

# SYBASE®

Installation Guide

**EAServer**

6.1

[ Windows ]

DOCUMENT ID: DC38014-01-0610-01

LAST REVISED: December 2007

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# About This Book

This book describes how to install EAServer, which is an integrated set of application servers that you use to deploy Web applications that support high-volume traffic, dynamic content, and intensive online transaction processing (OLTP).

## Audience

This book is for anyone responsible for installing EAServer.

## How to use this book

Chapter 1, “Before You Install EAServer,” contains system requirements and information about EAServer features and options.

Chapter 2, “Installing EAServer,” contains instructions for installing and starting EAServer and Adaptive Server™ Anywhere, upgrading an existing installation, and installing other EAServer products and features.

Chapter 3, “Creating Embedded EAServer Installations,” explains how to install EAServer silently and use EAServer automated configuration tools to further configure the installation within your own install script or program.

Chapter 4, “Installing and Configuring a Web Server Redirector Plug-In,” describes how to enable communication between the Web server and the EAServer HTTP and HTTPS protocol listeners.

Chapter 5, “Configuring OpenClient and ODBC,” describes how to configure Open Client and ODBC drivers used with EAServer.

## Related documents

**Core EAServer documentation** The core EAServer documents are available in HTML and PDF format in your EAServer software installation and on the SyBooks™ CD.

*EAServer 6.1 New Features Guide* summarizes new functionality in this version.

The *EAServer API Reference Manual* contains reference pages for proprietary EAServer Java classes and C routines.

The *EAServer Automated Configuration Guide* explains how to use Ant-based configuration scripts to:

- Define and configure entities, such as EJB modules, Web applications, data sources, and servers

- 
- Perform administrative and deployment tasks

The *EAServer CORBA Components Guide* explains how to:

- Create, deploy, and configure CORBA and PowerBuilder™ components and component-based applications
- Use the industry-standard CORBA and Java APIs supported by EAServer

The *EAServer Enterprise JavaBeans User's Guide* describes how to:

- Configure and deploy EJB modules
- Develop EJB clients, and create and configure EJB providers
- Create and configure applications clients
- Run the EJB tutorial

The *EAServer Feature Guide* explains application server concepts and architecture, such as supported component models, network protocols, server-managed transactions, and Web applications.

The *EAServer Java Message Service User's Guide* describes how to create Java Message Service (JMS) clients and components to send, publish, and receive JMS messages.

The *EAServer Migration Guide* contains information about migrating EAServer 5.x resources and entities to an EAServer 6.x installation.

The *EAServer Performance and Tuning Guide* describes how to tune your server and application settings for best performance.

The *EAServer Security Administration and Programming Guide* explains how to:

- Understand the EAServer security architecture
- Configure role-based security for components and Web applications
- Configure SSL certificate-based security for client connections
- Implement custom security services for authentication, authorization, and role membership evaluation
- Implement secure HTTP and IIOP client applications
- Deploy client applications that connect through Internet proxies and firewalls

The *EAServer System Administration Guide* explains how to:

- Start the preconfigured server and manage it with the Sybase Management Console
- Create, configure, and start new application servers
- Define database types and data sources
- Create clusters of application servers to host load-balanced and highly available components and Web applications
- Monitor servers and application components
- Automate administration and monitoring tasks with command line tools

The *EAServer Web Application Programming Guide* explains how to create, deploy, and configure Web applications, Java servlets, and JavaServer Pages.

The *EAServer Web Services Toolkit User's Guide* describes Web services support in EAServer, including:

- Support for standard Web services protocols such as Simple Object Access Protocol (SOAP), Web Services Description Language (WSDL), and Uniform Description, Discovery, and Integration (UDDI)
- Administration tools for deployment and creation of new Web services, WSDL document creation, UDDI registration, and SOAP management

*EAServer Troubleshooting Guide* describes procedures for troubleshooting problems that EAServer users may encounter. This document is available only on the SyBooks Online Web site at:

[http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.dc10113\\_0600/html/eastg/title.htm](http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.dc10113_0600/html/eastg/title.htm)

**jConnect for JDBC documents** EAServer includes the jConnect™ 6.0.5 driver to allow JDBC access to Sybase database servers and gateways. The *jConnect 6.0.5 Programmer's Reference* is available on the SyBooks Online Web site at:

[http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.dc39001\\_0605/html/prjdbc/title.htm](http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.dc39001_0605/html/prjdbc/title.htm)

**Sybase Software Asset Management User's Guide** EAServer includes the Sybase Software Asset Management license manager for managing and tracking your Sybase software license deployments. The *Sybase Software Asset Management User's Guide* is available on the Getting Started CD and in the EAServer 6.0 collection on the SyBooks Online Web site at:

[http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.dc00530\\_0200/html/sysamug/title.htm](http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.dc00530_0200/html/sysamug/title.htm)

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**Conventions**

The formatting conventions used in this manual are:

| <b>Formatting example</b>              | <b>To indicate</b>   |
|--|--|
| commands and methods                   | When used in descriptive text, this font indicates keywords such as: <ul style="list-style-type: none"><li>• Command names used in descriptive text</li><li>• C++ and Java method or class names used in descriptive text</li><li>• Java package names used in descriptive text</li><li>• Property names in the raw format, as when using jagtool to configure applications rather than the Management Console</li></ul> |
| <i>variable, package, or component</i> | Italic font indicates: <ul style="list-style-type: none"><li>• Program variables, such as <i>myCounter</i></li><li>• Parts of input text that must be substituted, for example:<br/><pre>Server.log</pre></li><li>• File names</li><li>• Names of components, EAServer packages, and other entities that are registered in the EAServer naming service</li></ul>   |
| File   Save                            | Menu names and menu items are displayed in plain text. The vertical bar shows you how to navigate menu selections. For example, File   Save indicates “select Save from the File menu.”  |
| package 1                              | Monospace font indicates: <ul style="list-style-type: none"><li>• Information that you enter in the Management Console, a command line, or as program text</li><li>• Example program fragments</li><li>• Example output fragments</li></ul>  |

**Other sources of information**

Use the Sybase Getting Started CD, the SyBooks CD, and the Sybase Product Manuals Web site to learn more about your product:

- The Getting Started CD contains release bulletins and installation guides in PDF format, and may also contain other documents or updated information not included on the SyBooks CD. It is included with your software. To read or print documents on the Getting Started CD, you need Adobe Acrobat Reader, which you can download at no charge from the Adobe Web site using a link provided on the CD.
- The SyBooks CD contains product manuals and is included with your software. The Eclipse-based SyBooks browser allows you to access the manuals in an easy-to-use, HTML-based format.

Some documentation may be provided in PDF format, which you can access through the PDF directory on the SyBooks CD. To read or print the PDF files, you need Adobe Acrobat Reader.



Refer to the *SyBooks Installation Guide* on the Getting Started CD, or the *README.txt* file on the SyBooks CD for instructions on installing and starting SyBooks.

- The Sybase Product Manuals Web site is an online version of the SyBooks CD that you can access using a standard Web browser. In addition to product manuals, you will find links to EBFs/Maintenance, Technical Documents, Case Management, Solved Cases, newsgroups, and the Sybase Developer Network.

To access the Sybase Product Manuals Web site, go to Product Manuals at <http://sybooks.sybase.com/nav/base.do>.

### Sybase certifications on the Web

Technical documentation at the Sybase Web site is updated frequently.

#### ❖ Finding the latest information on product certifications

- 1 Point your Web browser to Technical Documents at <http://www.sybase.com/support/techdocs/>.
- 2 Select Products from the navigation bar on the left.
- 3 Select a product name from the product list and click Go.
- 4 Select the Certification Report filter, specify a time frame, and click Go.
- 5 Click a Certification Report title to display the report.

#### ❖ Creating a personalized view of the Sybase Web site (including support pages)

Set up a MySybase profile. MySybase is a free service that allows you to create a personalized view of Sybase Web pages.

- 1 Point your Web browser to Technical Documents at <http://www.sybase.com/support/techdocs/>.
- 2 Click MySybase and create a MySybase profile.

### Sybase EBFs and software maintenance

#### ❖ Finding the latest information on EBFs and software maintenance

- 1 Point your Web browser to the Sybase Support Page at <http://www.sybase.com/support>.
- 2 Select EBFs/Maintenance. If prompted, enter your MySybase user name and password.
- 3 Select a product.

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## Accessibility features

- 4 Specify a time frame and click Go. A list of EBF/Maintenance releases is displayed.

Padlock icons indicate that you do not have download authorization for certain EBF/Maintenance releases because you are not registered as a Technical Support Contact. If you have not registered, but have valid information provided by your Sybase representative or through your support contract, click Edit Roles to add the “Technical Support Contact” role to your MySybase profile.

- 5 Click the Info icon to display the EBF/Maintenance report, or click the product description to download the software.

EAServer has been tested for compliance with U.S. government Section 508 Accessibility requirements. The online help for this product is also provided in Eclipse help formats, which you can navigate using a screen reader.

The Management Console supports working without a mouse. For more information, see “Keyboard navigation” in Chapter 2, “Management Console Overview,” in the *EAServer System Administration Guide*.

The Web Services Toolkit plug-in for Eclipse supports accessibility features for those that cannot use a mouse, are visually impaired, or have other special needs. For information about these features see the Eclipse help:

- 1 Start Eclipse.
- 2 Select Help | Help Contents.
- 3 Enter *Accessibility* in the Search dialog box.
- 4 Select Accessible User Interfaces or Accessibility Features for Eclipse.

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**Note** You may need to configure your accessibility tool for optimal use. Some screen readers pronounce text based on its case; for example, they pronounce ALL UPPERCASE TEXT as initials, and MixedCase Text as words. You might find it helpful to configure your tool to announce syntax conventions. Consult the documentation for your tool.

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For additional information about how Sybase supports accessibility, see Sybase Accessibility at <http://www.sybase.com/accessibility>. The Sybase Accessibility site includes links to information on Section 508 and W3C standards.

**If you need help**

Each Sybase installation that has purchased a support contract has one or more designated people who are authorized to contact Sybase Technical Support. If you cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area.



# Before You Install EAServer

This chapter contains information you need to know before you install or upgrade EAServer.

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## EAServer contents

Besides the EAServer 6.1 software, the installation includes:

- SQL Anywhere® database server runtime files
- jConnect 6.05
- PowerBuilder 10.5 and 11.0 virtual machines (PBVMs) to host PowerBuilder components
- Web Services Toolkit, which provides support for industry standard Web services protocols and APIs such as SOAP, WSDL, and UDDI
- Web service support that allows you to deploy J2EE Web applications and EJBs as Web services
- Plug-ins for popular Web servers, which allow you to integrate EAServer Web applications with Web sites hosted on popular Web servers
- Various tools, management utilities, Java extensions, third-party JAR files, and sample applications used to extend EAServer capabilities

## EAServer documentation

See the release bulletin for late-breaking installation information.

Online documentation is installed with EAServer. To view the documentation after installation, start EAServer and navigate to the Management Console at *http://hostname:8000/*, where *hostname* is the name of the machine that hosts EAServer. Select User Documentation.

You can also access the documentation at the Sybase Technical Library Web site at <http://www.sybase.com/support/manuals>. To print these manuals, download the PDF version from the Web site.

## System requirements

You can install EAServer 6.1 as a new installation or as an upgrade to an EAServer 6.0, 6.0.1, or 6.0.2 installation. You can also migrate existing EAServer 5.x entities to EAServer 6.1. See the *EAServer Migration Guide* for instructions.

EAServer 6.1 is compatible with:

- Windows 2000 Service Pack 4 or later
- Windows XP Professional Service Pack 2 or later
- Windows Server 2003
- Windows Vista

See the *EAServer Release Bulletin* for updates to system compatibility information including recommended service pack or maintenance levels.

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**Note** Before installing EAServer, verify that the *psapi.dll* file is located in the *%SYSTEM ROOT%\system32* directory (for example, *C:\WINDOWS\system32* ). If this file is not installed, the installation may end abruptly.

---

## Disk space requirements

The disk space requirements provided are approximate; actual amounts vary, depending on options selected, cluster size, hard disk size, and partitioning. The installation program verifies that you have enough disk space and displays an error message if you do not have enough space to install the selected products and features.

To run EAServer, Sybase recommends a minimum of 512MB of RAM and a 90 MHz Pentium or higher CPU.

The installation program requires 170MB of disk space. Make sure you have a TEMP environment variable and a *temp* directory with at least 170MB.

| Installation type | Minimum hard disk space      |
|-------------------|------------------------------|
| Full              | 701MB                        |
| Client Runtime    | 120MB                        |
| Typical           | 352MB                        |
| Custom            | Depends on features selected |

## JDK versions

EAServer requires (and installs) versions 1.4.2, 1.5.0, and 1.6.0 of the Java Development Kit (JDK) from Sun Microsystems. You can also configure the installation to use an existing version, as long as it is of the required patch level.

**Table 1-1: JDK versions and required patch levels**

| JDK version | Patch level |
|-------------|-------------|
| 1.4.2       | 15          |
| 1.5.0       | 12          |
| 1.6.0       | 02          |

To verify the version and patch level, open a DOS prompt in the *bin* directory of the JDK installation and run:

```
java -version
```

The installer prompts you to specify whether to use an existing JDK and for the location of the JDK. If the installer detects an existing JDK, the location is given as the default in this prompt. You can specify a different location.

## Installation types

When you install EAServer, features are installed by default depending on the type of installation you select. The types of installations include:

- Typical – installs the typical files required to develop EAServer applications.
- Custom – you define which features to install. By default, features that are installed in a typical installation are selected for installation in a custom installation, but you can add or remove features.
- Client Runtime – installs only the client runtime files, and Web server plug-ins. Select this option to run Java or C++ client applications or to use SSL connectivity from PowerBuilder clients, but not install the entire product set.

You are not required to install the client runtime if you are developing clients on a machine where the application server is installed. The server installation includes the core server files.

See Chapter 4, “Installing and Configuring a Web Server Redirector Plug-In,” for more information about the Web server plug-ins.

- Full – installs all features.
- Add Components – adds components to an existing 6.1 installation.
- Upgrade – upgrades EAServer from version 6.0.0, 6.0.1, or 6.0.2.

Table 1-2 describes EAServer features and lists the features that are installed for each type of installation. A Full installation installs everything.

**Table 1-2: EAServer features**

| Feature           | Description  | Installation type          |
|-------------------|--|----------------------------|
| Server            | Includes the application server and files required to manage the server and develop clients and components.  | Typical                    |
| Core server files | Installs files required by the server.   | Typical                    |
| Runtime libraries | Installs the required runtime libraries and includes these options: <ul style="list-style-type: none"> <li>• Standard – compatible with JDK 1.4 and JDK 1.5. This is the default for a Typical installation.</li> <li>• Optimized – compatible with JDK 1.5 only.</li> </ul> | Typical                    |
| Client Runtime    | Installs the client runtime files. Includes these options: <ul style="list-style-type: none"> <li>• Standard – compatible with JDK 1.4, JDK 1.5, and JDK 1.6. JDK 1.5 is the default.</li> <li>• Optimized – compatible with JDK 1.5 only.</li> </ul>                        | Client Runtime and Typical |



| Feature  | Description   | Installation type |
|--|---|-------------------|
| Servlet Runtime                                      | Installs the servlet runtime files.   | Typical           |
| Windows Service                                      | Allows you to install EAServer as a Windows service.<br><br><b>Note</b> Restart your machine if you install EAServer as a Windows service.  |                   |
| Program Menu Items                                   | Creates Start menus to run EAServer, start EAServer Manager, and so on. This option does not support multiple EAServer installations on a single machine. See “Multiple EAServer installations on a single machine” on page 6.  | Typical           |
| Registry Update                                      | Updates the Registry with required EAServer entries.<br><br>When you install or reinstall EAServer, the installer checks the Registry for an existing EAServer installation if this feature is selected, and uses that location as the default installation location. This option does not support multiple EAServer installations on a single machine. See “Multiple EAServer installations on a single machine” on page 6.  | Typical           |
| Apache, IIS, and Sun Java System Web Server plug-ins | Installs Web server plug-ins to integrate EAServer Web applications with Web sites hosted on popular Web servers. See Chapter 4, “Installing and Configuring a Web Server Redirector Plug-In,” for more information.  | Client Runtime    |
| Administration                                       | Installs: <ul style="list-style-type: none"> <li>• J2EE Web Administration Console – a web-based console that allows you to configure servers, packages, and components.</li> <li>• Web File Server – a Web application that provides FTP services on remote servers.</li> <li>• Web Shell – allows you to issue server and cluster commands through the shell command line.</li> <li>• Web Load Balancer – a Web application that balances server loads by redirecting HTTP requests from Web applications to application servers within a cluster.</li> </ul> | Typical           |
| Documentation  | Installs online HTML documentation and tutorial files in the EAServer <i>html/docs</i> subdirectory.  | Typical           |

| Feature                                | Description  | Installation type                        |
|--|--|--|
| Extras                                 | <p>Installs these options:</p> <ul style="list-style-type: none"> <li>• jConnect 6.05 – JDBC (Java Database Connectivity) allows Java applications to access multiple database management systems using Structured Query Language (SQL). (Typical)</li> <li>• JUDDI server – installs the files required to run a private Java implementation of the Uniform Description, Discovery, and Integration (UDDI) server.</li> <li>• Eclipse Development tool – installs an Eclipse plug-in to create and administer Web services, and optionally installs Eclipse.</li> </ul>   | Typical                                  |
| JDKs                                   | Options for installing both JDK 1.4 and 1.5.   | JDK 1.4 is included in a Typical install |
| Open Client                            | Installs the Open Client™ software. See Chapter 5, “Configuring OpenClient and ODBC” for more information.   | Typical                                  |
| Optional Charsets                      | Allows you to install additional character sets.   |  |
| Samples                                | Installs the EAServer samples.   | Typical                                  |
| Sybase Asset Management System (SySAM) | <p>(Optional) Installs SySAM to perform license administration and asset management tasks. If you select this option, you can then select:</p> <ul style="list-style-type: none"> <li>• Network License Server – installs the network license server used to manage resource licenses.</li> <li>• License Utilities – installs SySAM license utilities.</li> </ul> <p>See the <i>Sybase Software Asset Management User's Guide</i>, available from the Sybase Product Manuals Web site, for more information. To access the Sybase Product Manuals Web site, go to Product Manuals at <a href="http://sybooks.sybase.com/nav/base.do">http://sybooks.sybase.com/nav/base.do</a>.</p> | Typical                                  |
| Tools Support                          | <p>Installs:</p> <ul style="list-style-type: none"> <li>• PowerBuilder 10.5.0 – support for running PowerBuilder 10.5.0 components in EAServer.</li> <li>• PowerBuilder 11.0 – support for running PowerBuilder 11.0 components in EAServer.</li> </ul>  |  |

## Multiple EAServer installations on a single machine

You can install EAServer to multiple locations on one machine, with the following restrictions:

- Only one installation, referred to as the primary installation, may be configured with system environment variables, program menu items, and server runtime installation.
- In secondary installations, you must configure the environment manually (or via batch files) to run clients and components in a secondary install.

To create a secondary installation, specify a different location, use the Custom Install option and deselect the following features:

- Registry update
- Program menu items

In the secondary installation, use the command batch files to run EAServer Manager, start servers, run jagtool, and so forth. The *Automated Tools Configuration Guide* documents the command syntax.

To run servers in different installations simultaneously, use the Management Console or the installer to change the listener port numbers so that servers in different installations do not use the same port numbers. During installation, you can select different ports for the preconfigured local server.



# Installing EAServer

This chapter explains how to upgrade, install, and uninstall EAServer.

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## Pre-installation tasks

Before you install EAServer:

- 1 If you plan to migrate existing EAServer 5.x entities to EAServer 6.1, see the *EAServer Migration Guide* for more information.
- 2 Read the release bulletins for the latest information on the products that you are installing.  
  
Release bulletins are included on the Getting Started CD that is included with your software.
- 3 If you are reinstalling EAServer 6.1 or adding components or features, review the instructions described in “Reinstalling or adding components” on page 15.
- 4 If you are upgrading your license, see “Upgrading your license” on page 17.
- 5 Install operating system patches, if required. Required operating system patches are described in the release bulletin for the product.
- 6 Verify that you have enough space to install the software—see “System requirements” on page 2.

- 7 Make sure you have a TEMP environment variable and a *temp* directory with at least 170MB. The installation program uses the extra space and directory to write files temporarily during the installation. The installation program frees this space after the installation is complete.
- 8 Close any EAServer applications and application servers that run as Windows services.

---

**Obtaining a license for EAServer** EAServer 6.1 uses runtime license management. This requires you to go to the Sybase Product Download Center at <http://downloads.sybase.com> at the end of the installation (by selecting the Launch the Sybase Product Download Center (SPDC) check box when prompted) and getting a license for any edition other than the Developer's edition. A license is no longer supplied with your software.

---

## Installing EAServer

Installing EAServer takes 10 – 20 minutes, depending on the speed of your computer and features you are installing.

**What the installer does** The setup program installs software in default drives and directories unless you specify otherwise. If a directory you specify does not exist, the setup program creates it. The setup program:

- Adds required entries to the system CLASSPATH environment variable if you install the PBVM.
- Creates (or updates if it already exists) the *vpd.properties* configuration file in your home directory (such as *C:\Program Files\Common Files\InstallShield\Universal\EAS*). *vpd.properties* is used internally by InstallShield. Do not delete or modify this file as it may affect the ability to reinstall or uninstall any software that uses an InstallShield installer (including non-Sybase products).
- Adds the appropriate paths to the following Registry path:

HKEY\_LOCAL\_MACHINE\SOFTWARE\MICROSOFT\WINDOWS\CURRENTVERSION\APP\_PATHS

- Creates or updates the SYBASE key in *HKEY\_CURRENT\_USER\Software*.
- Updates system and user paths in *HKEY\_CURRENT\_USER\Environment*.

**❖ Installing EAServer**

- 1 Exit any programs that are running. If you do not, the Sybase installer may not be able to copy some files to the appropriate directories.
- 2 If you have downloaded EAServer, expand the installation software to a temporary location. Otherwise, insert the software CD into your CD drive.
- 3 Select Start | Run, and enter:

```
path\setup.exe [-is:tempdir temp_directory]
```

where *path* is the location of the installation software. If you have less than 170MB in your temp directory, add the `-is:tempdir temp_directory` option, replacing *temp\_directory* with the full path to a temporary directory that has at least 170MB of available disk space. For example:

```
f:\setup.exe -is:tempdir d:\temp
```

The installer starts, and the EAServer 6.1 Install window appears.

- 4 Click Next.

---

**Note** Use Back and Next to step backward and forward through the installation process to modify specifications as necessary.

Select Cancel to halt the installation process.

---

- 5 Select your country or region from the drop-down list to display the license agreement. You must read and accept the terms of the license agreement for your country before you can install any Sybase products. Click Next.
- 6 The installer checks whether any EAServer processes are running on the machine. If prompted, shut down any EAServer applications, including EAServer, and EAServer as an Windows service. Click Next.
- 7 Enter the full path to which EAServer is to be installed.  
To modify the default locations of either the Sybase or Shared directory locations, select Show Advanced Locations.
- 8 Select the type of installation, then click Next:
  - Typical – installs EAServer using the most common installation options.
  - Client Runtime – installs the files required to run standalone EAServer clients.
  - Full – installs everything.

- Custom – allows you to choose specific installation options for EAServer.

Select the EAServer features to install by placing a check mark next to the feature.

- Add Components – adds components to an existing 6.1 installation.
- Upgrade – upgrades EAServer from version 6.0.0, 6.0.1, or 6.0.2.

See “Installation types” on page 4 for a list of features that are installed for each installation type.

- 9 If you leave the JDK check boxes blank, the installation program installs the JDKs.

If you select to use an existing JDK, enter a path (or use the Browse button) to locate an existing JDK that may already be installed on your system. If the installer detects an existing JDK of the appropriate version, it displays as the default location. Existing JDKs must be of the correct version and patch level, as described in “JDK versions” on page 3.

Click Next to continue.

- 10 If you are creating a new installation, the installer displays port numbers for the preconfigured EAServer network listeners, as displayed in Table 2-1. You can edit the ports or accept the default settings. Choose port numbers that are not used by other servers running on your machine.

You can click “Suggest ports” to test whether any of the specified ports are in use. The installer tests each port to see if it is used by a running process or in known EAServer installations on the machine. If a port is in use, the number is incremented by 100 and tried again.

Click Default to restore the ports to their default values.

When you click Next, the installer also tests whether ports are in use. After the installation completes, you can modify or remove preconfigured listeners as described in Chapter 3, “Creating and Configuring Servers,” in the *EAServer System Administration Guide*.

**Table 2-1: Default listener settings**

| Listener name | Default port | Description  |
|---------------|--------------|--|
| http          | 8000         | For HTTP (Web client connections).                               |
| https1        | 8001         | HTTP with SSL security.  |
| https2        | 8002         | HTTP with SSL security requiring client certificates to connect. |



| Listener name | Default port | Description   |
|---------------|--------------|---|
| iiop          | 2000         | For IIOP connections. EAServer Manager, PowerBuilder, and other standalone client applications use this protocol. |
| iiops1        | 2001         | IIOP with SSL security.   |
| iiops2        | 2002         | IIOP with SSL security requiring client certificates to connect.  |
| Hostname      | <i>host</i>  | The host on which you are installing EAServer.  |
| rmi           | 1999         | Java Remote Method Invocations (RMI).   |

- 11 If you are creating a new installation and have chosen to install EAServer as a Windows service, specify the server and service names. Accept the default values unless you plan to create a different server after completing the installation. For new installations, the installer creates one server named EAServer. If you specify another server name, the service will not run unless you create the server after the install completes. Chapter 3, “Creating and Configuring Servers,” in the *EAServer System Administration Guide* describes how to create servers.

You can also install EAServer as a Windows service after installing EAServer. See the `service.bat` command in Chapter 14, “Command Line Tools”, in the *EAServer System Administration Guide* for more information.

- 12 The installer displays a summary of the features to be installed and the installation directory. Review these entries and click Next to continue or Back to modify your entries.
- 13 The installer begins copying files.
- 14 Select the product edition and license type from the corresponding drop-down lists. If you do not know this information, ask your system administrator.

- **License product edition**

| Product edition | Description       |
|-----------------|-------------------|
| AE              | Advanced Edition  |
| DE              | Developer Edition |
| WE              | Workgroup Edition |

- **License type**

| License type | Description                   |
|--------------|-------------------------------|
| AC           | Application Deployment CPU.   |
| AO           | Application Deployment Other. |

| License type | Description   |
|--------------|---|
| BC           | Application Deployment Standby CPU.   |
| CP           | CPU-based license. Allows users to install and run the software on a machine with a specified number of CPUs. No restrictions exist on either the number of software copies that users can run on the specified machine, or the number of users that can connect to the software. |
| DT           | Development and Testing.  |
| OT           | Other.  |
| SF           | Standby CPU.  |
| SR           | Server-based license. Enables users to install and run the software on the specified server. In addition to the server license, users must also purchase a Concurrent-User or Network-Seat license.   |
| SS           | Standalone Seat.  |

- 15 The installer prompts you for an administrative password. Enter and confirm a password for the admin@system user following the guidelines described by the installer. *Remember this password.* When you log in to the Management Console and connect to EAServer, you will need to provide the user name and password.
- 16 A summary screen informs you when the installation is complete. If you do not yet have a license, you must obtain one by selecting the Launch the Sybase Product Download Center (SPDC) Web Site option.

Select any of these options to perform the corresponding tasks at this time. You can also do any of these tasks later:

- Start Server – starts EAServer.
  - View Readme – displays the readme file.
  - Launch the Migration Tool – allows you to migrate EAServer 5.x entities to EAServer 6.1. See the *Migration Guide* for details.
  - Launch the Sybase Product Download Center (SPDC) Web Site – log in to the SPDC Web site to obtain a license for EAServer. You must know the product edition and license type for your particular installation. If you do not have this information, ask your system administrator. See the *FLEXnet Licensing End User Guide*, and the *Sybase Software Asset Management User's Guide* for more information.
- 17 Click Finish to exit the installer.

For each of the following products you choose to install, see the corresponding section for additional installation and configuration instructions:

- SQL Anywhere support – “Installing SQL Anywhere” on page 17.
- Any of the Web server redirector plug-ins (Apache, Sun Java System, or Microsoft IIS) – Chapter 4, “Installing and Configuring a Web Server Redirector Plug-In.”
- Open Client – Chapter 5, “Configuring OpenClient and ODBC.”
- jConnect – the jConnect user documentation.

#### Network install

If you are a system administrator, you may want to allow users to install EAServer from a network drive rather than from the CD. To do this, copy the files from each CD to a separate directory on a network drive and note the location. During installation, the user must specify the directory location for each CD.

## Reinstalling or adding components

This section describes how to add or reinstall components to a current version installation.

To add components to an existing installation, or to reinstall EAServer, run the *setup.exe* program as described in “Installing EAServer” on page 11, and select an installation directory that contains an EAServer installation.

### ❖ Adding components

- 1 The installer prompts you for the type of installation: Client Runtime or Custom. Select Client Runtime if you are adding components to a client installation. Select Custom for all other types of installations. Click Next.
- 2 Select the components you want to add.
- 3 Verify that the EAServer directory is correct and that the components being added are correct. Click Next.
- 4 You may be prompted to overwrite existing files. Click Yes to continue.
- 5 You see these:

- License server – if you are not obtaining licenses from a license server, select No and Next. If you select Yes, enter the name of the host name and port number of the license server from which you obtain your license. See the *FLEXnet Licensing End User Guide*, and the *Sybase Software Asset Management User's Guide* for more information.
  - Configure the SySAM e-mail alert mechanism. Select No and Next, or Yes to configure the SYSAM e-mail alert mechanism. See the *Sybase Software Asset Management User's Guide*, for more information.
  - Select the product edition and license type from the corresponding drop-down lists. If you do not know this information, ask your system administrator.
  - The installer prompts you for an administrative password. Enter and confirm a password for the admin@system user following the guidelines described by the installer. *Remember this password.* When you log in to the Management Console and connect to EAServer, you will need to provide the user name and password.
- 6 When the components have been added, the installer displays a message that EAServer has been successfully installed. Click Finish.

❖ **Reinstalling EAServer**

- 1 The installer prompts you for the type of installation: Typical, Client Runtime, Full, or Custom. If you select Typical or Full, a default set of features is reinstalled. Custom and Client Runtime allow you to modify your selections. Click Next.
- 2 Select the components you want to reinstall.
- 3 You see these prompts:
  - License server – if you are not obtaining licenses from a license server, select No and Next. If you select Yes, enter the name of the host name and port number of the license server from which you obtain your license. See the *FLEXnet Licensing End User Guide*, and the *Sybase Software Asset Management User's Guide* for more information.
  - Configure the SySAM e-mail alert mechanism. Select No and Next, or Yes to configure the SYSAM e-mail alert mechanism. See the *Sybase Software Asset Management User's Guide* for more information.

- Select the product edition and license type from the corresponding drop-down lists. If you do not know this information, ask your system administrator.
  - The installer prompts you for an administrative password. Enter and confirm a password for the admin@system user following the guidelines described by the installer. *Remember this password.* When you log in to the Management Console and connect to EAServer, you must provide the user name and password.
- 4 The installer displays a message when EAServer has been successfully reinstalled. Select Start Server to start EAServer or View Readme to display the readme file. Click Next.
  - 5 Click Finish to exit the installer.

## Upgrading your license

To upgrade your license, go to the Sybase Product Download Center at <http://downloads.sybase.com>. You must know the product edition and license type for your particular installation. If you do not have this information, ask your system administrator. You do not need a license for the Developer Edition of EAServer. All other editions require a license.

See the *FLEXnet Licensing End User Guide*, and the *Sybase Software Asset Management User's Guide* for information about upgrading your license, changing license servers, and so on.

## Installing SQL Anywhere

As part of a typical EAServer installation, SQL Anywhere is automatically installed in the *ASA100* subdirectory under the EAServer installation directory.

## Starting EAServer, SQL Anywhere, and the Management Console

The installer creates a preconfigured server named EAServer. If you installed EAServer as a Windows service, the server starts automatically when you restart your machine. Otherwise, you can start EAServer manually by choosing Start | Programs | Sybase | EAServer 6.1 | Start Server (JDK version). This also starts the SQL Anywhere database if installed.

There are many other ways to start the server. See “Starting the server” in Chapter 3, “Creating and Configuring Servers,” in the *EAServer System Administration Guide*.

With EAServer running, you can start the Management Console to configure new servers, packages, and components, and so on.

### ❖ Starting the Management Console

The Management Console allows you to configure servers, packages, and components. You can run the Management Console in either a Web browser or Eclipse.

- 1 To run the Management Console in a Web browser, open the browser and access this URL:

```
http://<host>:8000/console
```

where *host* is the name of the machine on which EAServer is installed.

To run the Management Console in Eclipse: start Eclipse, select Help | Help Contents, then choose the Management Console.

- 2 Enter `admin` as the user name, and the password that you established for this user during the installation, then click Login.

You can reset the password using the `set-admin-password` command, which is located in the *bin* subdirectory of your EAServer installation.

- 3 Select any of the installed plug-ins to access EAServer resources.

---

**Note** When you install EAServer, the default host name for all listeners is set to the name of the host machine and the default IIOP port number to 2000. After connecting to EAServer, you can use the Management Console to edit the listener properties and change the default host name and port numbers. Some of the sample programs use “localhost” as the host name when connecting to EAServer. See “Configuring listeners” in Chapter 3, “Creating and Configuring Servers,” in the *EAServer System Administration Guide* for more information.

---

## Uninstalling EAServer

This section describes how to uninstall EAServer from the Windows Control Panel:

- 1 Verify that EAServer is shut down before you uninstall EAServer.
- 2 If you plan to reinstall EAServer, make backup copies of files you may want to reuse, such as the DB, INI, and PBL files.
- 3 Select Control Panel | Add/Remove Programs.
- 4 Select the Install/Uninstall tab.
- 5 Highlight the Sybase EAServer 6.1 entry and click the Add/Remove button. This launches the Sybase Uninstaller. Click Next from the Sybase Uninstaller wizard.
- 6 If you selected View the Uninstall Summary Panel, the features to be uninstalled are displayed. Review the list and click Next.
- 7 The uninstaller displays a message when it has uninstalled EAServer. Click Finish.

---

**Note** The uninstaller does not remove any server or user created files from an installation upgrade, such as log files, repository files, stubs, skeletons, and temporary work files, or backup files created during the install process. You can manually remove these files after running the uninstaller.

---

Alternatively, you can uninstall EAServer by running *EASuninstall.exe* from the `_uninstall` subdirectory of your EAServer installation.



# Creating Embedded EAServer Installations

You can silently run the EAServer installer. If you are packaging EAServer with your own software, you may want to create a scripted installation, so your end users install EAServer with no interaction with the EAServer installer.

Additionally, EAServer provides tools for scripted configuration of the installation, including customization of server properties, and installation of your own components and application files to EAServer.

| Topic  | Page |
|--|------|
| Configuring and running the silent installer | 21   |
| Post-installation configuration              | 34   |

## Configuring and running the silent installer

The silent installer is a Java program. The installation CD contains a sample batch file to run the install with the correct JRE and CLASSPATH settings. An additional text file specifies the installation type and options. These instructions assume that you will include the EAServer install files and customized installer scripts with the install media for your own software.

### ❖ Configuring the silent installer

- 1 Create a directory for your install image.
- 2 Copy the following files from the EAServer installation CD to your install image:
  - *EAS610.jar*.
  - *readme.htm*. If you are installing the HTML documentation, this file contains additional documentation.

- The *JRE\_1\_5* subdirectory and its contents. Sybase recommends that you use this JRE to run the install. Other JRE versions may not work as well.
  - The *Modules/LicensePanel* directory is required, as are the other files and directories in the Modules folder.
- 3 Create configuration and run files as described in “Configuration and run files” on page 23. Copy any required additional files from the EAServer CD to your install image, as described in that section.
  - 4 To support the silent uninstallation process, create the files described in “Silent uninstaller files” on page 31.

---

**Note** You may make a few errors when creating and testing your silent installation. Cleaning up a failed installation requires that you delete the InstallShield *vpd.properties* file. This file may be required by the installers for other applications. Before testing your install, back up the following file and restore it before installing or upgrading other software:

```
C:\Program Files\Common Files\InstallShield\
Universal\EAS\Gen1\_vpddb\vpd.properties
```

---

### ❖ Testing and running the silent installer

- 1 Before running a silent installation:
  - a Have enough space in your temporary and product directories. See “System requirements” on page 2.
  - b If your *%SYSTEMROOT%* directory contains an InstallShield *vpd.properties* file, make a backup copy.
- 2 Test the silent installer using the run script that you created at the command line or in your own product’s installation script. Running a silent installation takes 10 – 20 minutes, depending on the speed of your computer.
- 3 After each trial run, check for errors, and clean up your machine as described in “Troubleshooting and cleanup of the silent installer” on page 33.

## Configuration and run files

In a silent installation, users cannot input information or choices. You must supply all required information in a configuration file or on the command line that runs the silent install. The EAServer installation script contains a sample configuration file, *SilentInstall.txt*. The batch file *SilentInstall.bat* runs the install with this configuration. Start with copies of these files and modify them to suit your installation.

Place your configuration file and run script in the root directory of your install image. Edit the run script to refer to the file name you are using for your configuration file.

Edit the configuration file to customize the install as described below.

## Product editions and license types

You can define various product installation and license types by defining the Sybase software asset management product edition and license type. Table 3-1 lists allowable values.

**Table 3-1: product editions and license types**

| Variable                      | Value  |
|-------------------------------|--|
| -V Variable_CBEASSySAMEDition | Specifies the product edition:<br>"Advanced Edition"<br>"Workgroup Edition"<br>"Developer Edition"   |
| -V Variable_CBEASSySAMType    | If you are using a license server, include the Sybase Software Asset Management product edition and license type. To modify the Product Edition and License Type, use these values when setting<br>-V Variable_CBEASSySAMEDition=:<br>"Application Deployment CPU License (AC)"<br>"Application Deployment Other License (AO)"<br>"Application Deployment Standby CPU License (BC)"<br>"CPU License (CP)"<br>"Development and Testing License (DT)"<br>"Other License (OT)"<br>"Standby CPU License (SF)"<br>"Server License (SR)"<br>"Standalone Seat License (SS)" |

## Install location

Set the `-w setInstallLocWin.value` to specify the install location.

The default value is `%D(install)\Sybase`, which specifies `C:\Program Files\Sybase\EAServer6.1`.

## License agreement

For the silent install to run, you must change the value of `-V AgreeToSybaseLicense` from `false` to `true`, indicating that you have read and agreed to the software license agreement. You can view license text by running the interactive install or on the Sybase Web site at <http://www.sybase.com/softwarelicenses>.

## Server and service names

If you are installing EAServer to run as a Windows service, configure the server and service names shown by setting the parameters in Table 3-2.

**Table 3-2: Parameters to configure servers run as Windows services**

| Parameter                               | Specifies  |
|---|--|
| <code>-V Variable_EASServerName</code>  | The name of the server to run as a service. For a new install, use the default value of EAServer unless you plan to create a different server after completing the install. For new installs, the installer creates one server named EAServer. If you specify another server name, the service will not run unless you create the server after the install completes. Chapter 3, “Creating and Configuring Servers,” in the <i>EAServer System Administration Guide</i> describes how to create servers. |
| <code>-V Variable_EASServiceName</code> | The service name, which must be unique on the machine.   |

You must also enable the `-P WindowsService.active` option, described in “Feature selection parameters” on page 27.

## Listener ports

EAServer includes several preconfigured network listeners for the supported protocols. For new installs, configure the listener ports by setting the parameters listed in Table 3-3. You can also configure these settings after the install completes using the Management Console or jagtool as described in the *EAServer System Administration Guide*.

**Table 3-3: Silent installer listener port parameters**

| Parameter                             | Specifies                                |
|---------------------------------------|--|
| <code>-V Variable_TFPortiiop</code>   | The initial port for the IIOP listener   |
| <code>-V Variable_TFPortiiops1</code> | The initial port for the IIOPS1 listener |

| <b>Parameter</b>           | <b>Specifies</b>                                     |
|----------------------------|--|
| -V Variable_TFPortiiops2   | The initial port for the IIOPS2 listener             |
| -V Variable_TFPorthttp     | The initial port for the HTTP listener               |
| -V Variable_TFPorthttps1   | The initial port for the HTTPS1 listener             |
| -V Variable_TFPorthttps2   | The initial port for the HTTPS2 listener             |
| -V Variable_TFPortrmi      | The initial port for the RMI listener                |
| -V Variable_TFPorthostname | The host name to which the port numbers are assigned |

## JDK installation parameters

You can configure EAServer to use the JDK versions described in “JDK versions” on page 3. For each JDK version, you can install the JDK, use an existing installation, or not use that JDK version at all.

The parameters in Table 3-4 allow you to configure the EAServer installation to use JDK installations that are already in place, rather than installing JDKs with the EAServer installation.

**Table 3-4: Silent installer existing JDK parameters**

| <b>Parameter</b>                    | <b>Specifies</b>   |
|-------------------------------------|--|
| -V EASJDKUseExisting_JDK14_CheckBox | Whether to use an existing JDK 1.4 installation. To use an existing installation, set this parameter to true and specify the location as the value of the next parameter. Also, set the value of JDK14.active to false in the feature selection section. |
| -V EAS_JDK14_Install_Location       | If you are using an existing JDK 1.4 installation, the location where it is installed. Verify the version and patch level of the specified JDK as described in “JDK versions” on page 3.   |
| -V EASJDKUseExisting_JDK15_CheckBox | Whether to use an existing JDK 1.5 installation. To use an existing installation, set this parameter to true and specify the location as the value of the next parameter. Also, set the value of JDK15.active to false in the feature selection section. |
| -V EAS_JDK15_Install_Location       | If you are using an existing JDK 1.5 installation, the location where it is installed. Verify the version and patch level of the specified JDK as described in “JDK versions” on page 3.   |
| -V EASJDKUseExisting_JDK16_CheckBox | Whether to use an existing JDK 1.6 installation. To use an existing installation, set this parameter to true and specify the location as the value of the next parameter. Also, set the value of JDK16.active to false in the feature selection section. |
| -V EAS_JDK16_Install_Location       | If you are using an existing JDK 1.6 installation, the location where it is installed. Verify the version and patch level of the specified JDK as described in “JDK versions” on page 3.   |

To install a JDK from your install image, enable the feature parameter for that JDK and include the required files in your image, as listed in Table 3-5.

**Table 3-5: Parameters to install JDKs**

| Parameter       | Specifies  | Comments   |
|-----------------|--|--|
| -P JDKs.active  | Whether to install any JDKs from the install image | Must be set to true or the next two parameters are ignored |
| -P JDK14.active | Whether to install JDK 1.4                         |  |
| -P JDK15.active | Whether to install JDK 1.5                         |  |
| -P JDK16.active | Whether to install JDK 1.6                         |  |

## Sybase Software Asset Management License input parameters

If licenses are to be obtained from the License Server you must define the license server parameters. Set the parameters in Table 3-6 to define the license server.

**Table 3-6: License server parameters**

| Parameter                     | Set the value to                    |
|-------------------------------|-------------------------------------|
| -V Variable_LicServerYes      | Set to true to use a license server |
| -V Variable_LicServerHostname | The license server host             |
| -V Variable_LicServerPortNum  | The license server port             |

## Sybase Software Asset Management e-mail alerts

To configure e-mail alerts, set:

```
-V Variable_RBEmailAlertsYes=true
-V Variable_RBEmailAlertsNo=false
```

Uncomment and set the -V Variable\_CBSySAMEmailSeverity variable to one of these values:

```
WARNING
INFORMATIONAL
ERROR
```

Additional SySAM variables that you can set include:

- -V Variable\_TFSySAMEmailHost=smtp
- -V Variable\_TFSySAMEmailPort=25
- -V Variable\_TFSySAMEmailSender=" "
- -V Variable\_TFSySAMEmailRecipient=" "

- -V Variable\_CBSySAMEmailSeverity=

See the *Sybase Software Asset Management User's Guide* for additional information.

## Feature selection parameters

These parameters specify which optional features to install. Table 3-7 lists the parameters that select which EAServer features are installed. Each parameter requires a value. Specify true to install the feature or false to not install the feature.

Some features have a parent-child relationship (shown by indentation in the sample installation script). To install child features, you must enable both the parent feature and the child feature.

Some features require additional files to be added to your installation image, as listed in Table 3-7. If you enable these features, add the required files to your image by copying them from the EAServer installation CD. Paths within your install image must match those listed in Table 3-7.

**Table 3-7: Feature selection parameters**

| Parameter                  | Feature   | Additional requirements   |
|----------------------------|---|---|
| -P Server.active           | Parent feature for several core server and client install features.   |   |
| -P CoreServerFiles.active  | Files required to run servers and EAServer Manager.   | Requires parent feature -P Server.active.<br>Requires files:<br><i>/Modules/EAS5_Patches/5xMigrationPatches.jar</i><br><i>/Modules/ASA100.jar</i><br><i>/Modules/EAS-61_ThirdPartyLegal.pdf</i> |
| -P Standard.active         | Standard is compatible with JDK1.4 and JDK1.5.  |   |
| -P Optimized.active        | Optimized is compatible with JDK1.5 only.   |   |
| -P OptionalCharsets.active | Installs additional character sets.   | Requires file:<br><i>/Modules/charsets.jar</i>  |
| -P RuntimeLibraries.active | Parent feature for client runtime libraries. No runtime libraries are installed unless this parameter is set to True. | Requires parent feature -P Server.active.   |

| Parameter                     | Feature   | Additional requirements  |
|-------------------------------|---|--|
| -P ClientRuntime.active       | Installs the client runtime files.  | Requires parent feature<br>-P RuntimeLibraries.active.<br>Requires file:<br><i>/Modules/EAS-61_ThirdPartyLegal.pdf</i>   |
| -P Standard_Client.active     | Standard client is compatible with JDK1.4 and JDK1.5.   | Requires parent feature -P ClientRuntime.active.   |
| -P Optimized_Client.active    | Optimized client is compatible with JDK1.5 only.  | Requires parent feature -P ClientRuntime.active.   |
| -P ServletRuntime.active      | Installs the servlet runtime files.   | Requires parent feature<br>-P RuntimeLibraries.active.<br>Requires file:<br><i>/Modules/servlet-rt.jar</i>   |
| -P WindowsService.active      | Installs the preconfigured EAServer to run as a Windows service.  | Requires a server restart after installation.  |
| -P ProgramMenuItems.active    | Creates Start menu items for EAServer.  |  |
| -P RegistryUpdate.active      | Updates the Registry with installation information.   |  |
| -P WebServerPlugins.active    | Parent feature for Web server plug-in files. No Web server plug-ins are installed unless this parameter is set to True. |  |
| -P EASApache20.active         | The Apache 2.0 Web server redirector plug-in.   | Requires parent feature<br>-P WebServerPlugins.active.<br>Requires files:<br><i>/Modules/redirector-apache-2.0.jar</i><br><i>/Modules/redirector-common-files.jar</i>              |
| -P SunJavaSysWebServ61.active | The Sun Java System 6.1 Web server redirector plug-in.  | Requires parent feature<br>-P WebServerPlugins.active.<br>Requires files:<br><i>/Modules/redirector-sun-java-web-server-6.1.jar</i><br><i>/Modules/redirector-common-files.jar</i> |



| Parameter                  | Feature  | Additional requirements   |
|----------------------------|--|---|
| -P IISPlugin.active        | The Microsoft Internet Information Server Web server redirector plug-in.                       | Requires parent feature -P WebServerPlugins.active.<br>Requires files:<br><i>/Modules/redirector-iis.jar</i><br><i>/Modules/redirector-common-files.jar</i> |
| -P Administration.active   | Parent feature for administration features.  |   |
| -P J2EEWebAdminCons.active | Installs files required to run the Web Administration console.                                 | Requires parent feature -P Administration.active.<br>Requires files:<br><i>/Modules/Help-Eclipse.jar</i><br><i>/Modules/RT14/application-console.zip</i>    |
| -P WebFileServer.active    | Installs files required to run the Web file server.  | Requires parent feature -P Administration.active.<br>Requires file:<br><i>/Modules/RT14/wfs.war</i>   |
| -P WebShell.active         | Installs files required to run the Web shell.  | Requires parent feature -P Administration.active.<br>Requires file:<br><i>/Modules/RT14/wsh.war</i>   |
| -P WebLoadBalancer.active  | Installs files required to run the Web load balancer.  | Requires parent feature -P Administration.active.<br>Requires file:<br><i>/Modules/RT14/wlb.war</i>   |
| -P Documentation.active    | Installs EAServer documentation in HTML format in the server's default document root location. | Requires files:<br><i>/Modules/docs-generic.jar</i><br><i>/Modules/docs-win.jar</i>   |
| -P Extras.active           | Parent feature for extra features.   |   |
| -P jConnect605.active      | Installs the jConnect DB Scripts.  | Requires parent feature -P Extras.active.   |
| -P JUDDIServer.active      | Installs the JUDDI server.   | Requires parent feature -P Extras.active.<br>Requires file:<br><i>/Modules/Extras-Juddi.jar</i>   |

| <b>Parameter</b>               | <b>Feature</b>  | <b>Additional requirements</b>   |
|--------------------------------|---|--|
| -P EclipseDevToolPlugin.active | Installs the Eclipse development tool plug-in.  | Requires parent feature -P Extras.active.<br>Requires files:<br><i>/Modules/eclipse-SDK-3.2.1-win32.zip</i><br><i>/Modules/syeclipse.jar</i><br><i>/Modules/syeclipse-help.jar</i><br><i>/Modules/RT14/sybasewst.war</i> |
| -P JDKs.active                 | Parent feature for JDK installation.  |  |
| -P JDK14.active                | Installs JDK 1.4.   | Requires parent feature -P JDKs.active.<br>Requires file:<br><i>/Modules/eas-jdk-14.jar</i>  |
| -P JDK15.active                | Installs JDK 1.5.   | Requires parent feature -P JDKs.active.<br>Requires file:<br><i>/Modules/eas-jdk-15.jar</i>  |
| -P JDK16.active                | Installs JDK 1.6.   | Requires parent feature -P JDKs.active.<br>Requires file:<br><i>/Modules/eas-jdk-16.jar</i>  |
| -P OpenClient.active           | Installs Sybase Open Client libraries and support files (required to use ODBC connection caches that connect to Sybase databases if you do not have Open Client installed already). | Requires file:<br><i>/Modules/opentclient.jar.</i>   |
| -P Samples.active              | Installs sample programs.   | Requires files:<br><i>/Modules/samples-generic.jar</i><br><i>/Modules/samples-win.jar</i>  |
| -P SybaseSYSAM.active          | Parent feature for Sybase Software Asset Management (SySAM)   |  |
| -P NetworkLicenseServer.active | Installs the SySAM network license server.  | Requires parent feature -P SybaseSYSAM.active<br>Requires file:<br><i>/Modules/sysam.jar</i>   |
| -P LicenseUtils.active         | Installs the SySAM license utilities.   | Requires parent feature -P SybaseSYSAM.active<br>Requires file:<br><i>/Modules/sysam-utils.jar</i>   |

| Parameter                     | Feature   | Additional requirements   |
|-------------------------------|---|---|
| -P ToolsSupport.active        | Parent option for the tools support option. If this parameter is set to false, the tools support options are ignored. |   |
| -P PowerBuilderv1051.active   | Installs the PowerBuilder version 10.5.1 virtual machine.   | Requires parent feature -P ToolsSupport.active.<br>Requires file:<br><i>/Modules/pbvm1051.jar</i> |
| -P PowerBuilderv11.0.0.active | Installs the PowerBuilder version 11.0 virtual machine.   | Requires parent feature -P ToolsSupport.active.<br>Requires file:<br><i>/Modules/pbvm1100.jar</i> |

## Specifying parameters on the command line

You may want to configure some install settings dynamically at install time. For example, you may want to set the EA Server install directory to a location selected by the end user. To do this, you can remove settings from the configuration file and specify them as command line arguments to the silent install.

For example, if your silent install script is *SilentInstall.bat*, this command installs EA Server to *C:\Program Files\Sybase\EA Server6.1*:

```
SilentInstall -W "SetInstallLocWin.value=C:\Program Files\Sybase\EA Server6.1"
```

Do not forget to remove the equivalent settings from the silent install configuration file.

## Silent uninstaller files

You can configure the silent installer to support silent uninstallation. The silent uninstaller requires:

- The *EASuninstall.jar* and *EASuninstall.dat* files that are created when users run the install. The JAR file contains the Java uninstallation program, and the *.dat* file contains data about installed features. These files are installed in the *\_uninstall* subdirectory of your EA Server installation.
- A JRE installation of the same version as found on the EA Server install CD.

- The files *SilentUninstall.txt* and *SilentUninstall.bat*. If these are present in the root directory of your silent installer, they are copied to the *\_uninstall* subdirectory when users run the install. You must prepare these files as described below.

## SilentUninstall.txt

A sample of this file is on the EAServer installation CD. However, *SilentUninstall.txt* does not run unless you edit the copy placed in your install image. This file configures the features to uninstall, using syntax similar to the options described in “Feature selection parameters” on page 27. To remove everything, set all the feature options to True. For a partial uninstallation, change the feature options to false for those features that should not be removed.

---

**Note** Some feature options in *SilentUninstall.txt* have a parent-child relationship, indicated by indentation in the sample file. To uninstall a parent feature, the parent feature and all child features must be set to true in *SilentUninstall.txt*.

---

## SilentUninstall.bat

Users will run this file to remove the installation from their systems. A sample of this file is on the EAServer installation CD. Place a copy in your install image, and verify the following, keeping in mind that the file will be run in the EAServer *\_uninstall* directory:

- The CLASSPATH includes *EASuninstall.jar* (located in the same directory).
- The java command line specifies the path to a java executable of the same version as on the EAServer software CD. You can run the uninstall with the JRE that is installed in the *\_jvm* subdirectory of the installation, for example:

```
..\_jvm\bin\java -classpath %CLASSPATH% run %* -options  
SilentUninstall.txt
```

The uninstaller does not remove all files. Files created after the install was run are not deleted, including log files, property and resource files updated at runtime, and any application files that you have created in the EAServer directory. After uninstalling, you must remove these files manually.

## Troubleshooting and cleanup of the silent installer

After a trial run of your silent install, check for errors, verify the installation, and clean up the machine before trying another run.

### Checking for errors

Check for installer errors on the console and in the installer log file in the specified install location. If you see *ZipException* errors, make sure you have included all required files in the install image.

### Testing the install

When testing your install results, start a server in the installation and verify that the expected features are licensed by checking the licensed features listed in the server log file. If not, verify that you have configured the license parameters described in “Sybase Software Asset Management License input parameters” on page 26.

Test any other features that you are installing, such as the Management Console, Web Services, and so forth.

### Cleaning up the machine

Before re-running the silent install, uninstall the previous installation using the graphical or silent uninstaller. For graphical uninstaller instructions, see “Uninstalling EAServer” on page 19. For silent uninstaller instructions, see “Silent uninstaller files” on page 31.

If your installer was configured incorrectly, or if you abort the process before it completes, the uninstall may fail. In that case, clean the previous installation from your machine as follows:

- 1 Delete the EAServer installation directory and subdirectories.
- 2 Delete the EAServer shared component installation directory (if not deleted as part of the EAServer installation directory).
- 3 If you made a backup copy of the *vpd.properties* file, restore it. Otherwise, delete the *vpd.properties* file that was generated during the install.
- 4 Delete EAServer menu items from Start | Programs | Sybase.
- 5 Edit the following system environment variables:
  - JAGUAR – delete this variable if it is set.

- JAGUAR\_CLIENT\_ROOT – delete this variable if it is set.
  - EASSHARE – delete this variable if it is set.
  - PATH – remove references to %JAGUAR%, %DJC\_HOME%, and %JAGUAR\_CLIENT\_ROOT% subdirectories.
- 6 Delete the *RootLocation* value of Registry key *HKEY\_LOCAL\_MACHINE\Software\Sybase*.

## Post-installation configuration

EAServer provides several options for scripted automated configuration of server properties and application components:

- *jagtool* is a command line configuration program that you can call from install scripts or batch files.
- *jagant* allows you to configure EAServer from Jakarta Ant scripts.

For information on *jagtool* and *jagant*, see “Using *jagtool* and *jagant*” in the *EAServer Automated Configuration Guide*.

You can call these tools from your installation script or install program to configure the server and install application components. For example, you might install your own components by importing them as JAR files with the *jagtool* or *jagant* *deploy* command, then use the *install* command to install the components to the preconfigured Jaguar server.

There are *jagtool* and *jagant* commands that you cannot run in standalone mode and require a connection to a server process. You can make your installer launch the preconfigured Jaguar server during installation. The *EAServer Automated Configuration Guide* describes the command line syntax for starting the server.

---

**Note** If you have installed EAServer to run as a Windows service, you must restart the system after installation. For this reason, you may want to avoid enabling the `-P WindowsService.active` silent installer option, which installs the server as a service. Instead, you can run the `start-server` command to run the server as a service after you have installed and configured EAServer.

---

Most tasks that you can accomplish manually from the Management Console can be automated using `jagtool` or `jagant`. In addition, the *EAServer Automated Configuration Guide* explains how to use Ant-based configuration scripts for configuring embedded EAServer installations: entity collections.

An entity collection allows you to create a single JAR file that contains a server configuration, connection cache configurations, components, Web applications, and all other entities required to run your application.

To create a deployable JAR file containing the entity collection, use the `jagtool export` command. At install time, you can use the `jagtool deploy` command to install the entity collection into the EAServer repository.





# Installing and Configuring a Web Server Redirector Plug-In

The Web server redirector plug-in allows communication between the Web server and the EAServer HTTP and HTTPS protocol listeners.

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## Overview

The EAServer application server hosts Web applications, and functions as a Web server. The redirector plug-ins are installed on third-party Web servers, and redirect requests to EAServer (for example, Apache to EAServer). You can also use redirectors to perform load balancing and failover. The Web server forwards requests that need to access EAServer servlets, JSPs, and so on, to EAServer. EAServer processes the requests and returns the results back to the Web server.

You can establish HTTPS (HTTP over SSL) connections between your Web server redirector and EAServer. This provides an SSL communication link (data integrity and encryption services), but does not support authentication services using client-side certificates.

Table 4-1 describes the Web servers for which a redirector plug-in is available, and the EAServer files required to enable them. When setting up a redirector for a specific Web server, simply unzip the appropriate redirector JAR file and the *redirector-common-files.jar* into the appropriate place for that Web server.

**Table 4-1: Redirector plug-in files**

| Web Server                     | File name                                     | Description                                       |
|--------------------------------|---|---|
| Apache 2.0 version 55          | <i>redirector-apache-2.0.jar</i>              | Apache 2.0 specific redirector files              |
| Sun Java System Web Server 6.1 | <i>redirector-sun-java-web-server-6.1.jar</i> | Sun Java Web Server 6.1 specific redirector files |
| IIS 5.x                        | <i>redirector-iis.jar</i>                     | Windows XP/2000 only                              |
| IIS 6.0                        | <i>redirector-iis.jar</i>                     | Windows 2003 only                                 |
| All                            | <i>redirector-common-files.jar</i>            | Files that are common for all redirectors         |

Commonly used terms

Table 4-2 lists variables and expressions that are used throughout this chapter and their descriptions.

**Table 4-2: Local variables and expressions**

| Term               | Description  |
|--------------------|--|
| Application server | Refers to a single installation of EAServer              |
| WEB_SERVER_HOME    | Represents the installation directory of your Web server |

## How the plug-in works

As Figure 4-1 on page 39 illustrates, the redirector plug-in forwards HTTP requests to EAServer. For Web servers to forward requests, you must:

- 1 Install the redirector plug-in on the Web server.
- 2 Edit the Web server configuration file to:
  - Locate and load the redirector plug-in.
  - Configure context paths that define which requests (application server hosted Web applications, JSPs, servlets, and so on) are forwarded to EAServer.

- 3 Create and edit the redirector configuration file to define the application servers to which the redirector sends requests.

---

**Note** Quote absolute path names containing spaces. Use forward slashes in path names, not backslashes.

---

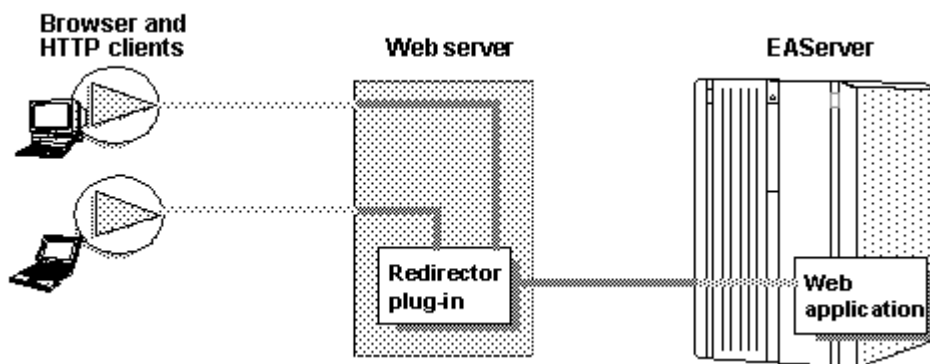
- 4 Configure EAServer so it accepts requests from the redirector.

---

**Configuration differs by Web server** Although the process for installing and configuring the redirector plug-in is similar for each Web server, the names of the redirector plug-in file, Web server configuration file, and the redirector configuration file (which you create) vary. See the section for your particular Web server when installing and configuring the redirector plug-in.

---

**Figure 4-1: HTTP request flow through the redirector**



## Load balancing

Load balancing is transparent to the client. The redirector detects and directs requests from existing sessions to EAServer using either the J2EE cookie or the J2EE session identifier that is part of the HTTP request.

If the cookie or identifier is missing, the client is treated as a new client, otherwise, the redirector sends the request to the EAServer that originally established the session.

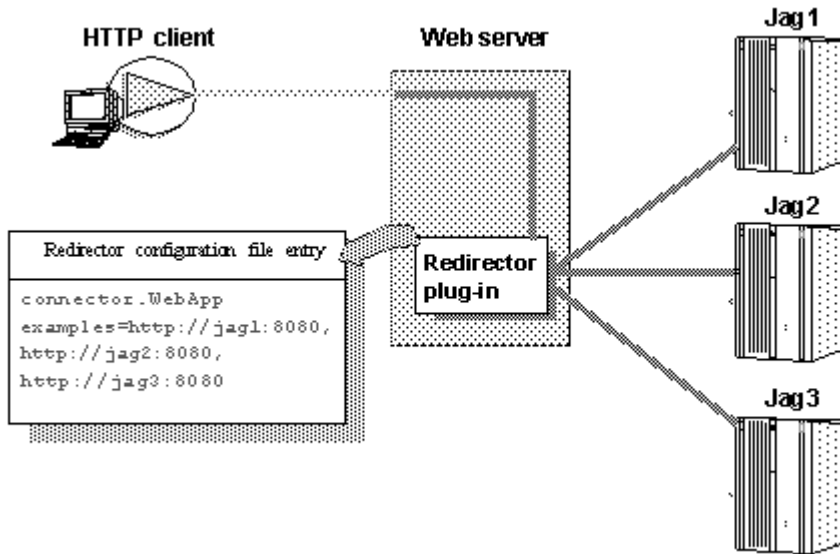
New requests are directed to different application servers that share and balance the load. Load balancing is based on a round-robin scheme. If a redirector is configured to service  $n$  number of application servers, and a new request arrives at the redirector, it is directed to the next application server in its list (as defined by the redirector configuration file) that has not previously serviced a request. The next new request is sent to the next available server, and so on.

#### Apache Web server

Apache Web servers handle load balancing differently than IIS and Sun Java System. Apache Web servers spawn multiple processes to handle the client load, whereas other Web servers use only a single process. Since Apache spawns multiple processes, client request loads are balanced for each Apache Web server process, not for all Apache processes. Therefore, while monitoring connection requests from an Apache Web server to multiple EAServer installations, you might initially see many new client requests from multiple Apache processes being directed to a single EAServer. In time, and as the number of client requests to the Apache Web server increases, the load is evenly distributed across all EAServer installations.

In Figure 4-2 on page 41, the Web server redirector has an entry in the redirector configuration file that directs requests for the “examples” Web application to three application servers: Jag1, Jag2, and Jag3. Requests for the Web application are distributed evenly across all three servers.

Figure 4-2: redirector configuration file entry



## Failover and detecting unavailable application servers

The redirector provides failover for Web applications. However, to achieve transparent failover, you must mark your Web application as distributable. This allows the `HttpSession` object created by the Web application to be visible to other application servers.

When a request arrives from a client, the Web server redirector sends it to an `EAServer` application server. The redirector selects the server based on a round-robin scheme where each *new* request from a client is directed to the next available application server that can service the request. If the application server is not responding to a request from a client (for example, temporarily down for administrative reasons), the redirector marks the application server unavailable for a fixed period of time and sends the request to the next application server that can service the request.

If a request arrives from a client and an application server has been unavailable for more than the retry value, the redirector sends the request to this unavailable server. If the server responds, it is marked as “available.”

The default retry value is 300 seconds (five minutes). You can change the default by adding this directive to the redirector configuration file:

```
Connector.RetryAfter <seconds>
```

where *seconds* is the number of seconds the application server is unavailable.

If the redirector has connected successfully to an application server, and while awaiting the response, the network connection is broken between the redirector and EAServer, the redirector does not attempt to restore the connection. The client must retry the request.

## Binding to a specific application server

If you are using the Apache or Sun Java System redirector plug-in, you can bind the redirector to a specific server. If a redirector is bound to a server and the server fails to respond to a request, the redirector returns immediately. By default, a request fails over to another server when the initial server does not respond. If you are running Web applications that are not marked as distributable, you must bind the redirector to a specific server. If a bound server fails to respond to a request, the redirector returns the error status to the client. To bind the redirector to a server, add this line to the redirector configuration file, where *serverName* is the name of the server:

```
Connector.BindToServer /serverName
```

## Debugging

If you are using the Apache or Sun Java System redirector plug-in, you can trace requests by setting this directive in the redirector configuration file:

```
Connector.SessionId <ConnectorSessionId>
```

When this directive is set, the value of *ConnectorSessionId* is appended to the URL that is forwarded to EAServer. EAServer writes the URL to the server's HTTP request log, which can be helpful for debugging. For example, if you add this to the redirector configuration file:

```
Connector.SessionId ConnSID
```

EAServer writes this information to the HTTP request log:

```
10.22.85.66 - - "GET /TestHTTPS/?ConnSID=2696_000000000000 HTTP/1.0" 200 51
10.22.85.66 - - "GET /TestHTTPS/?ConnSID=2888_000000000000 HTTP/1.0" 304 0
10.22.85.66 - - "GET /TestHTTPS/?ConnSID=2889_000000000000 HTTP/1.0" 304 0
```

```
10.22.85.66 - - "GET /TestHTTPS/?ConnSID=2888_000000000001 HTTP/1.0" 304 0
10.22.85.66 - - "GET /TestHTTPS/?ConnSID=2889_000000000001 HTTP/1.0" 304 0
```

In this example, the Apache Web server process 2696 sent one request, process 2888 sent two requests, and process 2889 sent two requests. The connector's session ID is computed as:

process identifier of the Web server's process + request count

## Defining a custom error page

You can specify a customized error page for the redirector to override the default message. To do so, add this setting to the redirector configuration file:

```
Connector.ErrorPage path-to-file
```

Where *path-to-file* is the full path to a text file that contains the alternate error message.

## Configuring the data source for HTTPServletRequest methods

When using a Web server redirector, you can configure the source for information returned by the `javax.servlet.http.HttpServletRequest` methods `getScheme`, `getServerPort`, and `getServerName`. EAServer 5.x differs from EAServer 6.1 in how these properties are used. See Proxy support below, for more information about this as well as other related features.

See the Java Servlet 2.4 specification for additional information about the Servlet 2.4 API, as well as the user documentation of your specific development tool.

## Proxy support

Proxy support is a series of properties that contain information about the machine hosting the Web redirector. Proxy support allows for scenarios where requests to the server come through a redirector. In some cases, the server constructs URLs for secondary requests, and these URLs must point to the redirector's host, protocol and port instead of the servers. Three cases exist to support this scenario:

- 1 Form-based authentication
- 2 Client-side redirection

- 3 Dynamically creating URLs via the `getServerName()`, `getServerPort()`, `getProtocol()` methods

New proxy properties and existing public APIs are used to enable proxy support.

## Proxy properties

Because there is no guarantee that a Web redirector is in the same domain as `EAServer`, a server property called `httpDomain` is required in some circumstances to ensure the redirector's domain is used instead of the server's domain.

For the server to communicate with the redirector, assign these application server properties to the Web redirector:

- `httpProxyProtocol` – the default protocol used to connect to the Web redirector.
- `httpProxyPort` – the HTTP port of the redirector.
- `httpsProxyPort` – the HTTPS port of the redirector.

If the proxy protocol is HTTP, then `httpsProxyPort` is not applicable. If the proxy protocol is HTTPS, then `httpProxyPort` is not applicable. These properties exist for scenarios in which the server must automatically redirect, such as in form-based authentication and client-side redirects.

## Public API changes

A JSP/servlet can dynamically create a URL using public methods on the `HttpRequest` object to get the server's port, protocol and host. When configured with a redirector, the server's port, protocol, and host differ from the redirector. As a JSP/servlet developer, you may decide to redirect JSPs/servlets to the redirector's host/port instead of the server's. In `EAServer 6.1`, the server reads these HTTP header fields:

- `host` – to determine the host and port the client used to connect.
- `sybaseredirectorheader` – to determine the protocol that was used to connect to a Web redirector.

If you call any of the `HttpRequest` methods—`getServerName`, `getServerPort`, or `getProtocol`—the values are retrieved from the browser.



## HTTP cookies

One of the fields of a standard cookie is called “domain”. This field is checked by Web browsers to ensure that a returned cookie is from the originating domain. If it is not, the browser drops the cookie. This scenario arises when you are using the Web redirector because the server and redirector might be on different domains. For example, if the client makes a connection to the redirector on domain a.b which then redirects to a server on domain c.d, by default the server creates a cookie with the domain set to c.d. When the client receives the cookie from domain c.d, it expects it to be from domain a.b, so drops it. Cookie generation uses the domain set in the `httpDomain` property.

## Sticky sessions

When the Web redirector performs load balancing, the load is spread between a number of servers. When session data is maintained by the server, it is more efficient to send all requests for the same session to the same server (sticky sessions). To enable sticky sessions set the `includeServerInfoInSession` property on the socket listener.

# Installing libraries from EAServer to your Web server

Run the installation program and select the various Web redirector plug-ins to install (or select the Client Runtime option to install all of the redirectors). See Table 4-1 on page 38. Corresponding files are installed in the *WebRedirectors* subdirectory of your EAServer installation. The Zip files along with the *redirector-common-files.jar* file include the necessary files for the corresponding redirector plug-in.

When setting up a redirector for a specific Web server, unzip the appropriate redirector-specific JAR file and common file into the appropriate directory for that Web server, using `WEB_SERVER_HOME` as the location of the Web server software:

- Sun Java System – the `WEB_SERVER_HOME\bin\https` directory.
- Apache – the `WEB_SERVER_HOME\modules` directory.
- IIS – a location in your system `PATH`.

## Installing and configuring a Sun Java System Web server plug-in

This section describes how to install and configure the redirector plug-in on a Sun Java System Web server. This process involves the following steps:

- 1 Installing libraries from EAServer to your Web server.
- 2 Edit the Web server configuration files.
- 3 Edit the redirector configuration file.

### Edit the Web server configuration files

Your Web server installation includes an *obj.conf* file that contains configuration information used by the Web server. For a Sun Java System Web server, the *magnus.conf* file must include location information, and *obj.conf* must include the context paths and the EASProxy object.

### Adding location information

The redirector plug-in is a Netscape Application Programming Interface (NSAPI) extension. The plug-in file name is *libjeas\_httpd40.dll*.

To load and initialize the plug-in, edit the *magnus.conf* file (Sun Java System), and add the locations of both the plug-in file, and the redirector configuration file, which is used by the redirector to map incoming client requests to EAServer HTTP listeners.

---

**Warning!** Make a backup of *obj.conf*, and when editing the file, do not include any extra spaces, tabs, or return characters. The Netscape Web server may not start if *obj.conf* contains a configuration error.

---

Add these lines at the top of *magnus.conf*:

```
Init fn="load-modules" shlib="PLUGIN_PATH" funcs="conn_init,conn_service"  
Init fn="conn_init" configfile="CONFIG_FILE_PATH"
```

Where *PLUGIN\_PATH* is the complete path and name of the NSAPI plug-in you are creating, and *CONFIG\_FILE\_PATH* is the complete path and name of the redirector configuration file. The redirector configuration file can be any name and location you choose, but must be defined by the *configfile* attribute.

---

**Note** Use forward slashes in the configuration file regardless of platform.

---

The following sample illustrates the correct syntax for the Sun Java System Web server. The example uses “neptune” as the name of the Web server, and “conn\_config” as the name of the configuration file.

Sun Java System:

```
Init fn="load-modules" shlib="WEB_SERVER_HOME/bin/https/libjeas_httpd40.dll"
funcs="conn_init,conn_service"
```

```
Init fn="conn_init"
configfile="c:/webserver/https-neptune/config/conn_config"
```

## Defining context paths

Context paths inform the Web server which requests are directed to the redirector. In the *obj.conf* file, search for this line:

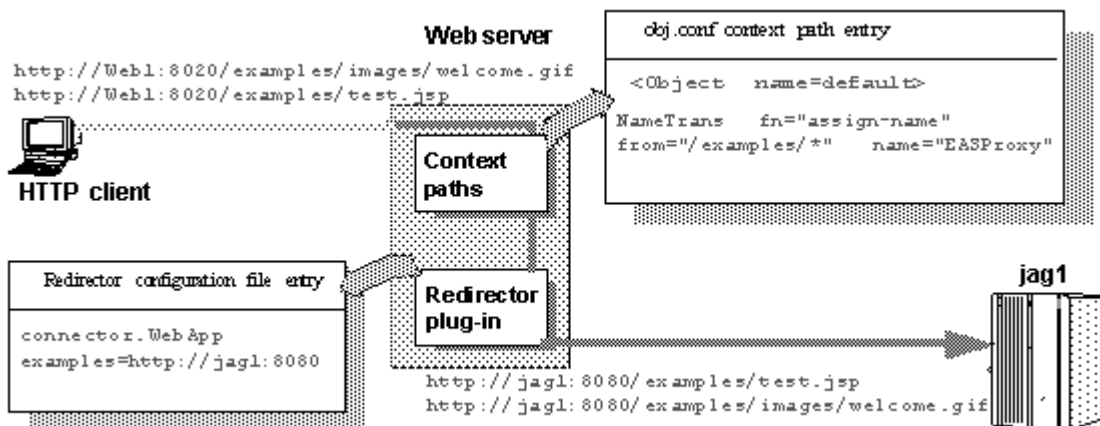
```
<Object name=default>
```

Immediately after this line, add the lines that define the context paths. For example, if you have two Web applications named “ws\_test” and “examples,” the lines that direct requests of the form `http://host-name/examples/*` and `http://host-name/ws_test/*` to the redirector are:

```
NameTrans fn="assign-name" from="/ws_test/*" name="EASProxy"
NameTrans fn="assign-name" from="/examples/*" name="EASProxy"
```

Figure 4-3 illustrates how a client request for *examples/test.jsp* and *examples/images/welcome.gif* to the Web server and port Web1:8020 are redirected to jag1:8080.

Figure 4-3: "examples" requests are redirected to EAServer



## Adding the EASProxy object

At the end of the *obj.conf* file, add the lines that add the EASProxy object and specify which HTTP methods are forwarded to the redirector:

```
<Object name=EASProxy>
ObjectType fn="force-type" type="text/plain"
Service method="(GET|HEAD|POST)" fn="conn_service"
</Object>
```

## Edit the redirector configuration file

This section describes how to set the redirector configuration file directives to:

- Map Web server requests to EAServer listeners
- Set the redirector logging level

## Mapping Web server requests to EAServer listeners

Create and edit the redirector configuration file to add the `Connector.WebApp` directive, which maps requests sent to the redirector by the Web server to EAServer HTTP listeners. The syntax is:

```
Connector.WebApp contextpath1 [, contextpath2, and so on] =
http://host:port [, http://host:port, and so on]
```

For example, if “neptune” is the name of your Web server, and *WEB\_SERVER\_HOME/https-neptune/config/conn\_config* is the name and location of the redirector configuration file, edit *conn\_config* to:

```
Connector.WebApp /testapp = http://jaghost1:8000
Connector.WebApp /estore1, /estore2, /estore3 = http://neptune:8000
Connector.WebApp /* = http://foobar:8000, http://neptune:8000
Connector.WebApp examples=http://jaghost1:8000, http://jaghost1:3080,
http://jaghost2:8000
```

- In the first line, the “testapp” Web application maps to the EAServer HTTP listener `http://jaghost1:8000`.

For example, if your Web server is accepting requests on the host machine “web\_server” on port 8020 and the client sends the request `http://web_server:8020/testapp/test.jsp`, the redirector forwards the request to `http://jaghost1:8000/testapp/test.jsp`.

- In the second line, the `/estore1`, `/estore2`, and `/estore3` Web applications map to the EAServer HTTP listener `http://neptune:8000`.

For example, if your Web server is accepting requests on the host machine “web\_server” on port 8020 and the client sends the request `http://web_server:8020/estore1/sign_in.jsp`, the redirector forwards the request to `http://neptune:8000/estore1/sign_in.jsp`.

- In the third line, “/\*” matches any request that is received by the connector, provided the request did not match any of the other specifically configured Web applications.

The redirector configuration file must contain the following mapping rule for each EAServer that you want to handle requests:

```
Connector.WebApp /* = http://jaguar_host:jaguar_listener
```

Where *jaguar\_host* is the EAServer host machine and *jaguar\_listener* is the EAServer HTTP listener.

- The last line in the example above is a load-balancing example, where the “examples” Web application is available at `jaghost1:8000`, `jaghost1:3080`, and `jaghost2:8000`.

#### Single-line entries

You must make entries in the redirector configuration file on a single line, but you can combine EAServer hosts in one entry or multiple entries. For example:

```
Connector.WebApp /*=http://rainforest:8000,http://neptune:8000
```

Is the same as:

```
Connector.WebApp /*=http://rainforest:8000
Connector.WebApp /*=http://neptune:8000
```

In addition, the server hosts specified by the WebApp directive (in this case, “rainforest” and “neptune”) must match the host names you define for your EAServer HTTP listeners. Use EAServer Manager to view and set host names for your EAServer HTTP listeners—see Chapter 3, “Creating and Configuring Servers,” in the *EAServer System Administration Guide* for more information.

## Setting the redirector logging level

Edit the redirector configuration file to add the Connector.LogLevel directive, which sets the redirector logging level that is sent to the Web server log file. The syntax is:

```
Connector.LogLevel [ inform | error | verbose ]
```

**Table 4-3: Logging level options**

| Logging level | Description   |
|---------------|---|
| inform        | Adding Connector.LogLevel inform to the redirector configuration file provides minimum logging to the Web server log file and is appropriate for production servers. This is the default logging level.   |
| error         | Adding Connector.LogLevel error to the redirector configuration file is appropriate when you want to log error messages to the Web server log file. Error messages provide additional information, such as the Web server disconnecting from EAServer or not connecting to an EAServer. |
| verbose       | Adding Connector.LogLevel verbose to the redirector configuration file provides the highest level of logging to the Web server log file and can be used only with the EAServer debug libraries to provide additional trace information that may be useful for diagnosing problems.      |

## Installing and configuring an Apache Web server plug-in

This section describes how to install and configure the redirector plug-in on the Apache Web server running on Windows. The process involves these steps:

- 1 Installing libraries from EAServer to your Web server. Your unzipped redirector file includes *redirector-apache-2.0.jar*, a *libjeas2\_mod.dll* file that implements the Apache 2.0 Web server plug-in.
- 2 Editing the *httpd.conf* configuration file.
- 3 Editing the redirector configuration file.

For information about the Apache Web server, see Apache Core Features at <http://httpd.apache.org/docs/mod/core.html>.

## EAPI versus non-EAPI

The redirector zip file contains the required files for the Apache plug-ins. Whether or not you are running an Extended API (EAPI) version of the Apache Web server determines which libraries you must copy to the location where the Web server normally searches for files. To determine which version of the Apache Web server is running, enter the `httpd -V` command. If the output from this command contains “-D EAPI,” you have an EAPI version of Apache and must have the appropriate files:

- Files required for EAPI versions of the Apache Web server:
  - *libjeaseapi\_mod.dll*
  - *libjeasproxyeapi\_mod.dll*
- Files required for non-EAPI versions of the Apache Web server:
  - *libjeas2\_mod.dll*
  - *libjeasproxy\_mod.dll*

In addition, for EAPI versions of Apache, you must modify the `LoadModule` directive in the *httpd.conf* file as follows:

```
LoadModule easredirector_module libexec/libjeaseapi_mod.dll
```

If you do not set this directive, the redirector may not run, and you may see a warning similar to this on the screen and in the connector log file:

```
[warn] Loaded DSO libexec/libjeas_mod.dll uses plain  
Apache 2.0 API, this module might crash under EAPI!  
(please recompile it with -DEAPI)
```

## Editing the *httpd.conf* configuration file

The *httpd.conf* file:

- Defines and loads the redirector module – the `LoadModule` directive informs the Apache Web server of the name and location of the redirector module to load when the Web server starts.
- Identifies the redirector configuration file – the redirector configuration file contains the mappings of incoming requests to the EAServer HTTP listener to which they are redirected.
- Defines the context paths – the `LocationMatch` directive defines the context paths that inform the Web server which requests are directed to the redirector. If no context path is provided, the request is serviced by the Web server.

Sample *httpd.conf* file

The following lines illustrate a sample *httpd.conf* file.

```
LoadModule easredirector_module
modules/libjeas2_mod.dll
EASConfigFile WEB_SERVER_HOME\conf\conn_config
ServerName www.myhost.com
<LocationMatch /examples*/|/estore/* >
SetHandler eas-handler
</LocationMatch>
```

At the end of the *WEB\_SERVER\_HOME\conf\httpd.conf* file, add the directives defined in the sample above, where:

- `LoadModule` defines and loads the redirector module.
- `EASConfigFile` identifies the file that contains the redirector configuration parameters.
- `ServerName` identifies the host machine on which the Web server runs. Specify the host using either the IP address or the fully qualified domain name; for example, `www.foo.com`. If you do not set this directive, the redirector continues to run, but you might see this warning in the connector log file:

```
[Tue Jun 18 15:19:12 2006] [alert] httpd: Could not
determine the server's fully qualified domain name,
using 1.2.3.4 for ServerName". However the following
is fatal and the redirector will not load.
```

```
"Unable to determine host name"
```

- *conn\_config* represents the redirector configuration file.



The redirector configuration file can be any name and location you choose, but it must be identified by `EASConfigFile`. In this example, `comm_config` is the name of the redirector configuration file. You must supply the full path to this file. See “Editing the redirector configuration file” on page 54 for a description of configuration parameters.

---

**Warning!** The Apache Web server must use the dynamic shared object (DSO) to load redirector modules and files. See your Apache Web server documentation for more information about building the Apache Web server with DSO support.

---

This is an Apache Web server directive:

```
<LocationMatch contextpath1 | contextpath2 | contextpath3>
  SetHandler eas-handler /
</LocationMatch>
```

When an HTTP request arrives and the starting path matches *contextpath1*, *contextpath2*, or *contextpath3*, `eas-handler` is invoked. The *contextpath* corresponds to the Web Application context path. If the path is set to “/\*”, all requests are sent to the redirector. See “Defining context paths” on page 53 for more information.

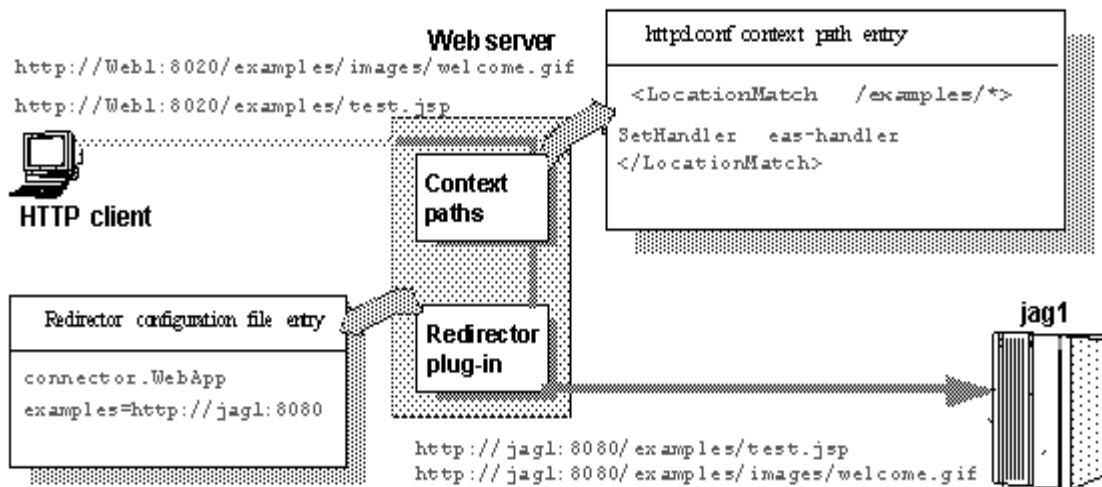
## Defining context paths

Context paths inform the Web server which requests are directed to the redirector. At the end of the `httpd.conf` file, add the lines that define the context paths. For example, if you have two Web applications named “ws\_test” and “examples”, the lines that direct requests of the form `http://host-name/examples/*` and `http://host-name/ws_test/*` to the redirector are:

```
<LocationMatch /examples/* | /ws_test/* >
  SetHandler eas-handler
</LocationMatch>
```

Figure 4-4 illustrates how a client request for `examples/test.jsp` and `examples/images/welcome.gif` to the Web server and port `Web1:8020` is redirected to `jag1:8080`.

Figure 4-4: “examples” requests are redirected to EAServer



## Editing the redirector configuration file

You create and configure a redirector configuration file, which is used to set the redirector directives to:

- Map Web server requests to EAServer listeners
- Set the redirector logging level

## Mapping Web server requests to EAServer listeners

You must configure the redirector configuration file by adding the `Connector.WebApp` directive which maps your requests to the EAServer listener to which they are redirected. The syntax is:

```
Connector.WebApp contextpath1 [, contextpath2, and so on] = \
http://host.port [, http://host.port, and so on]
```

For example, if “neptune” is the name of your Web server, and `WEB_SERVER_HOME/conf/conn_config` is the name and location of the redirector configuration file that you create, edit `conn_config` to set the `Connector.WebApp` directive:

```
Connector.WebApp /testapp = http://jaghost1:8000
Connector.WebApp /estore1, /estore2, /estore3 = http://neptune:8000
```

```
Connector.WebApp /* = http://foobar:8000, http://neptune:8000
Connector.WebApp examples=http://jaghost1:8000, http://jaghost1:3080,
http://jaghost2:8000
```

- In the first line, the “testapp” Web application maps to the EAServer HTTP protocol listener `http://jaghost1:8000`.

For example, if your Web server is accepting requests on the host machine “web\_server” on port 8020 and the client sends the request `http://web_server:8020/testapp/test.jsp`, the redirector forwards the request to `http://jaghost1:8000/testapp/test.jsp`.
- In the second, line the `/estore1`, `/estore2`, and `/estore3` Web applications map to the EAServer HTTP protocol listener `http://neptune:8000`.

For example, if your Web server is accepting requests on the host machine “web\_server” on port 8020 and the client sends the request `http://web_server:8020/estore1/sign_in.jsp`, the redirector forwards the request to `http://neptune:8000/estore1/sign_in.jsp`.
- In the third line, “/\*” matches any request that is received by the connector, provided the request did not match any of the other specifically configured Web applications. However you must still configure the Web server to tell it which context paths should be serviced by this connector. For this mapping, you would supply the following `LocationMatch` directive in the `httpd.conf` file:

```
<LocationMatch /* >
  SetHandler eas-handler
</LocationMatch>
```
- The last line of the example above provides load balancing. The “examples” Web application is available at `jaghost1:8000`, `jaghost1:3080` and `jaghost2:8000`.

#### Single-line entries

You must make entries in the redirector configuration file on a single line. You can combine EAServer hosts in one entry or create multiple entries; for example:

```
Connector.WebApp /*=http://rainforest:8000,http://neptune:8000
```

Is the same as:

```
Connector.WebApp /*=http://rainforest:8000
Connector.WebApp /*=http://neptune:8000
```

In addition, the server hosts specified for the `WebApp` directive (in this case “rainforest” and “neptune”) must match the host names you define for your `EAServer` HTTP listeners. Use `EAServer` Manager to view and set host names for your `EAServer` HTTP listeners—see Chapter 3, “Creating and Configuring Servers,” in the *EAServer System Administration Guide* for more information.

## Setting the redirector logging level

Edit the redirector configuration file to add the `Connector.LogLevel` directive, which determines the amount of redirector logging that is sent to the Web server log file. For a description of the logging level options, see Table 4-3 on page 50.

For example, to set the redirector logging level to “inform”, add this line to the redirector configuration file:

```
Connector.LogLevel inform
```

You must also set the logging level for the Apache Web server in the `httpd.conf` file to either “info” or “error” for the redirector to produce any logging. The syntax is:

```
LogLevel [ debug | info | notice | warn | error | crit ]
```

For example, add this line to the `httpd.conf` file:

```
LogLevel info
```

## Start the Apache Web server

If you are starting the Web server as a Windows service, add `WEB_SERVER_HOME\modules` to the `PATH` variable from the Control Panel.

If you are starting the Web server from the command line, you can add `WEB_SERVER_HOME\modules` to the `PATH` environment variable from the command line before starting the Web server.

### ❖ Verifying that the redirector plug-in works correctly

- 1 Verify that all the required libraries have been copied to the `libexec` subdirectory of the Apache installation directory.
- 2 Verify that the `conn_config` file exists in the Apache configuration directory.
- 3 Verify that the `Connector.WebApp` directive is set correctly in the `conn_config` file. For example:

```
Connector.WebApp /* = http://hostname:8000
```

where *hostname* is the machine name where EAServer is installed, and 8000 is the EAServer HTTP port number, and “/\*” appears immediately after Connector.WebApp.

- 4 Start the Web server. If it starts successfully, a disclaimer is displayed to the screen and written to the log file (*/testarea/apache/logs/error\_log*).
- 5 Start EAServer on the host you specified in the *conn\_config* file and from a Web browser, connect to the Web server’s default page.

The redirector plug-in should redirect your request to the EAServer home page. This is the *hostname:port\_number* set in the Connector.WebApp directive in the *conn\_config* file.

## Installing and configuring a Microsoft IIS Web server plug-in

The Microsoft Windows plug-in uses the ISAPI (Internet Server API) framework, which defines a DLL method of binding custom server-side processes to an instance of an IIS. The plug-in is a DLL that the IIS loads when the server is started and that stays in memory until the server shuts down.

To install and configure the redirector plug-in on IIS:

- 1 Installing libraries from EAServer to your Web server.
- 2 Set the WSPLUGIN\_CONFIG\_FILE environment variable.
- 3 Install the IIS plug-in.
- 4 Edit the redirector configuration file.

## Set the WSPLUGIN\_CONFIG\_FILE environment variable

The WSPLUGIN\_CONFIG\_FILE environment variable identifies the redirector configuration file that the Web server requires to run the plug-in. Using the System Properties dialog box, create the WSPLUGIN\_CONFIG\_FILE variable, then set it to the full path of the configuration file. You can name the file whatever you want. For example, if the configuration file is *redirector.cfg* and it is in the *c:\winnt\system32\iis* directory, set WSPLUGIN\_CONFIG\_FILE to *c:\winnt\system32\iis\redirector.cfg*. The configuration file must be on the server where the plug-in is installed.

---

**Note** When you edit an environment variable, you must restart your machine for the changes to take effect.

---

## Install the IIS plug-in

Your unzipped IIS redirector file includes a *libjeas\_iis.dll* file that implements the IIS Web server plug-in. To install the plug-in:

- 1 On Windows, select Control Panel | Administrative Tools | Internet Service Manager.
- 2 Highlight the Web site where you want to install the plug-in, right-click, and select Properties.
- 3 On the ISAPI Filters tab, click Add, and install *libjeas\_iis.dll* as an ISAPI filter. Filters are invoked in the listed order, so if you install more than one filter, *libjeas\_iis.dll* should be first in the list. Click OK.
- 4 Highlight the Web site where you installed *libjeas\_iis.dll*, right-click, and select New | Virtual Directory. Create a virtual directory that corresponds to the location specified in the Connector.IIS.Extension\_URI directive in the redirector configuration file—see “Edit the redirector configuration file” on page 59. The default name for the virtual directory is “sybase.” Enable read, log access, and execute permissions on the virtual directory.
- 5 Copy *libjeas\_iis.dll* that is contained in the IIS zip file to the virtual directory location that you specified in the previous step.

## Edit the redirector configuration file

Create a redirector configuration file in the location identified by the `WSPLUGIN_CONFIG_FILE` environment variable, then edit the file and configure these directives:

- `Connector.IIS.Extension_URI` – identifies the virtual directory path to the plug-in DLL on the IIS; if not set, the default is `/sybase/libjeas_iis.dll`. If the path is incorrect, requests fail with an HTTP server error. Use this syntax to specify the virtual directory path:

```
Connector.IIS.Extension_URI /virtual-directory/libjeas_iis.dll
```

---

**Note** If your virtual directory name is “sybase”, you do not need this directive in your configuration file.

---

- `Connector.IIS.URLS` – identifies one or more context paths that the redirector handles. If the URL of an incoming request matches any of the path prefixes, the redirector handles the request. If you set the value to `/*`, the redirector handles all the requests sent to the Web server. If this directive does not exist in the configuration file, the redirector does not handle any requests. Use this syntax to specify the context path:

```
Connector.IIS.URLS /context-path [, /context-path, ...]
```

For example, to configure the redirector to handle client requests for `http://host-name/examples1/servlet/TestApp` and `http://host-name/examples2/*`, add this line to the redirector configuration file:

```
Connector.IIS.URLS /examples1, /examples2
```

- `Connector.IIS.LogFile` – specifies the full path of the redirector log file. A separate log file is required because IIS-based logging is limited to 80 bytes per request, which is insufficient for debugging. The default log file name is `redirector.log`, which is created in the IIS current working directory. To specify another file name, use this syntax:

```
Connector.IIS.LogFile drive:\directory-name\file-name
```

- `Connector.LogLevel` – determines how much information is written to the Web server log file. For a description of the logging level options, see Table 4-3 on page 50. To specify the logging level, use this syntax:

```
Connector.LogLevel logging-level
```

- `Connector.WebApp` – maps Web server requests to EAServer listeners; for examples, see “Mapping Web server requests to EAServer listeners” on page 48.

Sample configuration file

This sample redirector configuration file:

```
Connector.IIS.Extension_URI /iis/libjeas_iis.dll
Connector.IIS.URLS /myWebApp, /SRP
Connector.WebApp /myWebApp = http://neptune:8000
Connector.WebApp /SRP = http://pluto:8000
Connector.IIS.LogFile C:\temp\redirector.log
Connector.LogLevel verbose
```

- Specifies that the Web server redirector plug-in DLL is in the target Web site's virtual directory *iis*
- Directs the plug-in to forward client requests for the URL `http://<host:port>/myWebApp/*` to `http://neptune:8000/myWebApp/*`, and to forward requests for `http://<host:port>/SRP/*` to `http://pluto:8000/SRP/*`
- Directs the plug-in to write debug information to `C:\temp\redirector.log` using the verbose option

## Tutorial: installing the IIS plug-in on Windows

This tutorial steps you through the process of installing and testing the redirector plug-in for IIS.

---

**Note** You must have selected the “IIS Plugin” option (or Client Runtime option) during the installation for the required files to be extracted. You can restart the installation program and add this option if needed.

---

### ❖ Installing and configuring the IIS redirector plug-in

Your EAServer installation includes files that implement the IIS Web server plug-in; you must copy these files to the IIS host machine.

- 1 Create the location on the Web server host for the plug-in files, for example:
  - `<plugin_location> c:\winnt\system32\inetrv\iisplugin`
  - `<dll_location> plugin_location\dll`
- 2 Install the appropriate libraries into the `dll_location` directory. See “Installing libraries from EAServer to your Web server” on page 45.
- 3 Add the `dll_location` directory to the system path.



- 4 Create a text file called *iis\_redirector.cfg* in the *plugin\_location* and copy the following lines into the file. This becomes the starting point for your redirector configuration file:

```
Connector.IIS.Extension_URI /sybase/libjeas_iis.dll
Connector.IIS.URLS /myWebApp
Connector.IIS.LogFile
c:\winnt\system32\inetsrv\iisplugin\redirector.log
Connector.LogLevel error
Connector.WebApp /myWebApp
=http://myJaguarMachine:8000
```

- 5 Create the WSPLUGIN\_CONFIG\_FILE system environment variable and set its value to the *iis\_redirector.cfg* configuration file created in the previous step. To do this, open the System Properties dialog box, create the WSPLUGIN\_CONFIG\_FILE variable, and set it to the full path of the configuration file:

```
WSPLUGIN_CONFIG_FILE
c:\winnt\system32\inetsrv\iisplugin\iis_redirector.cfg
```

- 6 Install the IIS plug-in into IIS – your “IIS Plugin” includes the *libjeas\_iis.dll* file that implements the IIS Web server plug-in:
  - a Open the IIS Administrative Tool.
  - b On Windows, select Control Panel | Administrative Tools | Internet Service Manager.  
  
Alternately, you can select Control Panel | Administrative Tools | Computer Management | Services and Applications | Internet Information Services.
- 7 Configure the ISAPI filter:
  - a Highlight the Web site where you want to install the plug-in, right-click, and select Properties.
  - b On the ISAPI Filters tab, click Add, and install *libjeas\_iis.dll* as an ISAPI filter. Filters are invoked in the listed order, so if you install more than one filter, *libjeas\_iis.dll* should be first in the list.

```
Filter Name: Sybase
Executable: C:\WINNT\system32\inetsrv\iisplugin\dll\libjeas_iis.dll
```

- c Click OK.
- 8 Create and configure the virtual directory that corresponds to the location of the *libjeas\_iis.dll* directory:

a Highlight the Web site where you installed *libjeas\_iis.dll*, right-click, and select New | Virtual Directory.

b Specify the alias:

Alias: Sybase

c Specify the directory:

Directory:  
C:\WINNT\system32\inetsrv\iisplugin\dll

d Specify the permissions:

Enable read, run scripts, and execute permissions on the virtual directory.

9 Edit the configuration file for your specific environment and system. Using a text editor, open the configuration file, *plugin\_location\iis\_redirector.cfg*.

a Configure static information. These settings are generic to your redirector and do not change as you add or modify Web applications.

1 Set the Extension\_URI to the DLL under the virtual directory:

```
Connector.IIS.Extension_URI /sybase/libjeas_iis.dll
```

2 Set Connector.IIS.LogFile:

```
Connector.IIS.LogFile  
C:\WINNT\system32\inetsrv\iisplugin\redirector.log
```

3 Set Connector.LogLevel:

```
Connector.LogLevel error
```

b Configure Web application-specific information, which is dependent on the Web applications you are redirecting, and changes as you add or modify Web applications.

1 Set Connector.IIS.URLS to a comma-separated list of your Web applications:

```
Connector.IIS.URLS /myWebApp1, /myWebApp2
```

2 Set Connector.WebApp, which maps each redirected Web application to an EAServer instance:

```
Connector.WebApp /myWebApp1=http://eas1:8000  
Connector.WebApp /myWebApp2=http://eas2:8000
```

- 10 Reboot the Web server machine for the environment changes to take effect.
- 11 Verify that the ISAPI filter is working correctly:
  - a Highlight the Web site where you want to install the plug-in, right-click, and select Properties.
  - b On the ISAPI Filters tab, verify that the status for the new filter (Sybase) is a green arrow pointing upward.
  - c If you see the green arrow, click OK, and move to the next test.
  - d If you do not see a green arrow, step through the instructions for the ISAPI filter again. Look for errors and other mismatches.
- 12 Test the redirector with a browser—enter the IIS URL followed by the Web application path. For example, if your settings are:

```
IIS URL:      http://myIIS
Web Application Context: /myWebApp1
Web Application page: login.jsp
```

You should be able to reach *login.jsp* with:

```
http://myIIS/myWebApp1/login.jsp
```

## Configuring EAServer to accept Web server requests

You must make sure the EAServer host and port defined in your redirector configuration file has an identical host name in the EAServer listener host and port fields. For example, this redirector entry also requires an EAServer HTTP protocol listener defined with the host name of *jaghost1* and a port number of 8000:

```
Connector.WebApp /*=http://jaghost1:8000
```

See the *EAServer System Administration Guide* for instructions.

---

**Note** *jaghost1* is not equivalent to *jaghost.domain*, where *domain* is the domain in which EAServer is hosted.

---

## Configuring HTTPS support for the Web server plug-ins

You can establish HTTPS connections between your Web server redirector and EAServer on Windows machines. You should be familiar with SSL and Security Manager before establishing HTTPS connections. See Chapter 12, “Managing Keys and Certificates” in the *EAServer Security Administration and Programming Guide*.

---

**Note** Verify that your Web server redirector successfully forwards HTTP requests before you configure it for HTTPS.

---

### HTTPS installation instructions

This section describes installation requirements for Web servers hosted on a Windows machine, including environment variable settings and which files to copy from your redirector zip file to the Web server host.

- 1 To redirect using HTTPS, install and extract both the *redirector-common-files.jar* file and the redirector specific files. See Table 4-1 on page 38.
- 2 The certificate database files are included as part of a Typical installation as well as a Client Runtime installation.

See “Enabling HTTPS connections” to enable your Web server redirector to establish HTTPS connections with EAServer.

### Enabling HTTPS connections

To enable your Web server redirector to establish HTTPS connections with EAServer:

- 1 Follow the same instructions as for establishing HTTP connections, for your Web server and platform.
- 2 Define the redirector configuration directives listed in Table 4-4. See Edit the redirector configuration file (Sun Java System), Editing the redirector configuration file (Apache), or Edit the redirector configuration file (IIS) for more information.

**Table 4-4: HTTPS directives**

| Directive name                 | Default or valid value  | Comments   |
|--------------------------------|---|--|
| Connector.Https.qop            | <sybpbs_simple   sybpbs_intl   sybpbs_domestic   sybpbs_strong> | Identifies the cipher suites the client (the Web server redirector in this case) is willing to utilize while negotiating an SSL connection.  |
| Connector.Https.pin            | <sybase>  | Specifies the PKCS #11 token PIN. This is required for logging in to PKCS #11 module for retrieving trust information.   |
| Connector.Https.cacheSize      | <100>   | SSL session IDs are cached once a successful connection has been established. When the client reconnects to the server, the client can reuse the previously established SSL session parameters by sending the old SSL Session ID to the server. This improves performance if the client is frequently connecting to, and disconnecting from, the same server. The cache size is the size of this SSL Session ID cache. |
| Connector.Https.SessLingerTime | <28800> (8 hours)   | Specifies in seconds the duration for which a session ID entry is kept in the SSL session cache after the last SSL connection using that session ID is terminated.   |
| Connector.Https.SessShareCount | <10>  | Specifies the number of concurrent SSL sessions that can use the same SSL session ID.  |

For a description of these directives, see CtsSecurity/SSLSessionInfo in the generated IDL documentation, which is available in HTML format in the *html/ir* subdirectory of your EAServer installation.

- 3 Set the JAGUAR\_CLIENT\_ROOT environment variable on the Web Server host to point to the location of your EAServer client installation. The directory pointed to by JAGUAR\_CLIENT\_ROOT must contain the *db* subdirectory, which contains the *sybcert.db* and *sybkey.db* files. The Web server process must be able to read these files. *sybcert.db* and *sybkey.db* contain certificate files, including the Jaguar User Test CA.
- 4 Edit the redirector configuration file to map requests sent to the redirector by the Web server to EAServer HTTPS listeners. For more information, see Mapping Web server requests to EAServer listeners (Apache). Map requests to HTTPS listeners by using the appropriate *host:port* combination. See Testing your HTTPS connections for more information.

## Testing your HTTPS connections

Once you have installed the required files and configured the Web server redirector plug-in to use HTTPS, you can test your connection to EAServer by sending HTTPS requests to a default HTTPS listener (for example, port 8001).

Port 8001 uses the Sample1 user certificate, which is signed by the Jaguar User Test CA. The Jaguar User Test CA is trusted by the Web server redirectors and installed certificates by default. Sending HTTPS requests to port 8001 ensures that your Web server redirector is configured correctly. You can then define HTTPS connections for a production environment following the steps described in “Managing certificates for HTTPS connections” on page 66.

## Managing certificates for HTTPS connections

To establish an HTTPS connection between your Web redirector and EAServer, you must export the CA certificate (the signing authority’s certificate) that signs the user certificate for the HTTPS listener to which you want to connect. For example, if Verisign Class 1 Primary CA is the signer of the `web_redirector_certificate` that is assigned to an EAServer listener at port 8085, then you must install the Verisign Class 1 Primary CA certificate on your Web server host and mark it trusted for your redirector to connect to that EAServer listener.

There are several ways, depending on how you obtain and manage certificates, to export and install certificates. See Chapter 11, “Managing Keys and Certificates” in the *EAServer Security Administration and Programming Guide*.

## Troubleshooting HTTPS connections

If the redirector does not start, or the Web server appears to hang, after configuring the HTTPS redirector, set the `JAGUAR_RANDOMSEED` environment variable to point to a file, and restart the Web server redirector. See “Setting the `JAGUAR_RANDOMSEED` variable” in Chapter 3, “Creating and Configuring Servers,” in the *EAServer System Administration Guide*.

## Adding FIPS and TLS support to the Web server redirector plug-ins

The only difference in enabling FIPS is that when you are configuring the Web server, instead of using the standard redirector module, you must use the *\_f140* version of the library:

- Apache 2.0 – *libjeas2\_mod\_f140.dll*
- Sun One – *libjeas\_httpd40\_f140.dll*
- IIS – *libjeas\_iis\_f140.dll*

### ❖ **Enabling FIPS on the redirector plug-in**

- 1 Make changes to the corresponding configuration files. See the section that corresponds to the particular Web server, and designate the *\_f140* version of the library.
- 2 Select a FIPS-compatible cipher suite when setting the `Connector.Https.qop` directive in the redirector configuration file.
- 3 Restart the Web server for the changes to take effect.

## Managing FIPS for the redirector plug-ins

To establish FIPS connections between a redirector plug-in and EAServer, enable FIPS on EAServer. Follow the instructions described in the Chapter “Using TLS and FIPS” in the *EAServer Security Administration and Programming Guide*.





# Configuring OpenClient and ODBC

This chapter describes how to set up OpenClient and ODBC drivers to work with EAServer.

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## Overview

EAServer 6.1 can use any external OpenClient that is publicly available from Sybase. Different versions of OpenClient may have subtle environment differences, so refer your OpenClient documentation for details. The EAServer installation includes an option to install OpenClient version 12.5.1. This section describes the basic configuration tasks required to use OpenClient and ODBC with the application server.

---

**Warning!** Do not perform the following configuration tasks if Adaptive Server Enterprise is already installed on this computer. The environment variable settings may conflict with those required by Adaptive Server.

---

*You do not need to* configure OpenClient and ODBC if OpenClient 12.5.1 and ODBC are already installed and configured.

## Configuring OpenClient and ODBC

EAServer 6.1 is designed to use OpenClient version 12.5.1 and later. Earlier versions of OpenClient use the SYBASE environment variable. More recent versions use the environment variables SYBASE and SYBASE\_OCS. The default installation of OpenClient 12.5.1 sets:

- SYBASE=c:\sybase
- SYBASE\_OCS=OCS\_12-5-1

These two variables are defined in the setup scripts for EAServer 6.1. You must ensure that your global OpenClient sets them correctly.

You can also use the *local-setenv.bat* script to locally define which installation of OpenClient to use.

Add the OpenClient *DLL* and *BIN* subdirectories to the PATH environment variable.

### ❖ Adding server definitions to the SQL.INI file

The *SQL.INI* file in the *OpenClient INI* subdirectory defines server names and addresses. Add an entry for each EAServer or database server to which you intend to connect.

- 1 Create the file *%SYBASE%\INI\SQL.INI* if it does not already exist.
- 2 Open the *SQL.INI* file in a text editor and add an entry in this format:

```
[server_name]
master=TCP,host,tds_port
query=TCP,host,tds_port
```

Where:

- *server\_name* – is a logical name for the server, composed of letters, digits, and the underscore character.
- *host* – is the server machine's host name or IP address.
- *tds\_port* – is the database server's TDS listener port number.

**Another method** You can also use the OpenClient dsedit tool to edit the *SQL.INI* file. For information about using dsedit, see the *OpenClient Server Configuration Guide for Desktop Platforms* in the latest OpenClient Server (Installation and Configuration) collection, available at the Product Manuals Web site at <http://infocenter.sybase.com/help/index.jsp>.

---

❖ **Verifying OpenClient connectivity to the server**

- Run the OpenClient isql tool to verify the configuration:

```
%SYBASE%\BIN\ISQL -S server_name -U user -P password
```

where:

- *server\_name* – is the server name you defined in the *SQL.INI* file.
- *user* – is a valid user name for the EAServer or database server.
- *password* – is the password that accompanies the user name.

The connection is successful if isql displays a command prompt instead of an error message.

## ODBC drivers

There are no ODBC drivers provided with your EAServer software. Earlier versions of EAServer included the Merant DataDirect ODBC Drivers. To install and configure ODBC drivers, refer to the Microsoft Windows ODBC documentation and your database client software documentation.



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