next panel, provide the directory name where the transferred files reside.</p>
Number of CPUs online	Shows the current number of general use processors currently online. It cannot be changed. This value is going to be matched with the licensed number of CPUs provided in the License Key, when the installation job is submitted. At this point this verification is not being enforced and if the licensed number does not match the actual number of CPUs currently online, a warning will be issued and the installation job will continue.
Installation Userid	Shows the current logon ID. It cannot be changed.
Administration Userid	<p>Initially, this field shows the same ID as the installation user ID.</p> <p>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.</p>
Umask setting to use	<p>Shows the current umask setting for the iadmin ID. The JCL passes this setting to the server for use at run time.</p> <p>Every time the server creates a file in the <code>.../ibi/profiles</code> or <code>.../ibi/apps</code> 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 do not want to grant.</p> <p>For example, if you specify a umask value of 0022, the server create files with the permissions 644: umask 0022 is subtracted from the default 666, disallowing the group and world write permissions.</p>

Field	Instructions
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, <i>jobnameA</i> , <i>jobnameB</i> , <i>jobnameC</i> , 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 <i>Enter Job Card information</i> field. The JOB card information that you enter will be used for each job that is submitted.

If you used the same user ID for both installation and administration, skip to Step 7. Otherwise, continue with the following step.

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

This panel appears 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 follows.

Field	Instructions
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, <i>jobnameA</i> , <i>jobnameB</i> , <i>jobnameC</i> , and so on) in the JCL generated by the installation procedure.

Field	Instructions
Override JOB name checking	To provide your own JOB card information, including JOB name, enter Y and provide valid JOB card information in the <i>Enter Job Card information</i> field. The JOB card information that you enter will be used for each run-time job that is created.

6. If you selected input source T or D, skip to Step 7.

If you selected F for automatic FTP only, complete the panel as follows.

Field	Instructions
FTP Download Directory	Directory to be used as the target for the FTP files. This directory must already exist.
FTP Userid	User ID provided on the download instructions.
FTP Password	Password provided on the download instructions.

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

Field	Instructions
HFS Base Directory	Base directory of the current server that is to be refreshed. The value will be checked to see if it contains a valid server directory structure. (It should contain <i>.../ibi/srvxx/home/bin</i> where <i>xx</i> is the major release level.) From this value, the current installation library name is obtained and this will be the location used to create the refresh JCL.

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

Field	Instructions
<b>Input Media (installing from tape)</b>	
Volume serial number	Provide the volume serial number of the server media. 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.  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= <i>volume</i> '.
<b>Input Media (installing from disk)</b>	
Directory name of input	Provide the name of the directory in which the installation files reside.
<b>MVS Installation Libraries</b>	
EDAHOME Library	This is the full data set name the installation procedure will use to allocate the EDAHOME load library on MVS and where the refresh load modules will be stored. If you are running from <i>high_level_qualifier</i> .HOME.DATA, this field will have the default value <i>high_level_qualifier</i> .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.
Refresh IBISAMP?	Select Y/N to refresh the contents of the IBISAMP application .
Application Directory	If Y was selected above, enter the path to IBISAMP to be refreshed.



**Note:** The EDACONF Library name is where the refresh JCL will be created. This library is the current server installation library. The value cannot be changed.

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

- N** to return to the initial panel 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.

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

The following jobs are added to the current server's configuration library:

Job	Description
<pre> ISETUPJ3 ISOPTS3 </pre>	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:

Directory	Description
<code>/u/iadmin/ibi/srv77/tape</code>	Contains HFS files from the input media.
<code>/u/iadmin/ibi/srv77/install</code>	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:
 

```
(EDA13023) ALL INITIAL SERVERS STARTED
```
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 going to the Web Console menu bar, selecting *Workspace*, and then *Stop*.

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

## Step 4. Reconfigure Server Security

### In this section:

Preventing Unsecured Server Starts After Upgrades

For information about configuring server security, see [Step 7. Configure Server Security](#) on page 151.

To reconfigure server security to OPSYS mode only:

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 EDHOME directory, change file attributes by entering the following TSO commands in ISPF Command Shell (option 6):

```
OSHELL extattr +a /u/iadmin/ibi/srv77/home/bin/tscom300.out
OSHELL extattr +a /u/iadmin/ibi/srv77/home/bin/tsqprx.out
```

3. Verify your changes by issuing the following command:

```
OSHELL ls -E /u/iadmin/ibi/srv77/home/bin/tscom300.out
OSHELL ls -E /u/iadmin/ibi/srv77/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 185.

This step will need to be repeated after any sever upgrade since these files are replaced during upgrade.

### Preventing Unsecured Server Starts After Upgrades

If the explicit environment variable EDAEXTSEC is set to OPSYS (or ON) and the server cannot impersonate users because it lacks platform-specific authorization steps, the server start aborts and error messages are written to the edaprint log.

This feature prevents an unsecured server start after a software upgrade if any of the required post-upgrade, reauthorization steps are missed on a UNIX, IBM i, or z/OS HFS deployment. This is not applicable to other platforms. The setting may be placed in any normal server start-up shell or profile that a site is using or in the server edaenv.cfg configuration file. The messages vary slightly by platform.

The edaprint messages are:

```
Configured security is 'ON' as set by EDAEXTSEC variable.
Server is not APF-authorized.
Workspace initialization aborted.
(EDA13171) UNABLE TO START SERVER
```

### 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.

Adapter	Steps After Updating Binaries
Adabas	<ul style="list-style-type: none"> <li>❑ Re-enable the module containing SVC using the Web Console adapter configuration page.</li> <li>❑ Test the adapter from the adapter page before running your applications.</li> </ul>
DB2 CAF	<ul style="list-style-type: none"> <li>❑ Rebind the DB2 plan using the Web Console adapter configuration page.</li> <li>❑ Test the adapter from the adapter page before running your applications.</li> </ul>

## Migrating From an MVS Server for HFS

### **In this section:**

Installation and Configuration  
Server JCL  
Data File Allocations  
FOCUS Files on a FOCUS Database Server  
Global Configuration Settings  
Service Settings  
Mapping Existing Applications to a Server on z/OS  
Enabling Tracing on the Server  
Server Profiles  
Configuring Adapters  
Metadata  
Starting the Server Console  
Media  
Configuring a Secured Server  
GETUSER Subroutine  
MSODDX: DDNAME Translation for User Subroutines  
WLM Enclave Feature  
Agent Services  
SMF Records

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 and it can read and write sequential files and FOCUS files, both locally and using the FOCUS Database Server (FDS). The DYNAM command is fully supported in server Release 5.2.8 and higher, except for:

- ❑ Full PDS copies in DYNAM COPY. Single member copies and sequential data set copies are supported.
- ❑ DYNAM COMPRESS.

To migrate application components (Master Files, Access Files, and FOCXECs):

1. Transfer the following allocations from your MVS server JCL to IRUNJCL: MASTER, FOCXEC, 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 z/OS equivalents of MVS parameters as described in the following sections.

For new applications, your files (Master, Access, and FOCXEC) 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.

### □ 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)
//*

```

## ❑ 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 using DYNAM or JCL.

### ❑ z/OS

#### PDS+

Existing Master Files and Access Files can be read from existing JCL or DYNAM allocations.

New applications can reside on UNIX System Services, or on native MVS allocations.

#### VSAM, FIXED, and FOCUS

R/W Access to files using 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 z/OS

The server for z/OS UNIX System Services 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 server for z/OS UNIX System Services.

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 servers from which, and to which, you are migrating:

#### ❑ **MVS** (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
```

#### ❑ **z/OS** (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 server for z/OS UNIX System Services communication configuration file (odin.cfg).

The node name FOCSU01, which is automatically defined in odin.cfg during 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 PERM 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
```

You can issue the following USE command in association with any of these allocation methods:

```
USE
CAR ON FOCUSU01
END
```

### **Example: Legacy FOCUS Database Server Under 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 FOC SBS, which runs as a batch job separate from the current version of the FOCUS Database Server:

```
USE
CAR ON FOC SBS
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 node block in the server for z/OS UNIX System Services communication configuration file (odin.cfg):

```

NODE=FOCSBS      <---node name of legacy FOCUS Database Server
BEGIN
  PROTOCOL=SBS
  SUBSYS = xyzw  <---optional parameter to specify the IBI subsystem name
  CLASS=SUCLIENT      (not needed if you are using the name IBIS)
  PORT=X.Y.Z        <---communications data set
END

```

## Global Configuration Settings

### How to:

Support Long Synonym Names Using DYNAM SET LONGSYNM

In configuration file, EDASERVE.CFG.

#### ❑ MVS

```

high_level_qualifier.install.data(EDASERVE)

EXTSEC
= OFF|OPSYS
SMFNUM
= 254
FASTLOAD
= **AUTO**
LONGSYNM
= ON (default in 5.3+. Replaced by DYNAM SET LONGSYNM on z/OS)
LICENSE
= 999-999-9999-99
STORAGEABOVE
= 4096
STORAGEBELOW
= 512
SZERO=YES
APFAUTH=INTERNAL

```

#### ❑ z/OS

```

/ibi/srv77/ffs/bin/edaserve.cfg

```

```

edahome = /u/iadmin
license = 999-999-9999-99
approot = /ibi/edauss/TEST/apps
server_name = "IWAY 77 Full Function Server"
cfg_date = 07/24/2002 19:14:46
smf_recno=255

```

Currently not applicable:

```

STORAGEABOVE = 4096
STORAGEBELOW = 512
FASTLOAD=**AUTO**

```

### **Syntax:** How to Support Long Synonym Names Using DYNAM SET LONGSYNM

The server supports synonym names up to 64 characters. However, PDS member names cannot exceed eight characters. The server accounts for this operating environment limitation with the command DYNAM SET LONGSYNM.

A synonym comprises a Master File and, usually, an Access File. When you create a synonym with a name exceeding eight characters, the LONGSYNM setting currently in effect determines how the long name of the Master File and of the Access File will be handled.

You can issue DYNAM SET LONGSYNM anywhere SET commands are valid, including the global server profile (edasprof.prf) and a stored procedure (FOCEXEC).

DYNAM SET LONGSYNM, on servers running on z/OS, corresponds functionally to the server configuration file keyword LONGSYNM on servers running on MVS.

The syntax is

```
DYNAM SET LONGSYNM {HFS|MVS|MATCH}
```

where:

#### HFS

Specifies that each synonym whose name is longer than eight characters will be created in an HFS directory. This is the default.

#### MVS

Specifies that when you save a synonym with a name exceeding eight characters, the server truncates the name, preserving up to the first six characters, followed by a left curly brace (}) and a suffix number that ensures the uniqueness of the name. (The server preserves the original long name within the synonym files.)

For example, if you create a Master File named VERYLONGNAMETEST, it will be saved as VERYLO{0. If you then create a Master File named VERYLONGNAMEPROD, it will be saved as VERYLO{1.

The server chooses a suffix number by taking the next unused number in the sequence for that truncation of a Master File or Access File name. If the next number available for the Master File is different than that available for the Access File, the files will be created with different numbers. For example, if the highest Master File name truncated to VERYLO is VERYLO{8, and the highest Access File name truncated to VERYLO is VERYLO{5, and you create a synonym specifying the name VERYLONGNAMEAGAIN, the new Master File will be saved as VERYLO{9, and the new Access File will be saved as VERYLO{6.

#### MATCH

Works the same as the MVS setting, except that it ensures that the truncated names of a Master File and Access File of a synonym will always match. That is, they will be named using the same suffix number.

In the example provided for the MVS setting, if SET LONGSYNM had instead been set to MATCH, both the new Master File and the new Access File would have been named VERYLO{9.

Matching names may be a convenience for some people if they manually manage synonym files. However, it is less efficient than the MVS setting.

## Service Settings

### □ MVS

```
high_level_qualifier.install.data(EDASERVE)

SERVICE           = EDAUSER
PROGRAM            = TSCOM3
NUMBER_READY       = 0
DEPLOYMENT         = PRIVATERE
FRESH_LIMIT        = 100
MAXIMUM            = 3|
IDLELIM           = -1
CPU_LIMIT          = 15
MEMORY_LIMIT_ABOVE = nnn
MEMORY_LIMIT_BELOW = nnn
WLM_ENCLAVE_TRNAME = wlm_enclave_trnam
LE_STACK           = BELOW
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.

## □ z/OS

```
/ibi/srv77/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`.

`LE_STACK` is not supported under z/OS. If you are running subroutines linked with `AMODE(24)`, they must be relinked with `AMODE(31)`.

## Mapping Existing Applications to a Server on z/OS

### Reference:

Procedure for Mapping One Application to a Server on z/OS

Procedure for Mapping Multiple Applications to a Server on z/OS

To map existing application PDSs to a server running on z/OS, you can run a procedure from a profile or a FOCEXEC.

### Reference: Procedure for Mapping One Application to a Server on z/OS

The following procedure maps a single application to a server running on z/OS.

Note that the APP MAP command must be coded as a single line.

```
-SET &MVSROOT=SSCTLAPP.ROOT;      (SSCTL APPROOT= value on EDASERVE DD)
-SET &APP=XYZ;                    (application name on SSCTL)
```

```
APP MAP &APP mas=//dd:&APP.MAS;fex=//dd:&APP.FEX;acx=//dd:&APP.ACX;
htm=//dd:&APP.HTM;sty=//dd:&APP.STY;gif=//dd:&APP.GIF;etg=//dd:&APP.ETG;
mnt=//dd:&APP.MNT;fcm=//dd:&APP.FCM;wfm=//dd:&APP.WFM
```

```
DYNAM ALLOC FI &APP.MAS DA &MVSROOT...&APP...MASTER.DATA SHR REU
DYNAM ALLOC FI &APP.ACX DA &MVSROOT...&APP...ACCESS.DATA SHR REU
DYNAM ALLOC FI &APP.FEX DA &MVSROOT...&APP...FOCEXEC.DATA SHR REU
DYNAM ALLOC FI &APP.HTM DA &MVSROOT...&APP...HTML.DATA SHR REU
DYNAM ALLOC FI &APP.STY DA &MVSROOT...&APP...FOCSTYLE.DATA SHR REU
DYNAM ALLOC FI &APP.GIF DA &MVSROOT...&APP...GIF.DATA SHR REU
DYNAM ALLOC FI &APP.ETG DA &MVSROOT...&APP...ETG.DATA SHR REU
DYNAM ALLOC FI &APP.FCM DA &MVSROOT...&APP...FOCCOMP.DATA SHR REU
DYNAM ALLOC FI &APP.MNT DA &MVSROOT...&APP...MAINTAIN.DATA SHR REU
DYNAM ALLOC FI &APP.WFM DA &MVSROOT...&APP...WINFORMS.DATA SHR REU
```

```
APP APPENDPATH &APP (alternatively, APP PREPENDPATH &APP)
```

**Reference: Procedure for Mapping Multiple Applications to a Server on z/OS**

The following procedure maps multiple applications to a server running on z/OS.

Note that the APP MAP command must be coded as a single line.

```
-SET &MVSROOT=SSCTLAPP.ROOT;          (SSCTL APPROOT= value on EDASERVE DD)
-REPEAT MAPPING FOR &CNT FROM 1 TO n (where n is the number of applications)
-SET &APP = DECODE &CNT (1 'appname1' 2 'appname2' 3 'appname3');
      (where appname is the name of an application on the MVS server)
```

```
APP MAP &APP mas=//dd:&APP.MAS;fex=//dd:&APP.FEX;acx=//dd:&APP.ACX;
htm=//dd:&APP.HTM;sty=//dd:&APP.STY;gif=//dd:&APP.GIF;etg=//dd:&APP.ETG;
mnt=//dd:&APP.MNT;fcm=//dd:&APP.FCM;wfm=//dd:&APP.WFM
```

```
DYNAM ALLOC FI &APP.MAS DA &MVSROOT...&APP...MASTER.DATA SHR REU
DYNAM ALLOC FI &APP.ACX DA &MVSROOT...&APP...ACCESS.DATA SHR REU
DYNAM ALLOC FI &APP.FEX DA &MVSROOT...&APP...FOCEXEC.DATA SHR REU
DYNAM ALLOC FI &APP.HTM DA &MVSROOT...&APP...HTML.DATA SHR REU
DYNAM ALLOC FI &APP.STY DA &MVSROOT...&APP...FOCSTYLE.DATA SHR REU
DYNAM ALLOC FI &APP.GIF DA &MVSROOT...&APP...GIF.DATA SHR REU
DYNAM ALLOC FI &APP.ETG DA &MVSROOT...&APP...ETG.DATA SHR REU
DYNAM ALLOC FI &APP.FCM DA &MVSROOT...&APP...FOCCOMP.DATA SHR REU
DYNAM ALLOC FI &APP.MNT DA &MVSROOT...&APP...MAINTAIN.DATA SHR REU
DYNAM ALLOC FI &APP.WFM DA &MVSROOT...&APP...WINFORMS.DATA SHR REU
```

```
APP APPENDPATH &APP      (alternatively, APP PREPENDPATH &APP)
MAPPING
```

**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
```

**❑ z/OS**

IBITRACE allocation is not needed. There are two ways to enable tracing:

- 1.** On the Web Console, by going to the Web Console menu bar, selecting Workspace, and then Diagnostics.
- 2.** Submit the ITRCON JCL job.

For additional diagnostics, see [Troubleshooting for HFS](#) on page 222.

## Server Profiles

### How to:

Allocate Temporary Files to MVS Data Sets

### Reference:

System Defaults for Allocating Temporary Files to MVS Data Sets

#### ❑ MVS

```
high_level_qualifier.EDAPROF.DATA(Fuserid)
```

Metadata Allocations:

```
DYNAM ALLOC FILE EDASYNA SHR REU -
  DATASET EDADMA.V7R1M07.EDADMA.EDASYNA.DATA
DYNAM ALLOC FILE EDASYNM SHR REU -
  DATASET EDADMA.V7R1M07.EDADMA.EDASYNM.DATA
DYNAM ALLOC FILE EDASYNR SHR REU -
  DATASET EDADMA.V7R1M07.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=bufferize
SET SLIM=n
SET CACHE={0|n}
SET EXTSORT={OPSYS|OFF}
SET CDN={ON|OFF}
SET LANGUAGE=language
SET SMARTMODE={ON|OFF}
SET SQLENGINE=sqlengine
```

#### ❑ z/OS

```
/ibi/srv77/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}
```

**DYNAM and 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)
DYNAM SET LONSYNM HFS    (default; long synonyms go to HFS)
DYNAM SET LONSYNM MVS    (long synonyms go to MVS)
DYNAM SET LONSYNM MATCH (as for MVS, but short aliases must match between Master
                          File and Access File)
```

```
SET BLIM=buffer size
SET SLIM=n
SET CACHE={0|n}
SET EXTSORT={OPSYS|OFF}
SET CDN={ON|OFF}
SET LANGUAGE=language
SET SMARTMODE={ON|OFF}
SET SQLENGINE=sqlengine
```

### **Syntax:** How to Allocate Temporary Files to MVS Data Sets

To alter the default allocation parameters for temporary files for MVS data sets, issue the following command

```
DYNAM SET TEMP[ALLOC] FOR type dynam_parms
```

where:

**ALLOC**

Is the optional remainder of the TEMPALLOC keyword. You can include it for readability; it has no effect on the command.

*type*

Is one of the following types: FOCUS, FOCSORT, HOLD, HOLDACC, HOLDMAST, OFFLINE, REBUILD, or SAVE.

*dynam\_parms*

Is one or more of the regular DYNAM ALLOC parameters to be used as default for that type. Note that DCB parameters, if provided here, will be ignored, since they must be compatible with the file type being written.

This is similar to the functionality of IBITABLA in the server on MVS. The defaults should be overwritten for all cases when in older versions a private copy of IBITABLA existed containing different values.

**Reference: System Defaults for Allocating Temporary Files to MVS Data Sets**

System defaults for HOLDMAST and HOLDACC are:

TRKS 5 5 DSORG PO DIR 36 NEW REU

System defaults for all other types are:

CYLS 5 10 DSORG PS NEW REU

**Configuring Adapters**

In z/OS, you configure all adapters using the Web Console.

Adapter	MVS	Information you must provide
Adabas	Edit and run <i>high_level_qualifier</i> .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.	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> </ul> 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. 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	Allocate the CA-DATACOM load library to your STEPLIB. Create a DATACOM URT. Create a server-side URT. Create synonyms using the Auto tool.	Provide the data set names for the following STEPLIB allocations: <ul style="list-style-type: none"> <li><input type="checkbox"/> CUSLIB load library</li> <li><input type="checkbox"/> CAILIB load library</li> <li><input type="checkbox"/> utility library</li> <li><input type="checkbox"/> URT library</li> </ul>

Adapter	MVS	Information you must provide
CA-IDMS (both DB and SQL)	Allocate the CA-IDMS: <ul style="list-style-type: none"> <li><input type="checkbox"/> Load library.</li> <li><input type="checkbox"/> DBA load library.</li> <li><input type="checkbox"/> SYSIDMS library.</li> <li><input type="checkbox"/> SYSCTL library.</li> </ul> <p><b>For CA-IDMS/SQL only:</b></p> Edit and run <i>high_level_qualifier.EDALIB.DATA</i> (GENEIDQ) to link module IDQFOC.	Provide the data set names for the following STEPLIB allocations: <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> <li><input type="checkbox"/> DBA load library</li> </ul> Provide the data set names to which the following ddnames are allocated: <ul style="list-style-type: none"> <li><input type="checkbox"/> SYSIDMS. Check with your CA-IDMS DBA regarding this ddname.</li> <li><input type="checkbox"/> SYSCTL. Is the library corresponding to the central version you want to use.</li> </ul>
CICS Transaction	This adapter is not available on the server under MVS.	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> CICS EXCI load library</li> </ul>
DB2 CAF	Edit and run <i>high_level_qualifier.EDALIB.DATA</i> (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.	Provide the data set names for the following STEPLIB allocations: <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNLOAD load library</li> </ul> For security information, see <a href="#">DB2 Security Exit Configuration for HFS</a> on page 160. <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNEXIT load library (optional)</li> </ul> Provide the following information for DB2 BIND: <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNCLIST dataset name.</li> <li><input type="checkbox"/> DB2 REL type either 8 or 9 or 10.</li> <li><input type="checkbox"/> DB2 plan name.</li> <li><input type="checkbox"/> DB2 SSID.</li> </ul> The installation will generate a fully customized DB2 BIND job and configure the adapter. DB2 CAF will be ready to use once the BIND job is executed. The configuration can be modified later using the Web Console, if necessary.

Adapter	MVS	Information you must provide
DB2 CLI	This adapter is not available on the server under MVS.	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNLOAD load library</li> </ul> <p>For security information, see <a href="#">DB2 Security Exit Configuration for HFS</a> on page 160.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNEXIT load library (optional)</li> </ul> <p>Provide a value for the following environment variable:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNAOINI, which contains the full path and file name of the DB2 CLI .ini file.</li> </ul>
EJB	This adapter is not available on the server under MVS.	<p>You must have the JDK installed.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CLASSPATH. Provide the paths of the .jar files that you want to access. These paths will be appended to CLASSPATH.</li> </ul> <p>If you are deploying the adapter to access an EJB on a:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> WebLogic server, specify the following path: <code>/pathspec/weblogic.jar</code></li> <li><input type="checkbox"/> WebSphere server, specify the following paths: <code>/pathspec/websphere.jar</code> <code>/pathspec/ejbcontainer.jar</code> (one for each EJB container)</li> <li><input type="checkbox"/> This adapter requires configuration of the JSCOM3 listener. The path to JVM must be provided using either JDK_HOME or IBI_JNIPATH. The installation will prompt for it.</li> </ul>

Adapter	MVS	Information you must provide
Call Java	This adapter is not available on the server under MVS.	<p>You must have the JDK installed.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CLASSPATH. Provide the paths of the .jar files that you want to access. These paths will be appended to CLASSPATH.</li> <li><input type="checkbox"/> This adapter requires configuration of the JSCOM3 listener. The path to JVM must be provided using either JDK_HOME or IBI_JNIPATH. The installation will prompt for it.</li> </ul>
IMS	Allocation of IMS loadlibs in STEPLIB.	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DFSPZP load library (optional; not needed if PZP modules are stored in the DFSRESLB library)</li> <li><input type="checkbox"/> DFSRESLB load library</li> </ul>
JDBC	This adapter is not available on the server under MVS.	<p>You must have the JDK installed.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CLASSPATH. Provide the paths of the .jar files that you want to access. These paths will be appended to CLASSPATH.</li> <li><input type="checkbox"/> This adapter requires configuration of the JSCOM3 listener. The path to JVM must be provided using either JDK_HOME or IBI_JNIPATH. The installation will prompt for it.</li> </ul>

Adapter	MVS	Information you must provide
Microsoft SQL Server	This adapter is not available on the server under MVS.	<p>Select the Call Java adapter, in addition to the Microsoft SQL Server adapter, in Step 10 of <a href="#">Optional Low-Level Qualifier Changes</a> on page 137.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CLASSPATH. Provide the paths to the following files; these paths will be appended to CLASSPATH. <ul style="list-style-type: none"> <li><input type="checkbox"/> msbase.jar</li> <li><input type="checkbox"/> mssqlserver.jar</li> <li><input type="checkbox"/> msutil.jar</li> </ul> </li> <li><input type="checkbox"/> This adapter requires configuration of the JSCOM3 listener. The path to JVM must be provided using either JDK_HOME or IBI_JNIPATH. The installation will prompt for it.</li> </ul>
Millennium	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> </ul>	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> </ul>
Model 204	Edit and run <i>high_level_qualifier</i> .EDALIB.DATA (GENE204)	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> </ul>
MQSeries	Provide the data set names for the following STEPLIB allocations: <ul style="list-style-type: none"> <li><input type="checkbox"/> SCSQLOAD load library</li> <li><input type="checkbox"/> SCSQAUTH load library</li> </ul>	Provide the data set names for the following STEPLIB allocations: <ul style="list-style-type: none"> <li><input type="checkbox"/> SCSQLOAD load library</li> <li><input type="checkbox"/> SCSQAUTH load library</li> </ul>

Adapter	MVS	Information you must provide
Oracle	<p>Edit and run <i>high_level_qualifier</i>.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.</p> <p>Add appropriate load libraries to server JCL.</p>	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CMDLOAD load library</li> </ul> <p>Provide the data set name to which the following ddname is allocated:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> ORA\$LIB message library</li> </ul> <p>Provide values for the following environment variables:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> ORACLE_SID, which contains the Oracle SID.</li> <li><input type="checkbox"/> ORACLE_HOME, which contains the Oracle home directory.</li> <li><input type="checkbox"/> LIBPATH, which contains the Oracle lib directory's location. This is usually \$ORACLE_HOME/lib.</li> </ul> <p>The installation procedure adds the following DD statement to IRUNJCL</p> <pre>//ORA@osid DD DUMMY</pre> <p>where:</p> <pre>osid</pre> <p>Is the Oracle SID that is specified in the ORACLE_SID environment variable.</p>
Teradata	<p>Edit and run <i>high_level_qualifier</i>.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.</p>	<p>You do not need to provide any information.</p>
VSAM CICS	<p>This adapter is not available on the server under MVS.</p>	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> SDFHEXCI load library</li> </ul>

## Metadata

### MVS

Adabas, VSAM, IMS and IDMS use AUTOTOOLS to create Master File Descriptions (metadata). DB2, Oracle, Teradata metadata is created with CREATE SYNONYM.

❑ **z/OS**

Metadata for the following DBMS is created through 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).

❑ **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 3490 or 3590 format with MVS PDSs.

❑ **z/OS**

The server software is provided on a cartridge in 3490 or 3590 format with both MVS PDSs and HFS tar files.

## Configuring a Secured Server

❑ **MVS**

In EDASERVE member, set EXTSEC=OPSYs.

The *high\_level\_qualifier*.EDALIB.LOAD library used by the JCL must be APF-authorized.

❑ **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 EDASHOME 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/srv77/ home/bin/tscom300.out
OSHELL extattr +a /u/iadmin/ibi/srv77/home/bin/tsqprx.out
```

Verify your changes by issuing the following commands:

```
OSHELL ls -E /u/iadmin/ibi/srv77/home/bin/tscom300.out
OSHELL ls -E /u/iadmin/ibi/srv77/home/bin/tsqprx.out
```

The *high\_level\_qualifier*.HOME.LOAD library used by the JCL must be APF-authorized.

## GETUSER Subroutine

### ❑ MVS

Fully supported.

### ❑ z/OS

Supported with minor adjustments.

## MSODDX: DDNAME Translation for User Subroutines

On z/OS, you can incorporate an additional routine called MSODDX into a user-written subroutine that needs to access ddnames allocated to a WebFOCUS Reporting Server, a Data Migrator Server, or a Full-function Server. MSODDX provides ddname translation services that enable external programs to access files under the ddname used by the Server.

For details, see Chapter 6, *Platform-Specific Commands and Features*, in the *Stored Procedures Reference*.

## 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
```

### ❑ 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 218.

## 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

### How to:

- Report From SMF Data Using the Web Console
- Enable Accounting
- Set the Accounting Field

### Reference:

- SMF RECTYPES
- SMF Record Format for RECTYPES 1 and 4
- SMF Record Format for RECTYPES 2 and 5
- Accounting for DB2 in a Server Task

The server provides an optional facility to use for accounting purposes that enables you to log resource utilization on a per-user basis. This facility enables the server to generate SMF records for query-level and user-level accounting.

Server accounting requires that the server STEPLIB data sets be APF-authorized. When SMF records are generated, they contain:

- ❑ The logon ID and security ID of the user.
- ❑ The CPU time and EXCPs consumed.
- ❑ Data based on the type of record written.

You can process the SMF records using the accounting programs that exist at your site. Examples of SMF records are provided in [SMF Record Format for RECTYPES 1 and 4](#) on page 213.

In order to write SMF records, the server must be running APF authorized.

A Master File, SMFVSAM, is provided for accessing accounting statistics. It resides in *qualif.P.HOME.MAS*. SMFVSAM enables you to interpret the SMF records generated by the accounting facility using reporting requests or stored procedures. SMFVSAM is for logoff records only, as indicated by ALIAS=2 on the RECTYPE field entry.

The Web Console provides access to a sample report to query the SMF data. The code for this report can be found in *qualif.P.HOME.FEX* (SMFMAN1).

### **Syntax:** How to Enable Accounting

To enable accounting, insert the following statement into the server configuration file (*edaserve.cfg*):

```
smf_recno=smfnumber
```

where:

*smfnumber*

Is an integer in a range from 128 to 255, inclusive. This number represents the SMF number used by the accounting facility when it sends records to the SMF system.

By default, both RECTYPE pairs will be created when accounting is enabled. You can override the default by coding the following parameter on *edaserve.cfg*:

```
smf_subtype = {all|logon|query}
```

where:

*all*

Cuts all records. This is the default.

*logon*

Cuts logon records only (RECTYPE pair 1 and 2).

*query*

Cuts query records only (RECTYPE pair 4 and 5).

### **Syntax:** How to Set the Accounting Field

Up to 40 characters can be supplied that appear in the SMF records field SMFOFA40. The SET BILLCODE command can be used in any support server profile to provide the account field information. The syntax is

```
SET BILLCODE=value
```

where:

*value*

Is the 1–40 characters to be used on each SMF record produced.

This information can also be set dynamically from a client application by coding an RPC with the SET command and executing it with the value as a parameter. WebFOCUS users can send the SET command to the server.

**Procedure: How to Report From SMF Data Using the Web Console**

To report from SMF data using the Web Console:

1. Go to the Web Console menu bar, select *Procedures*.
2. In the left pane, open the *Reports* folder, then click *System Management*.

The View as text and Run options are displayed.

3. Click *Run*.

You are prompted for the DSN of the SMF VSAM data set to be reported from and the smf\_recno value used to produce the SMF records.

The report is displayed.

**Reference: SMF RECTYPES**

There are five RECTYPE values defined to produce SMF records:

RECTYPE	Description
1	Indicates a start of task record. When included in a report, these statistics tell when a task initiation occurred, and are of no particular use in chargeback. By pairing start and end of task records for all tasks within a time period, statistics such as average active time, peak task count, and average task count can be determined. These values can be used for future capacity planning activities for the server.
2	Indicates the start of a task record. When included in a report, these statistics tell when a task termination occurred. These records are cut for both publicly and privately deployed services and contain statistics for the subtask as a whole.  For privately deployed services, RECTYPE (2) records contain statistics associated with a single user connection.
4	Begin query. (Record layout is the same as RECTYPE (1).)
5	End query. (Record layout is the same as RECTYPE (2).)

**Reference: SMF Record Format for RECTYPES 1 and 4**

The record format for RECTYPES 1 and 4 of the SMF records written by the server is defined below. The format is provided in the system 390 assembler DSECT form.

```

SMFON      DSECT
           SPACE

*-----*
*  USAGE ACCOUNTING SMF RECORD LAYOUT FOR LOGON RECORDS.          *
*                                                                    *
*  THIS IS THE DSECT DESCRIBING THE SMF RECORD WHICH IS PASSED TO  *
*  YOUR EXIT ON AT USER LOGON TIME.  IT IS COMPLETELY READY TO BE  *
*  WRITTEN WHEN YOUR EXIT RECEIVES CONTROL.                        *
*-----*
           SPACE

*-----*
*  THE FIRST TWENTY FOUR BYTES OF THE RECORD ARE THE SMF HEADER.  *
*  THESE FIELDS ARE REQUIRED IN ALL SMF RECORDS (18 BYTES FOR RECORDS *
*  WITHOUT SUBTYPES; WE USE SUBTYPES, THE HEADER IS 24 BYTES).    *
*-----*
           SPACE

SMFONLEN DS      H'116'          RECORD LENGTH
SMFONSEG DS      XL2'0000'       SEGMENT DESCRIPTOR (0 UNLESS SPANNED)
SMFONFLG DS      XL1            SYSTEM INDICATOR
SMFONRTY DS      XL1            RECORD TYPE
SMFONTME DS      XL4            TIME, IN HUNDREDTHS OF A SECOND
SMFONDTE DS      PL4            DATE, 00CYDDDF, WHERE F IS THE SIGN
SMFONSID DS      CL4            SYSTEM IDENTIFICATION
SMFONSBS DS      CL4            SUBSYSTEM IDENTIFICATION
SMFONSBT DS      XL2'0001'       SUBTYPE OF RECORD - X'0001' INDICATES X
                                   THIS IS A LOGON RECORD

           SPACE

```

```

*-----*
* THE NEXT FIELDS ARE THOSE PRESENT IN THE LOGON *
* RECORD FOR THE START OF A USER SESSION. *
*-----*
      SPACE
SMFONMSO DS CL8 JOBNAME
SMFONJID DS CL8 JOBID (FROM SSIBJBID)
SMFONASI DS Y ASID
SMFONRV1 DS XL2 RESERVED
SMFONUID DS CL8 SECURITY USERID
SMFONLID DS CL8 USERID PRESENTED AT LOGON (SAME AS X
SMFONSID UNLESS CHANGED VIA MSIDTR X
SECURITY EXIT)
SMFONRUL DS CL8 TSO USERID/CICS REGION/LU NAME X
CONTENTS OF THIS FIELD IS TSO USERID X
IF SMFONCNT = SMFONTSO, CICS REGION X
(JOBNAME) IF SMFONCNT = SMFONCIC, X
OR LU NAME IF SMFONCNT = SMFONVTM
SMFONCTI DS CL4 WHEN SMFONCNT = SMFONCIC, THIS FIELD X
CONTAINS THE CICS TERMID
SMFONSRV DS CL8 SERVICE NAME FROM SERVICE BLOCK
SMFONRS0 DS XL4 RESERVED FOR FUTURE EXPANSION
SMFONCNT DS XL1 CONNECTION TYPE
      SPACE
SMFONTSO EQU 1 CONNECTION VIA TSO
SMFONCIC EQU 2 CONNECTION VIA CICS
SMFONVTM EQU 4 CONNECTION VIA VTAM
SMFONPSR EQU 8
      SPACE
SMFONRS1 DS XL3 RESERVED
SMFONID1 DS F SYSPLEX ID 1
SMFONID2 DS F SYSPLEX ID 2
SMFOFPID DS XL8 POOLED USER ID
SMFONRS2 DS XL12 RESERVED
SMFONL EQU *-SMFON LENGTH OF THE SMF LOGON RECORD

```

**Reference: SMF Record Format for RECTYPES 2 and 5**

The record format for RECTYPES 2 and 5 of the SMF records written by the server is defined below. The format is provided in the system 390 assembler DSECT form.

```

SMFOF      DSECT
           SPACE

*-----*
*  USAGE ACCOUNTING SMF RECORD LAYOUT FOR LOGOFF RECORDS.          *
*                                                                    *
*  THIS IS THE DSECT DESCRIBING THE SMF RECORD WHICH IS PASSED TO  *
*  YOUR EXIT ON AT USER LOGOFF TIME.  IT IS COMPLETELY READY TO BE *
*  WRITTEN WHEN YOUR EXIT RECEIVES CONTROL.                        *
*-----*
           SPACE

*-----*
*  THE FIRST TWENTY FOUR BYTES OF THE RECORD ARE THE SMF HEADER.  *
*  THESE FIELDS ARE REQUIRED IN ALL SMF RECORDS (18 BYTES FOR RECORDS *
*  WITHOUT SUBTYPES; WE USE SUBTYPES, THE HEADER IS 24 BYTES).    *
*-----*
           SPACE
SMFOFLEN DS      H'168'          RECORD LENGTH
SMFOFSEG DS      XL2'0000'      SEGMENT DESCRIPTOR (0 UNLESS SPANNED)
SMFOFFLG DS      XL1           SYSTEM INDICATOR
SMFOFRTY DS      XL1           RECORD TYPE
SMFOFTME DS      XL4           TIME, IN HUNDREDTHS OF A SECOND
SMFOFDTE DS      PL4           DATE, 00CYDDDF, WHERE F IS THE SIGN
SMFOFSID DS      CL4           SYSTEM IDENTIFICATION
SMFOFSBS DS      CL4           SUBSYSTEM IDENTIFICATION
SMFOFSBT DS      XL2'0002'     SUBTYPE OF RECORD - X'0002' INDICATES X
                               THIS IS A LOGOFF RECORD

           SPACE

```

```

*-----*
* THE NEXT FIELDS ARE THOSE PRESENT IN THE LOGOFF RECORD FOR THE END OF A USER SESSION.
*-----*
      SPACE
SMFOFMSO DS CL8 JOBNAME
SMFOFJID DS CL8 JOBID (FROM SSIBJBID)
SMFOFASI DS Y ASID
SMFOFRV1 DS XL2 RESERVED
SMFOFUID DS CL8 SECURITY USERID
SMFOFLID DS CL8 USERID PRESENTED AT LOGON (SAME AS SMFOFSID UNLESS CHANGED VIA MSIDTR SECURITY EXIT) X
SMFOFRUL DS CL8 TSO USERID/CICS REGION/LU NAME CONTENTS OF THIS FIELD IS TSO USERID IF SMFOFCNT = SMFOFTSO, CICS REGION (JOBNAME) IF SMFOFCNT = SMFOFCIC, OR LU NAME IF SMFOFCNT = SMFOFVTM WHEN SMFOFCNT = SMFOFCIC, THIS FIELD CONTAINS THE CICS TERMID X
SMFOFCTI DS CL4 SERVICE NAME FROM THE SERVICE BLOCK X
SMFOFSRV DS CL8 RESERVED FOR FUTURE EXPANSION
SMFOFRS0 DS XL4 CONNECTION TYPE
SMFOFCNT DS XL1
      SPACE
SMFOFTSO EQU 1 CONNECTION VIA TSO
SMFOFCIC EQU 2 CONNECTION VIA CICS
SMFOFVTM EQU 4 CONNECTION VIA VTAM
SMFOFPSR EQU 8
SMFOFCC DS XL3 COMPLETION CODE FOR THE TASK
SMFOFACT DS CL8 USER ACCOUNTING INFORMATION; THIS FIELD CURRENTLY PASSED AS LOW VALUE X
SMFOFCPU DS XL4 CPU TIME IN HUNDREDTHS OF A SECOND
SMFOFEXC DS XL4 COUNT OF EXCP'S
SMFOFLTM DS FL4 LOGON DURATION IN HUNDREDTHS OF A SECOND X
SMFPRTY DS XL1 PRIORITY
SMFCOMPL DS XL1 COMPLETION TYPE
DS XL2 RESERVED
SMFOFID1 DS F SYSPLEX ID 1
SMFOFID2 DS F SYSPLEX ID 2
SMFOPID DS XL8 POOLED USERID
SMFOFA40 DS CL40 FULL 40-BYTE ACCOUNTING FIELD
      SPACE
SMFOFL EQU *-SMFOF LENGTH OF THE SMF LOGOFF RECORD

```



**Reference: Accounting for DB2 in a Server Task**

When using a server to access DB2 data, certain processing takes place within the DB2 address space and is governed by DB2's chargeback system. If a user requests data from DB2, the server passes the request to the DB2 subsystem. The DB2 subsystem then processes the request, performing such tasks as retrieving rows and aggregating the data. It generates the answer set, and passes the output back to the server. The server then performs any joins and formatting which have not been performed by DB2 to satisfy the original request.

Charges incurred while the request was being processed by the DB2 subsystem are added to the charges accumulated in the server task that originated the request for processing. If the server accounting is enabled, these charges are associated with the user logon and security IDs in the SMF records described earlier.

**Performance Considerations for HFS****In this section:**

Running the Server in a Non-Swappable Address Space  
Workload Manager

There are several ways in which you can improve the server 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 217.
- ❑ **Workload Manager (WLM).** You can balance server workload by using Workload Manager. For more information, see [Workload Manager](#) on page 218.

**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(SCHEDxx):

```
PPT PGMNAME(TSCOM300)          /* PROGRAM NAME */
NOSWAP                          /* NON-SWAPPABLE */
CANCEL                          /* CAN BE CANCELLED */
```

Do not use the KEY 0 parameter, or any other parameter (such as NOPASS), unless the system programmer completely understands the consequences of adding the parameter.

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 server agents may perform differently than the server by adding the following keyword to edaserve.cfg:

```
wlm_enclave_trname = WLM_transaction_name
```

where:

```
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 dispatching priority of the task. 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 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 type	Qualifier name	Starting position	Service Class	Report Class
1	TN	IWAYFAST		EDAQRYHI	

WLM subrules (levels 2 and above) are supported. For a server request to join an enclave in a particular service class, the names of all rule qualifiers below our transaction name are checked. For example, consider the following WLM definition:

```
Subsystem Type JES - Batch Jobs
Classification:
```

```
Default service class is PRDBATLO
There is no default report class.
```

Qualifier #	Qualifier type	Qualifier name	Starting position	Service Class	Report Class
1	SSC	PRDMVS		PRDDFLT	
2	. TN	. IWAYFAST		EDAQRYHI	

In this particular case, the qualifier 1 type is SSC (Subsystem Collection), and a server request will only join the enclave IWAYFAST if it is running on a particular LPAR in the SYSPLEX. This qualifier (PRDMVS) must match the XCF group definition: issue \$DMASDEF (for JES2) and check the value of XCFGRPNM field.

You can handle WLM scheduling environments by defining them to WLM and then adding the JOB statement parameter SCHENV=xxxxx to the ISTART JCL.

## Frequently Asked Questions for HFS

### 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=high_level_qualifier.EDAPROF.DATA
```

2. Add the highlighted lines to the global server profile, edasprof.prf:

```
APP MAP MVSPROF fex>//dd:mvsprof
APP MAP MVSAPP mas>//dd:master;fex>//dd:focexec;acx>//dd:access; ...
APP PATH IBISAMP 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 application 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 at installation time, or manually in IRUNJCL. For example:

```
//TSCOM300 EXEC PGM=TSCOM300,
//          PARM='ENVAR("_EDC_UMASK_DFLT=0022")/'
//STEPLIB DD DISP=SHR,DSN=EDABXV.SRV77.HOME.LOAD
```

**Q: Can I monitor server startup by checking the MVS SYSLOG?**

**A:** Yes.

The following messages are written to the SYSLOG when

- The server starts successfully:

```
(EDA13023) ALL INITIAL SERVERS STARTED
```

- The Server does not start:

```
(EDA13171) UNABLE TO START IWAY SERVER
```

## Third-Party Software and Licenses

### In this section:

OpenFlex SDK

As of Version 7 Release 6.8, to address display of third-party software license requirements, a license option has been added to the Help menu located on the Web Console. This section describes the third-party software and includes references to the full licenses included in *Information Builders and Third-Party Licenses* on page 413.

### OpenFlex SDK

OpenFlex SDK is included by Information Builders for use with its HOLD FORMAT FLEX feature. This distribution is subject to the terms and conditions of the Mozilla Public License Version 1.1.

For more information, see *Zip Archiver License* on page 427 or visit our World Wide Web site, <http://www.informationbuilders.com>.

## Troubleshooting for HFS

### **How to:**

- Generate a Server Trace
- Generate a System Dump
- Add JCL Allocations to a Running Server
- Free Data sets Allocated to the Server
- Initialize the RDAAPP Application
- Add Your Problem to the Troubleshooting Guide
- Allocate a Data set From the z/OS System Console
- Free a Data set From the MVS System Console

### **Example:**

- Allocating a VSAM Data set
- Allocating a SYSMDUMP Data set with FREE=CLOSE Option
- Freeing an Allocated Data Set
- IRDAAPP REXX Execution

### **Reference:**

- Problem: The Server Abends With a U4039 Code
- Problem: INSUFFICIENT AUTHORITY TO GETPSENT messages in JESLOG
- Problem: Request fails, and JVM not found messages written to edaprint.log
- Secured Server Starts Unsecured or Does not Start After Upgrade
- Add Your Problem to the Troubleshooting Guide

To troubleshoot an installation problem, identify your problem in the following list, and follow the link to a description of the solution.

If you cannot find your problem described in the list, and cannot resolve it yourself, contact Customer Support Services as described in [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11. In addition, supply the following information to Customer Support Services:

- ❑ Server trace (see [How to Generate a Server Trace](#) on page 224).
- ❑ JCL for IRUNJCL.

- ❑ Job output.
- ❑ System dump, if needed (see [How to Generate a System Dump](#) on page 225).
- ❑ Any additional information regarding how the problem occurred.

If you have a troubleshooting suggestion that is not described in the list, and you think others will find it helpful, we invite you to send it to us, as described in [How to Add Your Problem to the Troubleshooting Guide](#) on page 231. We will consider including your problem in a future release of this manual.

**Problems:**

- ❑ The server abends with a U4039 code.  
See [Problem: The Server Abends With a U4039 Code](#) on page 223.
- ❑ INSUFFICIENT AUTHORITY TO GETPSENT messages appear in JESLOG.  
See [Problem: INSUFFICIENT AUTHORITY TO GETPSENT messages in JESLOG](#) on page 223.
- ❑ The request fails, and *JVM not found* messages are written to edaprint.log.  
See [Problem: Request fails, and JVM not found messages written to edaprint.log](#) on page 224.

**Reference: Problem: The Server Abends With a U4039 Code**

**Problem:** The server abends with a U4039 code.

**Cause:** 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.

**Reference: Problem: INSUFFICIENT AUTHORITY TO GETPSENT messages in JESLOG**

**Problem:** INSUFFICIENT AUTHORITY TO GETPSENT messages appearing in JESLOG.

**Cause:** See IBM's APAR II11813.

**Solution:** The APAR recommends issuing one of the following RACF commands:

```
SETROPTS LOGOPTIONS (NEVER(PROCACT))
SETROPTS 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.

**Reference: Problem: Request fails, and JVM not found messages written to edaprint.log**

**Problem:** The request fails, and *JVM not found* messages are written to `edaprint.log`.

**Cause:** If the server cannot find the Java Virtual Machine (JVM), the JSCOM Listener will not be able to start, and messages will be written to the server log stating that the JVM cannot be found.

**Solution:** Specify the location of the JVM in `JDK_HOME` or `IBI_JNIPATH`. (For information, see [JVM Requirements for the Listener for Java](#) on page 111.)

**Reference: Secured Server Starts Unsecured or Does not Start After Upgrade**

A server will implicitly attempt to start unsecured if proper authorization steps have not been completed. Starting the server normally clears `edatemp`. If prior `edatemp` files exist (and authorization has not been done), start up will fail due to an inability to clear the directory. However, if an `edastart -cleardir` command was issued just before the upgrade, there is nothing to clear, no error occurs, and the server starts. If the server starts and is not inspected after the initial start up, the server being in the wrong mode may go unnoticed.

The proper solution is to add proper authorizations after an upgrade, as described in [Step 4. Reconfigure Server Security](#) on page 186, and restart the server. A new safety measure has also been added. If the environment variable `EDAEXTSEC` is set to `OPSYS` explicitly, and a server lacks authorization, it will not start (see [Preventing Unsecured Server Starts After Upgrades](#) on page 187 for details).

**Procedure: How to Generate a Server Trace**

To generate a server trace:

1. Turn tracing by going to the Web Console menu bar, selecting *Workspace*, and then *Diagnostics*; or else by running the `ITRCON JCL` member.
2. Reproduce the problem.
3. Submit the `ISAVEDIA` member to produce the diagnostic information.

A directory called `sdnnnnn` is created under your configuration directory (for example, `/ibi/srv77/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), and send it to Customer Support Services.

Instead of using JCL allocations to add SYSMDUMP, the procedure described below can be used alternatively.

### **Procedure: How to Add JCL Allocations to a Running Server**

A z/OS operator can issue modify commands from the z/OS system console to allocate DDNAMES to the server without restarting it. This procedure is useful if you need to reallocate a file that was freed to allow a batch overnight utility to run, or perhaps to add SYSMDUMP allocation to a running server.

**Syntax: How to Allocate a Data set From the z/OS System Console**

```
F <iway_server_jobname/started task>,DYNAM ALLOC FI <ddname> DA <dsname>  
<optional dynam parameters>
```

**Example: Allocating a VSAM Data set**

```
F IWAY2,DYNAM ALLOC F VSAMFILE DA VSAM.FILEA.CLUSTER SHR
```

**Example: Allocating a SYSMDUMP Data set with FREE=CLOSE Option**

```
F IWAY2,DYNAM ALLOC FILE SYSMDUMP DA PROD2.SYSMDUMP.DATA SHR CLOSE
```

**Note:** The examples above assume IWAY2 is the jobname/started task ID for the server.

All valid DYNAM ALLOC syntaxes are supported. For more information on the DYNAM command, please refer to the *Store Procedures Reference* manual.

The following message will be issued in the server JESMSGLG indicating if the command was processed successfully or not.

Success:

```
+DYNAM COMMAND SUCCESSFULLY PROCESSED Rc=0
```

Failure:

```
+DYNAM ERROR: IKJ56225I DATA SET IWAY.TEST ALREADY IN USE, TRY LATER
```

**Procedure: How to Free Data sets Allocated to the Server**

A z/OS operator can issue modify commands from the z/OS system console to free DDNAMEs or DSNAMEs allocated to the server. Both global allocations (made at the server ISTART JCL) and local ones (DYNAM ALLOC commands issued by user tasks) can be freed. This procedure is useful if you need to free an allocation to run a batch utility overnight, without restarting the server.

**Syntax: How to Free a Data set From the MVS System Console**

To free a single DDNAME:

```
F <iway_server_jobname/started task>,DYNAM FREE FI <ddname>
```

To free a single DSNAME (all occurrences in the server):

```
F <iway_server_jobname/started task>,DYNAM FREE DS <dsname>
```

To free multiple DDNAMEs, passing a pattern (free all DDNAMEs starting with AB):

```
F <iway_server_jobname/started task>,DYNAM FREE FI AB*
```

To free multiple DSNAMES (all occurrences in the server), passing a pattern (free all allocations of data sets starting with IWAY.VSAM):

```
F <iway_server_jobname/started task>,DYNAM FREE DA IWAY.VSAM*
```

A message will be issued in the iway\_server JESMSG LG indicating if the command was process successfully or not, as follows.

Success:

```
+DYNAM COMMAND SUCCESSFULLY PROCESSED Rc=0
```

Failure:

```
+DYNAM ERROR: IKJ56225I DATA SET IWAY.TEST ALREADY IN USE, TRY LATER
```

### **Example:** Freeing an Allocated Data Set

Suppose ISTART JCL (jobname IWAY2) has the following allocation:

```
//VSAMFILE DD DISP=SHR,DSN=VSAM.FILEA.CLUSTER
```

The operator can free this file using the command (from MVS console):

```
F IWAY2,DYNAM FREE FI VSAMFILE
```

### **Procedure:** How to Initialize the RDAAPP Application

RDAAPP is an interactive client test application that facilitates the execution of SQL statements and stored procedures on the Unified server. During the installation process, JCL and REXX routines are created in the installation data set as members IRDAAPPJ and IRDAAPPC respectively.

The following installation data set is used for HFS deployment.

```
qualify.servertype.DATA
```

where:

```
servertype
```

Is determined by your license key.

The following installation data set is used for PDS deployment.

```
qualify.PDS.servertype. DATA
```

where:

```
servertype
```

Is determined by your license key.

**Note:** The RDAAPP application is not intended for use as a production tool.

1. To use the IRDAAPPJ JCL, you must first edit the member IRDAAPPJ and add your request details.

- a. To edit the member IRDAAPPJ, change the following field,

```
//STDIN DD *
Put your request here
//

to

//STDIN DD *
<enter blank line>
<enter userid>
<enter password>
LOOPBACK
<enter request>
<enter optional parameters>
Q
Q
//
```

- b. Complete the panel as follows.

Field	Instructions
<enter userid>	Enter a valid userid or blank line if the userid of the user who submitted the job is to be used for a trusted connection.
<enter password>	Enter the password for the above userid or a blank line if the userid/password of the user who submitted the job is to be used for a trusted connection.
LOOPBACK	Match a node name in the EDACS3 allocation in the IRDAAPPJ JCL. Default is LOOPBACK.

Field	Instructions
<enter request>	Enter one of the following values:
	<b>S</b> To enter an SQL SELECT statement. Type the statement after you enter the value S (see the following example).
	<b>P</b> To enter an SQL PREPARE statement. Type the statement after you enter the value P.
	<b>D</b> To execute a prepared statement by supplying the ID. Type the ID after you enter the value E.
	<b>Q</b> To quit.
	<b>?</b> For this list of commands.
<enter optional parameters>	<p>Depending on the above command, you may be prompted for:</p> <p>Select engine (0/ENTER - EDA, 1 - DB2, 2 - ORACLE, 3 - TERADATA, and so on.).</p> <p>Reclimit (Press Enter for all records).</p> <p>Readlimit (Press Enter for all records).</p>
<b>Q</b>	Quit RDAAPP (It is needed twice).

- c. Once you have made the above edits, submit the JCL for execution.
2. Type the following command at the TSO ready prompt to use the IRDAAPPC REXX routine:
 

```
EX 'qualif.servertype.DATA(IRDAAPPC)'
```

 or
 

```
EX 'qualif.PDS.servertype.DATA(IRDAAPPC)'
```

 where:
 

```
servertype
```

 Is determined by your license key.
  3. After the prompts, enter the same information as specified in the above table.

**Example: IRDAAPP REXX Execution**

The following is the screen output from a sample execution of the IRDAAPP REXX routine:

```
*****
**                               RDAAPP Client test tool                               **
*****

<<< RDAAPP : Initializing EDA/API SQL, Version 7, Release 7 >>>

Default communications config file : //DD:EDACS3
Override? (Press enter for default) :   <enter blank line>

<<< Initialization Successful >>>

Enter User Name : <enter userid or leave blank for current TSO userid>
Enter Password : <enter password or leave blank for current TSO userid
password>
Enter server name, number, SELF, URL or ? (Hit return for 'LOOPBACK') :

<<< Successfully connected to synchronous server LOOPBACK >>>

Enter Command (? for command help):
S SELECT COUNTRY FROM CAR;
Select engine (0/ENTER - EDA, 1 - DB2, 2 - ORACLE, 3 - TERADATA, etc) :
Reclimit (Hit enter for all records):
Readlimit (Hit enter for all records):

Please Wait...

ENGLAND
FRANCE
ITALY
JAPAN
W GERMANY

<<< 5 record(s) processed. (scb count 5) wait=4 secs, retrieval=0 secs>>>
<<< 5 record(s) processed. (scb count 5)>>>

Q

Enter Connect or Quit:

Q

<<< RDAAPP : Exiting... >>>

***

Enter Command (? for command help):
```

**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@ibi.com](mailto:books_info@ibi.com). Include your name and phone number, and include *Server Installation Troubleshooting* in the subject line.

- ❑ **Send them** to:

Documentation Services  
Information Builders  
Two Penn Plaza  
New York, NY 10121-2898

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

## PDS Deployment

**In this section:**

Installation Requirements for PDS

Installing a New Server for PDS

Starting and Stopping a Server for PDS

DB2 Security Exit Configuration for PDS

MSODDX: DDNAME Translation for User Subroutines

Overriding the Time Zone Setting

Adding a Configuration Instance for PDS

Upgrading Your Server Release for PDS

Migrating From an MVS Server to a PDS Deployment Server

Performance Considerations for PDS

Frequently Asked Questions for PDS

Third-Party Software and Licenses

Troubleshooting for PDS

The topics in this section describe how to install your server in a partitioned data set (PDS) environment.

## Installation Requirements for PDS

### **In this section:**

- Operating System Requirements
- JVM Requirements for the Listener for Java
- Browser Requirements
- Disk Space Requirements
- Memory Requirements
- Communication Requirements
- USS Segment Requirements
- HFS Home and Configuration Directory Requirements

Before beginning server installation, review all requirements.

### **Operating System Requirements**

The server runs on any supported release of z/OS. For current information about supported releases:

- 1.** Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
- 2.** In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.  
The Supported Systems and Adapters page opens.
- 3.** Click the link for the server release you want.  
The Supported Systems and Adapters page for that release opens.
- 4.** Click the link for your platform.  
The support chart for that platform opens.

In general, the operating system should have the latest cumulative patch levels applied. Confirm that your server installation software is labeled for your operating system level.



## JVM Requirements for the Listener for Java

If JVM-based adapters, server-side graphics, XBRL, or user-written CALLJAVA applications are to be used, a Java Runtime Environment (JRE) JVM must be installed on the machine, and the server must be configured to use it. As of 77x, the general minimum JVM level is 1.5 or higher, since a number of components require 1.5. In narrow cases, a lower JVM level may be used, but is not advised nor has it been specifically tested. This section discusses JVM installation and configuration.

When you install the Java SDK, the JRE is included. The SDK build type in use must also match in terms of 32-bit or 64-bit to the bit type of the server in use. If a JVM is not on the library path or is an inappropriate bit type, a *Failed to find JVM* message as well as debugging information will be written to the start log, which will indicate a failed JSCOM3 service.

The default JRE for the server is JRE 1.5, since this is the minimum requirement for some server components and JRE 1.4 is past its EOSL date. The following URL has Java EOL and EOSL information:

<http://java.sun.com/products/archive/eol.policy.html>

You can revert to using JRE 1.4 from the Web Console by selecting *Configuration/Monitor* from the *Workspace* menu, opening the *Java Services* folder, right-clicking *Default*, and selecting *Properties*.

The JDK JRE bin and server (or client) subdirectories must be specified in the load library path environment variable. A server restart is required, plus the appropriate JVM must be on the path if switching JRE levels. The load library path will be prompted at install time if JVM-based adapters or features are required. Otherwise, it can be manually set by editing the EDAENV file using any of the following methods.

- ❑ Set the JDK\_HOME variable to the name of the Java SDK home directory and the required directories will be added internally using the library load path.
- ❑ Set the JVM server or client directory (in which libjvm resides) and its parent directory to the IBI\_JNIPATH Java library load path. For example:

```
IBI_JNIPATH=/usr/lpp/java/J5.0/jre/bin:
/usr/lpp/java/J5.0/jre/bin/j9vm:
/usr/lpp/java/J5.0/jre/bin/classic
```

- ❑ Set or append the JVM server or client directory (in which libjvm resides) and its parent directory to the system library load path (LIBPATH). This is the least preferred method and only documented for backward compatibility. For example:

```
LIBPATH=/usr/lpp/java/J5.0/jre/bin:
/usr/lpp/java/J5.0/jre/bin/j9vm:
/usr/lpp/java/J5.0/jre/bin/classic:
/usr/lpp/java/J5.0/
```

If JVM-based adapters or features are not required, the message *Failed to find JVM* is normal and can be ignored.

To add classes to the JVM class path for customer-written CALLJAVA applications, set and export the CLASSPATH variable to the operating system level before server start-up or use the Web Console to set the Java Listener IBI\_CLASSPATH property.

## Browser Requirements

The Web Console server requires one of the following Web browsers:

- Microsoft Internet Explorer® 7 or higher.
- Mozilla Firefox® 3.5 or higher.
- Google Chrome® 10.0 or higher.
- Apple Safari® 5.0 or higher.

The Opera™ browser does not support RIA (Rich Internet Application), the default appearance mode of the 7.7.x Web Console. Opera 5.0 or higher seems to operate properly in HTML mode, and the Web Console detects this and switches modes automatically. Since HTML mode is less extensively tested, Opera is considered unofficially supported at this time. Please report any issues you find to customer service.

## Disk Space Requirements

The server disk space requirements are:

Supplied (EDAHOME) Data Sets	3390 Cylinders
<i>high_level_qualifier.P.HOME.ACX</i>	2
<i>high_level_qualifier.P.HOME.BIN</i>	70
<i>high_level_qualifier.P.HOME.CICS.LOAD</i>	10
<i>high_level_qualifier.P.HOME.ERR</i>	90
<i>high_level_qualifier.P.HOME.ETC</i>	90
<i>high_level_qualifier.P.HOME.FEX</i>	15
<i>high_level_qualifier.P.HOME.LOAD</i>	300
<i>high_level_qualifier.P.HOME.MAS</i>	3

<b>Configuration (EDACONF) Data Sets</b>	<b>3390 Cylinders</b>
<i>high_level_qualifier.server_type.CONF.ACX</i>	2
<i>high_level_qualifier.server_type.CONF.CFG</i>	2
<i>high_level_qualifier.server_type.CONF.MAS</i>	2
<i>high_level_qualifier.server_type.CONF.PRF</i>	2

<b>Installation Data Sets</b>	<b>3390 Cylinders</b>
<i>high_level_qualifier.HOME.DATA</i>	5
<i>high_level_qualifier.server_type.DATA</i>	2

<b>Application Data Sets</b>	<b>3390 Cylinders</b>
<i>aproot.IBISAMP.type.DATA</i>	38 (across 14 data sets)
<i>aproot.BASEAPP.type.DATA</i>	56 (14 data sets using 4 cylinders per file)

<b>Deferred Execution Data Sets (Optional)</b>	<b>3390 Cylinders</b>
<i>high_level_qualifier.server_type.CONF.DEL</i>	5
<i>high_level_qualifier.server_type.CONF.REQ</i>	5
<i>high_level_qualifier.server_type.CONF.RPE</i>	5
<i>high_level_qualifier.server_type.CONF.RPF</i>	5
<i>high_level_qualifier.server_type.CONF.RPI</i>	5
<i>high_level_qualifier.server_type.CONF.RQD</i>	5
<i>high_level_qualifier.server_type.CONF.RQF</i>	5
<i>high_level_qualifier.server_type.CONF.RQP</i>	5
<i>high_level_qualifier.server_type.CONF.RSP</i>	20

Supplementary Data Sets	3390 Cylinders
<i>high_level_qualifier.server_type.SYSRPC.FOCUS</i>	1
<i>high_level_qualifier.server_type.ETLLOG.FOCUS</i> (DataMigrator configurations only)	1
<i>high_level_qualifier.server_type.ETLSTATS.FOCUS</i> (DataMigrator configurations only)	1
<i>high_level_qualifier.server_type.CONF.SMARTLIB.DATA</i>	1

Sample Files	3390 Cylinders
<i>aproot.IBISAMP.CAR.FOCUS</i>	1
<i>aproot.IBISAMP.EMPLOYEE.FOCUS</i>	1
<i>aproot.IBISAMP.EDUCFILE.FOCUS</i>	1
<i>aproot.IBISAMP.JOBFILE.FOCUS</i>	1

where:

*high\_level\_qualifier*

Is the high-level qualifier to be used for all output libraries. You specify the high-level qualifier during server installation, as described in [Step 4. Run ISETUP](#) on page 250, in Step 4.

*server\_type*

Is one of the following:

- FFS** for a Full-Function Server
- DM** for a DataMigrator Server
- WFS** for a WebFOCUS Reporting Server
- WFM** for a Shared Application Server for WebFOCUS Maintain

*aproot*

Is the default location for storing applications. You specify aproot during server installation, as described in [Step 4. Run ISETUP](#) on page 250,

## 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. For SHRLIBRGNSIZE, we recommend the default MVS installation value of 64Mb:

```
SHRLIBRGNSIZE(67108864)
```

Server memory usage:

- ❑ The workspace (including Listeners) uses 200 megabytes.
- ❑ Each pre-started agent requires 4 megabytes.

The minimum amount of memory for a newly installed server with no workload is 250Mb. However, depending on usage, workload, and configuration options, 500Mb is recommended to start, to be adjusted as needed.

## Communication Requirements

You need four TCP/IP ports for each server instance that you configure. Three of these ports must be consecutive. You specify these port numbers during installation. You may require additional ports depending on which options you configure later.

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

## USS Segment Requirements

PDS deployment requires each user of the server to be identified to USS by means of a default segment definition. This default OMVS segment is defined when USS is installed as a part of z/OS. Please refer to your IBM UNIX System Services documentation for more information about this subject.

## HFS Home and Configuration Directory Requirements

Libraries and the APIs supporting them must reside in the HFS file system to enable the following features:

- ❑ Server-side graphics.

- ❑ Adobe® Flex® .

They are also required for the following Java-based and SAP-based adapters:

- ❑ Call Java.
- ❑ EJB.
- ❑ JDBC.
- ❑ Microsoft SQL Server.
- ❑ SQL SAP.
- ❑ SAP BWB.

At installation time, a panel with a list of adapters to be configured will be displayed. If any of the above adapters are selected, the installation will require the path for two HFS locations as follows:

- ❑ **edahome\_dir**. Provide the edahome path for the dll modules that interface with Java/SAP/Adobe® Flex® and must reside in HFS. The directory will be created with 755 permissions, if it does not exist.
- ❑ **edaconf\_dir**. Provide the edaconf path to be used for both configuration files (such as codepage files), as well as the root location for temporary files (such as traces and logs), that must reside in HFS. If it does not exist, the directory will be created with 755 permissions.

If no data adapters were selected, the next panel will allow an optional configuration for the JSCOM3 listener. If server-side graphics and/or Adobe® Flex® support are desired, the listener must be configured and all three paths are required (edahome\_dir, edaconf\_dir, plus the path to Java passed to either JDK\_HOME or IBI\_JNIPATH).

If edahome\_dir is not defined at installation time, it will not be possible to configure it later using the Web Console. The server will have to be re-installed, configuring the JSCOM3 listener.

## Installing a New Server for PDS

### In this section:

- Step 1. Set Up User IDs
- Step 2. Collect Required Information for Adapters
- Step 3. Access the Installation Software
- Step 4. Run ISETUP
- Step 5. Test the Server Installation
- Step 6. Configure Server Security

To install a new Server for z/OS deployed using partitioned data set (PDS) libraries, perform the following steps.

### Step 1. Set Up User IDs

You can use any user ID to install and run the server. Whichever ID you use becomes the first server administrator ID (sometimes referred to as iadmin).

### Step 2. Collect Required Information for Adapters

For current information about which adapters are supported:

1. Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
2. In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.  
The Supported Systems and Adapters page opens.
3. Click the link for the server release you want.  
The Supported Systems and Adapters page for that release opens.
4. Click the link for your platform.  
The support chart for that platform opens.

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 an optional steplib, ddname, or environment variable, the installation procedure will indicate this with an OPT> prompt.

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:

- ❑ **IRUNJCL.** This procedure contains the JCL procedure for the server, and is a member of the configuration library

*high\_level\_qualifier.PDS.server\_type.DATA*

where:

*high\_level\_qualifier*

Is the high-level qualifier to be used for all output libraries. You specify the high-level qualifier during server installation, as described in [Step 4. Run ISETUP](#) on page 250, in Step 6.

*server\_type*

Is one of the following:

- FFS* for a Full-Function Server
- DM* for a DataMigrator Server
- WFS* for a WebFOCUS Reporting Server
- WFM* for a Shared Application Server for WebFOCUS Maintain

Adapter	Information you must provide
Adabas	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li>❑ load library</li> </ul> <p>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.</p> <p>When you configure the adapter, you will need to provide the name of the Adabas source library and the associated data set name.</p>
CA-DATACOM	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li>❑ CUSLIB load library</li> <li>❑ CAILIB load library</li> <li>❑ utility library</li> <li>❑ URT library</li> </ul>



Adapter	Information you must provide
CA-IDMS (both DB and SQL)	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> <li><input type="checkbox"/> DBA load library</li> </ul> <p>Provide the data set names to which the following ddnames are allocated:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> SYSIDMS. Check with your CA-IDMS DBA regarding this ddname.</li> <li><input type="checkbox"/> SYSCTL. Is the library corresponding to the central version you want to use.</li> </ul>
CICS Transaction	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CICS EXCI load library</li> </ul>
Call Java	<p>You must have the JDK installed.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CLASSPATH. Provide the paths of the .jar files that you want to access. These paths will be appended to CLASSPATH.</li> </ul> <p>This adapter requires configuration of the JSCOM3 listener. Provide three required paths:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The path to JVM using either JDK_HOME or IBI_JNIPATH, as described in <a href="#">JVM Requirements for the Listener for Java</a> on page 233.</li> <li><input type="checkbox"/> The paths to edahome_dir and edaconf_dir, as described in <a href="#">HFS Home and Configuration Directory Requirements</a> on page 237.</li> </ul>

Adapter	Information you must provide
EJB	<p>You must have the JDK installed.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li>❑ CLASSPATH. Provide the paths of the .jar files that you want to access. These paths will be appended to CLASSPATH.</li> </ul> <p>If you are deploying the adapter to access an EJB on a:</p> <ul style="list-style-type: none"> <li>❑ WebLogic server, specify the following path: <code>/pathspec/weblogic.jar</code></li> <li>❑ WebSphere server, specify the following paths: <code>/pathspec/websphere.jar</code> <code>/pathspec/ejbcontainer.jar</code> (one for each EJB container)</li> </ul> <p>This adapter requires configuration of the JSCOM3 listener. Provide three required paths:</p> <ul style="list-style-type: none"> <li>❑ The path to JVM using either JDK_HOME or IBI_JNIPATH, as described in <a href="#">JVM Requirements for the Listener for Java</a> on page 233.</li> <li>❑ The paths to edahome_dir and edaconf_dir, as described in <a href="#">HFS Home and Configuration Directory Requirements</a> on page 237.</li> </ul>
JDBC	<p>You must have the JDK installed.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li>❑ CLASSPATH. Provide the paths of the .jar files that you want to access. These paths will be appended to CLASSPATH.</li> </ul> <p>This adapter requires configuration of the JSCOM3 listener. Provide three required paths:</p> <ul style="list-style-type: none"> <li>❑ The path to JVM using either JDK_HOME or IBI_JNIPATH, as described in <a href="#">JVM Requirements for the Listener for Java</a> on page 233.</li> <li>❑ The paths to edahome_dir and edaconf_dir, as described in <a href="#">HFS Home and Configuration Directory Requirements</a> on page 237.</li> </ul>

Adapter	Information you must provide
Microsoft SQL Server	<p>You must select Call Java adapter in addition to the Microsoft SQL Server adapter.</p> <p>Provide a value for the following environment variables:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CLASSPATH. Provide the paths to the following files; these paths will be appended to CLASSPATH. <ul style="list-style-type: none"> <li><input type="checkbox"/> msbase.jar</li> <li><input type="checkbox"/> mssqlserver.jar</li> <li><input type="checkbox"/> msutil.jar</li> </ul> </li> </ul> <p>This adapter requires configuration of the JSCOM3 listener. Provide three required paths:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The path to JVM using either JDK_HOME or IBI_JNIPATH, as described in <a href="#">JVM Requirements for the Listener for Java</a> on page 233.</li> <li><input type="checkbox"/> The paths to edahome_dir and edaconf_dir, as described in <a href="#">HFS Home and Configuration Directory Requirements</a> on page 237.</li> </ul>
DB2 CAF	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNLOAD load library <p>For security information, see <a href="#">DB2 Security Exit Configuration for HFS</a> on page 160.</p> </li> <li><input type="checkbox"/> DSNEXIT load library (optional)</li> </ul> <p>Provide the following information for DB2 BIND:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNCLIST dataset name.</li> <li><input type="checkbox"/> DB2 REL type either 8 or 9 or 10.</li> <li><input type="checkbox"/> DB2 plan name.</li> <li><input type="checkbox"/> DB2 SSID.</li> </ul> <p>The installation will generate a fully customized DB2 BIND job and configure the adapter. DB2 CAF will be ready to use once the BIND job is executed. The configuration can be modified later using the Web Console, if necessary.</p>

Adapter	Information you must provide
DB2 CLI	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNLOAD load library</li> </ul> <p>For security information, see <a href="#">DB2 Security Exit Configuration for HFS</a> on page 160.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNEXIT load library (optional; this is needed only for an explicit connection).</li> </ul> <p>Provide the data set name (including member name if applicable) for the following DDname:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DSNAOINI, which contains the DB2 CLI ini file.</li> </ul>
IMS	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DFSPZP load library (optional; not needed if PZP modules are stored in the DFSRESLB library)</li> <li><input type="checkbox"/> DFSRESLB load library</li> </ul>
IMSBMP	<p>Provide the data set names for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> DFSRESLB load library</li> </ul> <p>Provide the data set names for the following FOCPSB allocation:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> FOCPSB library containing FOCPSB definitions</li> </ul>
Millennium	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> </ul>
Model 204	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> load library</li> </ul>
MQSeries	<p>Provide the data set names for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> SCSQLOAD load library</li> <li><input type="checkbox"/> SCSQAUTH load library</li> </ul>

Adapter	Information you must provide
NATURAL Batch	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> NATURAL load library</li> </ul>
Oracle	Provide the data set name for the following STEPLIB allocation: <ul style="list-style-type: none"> <li><input type="checkbox"/> CMDLOAD load library</li> </ul> Provide the data set name to which the following ddname is allocated: <ul style="list-style-type: none"> <li><input type="checkbox"/> ORA\$LIB message library</li> </ul> Provide values for the following EDAENV environment variables: <ul style="list-style-type: none"> <li><input type="checkbox"/> ORACLE_SID, which contains the Oracle SID.</li> <li><input type="checkbox"/> ORACLE_HOME, which contains the Oracle home directory.</li> <li><input type="checkbox"/> LIBPATH, which contains the Oracle lib directory location. This is usually \$ORACLE_HOME/lib.</li> </ul> The installation procedure adds the following DD statement to IRUNJCL. <pre>//ORA@osid DD DUMMY</pre> where: <pre>osid</pre> Is the Oracle SID that is specified in the ORACLE_SID environment variable.
SAP (SQL)	Provide values for the following environment variables: <ul style="list-style-type: none"> <li><input type="checkbox"/> LIBPATH, which contains the path to SAP RFC SDK.</li> <li><input type="checkbox"/> SAP_CODEPAGE=0126, or the correct SAP code page for your language environment.</li> </ul> This adapter requires configuration of two required paths: <ul style="list-style-type: none"> <li><input type="checkbox"/> The paths to edahome_dir and edaconf_dir, as described in <a href="#">HFS Home and Configuration Directory Requirements</a> on page 237</li> </ul> Is recommended that the code page conversion tables be created under directory edaconf_dir.

Adapter	Information you must provide
SAP BW	<p>Provide values for the following environment variables:</p> <ul style="list-style-type: none"> <li>❑ LIBPATH, which contains the path to SAP RFC SDK.SAP_CODEPAGE=0126, or the correct SAP code page for your language environment.</li> </ul> <p>This adapter requires configuration of two required paths:</p> <ul style="list-style-type: none"> <li>❑ The paths to edahome_dir and edaconf_dir, as described in <a href="#">HFS Home and Configuration Directory Requirements</a> on page 237</li> </ul> <p>Is recommended that the code page conversion tables be created under directory edaconf_dir.</p>
Supra	<p>Provide the dataset name for the following STEPLIB allocations:</p> <ul style="list-style-type: none"> <li>❑ LINKLIB load library.</li> <li>❑ INTERFLM load library.</li> <li>❑ ENVLIB load library.</li> </ul> <p>Provide the data set name to which the following ddname is allocated:</p> <ul style="list-style-type: none"> <li>❑ CSIPARM containing the CSIPARM definition, which in turn points to the Central PDM you are accessing.</li> <li>❑ CSISYSIN containing the parameters used for connecting the multi-session adapter to the Central PDM.</li> </ul>
VSAM CICS	<p>Provide the data set name for the following STEPLIB allocation:</p> <ul style="list-style-type: none"> <li>❑ CICS EXCI load library</li> </ul>

### Step 3. Access the Installation Software

#### How to:

Unload the Installation Software From Tape  
Download the Installation Software Using FTP

#### Reference:

Optional Low-Level Qualifier Changes  
Default Low-Level Qualifiers

You can choose to access the server installation software using either:

- ❑ **Tape.** The software is provided on a 3490 or 3590 cartridge.  
You must unload the installation data set from the tape before you can run the installation. This is how most installations are performed.
- ❑ **FTP.** You download the installation software from the Information Builders FTP site.  
Downloading the installation software involves:
  - 1. Registering** at the Information Builders FTP site.
  - 2. Downloading** the server installation data set from the site.
  - 3. Running** the isetup procedure to complete the download process and install the server.

#### Procedure: How to Unload the Installation Software From Tape

The software is provided on a cartridge in 3490 or 3590 format with MVS PDSs. Perform the following to unload the installation data set from the tape:

- 1.** Log on to TSO.
- 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.

**Note:** If you do not use HOME.DATA, then change the following line to reflect the value you used.

```
//          SET  EDAUSSD= 'HOME .DATA '
```

Do this before you run ISETUP.

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,(5,5,25)),
// 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 data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server. However, you can use any site-specific value.

For PDS, we recommend retaining the low-level qualifier HOME.DATA, but you can change this to any site-specific value. If you use a low-level qualifier other than HOME.DATA, you must then edit member PDSSNAME to change the string "HOME.DATA" to the low-level qualifier you specify here.

*cart*

Is the unit type of the tape drive. Common names include 3490, TAPE, and 3590. 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.

See [Optional Low-Level Qualifier Changes](#) on page 249.



**Procedure: How to Download the Installation Software Using FTP**

To download the installation software:

- 1.** Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
  - 2.** Click *My Downloads* in the My Account section on the right side of the page.  
The Downloads, Upgrades, Service Packs, and PTFs page opens.
  - 3.** Click the link for your product (for example, WebFOCUS and iWay Server and iWay Client).  
The Downloads by Release page for your product opens.
  - 4.** Click your release from the Current Production Releases list.  
The Software Downloads page for your release opens.
  - 5.** Scroll down and find the platform on which you want to install the server, and then click *Download* to the right of the platform name.
  - 6.** Fill in the registration form and then click *Continue*.  
The Software Download Agreement page opens.
  - 7.** Select *I agree...* to consent to the Download Agreement, and then click *Continue*.  
The Download Instructions page opens. Select AUTOMATIC or MANUAL and follow the relevant instructions.  
A copy of the instructions is automatically emailed to you for later reference.
  - 8.** Log on to TSO.
  - 9.** Follow the instructions on the Download Page in your TSO session.
- Continue with [Optional Low-Level Qualifier Changes](#) on page 249.

**Reference: Optional Low-Level Qualifier Changes**

We recommend retaining the default low-level qualifiers that are supplied for the installation libraries. However, if you need to change any of them (for example, to conform to site-specific naming conventions), you can do so by editing them in member PDSSNAME of *high\_level\_qualifier*.HOME.DATA. You can see a list of the qualifiers in [Default Low-Level Qualifiers](#) on page 250.

**Caution:** If you change any low-level qualifiers and do not reflect those changes exactly in PDSSNAME, you will experience problems with the server installation and operation.

Do not change the value of &CONFTYPE.

Once you have finished changing any names, continue with [Step 4. Run ISETUP](#) on page 250.

### Reference: Default Low-Level Qualifiers

The following low-level qualifiers are set in *high\_level\_qualifier*.HOME.DATA(PDSSNAME):

```
//      SET   PDSFFSD= 'PDS.FFS.DATA'           Full Function server
//      SET   PDSWFS= 'PDS.WFS.DATA'           WebFocus Reporting server
//      SET   PDSMD= 'PDS.DM.DATA'             DataMigrator
//      SET   PDSWFM= 'PDS.WFM.DATA'           WebFocus Maintain Server
//      SET   EDACCFG=&CONFTYPE..CONF.CFG      Configuration files
//      SET   EDACACX=&CONFTYPE..CONF.ACX
//      SET   EDACMAS=&CONFTYPE..CONF.MAS
//      SET   SMARTLIB=&CONFTYPE..CONF.SMARTLIB.DATA
//      SET   EDACPRF=&CONFTYPE..CONF.PRF      Profiles
//      SET   EDACDREQ=&CONFTYPE..CONF.REQ
//      SET   EDACDRQD=&CONFTYPE..CONF.RQD
//      SET   EDACDRQP=&CONFTYPE..CONF.RQP
//      SET   EDACDRQF=&CONFTYPE..CONF.RQF
//      SET   EDACDDEL=&CONFTYPE..CONF.DEL
//      SET   EDACDRSP=&CONFTYPE..CONF.RSP
//      SET   EDACDRPF=&CONFTYPE..CONF.RPF
//      SET   EDACDRPE=&CONFTYPE..CONF.RPE
//      SET   EDACDRPI=&CONFTYPE..CONF.RPI
//      SET   EDAHDAT= 'HOME.DATA'             Installation library
//      SET   EDAHETC= 'P.HOME.ETC'           Server html and text files
//      SET   EDAHACX= 'P.HOME.ACX'           Access files
//      SET   EDAHFEX= 'P.HOME.FEX'           RPCs
//      SET   EDAHMAS= 'P.HOME.MAS'           Master files
//      SET   EDAHBIN= 'P.HOME.BIN'           Server binary files
//      SET   EDAHERR= 'P.HOME.ERR'           Server NLS and error files
//      SET   EDALOAD= 'P.HOME.LOAD'           Load Library
//      SET   EDACICS= 'P.HOME.CICS.LOAD'     CICS Load Library
//      SET   SYSRPC=&CONFTYPE..SYSRPC.FOCUS
//      SET   FOCUSU=&CONFTYPE..FOCUSSU.FOCUS
//      SET   ETLLOG=&CONFTYPE..ETLLOG.FOCUS
//      SET   ETLSTATS=&CONFTYPE..ETLSTATS.FOCUS
```

### Step 4. 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 z/OS. This JCL job retrieves the remainder of the data sets from the media and configures a basic working server.

1. Execute the ISETUP member of your *high\_level\_qualifier*.HOME.DATA using ISPF option 6.

The first Installation and Configuration panel opens.

```

IWay Software           Installation and Configuration           Unified Server Install
Command ==>                                                    P0

Unified Server Installation
Please select one of the following options:

    1. USS/HFS Deployment
        . Installation files and temporary files in HFS
        . Application files, like synonyms and procedures, in HFS (or
          optionally in both HFS and PDS)

    2. PDS Deployment
        . Installation files and temporary files in PDS
        . Application files, like synonyms and procedures, in PDS (or
          optionally in both PDS and HFS)

Enter selection (Default=1) ==> 1
Press Enter to continue, PF3 to END

```

2. Enter 2 and press Enter to continue to the next panel.

The following panel opens.

```

Information Builders     Installation and Configuration           z/OS PDS Deploy
Command ==>                                                    D1

Please select one of the following options:

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

Enter selection (Default=1) ==> 1
Enter License Key       ==> - - - _ Last License key used
Input source           ==> D (T)ape, (D)isk or (F)tp
Number of CPUs online  ==> 3
Installation Userid    ==> IADMIN Logged on Userid

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

```

3. Complete the panel as directed in the following table.

Field	Instructions
Enter selection	<p>Accept the default value 1, <i>Install and Configure</i>, for a new installation.</p> <p>For option 2, <i>Add Additional Configuration Instance</i>, see <a href="#">Adding a Configuration Instance for PDS</a> on page 271.</p> <p>For option 3, <i>Refresh Installation</i>, see <a href="#">Upgrading Your Server Release for PDS</a> on page 281.</p>
Enter License Key	<p>Enter the license key that was provided with the software.</p> <p>Be sure to store this key in a safe place for future reference.</p>
Input source	<p>Enter the input source:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>T</i> for Tape - If you received your software on Tape media.</li> <li><input type="checkbox"/> <i>D</i> for Disk - If you selected manual download from the download instructions.</li> <li><input type="checkbox"/> <i>F</i> for FTP - If you selected automatic download from the download instructions.</li> </ul>
Number of CPUs online	<p>Shows the current number of general use processors currently online. It cannot be changed. This value is going to be matched with the licensed number of CPUs provided in the License Key, when the installation job is submitted. At this point this verification is not being enforced and if the licensed number does not match the actual number of CPUs currently online, a warning will be issued and the installation job will continue.</p>
Installation Userid	<p>Shows the current logon ID. It cannot be changed.</p>
Enter Job Card information	<p>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.</p> <p>This job name is used for multiple submissions (for example, <i>jobnameA</i>, <i>jobnameB</i>, <i>jobnameC</i>, and so on) in the JCL generated by the installation procedure.</p>

Field	Instructions
Override JOB name checking	To provide your own JOB card information, including JOB name, enter Y and provide valid JOB card information in the <i>Enter Job Card information</i> field. The JOB card information that you enter will be used for each job that is submitted.

4. Press Enter to continue to the next panel.

This following panel only appears if FTP was previously selected. Otherwise, skip to Step 6.

```

IWay Software           Installation and Configuration           z/OS PDS Deployment
Command ==>                                                    DN

                               New Installation

Please enter the following information for Full Function Server

FTP download destination and user information

  HLQ for downloaded files ==> IADMIN.SRV77

  FTP Userid                ==>
  FTP Password               ==>

Press Enter to continue, PF3 to return to previous menu

```

5. Complete the panel as follows.

Field	Instructions
HLQ for downloaded files	This value defaults to the high level qualifier of the HOME.DATA file that ISETUP is running from. If necessary, change the value to any other high level qualifier that is to be used to create the uncompressed version of the FTP files.
FTP Userid	Cut and paste from the download instructions.

Field	Instructions
FTP Password	Cut and paste from the download instructions.

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

Note that in the current panel (and some later panels), if you are running ISETUP from:

- high\_level\_qualifier*.HOME.DATA, the panel will display default values for some fields.
- Any other library, the panel will not display any 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.

```

IWay Software           Installation and Configuration           z/OS PDS Deployment
Command ==>                                                    D2

                               New Installation

Please enter the following information for Full Function Server
(blank any field for default)
Input Media

Volume serial number      ==> _           Unit type ==> 3490
Work unit type           ==> SYSDA

Output Libraries
Output Libraries HLQ     ==> IADMIN.SRV77
(EDAHOME/EDACONF)       Unit ==> SYSDA           Volume ==>

Configuration options
Approot value            ==> PLEASE SUPPLY VALUE           (21 Characters max)
HTTP Listener Port      ==> 8106           TCP Listener Port ==> 8105
Deferred Execution req? ==> N             Y or N
Installation JCL Library ==> IADMIN.SRV77.PDS.FFS.DATA

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

Complete the panel as follows.

Field	Instructions
<b>Input Media (installing from tape only)</b>	
Volume serial number	Provide the volume serial number of the server media. The number is located on the tape supplied in you server package.

Field	Instructions
Unit type	Review the default value and change if necessary.
Work unit type	Review the default value and change if necessary. 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'.
<b>Input Media (installing from disk/FTP only)</b>	
Input Libraries HLQ (EDAHOME)	This is the high-level qualifier that you had specified when you manually downloaded the installation software from the FTP site. This is an input field if Disk input source was previously selected. Otherwise, it is a protected field.
Copy to runtime libraries	If you want to use the downloaded installation software as a backup, and create a new copy from which to run, enter Y. If the Input Libraries HLQ and the Output Libraries HLQ are the same, this value will be ignored and no copy will take place.  Otherwise, accept the default N to run from the downloaded software.
<b>General Installation Parameters</b>	
Output Libraries HLQ	This is the high-level qualifier that the installation procedure will use to allocate output libraries.
Unit/Volume	These show the values that the installation process will use to allocate the output libraries. If necessary, you can change these to site-specific values.
Aproot value	This is where application components will reside.  Note that this high-level qualifier <i>must</i> differ from the output libraries high-level qualifier (EDACONF) that you entered at the top of the panel.  To specify a different qualifier for application components, change the value for this field. It can be up to 21 characters.

Field	Instructions
HTTP Listener Port	<p>This is the port number that the server will use for HTTP. It is the first of three connection ports that must be available to the server.</p> <p>For example, if you choose port 8101, then ports 8101, 8102, and 8103 are used by the server. Ensure that you choose ports that are not currently being used.</p>
TCP Listener Port	<p>This is the port number of the TCP Listener.</p> <p>The default is one less than the port specified for the HTTP Listener, but it can be any port number other than the three reserved for HTTP.</p>
Deferred Execution req?	<p>For PDS deployment, the creation of the deferred execution files is optional at install time. For WebFOCUS Reporting Server the default is Y. If N is selected, no files are created and commented out DD entries are coded in the IRUNJCL member of the server's configuration file. Member IBATDEF is also created at install time and can be run at any time to physically create the deferred execution files. The feature can then be activated by un commenting the nine DD cards (//*EDACDxxx) in IRUNJCL and resubmitting the server JCL ISTART.</p>

7. Press Enter to continue to the next panel.

Depending on your license key, the Data Adapter panel may open. If the Data Adapter panel opens, continue with Step 8; otherwise, skip to Step 9.

8. 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 2. Collect Required Information for Adapters](#) on page 239.

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.

9. Press Enter to continue to the next panel.



The JSCOM3 Listener configuration panel opens.

- a. The panel will prompt for the path to the Java environment to be passed to either JDK\_HOME or IBI\_JNIPATH, as described in *JVM Requirements for the Listener for Java* on page 111, and it will also prompt for edahome\_dir and edaconf\_dir, as described in *HFS Home and Configuration Directory Requirements* on page 237.
- b. Configuration of the JSCOM3 Listener is either optional or mandatory depending on which adapters were selected. If any Java-based adapters were selected (EJB, Call Java, JDBC, MS SQL Server), the configuration of all three paths listed above is mandatory. If SAP-based adapters were selected (SAP or SAP BW), only edahome\_dir and edaconf\_dir are required.
- c. If no Java-based or SAP based adapters were select, this configuration might still be desirable to enable server-side graphics and Adobe® Flex® features. To skip the configuration, leave the path blank.

10. Press Enter to continue to the next panel.

The confirmation panel opens.

```

IWay Software           Installation and Configuration           z/OS PDS Deployment
Command ==>                                                    D4

                               New Installation

Please confirm the following information for Full Function Server
Input Media

Volume serial number      ==> C77076   Unit type ==> 3490
Work unit type            ==> SYSDA

Product Configuration parameters

Output Libraries HLQ      ==> IADMIN.SRV77
(EDAHOME/EDACONF)        Unit==> SYSDA   Volume ==>
(Above will be used for all output libraries)
Approot value            ==> IADMIN.SRV77.APPS
HTTP Listener Port       ==> 8106      TCP Listener Port ==> 8105
Deferred Execution req?  ==> N
Installation JCL Library ==> IADMIN.SRV77.PDS.FFS.DATA
Review output allocations ==> N        Y or N

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

```

11. If you wish to review a list of the data sets to be allocated, type Y in the Review output allocations field and press Enter.

A panel opens listing the data sets. You may need to page down to see the entire list. Press Enter when you are done to return to the confirmation panel.

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

- N** to return to the initial panel 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 *high\_level\_qualifier.PDS.server\_type.DATA* configuration library.
- S** to create JCL in *high\_level\_qualifier.PDS.server\_type.DATA*, and submit the job immediately.

**Note:** If FTP was selected, JCL will be created to download the server software and run the install and configuration process.

where:

*high\_level\_qualifier*

Is the high-level qualifier to be used for all output libraries. You specified the high-level qualifier during server installation, as described in [Step 4. Run ISETUP](#) on page 250, in Step 4.

*server\_type*

Is one of the following:

- FFS** for a Full-Function Server
- DM** for a DataMigrator Server
- WFS** for a WebFOCUS Reporting Server
- WFM** for a Shared Application Server for WebFOCUS Maintain

**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 (as described in Step 11).

Job	Description
ISETUPJ1	Main JCL Job stream that is used to install the server. For FTP processing, this JCL can be restarted at any step due to a previous failure. To do this, add RESTART = procname.stepname to the JOB card and resubmit the ISETUPJ1 JCL.
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.

Member	Description
ISTART	Starts the server.
ISAVEDIA	JCL to print a copy of configuration files for diagnostic purposes.
ITRCON	Starts the server with traces on.

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

Member	Description
CMRUN	JCL to run DataMigrator batch jobs. This is created only when installing a DataMigrator Server.
IBATDEF	JCL to create the deferred execution data sets, in case they were not created in the original install.
DB2V8PRM	DB2 version 8 DBRM referenced in GENDB2 JCL.
DB2V9PRM	DB2 version 9 DBRM referenced in GENDB2 JCL.
DB2V10PR	DB2 version 10 DBRM referenced in GENDB2 JCL.
GENDB2	JCL to bind the DB2/CAF plan.
IIMSBMP	Example JCL to run the IMS/XMI server job in BMP mode.
IIMSDLI	Example JCL to run the IMS/XMI server job in DLI mode.

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

Member	Description
IWAYS	A started task that starts the server.

Member	Description
EDAENV	A parameter file used by the server. It contains all required environment variables.

## Step 5. Test the Server Installation

To test the server installation:

1. Log on to TSO as iadmin.
2. Submit the ISTART JCL from the configuration library to start the server. This executes the IRUNJCL proc. The configuration library is

`high_level_qualifier.PDS.server_type.DATA`

where:

`high_level_qualifier`

Is the high-level qualifier to be used for all output libraries. You specified the high-level qualifier during server installation, as described in [Step 4. Run ISETUP](#) on page 250, in Step 6.

`server_type`

Is one of the following:

- `FFS` for a Full-Function Server
- `DM` for a DataMigrator Server
- `WFS` for a WebFOCUS Reporting Server
- `WFM` for a Shared Application Server for WebFOCUS Maintain

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

`(EDA13023) ALL INITIAL SERVERS STARTED`

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. Continue with adapter configuration, as described in the *Adapter Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

When you are finished using the server, you can use the Web Console to stop the server by going to the Web Console menu bar, selecting *Workspace*, and then *Stop*.

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

## Step 6. Configure Server Security

### How to:

Configure Security With All Security Products

Configure Security With eTrust CA-Top Secret

Change the Security Mode From OPSYS to OFF

Change the Security Mode From OPSYS to PTH, DBMS, or LDAP

### Example:

Facility Entry Defining the Server to CA-Top Secret

You can run the server in any of the following security modes:

- OFF
- OPSYS
- PTH
- DBMS
- LDAP

If you will be configuring your server with security mode OPSYS, you must perform the instructions in [How to Configure Security With All Security Products](#) on page 152, regardless of which security product you use. (For security modes PTH, DBMS, and LDAP, skip these topics.)

For a full description of all server security modes:

1. From the Web Console menu bar, select *Help*, then *Contents and Search*.

The Web Console Help window opens.

2. In the left pane expand *Server Administration*.

Alternatively, see the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

### **Procedure: How to Configure Security With All Security Products**

To configure server security with RACF, eTrust CA-ACF2, or eTrust CA-Top Secret:

1. Log on to TSO using the ID used to install the server.
2. The libraries allocated to STEPLIB in IRUNJCL must be APF-authorized. Any non-APF-authorized libraries must be allocated to the TASKLIB DDNAME.
3. Restart the server.

**Note:** If you want to use eTrust CA-ACF2 or eTrust CA-Top Secret, please contact Customer Support Services.

### **Procedure: How to Configure Security With eTrust CA-Top Secret**

To use eTrust CA-Top Secret security, perform the following step:

1. Create an eTrust CA-Top Secret facility entry for the server security module, R1SEC. The only need for permissions is for the RACROUTE call from the R1SEC program.

### **Example: Facility Entry Defining the Server to CA-Top Secret**

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

```
PGM=R1SEC ID=1 TYPE=099
ATTRIBUTES=IN-USE , ACTIVE , SHRPRF , ASUBM , NOABEND , MULTIUSER , NOXDEF
ATTRIBUTES=LUMSG , STMSG , SIGN(M) , INSTDATA , RNDPW , AUTHINIT
ATTRIBUTES=NOPROMPT , NOAUDIT , RES , WARNPW , NOTSOC , LCFTRANS
ATTRIBUTES=NOMSGLC , NOTRACE , NOEODINIT , IJU , NODORMPW , NONPWR
ATTRIBUTES=LUUPD MODE=FAIL DOWN=GLOBAL LOGGING=ACCESS , INIT
UIDACID=8 LOCKTIME=000 DEFACID=*NONE* KEY=8
MAXUSER=03000 PRFT=003
```

### **Procedure: How to Change the Security Mode From OPSYS to OFF**

To change the security mode from OPSYS to OFF:

1. Make sure the server is not running.
2. In the *high\_level\_qualifier.PDS.server\_type.DATA(EDAENV) JCL*, add the following setting:

```
EDAEXTSEC=OFF
```

3. Submit `high_level_qualifier.PDS.server_type.DATA(ISTART)`. The server will now be running with security turned off.

**Procedure: How to Change the Security Mode From OPSYS to PTH, DBMS, or LDAP**

To switch the security mode from OPSYS to PTH, DBMS, or LDAP:

1. From the Web Console's menu bar select *Workspace* and then *Access Control*.  
The Security Mode pane opens.

2. In the Security Mode drop-down list, select the new security mode.

For more information about configuring PTH, DBMS, and LDAP security modes, either:

- ❑ Go to the Web Console menu bar, select *Help*, then *Contents and Search*, and in the left pane expand *Server Administration*.
- ❑ See the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

3. Click the *Apply and Stop* button.

A message is displayed about restarting the server.

4. Assign the new security setting to EDAEXTSEC by manually editing following server member.

For HFS: `high_level_qualifier.server_type.DATA(EDAENV)`

For PDS: `high_level_qualifier.PDS.server_type.DATA(EDAENV)`

For example:

`EDAEXTSEC=PTH`

5. Restart the server by submitting the ISTART JCL.

## Starting and Stopping a Server for PDS

### In this section:

- Starting the Server Using a Batch Job
- Starting the Server Using a Started Task
- Stopping the Server

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 *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

### Starting the Server Using a Batch Job

To start the server, submit the ISTART member of the MVS configuration library (*high\_level\_qualifier.server\_type.DATA*) for your server.

### Starting the Server Using a Started Task

ISSETUP creates started task JCL to start the server. This started task in a member of the MVS configuration library is IWAYS.

In order to execute the started task, you must:

- ❑ **Copy it** into SYS1.PROCLIB or any other JES2 Proclib data set.
- ❑ **Satisfy security requirements.** All external security-related permissions must exist for both the data sets 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 submit the started task from the MVS console, issue the following command:

```
S IWAYS
```

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

### Stopping the Server

You can stop the server using any of the following methods:

- ❑ **Web Console.** From the Web Console menu bar select *Workspace* and then *Stop*.



- ❑ **MVS operator command.** On the MVS Console or SDSF, issue the following operator MODIFY command:

```
F jobname, -stop
```

where:

```
jobname
```

Is the job under which the server is running.

- ❑ **Cancel the server job.** In SDSF, cancel the job.

## DB2 Security Exit Configuration for PDS

### Example:

Changing DSN3SATH for RACF 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 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 connection ID to DB2 that is associated with the region, job submitter, or started task.

For DB2 CLI adapter, the connection to DB2 must be configured as *trusted* for the exit to be invoked.

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

- ❑ For an example of the changes that must be made in DSN3SATH for RACF and eTrust CA-Top Secret sites, see [Changing DSN3SATH for RACF and eTrust CA-Top Secret Sites](#) on page 266.
- ❑ For an example of the changes that must be made in DSN3SATH for eTrust CA-ACF2 sites, see [Changing DSN3SATH for eTrust CA-ACF2 Sites](#) on page 269.

The highlighted text and comments 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 270.

**Note:**

- ❑ The positioning of these lines is approximate, 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 eTrust CA-Top Secret. FOCDSN4 is not needed with eTrust CA-ACF2. The secondary authorization ID(s) will be set correctly without it.

**Example: Changing DSN3SATH for RACF and eTrust CA-Top Secret Sites**

**1. Search for the SATH001 label** - add two lines (FOCDSN3):

```

SATH001  DS      0H
          USING  WORKAREA,R11          ESTABLISH DATA AREA ADDRESSABILITY
          ST     R2,FREMFLAG           SAVE FREEMAIN INDICATOR
          XC     SAVEAREA(72),SAVEAREA CLEAR REGISTER SAVE AREA
          .
          .
          .
*****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          <--ADD
CALL   FOCDSN3              GO GET THE IBI EXIT     <--ADD
CLI    AIDLPRIM,BLANK       IS THE INPUT PRIMARY AUTHID NULL
BH     SATH020              SKIP IF A PRIMARY AUTH ID EXISTS

```



**3. Search for the SATH025 label** - replace sath025 and add sath026 (FOCDNS4):

```

SATH025  DS      0H

        CALL  FOCDSN4              GO GET THE IBI EXIT (4=GROUP AUTH) <--ADD
        LTR   R6,R6                DOES AN ACEE EXIST?  IF NOT,      <--ADD
        BZ    SATH026              CHECK ACEE IN ADDRESS SPACE    <--ADD
        CLC   ACEEACEE,EYEACEE     DOES IT LOOK LIKE AN ACEE?    <--ADD
        BE    SATH027              YES, GO DO GROUPS              <--ADD
SATH026  DS      0H                <--ADD

        L     R6,ASCBASXB          GET ADDRESS SPACE EXTENSION BLOCK <--ADD
        L     R6,ASXBSENV-ASXB(,R6) GET ACEE ADDRESS             <--ADD
        CLC   ACEEACEE,EYEACEE     DOES IT LOOK LIKE AN ACEE?    <--ADD
        BNE   SATH049              NO, THEN CAN'T DO GROUPS      <--ADD
        DROP  R8                   DROP ASCB BASE REG             <--ADD
        SPACE 1                    <--ADD

SATH027  DS      0H                CHECK LIST OF GROUPS OPTION
        TM    RCVTOPTX,RCVTLGRP    IS LIST OF GROUPS CHECKING ACTIVE
        BZ    SATH040              SKIP TO SINGLE GROUP COPY IF NOT
        DROP  R7                   DROP RCVT BASE REG
        SPACE 1

* RACF LIST OF GROUPS OPTION IS ACTIVE
  EJECT
  .
  .
  .

```

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

\*DSN3SATH source is provided by ACF2.

**1. Search for PRIMARY AUTHORIZATION ID** - add two lines (FOCDNS3):

```
*****
*
*          PRIMARY AUTHORIZATION ID
*
*****
*
*   IF THE PRIMARY AUTHORIZATION ID IS NULL OR BLANKS
*   IF CA-ACF2 IS AVAILABLE
*   SET PRIMARY ID FROM ACFASVT (ASVLID)
*   ELSE
*   IF TSO FOREGROUND USER
*   SET PRIMARY ID FROM TSO LOGON ID (ASCBJBNB)
*   ELSE
*   SET PRIMARY ID FROM JOB USER (JCTUSER)
*
*****
SPACE 2                                04260000
LA R1,AIDLPRIM LOAD PARM REG1           <--ADD
CALL FOCDNS3 GO GET THE IBI EXIT        <--ADD
CLI  AIDLPRIM,C' ' PRIMARY AUTHID THERE ? 04270000
BH  PRIMWTO ..YES, EVERYTHINGS OK HERE 04280000
L   R3,PSAAOLD-PSA(0) CURRENT ASCB ADDRESS 04290000
USING ASCB,R3 ASCB ADDRESSABILITY 04300000
SPACE 2                                04310000
```

**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=high_level_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 EDAMOD(FOCDNS3)
*****
*** Omit the following line for eTrust CA-ACF2
*****
INCLUDE EDAMOD(FOCDNS4)
ENTRY DSN3@ATH
NAME DSN3@ATH(R)
/*
```

where:

*db2pref*

Is the prefix for the DB2 data sets.

*high\_level\_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.

**MSODDX: DDNAME Translation for User Subroutines**

On z/OS, you can incorporate an additional routine called MSODDX into a user-written subroutine that needs to access ddnames allocated to a WebFOCUS Reporting Server, a Data Migrator Server, or a Full-function Server. MSODDX provides ddname translation services that enable external programs to access files under the ddname used by the Server.

For details, see Chapter 6, *Platform-Specific Commands and Features*, in the *Stored Procedures Reference*.

**Overriding the Time Zone Setting**

By default, the server will use the system set value for Time Zone. This can be overridden by setting the TZ in the EDAENV member of the servers configuration library.

*TZ = valid tz string*

For more information about time zone values, see the IBM UNIX System Services Command Reference and search for TZ.

## Adding a Configuration Instance for PDS

### In this section:

- Step 1. Run ISETUP
- Step 2. Test the New Configuration Instance

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.

### Step 1. Run ISETUP

To add a configuration instance, perform the following steps.

1. Execute ISETUP again. You should have a *high\_level\_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.

The first Installation and Configuration panel opens.

```

IWay Software           Installation and Configuration           Unified Server Install
Command ==>                                                    P0

Unified Server Installation
Please select one of the following options:

    1. USS/HFS Deployment
        . Installation files and temporary files in HFS
        . Application files, like synonyms and procedures, in HFS (or
          optionally in both HFS and PDS)

    2. PDS Deployment
        . Installation files and temporary files in PDS
        . Application files, like synonyms and procedures, in PDS (or
          optionally in both PDS and HFS)

Enter selection (Default=1) ==> 1
Press Enter to continue, PF3 to END
    
```

2. Enter 2 and press Enter to continue to the next panel.

The following panel opens.

```

Information Builders     Installation and Configuration           z/OS PDS Deploy
Command ==>                                                    D1

Please select one of the following options:

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

Enter selection (Default=1) ==> 1
Enter License Key       ==> - - - _ Last License key used
Input source            ==> D (T)ape, (D)isk or (F)tp
Number of CPUs online   ==> 3
Installation Userid     ==> IADMIN Logged on Userid

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



3. Complete the first Installation and Configuration panel as follows.

Field	Instructions
Enter selection	Choose option 2, <i>Add Additional Configuration Instance</i> .
Enter License Key	Enter the license key that was provided with the software for the type of server instance that you want to configure (for example, the license key for a WebFOCUS Reporting Server or for a Full-Function Server).
Input source	This is ignored for option 2, adding a configuration instance.
Number of CPUs online	Shows the current number of general use processors currently online. It cannot be changed. This value is going to be matched with the licensed number of CPUs provided in the License Key, when the installation job is submitted. At this point this verification is not being enforced and if the licensed number does not match the actual number of CPUs currently online, a warning will be issued and the installation job will continue.
Installation Userid	Shows the current logon ID. It cannot be changed.
Enter Job Card information	<p>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.</p> <p>This job name is used for multiple submissions (for example, <i>jobnameA</i>, <i>jobnameB</i>, <i>jobnameC</i>, and so on) in the JCL generated by the installation procedure.</p>
Override JOB name checking	To provide your own JOB card information, including JOB name, enter Y and provide valid JOB card information in the <i>Enter Job Card information</i> field. The JOB card information that you enter will be used for each job that is submitted.

4. Press Enter to continue to the next panel.

The following panel opens.

```

IWay Software           Installation and Configuration           z/OS PDS Deployment
Command ==>                                                    DG

                                Add Configuration

Please enter the following information for WebFocus Reporting Server

Product Configuration Parameters

Current base HLQ (EDAHOME)           ==> _

Press Enter to continue, PF3 to return to previous menu

MÁ  a                                                                09/042
    
```

5. Enter the current base high-level qualifier used for EDAHOME.

This indicates where to install the configuration (EDACONF) and where the binaries (EDAHOME) are installed. The installation procedure checks whether the required set of EDAHOME data sets exist. If the test fails, you receive a message indicating the failure and available options.

6. Press Enter to continue to the next panel.

If you are configuring the *first* instance of a given server type, the following panel opens.

```

IWay Software           Installation and Configuration           z/OS PDS Deployment
Command ==>                                                    D3

                                Add Configuration

Please enter the following information for WebFocus Reporting Server
(Blank any field for default)
Using the following existing information

Current base HLQ           ==> IADMIN.SRV77

Output Libraries

Output Libraries HLQ       ==> IADMIN.SRV77
(EDACONF)                 Unit ==> SYSDA           Volume ==>

Configuration options
Approot value              ==> PLEASE SUPPLY VALUE           (21 Characters max)
HTTP Listener Port        ==> 8121           TCP Listener Port ==> 8120
Deferred Execution req?   ==> Y           Y or N
Installation JCL Library   ==> IADMIN.SRV77.PDS.WFS.DATA

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

Otherwise, if you are configuring an *additional* instance of a given server type, the following panel opens. In this sample panel, two Full-Function Server configuration instances (FFS and FFS1) already exist, and a third (FFS2) is being added.

```

IWay Software           Installation and Configuration           z/OS PDS Deployment
Command ==>                                                    DI
                                Add additional Configurations

Please enter the following information for Full Function Server

Using the following existing information
Current base HLQ           ==> IADMIN.SRV77
Base Install Library       ==> IADMIN.SRV77.PDS.FFS.DATA
Current configurations     ==> FFS

Configuration Options (blank any field for default)

Approot value              ==> IADMIN.SRV77.APPS
EDACONF suffix ( FFS plus) ==> 1                or string suffix ==>
HTTP Listener Port         ==> 8106            TCP Listener Port ==> 8105
Deferred Execution req?    ==> N                Y or N
Installation JCL Library   ==> IADMIN.SRV77.PDS.FFS1.DATA

Press Enter to continue, PF3 to return to previous menu

```

## 7. Complete the panel as follows.

Field	Instructions
<b>Configuration Parameters</b>	
Approot value	<p>This indicates where application components will reside for this configuration. The default value is based on the value specified for <i>Current Base HLQ (EDAHOME)</i> on the previous panel. To specify a different location for application components, change the value of this field.</p> <p>Different configurations which use the same base HLQ (high level qualifier) libraries (EDAHOME) can share the same approot value (that is, the same application files). Alternatively, they can use different approot values so that they have different sets of application files.</p> <p>If you specify the approot value of an existing server configuration, the installation process will recreate the server supplementary data sets and sample files (see <a href="#">Disk Space Requirements</a> on page 234). If you do not want them to be recreated, provide a different value for approot.</p>
Output Libraries HLQ (EDACONF)	<p>You are prompted for this information <i>only</i> if you are configuring the <i>first</i> instance of a server type (for example, if you are configuring the first instance of a WebFOCUS Reporting Server).</p> <p>This is the high-level qualifier that the installation procedure will use to allocate output libraries, that is, to allocate the configuration libraries for this server instance. This high-level qualifier is also known as EDACONF.</p>
Unit/Volume	<p>You are prompted for this information <i>only</i> if you are configuring the <i>first</i> instance of a server type (for example, if you are configuring the first instance of a WebFOCUS Reporting Server).</p> <p>These show the values that the installation process will use to allocate the output libraries. If necessary, you can change these to site-specific values.</p>

Field	Instructions
EDACONF suffix	<p>You are prompted for this information <i>only</i> if you are configuring an <i>additional</i> instance of a server type (for example, if you are configuring a second instance of a WebFOCUS Reporting Server).</p> <p>Each server instance must have its own set of configuration libraries. To guarantee this, and to prevent a new set of configuration libraries from overwriting an existing set, the suffix that you specify here will be appended to the name of the server type qualifier. For example, if you are configuring the second instance of a WebFOCUS Reporting Server, you could specify that the suffix "1" be added, so that the EDACONF high-level qualifier would be:</p> <p><code>IADMIN.SRV77.PDS.WFS1.DATA</code></p> <p>You can add a new configuration as a numeric or string suffix to the base server type. If you supply a string, the installation procedure ignores any numeric suffix. For a:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Numeric suffix, 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.</li> <li><input type="checkbox"/> String suffix, enter a string of between 1 and 5 characters (for example, TEST, PROD, or DEV). The string cannot contain embedded spaces.</li> </ul> <p>You can also use the string suffix to extend the numeric numbering past 9. Just supply a number greater than 9.</p> <p>If you change the suffix value, when you press Enter, the panel refreshes with a new value for EDACONF Library.</p>
HTTP Listener Port	<p>This indicates the port number that the server will use for HTTP. It is the first of three connection ports that must be available to the server.</p> <p>For example, if you choose port 8101, then ports 8101, 8102, and 8103 are used by the server. Ensure that you choose ports that are not currently being used.</p>

Field	Instructions
TCP Listener Port	This is the port number of the TCP Listener.  The default is one less than the port specified for the HTTP Listener, but it can be any port number other than the three reserved for HTTP.
Deferred Execution req?	For PDS deployment, the creation of the deferred execution files is optional at install time. For WebFOCUS Reporting Server the default is Y. If N is selected, no files are created and commented out DD entries are coded in the IRUNJCL member of the server's configuration file. Member IBATDEF is also created at install time and can be run at any time to physically create the deferred execution files. The feature can then be activated by un commenting the nine DD cards (//*EDACDxxx) in IRUNJCL and resubmitting the server JCL ISTART.

- 8.** Press Enter to continue to the next panel.

Depending on your license key, the Data Adapter panel may open before the confirmation 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 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 2. Collect Required Information for Adapters](#) on page 239.

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 JCL requirements.

- 10.** Press Enter to continue to the next panel.

The JSCOM3 Listener configuration panel opens.

- a.** The panel will prompt for the path to the Java environment to be passed to either JDK\_HOME or IBI\_JNIPATH, as described in [JVM Requirements for the Listener for Java](#) on page 111, and it will also prompt for edahome\_dir and edaconf\_dir, as described in [HFS Home and Configuration Directory Requirements](#) on page 237.

- b.** Configuration of the JSCOM3 Listener is either optional or mandatory depending on which adapters were selected. If any Java-based adapters were selected (EJB, Call Java, JDBC, MS SQL Server), the configuration of all three paths listed above is mandatory. If SAP-based adapters were selected (SAP or SAP BW), only edahome\_dir and edaconf\_dir are required.
- c.** If no Java-based or SAP based adapters were select, this configuration might still be desirable to enable server-side graphics and Adobe® Flex® features. To skip the configuration, leave the path blank.

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

The confirmation panel opens.

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

- N** to return to the initial panel 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.

**13.** As the job is processed, validate the installation as described in [Step 2. Validate the Installation](#) on page 174.

## Step 2. Test the New Configuration Instance

To test the configuration instance that you just added:

- 1.** Log on to TSO as iadmin.
- 2.** Submit the ISTART JCL from the configuration library to start the server. This executes the IRUNJCL proc. The configuration library is

`high_level_qualifier.PDS.server_type[suffix].DATA`

where:

`high_level_qualifier`

Is the high-level qualifier to be used for all output libraries. You specified the high-level qualifier during server installation, as described in [Step 4. Run ISETUP](#) on page 250, in Step 6.

*server\_type*

Is one of the following:

- FFS** for a Full-Function Server
- DM** for a DataMigrator Server
- WFS** for a WebFOCUS Reporting Server
- WFM** for a Shared Application Server for WebFOCUS Maintain

*suffix*

If you are testing an additional instance of a server type for which an earlier configuration exists, the new configuration library server type qualifier will have a suffix (for example, FFS1 or FFSDEV). The suffix distinguishes the new configuration library from the original one.

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

`(EDA13023) ALL INITIAL SERVERS STARTED`

- 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.** Continue with adapter configuration, as described in the *Adapter Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.



## Upgrading Your Server Release for PDS

### In this section:

- Step 1. Access the Installation Software
- Step 2. Run ISETUP
- Step 3. Test the Server Installation
- Step 4. Reconfigure Server Security
- Step 5. Reconfigure Adapters

Use this option to upgrade a server to a new maintenance level within the same major release or, starting with major release 77, upgrade to a higher major release level. A major release is indicated by the first two digits of the release number.

The purpose of the PDS server refresh option is to create a new set of EDASHOME libraries. It is recommended that you test the new libraries in a test environment before manually changing your production JCL (IRUNJCL) to point to the new software. The upgrade process can overwrite an existing set of EDASHOME libraries (not recommended) if both "Current Base HLQ" and "HLQ for downloaded files" or "Output Libraries HLQ" are the same value.

### Step 1. Access the Installation Software

#### How to:

- Unload the Installation Software From Tape
- Download the Installation Software Using FTP

You can choose to access the server installation software using either:

- ❑ **Tape.** The software is provided on a 3490 or 3590 cartridge.  
You must unload the installation data set from the tape before you can run the installation. This is how most installations are performed.
- ❑ **FTP.** You download the installation software from the Information Builders FTP site.  
Downloading the installation software involves:
  - 1. Registering** at the Information Builders FTP site.
  - 2. Downloading** the server installation data set from the site.
  - 3. Running** the isetup procedure to complete the download process and install the server.

**Note:** The above FTP steps are for the AUTOMATIC download instructions to MVS. If you downloaded the software to another platform, then transferred the files to MVS (following the manual FTP instructions), a new set of EDAHOMELibraries will already exist on MVS, therefore there will be no need to run ISETUP. The only process that needs to occur is the copying of the DB2VPRM members from the new HOME.DATA to the current HOME.DATA of the release to be upgraded. Complete the upgrade by following steps 3-5 in [Step 2. Run ISETUP](#) on page 284.

### **Procedure: How to Unload the Installation Software From Tape**

The software is provided on a cartridge in 3490 or 3590 format with MVS PDSs. Perform the following to unload the installation data set from the tape:

1. Log on to TSO.
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.

**Note:** If you do not use HOME.DATA, then change the following line to reflect the value you used.

```
//          SET  EDAUSSD= 'HOME.DATA'
```

Do this before you run ISETUP.

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,(5,5,25)),
// 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 data sets that the installation procedure allocates. We recommend that the high-level qualifier reflect the release of the server. However, you can use any site-specific value.

For PDS, we recommend retaining the low-level qualifier HOME.DATA, but you can change this to any site-specific value. If you use a low-level qualifier other than HOME.DATA, you must then edit member PDSSNAME to change the string "HOME.DATA" to the low-level qualifier you specify here.

*cart*

Is the unit type of the tape drive. Common names include 3490, TAPE, and 3590. 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 2. Run ISETUP](#) on page 284.

### **Procedure: How to Download the Installation Software Using FTP**

To download the installation software:

- 1.** Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
- 2.** Click *My Downloads* in the My Account section on the right side of the page.  
The Downloads, Upgrades, Service Packs, and PTFs page opens.
- 3.** Click the link for your product (for example, WebFOCUS and iWay Server and iWay Client).  
The Downloads by Release page for your product opens.
- 4.** Click your release from the Current Production Releases list.  
The Software Downloads page for your release opens.
- 5.** Scroll down and find the platform on which you want to install the server, and then click *Download* to the right of the platform name.

6. Fill in the registration form and then click *Continue*.

The Software Download Agreement page opens.

7. Select *I agree...* to consent to the Download Agreement, and then click *Continue*.

The Download Instructions page opens. Select AUTOMATIC or MANUAL and follow the relevant instructions.

A copy of the instructions is automatically emailed to you for later reference.

8. Log on to TSO.

9. Follow the instructions on the Download Page in your TSO session.

Continue with [Step 2. Run ISETUP](#) on page 284.

## Step 2. Run ISETUP

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 create a new set of EDAHOME libraries.

1. Execute the ISETUP member of your *high\_level\_qualifier*.HOME.DATA using ISPF option 6.

The Installation and Configuration panel opens.

2. Select 2 for PDS deployment and press Enter to continue to the next panel.

3. Complete the panel as follows.

Field	Instructions
Enter selection	Choose option 3, <i>Refresh Installation</i> .
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 F for automatic FTP download direct to MVS.
Number of CPUs online	Shows the current number of general use processors currently online. It cannot be changed. This value is going to be matched with the licensed number of CPUs provided in the License Key, when the installation job is submitted. At this point this verification is not being enforced and if the licensed number does not match the actual number of CPUs currently online, a warning will be issued and the installation job will continue.
Installation Userid	Shows the current logon ID. It cannot be changed.
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, <i>jobnameA</i> , <i>jobnameB</i> , <i>jobnameC</i> , 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 <i>Enter Job Card information</i> field. The JOB card information that you enter will be used for each job that is submitted.

4. If you selected input source T, skip to Step 5.

If you selected F for automatic FTP only, complete the panel as follows.

Field	Instructions
HLQ for downloaded files	High level qualifier to be used as the target for the FTP files. If this is the same value as "Current Base HLQ" (see below) then files will be overwritten. Two warning messages will be given and the enter key must be pressed to continue.
FTP Userid	User ID provided on the download instructions.
FTP Password	Password provided on the download instructions.

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

Field	Instructions
Current Base HLQ (EDAHOME)	High level qualifier of the current server that is to be refreshed. This HLQ will be used to check if a full set of EDAHOME libraries exist. From this value, the current installation library name is obtained and this will be the location used to create the refresh JCL.

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

Field	Instructions
<b>Input Media (installing from tape)</b>	
Volume serial number	Provide the volume serial number of the server media. 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. 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= <i>volume</i> '.

Field	Instructions
<b>Output Libraries</b>	
Output Libraries HLQ	For tape input only: High level qualifier that will be used to allocate and load a full set of EDAHOME libraries. Change the value as necessary. If this is the same value as "Current Base HLQ" (see previous page) then files will be overwritten. Two warning messages will be given and the enter key must be pressed to continue.
HLQ for downloaded files	If FTP is selected, this "HLQ for downloaded files" was provided on the previous panel.
Unit/Volume	Values that the installation process will use to allocate the EDAHOME libraries on MVS. If necessary, you can change these to site specific values.
Refresh IBISAMP?	Select Y/N to refresh the contents of the IBISAMP application.
APPROOT value	If Y was selected above, enter the APPROOT HLQ for IBISAMP to be refreshed.
Refresh edahome_dir?	Select Y/N to refresh the contents of the edahome_dir directory.
edahome_dir	If Y was selected above, enter the path to edahome_dir.
RA Active?	If you are refreshing a 7.7, 7.7.01, or 7.7.02 installation, and Resource Management is configured, select Y to recreate RMLDATxx datasets, otherwise select N. The default value is N.

**Note:** The installation JCL library name is where the refresh JCL will be created. This library is the current server installation library. The value cannot be changed.

- 7.** Ensure that all values on the panel are correct, then select one of the following options:
- N** to return to the initial panel 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.

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

The following jobs are added to the current server configuration library:

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

### Step 3. Test the Server Installation

To test the server installation:

1. Log on to TSO as iadmin.
2. Using a test server, replace all the EDHOME libraries referenced in IRUNJCL with the new set.
3. Submit the ISTART JCL to start the server.
4. Check the job output for errors. Look for the EDAPRINT message:

```
(EDA13023) ALL INITIAL SERVERS STARTED
```

5. 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.

6. 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 going to the Web Console menu bar, selecting *Workspace*, and then *Stop*.

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



## Step 4. Reconfigure Server Security

For information about configuring server security, see [Step 7. Configure Server Security](#) on page 151.

To reconfigure server security to OPSYS mode only:

1. Log on to TSO.
2. The libraries allocated to STEPLIB in IRUNJCL must be APF-authorized. Any non APF-authorized libraries must be allocated the TASKLIB DDNAME.
3. Test server security by repeating the process described in [Step 3. Test the Server Installation](#) on page 185.

## 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.

Adapter	Steps After Updating Binaries
Adabas	<ul style="list-style-type: none"> <li>❑ Change the value for EDALOAD in member EDAENV of your current server configuration library (<i>qualif.PDS.servertype.DATA</i>) to point to the new P.HOME.LOAD.</li> <li>❑ Re-enable the module containing SVC using the Web Console adapter configuration page.</li> <li>❑ Test the adapter from the adapter page before running your applications.</li> </ul>
DB2 CAF	<ul style="list-style-type: none"> <li>❑ Rerun the IDB2BIND JCL found in your current server configuration library <i>qualif.PDS.servertype.DATA</i>. This needs to be done for each subsystem that is used.</li> <li>❑ Test the adapter from the adapter page before running your applications.</li> </ul>

## Migrating From an MVS Server to a PDS Deployment Server

**In this section:**

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Typical Server Configuration File

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Service Level Settings

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PDS - DYNAM SET TEMP[ALLOC]

Allocation Order

MVS - IBITABLA

PDS - DYNAM SET TEMP[ALLOC] FOR

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PDS - DYNAM SET LONGSYNM

User Data File Allocations

DATASET=keyword on MASTER

Migrating Existing Applications to PDS

PDS - Allocating User MVS Libraries (Technique)

FOCUS Database Server (FDS)

MVS FOCUS Files (FDS/Sink Machine)

PDS - FOCUS Files Through the Legacy Sink

PDS - FOCUS Files Through the PDS FDS

MSODDX: DDNAME Translation for User Subroutines

SMF Records

In this section, we will be describing the migration process by comparing both server architectures (Traditional MVS server versus the PDS Deployment server), so we will demonstrate where configurations were made in the MVS server and what is the corresponding place and/or syntax in the PDS server.

Throughout this section we will refer to the Traditional MVS Server as simply MVS or SSCTL and we will refer to the PDS Deployment Server as simply PDS.

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 and it can read and write sequential files and FOCUS files, both locally and using the FOCUS Database Server (FDS).

The DYNAM command is fully supported, except for:

- ❑ Full PDS copies in DYNAM COPY. Single member copies and sequential data set copies are supported.
- ❑ DYNAM COMPRESS.

## Installation Overview

### ❑ MVS

1. **IEBCOPY** - Unload EDALIB.DATA.
2. **EDAJINS2** - Unload and allocate PDSs.
3. **EDACFGF** - Configuration Routine.
4. Add Jobcard to server JCL and submit.

### ❑ PDS

This is assuming a TAPE installation. FTP installation is also available. For more information, please see [Installing a New Server for PDS](#) on page 239.

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.

## MVS TCBs vs. PDS Processes

The following table illustrates how the PDS server has a more complex and enhanced architecture. All required components (processes) are preconfigured according to server license code and available from the ISETUP installation.

MVS TCB	PDS Process	Description
SSCTL	edaph	Main control
ATMTCP	edapgwy	TCP listener
ATMLU62	—	LU62 listener
DFMATM	edapgwy	Deferred listener
—	edapgwy	HTTP listener (WC)
EDACONS	—	LU2 console
TSCOM3	tscom3	Service Agent
HLISNK	hlisnk	Sink-machine (FDS)
—	tscom300	start, stop, savediag, traceon, etc.
—	scheduler	DataMigrator scheduler
—	edachkup	Monitors crashes, refreshes, shutdown, mrm (cpu_limit, agent_idle_limit, session_idle_limit)
—	edaplog	Writes edaprint.log
—	tsqprx	UNIX commands processor

### Note:

- ❑ On MVS, HLISNK runs in a separated JOB from the server.
- ❑ The number of tscom3 processes/TCBs corresponds to the number of agents currently started.
- ❑ PDS server does not use Shared Memory, so tscom300 process can not process commands originated from other jobs (like ISTOP, ITRCON, ITRCOFF). To issue commands to the server either use the Web Console or use Operator Modify commands.

- Except for tscom3, all processes/TCBs of each type are unique (1 per server).

## Typical Server JCL

### MVS:

```
// <jobcard>
//EDASERVE EXEC PGM=SSCTL
//STEPLIB DD DISP=SHR,DSN=qualif.EDALIB.LOAD
//ERRORS DD DISP=SHR,DSN=qualif.EDAMSG.DATA
//IBIFEX DD DISP=SHR,DSN=qualif.EDARPC.DATA
//FOCEXEC DD DISP=SHR,DSN=userlib.FOCEXEC
//IBIMFD DD DISP=SHR,DSN=qualif.EDAMFD.DATA
//MASTER DD DISP=SHR,DSN=userlib.EDAMFD.DATA
//ACCESS DD DISP=SHR,DSN=qualif.EDAAFD.DATA
// DD DISP=SHR,DSN=userlib.EDAAFD.DATA
//HTML DD DISP=SHR,DSN=userlib.HTML.DATA
//GIF DD DISP=SHR,DSN=userlib.GIF.DATA
//IBISNAP DD SYSOUT=X
//EDAPRINT DD SYSOUT=*
//CAR DD DISP=SHR,DSN=userlib.CAR.FOCUS
//QAVSM01 DD DISP=SHR,DSN=userlib.QAVSM01.VSAM

//EDACSG DD DISP=SHR,DSN=qualif.INSTALL.DATA(FFSCFG)
//EDASERVE DD DISP=SHR,DSN=qualif.INSTALL.DATA(FFSSERV)
//*EDACONS DD DISP=SHR,DSN=qualif.INSTALL.DATA(FFSCONS)
```

**Note:** SSCTL startup JCL corresponds to IRUNJCL member on *iadmin.servertype*.DATA on PDS server. The only lines that need to be copied to IRUNJCL are those containing userlib allocations (shown here highlighted).

This is just one example. You may create additional allocations according to need. In this example, allocations highlighted are customer allocations, while the others are using SSCTL installation and customization libraries. SSCTL JCL might have in-stream allocations replacing the data sets, for example:

```
//EDACSG DD *
NAME = iWay Data Adapter for MVS 5.x
NODE = TCPIN
BEGIN
    PROTOCOL = TCP
    CLASS = AGENT
    SERVICE = 2426 ;Port number server is listening
; CONNECT_INTERVAL = 50
END
/*
```

## Typical Server Configuration File

### MVS (pointed by //EDASERVE DD)

```

***** Global Settings *****
LONGSYNM          = ON
UNIQUE            = LOGID
EXTSEC            = ON
FASTLOAD          = **AUTO**
LICENSE           = 100-111-0422
SZERO=YES
IMSPZP=01
DBCTL=START
IMSSEC=ON
IMSCLASS=PCICSPSB
***** Service Level Settings *****
SERVICE          = EDAUSER
PROGRAM           = TSCOM3
NUMBER_READY     = 0
REFRESH_LIMIT    = 100
MAXIMUM          = 2
SERVINIT         = *,++
DYNAM ALLOC FILE EDASPROF DA qualif.EDAPROF.DATA(FEDAYHC) SHR REU
DYNAM ALLOC FILE EDAPROF DA qualif.EDAPROF.DATA SHR REU
DYNAM ALLOC FILE IBITRACE DA qualif.EDACTL.DATA(NOTRACE) SHR REU
++

```

//EDASERVE on SSCTL corresponds to EDASERVE member on *iadmin.servertype.CFG* on PDS server.

SERVINIT contains DYNAM ALLOC to be performed at Service initialization (like standard EDASPROF, EDAPROF, IBITRACE and STDOUT). Any additional customer allocations (like FOCUS or VSAM files) made on SSCTL SERVINIT must be copied to PDS SRVINIT member on *iadmin.servertype.CFG*.

Notice that SSCTL EDASPROF was not a *server profile*, but actually a *service level profile*. PDS EDASPROF member is a *server profile*. PDS server also has *service level profiles* pointed by `profile=` setting on EDASERVE member. For more information, see [Service Level Settings](#) on page 296.

If SSCTL server is running APP ENABLE, SERVINIT can also contain APPROOT=<applications HLQ>. On ISETUP installation, you should use the same existing SSCTL APPROOT value to install the PDS server.

## MVS Global Configuration Settings and Their PDS Equivalents

PDS server should be configured using the Web Console. The purpose of the following chart is to provide information where settings reside so you can configure PDS accordingly.

MVS (EDASERVE DD)	PDS
EXTSEC=ON APFAUTH=INTERNAL TASKLIB=<ddname>	EDAEXTSEC=OPSYS/PTH/DBMS/LDAP/OFF
SMFNUM=249	smf_recno=249
FASTLOAD=**AUTO**	Not applicable
LONGSYNM=ON	DYNAM SET LONGSYNM
LICENSE=xxx-xxx-xxxx	license=xxx-xxx-xxxx-xx
STORAGEABOVE = 4096 STORAGEBELOW = 512	Not applicable
CONSSEC=    CONSOPER= CONSDTL=    CONSUSER=	admin_level=    admin_password= (on admin.cfg through the Web Console)
IMSPZP=    DBCTL= IMSSEC=    IMSCLASS=	node on odin.cfg (created automatically through the Web Console Adapter configuration)
UNIQUE=LOGID	max_connections_per_user=

### Note:

- ❑ The EDAEXTSEC setting resides on EDASERVE (//EDACCFG) file, unless otherwise noted below.

EDAEXTSEC is an environment variable set on EDAENV DD. By default, server will try to start secure, if all privileges are in place (APF-authorization). It is only required if you want to change the security mode from the default. Security OPSYS is equivalent to the old APFAUTH=INTERNAL/TASKLIB= combination. TASKLIB DD name is used for 3rd party load libraries that are not APF authorized on IRUNJCL proc.

- ❑ LONGSYNM=ON became default on MVS 5.3.x servers. On PDS server, it was replaced by DYNAM SET LONGSYNM and it works in conjunction with DYNAM SET TEMP MVS. For more information, see [Long Synonym Support](#) on page 306. DYNAM SET commands can be coded in any profile or focexec.

- ❑ `max_connections_per_user=` is a service level keyword, giving you more flexibility. You can also limit to any number, not only UNIQUE as before.

## Service Level Settings

The following table lists the MVS Service Level Configuration Settings and their PDS equivalents.

MVS (EDASERVE DD)	PDS
WLM_ENCLAVE_TRNAME= PRTYGROUP=	wlm_enclave_trname=
LE_STACK=BELOW	Not supported
SERVINIT=	profile=<service_level_profile>
SZERO=YES	szero=y
MEMORY_LIMIT_ABOVE= MEMORY_LIMIT_BELOW=	memory_limit= memory_limit_below=
SOS_PERCENT=	Not supported
IDLELIM= IDLE_AGENT_LIMIT=	idle_session_limit= idle_agent_limit=
REFRESH_LIMIT=	agent_refresh=
CONNECT_INTERVAL=	queue_limit=    maximum_q=
APPROOT=	aproot=

### Note:

- ❑ PDS setting resides on EDASERVE(//EDACCFG) file, unless otherwise noted below.
- ❑ `wlm_enclave_trname=` has the exact same implementation on PDS as the MVS equivalent and performs the same function as the old `PRTYGROUP=` setting.
- ❑ `LE_STACK=` is not supported under PDS. If you are running subroutines linked with `AMODE(24)`, they must be re-linked with `AMODE(31)`.
- ❑ `profile=` can be used to specify a focexec file which will be executed during agent startup, for example, `baseapp/myprof` (`myprof` being of type focexec). Execution order is `edasprof`, `service profile`, `group profile` and finally `user profile`.



- ❑ Regarding MEMORY\_LIMIT\_=, the MRM=ON setting in MVS became obsolete on PDS. The presence of the memory\_limit= keywords enables the feature automatically.
- ❑ The edaprint.log will display messages when memory available is insufficient, but they are currently not echoed to MVS system log. Also PDS server will only issue messages when there's no more memory available to start an agent. SOS\_PERCENT= used to tell operators when a critical situation was about to occur.
- ❑ CONNECT\_INTERVAL resides on MVS //EDACSG file. queue\_limit= is the equivalent and limits how long a connection waits in queue. maximum\_q= limits how many connections can be queued.
- ❑ approot= is a global configuration setting (not in the service level scope).
- ❑ Keywords that did not change functionality or parameter names (other than uppercase to lowercase) are omitted. For example, DEPLOYMENT = deployment, NUMBER\_READY = number\_ready, and so on.

## Typical Server Profile

### MVS (pointed by //EDASERVE DD)

```

-* FF Server FEDAYHC Profile generated on 27 Sep 2001 at 14:23:59
-***** Allocate the catalogue files *****
  DYNAM ALLOC FILE SYSCOLLN SHR REU DA qualific.SYSCOLLN.FOCUS
  DYNAM ALLOC FILE SYSCOLLT SHR REU DA qualific.SYSCOLLT.FOCUS
  DYNAM ALLOC FILE SYSRPC   SHR REU DATASET qualific.SYSRPC.FOCUS
-***** Allocate the synonym files *****
-* DYNAM ALLOC FILE EDASYNA  SHR REU DATASET qualific.EDAAFD.DATA
-* DYNAM ALLOC FILE EDASYNM  SHR REU DATASET qualific.EDAMFD.DATA
-* DYNAM ALLOC FILE EDASYNR  SHR REU DATASET qualific.FOCEXEC
-*****
-* JOINTYPE sets the method of processing cross platform joins:
-*   NESTEDLOOP - Perform a nested loop join on second set.
-*   SORTMERGE  - Perform a merge of the second set.
-* SQL EDA SET JOINTYPE SORTMERGE
-*****
-* EXORDER is execution order for RPCs. Possible values are:
-*   PGM        - Search for 3gl RPCs only
-*   FEX        - Search for 4gl RPCs only
-*   PGM/FEX    - Search for 3gl RPCs. If not found search for 4gl.
-*   FEX/PGM    - Search for 4gl RPCs. If not found search for 3gl.
  SET EXORDER=FEX/PGM
-* End of profile generated on 27 Sep 2001 at 14:23:59

```

Catalog files are automatically added to IRUNJCL at installation and should be ignored as a migration task.

In this example, allocations highlighted are the only ones being executed. The lines that include "-" characters are comments. If you never made customizations from the standard EDASPROF supplied with SSCTL, then there will be no settings to manually copy to EDASPROF member of *iadmin.servertype.PRF* on PDS.

JOINTYPE line would appear uncommented for HUB servers.

For APP ENABLE SSCTL servers, the following lines would also be present:

- ❑ APP ENABLE
- ❑ APP PATH IBISAMP

EDASYNM, EDASYMA and EDARPC allocations should be added to IRUNJCL as part of the concatenations for MASTER, ACCESS and FOCEXEC, respectively, as shown in the following example.

```
//IRUNJCL      PROC//TSCOM300 EXEC PGM=TSCOM300
//STEPLIB      DD DISP=SHR,DSN=iadmin.P.HOME.LOAD
//*TASKLIB DD DISP=SHR,DSN=iadmin.P.HOME.LOAD
//*
//              SAMPLE MASTER, ACCESS, FOCEXEC
//MASTER      DD DISP=SHR,DSN=<qualif>.EDASYNM.DATA
//              DD DISP=SHR,DSN=<qualif>.MASTER.DATA
//ACCESS      DD DISP=SHR,DSN=<qualif>.EDASYNA.DATA
//              DD DISP=SHR,DSN=<qualif>.ACCESS.DATA
//FOCEXEC DD DISP=SHR,DSN=<qualif>.EDARPC.DATA
//              DD DISP=SHR,DSN=<qualif>.FOCEXEC.DATA
```

## Server Profile

### ❑ MVS

Pointed by EDASPROF DDNAME, for example, *qualif.EDAPROF.DATA(Fuserid)*. The server can contain any valid focexec commands.

### ❑ PDS

Pointed by EDAPROF DDNAME (member EDASPROF), for example *iadmin.servertype.PRF*. The server can contain any valid focexec commands.

#### Note:

- ❑ All DYNAM options are supported with the exception of COMPRESS. COPY and COPYDD have limited support:  
COPY and COPYDD are supported for sequential files and PDS (PDSE) members. Full library copies are not supported.

- ❑ Adapter settings should be changed from SQL <eng> to the new format ENGINE <eng>, for example, SQL EDA SET becomes ENGINE EDA SET. The old format is still valid, but we should indicate to customers that the old syntax may eventually be de-supported. Best approach is to configure new Adapters on the Web Console and then lookup the settings on SSCTL profile in the manual and see if we need to manually copy any setting to PDS server. For instance, we do not want to copy the basic Adapter configuration (will be done automatically), but we might have an specific setting for the Adapter that is not added by default.
- ❑ New DYNAM commands added to handle IBITABLA / IBIAPPLA / LONGSYNM and destination of Temporary files.

## User Profiles

### ❑ MVS

Pointed by EDAPROF DDNAME, for example, *qualif*.EDAPROF.DATA. Can contain any valid focexec commands.

### ❑ PDS

Pointed by EDAPROF DDNAME, for example, *iadmin.servertype*.PRF. Can contain any valid focexec commands.

The same rule for server profiles applies: Only copy DYNAMs that are not already present on IRUNJCL (member of *iadmin.servertype*.DATA), Adapter settings that are not automatically done by Web Console configuration and server settings that are used by customer applications. For example:

```
ENGINE DB2 SET ERRORTYPE DBMS
SET PRINTPLUS=ON
```

Not:

```
ENGINE SQLDBC SET DBCLOGON TDPA/EDAQA,EDAQA;
```

## PDS - DYNAM SET TEMP[ALLOC]

There is no migration task here as the default value is ideal for most applications. This topic is included here to give awareness of this new command. To determine the allocation for your temporary files, issue the following command:

```
DYNAM SET TEMP[ALLOC] {HFS|MVS|HIPER|MEMORY}
```

where:

### HFS

Allocates temporary files to the hierarchical file system. (Default in HFS Server; not applicable for PDS server.)

#### MVS

Allocates temporary files to MVS data sets. (Default in PDS server.)

#### HIPER

Allocates temporary files to hiperspace. Limited implementation with no spill control (agent will crash if memory is exceeded).

#### MEMORY

Allocates temporary files to main storage. Limited implementation with no spill control (agent will crash if memory is exceeded).

**Note:** DYNAM SET TEMP command does not cause an allocation to be made, but simply determines where files should be allocated so that, when an allocation request is made, it will issue the proper command (DYNAM or FILEDEF) according to the location (MVS, HFS, HIPER or MEMORY). A DYNAM already in place for a given DDNAME will be respected.

## Allocation Order

### Example:

Reusing Temporary Allocations With Explicit DYNAMs and HIPER  
Reusing Temporary Allocations With No Explicit Allocations

Allocations are searched in the following order:

1. JCL ALLOCATION.
2. DYNAM ALLOCATION.
3. FILEDEF (for non-FOCUS data sources)  
or  
USE (for FOCUS data sources).
4. DATASET= in MASTER file.
5. APP PATH (server runs APP ENABLE by default).

### Example: Reusing Temporary Allocations With Explicit DYNAMs and HIPER

```
DYNAM ALLOC FI MYHOLD SPACE 1 1
DYNAM ALLOC FI HOLDMAST SPACE 1 1 DIR 10

DYNAM SET TEMP HIPER
TABLE FILE CAR PRINT COUNTRY
ON TABLE HOLD AS MYHOLD
END
```

**Note:**

- ❑ Prior DYNAM allocations will be respected. HOLD and HOLDMAST will NOT go to HIPER, but future, non-explicit allocations, will do so.
- ❑ IBI recommends using the default value for DYNAM SET TEMP[ALLOC]. The examples given here are just to illustrate DDNAME allocation mechanism.

**Example: Reusing Temporary Allocations With No Explicit Allocations**

For future allocations in DASD:

```
DYNAM SET TEMP MVS
TABLE FILE CAR PRINT COUNTRY
ON TABLE HOLD AS MYHOLD
END
```

**Note:** The commands above will cause automatic DYNAM allocation for MYHOLD and HOLDMAST as MVS temporary files.

To issue DYNAMs for MYHOLD and HOLDMAST:

```
TABLE FILE CAR PRINT COUNTRY CAR
ON TABLE HOLD AS MYHOLD
END
```

**Note:**

- ❑ Prior DYNAM allocations will be respected. Data allocation will have DCB overridden for proper LRECL/BLKSIZE/RECFM.
- ❑ IBI recommends using the default value for DYNAM SET TEMP[ALLOC]. The examples given here are just to illustrate DDNAME allocation mechanism.

## MVS - IBITABLA

Default sample IBITABLA is shipped on MVS *qualif*.EDALIB.DATA.

```
*...+...1...+...2...+...3...+...4...+
HOLD      CYLS    5  10                                3,
HOLDMAST  TRKS    5  5 36          NOHIPER            ,
SAVE      CYLS    5  10                                3,
REBUILD   CYLS    5  10                                3,
FOCSML    CYLS    5  5                                 2,
FOCUS     CYLS    5  5                                 1,
FOCSTACK  TRKS    5  5                                 2,
FOCSORT   CYLS    5  5                                 1,
OFFLINE   CYLS                                A          ,
SESSION   TRKS    5  5                                 2,
FOCCOMP   TRKS    5  5 12                              ,
HOLDACC   TRKS    5  5 12                              ,
FMU       TRKS    5  5 12                              ,
TRF       TRKS    5  5 12                              ,
FOCPOOLT  CYLS    5  20          NOHIPER            4,
FUSION    CYLS    5  50          NOHIPER            4,
MDI       CYLS    5  20          NOHIPER            4,
FOC$HOLD  CYLS    5  5                                 2,
EXTINDEX  CYLS    5  5                                 2,
```

**Note:**

- ❑ Entries highlighted are supported in PDS DYNAM SET command.
- ❑ HIPER/NOHIPER is not supported. Hiper supported is very limited and it works globally (all temp files or nothing).

The following table lists and describes the columns in IBITABLA member.

Columns	Length	Description
01-08	8	Class of file - DD name
10-13	4	Allocation units (CYLS, TRKS)
15-17	3	Primary extent
19-21	3	Secondary extent
23-24	2	Number of directory blocks (blank specifies a sequential file - 0 is invalid)
26-26	1	SYSOUT class

Columns	Length	Description
28-33	6	Volume serial on which to allocate
35-42	8	Type of unit to allocate (for example, 3390, DASD, NOHIPER*, etc)
44-55	2	Unit count

## PDS - DYNAM SET TEMP[ALLOC] FOR

To alter the default allocation parameters for temporary files for MVS data sets, issue the following command:

```
DYNAM SET TEMP[ALLOC] FOR type dynam_parms
```

where:

*type*

Is one of the following: HOLDACC, HOLDMAST, HOLD, SAVE, REBUILD, FOCUS, FOCSORT, OFFLINE, FOCCOMP, FMU or TRF.

*dynam\_parms*

Are regular DYNAM ALLOC parameters to be used as default for that type. Note that DCB parameters, if provided here, will be ignored, since they must be compatible with the file type being written.

This is similar to the functionality of IBITABLA in the MVS Server. The defaults should be overwritten for all cases when, in older versions, a private copy of IBITABLA existed containing different values. DYNAM SET TEMP FOR commands can be issued in any focexec, but IBI recommends issuing them on either profiles or SRVINIT member.

Defaults for HOLDMAST, HOLDACC, FOCCOMP, FMU and TRF:

```
TRKS SPACE 5 5 DSORG PO DIR 36 NEW DELETE REU
```

Defaults for REBUILD:

```
TRKS SPACE 5 10 NEW DELETE REU
```

Defaults for HOLD, FOCSORT and all other types:

```
CYLS SPACE 5 10 DSORG PS NEW DELETE REU
```

Examples:

```
DYNAM SET TEMP FOR HOLD TRACKS SPACE 50 100
```

```
DYNAM SET TEMP FOR FOCUS DATACLASS xxx STORCLASS yyy
```

```
DYNAM SET TEMP FOR HOLDMAST DSNTYPE LIBRARY CYLS SP 1,1
```

## MVS - IBIAPPLA

Default sample IBIAPPLA is shipped on MVS *qualif*.EDALIB.DATA.

```
class recfm lrecl blksize units prim sec dir postfix
*
FOCEXEC  VB  4096   27998  TRKS  50  50  50  FOCEXEC.DATA
MASTER   FB   80    22000  TRKS  50  50  50  MASTER.DATA
ACCESS   FB   80    22000  TRKS  50  50  50  ACCESS.DATA
FOCSTYLE FB   80    22000  TRKS  50  50  50  FOCSTYLE.DATA
HTML     VB  4096   27998  TRKS  50  50  50  HTML.DATA
GIF      FB  1024   27648  TRKS  50  50  50  GIF.DATA
MAINTAIN VB  4096   27998  TRKS  50  50  50  MAINTAIN.DATA
WINFORMS VB  4096   27998  TRKS  50  50  50  WINFORMS.DATA
FOCCOMP  VB  32756  32760  TRKS  50  50  50  FOCCOMP.DATA
ETG      VB  4096   27998  TRKS  50  50  50  ETG.DATA
XML      VB  4096   27998  TRKS  50  50  50  XML.DATA
```

### Note:

- ❑ Highlighted entries are supported in PDS DYNAM SET command.
- ❑ IBIAPPLA defines the default allocations for all application files created by APP CREATE command.
- ❑ Default values, unless overwritten by member IBIAPPLA of //EDAPROF.

## PDS - DYNAM SET APP FOR

### Example:

DYNAM SET APP FOR Syntax

To create application libraries, issue the following:

```
DYNAM SET APP FOR filetype [SKIP|CREATE][POSTFIX a.b] [parms]
```

where:

*filetype*

Are the component types that may be affected by this command: ACCESS, DTD, ETG, FOCCOMP, FOCEXEC, FOCSTYLE, GIF, HTML, MAINTAIN, MASTER, SQL, WINFORMS, XML, XSD. You must issue a separate command for each component type you wish to affect.

SKIP

Indicates that the designated file type should not be created when the APP CREATE command is issued.



**CREATE**

Creates the designated file type when the APP CREATE command is issued. This is the default setting.

**POSTFIX**

Specifies the lower level qualifier of the DSN (data set name) for the component type. The APPROOT value is used to complete the full DSN, which is expressed as

*aprootvalue.appname.component\_type*

The default value for component\_type is *filetype.DATA*.

**parms**

Are the allocation parameters you can set. The default parameter values are:

<b>Filetype</b>	<b>Parms</b>
ACCESS	RECFM FB TRKS LRECL 80 BLKSIZE 22000 SPACE 50 50 DIR 50
DTD	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
ETG	RECFM FB TRKS LRECL 80 BLKSIZE 22000 SPACE 50 50 DIR 50
FOCCOMP	RECFM VB TRKS LRECL 32756 BLKSIZE 32760 SPACE 50 50 DIR 50
FOCEXEC	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
FOCSTYLE	RECFM FB TRKS LRECL 1024 BLKSIZE 27648 SPACE 50 50 DIR 50
GIF	RECFM VB TRKS LRECL 1028 BLKSIZE 27998 SPACE 50 50 DIR 50 GIF type creates libraries for GIF and JPG files.
HTML	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
MAINTAIN	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
MASTER	RECFM FB TRKS LRECL 80 BLKSIZE 22000 SPACE 50 50 DIR 50
SQL	RECFM VB TRKS LRECL 32756 BLKSIZE 32760 SPACE 50 50 DIR 50
WINFORM	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
XML	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
XSD	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50

This is similar to the functionality of IBIAPLA in the MVS Server. The defaults should be overwritten for all cases when, in older versions, a private copy of IBIAPPLA existed containing different values. DYNAM SET APP FOR commands can be issued in any focexec, but IBI recommends issuing them on either profiles or SRVINIT member.

**Example: DYNAM SET APP FOR Syntax**

- ❑ Do not create WINFORMS automatically:

```
DYNAM SET APP FOR WINFORMS SKIP
```

- ❑ Change low-level qualifier for type FOCEXEC:

```
DYNAM SET APP FOR FOCEXEC POSTFIX DEPT1.FEX.LIB
```

- ❑ Increase allocation space for type MASTER:

```
DYNAM SET APP FOR MASTER SPACE 5 5 CYLS DIR 100
```

- ❑ Change DCB information for type ETG:

```
DYNAM SET APP FOR ETG RECFM VB LRECL 1024 BLKSIZE 27998
```

**Note:** All attributes (DCB, space and low-level qualifier) could be changed at once for a given type. These are simple examples.

**Long Synonym Support**

**How to:**  
 Implement Long Synonyms in MVS  
 Implement Long Synonyms in PDS

These are the long names supported.

Long Name	Member Name (Master and/or Access)
EMPLOYEES_ACCOUNTING	EMPLOY{0
EMPLOYEES_DEVELOPMENT	EMPLOY{1
EMPLOYEES_DISTRIBUTION	EMPLOY{2
EMPLOYEES_FINANCE	EMPLOY{3

\$VIRT=<long\_name> as 1st line of MASTER and/or ACCESS. For example, EMPLOY{0}.

```
$ VIRT=EMPLOYEE_ACCOUNTING$ Created from EMPLOYEE MASTER
  FILENAME=EMPLOYEE_DATA,
  SUFFIX=FOC
  SEGNAME=EMPINFO,SEGTYPE=S1
  FIELDNAME=EMP_ID, ALIAS=EID, FORMAT=A9, $
  FIELDNAME=LAST_NAME, ALIAS=LN, FORMAT=A15, $
```

### **Syntax:** How to Implement Long Synonyms in MVS

- ❑ Permanent FOCUS, FLAT, VSAM by LONGNAME keyword on DYNAM ALLOC/FREE:

```
DYNAM ALLOC FI CAR LONGNAME CARFILELONG1
  DA qualif.CAR.FOCUS SHR REU
```

- ❑ Permanent Adapter files, for example, DB2:

```
CREATE SYNONYM DB2TABLELONG1 DBMS DB2
  FOR userid.DB2TABLELONG
END
```

- ❑ Temporary files, using ON TABLE HOLD FORMAT xxx AS <long\_name>:

- ❑ Feature enabled by LONGSYNM=ON on EDASERVE DD2.
- ❑ No support for FDS (Sink) Focus Files or DATASET= on MASTER.

#### **Note:**

- ❑ Long file names (synonyms) can be up to 64 characters long.
- ❑ LONGSYNM=ON became default on MVS 5.3.x servers and no longer had to be coded.

### **Syntax:** How to Implement Long Synonyms in PDS

- ❑ Permanent FOCUS, FLAT, VSAM by long DDNAMES accepted on DYNAM and in ? TSO DDNAME:

```
DYNAM ALLOC FI CARFILELONG1 DA qualif.CAR.FOCUS SHR REU
```

- ❑ Permanent Adapter files, for example, DB2:

```
CREATE SYNONYM baseapp/DB2TABLELONG2 DBMS DB2
  FOR userid.DB2TABLELONG
END
```

- ❑ Temporary files, using ON TABLE HOLD FORMAT xxx AS <long\_name>:
  - ❑ Feature enabled by DYNAM SET LONGSYNM setting, explained in the next topic.
  - ❑ Support for PDS FDS(Sink) Focus Files and DATASET= on MASTER.

**Note:**

- ❑ Long file names (synonyms) can be up to 64 characters long.
- ❑ The CREATE SYNONYM syntax employed above was also available on MVS server, when running APP ENABLE mode. APP ENABLE is the default and recommended mode to run PDS server.
- ❑ The PDS FDS service is automatically configured as part of the PDS server. Legacy MVS FDS (Sink Machine) does not support Long file names.

## PDS - DYNAM SET LONGSYNM

To determine the allocation for your long synonyms (metadata), issue the following command:

```
DYNAM SET LONGSYNM {HFS|MVS|MATCH}
```

where:

**HFS**

Long synonyms will be created on HFS. (not applicable to PDS).

**MVS**

Long synonyms will be created on MVS (default in PDS).

**MATCH**

Is the same as for MVS, but short aliases must match between the Master File and the Access File (additional CPU processing to synchronize member names at creation).

**Note:** Setting is only required at creation time. For HOLD files, DYNAM SET TEMP MVS is also needed. In other words, a FOCEXEC running against existing long synonyms allocated in DD MASTER and ACCESS do not require this setting. To Create SYNONYMS through the Web Console, both DYNAM SET LONGSYNM MVS and DYNAM SET TEMP MVS must be set (they are the default values in PDS).

## User Data File Allocations

### How to:

Allocate FOCUS Files  
 Allocate FLAT (Sequential) Files  
 Allocate VSAM Files

The following topics describe how to allocate user data files.

### **Syntax:** How to Allocate FOCUS Files

FOCUS files can be allocated in the following ways:

#### ❑ **IRUNJCL:**

1. `//CAR DD DISP=SHR,DSN=qualif.CAR.FOCUS`
2. `//CAR DD DISP=SHR,DSN=qualif.GDG.FOCUS(0)`

#### ❑ **DYNAM:**

1. `DYNAM ALLOC FI CAR DA qualif.CAR.FOCUS SHR REU`
2. `DYNAM ALLOC FI CAR DA qualif.GDG.FOCUS(-1) SHR REU`

#### ❑ **USE command:**

1. Renaming a Master File:

```
USE CAR1 AS CAR
END
```

2. Concatenating Master Files:

```
USE CAR1 AS CAR
CAR2 AS CAR
END
```

3. Accessing Files on FDS (Sink Machine):

```
USE CAR1 ON FOCUSU01
END
```

4. Application Allocation:

```
USE baseapp/car.foc AS CAR
END
```

**Note:**

- ❑ CAR ddname was used arbitrarily.
- ❑ When a DYNAM or JCL allocation is present, USE command is not required, unless some other operation is required, as shown in these examples.
- ❑ Applications are mapped to PDS files, not HFS directories, despite notation used in the command.

**Syntax:**     **How to Allocate FLAT (Sequential) Files**

Flat (Sequential) files can be allocated in the following ways:

**IRUNJCL:**

1. `//FLAT DD DISP=SHR,DSN=qualif.FLAT.DATA`
2. `//FLAT DD DISP=SHR,DSN=qualif.GDG.DATA(-2)`
3. `//FLAT DD DISP=SHR,DSN=qualif.PDS.DATA(MEMBER01)`

**DYNAM:**

1. `DYNAM ALLOC FI FLAT DS qualif.FLAT.DATA SHR REU`
2. `DYNAM ALLOC FI FLAT DS qualif.GDG.DATA(+1) NEW SPACE 1,1 -  
TRK REFDSN qualif.GDG.BASE NEW CATLG TRTCH COMP`
3. `DYNAM ALLOC FI FLAT DS qualif.PDS.DATA(MEMBER01) SHR REU`

**FILEDEF Command:**

1. To MVS File:

```
FILEDEF FLAT DISK `/'qualif.FLAT.DATA`
```

2. Application Allocation:

```
FILEDEF FLAT DISK baseapp/flat.ftm
```

**Note:**

- ❑ FLAT ddname was used arbitrarily.
- ❑ FILEDEF is valid for sequential files, PDS members and GDG files instead of DYNAM or JCL allocation. VSAM files CANNOT be read using FILEDEF.
- ❑ Applications are mapped to PDS files, not HFS directories, despite notation used in the commands.

**Syntax: How to Allocate VSAM Files**

VSAM files can be allocated in the following ways:

❑ **IRUNJCL:**

Requires `szero=y` on EDASERVE, member of `iadmin.servertype.CFG`, for concurrent access.

```
//VSAM1 DD DISP=SHR,DSN=qualif.VSAM.CLUSTER
```

❑ **DYNAM:**

```
DYNAM ALLOC FI VSAM1 DS qualif.VSAM1.CLUSTER SHR REU
```

**Note:**

- ❑ VSAM1 ddname was used arbitrarily.
- ❑ You cannot use FILEDEF for VSAM files.

**DATASET=keyword on MASTER**

If a data set name satisfies one of the following conditions, the server assumes that it is an MVS fully qualified data set:

- ❑ Data set name starts with `"/"`.
- ❑ Data set name contains no `"/` and contains at least one `."`

In all other cases, the name is interpreted as a relative application reference name, translated internally by the server to the actual fully qualified data set name.

The following table shows all possible DATASET= syntaxes.

Keyword on MASTER FILE	Type
<code>DATASET=APP1/physfile.ftm</code>	Application relative file name
<code>DATASET='qualif.ABC.DATA'</code>	Fully qualified sequential data set
<code>DATASET=qualif.ABC.DATA</code>	Fully qualified sequential data set
<code>DATASET=/'qualif.ABC.DATA'</code>	Fully qualified sequential data set
<code>DATASET=qualif.GDG.DATA(0)</code>	Fully qualified GDG data set
<code>DATASET=qualif.PDS.FILE(MEMBER)</code>	Fully qualified PDS member

**Note:** Examples on rows 2, 3 and 4 are all equivalent.

## Migrating Existing Applications to PDS

- ❑ Case I — non APP ENABLE MVS server:

Transfer the following allocations from your MVS server JCL to IRUNJCL (member of iadmin.servertype.DATA): MASTER,FOCEXEC, ACCESS, HTML, GIF, FOCSTYLE, FOCPSB and data files (if DYNAM is not going to be used).

The PDS server will automatically recognize them as part of MVSAPP application.

**Note:** You may not have all of them. SSCTL server had some aliases that now can be mapped to a unique DDNAME. If customer had more than one DDNAME, we can concatenated then into a single DDNAME, as follows:

```
EDASYNM  \
MASTER   --> MASTER
EDAMFD   /

EDASYMR  \
FOCEXEC  --> FOCEXEC
EDARPC   /

EDASYMA  \
ACCESS   --> ACCESS
EDAAFD   /
```

- ❑ CASE II – APP ENABLE MVS server:

Simply use the same APPROOT value on the ISETUP installation panel.

## PDS - Allocating User MVS Libraries (Technique)

If each user (or a particular user) has his own set of FOCEXEC, MASTER, ACCESS, HTML, GIF, FOCPSB and FOCSTYLE, code the following on his user profile:

```
APP MAP userAPP mas>//dd:usermas;fex>//dd:userfex;acx>//dd:useracx;
    htm>//dd:userhtm;gif>//dd:usergif;sty>//dd:usersty;psb>//dd:userpsb;
DYNAM ALLOC FI usermas DA user.MASTER.DATA SHR REU
DYNAM ALLOC FI userfex DA user.FOCEXEC.DATA SHR REU
DYNAM ALLOC FI useracx DA user.ACCESS.DATA SHR REU
DYNAM ALLOC FI userhtm DA user.HTML.DATA SHR REU
DYNAM ALLOC FI usergif DA user.GIF.DATA SHR REU
DYNAM ALLOC FI usersty DA user.FOCSTYLE.DATA SHR REU
DYNAM ALLOC FI userpsb DA user.FOCPSB.DATA SHR REU
APP PREPEND PATH userAPP
```

where:

*user, userfex, usermas, useracx, userAPP*

Are all arbitrary names, used as examples only.



You only need to map the ddnames you are actually using. If you do not have FOCPSB libraries, for instance, you do not need to add DYNAM ALLOC commands for it.

## FOCUS Database Server (FDS)

FOCUS Database Server is also referred to as Sink Machine. PDS Server comes pre-configured with its own Sink Machine process, and it is also able to communicate with the legacy MVS Sink machine.

This is useful as in the migration process, you may have applications already moved to the PDS server and others still running on the MVS server.

The following topics will show how Sink machines were used on MVS server as well as how to communicate with either one, using the PDS Server.

**Note:** You cannot manage the same file using both the legacy and current versions of the FOCUS Database Server, as it will cause enqueue conflicts.

## MVS FOCUS Files (FDS/Sink Machine)

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.

```
//FOCSU01 DD DSN=x.y.z,DISP=SHR
```

A USE statement was then issued to connect the FOCUS Master File to the DDNAME allocated to the communications file.

```
USE
  CAR ON FOCSU01
END
```

## PDS - FOCUS Files Through the Legacy Sink

- DDNAME allocation was replaced by a node in the ODIN file as follows:

```
NODE=FOCSBS
BEGIN
  PROTOCOL=SBS
  SUBSYS=xyzw
  CLASS=SUCLIENT
  PORT=x.y.z
END
```

where:

```
NODE=FOCSBS
```

Is the node name of legacy FOCUS Database Server.

`SUBSYS=xyzw`

Is the optional parameter to specify the IBI subsystem name.

**Note:** This is not needed if you are using the default IBI subsystem name IBIS.

`PORT=x.y.z`

Is the communications data set.

- ❑ A USE statement is then issued to connect the FOCUS Master File to the DDNAME allocated through the ODIN communications file.

## PDS - FOCUS Files Through the PDS FDS

If you want a FOCUS database to be managed by the current version of the FDS (FOCUS Database Server), you can allocate its data file in several ways:

- ❑ JCL in the IRUNJCL procedure:

```
//CAR DD DISP=SHR,DSN=dsname
```

- ❑ DYNAM ALLOC statements in suprof.prf or edasprof.prf:

```
DYNAM ALLOC FI CAR DA dsname SHR REU
```

- ❑ DYNAM ALLOC statements in user profiles or focexec procedure:

```
DYNAM ALLOC FI CAR DA dsname SHR REU
```

Issue the following USE command in association with any of these allocation methods:

```
USE CAR ON FOCUSU01  
END
```

## MSODDX: DDNAME Translation for User Subroutines

On z/OS, you can incorporate an additional routine called MSODDX into a user-written subroutine that needs to access ddnames allocated to a WebFOCUS Reporting Server, a Data Migrator Server, or a Full-function Server. MSODDX provides ddname translation services that enable external programs to access files under the ddname used by the Server.

For details see Chapter 6, *Platform-Specific Commands and Features*, in the *Stored Procedures Reference*.

## SMF Records

### How to:

Report From SMF Data Using the Web Console

Enable Accounting

Set the Accounting Field

### Reference:

SMF RECTYPES

SMF Record Format for RECTYPES 1 and 4

SMF Record Format for RECTYPES 2 and 5

Accounting for DB2 in a Server Task

The server provides an optional facility to use for accounting purposes that enables you to log resource utilization on a per-user basis. This facility enables the server to generate SMF records for query-level and user-level accounting.

Server accounting requires that the server STEPLIB data sets be APF-authorized. When SMF records are generated, they contain:

- ❑ The logon ID and security ID of the user.
- ❑ The CPU time and EXCPs consumed.
- ❑ Data based on the type of record written.

You can process the SMF records using the accounting programs that exist at your site. Examples of SMF records are provided in [SMF Record Format for RECTYPES 1 and 4](#) on page 213.

In order to write SMF records, the server must be running APF authorized.

A Master File, SMFVSAM, is provided for accessing accounting statistics. It resides in *qualif.P.HOME.MAS*. SMFVSAM enables you to interpret the SMF records generated by the accounting facility using reporting requests or stored procedures. SMFVSAM is for logoff records only, as indicated by ALIAS=2 on the RECTYPE field entry.

The Web Console provides access to a sample report to query the SMF data. The code for this report can be found in *qualif.P.HOME.FEX(SMFMAN1)*.

**Syntax:**     **How to Enable Accounting**

To enable accounting, insert the following statement into the server configuration file (edaserve.cfg):

```
smf_recno=smfnumber
```

where:

*smfnumber*

Is an integer in a range from 128 to 255, inclusive. This number represents the SMF number used by the accounting facility when it sends records to the SMF system.

By default, both RECTYPE pairs will be created when accounting is enabled. You can override the default by coding the following parameter on edaserve.cfg :

```
smf_subtype = {all|logon|query}
```

where:

all

Cuts all records. This is the default.

logon

Cuts logon records only (RECTYPE pair 1 and 2).

query

Cuts query records only (RECTYPE pair 4 and 5).

**Syntax:**     **How to Set the Accounting Field**

Up to 40 characters can be supplied that appear in the SMF records field SMFOFA40. The SET BILLCODE command can be used in any support server profile to provide the account field information. The syntax is

```
SET BILLCODE=value
```

where:

*value*

Is the 1–40 characters to be used on each SMF record produced.

This information can also be set dynamically from a client application by coding an RPC with the SET command and executing it with the value as a parameter. WebFOCUS users can send the SET command to the server.

**Procedure: How to Report From SMF Data Using the Web Console**

To report from SMF data using the Web Console:

- 1.** Go to the Web Console menu bar, select *Procedures*.
- 2.** In the left pane, open the *Reports* folder, then click *System Management*.

The View as text and Run options are displayed.

- 3.** Click *Run*.

You are prompted for the DSN of the SMF VSAM data set to be reported from and the smf\_recno value used to produce the SMF records.

The report is displayed.

**Reference: SMF RECTYPES**

There are five RECTYPE values defined to produce SMF records:

RECTYPE	Description
<b>1</b>	Indicates a start of task record. When included in a report, these statistics tell when a task initiation occurred, and are of no particular use in chargeback. By pairing start and end of task records for all tasks within a time period, statistics such as average active time, peak task count, and average task count can be determined. These values can be used for future capacity planning activities for the server.
<b>2</b>	Indicates the start of a task record. When included in a report, these statistics tell when a task termination occurred. These records are cut for both publicly and privately deployed services and contain statistics for the subtask as a whole.  For privately deployed services, RECTYPE (2) records contain statistics associated with a single user connection.
<b>4</b>	Begin query. (Record layout is the same as RECTYPE (1).)
<b>5</b>	End query. (Record layout is the same as RECTYPE (2).)

**Reference: SMF Record Format for RECTYPES 1 and 4**

The record format for RECTYPES 1 and 4 of the SMF records written by the server is defined below. The format is provided in the system 390 assembler DSECT form.

```

SMFON      DSECT
           SPACE

*-----*
*  USAGE ACCOUNTING SMF RECORD LAYOUT FOR LOGON RECORDS.          *
*                                                                    *
*  THIS IS THE DSECT DESCRIBING THE SMF RECORD WHICH IS PASSED TO  *
*  YOUR EXIT ON AT USER LOGON TIME.  IT IS COMPLETELY READY TO BE  *
*  WRITTEN WHEN YOUR EXIT RECEIVES CONTROL.                        *
*-----*
           SPACE

*-----*
*  THE FIRST TWENTY FOUR BYTES OF THE RECORD ARE THE SMF HEADER.  *
*  THESE FIELDS ARE REQUIRED IN ALL SMF RECORDS (18 BYTES FOR RECORDS *
*  WITHOUT SUBTYPES; WE USE SUBTYPES, THE HEADER IS 24 BYTES).    *
           SPACE
SMFONLEN DS      H'116'          RECORD LENGTH
SMFONSEG DS      XL2'0000'      SEGMENT DESCRIPTOR (0 UNLESS SPANNED)
SMFONFLG DS      XL1           SYSTEM INDICATOR
SMFONRTY DS      XL1           RECORD TYPE
SMFONTME DS      XL4           TIME, IN HUNDREDTHS OF A SECOND
SMFONDTE DS      PL4           DATE, 00CYDDDF, WHERE F IS THE SIGN
SMFONSID DS      CL4           SYSTEM IDENTIFICATION
SMFONSBS DS      CL4           SUBSYSTEM IDENTIFICATION
SMFONSET DS      XL2'0001'      SUBTYPE OF RECORD - X'0001' INDICATES X
                               THIS IS A LOGON RECORD

           SPACE

```

```

*-----*
* THE NEXT FIELDS ARE THOSE PRESENT IN THE LOGON *
* RECORD FOR THE START OF A USER SESSION. *
*-----*
      SPACE
SMFONMSO DS   CL8           JOBNAME
SMFONJID DS   CL8           JOBID (FROM SSIBJBID)
SMFONASI DS   Y             ASID
SMFONRV1 DS   XL2           RESERVED
SMFONUID DS   CL8           SECURITY USERID
SMFONLID DS   CL8           USERID PRESENTED AT LOGON (SAME AS X
SMFONSID UNLESS CHANGED VIA MSIDTR X
SECURITY EXIT)
SMFONRUL DS   CL8           TSO USERID/CICS REGION/LU NAME X
CONTENTS OF THIS FIELD IS TSO USERID X
IF SMFONCNT = SMFONTSO, CICS REGION X
(JOBNAME) IF SMFONCNT = SMFONCIC, X
OR LU NAME IF SMFONCNT = SMFONVTM
SMFONCTI DS   CL4           WHEN SMFONCNT = SMFONCIC, THIS FIELD X
CONTAINS THE CICS TERMID
SMFONSRV DS   CL8           SERVICE NAME FROM SERVICE BLOCK
SMFONRS0 DS   XL4           RESERVED FOR FUTURE EXPANSION
SMFONCNT DS   XL1           CONNECTION TYPE
      SPACE
SMFONTSO EQU   1             CONNECTION VIA TSO
SMFONCIC EQU   2             CONNECTION VIA CICS
SMFONVTM EQU   4             CONNECTION VIA VTAM
SMFONPSR EQU   8
      SPACE
SMFONRS1 DS   XL3           RESERVED
SMFONID1 DS   F             SYSPLEX ID 1
SMFONID2 DS   F             SYSPLEX ID 2
SMFOFPID DS   XL8           POOLED USER ID
SMFONRS2 DS   XL12          RESERVED
SMFONL EQU   *-SMFON        LENGTH OF THE SMF LOGON RECORD

```

**Reference: SMF Record Format for RECTYPES 2 and 5**

The record format for RECTYPES 2 and 5 of the SMF records written by the server is defined below. The format is provided in the system 390 assembler DSECT form.

```

SMFOF      DSECT
           SPACE

*-----*
*  USAGE ACCOUNTING SMF RECORD LAYOUT FOR LOGOFF RECORDS.          *
*                                                                    *
*  THIS IS THE DSECT DESCRIBING THE SMF RECORD WHICH IS PASSED TO  *
*  YOUR EXIT ON AT USER LOGOFF TIME.  IT IS COMPLETELY READY TO BE *
*  WRITTEN WHEN YOUR EXIT RECEIVES CONTROL.                        *
*-----*
           SPACE

*-----*
*  THE FIRST TWENTY FOUR BYTES OF THE RECORD ARE THE SMF HEADER.  *
*  THESE FIELDS ARE REQUIRED IN ALL SMF RECORDS (18 BYTES FOR RECORDS *
*  WITHOUT SUBTYPES; WE USE SUBTYPES, THE HEADER IS 24 BYTES).    *
*-----*
           SPACE
SMFOFLEN  DS      H'168'          RECORD LENGTH
SMFOFSEG  DS      XL2'0000'      SEGMENT DESCRIPTOR (0 UNLESS SPANNED)
SMFOFFLG  DS      XL1           SYSTEM INDICATOR
SMFOFRTY  DS      XL1           RECORD TYPE
SMFOFTME  DS      XL4           TIME, IN HUNDREDTHS OF A SECOND
SMFOFDTE  DS      PL4           DATE, 00CYDDDF, WHERE F IS THE SIGN
SMFOFSID  DS      CL4           SYSTEM IDENTIFICATION
SMFOFSBS  DS      CL4           SUBSYSTEM IDENTIFICATION
SMFOFSBT  DS      XL2'0002'     SUBTYPE OF RECORD - X'0002' INDICATES X
                                   THIS IS A LOGOFF RECORD

           SPACE

```



```

*-----*
* THE NEXT FIELDS ARE THOSE PRESENT IN THE LOGOFF RECORD FOR THE END OF A USER SESSION.
*-----*
      SPACE
SMFOFMSO DS CL8 JOBNAME
SMFOFJID DS CL8 JOBID (FROM SSIBJBID)
SMFOFASI DS Y ASID
SMFOFRV1 DS XL2 RESERVED
SMFOFUID DS CL8 SECURITY USERID
SMFOFLID DS CL8 USERID PRESENTED AT LOGON (SAME AS SMFOFSID UNLESS CHANGED VIA MSIDTR SECURITY EXIT) X X
SMFOFRUL DS CL8 TSO USERID/CICS REGION/LU NAME CONTENTS OF THIS FIELD IS TSO USERID IF SMFOFCNT = SMFOFTSO, CICS REGION (JOBNAME) IF SMFOFCNT = SMFOFCIC, OR LU NAME IF SMFOFCNT = SMFOFVTM WHEN SMFOFCNT = SMFOFCIC, THIS FIELD CONTAINS THE CICS TERMID X X
SMFOFCTI DS CL4 SERVICE NAME FROM THE SERVICE BLOCK X
SMFOFSRV DS CL8 RESERVED FOR FUTURE EXPANSION
SMFOFRS0 DS XL4 CONNECTION TYPE
SMFOFCNT DS XL1
      SPACE
SMFOFTSO EQU 1 CONNECTION VIA TSO
SMFOFCIC EQU 2 CONNECTION VIA CICS
SMFOFVTM EQU 4 CONNECTION VIA VTAM
SMFOFPSR EQU 8
SMFOFCC DS XL3 COMPLETION CODE FOR THE TASK
SMFOFACT DS CL8 USER ACCOUNTING INFORMATION; THIS FIELD CURRENTLY PASSED AS LOW VALUE X
SMFOFCPU DS XL4 CPU TIME IN HUNDREDTHS OF A SECOND
SMFOFEXC DS XL4 COUNT OF EXCP'S
SMFOFLTM DS FL4 LOGON DURATION IN HUNDREDTHS OF A SECOND X
SMFPRTY DS XL1 PRIORITY
SMFCOMPL DS XL1 COMPLETION TYPE
DS XL2 RESERVED
SMFOFID1 DS F SYSPLEX ID 1
SMFOFID2 DS F SYSPLEX ID 2
SMFOPID DS XL8 POOLED USERID
SMFOFA40 DS CL40 FULL 40-BYTE ACCOUNTING FIELD
      SPACE
SMFOFL EQU *-SMFOF LENGTH OF THE SMF LOGOFF RECORD

```

### Reference: Accounting for DB2 in a Server Task

When using a server to access DB2 data, certain processing takes place within the DB2 address space and is governed by DB2's chargeback system. If a user requests data from DB2, the server passes the request to the DB2 subsystem. The DB2 subsystem then processes the request, performing such tasks as retrieving rows and aggregating the data. It generates the answer set, and passes the output back to the server. The server then performs any joins and formatting which have not been performed by DB2 to satisfy the original request.

Charges incurred while the request was being processed by the DB2 subsystem are added to the charges accumulated in the server task that originated the request for processing. If the server accounting is enabled, these charges are associated with the user logon and security IDs in the SMF records described earlier.

## Performance Considerations for PDS

### In this section:

Server Initialization Commands Configured in SRVINIT Member

Running the Server in a Non-Swappable Address Space

Workload Manager

There are several ways in which you can improve the server performance:

- ❑ **Server initialization commands.** You can specify DYNAM commands in member SRVINIT of the data set referenced by //EDACCFG DD in IRUNJCL. For more information, see [Server Initialization Commands Configured in SRVINIT Member](#) on page 322.
- ❑ **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 325.
- ❑ **Workload Manager (WLM).** You can balance server workload by using Workload Manager. For more information, see [Workload Manager](#) on page 325.

### Server Initialization Commands Configured in SRVINIT Member

It is possible to specify DYNAM commands in member SRVINIT of the data set referenced by //EDACCFG DD in IRUNJCL. These commands will be executed during server startup and will be in effect until the server is shut down. You can execute the following DYNAM commands from SRVINIT:

□ `DYNAM SET APP FOR filetype [SKIP]CREATE] [POSTFIX a.b] [ parms]`

Specify the types of component files that are skipped or created for the application when an APP CREATE command is issued. By default, all component file types are generated.

where:

*filetype*

Are the component types that may be affected by this command: ACCESS, DTD, ETG, FOCCOMP, FOCEXEC, FOCSTYLE, GIF, HTML, MAINTAIN, MASTER, SQL, WINFORMS, XML, XSD. You must issue a separate command for each component type you wish to affect.

SKIP

Indicates that the designated file type should not be created when the APP CREATE command is issued.

CREATE

Creates the designated file type when the APP CREATE command is issued. This is the default setting.

POSTFIX

Specifies the lower-level qualifier of the DSN (data set name) for the component type. The APPROOT value is used to complete the full DSN, which is expressed as

*aprootvalue.appname.component\_type*

The default value for component\_type is

*filetype.DATA*

*parms*

Are the allocation parameters you can set. The default parameter values are:

Filetype	Parms
ACCESS	RECFM FB TRKS LRECL 80 BLKSIZE 22000 SPACE 50 50 DIR 50
DTD	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
ETG	RECFM FB TRKS LRECL 80 BLKSIZE 22000 SPACE 50 50 DIR 50
FOCCOMP	RECFM VB TRKS LRECL 32756 BLKSIZE 32760 SPACE 50 50 DIR 50
FOCEXEC	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50

Filetype	Parms
FOCSTYLE	RECFM FB TRKS LRECL 1024 BLKSIZE 27648 SPACE 50 50 DIR 50
GIF	RECFM VB TRKS LRECL 1028 BLKSIZE 27998 SPACE 50 50 DIR 50 GIF type creates libraries for GIF and JPG files.
HTML	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
MAINTAIN	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
MASTER	RECFM FB TRKS LRECL 80 BLKSIZE 22000 SPACE 50 50 DIR 50
SQL	RECFM VB TRKS LRECL 32756 BLKSIZE 32760 SPACE 50 50 DIR 50
WINFORM	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
XML	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50
XSD	RECFM VB TRKS LRECL 4096 BLKSIZE 27998 SPACE 50 50 DIR 50

- ❑ `DYNAM APP app1 [app2 ...]`

Enable application libraries to be allocated during the server startup, improving performance. This command is not applicable to sequential data sets in the application (for example, FOCUS, FTM) which will only be allocated when they are referenced. For example:

```
DYNAM APP IBISAMP BASEAPP (default command at installation time)
```

- ❑ `DYNAM ALLOC` commands

For sequential data sets in the application (for example, FOCUS, FTM) to be allocated at server startup (equivalent to adding a JCL allocation for these files in IRUNJCL).

## 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(SCHEDxx):

```
PPT PGMNAME(TSCOM300)      /* PROGRAM NAME */
NOSWAP                     /* NON-SWAPPABLE */
CANCEL                     /* CAN BE CANCELLED */
```

Do not use the KEY 0 parameter, or any other parameter (such as NOPASS), unless the system programmer completely understands the consequences of adding the parameter.

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 server agents may perform differently than the server by adding the following keyword to edaserve.cfg:

```
wlm_enclave_trname = WLM_transaction_name
```

where:

```
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 dispatching priority of the task. 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 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 type	Qualifier name	Starting position	Service Class	Report Class
1	TN	IWAYFAST		EDAQRYHI	

WLM sub-rules (levels 2 and above) are supported. For a server request to join an enclave in a particular service class, the names of all rule qualifiers below our transaction name are checked. For example, consider the following WLM definition:

```
Subsystem Type JES - Batch Jobs
Classification:
```

```
Default service class is PRDBATLO
There is no default report class.
```

Qualifier #	Qualifier type	Qualifier name	Starting position	Service Class	Report Class
1	SSC	PRDMVS		PRDDFLT	
2	TN	IWAYFAST		EDAQRYHI	

In this particular case, the qualifier 1 type is SSC (Subsystem Collection), and a server request will only join the enclave IWAYFAST if it is running on a particular LPAR in the SYSPLEX. This qualifier (PRDMVS) must match the XCF group definition: issue \$DMASDEF (for JES2) and check the value of XCFGRPNM field.

You can handle WLM scheduling environments by defining them to WLM and then adding the JOB statement parameter SCHENV=xxxxx to the ISTART JCL.

## Frequently Asked Questions for PDS

### **Q: Why might someone want to use the PDS deployment?**

**A:** PDS deployment provides the same rich level of features as the HFS-deployed server, including the Web Console, but removes the requirement for interaction with Unix System Services at installation and run time. It deploys the server software in partitioned data sets. Configuration and user-created source files, such as procedures and metadata, are also stored in PDS libraries.

Administration of the server, from a systems perspective, has been streamlined to match that of the classic MVS version of the server (also known as the SSCTL server). There are fewer user ID requirements for installing and operating the PDS-deployed server than the HFS-deployed version, and security management has been simplified.

### **Q: Does this replace the older MVS server (also known as SSCTL)?**

**A:** The z/OS server with PDS deployment is a migration path from the older MVS server.

### **Q: Can one refresh a server's installation software that had been deployed one way with software using other type of deployment?**

**A:** No. Each deployment type is independent of the other with regards to installation.

### **Q: Can both deployments of the server coexist on one z/OS system?**

**A:** Yes, if your license agreement allows for this.

### **Q: Can one configure two server instances of the same server, one instance an HFS/USS deployment, and the other a PDS deployment?**

**A:** No. Although the media and installation are unified, once the base server software is installed, the two deployment types run separately.

As with the HFS/USS deployment, the PDS deployment can have many instances running from the same EDHOME set of libraries.

### **Q: Can I monitor server startup by checking the MVS SYSLOG?**

**A:** Yes.

The following messages are written to the SYSLOG when

- ❑ The server starts successfully:

(EDA13023) ALL INITIAL SERVERS STARTED

- ❑ The Server does not start:

(EDA13171) UNABLE TO START IWAY SERVER

**Q: What, if anything, does the PDS deployment not support? In what installation implementation?**

**A:** The PDS deployment of the server currently does not support the following functions:

- ❑ The Web Console Run Stress option.
- ❑ Displaying server logs and traces in the Web Console.

## Third-Party Software and Licenses

### In this section:

OpenFlex SDK

As of Version 7 Release 6.8, to address display of third-party software license requirements, a license option has been added to the Help menu located on the Web Console. This section describes the third-party software and includes references to the full licenses included in *Information Builders and Third-Party Licenses* on page 413.

### OpenFlex SDK

OpenFlex SDK is included by Information Builders for use with its HOLD FORMAT FLEX feature. This distribution is subject to the terms and conditions of the Mozilla Public License Version 1.1.

For more information, see *Zip Archiver License* on page 427 or visit our World Wide Web site <http://www.informationbuilders.com>.



## Troubleshooting for PDS

### How to:

Generate a Server Trace  
 Generate a System Dump  
 Add JCL Allocations to a Running Server  
 Free Data sets Allocated to the Server  
 Initialize the RDAAPP Application  
 Add Your Problem to the Troubleshooting Guide  
 Allocate a Data set From the z/OS System Console  
 Free a Data set From the MVS System Console

### Example:

Allocating a VSAM Data set  
 Allocating a SYSMDUMP Data set with FREE=CLOSE Option  
 Freeing an Allocated Data Set  
 IRDAAPPC REXX Execution

### Reference:

Problem: The Server Abends With a U4039 Code  
 Add Your Problem to the Troubleshooting Guide

If you have a problem and cannot resolve it yourself, contact Customer Support Services as described in [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11. In addition, supply the following information to Customer Support Services:

- ❑ Server trace (see [How to Generate a Server Trace](#) on page 330).
- ❑ JCL for IRUNJCL.
- ❑ Job output.
- ❑ System dump, if needed (see [How to Generate a System Dump](#) on page 330).
- ❑ Any additional information regarding how the problem occurred.

If you have a troubleshooting suggestion and you think others will find it helpful, we invite you to send it to us, as described in [How to Add Your Problem to the Troubleshooting Guide](#) on page 336. We will consider including your problem in a future release of this manual.

### **Reference: Problem: The Server Abends With a U4039 Code**

**Problem:** The server abends with a U4039 code.

**Cause:** 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.

### **Procedure: How to Generate a Server Trace**

To generate a server trace:

1. Turn tracing on by doing one of the following:
  - ❑ Going to the Web Console menu bar, selecting *Workspace*, and then *Enable Traces*.
  - ❑ Starting the server by running the ITRCON JCL member.
  - ❑ On the MVS Console or SDSF, issue the following operator MODIFY command  

```
F jobname , -traceon
```

where *jobname* is the job under which the server is running.
2. Reproduce the problem.
3. Submit the ISAVEDIA member to produce additional diagnostic information.
4. Send the server JES log, and the ISAVEDIA JES log, to Customer Support Services.

### **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), and send it to Customer Support Services.

Instead of using JCL allocations to add SYSMDUMP, the procedure described below can be used alternatively.

### **Procedure:** How to Add JCL Allocations to a Running Server

A z/OS operator can issue modify commands from the z/OS system console to allocate DDNAMES to the server without restarting it. This procedure is useful if you need to re-allocate a file that was freed to allow a batch overnight utility to run, or perhaps to add SYSMDUMP allocation to a running server.

### **Syntax:** How to Allocate a Data set From the z/OS System Console

```
F <iway_server_jobname/started task>,DYNAM ALLOC FI <ddname> DA <dsname>  
<optional dynam parameters>
```

### **Example:** Allocating a VSAM Data set

```
F IWAY2,DYNAM ALLOC F VSAMFILE DA VSAM.FILEA.CLUSTER SHR
```

### **Example:** Allocating a SYSMDUMP Data set with FREE=CLOSE Option

```
F IWAY2,DYNAM ALLOC FILE SYSMDUMP DA PROD2.SYSMDUMP.DATA SHR CLOSE
```

**Note:** The examples above assume IWAY2 is the jobname/started task ID for the server.

All valid DYNAM ALLOC syntaxes are supported. For more information on DYNAM command, please refer to the *Store Procedures Reference* manual.

The following message will be issued in the server JESMSGLG indicating if the command was processed successfully or not.

Success:

```
+DYNAM COMMAND SUCCESSFULLY PROCESSED Rc=0
```

Failure:

```
+DYNAM ERROR: IKJ56225I DATA SET IWAY.TEST ALREADY IN USE, TRY LATER
```

### **Procedure: How to Free Data sets Allocated to the Server**

A z/OS operator can issue modify commands from the z/OS system console to free DDNAMEs or DSNAMES allocated to the server. Both global allocations (made at the server ISTART JCL) and local ones (DYNAM ALLOC commands issued by user tasks) can be freed. This procedure is useful if you need to free an allocation to run a batch utility overnight, without restarting the server.

### **Syntax: How to Free a Data set From the MVS System Console**

To free a single DDNAME:

```
F <iway_server_jobname/started task>,DYNAM FREE FI <ddname>
```

To free a single DSNAME (all occurrences in the server):

```
F <iway_server_jobname/started task>,DYNAM FREE DS <dsname>
```

To free multiple DDNAMEs, passing a pattern (free all DDNAMEs starting with AB):

```
F <iway_server_jobname/started task>,DYNAM FREE FI AB*
```

To free multiple DSNAMES (all occurrences in the server), passing a pattern (free all allocations of data sets starting with IWAY.VSAM):

```
F <iway_server_jobname/started task>,DYNAM FREE DA IWAY.VSAM*
```

A message will be issued in the iway\_server JESMSG LG indicating if the command was process successfully or not, as follows.

Success:

```
+DYNAM COMMAND SUCCESSFULLY PROCESSED Rc=0
```

Failure:

```
+DYNAM ERROR: IKJ56225I DATA SET IWAY.TEST ALREADY IN USE, TRY LATER
```

### **Example: Freeing an Allocated Data Set**

Suppose ISTART JCL (jobname IWAY2) has the following allocation:

```
//VSAMFILE DD DISP=SHR,DSN=VSAM.FILEA.CLUSTER
```

The operator can free this file using the command (from MVS console):

```
F IWAY2,DYNAM FREE FI VSAMFILE
```

### Procedure: How to Initialize the RDAAPP Application

RDAAPP is an interactive client test application that facilitates the execution of SQL statements and stored procedures on the Unified server. During the installation process, JCL and REXX routines are created in the installation data set as members IRDAAPPJ and IRDAAPPC respectively.

The following installation data set is used for HFS deployment.

```
qualify.servertype.DATA
```

where:

```
servertype
```

Is determined by your license key.

The following installation data set is used for PDS deployment.

```
qualify.PDS.servertype.DATA
```

where:

```
servertype
```

Is determined by your license key.

**Note:** The RDAAPP application is not intended for use as a production tool.

**1.** To use the IRDAAPPJ JCL, you must first edit the member IRDAAPPJ and add your request details.

**a.** To edit the member IRDAAPPJ, change the following field,

```
//STDIN DD *
Put your request here
//

to

//STDIN DD *
<enter blank line>
<enter userid>
<enter password>
LOOPBACK
<enter request>
<enter optional parameters>
Q
Q
//
```

**b.** Complete the panel as follows.

Field	Instructions	
<enter userid>	Enter a valid userid or blank line if the userid of the user who submitted the job is to be used for a trusted connection.	
<enter password>	Enter the password for the above userid or a blank line if the userid/password of the user who submitted the job is to be used for a trusted connection.	
LOOPBACK	Match a node name in the EDACS3 allocation in the IRDAAPPJ JCL. Default is LOOPBACK.	
<enter request>	Enter one of the following values:	
	S	To enter an SQL SELECT statement. Type the statement after you enter the value S (see the following example).
	P	To enter an SQL PREPARE statement. Type the statement after you enter the value P.
	D	To execute a prepared statement by supplying the ID. Type the ID after you enter the value E.
	Q	To quit.
	?	For this list of commands.
<enter optional parameters>	Depending on the above command, you may be prompted for:  Select engine (0/ENTER - EDA, 1 - DB2, 2 - ORACLE, 3 - TERADATA, and so on).  Reclimit (Hit Enter for all records).  Readlimit (Hit Enter for all records).	
Q	Quit RDAAPP (It is needed twice).	

- c. Once you have made the above edits, submit the JCL for execution.
2. Type the following command at the TSO ready prompt to use the IRDAAPP REXX routine:  

```
EX 'qualif.servertype.DATA(IRDAAPP)'
```

or

```
EX 'qualif.PDS.servertype.DATA(IRDAAPPC)'
```

where:

*servertype*

Is determined by your license key.

3. After the prompts, enter the same information as specified in the above table.

### Example: IRDAAPPC REXX Execution

The following is the screen output from a sample execution of the IRDAAPPC REXX routine:

```
*****
**                               RDAAPP Client test tool                               **
*****

<<< RDAAPP : Initializing EDA/API SQL, Version 7, Release 7 >>>

Default communications config file : //DD:EDACS3
Override? (Press enter for default) :   <enter blank line>

<<< Initialization Successful >>>

Enter User Name : <enter userid or leave blank for current TSO userid>
Enter Password : <enter password or leave blank for current TSO userid
password>
Enter server name, number, SELF, URL or ? (Hit return for 'LOOPBACK') :

<<< Successfully connected to synchronous server LOOPBACK >>>

Enter Command (? for command help):
S SELECT COUNTRY FROM CAR;
Select engine (0/ENTER - EDA, 1 - DB2, 2 - ORACLE, 3 - TERADATA, etc) :
Reclimit (Hit enter for all records):
Readlimit (Hit enter for all records):

Please Wait...

ENGLAND
FRANCE
ITALY
JAPAN
W GERMANY

<<< 5 record(s) processed. (scb count 5) wait=4 secs, retrieval=0 secs>>>
<<< 5 record(s) processed. (scb count 5)>>>

Q

Enter Connect or Quit:
```

Q

```
<<< RDAAPP : Exiting... >>>
```

```
***
```

```
Enter Command (? for command help):
```

### **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@ibi.com](mailto:books_info@ibi.com). Include your name and phone number, and include *Server Installation Troubleshooting* in the subject line.

- Send them** to:

Documentation Services  
Information Builders  
Two Penn Plaza  
New York, NY 10121-2898

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



# 5 | Server Installation for IBM i

This chapter describes the requirements and procedures for installing the server on IBM i.

**Note.** This manual uses the term IBM i generically to refer to all OS/400, i5/OS, and IBM i releases.

## Topics:

- ❑ Step 1. Reviewing System Requirements
- ❑ Step 2. Creating User IDs
- ❑ Step 3. Accessing the Installation Software
- ❑ Step 4. Running the Installation Program
- ❑ Step 5. Verifying the Server Installation
- ❑ Step 6. Configuring the Server With Different Security Modes
- ❑ Starting and Using the Server
- ❑ Other IBM i Start Up Options
- ❑ Accessing IFS Files and QSYS Libraries
- ❑ Generating a Trace
- ❑ Third-Party Software and Licenses
- ❑ Troubleshooting for IBM i

## Step 1. Reviewing System Requirements

### **In this section:**

Operating System Release Requirements  
Shell Requirements  
JVM Requirements for the Listener for Java  
Browser Requirements  
Disk Space Requirements  
Memory Requirements  
Communications Requirements  
User ID Requirements  
Installation and Configuration Directories

Before beginning the server installation, review the requirements in the following topics.

### **Operating System Release Requirements**

For current information about supported releases:

- 1.** Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
- 2.** In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.  
The Supported Systems and Adapters page opens.
- 3.** Click the link for the server release you want.  
The Supported Systems and Adapters page for that release opens.
- 4.** Click the link for your platform.  
The support chart for that platform opens.

In general, the operating system should have the latest cumulative patch levels applied. Confirm that your server installation software is labeled for your operating system level.

## Shell Requirements

The IBM i - QShell Interpreter (IBM i Installation Option 30) must be installed to use the server. The QShell Interpreter is a free optional feature of IBM i. The easiest way to check if this feature is installed is to enter QSH on the IBM i 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.

## JVM Requirements for the Listener for Java

If JVM-based adapters, server-side graphics, XBRL, or user-written CALLJAVA applications are to be used, a Java Runtime Environment (JRE) JVM must be installed on the machine, and the server must be configured to use it. As of 77x, the general minimum JVM level is 1.5 or higher, since a number of components require 1.5. In narrow cases, a lower JVM level may be used, but is not advised nor has it been specifically tested. This section discusses JVM installation and configuration.

When you install the Java SDK, the JRE is included. The SDK build type in use must also match in terms of 32-bit or 64-bit to the bit type of the server in use. If a JVM is not on the library path or is an inappropriate bit type, a *Failed to find JVM* message as well as debugging information will be written to the start log, which will indicate a failed JSCOM3 service.

The current default/preferred JRE for the server is JRE 1.5, since this is the minimum requirement for some server components and JRE 1.4 is past its EOSL date. The following URL has Java EOL and EOSL information:

<http://java.sun.com/products/archive/eol.policy.html>

You can revert to using JRE 1.4 from the Web Console by selecting *Configuration/Monitor* from the *Workspace* menu, opening the *Java Services* folder, right-clicking *Default*, and selecting *Properties*.

If using 1.4 on platforms where 1.5 is available, you would need to use the Web Console to set the JVM version of the Java Listener property to 1.4. Note that if you install the Java SDK, the JRE is included.

The location of the JVM on IBM i is the object QSYS/QJVAJNI. This is normally on the system path, so you do not need to do anything to fulfill JVM requirements. However, a default JVM level of the machine may not be 1.5 or higher. There are several choices to address this:

- Switch the Java default property of the machine to 1.5.
- Switch the server ID Java default property to 1.5.
- Configure the server to have a 1.5 JVM property.

To change or add a Java property of `java_version=1.5`, use EDTF against the `/QIBM/UserData/Java400/SystemDefault.properties` file or the server ID home directory `SystemDefault.properties` file. If an editor is not available, you can also create or append to the Java system or user property files using the following:

```
QSH CMD('echo "java.version=1.5">>  
/QIBM/UserData/Java400/SystemDefault.properties')
```

or

```
QSH CMD('echo "java.version=1.5" >> $HOME/SystemDefault.properties')
```

To configure the server JVM property, use the Web Console to access the Java Listener tuning:

1. Select *Configuration/Monitor* from the *Workspace* menu.
2. Open the *Java Services* folder.
3. Right-click *DEFAULT* and select *Properties*.

The Java Services Configuration pane opens.

4. Expand the *JVM Settings* section.
5. Under *Non-standard JVM options*, enter `-Djava.version=1.5` in the *JVM\_OPTIONS* field.
6. Click *Save and Restart Java Services*.

To add classes to the JVM class path for customer-written CALLJAVA applications, set and export the `CLASSPATH` variable to the operating system level before server start-up or use the Web Console to set the Java Listener `IBI_CLASSPATH` property.

If JVM-based adapters or features are not required, the message *Failed to find JVM* is normal and can be ignored.

## Browser Requirements

The Web Console server requires one of the following Web browsers:

- Microsoft Internet Explorer® 7 or higher.
- Mozilla Firefox® 3.5 or higher.
- Google Chrome® 10.0 or higher.
- Apple Safari® 5.0 or higher.

The Opera™ browser does not support RIA (Rich Internet Application), the default appearance mode of the 7.7.x Web Console. Opera 5.0 or higher seems to operate properly in HTML mode, and the Web Console detects this and switches modes automatically. Since HTML mode is less extensively tested, Opera is considered unofficially supported at this time. Please report any issues you find to customer service.

## 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.

Version	During Install	After Install
V5R3	1800 Megabytes	870 Megabytes
V6R1 or higher	2.8 Gigabytes	1.4 Gigabytes

## Memory Requirements

Memory and shared memory usage depend on the following elements:

- ❑ Number of data access agents.
- ❑ Type of access that is performed, such as joins and large retrieval.
- ❑ Connection queue.

Actual memory usage differs between applications and the server load.

## Communications Requirements

You need four TCP/IP ports for each server instance that you configure. Three of these ports must be consecutive. You specify these port numbers during installation. You may require additional ports depending on which options you configure later.

## User ID Requirements

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

- ❑ **Server administrator IDs (iadmin).** Server administrators use this ID to start, configure, and stop the server.

The operating system ID you use when installing the server owns the server 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-QSECOFR) ID.

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 with security set to OPSYS, they are authenticated against the operating system. You need to make IBM i IDs available to use so they can access the server. When running in OPSYS mode, server data access agents impersonate these IDs before performing any file access on their behalf. Other security modes do not require special user IDs.

For more information about running the server in OPSYS mode, see [Step 6. Configuring the Server With Different Security Modes](#) on page 359.

- ❑ **Server system ID (iserver).** You have the option of creating a user ID that is QSECOFR for internal use by the server to proxy the authority of QSECOFR. The ID can be an account never used for logging in. You might wish to create an `iserver` ID if, for example, you do not want certain server processes to appear as owned by QSECOFR.

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

For specific information on creating IDs, see [Step 2. Creating User IDs](#) on page 344.

## Installation and Configuration Directories

The installation process creates these high-level directories:

- ❑ **Home directory.** This installation directory stores the server program links and other files. We refer to this as `EDAHOME`, and when the server is running, the full path is stored in the environment variable `EDAHOME`. The default directory is

```
ibi/srv77/home[suffix]
```

*suffix*

Is optional when installing and maintaining a single release of the server. It is required if installing and maintaining multiple server releases, to ensure that each installed release has a uniquely-named home directory. For example:

```
/home/iadmin/ibi/srv77/home77
```

- ❑ **Home library.** This installation library contains the actual server programs that appear in the home directory as symbolic links. The default library name is `SRV77`, but you can specify any valid library name.

- ❑ **Configuration directory.** The files that control the behavior of each server instance reside here. We refer to this as EDACONF, and when the server is running, the full path is stored in the environment variable EDACONF. The default directory is

```
ibi/srv77/server_type[suffix]
```

where:

*server\_type*

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  
**WFM** for a Shared Application Server for WebFOCUS Maintain

*suffix*

Optional for an initial default installation and configuration. Required when configuring additional instances of the server. You must add a suffix to the directory name to ensure that each server instance has a uniquely-named configuration directory. For example:

```
/home/iadmin/ibi/srv77/ffs002
```

- ❑ **Application directory.** This is the default location for storing applications. We refer to this as APPROOT, and when the server is running, the full path is stored in the environment variable APPROOT. This directory may be shared by applications created with other Information Builders products. It defaults to

```
ibi/apps
```

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.

- ❑ **Profiles directory.** The user and group profiles reside here, as does the admin.cfg file, which specifies the server administrator. We refer to this as EDAPRFU, and when the server is running, the full path is stored in the environment variable EDAPRFU. This directory defaults to

```
ibi/profiles
```

## Step 2. Creating User IDs

### Server administrator ID (iadmin)

The installation of a 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, not have a group of QSECOFR, and not have other special authorities.
- ❑ Have authority to use RSTLIB for the duration of the installation process.
- ❑ Have a message queue delivery of \*NOTIFY if this is not the default for the system.
- ❑ Have a writable explicit CURLIB (not \*CRTDFT QGPL). We recommend a library that is the same name as the user ID (for example, CRTLIB IADMIN). However, if the DB2 interface is being used in SQL mode (vs. CLI) then the library should be created as a DB2 Collection (for example, STRTSQL -> CREATE COLLECTION IADMIN) so DB2 Journaling is active for the server. Alternately, Journaling for DB2 may be redirected (instead of creating a specific collection) by creating a QDFTJRN Data Area entry in the CURLIB with:

```
CRTDTAARA DTAARA(IADMIN/QDFTJRN) TYPE(*CHAR) LEN(25) VALUE(' IADMIN  
QSQJRN *FILE')
```

The CRTDTAARA VALUE parm must be padded to the sizing shown (10 10 5). If not, Journal redirection will not work.

**Note:** As of Release 7.6.3, requiring an explicit CURLIB is a requirement. Sites with prior installations must update the server admin ID to have a CURLIB if it did not (for example, CHGPRF CURLIB(IADMIN)). Otherwise, the installation process will fail. The easiest way to check if an ID has a CURLIB is to do a DSPLIBL and look for a library entry with type of CUR. Information Builders does not recommend CURLIB library names matching the software install library (for example, SRV77) as this allows the server software library to possibly get corrupted with files from daily activities. It also creates a high possibility of accidental overwrites/deletions of important server software.

- ❑ The server administrator ID should only have basic IBM i libraries and no System/36 compatibility libraries.
- ❑ Have a HOMEDIR other than the IBM i 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 do not need to do anything else.



- If square brackets are *not* in the same position, change the code page that is specified in the IBM i 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 IBM code page descriptions at:

<http://www.ibm.com/servers/eserver/series/software/globalization/codepages.html>

This documentation refers to the server administrator ID, which you use to install and administer the server, as the iadminID, but you can name it anything you want. If you name it something other than iadmin, you will need to create a second ID, literally named iadmin, for the DVD library to properly unload. If you do not use this literal iadmin ID to install and own the files, you can remove it after installation.

While logged on as QSECOFR, create the server administrator ID and home directory using the following sample code:

```
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).

### User IDs

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 parameters are needed for these IDs.

To keep the server secure, you should make the iadmin ID available only to users that require server administrative privileges.

### Server system ID (iserver)

You have the option of creating a user ID that is QSECOFR for internal use by the server to proxy the authority of QSECOFR. We call this the Server system ID (iserver). The ID can be an account that is never used for logging in. You might wish to create an iserver ID if, for example, you do not want certain server processes to appear as owned by QSECOFR.

To create iserver, issue the following command

```
CRTUSRPRF USRPRF(id) PASSWORD(*NONE) USRCLS(*SECADM)
  TEXT('Server System Security ID') SPCAUT(*SECADM *ALLOBJ *JOBCTL)
```

where:

*id*

Is the name of the actual iserver ID.

## Step 3. Accessing the Installation Software

### In this section:

Copying the Installation Library From DVD

Downloading the Installation Software Using FTP

You install the server from a library that is restored from either a DVD or a file that you downloaded by means of FTP. If you access the software using:

- ❑ **DVD**, the software is provided as a library on DVD that is copied to disk. This is how most installations are performed. For DVD installation, see [Copying the Installation Library From DVD](#) on page 346.

**Note:** As of 768, DVD media is used in order to fit large files on a single media where prior releases used multiple CDs.

- ❑ **FTP**, you download the installation software from the Information Builders FTP site. Downloading the installation software involves:

- 1. Registering** at the Information Builders FTP site.
- 2. Downloading** the server installation software from the site.
- 3. Unzipping** the downloaded file.
- 4. Running** the isetup procedure to begin installing the server.

For instructions, see [Downloading the Installation Software Using FTP](#) on page 347.

## Copying the Installation Library From DVD

- 1.** Log on as a QSECOFR authorized ID. The ID must have ALLOBJ authority and RSTLIB authority.
- 2.** Place the media in the drive.
- 3.** Restore the installation library from the DVD to disk by issuing the command

```
RSTLIB SAVLIB(InnnLIB) DEV(device) RSTLIB(instLibName)
```

where:

*nnn*

Is the server version and release number (for example, 771).

*device*

Is the device name. To view available devices, issue the command:

```
WRKCFGSTS CFGTYPE(*DEV) CFGD(*OPT)
```

*RSTLIB(instLibName)*

Is required if you will be using the server with a code page that is incompatible with code page 37, EBCDIC 8-bit West European. For example, this is required if you will be using the server with Japanese or another double-byte character set. Otherwise, this is optional but recommended.

*instLibName* is the name you assign to the library to which you are restoring the DVD's contents. It can be any valid library name. If you do not specify *RSTLIB(instLibName)*, the restored installation library name defaults to I771LIB.

Note that in examples later in the installation process we will show this as I771LIB, but you should always enter the actual name that you specified here.

For more information about using the server with different code pages, see the explanation of the Initial Code Page parameter in Step 2 in [Step 4. Running the Installation Program](#) on page 348.

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(instLibName/INU) OBJTYPE(*PGM) NEWOWN(QSECOFR)
```

where:

*instLibName*

Is the name of the installation library that you restored from DVD in Step 3.

5. Log off the QSECOFR user ID and proceed to [Step 4. Running the Installation Program](#) on page 348.

After you complete the installation, you can delete the installation library.

## Downloading the Installation Software Using FTP

To download the installation software:

1. Go to <http://techsupport.informationbuilders.com>.

The Information Builders Technical Support home page opens.

2. Click *My Downloads* in the My Account section on the right side of the page.

The Downloads, Upgrades, Service Packs, and PTFs page opens.

3. Click the link for your product (for example, WebFOCUS and iWay Server and iWay Client).

The Downloads by Release page for your product opens.

4. Click your release from the Current Production Releases list.

The Software Downloads page for your release opens.

5. Scroll down and find the platform on which you want to install the server, and then click *Download* to the right of the platform name.

6. Fill in the registration form and then click *Continue*.

The Software Download Agreement page opens.

7. Select *I agree...* to consent to the Download Agreement, and then click *Continue*.

The Download Instructions page opens. Select AUTOMATIC or MANUAL and follow the relevant instructions.

A copy of the instructions is automatically emailed to you for later reference.

8. Follow the instructions on the Download Page.

9. Run the installation procedure as described in [Step 4. Running the Installation Program](#) on page 348.

Note the name of the installation library: I77LIB.

After you complete the installation, you can delete the iserver save file and the installation library.

## Step 4. Running the Installation Program

### **In this section:**

Additional Configurations

Refreshing an Installation

Installing and Configuring a Server Silently

### **Example:**

Full-Function Server Installation

### **Reference:**

Server Installation Parameters

1. Log on with the iadmin user ID.

2. On the IBM i command line, call the installation procedure. For example

```
CALL instLibName/ISETUP
```

where:

*instLibName*

Is the name of the installation library that you downloaded, or restored from DVD, in [Step 3. Accessing the Installation Software](#) on page 346. The default name is I77LIB.

3. Select the initial code page, or press Enter to accept the default value. (Most installation procedure prompts will allow you to press Enter to accept the default.)

For information about your code page choices, see [Server Installation Parameters](#) on page 351.

You are prompted for the type of installation you are performing.

4. Enter the installation option 1 (Install and Configure).

You are prompted for your license key.

5. Enter your license key. You can find it on your shipping manifest.

You are prompted for the name of the installation media library.

6. Enter the name of the installation library that you downloaded, or restored from DVD, in [Step 3. Accessing the Installation Software](#) on page 346. The default name is I77LIB.

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

7. Enter the server administrator password.

You are prompted for the server system (iserver) ID.

8. Enter the server system ID.

You are prompted to review the default values of the remaining installation parameters.

9. To accept all the default values, enter Y and skip to Step 11. Otherwise, to change any values, continue to Step 10.

**Installing the demo files.** By default, the Century Corp demo files are not installed. If you wish to install them, do not enter Y; continue to Step 10, where you will have the option of installing them in one or more languages. Note that all other demo files are installed automatically, in English, as part of the standard installation.

10. Enter N to be prompted individually for each installation parameter. For each one, you will be given the choice of accepting the default value or changing it.

For information about these parameter values, see [Server Installation Parameters](#) on page 351. Note that the default root location is the iadmin ID home directory.

If any of the prompted locations (such as EDAPHOME) 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.

When specifying a location, note these requirements:

- ❑ The EDAPHOME directory path name directory path name must conform to the pattern `*ibi/srv77*/home*` and must be an absolute path.
- ❑ If you changed the EDAPHOME value, the default EDACONF and EDAPHOMELIB values change to conform to EDAPHOME.

EDACONF must be in the same `srv77` path as EDAPHOME. The lowest-level EDAPHOME directory (`home`) becomes the server type directory in EDACONF.

For example, if EDAPHOME is

```
iadmin/ibi/srv77/home
```

then EDACONF for a WebFOCUS Reporting Server defaults to:

```
iadmin/ibi/srv77/wfs
```

If you are configuring an additional server instance, be sure to specify a new configuration directory here; do not use an existing directory. Each server instance must have its own configuration directory. You can append characters to the name of the `server_type` directory to avoid overwriting the existing directory. For example:

```
iadmin/ibi/srv77/wfs2
```

For more information about EDAPHOME and EDACONF, see [Installation and Configuration Directories](#) on page 342.

Note that the server National Language Support (NLS) is set to OFF by default. You can configure it using the Web Console after installation.

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

Alternatively, to start over, enter `N`. To quit the installation procedure, enter `Q`.

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

- 12** Type `Y` to start the server or `N` to exit.

If you start the server, startup messages and the Web Console URL are now displayed.

You should now verify your installation, as described in [Step 5. Verifying the Server Installation](#) on page 357.

**Reference: Server Installation Parameters**

The server installation procedure parameters are described in the following table.

Parameter	Description
Media for Product	Name of the installation library that you downloaded, or restored from DVD, in <a href="#">Step 3. Accessing the Installation Software</a> on page 346. The default name is I771LIB.
Server Admin Password	Server administrator (iadmin) password. It is recommended that you supply a password. Otherwise, the server will start in safe mode.
Server System Support ID	The ID (ISERVER) used internally by the server for security authority. For more information about it, see <a href="#">User ID Requirements</a> on page 341.
EDAHOME	IFS directory location for files. Any changes in the EDAHOME location must follow the pattern *ibi.srv77*.home* in its declaration.
EDAHOMELIB	QSYS library location for programs.
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, or wfs (based on the key and on any change in the EDAHOME pattern).
EDAPRFU	Location of user and group profiles and of admin.cfg, which specifies the server administrator.
APPROOT	Location for default applications and sample applications.

Parameter	Description
HTTP_BASE_PORT	<p>First of three consecutive port numbers that the server uses for the HTTP Listener and other IP-based services.</p> <p>If you are configuring multiple server instances, be sure to specify a different range of ports for each server instance.</p> <p>The default port automatically varies by product to support multiple servers on a particular computer:</p> <ul style="list-style-type: none"> <li>❑ <b>For a Full-Function Server</b>, 8101 is the default value, which reserves ports 8101-8103.</li> <li>❑ <b>For a WebFOCUS Reporting Server</b>, 8121 is the default value, which reserves ports 8121-8123.</li> <li>❑ <b>For a DataMigrator Server</b>, 8117 is the default value, which reserves ports 8117-8119.</li> <li>❑ <b>For a Shared Application Server</b> (for WebFOCUS Maintain), 8113 is the default, which reserves ports 8113-8115.</li> </ul>
TCP_BASE_PORT	<p>Port number on which the server TCP Listener listens. It must be outside the range of the three consecutive HTTP Listener ports. It defaults to the port immediately preceding the first HTTP Listener port.</p> <p>For example, if you accept the default HTTP Listener Port value of 8101, the TCP Listener port defaults to 8100.</p> <p>If you are configuring multiple server instances, be sure to specify a different port for each server instance.</p>



**Example: Full-Function Server Installation**

The following session is an example of a Full-Function Server installation in which the user has accepted the default values. The session begins with a CALL command issued from the command line of the IBM i menu.

```
CALL I77LIB/ISETUP
```

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

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 999-999-9999-99) :   xxx-xxx-xxxx-xx

    License Key has been checked

    Product: Full Function Server
    Maximum Number of Adapters: 4
    Maximum Number of Users: 8
    Maximum Number of CPUs: 2

ISETUP: License xxx-xxx-xxxx-xx has been accepted
-----

Please enter the media library name

(Default=R729999BTP)

Please supply media or <Enter> :
-----
```

## Step 4. Running the Installation Program

---

Enter the Server Administrator (IADMIN) Password:  
xxxxxxx

Enter the Server System Support ID

(Default=QSECOFR) :  
xxxxxxx

-----  
Please review the default settings.

EDAHOME = /home/iadmin/ibi/srv77/home  
EDAHOMELIB = srv77  
EDACONF = /home/iadmin/ibi/srv77/ffs  
EDAPRFU = /home/iadmin/profiles  
APPROOT = /home/iadmin/ibi/apps  
HTTP\_BASE\_PORT = 8101  
TCP\_BASE\_PORT = 8100

WARNING: Directories marked as existing will be deleted and recreated!

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/srv77/home  
EDAHOMELIB = srv77

```

Configure Options ...
  EDACONF = /home/iadmin/ibi/srv77/ffs
  EDAPRHOME = /home/iadmin/ibi/srv77/home
  EDAPRHOME_LIB = srv77
  LICENSE = 999-999-9999-99
  WORKSPACE_MANAGER_NAME = "iWay 77 Full Function Server"
  EDAPRHOME = /home/iadmin/profiles
  APPROOT = /home/iadmin/ibi/apps
  SERVER_TYPE = ffs
  SERVER_ADMIN_ID = IADMIN
  SERVER_ADMIN_PASSWORD = C498X8e60C1ByAF7526E2
  HTTP_BASE_PORT = 8101
  TCP_BASE_PORT = 8100
  SERVER_ADMIN_ID = IADMIN
  SERVER_ADMIN_PASSWORD = C498X8e60C1ByAF7526E2
  SERVER_SYSTEM_ID = QSECOFR

```

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 ...

ISSETUP: Installation Step completed

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

ISSETUP: Configuration Step completed

-----

Would you like to start the Server Workspace (Y/N Default=Y)? : y

```

09/09/2006 15:29:20 Starting Workspace Manager in
  /home/iadmin/ibi/srv77/ffs
09/09/2006 15:29:20 Logging startup progress and errors in
  /home/iadmin/ibi/srv77/ffs/edaprint.log
09/09/2006 15:29:20 Opening PTH context
09/09/2006 15:29:21 Checking listeners and services
09/09/2006 15:29:24 TCP started
09/09/2006 15:29:24 HTTP started
09/09/2006 15:29:24 JSCOM3 started
09/09/2006 15:29:24 Workspace Manager started.

```

```
ISETUP: The server has been started
```

```
-----  
To administer the server go to a web browser  
and open the URL http://myworld:10901
```

### Additional Configurations

If you have additional licenses and need to configure an additional server, log on with the iadmin ID, start QSH, and run EDACONF /bin/isetup, where EDACONF is the directory on which the software was installed (ibi/srv77/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 EDACONF 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 installation directory (EDACONF) because it has become accidentally damaged, populated with unwanted files, or needs updating with a service pack. To do this:

1. Log on with the iadmin user ID.
2. On the IBM i command line, call the installation procedure where it resides.

For example:

```
CALL I771LIB/ISETUP
```

3. Specify the initial code page to be used by the server, as described in [Step 4. Running the Installation Program](#) on page 348.
4. At the main menu, select option 3, *Refresh Installation (Reinstall, Keep Configuration)*, and follow the prompts.

This refreshes programming files under the server installation directory (EDACONF) and does not affect any configuration directories. The complete directory tree (EDACONF) and library (EDACONFLIB) are removed and recreated. If any files need to be retained, they should be copied elsewhere beforehand.

## Installing and Configuring a Server Silently

This is also known as a silent install. The most common form is an initial install which also results in an initial configuration (and is what is documented here). An initial installation and configuration should only be done once per EDASHOME and an add product configuration used thereafter.

You can install a server "silently," without the installation process prompting for information, if you first create a text file that specifies your server installation parameters. Installing silently can be helpful if, for example, you want to install many servers at once throughout an 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 in [Step 4. Running the Installation Program](#) on page 348.

Run `isetup -?` to display information on the setup and use of a parameters file for silent installation and configuration.

## Step 5. Verifying the Server Installation

To verify that you have successfully installed the server, use the 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. (If you started the server as the last step of the installation procedure, skip ahead to Step 4.)

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 IBM i Administrator:

```
CALL SRV77/TSCOM300 PARM('-edaconf' '/home/iadmin/ibi/srv77/ffs' '-start')
```

Alternate startup methods and batch examples are noted below.

3. Check to ensure that the processes are up with `-show`:

```
CALL SRV77/TSCOM300 PARM('-edaconf' '/home/iadmin/ibi/srv77/ffs' '-show')
```

4. Start the Web Console by starting a browser pointed at the server HTTP Listener port specified during installation. The URL format is `http://host:port`. (The URL is also displayed at the end of the installation procedure.)

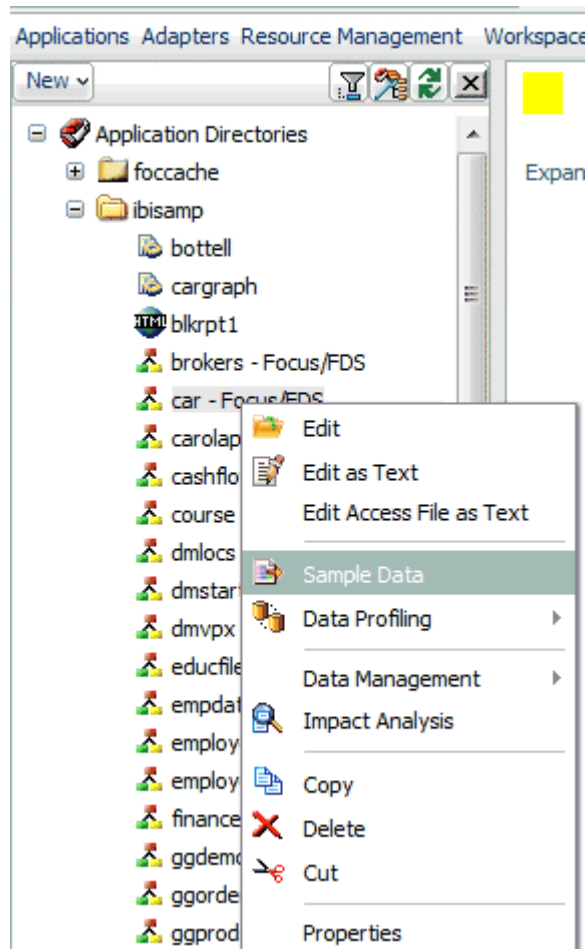
For example, if default ports were used during installation, use `http://host:8101` for a Full-Function Server and `http://host:8121` for a WebFOCUS Server.

5. If the server is running in secure mode, you will first see a logon screen. Log on using the iadmin ID. For information about configuring the server security, see [Step 6. Configuring the Server With Different Security Modes](#) on page 359.

## Step 5. Verifying the Server Installation

The Web Console 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 *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

6. To test the server, open the *ibisamp* folder on the Applications tree, right-click a synonym, such as *CAR* or *EMPLOYEE*, and select *Sample Data*.



A sample report is executed and the result is displayed.

7. When you are done using the server, you can stop it using the Web Console by clicking the *Stop* option on the Web Console toolbar.
8. If you experience any problems, examine the IFS `/home/iadmin/ibi/srv77/ffs/edaprint.log` file.

## Step 6. Configuring the Server With Different Security Modes

### In this section:

Preventing Unsecured Server Starts After Upgrades

### How to:

Satisfy Security Mode OPSYS Requirements

You can run the server in any of the following security modes:

- ❑ **OFF**, in which access to data sources and the Web Console is unrestricted. Users do not need to provide a password.
- ❑ **OPSYS**, each connecting user is authenticated against the IBM i security subsystem, and the data agents impersonate the user ID to control access rights to data files and DBMS objects. Access to the Web Console administrative functions is protected by user authentication at the operating system level.
- ❑ **PTH**, in which access to the Web Console is controlled by authentication against the user list defined at the configuration level.
- ❑ **DBMS**, in which access to data sources and the Web Console is controlled by authentication against the database list of user IDs. Control of data resources can be accomplished by creating different profiles.
- ❑ **LDAP**, in which access to data resources and the Web Console is controlled by authentication through the established directory.

The default security mode is OPSYS if you have satisfied the OPSYS requirements. Otherwise, the default mode is OFF. To apply a different security mode, configure server security in the Web Console.

You must satisfy the requirements described in [How to Satisfy Security Mode OPSYS Requirements](#) on page 360.

Some security modes need to be configured before you can activate them. You can see a full description of all server security modes in the Web Console help, and also in the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual. To see it in the Web Console:

1. From the Web Console menu bar, select *Help*, then *Contents and Search*.  
The Web Console Help window opens.
2. In the left pane, expand *Server Administration*.

## Procedure: How to Satisfy Security Mode OPSYS Requirements

To run a server in security mode OPSYS in IBM i, you must satisfy the following requirements. You must do this once after installing or refreshing the server.

Certain files must be owned by QSECOFR or a QSECOFR-authorized ID (such as iserver). Running with security mode OPSYS requires users to send a password to connect to the server, or to use some other form of verification. Although 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(SRV77/TSCOM300) OBJTYPE(*PGM) NEWOWN(QSECOFR)
CHGOBJOWN OBJ(SRV77/R1SEC) OBJTYPE(*SRVPGM) NEWOWN(QSECOFR)
```

This step will need to be repeated after any sever upgrade since these files are replaced during upgrade.

## Preventing Unsecured Server Starts After Upgrades

If the explicit environment variable EDAEXTSEC is set to OPSYS (or ON) and the server cannot impersonate users because it lacks platform-specific authorization steps, the server start aborts and error messages are written to the edaprint log.

This feature prevents an unsecured server start after a software upgrade if any of the required post-upgrade, reauthorization steps are missed on a UNIX, IBM i, or z/OS HFS deployment. This is not applicable to other platforms. The setting may be placed in any normal server start-up shell or profile that a site is using or in the server edaenv.cfg configuration file. The messages vary slightly by platform.

The edaprint messages are:

```
Configured security is 'ON' as set by EDAEXTSEC variable.
TSCOM300.PGM has no QSECOFR authority.
Workspace initialization aborted.
(EDA13171) UNABLE TO START SERVER
```

## Starting and Using the Server

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, IBM i, and z/OS* manual. For current information about which adapters are supported:

1. Go to <http://techsupport.informationbuilders.com>.

The Information Builders Technical Support home page opens.

2. In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.

The Supported Systems and Adapters page opens.

3. Click the link for the server release you want.

The Supported Systems and Adapters page for that release opens.

4. Click the link for your platform.

The support chart for that platform opens.

To ensure that the Web Console is accessible, the ID that starts the server must be iadmin (the ID that installed the server) and have a code page compatible with the one you specified during installation in [Step 4. Running the Installation Program](#) on page 348. For more information about code pages, see [Step 2. Creating User IDs](#) on page 344.

IBM i sites have the option of using QSH commands that run edastart or a CALL TSCOM300 to start and manage a server. CALL TSCOM300 is described in [Other IBM i Start Up Options](#) on page 362.

The following chart lists commonly used edastart options and functions (the parameters are the same for CALL TSCOM300 usage).

Command and Option	Function
<code>edastart</code>	(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 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 equivalent key or use the help instructions of your emulator on how to create mapping for the SysReq key.
<code>edastart -start</code>	Starts the server in background. Only a short message appears.

Command and Option	Function
<code>edastart -sstart n</code>	Starts the server, but waits <i>n</i> seconds for actual startup.
<code>edastart -show</code>	Shows general status of server and agents.
<code>edastart -stop</code>	Stops the server.
<code>edastart -quit</code>	Exits the server line mode console log (edaprint) and returns to the operating system command prompt, but leaves the server running.
<code>edastart -console</code>	Re-enters the server line mode console log (edaprint).
<code>edastart -traceon</code>	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.
<code>edastart -traceoff</code>	Turns off tracing.
<code>edastart -?</code>	Displays edastart options (this list, plus more).
<code>edastart -?s</code>	Displays support information and support related options.

**Note:** The IBM i 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 IBM i Start Up Options](#) on page 362.

## Other IBM i Start Up Options

### In this section:

CL and CMD Programs

You can use the following methods to start and manage the server environment using either native IBM i CALL syntax or QSH syntax. The directory and library names shown are examples; the actual names you use may differ.

- ❑ To start the server from the native IBM i menu command line, use:

```
CALL SRV77/TSCOM300 PARM('-edaconf' '/home/iadmin/ibi/srv77/ffs'
'-start')
```

- ❑ To start the server from the native IBM i menu command line with traces, use:

```
CALL SRV77/TSCOM300 PARM('-edaconf' '/home/iadmin/ibi/srv77/ffs'
'-start' '-traceon')
```

- ❑ To stop the server from the native IBM i menu command line, use:

```
CALL SRV77/TSCOM300 PARM('-edaconf' '/home/iadmin/ibi/srv77/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 SRV77/TSCOM300 PARM('-edaconf' '/home/iadmin/ibi/srv77/ffs'
'-clear')
```

- ❑ To start the server from the command line of a QSH session, use:

```
QSH (starts QSH)
/home/iadmin/ibi/srv77/ffs/bin/edastart -start
```

- ❑ To stop the server from the command line of a QSH session, use:

```
QSH (starts QSH)
/home/iadmin/ibi/srv77/ffs/bin/edastart -stop
```

- ❑ To start the server as a QSH session, but from the IBM i command line, use:

```
QSH CMD('/home/iadmin/ibi/srv77/ffs/bin/edastart -start &')
```

- ❑ To stop the server as a QSH session, but from the IBM i command line, use:

```
QSH CMD('/home/iadmin/ibi/srv77/ffs/bin/edastart -stop')
```

- ❑ To start the server as a submitted QSH session on the IBM i command line with a code page (Belgium), use:

```
SBMJOB CMD(QSH CMD('/home/iadmin/ibi/srv77/ffs/bin/edastart -start
&'))
JOB(MYJOB) LANGID(NLB) CNTRYID(BE) CCSID(500)
```

- ❑ To start the server as a submitted job on the IBM i command line with a code page (Belgium) and specific job queue, use:

```
SBMJOB CMD(CALL SRV77/TSCOM300 PARM('-edaconf'
'/home/iadmin/ibi/srv77/ffs'))
JOB(MYJOB) LANGID(NLB) CNTRYID(BE) CCSID(500) JOBQ(MYQUEUE)
```

If the -start or -sstart option is:

- ❑ **Included in a submitted job**, the full edaprint log is written to the edaprint.log file on disk, and standard short server start up messages are written to the job system spool file.
- ❑ **Omitted from a submitted job**, the full edaprint log is written to the edaprint.log file on disk, and the full edaprint log is written to the job system spool file.

You can view the spool file by means of WRKSBMJOB Option 8 (Work with spooled files) of the PGM-QZSHSH task (start using QSH shell scripts) or of the PGM-TSCOM300 task (start using TSCOM300) task.

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, -tracoon, and -traceoff.

## 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 IBM i 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 CL and CMD sources are created in a configuration bin directory, then copied into QTEMP and compiled into the user CURLIB (for example, the IADMIN library). 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.

**Note:** Releases prior to Version 7.6.3 allowed \*CRTDFT QGPL as a CURLIB and, if so configured, the CL and CMD files would have been placed into QGPL. These QGPL copies should be deleted and, if there are any site-created CLs that use them, they should be adjusted for the new location.

The basic commands and functions are listed in the following table.

Command	Function
ISTART	edastart
ISTOP	edastart -stop
ISHOW	edastart -show
ISHOWLOG	edastart -showlog

Command	Function
ITRCON	edastart -traceon
ITRCOFF	edastart -traceoff
ICLEAR	edastart -clear
ICLRDIR	edastart -cleardir
ISAVEDIA	edastart -savediag

To use any of the commands, type the command at the IBM i menu command line. You may also point to other EDACONF directories using the IBM i F4 Prompt mode.

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:

Accessing QSYS Libraries

### How to:

Access IFS Files

The location of procedure (FOCEXEC) files, Master Files (MASTER), Access Files (ACCESS), and FOCUS database files 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 Access IFS Files**

IFS access follows the standards of a number of other platforms for 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

```
FILEDEF ddname DISK filename [(options)  
USE  
filename [AS name]  
END
```

```
APP MAP MYAPP directory
```

where:

*ddname*

Is the reference name for the file being opened.

*filename*

Is either the relative path or full path and the 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.

For more information about FILEDEF options, see the *Stored Procedures Reference*.

*name*

Is the optional alternate name of the Master File.

*directory*

Is the full path name of the directory (for example, /home/iadmin/acctng).

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 ~) is not supported in any context.

## Accessing QSYS Libraries

### How to:

Map a QSYS Library to APPROOT

Use FILEDEF to Access a QSYS Library Member

Use DATASET to Access a QSYS Library Member

Use the USE Command to Access a FOCUS Database

QSYS access works with libraries and has the following APP, FILEDEF, DATASET, and USE support for accessing existing applications.

The option to use IFS references to QSYS libraries is a native feature of IBM i. IFS references to QSYS names, such MYLIB, use IFS-style references such as /QSYS.LIB/MYLIB.LIB, which are clearly recognizable as QSYS references.

To map a QSYS library to a WebFOCUS application root directory (APPROOT), use the APP MAP command, as described in [How to Map a QSYS Library to APPROOT](#) on page 368.

To access or create a FOCUS database in a QSYS library, you need to issue a USE command, as described in [How to Use the USE Command to Access a FOCUS Database](#) on page 370.

To access a member of a physical file (other than a FOCUS database) in a QSYS library, you can use either:

- ❑ **The FILEDEF command**, as described in [How to Use FILEDEF to Access a QSYS Library Member](#) on page 368.
- ❑ **The DATASET attribute** in a Master File synonym, as described in [How to Use DATASET to Access a QSYS Library Member](#) on page 369.

Using the DATASET attribute has the advantage of automatically specifying the correct member when you refer to the synonym.

If you issue an explicit FILEDEF command, and a DATASET attribute exists, the FILEDEF command takes precedence.

Creating a HOLD file automatically creates the physical file if it does not already exist. Issuing a -WRITE or -READ statement, however, requires that the physical file exist.

**Syntax:**     **How to Map a QSYS Library to APPROOT**

To assist with existing applications outside the pre-defined application root directory (APPROOT), the APP MAP command allows an alias to be assigned to a non-APPROOT directory. This alias becomes a virtual directory under APPROOT so it can then be referenced in an APP PATH command. Mapping does *not* automatically add to the path. It simply makes it available to participate in an APP PATH command. For more information about APPROOT, see the WebFOCUS *Developing Reporting Applications* manual.

In APP mode, the APP MAP command supports use of IFS QSYS library references so that the application name can be used for path search purposes in applications through the APP PATH command. However, the contents of a QSYS mapping are not available from the Web Console.

The syntax for mapping an application to a QSYS library is:

```
APP MAP appname /QSYS.LB/libname.LIB
```

where:

*appname*

Is the name of the application.

*libname*

Is the name of the library to which you are mapping the application. The name must be uppercase.

**Syntax:**     **How to Use FILEDEF to Access a QSYS Library Member**

To use the FILEDEF command to access a member of a physical file in a QSYS library, the syntax is

```
FILEDEF ddname DISK library/file(member) (LRECL n
```

where:

*ddname*

Is the logical name you want to assign to the member. It can be up to eight characters in length, and can contain letters, numbers, and underscores. It must begin with a letter.

When used to associate a data source with a Master File, the ddname must match the name of the Master File.

*library*

Is the QSYS library in which the file is located.

*file*

Is the name of the file.



*member*

Is the name of the member to which you are assigning a logical name.

For the member of a single-member physical file, the member name must be identical to the file name. The operating system shorthand of \*FIRST is not a valid alternative.

For a member of a multiple-member physical file, you can specify any member name.

**LRECL**

Specifies the logical record length (LRECL) of the member.

*n*

Is the local record length.

### **Syntax:** **How to Use DATASET to Access a QSYS Library Member**

To use the DATASET attribute of a Master File synonym to access a member of a physical file in a QSYS library, the syntax is

```
DATASET = library/file(member) (LRECL n
```

where:

*library*

Is the QSYS library in which the physical file is located.

*file*

Is the name of the physical file.

*member*

Is the name of the member that you want to access.

**LRECL**

Specifies the logical record length (LRECL) of the member.

*n*

Is the local record length.

**Syntax:**     **How to Use the USE Command to Access a FOCUS Database**

To access a FOCUS database, the syntax is

```
USE  
library/file[(member)] [AS name] [NEW]  
END
```

where:

*library*

Is the QSYS library in which the physical file is located.

*file*

Is the name of the physical file.

*member*

Is the name of the member that you want to access. If you omit the name, it defaults to the name of the physical file.

This is the default name used by WebFOCUS to refer to the member. You can override it by specifying AS *name*.

AS

Defines a logical name that you can use instead of the member name.

*name*

Is the logical name you want to assign to the member.

NEW

Creates the member, and also creates the physical file if it does not exist. The data source is created as a member of a physical file starting with "F\$". The file is created in the specified QSYS library.

This construction allows you to organize multiple FOCUS databases within a single QSYS physical file with a functional name, such as FOCUS, ACCTG, SHIPPING, AR, or AP; or as individual QSYS physical file members, such as SHIP(SHIP), AR(AR), AP(AP), or SHIP(FOCUS).

Early releases of FOCUS and iWay (FOCUS Release 6.x, and iWay Releases 3.x and 4.x) 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). All subsequent releases do not assume this is a default, and therefore require either a USE command with an explicit AS, or that the files are renamed to fit the current conventions.

For more information about the USE command, see the *WebFOCUS Developing Reporting Applications* manual.

## Generating a Trace

### How to:

Generate a Server Trace

Generate a Non-Server Trace

If you encounter a server problem, you can run a set of traces that will help you assess the problem, and, if necessary, communicate it to Customer Support Services for further troubleshooting. This topic describes trace options and provides instruction for creating the traces.

There are two types of traces you can run to troubleshoot a problem:

- ❑ **A server trace**, in which you trace an agent that is running in a server context.
- ❑ **A non-server trace**, in which you trace an agent that is running outside a server context, that is, an agent that is running in standalone mode.

Under normal conditions, most applications are run in a server context. However, if you run your trace in a non-server context (that is, if you run a non-server trace), you can produce the necessary diagnostic information while significantly reducing the amount of material that needs to be reviewed. Running a non-server trace also rules out server communications as a cause of your problem.

If you prefer to use native IBM i commands, a number of CMD/CL programs are created during installation in the server administrator comment library and can be used to start traces, turn traces off, and perform `edastart -savediag` functions. The commands are, respectively, `ITRCON`, `ITRCOFF`, and `ISAVEDIA`. To use them (instead of using `edastart` under `QSH`), enter the required command and press *F4* for prompted mode, then edit parameters, as needed, and press *Enter*. For related information, see [CL and CMD Programs](#) on page 364.

### Procedure: How to Generate a Server Trace

To generate a server trace:

1. Turn tracing on by doing one of the following:
  - ❑ Go to the Web Console menu bar, select *Workspace* and then *Enable Traces*.
  - ❑ Start the server by issuing the following command:

```
edastart -traceon
```

You must preface `edastart` with the appropriate path, or place the directory in your system `PATH` variable.

2. Reproduce the problem.
3. Stop the server.
4. Issue the following command:

```
edastart -savediag
```

5. Respond to the prompts to capture, and optionally archive, diagnostic information.  
For information about sending the diagnostic information to Customer Support Services, see [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

### **Procedure: How to Generate a Non-Server Trace**

To generate a non-server trace:

1. Create an directory under APPROOT to reproduce the problem.
2. Copy any files required for the reproduction to the directory.
3. Switch to the directory.
4. Reproduce the problem using edastart -traceon and one of switches -t, -x, or -f.
5. Switch to a directory other than the problem reproduction directory.
6. Issue the following command

```
edastart -savediag
```

You must preface edastart with the appropriate path, or place the directory in your system PATH variable.

7. Respond to the prompts to capture, and optionally archive, diagnostic information.  
For information about sending the diagnostic information to Customer Support Services, see [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

## **Third-Party Software and Licenses**

### **In this section:**

OpenFlex SDK

As of Version 7 Release 6.8, to address display of third-party software license requirements, a license option has been added to the Help menu located on the Web Console. This section describes the third-party software used on IBM i and includes references to the full licenses included in [Information Builders and Third-Party Licenses](#) on page 413.

## OpenFlex SDK

OpenFlex SDK is included by Information Builders for use with its HOLD FORMAT FLEX feature. This distribution is subject to the terms and conditions of the Mozilla Public License Version 1.1.

For more information, see [OpenFlex SDK License](#) on page 419 or visit our World Wide Web site, <http://www.informationbuilders.com>.

## Troubleshooting for IBM i

### How to:

Add Your Problem to the Troubleshooting Guide

### Reference:

Problem: The Server Starts in Safe Mode

Problem: Java Listener Fails to Start With JVM not found Messages Written to the Log

Problem: Secured Server Starts Unsecured or Does not Start after Upgrade

Add Your Problem to the Troubleshooting Guide

To troubleshoot an installation problem, identify your problem in the following list, and follow the link to a description of the solution.

If you cannot find your problem described in the list, and cannot resolve it yourself, contact Customer Support Services as described in [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

If you have a troubleshooting suggestion that is not described in the list, and you think others will find it helpful, we invite you to send it to us, as described in [How to Add Your Problem to the Troubleshooting Guide](#) on page 375. We will consider including your problem in a future release of this manual.

### Problems:

- ❑ The server starts in safe mode (as indicated at the top of the Web Console).  
See [Problem: The Server Starts in Safe Mode](#) on page 374.
- ❑ The request fails, and *JVM not found* messages are written to edaprint.log.  
See [Problem: Java Listener Fails to Start With JVM not found Messages Written to the Log](#) on page 374.

### **Reference: Problem: The Server Starts in Safe Mode**

**Problem:** The server starts in safe mode. The Web Console home page displays a message stating that the server is in safe mode and describing what triggered it.

**Cause:** A common cause for the server starting in safe mode is a problem with the server administrator ID 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 click the *fix* hyperlink, which is displayed under the problem description, to display the relevant pane and resolve the problem.

For example, if the problem is that the server administrator password is out of synchronization:

1. Click the *fix* hyperlink displayed under the problem description.
2. In the left pane, open the *Users* folder, then the *Server Administrator* folder.
3. Click your user ID and select *Properties* from the pop-up menu.

The Access Control pane is displayed on the right.

4. Type the correct operating system password in the *Password* field, and type it again in the *Confirm Password* field.

5. Click *Save and Restart*.

The Security Mode pane opens on the right.

6. Click the Home icon in the menu bar to return to the Web Console home page.

### **Reference: Problem: Java Listener Fails to Start With JVM not found Messages Written to the Log**

**Problem:** The listener start request fails with *JVM not found* messages written to the *edaprint.log* file.

**Cause:** If the server cannot find the Java Virtual Machine (JVM), the JSCOM Listener will not be able to start, and messages will be written to the server log stating that the JVM cannot be found.

The server log is

#### **On Windows:**

`drive:\ibi\srv77\server_type\edaprint.log`

#### **On UNIX:**

`ibi/srv77/server_type/edaprint.log`

**On IBM i:**

`/home/iadmin/ibi/srv77/server_type/edaprint.log`

where:

`drive`

Is the hard drive on which the directory resides (on Windows).

`server_type`

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
- `WFM` for a Shared Application Server for WebFOCUS Maintain

**Solution:** Set up the JVM as described in *JVM Requirements for the Listener for Java* on page 339.

### **Reference: Problem: Secured Server Starts Unsecured or Does not Start after Upgrade**

A server will implicitly attempt to start unsecured if proper authorization steps have not been completed. Starting the server normally clears edatemp. If prior edatemp files exist (and authorization has not been done), start up will fail due to an inability to clear the directory. However, if an edastart -cleardir command was issued just before the upgrade, there is nothing to clear, no error occurs, and the server starts. If the server starts and is not inspected after the initial start up, the server being in the wrong mode may go unnoticed.

The proper solution is to add proper authorizations after an upgrade, as described in *How to Satisfy Security Mode OPSYS Requirements* on page 360, and restart the server. A new safety measure has also been added. If the environment variable EDAEXTSEC is set to OPSYS explicitly, and a server lacks authorization, it will not start (see *Preventing Unsecured Server Starts After Upgrades* on page 360 for details).

### **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@ibi.com](mailto:books_info@ibi.com). Include your name and phone number, and include *Server Installation Troubleshooting* in the subject line.

□ **Send them** to:

Documentation Services  
Information Builders  
Two Penn Plaza  
New York, NY 10121-2898

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



# 6 | Server Installation for OpenVMS

This chapter describes the requirements and procedures for proper installation of the server on OpenVMS.

## Topics:

- ❑ Step 1. Checking System Requirements
- ❑ Step 2. Creating User IDs
- ❑ Step 3. Accessing the Installation Software
- ❑ Step 4. Running the Setup Procedure
- ❑ Step 5. Verifying the Server Installation
- ❑ Step 6. Configuring the Server With Different Security Modes
- ❑ Starting and Using the Server
- ❑ Generating a Trace
- ❑ Third-Party Software and Licenses
- ❑ General Information for an OpenVMS Installation
- ❑ Troubleshooting for OpenVMS

## Step 1. Checking System Requirements

### **In this section:**

Operating System Level and Patch Requirements  
JVM Requirements for the Listener for Java  
Browser Requirements  
Disk Space Requirements  
Memory Requirements  
Workspace Manager Shared Memory Resources Requirements  
Communications Requirements  
User ID Requirements

Before beginning server installation, review the requirements in the following topics.

### **Operating System Level and Patch Requirements**

For current information about supported releases:

- 1.** Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
- 2.** In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.  
The Supported Systems and Adapters page opens.
- 3.** Click the link for the server release you want.  
The Supported Systems and Adapters page for that release opens.
- 4.** Click the link for your platform.  
The support chart for that platform opens.

In general, the operating system should have the latest cumulative patch levels applied.

Confirm that your server installation software is labeled for your operating system level.

OpenVMS Release	CD Label
7.3-2 Alpha	OpenVMS V7.3-2 Alpha
8.2-1 IA64	OpenVMS V8.2-1 IA64 IEEE
8.2-1 Alpha	OpenVMS V8.2-1 Alpha IEEE
8.3-1H1 IA64	OpenVMS V8.3-1H1 IA64 IEEE

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 Services.

In OpenVMS 8.x, some DBMS vendors changed their products to use IEEE floating point for single (F) /double (D) float data, while others have retained use of G\_FLOAT float point or depend upon the application itself. In order to support these varying float-type sources, OpenVMS 8.x servers use the SET VMSFLOATCNV = IEEE/G-FLOAT command to select the float type of the data, and it would be used in the server profile (edaprof.prf). Sites that use both IEEE and G\_FLOAT data sources will need separate server configurations with the appropriate SET VMSFLOATCNV = IEEE/G-FLOAT command and a hub-sub configuration to allow the joining of data.

OpenVMS 8.x releases prior to the 7.7.02 server used separate builds type to read the different float types. As of 7.7.02, SET VMSFLOATCNV = IEEE/G-FLOAT is used. For configuration information, see [Configuring for IEEE/G\\_FLOAT Float Data](#) on page 406.

## JVM Requirements for the Listener for Java

If JVM-based adapters, server-side graphics, XBRL, or user-written CALLJAVA applications are to be used, a Java Runtime Environment (JRE) JVM must be installed on the machine, and the server must be configured to use it. As of 7.7x, the general minimum JVM level is 1.5 or higher, since a number of components require 1.5. In narrow cases, a lower JVM level may be used, but is not advised nor has it been specifically tested. This section discusses JVM installation and configuration.

When you install the Java SDK, the JRE is included. The SDK build type in use must also match in terms of 32-bit or 64-bit to the bit type of the server in use. If a JVM is not on the library path or is an inappropriate bit type, a *Failed to find JVM* message as well as debugging information will be written to the start log, which will indicate a failed JSCOM3 service.

The current default/preferred JRE for the server is JRE 1.5, since this is the minimum requirement for some server components and JRE 1.4 is past its EOSL date. The following URL has Java EOL and EOSL information:

<http://java.sun.com/products/archive/eol.policy.html>

You can revert to using JRE 1.4 from the Web Console by selecting *Configuration/Monitor* from the *Workspace* menu, opening the *Java Services* folder, right-clicking *Default*, and selecting *Properties*.

If JAVA\* logicals are not active system-wide or are for Java 1.4, when we require 1.5, you must make the logicals active by installing the desired Java SDK (from HP), and either at the system level or for the server level, execute the DCL initialization script that comes with the Java SDK. At the server level, this would be done by adding the Java initialization script to the server *edaenv.com* file in the *EDACONF* bin directory (create it if needed). As of 77x, the *edaenv.com* file is pre-created with DCL to initialize 1.5.

The OpenVMS Java logical *JAVA\$CLASSPATH* is not currently supported for adding classes to the JVM class path for customer-written *CALLJAVA* applications. To add classes, use the logical *CLASSPATH* using UNIX style conventions enclosed in quotes as described in OpenVMS Java documentation or use the Web Console to set the Java Listener *IBI\_CLASSPATH* property.

If JVM-based adapter or features are not required, the message *Failed to find JVM* is normal and can be ignored.

## Browser Requirements

The Web Console server requires one of the following Web browsers:

- ❑ Microsoft Internet Explorer® 7 or higher.
- ❑ Mozilla Firefox® 3.5 or higher.
- ❑ Google Chrome® 10.0 or higher.
- ❑ Apple Safari® 5.0 or higher.

The Opera™ browser does not support RIA (Rich Internet Application), the default appearance mode of the 7.7.x Web Console. Opera 5.0 or higher seems to operate properly in HTML mode, and the Web Console detects this and switches modes automatically. Since HTML mode is less extensively tested, Opera is considered unofficially supported at this time. Please report any issues you find to customer service.

## 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	7.3-2	705,000 blocks
	8.2	650,000 blocks
OpenVMS for IA64	8.2-1	980,000 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 server, with or without 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

You need four TCP/IP ports for each server instance that you configure. Three of these ports must be consecutive. You specify these port numbers during installation. You may require additional ports depending on which options you configure later.

## User ID Requirements

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

- ❑ **Server administrator IDs (iadmin).** Server administrators use this ID to start, configure, and stop the server.

The operating system ID you use when installing the server owns the server 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 existing ID, provided it is set up as described in [Step 2. Creating User IDs](#) on page 382.

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.

If Active Technologies has been licensed, the installation path of the server (which is typically under the iadmin home directory) must not include any dollar signs (\$) in the device or path name (as is common in OpenVMS device names like DISK\$DKAO). Dollar signs in the EDAHOME path causes the underlying Flex Compiler to fail, regardless of the OpenVMS Java configuration. This requirement provides a simple workaround if Active Technologies is being used. Use of a concealed or regular logical to hide dollar signs in the installation path is allowed.

- ❑ **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 OpenVMS IDs available to users so that they 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 [Step 6. Configuring the Server With Different Security Modes](#) on page 397.

## Step 2. Creating User IDs

The installation of a 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 can be any user ID that has the required privileges and quotas for running the server in all security modes. For the iadmin privileges necessary for running the server in security mode OPSYS, see [Step 6. Configuring the Server With Different Security Modes](#) on page 397, and configure for that mode at this time. We highly recommend running the server secured (that is, with security set to OPSYS, PTH, or DBMS).

The iadmin privileges necessary for running a server in security mode OFF 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	Adapter for Progress only

Any additional privileges required by particular underlying databases must also be authorized.

We recommend running the OpenVMS server in security mode OPSYS. 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

Quota Resources	UAF Keyword	Value
PRIORITY	Prio	4
WORKING_SET	WSdef	3076
MAXIMUM_WORKING_SET	WSquo	8192
MAX_JOBS	Maxjobs	0
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 do not need to 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 and 8.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 [End-User Requirements](#) on page 402 for details.



## Step 3. Accessing the Installation Software

### In this section:

Inserting and Mounting the Software CD

Downloading the Installation Software Using FTP

You can choose to access the server installation software using either:

- ❑ **CD.** The software is provided on CD in OSD-2 format. This is how most installations are performed. You must insert and mount the CD as explained below in [Inserting and Mounting the Software CD](#) on page 385. 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.
- ❑ **FTP.** You download the installation software from the Information Builders FTP site. Downloading the installation software involves:
  - 1. Registering** at the Information Builders FTP site.
  - 2. Downloading** the server installation software from the site.
  - 3. Unzipping** the downloaded file.
  - 4. Running** the isetup procedure to begin installing the server.

For instructions, see [Downloading the Installation Software Using FTP](#) on page 386.

## Inserting and 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 drive.
- 3.** Issue the following command:

```
MOUNT /OVER=ID device_name:
```

where:

*device\_name*

Is the system name for your CD device. Consult your OpenVMS System Administrator for the name of the device for your platform. This document uses "CD:" to generically refer to this device for OpenVMS purposes.

The CD will now be accessible for the ID performing 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. Running the Setup Procedure](#) on page 387. 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 CD:[ 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. Running the Setup Procedure](#) on page 387.

After you complete the installation, you can later delete the [.TMP] directory.

## Downloading the Installation Software Using FTP

To download the installation software:

1. Go to <http://techsupport.informationbuilders.com>.

The Information Builders Technical Support home page opens.

2. Click *My Downloads* in the My Account section on the right side of the page.

The Downloads, Upgrades, Service Packs, and PTFs page opens.

3. Click the link for your product (for example, WebFOCUS and iWay Server and iWay Client).

The Downloads by Release page for your product opens.

4. Click your release from the Current Production Releases list.

The Software Downloads page for your release opens.

5. Scroll down and find the platform on which you want to install the server, and then click *Download* to the right of the platform name.

6. Fill in the registration form and then click *Continue*.

The Software Download Agreement page opens.

7. Select *I agree...* to consent to the Download Agreement, and then click *Continue*.

The Download Instructions page opens. Select AUTOMATIC or MANUAL and follow the relevant instructions.

A copy of the instructions is automatically emailed to you for later reference.

8. Follow the instructions on the Download Page.
9. Run the installation procedure as described in [Step 4. Running the Setup Procedure](#) on page 387.

**Caution:** Do not run the installation procedure from the `[.download]` directory in which ISETUP resides as this will cause errors in the installation process.

After you complete the installation, you can delete the `[.download]` directory, as well as the directory to which the saveset was expanded.

## Step 4. Running the Setup Procedure

### In this section:

Configuring an Additional Server

Refreshing an Installation

Dismounting the Software CD

Installing and Configuring a Server Silently

### Example:

Installing and Starting a Full-Function Server

### Reference:

Server Installation Parameters

The installation procedure name is called ISETUP. For performance reasons, you should not install to an FSD or NFS-mounted disk.

To install the server:

1. Log on with the iadmin user ID.
2. Set the default protection mask to at least 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 from either:

- CD.** For example:

```
RUN CD:[IWAY]ISETUP
```

- Disk.** For example:

```
RUN [.download]ISETUP
```

You are prompted for the type of installation you are performing.

6. Enter option 1, *Install and Configure*.

You are prompted for your license key.

7. Type your license key.

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

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

8. Type the full path (including the CD or disk drive) of the installation file, or press *Enter* to accept the default.

For example, from CD:

```
CD:[IWAY]iserver.bck
```

For example, from disk:

```
[.download]iserver.bck
```

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

9. Type the server administrator password.

The password does not display, and is stored in encrypted form.

You are prompted to review the default values of the remaining installation parameters.

10. To accept all the default values, enter *Y* and skip to Step 12. Otherwise, to change any values, continue with Step 11.

**Installing the demo files.** By default, the Century Corp demo files are not installed. If you wish to install them, do not enter Y; continue to Step 11, where you will have the option of installing them in one or more languages. (Note that all other demo files are installed automatically, in English, as part of the standard installation.)

- 11** Enter *N* to be prompted individually for each installation parameter. For each one, you will be given the choice of accepting the default value or changing it.

For information about these parameter values, see [Server Installation Parameters](#) on page 390. Note that the default root location is the iadmin ID's home directory.

If any of the prompted locations (such as EDHOME) 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.

When specifying a location, note these requirements:

- ❑ The EDHOME directory path name directory path name must conform to the pattern `*ibi.srv77*.home*` and must be an absolute path.
- ❑ If you changed the EDHOME value, the default EDACONF value changes to conform to EDHOME.

EDACONF must be in the same `srv77` path as EDHOME. The lowest-level EDHOME directory (home) becomes the server type directory in EDACONF.

For example, if EDHOME is

```
[ iadmin.ibi.srv77.home ]
```

then EDACONF for a WebFOCUS Reporting Server defaults to:

```
[ iadmin.ibi.srv77.wfs ]
```

If you are configuring an additional server instance, be sure to specify a new configuration directory here; do not use an existing directory. Each server instance must have its own configuration directory. You can append characters to the name of the `server_type` directory to avoid overwriting the existing directory. For example:

```
[ iadmin.ibi.srv77.wfs2 ]
```

Note that the server National Language Support (NLS) is set to OFF by default. You can configure it using the Web Console after installation.

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

Alternatively, to start over, enter *N*. To quit the installation procedure, enter *Q*.

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

- 13** Type *Y* to start the server or *N* to exit.

If you start the server, startup messages and the Web Console URL are now displayed. You should now verify your installation, as described in [Step 5. Verifying the Server Installation](#) on page 396.

**Reference: Server Installation Parameters**

The server installation procedure parameters are described in the following table.

Parameter	Description
EDAHOME	Directory location for files. Any changes in the EDAHOME location must follow the pattern *ibi.srv77*.home* in its declaration.  <b>Note:</b> Do not use dollar signs (\$) in device or path names if Active Technologies has been licensed.
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, or wfs (based on the key and on any change in the EDAHOME pattern).  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.  When aliasing occurs, a message similar to the following appears:  <code>Warning: WSM id 'DISK\$SOFTWARE:[IWAY.IBI.SRV77.FFS] has been aliased to EDASHARE=EDA8100 due to length.</code>
EDAPRFU	Location of user and group profiles and of admin.cfg, which specifies the server administrator.
APPROOT	Location for default applications and sample applications.

Parameter	Description
HTTP_BASE_PORT	<p>First of three consecutive port numbers that the server uses for the HTTP Listener and other IP-based services.</p> <p>If you are configuring multiple server instances, be sure to specify a different range of ports for each server instance.</p> <p>The default port automatically varies by product to support multiple servers on a particular computer:</p> <ul style="list-style-type: none"> <li>❑ <b>For a Full-Function Server</b>, 8101 is the default value, which reserves ports 8101-8103.</li> <li>❑ <b>For a WebFOCUS Reporting Server</b>, 8121 is the default value, which reserves ports 8121-8123.</li> <li>❑ <b>For a DataMigrator Server</b>, 8117 is the default value, which reserves ports 8117-8119.</li> <li>❑ <b>For a Shared Application Server</b> (for WebFOCUS Maintain), 8113 is the default, which reserves ports 8113-8115.</li> </ul>
TCP_BASE_PORT	<p>Port number on which the server's TCP Listener listens. It must be outside the range of the three consecutive HTTP Listener ports. It defaults to the port immediately preceding the first HTTP Listener port.</p> <p>For example, if you accept the default HTTP Listener Port value of 8101, the TCP Listener port defaults to 8100.</p> <p>If you are configuring multiple server instances, be sure to specify a different port for each server instance.</p>

**Example: Installing and Starting a Full-Function Server**

The following session is an example of a Full-Function Server installation from CD in which the user has accepted the default values. The session begins with a RUN command issued from the OpenVMS command prompt.

```
$ RUN CD:[IWAY]ISETUP

-----

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

-----

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 999-999-9999-99) : xxx-xxx-xxxx-xx

    License Key has been checked

    Product: Full Function Server
    Maximum Number of Adapters: 4
    Maximum Number of Users: 8
    Maximum Number of CPUs: 2

ISETUP: License xxx-xxx-xxxx-xx has been accepted

-----

    Please enter the full path name of the media for the product
(Default=CD:[IWAY]iserver.bck)

Please supply media or <Enter> :

-----

Enter the Server Administrator (iadmin) Password:
xxxxxxx

-----
```



Please review the default settings.

```
EDAHOME = IWAY:[iadmin.ibi.ibi.srv77.home]
EDACONF = IWAY:[iadmin.ibi.ibi.srv77.ffi]
EDAPRFU = IWAY:[iadmin.ibi.profiles]
APPROOT = IWAY:[iadmin.ibi.apps]
HTTP_BASE_PORT = 8101
TCP_BASE_PORT = 8100
```

WARNING: Directories marked as existing will be deleted and recreated!

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 = CD:[IWAY]iserver.bck
PRODUCT = server
EDAHOME = IWAY:[iadmin.ibi.ibi.srv77.home]
```

Configure Options ...

```
EDACONF = IWAY:[iadmin.ibi.ibi.srv77.ffi]
EDAHOME = IWAY:[iadmin.ibi.ibi.srv77.home]
LICENSE = 999-999-9999-99
WORKSPACE_MANAGER_NAME = "iWay 77 Full Function Server"
EDAPRFU = IWAY:[iadmin.ibi.profiles]
APPROOT = IWAY:[iadmin.ibi.apps]
SERVER_TYPE = ffi
SERVER_ADMIN_ID = iadmin
SERVER_ADMIN_PASSWORD = C498X8e60C1ByAF7526E2
HTTP_BASE_PORT = 8101
TCP_BASE_PORT = 8100
```

## Step 4. Running the Setup Procedure

---

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 Workspace (Y/N Default=Y)? : y

04/09/2010 15:29:20 Starting Workspace Manager in

IWAY:[iadmin.ibi.ibi.srv77.ffs]

04/09/2010 15:29:20 Logging startup progress and errors in

IWAY:[iadmin.ibi.ibi.srv77.ffs]edaprint.log

04/09/2010 15:29:20 Opening PTH context

04/09/2010 15:29:21 Checking listeners and services

04/09/2010 15:29:24 TCP started

04/09/2010 15:29:24 HTTP started

04/09/2010 15:29:24 Workspace Manager started.

ISETUP: The server has been started

-----  
To administer the server go to a web browser  
and open the URL <http://myworld:10901>

## 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.SRV77.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 installation directory (EDAHOME) because it has become accidentally damaged or needs updating with a service pack. To do this, run the ISETUP program on the CD from which the software was originally installed, as described in [Step 4. Running the Setup Procedure](#) on page 387, or from a service pack CD. 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.

## Dismounting the Software CD

When you have finished accessing the CD, 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 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 for this purpose. You will also need the CD if you refresh the installation.

## Installing and Configuring a Server Silently

This is also known as a silent install. The most common form is an initial install which also results in an initial configuration (and is what is documented here). An initial installation and configuration should only be done once per EDAHOME and an add product configuration used thereafter.

You can install a server silently, without the installation process prompting for information, if you first create a text file that specifies your server installation parameters. Installing silently can be helpful if, for example, you want to install many servers at once throughout an 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 in [Step 4. Running the Setup Procedure](#) on page 387.

Run `isetup -?` to display information on the setup and use of a parameters file for silent installation and configuration.

## Step 5. Verifying the Server Installation

To verify that you have successfully installed the server, use the 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. (If you started the server as the last step of the installation procedure, skip ahead to Step 5.)

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 login profile (LOGIN.COM).

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

```
@IWAY:[IADMIN.IBI.SRV77.FFS.BIN]EDASTART.COM -START
```

4. Check to see whether the processes are active using -show

```
@IWAY:[IADMIN.IBI.SRV77.FFS.BIN]EDASTART.COM -SHOW
```

5. Start the Web Console by starting a browser pointed at the server HTTP Listener port specified during installation. The URL format is `http://host:port`. (The URL is also displayed at the end of the installation procedure.)

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.

6. If the server is running in secure mode, you will first see a logon screen. Log on using the iadmin ID. For information about configuring the server security, see [Step 6. Configuring the Server With Different Security Modes](#) on page 397.

The Web Console 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 *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual.

7. To test the server, open the ibisamp folder on the Applications tree, right-click a synonym, such as CAR or EMPLOYEE, and select *Sample Data*.

A sample report is executed and the result is displayed.

8. When you are done using the server, you can stop it using the Web Console by clicking the *Stop* option on the Web Console toolbar.

9. If you experience any problems, examine the `IWAY:[IADMIN.IBI.SRV77.FFS]EDAPRINT.LOG` file.

## Step 6. Configuring the Server With Different Security Modes

### How to:

Satisfy Security Mode OPSYS Requirements

Add/Change Privileges and Quotas (EDAENV.PRM)

You can run the server in any of the following security modes:

- ❑ **OFF**, in which access to data sources and the Web Console is unrestricted. Users do not need to provide a password.
- ❑ **OPSYS**, each connecting user is authenticated against the OpenVMS authorization file, and the data agents impersonate the user ID to control access rights to data files and DBMS objects. Access to the Web Console administrative functions is protected by user authentication at the operating system level.
- ❑ **PTH**, in which access to the Web Console is controlled by authentication against the user list defined at the configuration level.
- ❑ **DBMS**, in which access to data sources and the Web Console is controlled by authentication against the database list of user IDs. Control of data resources can be accomplished by creating different profiles.

The default security mode is OPSYS if you have satisfied the OPSYS requirements. Otherwise, the default mode is OFF. To apply a different security mode, configure server security in the Web Console.

You must satisfy the requirements described in [How to Satisfy Security Mode OPSYS Requirements](#) on page 397.

Some security modes need to be configured before you can activate them. You can see a full description of all server security modes in the Web Console help, and also in the *Server Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS* manual. To see it in the Web Console:

1. From the Web Console menu bar, select *Help*, then *Contents and Search*.  
The Web Console Help window opens.
2. In the left pane, expand *Server Administration*.

### Procedure: How to Satisfy Security Mode OPSYS Requirements

To run a server in security mode OPSYS in OpenVMS, you must satisfy the following requirements. You must do this when you set up the server administration (iadmin) ID.

Although 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	Adapter for Progress 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 [How to Add/Change Privileges and Quotas \(EDAENV.PRM\)](#) on page 399.

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 EDACONF [.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 (for example, 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<sub>*n*</sub> : privilege [, privilege, ...], where *n* is any integer from 1 to 99. The value for *n* must be unique among the Privilege<sub>*n*</sub> lines. Any number of comma-separated privilege names per line may be declared, but each Privilege<sub>*n*</sub> 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 = 100
page_file = 2097152
buffer_limit = 800000
io_buffered = 200
ast_limit = 300
working_set = 3076
maximum_working_set = 8192
extent = 10240
file_limit = 4096
enqueue_limit = 4000
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
```

## Starting and Using the Server

### In this section:

Other DCL Programs

Adding JOB, GROUP or Other Defined Environment Values (EDAENV.COM)

End-User Requirements

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 [Step 5. Verifying the Server Installation](#) on page 396).

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, IBM i, and z/OS* manual. For current information about which adapters are supported:

1. Go to <http://techsupport.informationbuilders.com>.  
The Information Builders Technical Support home page opens.
2. In the Quick Links section on the right side of the page, click *Supported Systems/Adapters*.  
The Supported Systems and Adapters page opens.
3. Click the link for the server release you want.  
The Supported Systems and Adapters page for that release opens.
4. Click the link for your platform.  
The support chart for that platform opens.

Commonly used edastart options and functions are as follows:

Command and Option	Function
<code>edastart</code>	(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.
<code>edastart -start</code>	Starts the server in background. Only a short message appears.
<code>edastart -sstart n</code>	Starts the server, but waits <i>n</i> seconds for actual startup.



Command and Option	Function
<code>edastart -show</code>	Shows general status of the server and agents.
<code>edastart -stop</code>	Stops the server.
<code>edastart -quit</code>	Exits the server line mode console log (edaprint) and returns to the operating system command prompt, but leaves the server running.
<code>edastart -console</code>	Re-enters the server line mode console log (edaprint).
<code>edastart -traceon</code>	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.
<code>edastart -traceoff</code>	Turns off tracing.
<code>edastart -?</code>	Displays edastart options (those on this list, and more).
<code>edastart -?s</code>	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 the configuration 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
<code>ISTART [ID]</code>	<code>edastart</code>
<code>ISTOP [ID]</code>	<code>edastart -stop</code>
<code>ISHOW [ID]</code>	<code>edastart -show</code>

Command	Function
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 the Adapter for Progress only.

## Generating a Trace

### How to:

Generate a Server Trace

Generate a Non-Server Trace

If you encounter a server problem, you can run a set of traces that will help you assess the problem, and, if necessary, communicate it to Customer Support Services for further troubleshooting. This topic describes trace options and provides instruction for creating the traces.

There are two types of traces you can run to troubleshoot a problem:

- ❑ **A server trace**, in which you trace an agent that is running in a server context.
- ❑ **A non-server trace**, in which you trace an agent that is running outside a server context, that is, an agent that is running in standalone mode.

Under normal conditions, most applications are run in a server context. However, if you run your trace in a non-server context (that is, if you run a non-server trace), you can produce the necessary diagnostic information while significantly reducing the amount of material that needs to be reviewed. Running a non-server trace also rules out server communications as a cause of your problem.

If you prefer to use DCL jobs to control tracing and save diagnostics functions, you can take advantage of a number of DCL scripts that are created during installation in the EDACONF [.BIN] directory and can be used to start traces, turn traces off, and perform edastart - savediag functions. The commands are, respectively, ITRCON.COM, ITRCOFF.COM, and ISAVEDIA.COM. An alternate ID parameter is available, under which you can submit the job. For details, see [Other DCL Programs](#) on page 401.

### **Procedure: How to Generate a Server Trace**

To generate a server trace:

1. Turn tracing on by doing one of the following:

- ❑ Go to the Web Console menu bar, select *Workspace* and then *Enable Traces*.
- ❑ Start the server by issuing the following command:

```
edastart -traceon
```

**Note:** Preface `edastart` with an @ sign and pathname, unless a symbol has been set up.

2. Reproduce the problem.
3. Stop the server.
4. Issue the following command:

```
edastart -savediag
```

5. Respond to the prompts to capture, and optionally archive, diagnostic information.

For information about sending the diagnostic information to Customer Support Services, see [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

### **Procedure: How to Generate a Non-Server Trace**

To generate a non-server trace:

1. Create a directory under APPROOT to reproduce the problem.
2. Copy any files required for the reproduction to the directory.
3. Switch to the directory.
4. Reproduce the problem using `edastart -traceon` and one of switches `-t`, `-x`, or `-f`.
5. Switch to a directory other than the problem reproduction directory.
6. Issue the following command:

```
edastart -savediag
```

**Note:** Preface `edastart` with an @ sign and pathname, unless a symbol has been set up.

7. Respond to the prompts to capture, and optionally archive, diagnostic information.

For information about sending the diagnostic information to Customer Support Services, see [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

## Third-Party Software and Licenses

### In this section:

OpenFlex SDK

As of Version 7 Release 6.8, to address display of third-party software license requirements, a license option has been added to the Help menu located on the Web Console. This section describes the third-party software used on OpenVMS and includes references to the full licenses included in *Information Builders and Third-Party Licenses* on page 413.

### OpenFlex SDK

OpenFlex SDK is included by Information Builders for use with its HOLD FORMAT FLEX feature. This distribution is subject to the terms and conditions of the Mozilla Public License Version 1.1.

For more information, see *OpenFlex SDK License* on page 419 or visit our World Wide Web site, <http://www.informationbuilders.com>.

## General Information for an OpenVMS Installation

### In this section:

Java Listener JVM Defaults

Configuring for IEEE/G\_FLOAT Float Data

This section covers general information for an OpenVMS Installation.

### Java Listener JVM Defaults

#### How to:

Tune the Java Listener

The Java Listener on OpenVMS Alpha has pre-set values for Initial Java Heap Size (JVM\_INIT\_HEAP) and Maximum Java Heap Size (JVM\_MAX\_HEAP) because the internal Java defaults for these values are insufficient (and cause features to fail). Plus, the OpenVMS Alpha Java documentation explicitly states that the internal defaults should not be depended on.

The pre-set values do not reflect any tuning, but are simply known working values. Specific tuning should be done based on your application need.

Since OpenVMS Integrity (IA64) Java does not have issues with these internal defaults, they are not pre-set. However, applications may benefit from specific tuning.

Java Listener tuning is accessed from the Web Console.

### **Procedure: How to Tune the Java Listener**

To tune the Java Listener from the Web Console:

- 1.** Select *Configuration/Monitor* from the *Workspace* menu.
- 2.** Open the *Java Services* folder.
- 3.** Right-click *DEFAULT* and select *Properties*.

The Java Services Configuration pane opens.

- 4.** Expand the *JVM Settings* section.
- 5.** Under *Non-standard JVM options*, enter values in the *Initial Java Heap Size* and *Maximum Java Heap Size* fields.
- 6.** Click *Save and Restart Java Services*.

### **Configuring for IEEE/G\_FLOAT Float Data**

As of 7.7.02, OpenVMS 8.x builds are natively IEEE builds and the SET VMSFLOATCNV = IEEE/G-FLOAT command is used to SET the float read method for single (F)/double (D) float data. This requires separate server configurations for each float type and a hub-sub arrangement to join data. By default, an IEEE build needs no explicit SET command to access IEEE float data, although it is allowed. To access G\_FLOAT data, the following command must be added to the server edasprof.prf:

```
SET VMSFLOATCNV = G-FLOAT
```

This may be done from the Web Console using the server profile edit feature.

The SET command is ignored on non-applicable platforms, so application sources may be shared. The setting also does not apply to the OpenVMS 7.x builds, which are strictly G\_FLOAT builds.

## Troubleshooting for OpenVMS

### How to:

Add Your Problem to the Troubleshooting Guide  
Install and Activate the Debuggable Version of the Server

### Reference:

Problem: The Server Starts in Safe Mode  
Problem: EDASTART Window Displays Only a Few Lines  
Problem: HTTP Listener Does Not Start Or Runs Intermittently  
Problem: Missing Folders in Web Console Procedure and Metadata Panes  
Problem: Unexpected EDASHARE Message  
Problem: Java Tasks Fail When Using Oracle  
Add Your Problem to the Troubleshooting Guide

To troubleshoot an installation problem, identify your problem in the following list, and follow the link to a description of the solution.

If you cannot find your problem described in the list, and cannot resolve it yourself, contact Customer Support Services as described in [Information You Should Have](#) on page 11 and [Customer Support](#) on page 11.

If you have a troubleshooting suggestion that is not described in the list, and you think others will find it helpful, we invite you to send it to us, as described in [How to Add Your Problem to the Troubleshooting Guide](#) on page 410. We will consider including your problem in a future release of this manual.

### Problems:

- ❑ The server starts in safe mode (as indicated at the top of the Web Console).  
See [Problem: The Server Starts in Safe Mode](#) on page 408.
- ❑ Issuing the edastart command without the -start option displays only a few lines in the EDASTART window.  
See [Problem: EDASTART Window Displays Only a Few Lines](#) on page 408.
- ❑ The HTTP Listener does not start, or runs intermittently, unless traces are on (edastart -traceon option).  
See [Problem: HTTP Listener Does Not Start Or Runs Intermittently](#) on page 409.

- ❑ The Web Console Procedure and Metadata panes do not display any folders.  
See [Problem: Missing Folders in Web Console Procedure and Metadata Panes](#) on page 409.
- ❑ You receive an unexpected EDASHARE message after starting the server.  
See [Problem: Unexpected EDASHARE Message](#) on page 409.

**Reference: Problem: The Server Starts in Safe Mode**

**Problem:** The server starts in safe mode. The Web Console home page displays a message stating that the server is in safe mode and describing what triggered it.

**Cause:** A common cause for the server starting in safe mode is a problem with the server administrator ID 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 click the *fix* hyperlink, which is displayed under the problem description, to display the relevant pane and resolve the problem.

For example, if the problem is that the server administrator password is out of synchronization:

1. Click the *fix* hyperlink displayed under the problem description.
2. In the left pane, open the *Users* folder, then the *Server Administrator* folder.
3. Click your user ID and select *Properties* from the pop-up menu.  
The Access Control pane is displayed on the right.
4. Type the correct operating system password in the *Password* field, and type it again in the *Confirm Password* field.
5. Click *Save and Restart*.  
The Security Mode pane opens on the right.
6. Click the Home icon in the menu bar to return to the Web Console home page.

**Reference: Problem: EDASTART Window Displays Only a Few Lines**

**Problem:** Issuing the `edastart` command without the `-start` option displays only a few lines in the terminal session, even though the server starts and `EDAPRINT.LOG` is complete.

**Cause:** This is a file contention problem that generally happens on very fast systems. It does not affect creating and updating the `EDAPRINT.LOG` file.

**Solution:** Start the server by issuing the `edastart -start` command, immediately followed by the `edastart -console` command to display the `edaprint log`.



**Reference: Problem: HTTP Listener Does Not Start Or Runs Intermittently**

**Problem:** The HTTP Listener does not start, or runs intermittently, unless traces are on (edastart -traceon option).

**Cause:** This is caused by a TCP/IP socket synchronization problem on fast systems.

**Solution:** Briefly delay the socket logic by setting a delay variable intended for this purpose. To define the delay, add the following statement to the iadmin ID LOGIN.CON before starting the server:

```
DEFINE VMS_RECV_DELAY 1
```

The unit of measurement is the microsecond. A value of 1 usually resolves the problem. However, the value is likely to be affected by system load, so you will need to experiment to find the correct value for your system.

**Reference: Problem: Missing Folders in Web Console Procedure and Metadata Panes**

**Problem:** The Web Console Procedure and Metadata panes do not display any folders.

**Cause:** This is caused by a TCP/IP socket synchronization problem on fast systems.

**Solution:** Briefly delay the socket logic by setting a delay variable intended for this purpose. To define the delay, add the following statement to the iadmin ID LOGIN.CON before starting the server:

```
DEFINE VMS_RECV_DELAY 1
```

The unit of measurement is the microsecond. A value of 1 usually resolves the problem; however, the value is likely to be affected by system load, so you will need to experiment to find the correct value for your system.

**Reference: Problem: Unexpected EDASHARE Message**

**Problem:** After the server starts, you receive an unexpected EDASHARE message.

**Cause:** EDASHARE may have been declared manually in an earlier release.

**Solution:** Remove the manual EDASHARE declaration.

**Reference: Problem: Java Tasks Fail When Using Oracle**

**Problem:** Java tasks fail when using Oracle.

**Cause:** Newer Oracle releases use Java. When you call Oracle setup scripts (for example, in edaenv.com) and then start the server.

**Solution:** Call the standard Java setup environment after calling any Oracle setup scripts.

### **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@ibi.com](mailto:books_info@ibi.com). Include your name and phone number, and include *Server Installation Troubleshooting* in the subject line.

- ❑ **Send them** to:

Documentation Services  
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 Install and Activate the Debuggable Version of the Server**

If instructed by Customer Support Services, you can activate the debuggable version of the server to help troubleshoot a problem.

**Caution:** Do not activate the debuggable version unless explicitly requested to by Customer Support Services.

To install and activate the debuggable version of the server:

1. Log on with the server administrator ID (often referred to as iadmin).
2. Download the iserverd compression file (for example, .tar, .zip, or .bck) from the FTP site to a local directory. Debuggables for OpenVMS environments are not normally shipped on the original CD media, but can be made available on CD by special request to Customer Support Services and requires a lead time of approximately one week. IF CD media is being used, mount the media.
3. Run the isetup installation program (located in EDAHOME bin if download was used or in a root directory of the CD media).
4. At the isetup main menu, select option 4, *Install Debuggables to the Installation Directory* and follow the steps supplying information similar to when the original install was performed.
5. After completion of isetup, the server may be run in debug mode with the following steps.

```
edastart -stop
```

Copy the edastart.com to edastartdbg.com and on TSCOM symbol set up line edit bin]tscom300.exe to be dbg]tscom300.exe and save.

```
edastart -dbgon  
edastartdbg -start
```

The debugger starts and the user is required to type GO and GO for the actual executable to start (run until repro is completed).

```
edastart -stop
edastart -dbgoff
edastart -start
```

The debugger GO/GO step may be avoided by creating a text file with the words GO and GO on separate lines and issuing a logical for DBG\$INPUT before starting the server.

- 6.** If the debug version is no longer needed, the debuggables may be removed. If a service pack is being installed, the debuggables *must* be removed to prevent mismatches with the new release. To remove the debuggables, change the directory to the home directory of EDAHOME and issue DELETE [.DBG...]\*.\*;\* and then DELETE DBG.DIR;\*.

Customer Support Services will provide you with additional instructions as your situation requires.



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