



# Sun GlassFish Enterprise Server v3 Prelude Troubleshooting Guide



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# Preface

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This guide describes common problems that you might encounter when using Sun GlassFish™ Enterprise Server v3 Prelude and how to solve them.

This preface contains information about and conventions for the entire Sun GlassFish Enterprise Server documentation set.

The following topics are addressed here:

- “Enterprise Server Documentation Set” on page 7
- “Related Documentation” on page 9
- “Typographic Conventions” on page 9
- “Symbol Conventions” on page 10
- “Default Paths and File Names” on page 10
- “Documentation, Support, and Training” on page 11
- “Searching Sun Product Documentation” on page 11
- “Third-Party Web Site References” on page 11
- “Sun Welcomes Your Comments” on page 12

## Enterprise Server Documentation Set

The Enterprise Server documentation set describes deployment planning and system installation. The Uniform Resource Locator (URL) for Enterprise Server documentation is <http://docs.sun.com/coll/1343.7>. For an introduction to Enterprise Server, refer to the books in the order in which they are listed in the following table.

TABLE P-1 Books in the Enterprise Server Documentation Set

| Book Title               | Description   |
|--------------------------|---|
| <i>Release Notes</i>     | Provides late-breaking information about the software and the documentation. Includes a comprehensive, table-based summary of the supported hardware, operating system, Java™ Development Kit (JDK™), and database drivers. |
| <i>Quick Start Guide</i> | Explains how to get started with the Enterprise Server product.   |

TABLE P-1 Books in the Enterprise Server Documentation Set (Continued)

| Book Title   | Description  |
|--|--|
| <i>Installation Guide</i>  | Explains how to install the software and its components.   |
| <i>Application Deployment Guide</i>  | Explains how to assemble and deploy applications to the Enterprise Server and provides information about deployment descriptors.   |
| <i>Developer's Guide</i>   | Explains how to create and implement Java Platform, Enterprise Edition (Java EE platform) applications that are intended to run on the Enterprise Server. These applications follow the open Java standards model for Java EE components and APIs. This guide provides information about developer tools, security, and debugging. |
| <i>Add-On Component Development Guide</i>                                      | Explains how to use published interfaces of Enterprise Server to develop add-on components for Enterprise Server. This document explains how to perform <i>only</i> those tasks that ensure that the add-on component is suitable for Enterprise Server.   |
| <i>RESTful Web Services Developer's Guide</i>                                  | Explains how to develop Representational State Transfer (RESTful) web services for Enterprise Server.  |
| <i>Getting Started With JRuby on Rails for Sun GlassFish Enterprise Server</i> | Explains how to develop Ruby on Rails applications for deployment to Enterprise Server.  |
| <i>Getting Started With Project jMaki for Sun GlassFish Enterprise Server</i>  | Explains how to use the jMaki framework to develop Ajax-enabled web applications that are centered on JavaScript™ technology for deployment to Enterprise Server.  |
| <i>Roadmap to the Java EE 5 Tutorial</i>                                       | Explains which information in the <i>Java EE 5 Tutorial</i> is relevant to users of the v3 Prelude release of the Enterprise Server.   |
| <i>Java EE 5 Tutorial</i>  | Explains how to use Java EE 5 platform technologies and APIs to develop Java EE applications.  |
| <i>Java WSIT Tutorial</i>  | Explains how to develop web applications by using the Web Service Interoperability Technologies (WSIT). The tutorial focuses on developing web service endpoints and clients that can interoperate with Windows Communication Foundation (WCF) endpoints and clients.  |
| <i>Administration Guide</i>  | Explains how to configure, monitor, and manage Enterprise Server subsystems and components from the command line by using the <code>asadmin(1M)</code> utility. Instructions for performing these tasks from the Administration Console are provided in the Administration Console online help.                                    |
| <i>Administration Reference</i>  | Describes the format of the Enterprise Server configuration file, <code>domain.xml</code> .  |
| <i>Troubleshooting Guide</i>   | Describes common problems that you might encounter when using Enterprise Server and how to solve them.   |



TABLE P-1 Books in the Enterprise Server Documentation Set (Continued)

| Book Title              | Description  |
|-------------------------|--|
| <i>Reference Manual</i> | Provides reference information in man page format for Enterprise Server administration commands, utility commands, and related concepts. |

## Related Documentation

A Javadoc™ tool reference for packages that are provided with the Enterprise Server is located at <https://glassfish.dev.java.net/nonav/api/v3-prelude/index.html>. Additionally, the following resources might be useful:

- The Java EE 5 Specifications (<http://java.sun.com/javaee/5/javatech.html>)
- The Java EE Blueprints (<http://java.sun.com/reference/blueprints/index.html>)

For information about creating enterprise applications in the NetBeans™ Integrated Development Environment (IDE), see <http://www.netbeans.org/kb/60/index.html>.

For information about the Java DB for use with the Enterprise Server, see <http://developers.sun.com/javadb/>.

## Typographic Conventions

The following table describes the typographic changes that are used in this book.

TABLE P-2 Typographic Conventions

| Typeface         | Meaning   | Example   |
|------------------|---|---|
| AaBbCc123        | The names of commands, files, and directories, and onscreen computer output                             | Edit your <code>.login</code> file.<br>Use <code>ls -a</code> to list all files.<br><code>machine_name% you have mail.</code>   |
| <b>AaBbCc123</b> | What you type, contrasted with onscreen computer output   | <code>machine_name% su</code><br>Password:  |
| <i>AaBbCc123</i> | A placeholder to be replaced with a real name or value  | The command to remove a file is <code>rm filename</code> .  |
| <i>AaBbCc123</i> | Book titles, new terms, and terms to be emphasized (note that some emphasized items appear bold online) | Read Chapter 6 in the <i>User's Guide</i> .<br><i>A cache</i> is a copy that is stored locally.<br>Do <i>not</i> save the file. |

## Symbol Conventions

The following table explains symbols that might be used in this book.

TABLE P-3 Symbol Conventions

| Symbol | Description  | Example                | Meaning  |
|--------|--|------------------------|--|
| [ ]    | Contains optional arguments and command options.             | ls [-l]                | The -l option is not required.   |
| {   }  | Contains a set of choices for a required command option.     | -d {y n}               | The -d option requires that you use either the y argument or the n argument. |
| \${ }  | Indicates a variable reference.                              | \${com.sun.javaRoot}   | References the value of the com.sun.javaRoot variable.                       |
| -      | Joins simultaneous multiple keystrokes.                      | Control-A              | Press the Control key while you press the A key.                             |
| +      | Joins consecutive multiple keystrokes.                       | Ctrl+A+N               | Press the Control key, release it, and then press the subsequent keys.       |
| →      | Indicates menu item selection in a graphical user interface. | File → New → Templates | From the File menu, choose New. From the New submenu, choose Templates.      |

## Default Paths and File Names

The following table describes the default paths and file names that are used in this book.

TABLE P-4 Default Paths and File Names

| Placeholder            | Description  | Default Value   |
|------------------------|--|---|
| <i>as-install</i>      | Represents the base installation directory for Enterprise Server.<br><br>In configuration files, <i>as-install</i> is represented as follows:<br><br>\${com.sun.aas.installRoot} | Installations on the Solaris™ operating system, Linux operating system, and Mac operating system:<br><br><i>user's-home-directory/glassfishv3-prelude/glassfish</i><br><br>Windows, all installations:<br><br><i>SystemDrive:\glassfishv3-prelude\glassfish</i> |
| <i>domain-root-dir</i> | Represents the directory in which a domain is created by default.  | <i>as-install/domains/</i>  |

TABLE P-4 Default Paths and File Names (Continued)

| Placeholder       | Description  | Default Value                      |
|-------------------|--|------------------------------------|
| <i>domain-dir</i> | <p>Represents the directory in which a domain's configuration is stored.</p> <p>In configuration files, <i>domain-dir</i> is represented as follows:</p> <pre> \${com.sun.aas.instanceRoot} </pre> | <i>domain-root-dir/domain-name</i> |

## Documentation, Support, and Training

The Sun web site provides information about the following additional resources:

- [Documentation](http://www.sun.com/documentation/) (<http://www.sun.com/documentation/>)
- [Support](http://www.sun.com/support/) (<http://www.sun.com/support/>)
- [Training](http://www.sun.com/training/) (<http://www.sun.com/training/>)

## Searching Sun Product Documentation

Besides searching Sun product documentation from the docs.sun.com<sup>SM</sup> web site, you can use a search engine by typing the following syntax in the search field:

```
search-term site:docs.sun.com
```

For example, to search for “broker,” type the following:

```
broker site:docs.sun.com
```

To include other Sun web sites in your search (for example, [java.sun.com](http://java.sun.com), [www.sun.com](http://www.sun.com), and [developers.sun.com](http://developers.sun.com)), use `sun.com` in place of `docs.sun.com` in the search field.

## Third-Party Web Site References

Third-party URLs are referenced in this document and provide additional, related information.

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## Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. To share your comments, go to <http://docs.sun.com> and click Send Comments. In the online form, provide the full document title and part number. The part number is a 7-digit or 9-digit number that can be found on the book's title page or in the document's URL. For example, the part number of this book is 820-6823.

# Overview of Enterprise Server Troubleshooting

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This chapter describes the tools, methods, and information sources available for troubleshooting Sun GlassFish Enterprise Server v3 Prelude. Guidelines for evaluating and investigating a problem are included.

This chapter contains the following sections:

- “Identifying the Problem” on page 13
- “Troubleshooting Tools” on page 17
- “Where to Go for More Information” on page 19

## Identifying the Problem

Application servers are typically deployed in complex and sophisticated operating environments and involve many technologies, products, and tools. Understanding and diagnosing problems in a large piece of software with so many components performing so many tasks can be challenging. This section gets you started, and includes the following topics:

- “First Steps” on page 13
- “Gathering Information” on page 15
- “Examining Log Files” on page 16
- “Monitoring the System” on page 17

## First Steps

Sometimes the most obvious solutions are overlooked. As you begin your investigation, try the following steps first.

## Verify System Requirements and Configuration

Problems are often caused by configuration issues (system, JVM™, server, or application-level) and by resource issues (such as when a system runs out of memory). Refer to the *Sun GlassFish Enterprise Server v3 Prelude Release Notes* for the latest information regarding system requirements dependencies.

## Review Known Issues

Your problem might be related to a known issue for the release. Refer to the *Sun GlassFish Enterprise Server v3 Prelude Release Notes* for the latest information regarding known issues and possible workarounds. Also search the GlassFish issue tracker at <https://glassfish.dev.java.net/servlets/ProjectIssues>.

## Search the Product Documentation

Enterprise Server includes complete documentation. Search the documentation to see if your problem is addressed. The documentation set is available at <http://docs.sun.com/coll/1343.7>. See “Enterprise Server Documentation Set” on page 7 for a list of books in the documentation set and a description of their contents.

## Search the GlassFish Mailing Lists and Forums

Lists and forums are extremely helpful resources, and are accessed as follows:

- GlassFish mailing lists (start with *users@glassfish.dev.java.net*):  
<http://glassfish.dev.java.net/servlets/ProjectMailingListList>
- GlassFish user forum: <http://forums.java.net/jive/forum.jspa?forumID=56>
- Other GlassFish forums: <http://forums.java.net/jive/category.jspa?categoryID=58>

## Learn More About Enterprise Server v3 Prelude

As the name suggests, the release is a *prelude* to Sun GlassFish Enterprise Server v3. It is not a full Java EE 5 application server, and not everything that was implemented in Sun Java System Application Server 9.1 (GlassFish v2) is implemented and functional in Enterprise Server v3 Prelude. You might be trying to do something that is not possible with the existing feature set. For more information about Enterprise Server v3 Prelude and the features it contains, consult the following resources:

- Feature list and comparison:  
[https://glassfish.dev.java.net/public/comparing\\_v2\\_and\\_v3.html](https://glassfish.dev.java.net/public/comparing_v2_and_v3.html)
- Download page: <https://glassfish.dev.java.net/downloads/v3-prelude.html>
- Resources page:  
<http://wiki.glassfish.java.net/Wiki.jsp?page=GlassFishV3PreludeResources>
- Documentation: <http://docs.sun.com/coll/1343.7>

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**Note** – Some resources refer to GlassFish v3 Prelude. GlassFish v3 Prelude is the community version of the commercially supported offering, Sun GlassFish Enterprise Server v3 Prelude. The software is the same; the difference is in support.

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## Search the SunSolve Knowledgebase

SunSolve<sup>SM</sup> is Sun's informational and patch database service with a browseable directory of all publicly available Sun Microsystems support documents. SunSolve is available at <http://sunsolve.sun.com>. Additional resources are also available for customers with support contracts.

## Gathering Information

Troubleshooting and analysis require information. The more information that you have, the easier it is to classify a problem and search for its solution. Detailed information will also be necessary should you need to contact others for support, either through a community mailing list or through more formal Sun support channels.

For general information about gathering data, also refer to *Sun Gathering Debug Data for Sun Java System Application Server*. The document pertains to previous versions but much of the information is generic enough that it might be helpful for Enterprise Server v3 Prelude.

As you continue your investigation, consider the following questions.

### When Does the Problem Occur?

- What do the logs show? What kind of error message are you getting? For more information about logs, see “Examining Log Files” on page 16.
- What are you trying to do when the problem occurs, and how are you doing it? What is the sequence of events?
- Does the problem occur every time you perform the same type of operation, or does it seem random? Can you reproduce the issue?
- Have other events or problems occurred that could possibly be related, such as web sessions closing early, exceptions being thrown in your own application logic, components not being correctly deployed or undeployed?

### What Is Your Environment?

- What version of Enterprise Server are you using? What operating system and version? What JDK version?
- What resources does your system have, such as memory, disk, and swap space? If system memory is an issue, look for ways to optimize your configuration and consider taking other actions such as adding memory or decreasing system load.

- Have any patches been applied? If so, what are the product and operating system patch numbers?
- What other products and technologies are installed and being used in the installation?
- How many application servers, web servers, and directory servers are installed? What are the products and versions?
- How is the web server connected to Enterprise Server? On the same system?
- How is Enterprise Server connected to the directory server?
- What JDBC driver is being used to access the database?

## What Is Your System Configuration?

- What are your settings?
- On which port is Enterprise Server v3 Prelude configured? The default or something else?
- What defaults were changed during installation and what are the values?
- What other settings were changed from the defaults and what are their values?
- What are the JVM heap, stack, and garbage collection-related parameters set to?
- What are the JVM options?
- What is the permgen size? `OutOfMemoryError:PermGen` space errors are common and indicate that you need to increase the permanent generation space available.
- Is SSL enabled?
- What are your network settings (proxy, firewall, and so on)? What happens if you disable your firewall and attempt the task?

## What Is Different?

- What is different that could have provoked the problem or triggered the event? Was something new added or changed? Have any new applications been deployed? If changes have been made recently, consider backing them out and seeing what happens — does the problem still occur?
- Was the feature or functionality working correctly at one time? If so, what changed or happened between then and now?
- Is this working on another system? If so, what is different about that environment?

## Examining Log Files

Logging is one of your most important troubleshooting tools. It is the process by which Enterprise Server captures data about events that occur during server operation. This data is recorded in a log file, and is usually the first source of information when Enterprise Server problems occur. The primary purpose of log files is to provide troubleshooting information.



By default, all Enterprise Server log information is captured in the `server.log` file, typically located in `domain-dir/logs`. Log Viewer is not available in Enterprise Server v3 Prelude. You cannot view the server's log file or configure logging using the Administration Console. To view log information, open the `server.log` file in a text editor. You can also use command-line file viewing commands such as `tail`, `grep`, or `more`. Logging is configured by editing the `logging.properties` file, located by default in the same directory as the `domain.xml` file, typically `domain-dir/config`.

Log levels such as SEVERE, WARNING, INFO, CONFIG, and others can be set to provide different types and amounts of information. Each Enterprise Server module has its own logger, and each logger has its own namespace. Log levels can be set globally for all loggers, or individually for module-specific loggers.

See [Chapter 9, “Administering Logging”](#) in *Sun GlassFish Enterprise Server v3 Prelude Administration Guide* for complete details about logging. Also see the *Sun GlassFish Enterprise Server v3 Prelude Release Notes* for any known issues related to logging.

## Monitoring the System

Monitoring is another helpful tool. It is the process of reviewing the statistics of a system to improve performance or solve problems. By monitoring the state of various components and services deployed in Enterprise Server, you can identify performance bottlenecks, predict failures, perform root cause analysis, and ensure that everything is functioning as expected. For more information about monitoring, see [Chapter 10, “Monitoring the Enterprise Server,”](#) in *Sun GlassFish Enterprise Server v3 Prelude Administration Guide*.

# Troubleshooting Tools

Several tools are available that can be used to collect information for troubleshooting purposes. This section provides basic information about the following:

- “Operating System Utilities” on page 17
- “Stack Traces and Thread Dumps” on page 18
- “VisualVM” on page 18

## Operating System Utilities

Operating system utilities, such as `pkginfo` and `showrev` on Solaris and `rpm` on Linux, are helpful in gathering system information.

The `ps -ef` command provides helpful information about processes that are running, including their process identification numbers (PIDs).

## Stack Traces and Thread Dumps

A stack trace is a user-friendly snapshot of the threads and monitors in a Virtual Machine for the Java platform (Java Virtual Machine or JVM machine). A thread dump shows what every thread in a JVM is doing at a given time and is useful in debugging. When the application server freezes, hangs, or becomes sluggish for no apparent reason, you should generate and analyze a thread dump.

This section explains how to obtain a thread dump for Enterprise Server. More information about analyzing the information contained in a thread dump can be found in “An Introduction to Java Stack Traces”

(<http://java.sun.com/developer/technicalArticles/Programming/Stacktrace>). By default, the server dumps a core file and restarts with the `-Xrs java-option` flag in the `server.xml` file.

### ▼ To Obtain a Server Thread Dump

- Type the following command:

```
asadmin generate-jvm-report --type=thread
```

**See Also** [generate-jvm-report\(1\)](#)

## VisualVM

VisualVM is a Java troubleshooting tool that uses various technologies such as `jvmstat`, `JMX™`, and Attach API to access monitored applications. VisualVM is a tool for visualizing data sources and by default visualizes the following types: applications, hosts, snapshots, core dumps, heap dumps, and thread dumps. These data sources are visualized in VisualVM so that they can be monitored for the purposes of analysis, management, and troubleshooting. VisualVM is commonly used to detect memory leaks.

VisualVM has a GlassFish plugin that enhances monitoring of hosted applications by adding specialized overview, a tab for monitoring the HTTP Service, and the ability to visually select and monitor any of the deployed web applications. You can experiment with VisualVM troubleshooting capabilities, but note that various features depend on the Java versions used in the client and server. Depending on your configuration, you might only get parts of the VisualVM features. For more information about VisualVM, see <https://visualvm.dev.java.net>.

## Where to Go for More Information

- Product page:  
[http://www.sun.com/software/products/glassfishv3\\_prelude/index.xml](http://www.sun.com/software/products/glassfishv3_prelude/index.xml)
- Comparison between Sun Java System Application Server 9.1 (GlassFish v2) and Enterprise Server v3 Prelude:  
[https://glassfish.dev.java.net/public/comparing\\_v2\\_and\\_v3.html](https://glassfish.dev.java.net/public/comparing_v2_and_v3.html)
- Support and services:  
[http://www.sun.com/software/products/glassfishv3\\_prelude/support.xml](http://www.sun.com/software/products/glassfishv3_prelude/support.xml)
- SunSolve knowledgebase: <http://sunsolve.sun.com>
- Resources page (points to articles, blogs, videos, screencasts, FAQs, and many other resources related to Enterprise Server v3 Prelude):  
<http://wiki.glassfish.java.net/Wiki.jsp?page=GlassFishV3PreludeResources>
- Documentation: <http://docs.sun.com/coll/1343.7>
- Mailing lists and forums: See “Search the GlassFish Mailing Lists and Forums” on page 14 for details about accessing lists and forums.
- Technical Note: *Sun Gathering Debug Data for Sun Java System Application Server*
- GlassFish community site: <http://glassfish.org>
- GlassFish wiki:  
<http://wiki.glassfish.java.net/Wiki.jsp?page=PlanForGlassFishV3>



## Specific Issues

---

This chapter lists problems that you might encounter when using Sun GlassFish Enterprise Server v3 Prelude. The following issues are addressed.

### General Issues

- “Cannot Access Local Server (<http://localhost:8080>)” on page 21
- “Cannot Access Remote Server” on page 23
- “Cannot Access the Administration Console” on page 24
- “Cannot Access a Server Application” on page 25
- “Server Will Not Start on Windows (Port Conflict)” on page 27
- “Two Server Instances Bind to Same Port on Windows” on page 28
- “Cannot Produce a JVM Thread Dump After Server Crash” on page 29

### Specific Issues

- “Issues Related to Applications” on page 29
- “Issues Related to `asadmin`” on page 31
- “Issues Related to Eclipse” on page 33
- “Issues Related to Installation and Upgrade” on page 34
- “Issues Related to JavaMail” on page 35
- “Issues Related to JNDI” on page 35
- “Issues Related to MySQL” on page 36
- “Issues Related to Security” on page 36

## Cannot Access Local Server (<http://localhost:8080>)

When this error occurs, check the following:

- “Did the Server Start?” on page 22
- “Was the Server Started at the Expected Port?” on page 22

## Did the Server Start?

### Description

If the console window is still open, the expected message is:

```
Domain domain Started
```

where *domain* is the name of the default domain. This indicates that the default domain was started successfully.

If the console window is already closed, check for messages in the log file:

```
as-install/domains/domain1/logs/server.log
```

If startup was successful, the expected message is similar to that on the console, and appears at the end of the log file.

## Was the Server Started at the Expected Port?

### Description

The server might be running at a different port number than expected, either because it was intentionally installed there, or because another server was already running on the default port when the server was installed.

### ▼ To Determine Which Port Number the Server Is Actually Using

**1 Examine the server's configuration file:**

```
as-install/domains/domain1/config/domain.xml
```

**2 Find the `http-listener` element.**

**3 Inspect the value of the `port` attribute.**

Be sure to enter the correct port number when invoking the server.

---

**Note** – The server's default port number is `8080`, however, there are a number of ways in which the expected value can change:

- A different port number was specified during installation.
  - A previous installation exists.
-

# Cannot Access Remote Server

When attempting to open the start page of Enterprise Server, the initial screen does not appear.

When this error occurs, check the following:

- “Is the Server Available Locally?” on page 23
- “Is the Proxy Setting Causing a Problem?” on page 23

## Is the Server Available Locally?

### Description

If the server cannot be accessed from the web, but it is running locally, then the server is actually running.

### Solution

Verify that the server is running locally.

#### ▼ To Verify That the Server Is Running Locally

- 1 Log on to the host where the server is running.
- 2 Go to the local web page. For example, if 8080 is the default port, go to:

```
http://localhost:8080/
```

If the start page does appear, the web connection is encountering a problem that prevents accessing the server remotely. If the start page does not appear, see “[Did the Server Start?](#)” on [page 22](#).

## Is the Proxy Setting Causing a Problem?

### Description

The server should be accessible directly from the host on which it is running (localhost); for example, using the default port 8080:

```
http://localhost:8080/
```

### Solution

A server instance running on localhost might not be accessible if the server host machine is connected to the web through a proxy. To solve this problem, do one of the following:

- Set the browser to bypass the proxy server when accessing localhost. Refer to the browser's help system for information about how to do this.
- Use the fully-qualified host name or IP address of your system; for example:  
  
`http://myhost.mydomain.com:8080/`
- Create an entry in the system's hosts file (for example, pointing 127.0.0.1 to localhost; 127.0.0.1 is not proxied).

---

**Note** – To find the host name and domain for the localhost machine:

- **On Microsoft Windows** — On the desktop, right-click My Computer and select Properties from the pop-up menu. A System Properties dialog is displayed. Click Network Identification to see the computer name.
  - **On Solaris or Linux** — Type hostname at the command prompt.
- 

## Cannot Access the Administration Console

The Administration Console provides an interface for administrative functions. If the Administration Console is not accessible, check the following:

- [“Is the Application Server Running?” on page 24](#)
- [“Is the Administration Console Running on the Expected Port?” on page 25](#)
- [“Is the Security Manager Disabled?” on page 25](#)

## Is the Application Server Running?

### Description

The server must be running before the Administration Console can be accessed.

### Solution

Review the information in [“Did the Server Start?” on page 22](#) to determine if the server is running.



## Is the Administration Console Running on the Expected Port?

### Description

The default port number for the Administration Console is 4848. However, it could be running on a different port number than expected, either because it was intentionally installed there, or because that port was in use when the server was started.

### Solution

Refer to [“Was the Server Started at the Expected Port?” on page 22](#) for guidelines on verifying the port on which the Administration Console is running. Be sure to enter the correct port number and HTTP protocol when invoking the Administration Console.

## Is the Security Manager Disabled?

### Description

The Security Manager is not optional; it must be enabled in Enterprise Server. Because there is no configuration interface in Enterprise Server for disabling the Security Manager, it can only be disabled when you directly modify the `domain.xml` configuration file in such a way that the following line is removed or commented out:

```
<jvm-option>-Djava.security.policy=yourPolicy</jvm-option>
```

### Solution

Verify that the `-Djava.security.policy=yourPolicy` option is present in the `domain.xml` file.

## Cannot Access a Server Application

If a particular application cannot be accessed through Enterprise Server, check the following:

- [“Is the Application Server Running?” on page 25](#)
- [“Was Application Deployment Successful?” on page 26](#)
- [“Administrator User Name or Password Not Known” on page 26](#)

## Is the Application Server Running?

### Description

If Enterprise Server is not running, applications are not accessible.

## Solution

Review the information in [“Did the Server Start?” on page 22](#) to determine if the server is running. The server must be running before a server application can be accessed.

## Was Application Deployment Successful?

### Description

An application must be successfully deployed before it can be accessed.

### Solution

Check the server's log file:

```
as-install/domains/domain1/server.log
```

## Administrator User Name or Password Not Known

If you have forgotten the administrator user name, you can find it by inspecting the `as-install/domains/domain-name/config/keyfile` file, where *domain-name* is the name of the domain. In the default domain, `domain1`, the file to inspect is `as-install/domains/domain1/config/keyfile`. For a different domain, substitute its name in the path.

If you have forgotten the administrator password, you must create a new user name-password pair by removing the user name and password, creating new ones, and restarting the server. (You will not be able to read the password, because it is encrypted in the keyfile.)

### ▼ To Remove the User Name and Password Completely

- 1 **Stop the server, if it is currently running.**
- 2 **Change to the appropriate WEB-INF directory; for example:**  

```
as-install/lib/install/applications/adminapp/adminapp_war/WEB-INF
```
- 3 **Comment out the entire `<security-constraint>` element in the `web.xml` file.**  
Do not delete the element, as you will be reenabling it later. This action disables security for command-line operations.

---

**Note** – The commands will still expect a value for `--username` (or `-u`) and `--password` (or `-w`). But these can be dummy values, since the server side does not impose any security.

---

**4 Start the server.**

At this point, the server does not have command-line security.

**5 Create a plain text file that defines the `AS_ADMIN_USERPASSWORD` variable as follows:**

```
AS_ADMIN_USERPASSWORD=adminpassword
```

*adminpassword* Your choice of password for the administration user's password.

**6 Create an administration user whose password is the password that you defined in the preceding step.**

```
asadmin create-file-user --groups asadmin --passwordfile=password-file adminuser
```

*passwordfile* The full path to the file that you created in the previous step.

*adminuser* The name of the user that you are creating.

This command adds an entry to the *as-install/domains/domain-name/config/keyfile* file.

**7 Uncomment the `<security-constraint>` element in the `web.xml` file.**

**8 Restart the server for the new user name-password to take effect.**

---

**Note** – After the server is restarted, remote commands must specify *adminuser* as the administration user and *adminpassword* as the administration password.

---

## Server Will Not Start on Windows (Port Conflict)

If a message similar to the following is displayed when starting Enterprise Server on Microsoft Windows, a server port conflict has occurred:

```
Address already in use
```

This error occurs when another application is running on the Enterprise Server port (default 8080), or because a previous instance of Enterprise Server did not shut down cleanly.

You might also check the following:

- [“Is Another Application Running on the Server's Port?” on page 28](#)
- [“Has an Ungraceful Shutdown Occurred on a Previously Running Server?” on page 28](#)

## Is Another Application Running on the Server's Port?

If another application is using the server's port, stop the other application, then restart Enterprise Server.

## Has an Ungraceful Shutdown Occurred on a Previously Running Server?

Use the `asadmin stop-domain` command to stop the server, or explicitly kill the Java process and then restart Enterprise Server.

# Two Server Instances Bind to Same Port on Windows

## Description

This problem only occurs on Windows 2000/XP systems with Enterprise Server software, and is due to a known Windows security flaw rather than a problem with Enterprise Server itself.

The problem occurs when two or more instances of Enterprise Server are created using the same port number for the `instanceport` option; for example:

```
asadmin create-domain -adminport 5001 options -instanceport 6001 domain
asadmin create-domain -adminport 5002 options -instanceport 6001 domain
```

When the two domains are started on a UNIX or Linux system, a port conflict error is thrown and the second instance fails to start. However, when the two domains are started on Windows 2000/XP, no error is thrown, both server instances start, but only the first instance is accessible at the specified port. When that first server instance is subsequently shut down, the second instance then becomes accessible. Moreover, when both instances are running, the `Windows netstat` command only reports the first instance.

## Solution

Be sure to use unique port numbers for all server instances on Windows systems.

# Cannot Produce a JVM Thread Dump After Server Crash

## Description

If Enterprise Server crashes, the server dumps a core file and, by default, restarts with the `-Xrs` flag, which prevents the dump of a JVM thread dump.

## Solution

### ▼ To Obtain a Server Thread Dump

- Type the following command:

```
asadmin generate-jvm-report --type=thread
```

See Also [generate-jvm-report\(1\)](#)

## Issues Related to Applications

### Error When Deploying EAR

#### Description

You tried to deploy a traditional EAR type of application in Enterprise Server but received an error message instead.

#### Solution

Enterprise Server v3 Prelude does not include a full EJB 3.0 implementation and does not support traditional EJB modules. Applications can be packaged for deployment in web archive (WAR) format only. You can download a partial implementation of a few EJB 3.1 features using Update Tool, but the bulk of EJB 3.0 (`ejb-jar` and `.ear` support) is not available. If you need a full Java EE 5 implementation, Sun Java System Application Server 9.1 (GlassFish v2) is a better choice for now. Web applications are the only Java EE application type supported by Enterprise Server v3 Prelude.

For related information, see the following:

- Forum threads: <http://forums.java.net/jive/thread.jspa?messageID=301326> and <http://forums.java.net/jive/thread.jspa?messageID=318879>
- Blog post: “EJB 3.1 in GlassFish v3 Prelude” ([http://blogs.sun.com/kensaks/entry/ejb\\_3\\_1\\_in\\_glassfish](http://blogs.sun.com/kensaks/entry/ejb_3_1_in_glassfish))
- Blog post: “Deployment in GlassFish v3 Prelude” ([http://blogs.sun.com/quinn/entry/deployment\\_in\\_glassfish\\_v3\\_prelude](http://blogs.sun.com/quinn/entry/deployment_in_glassfish_v3_prelude))
- Documentation: Chapter 3, “Extending Enterprise Server,” in *Sun GlassFish Enterprise Server v3 Prelude Administration Guide*

## Cannot Find SunDeploymentManager

### Description

You cannot find `SunDeploymentFactory.java`.

### Solution

Enterprise Server v3 Prelude does not include the JSR-88 API (`SunDeploymentManager` is the implementation of the JSR 88 API). The JSR 88 specification provides a complete description of the APIs required by the Java EE platform to enable development of platform-independent deployment tools.

## Cannot Undeploy or Redeploy Application With Open Streams to jar Files (Windows Only)

### Description

On Windows systems, after running an application, subsequent attempts to undeploy it or redeploy it throw exceptions about the server being unable to delete a file or rename a directory.

On Windows systems, an application may use `getClass().getResource` or `getResourceAsStream` methods to locate a resource inside the application, particularly in jar files that are in the application or accessible to it. If the streams remain open, subsequent attempts to redeploy or undeploy the application can fail. In addition, the Java runtime by default caches streams to jar files for performance reasons.

### Solution

Be sure to close streams opened by your applications. Also, if an application needs to be redeployed or undeployed repeatedly, and also needs to obtain a resource from a jar file using

`getResource` or `getResourceAsStream`, consider using `getClass().getResource`, which returns a URL object, then invoke the `url.setUseCaches` method to turn off caching for that jar file, and use `url.getInputStream()` to obtain the stream.

Although turning off caching for access to the jar file can slow performance, this approach does allow the application to be undeployed or redeployed. Note also that if the `getClass().getResourceAsStream` method is used instead, then the jar file in which the resource is located is cached (this is the default Java runtime setting) and remains open until the server is stopped.

## Issues Related to asadmin

### asadmin start-domain Command Fails

The command `asadmin start-domain` fails with one of the following errors:

- Error: CLI143 There is more than one domain...
- Error: Could Not Start Domain

**Error:** CLI143 There is more than one domain...

#### Description

When issued with no arguments, the command `asadmin start-domain` fails with the error:

```
CLI143 There is more than one domain in C:\\Sun\\AppServer\\domains.  
Please use operand to specify the domain.  
CLI156 Could not start the domain null.
```

This error occurs when there is more than one domain in the domains directory, none of them is named `domain1`, and no domain is specified with the `start-domain` command.

#### Solution

Specify the domain when issuing the `start-domain` command:

```
asadmin start-domain domain-name
```

For example:

```
asadmin start-domain mycustomdomain
```

## Error: Could Not Start Domain

### Description

This message comes from Sun Java System Application Server 8. The full message looks like either:

```
Could not start the domain.  
There are no domains.
```

*or*

```
Could not start the domain.  
No default domain. Need to enter a domain.
```

This error occurs when Sun Java System Application Server 8 is installed on the same system, and its `asadmin` command (at `/usr/sbin`) is found on the `PATH` before the `asadmin` command for Sun Java System Application Server 8 at `as-install/bin`. The situation is especially likely to occur on Solaris and Linux systems when `.` is not specified as part of the `PATH` variable. Without `.` in the `PATH`, the `asadmin` command in `/usr/sbin` is found first, even when the current directory is `as-install/bin`.

### Solution

Make sure `as-install/bin` is in the `PATH` ahead of `/usr/sbin`, or that `.` is in the `PATH` ahead of `/usr/sbin` if you access `asadmin` by changing directories to `as-install/bin`. Alternatively, if you do change to `as-install/bin` to run `asadmin`, be sure to include `./` in the command name; for example:

```
cd as-install/bin  
./asadmin
```

## Cannot Stop Domain Using `asadmin stop-domain`

### Description

You cannot stop the domain using the `asadmin stop-domain` command.

### Solution

Search the server `.log` file for error messages related to your inability to stop the domain. To kill a process when `stop-domain` is not working, try `$JAVA_HOME/bin/jps` and look for the process with `ASMain`.



## Using `asadmin set` Command Might Produce Unexpected Results

### Description

Unexpected results are returned when setting variables in a command, such as:

```
asadmin set name=${a-b}
```

In this case, `name` is set to `b`, not `{a-b}` because the shell syntax `${a=b}` is interpreted as “if the variable `a` is unset, substitute the value `b`, otherwise substitute the value of `a`.” This is standard shell behavior. For example, consider the following:

```
asadmin set default-config.http-service.http-listener.http-listener-1.port=
${http-listener-1-port}
```

In this case, `default-config.http-service.http-listener.http-listener-1.port` is set to `listener-1-port`, which is invalid.

## Issues Related to Eclipse

### Eclipse GlassFish Server Adapter – Port Conflict When Starting GlassFish

#### Description

On Windows, the following error message is displayed when you start Enterprise Server v3 Prelude using the server adapter within Eclipse:

```
Please stop the server process using the same port as the one used
by the Application Server. A server process is already running on this port
but we cannot determine if it's a GlassFish
process (lack of info or credentials)
```

The message does not list which port is blocked by a server process, making it difficult to locate the blocking process. Obvious candidates such `4848` or `8080` are not blocked, according to TCP View.

## Solution

This problem only occurs on Windows platforms and is related to an HTTP connection socket error. For more information, see the following:

- Forum threads: <http://forums.java.net/jive/thread.jspa?messageID=316148> and <http://forums.java.net/jive/thread.jspa?messageID=316905>
- Issue report: [http://glassfishplugins.dev.java.net/issues/show\\_bug.cgi?id=72](http://glassfishplugins.dev.java.net/issues/show_bug.cgi?id=72)

---

**Note** – The `netstat -ab` command shows the PID and might prove useful.

---

# Issues Related to Installation and Upgrade

## General Installation

### Description

You encounter problems when installing.

### Solution

The Enterprise Server installation requires JDK 5 or JDK 6, so check your system for that dependency. Make sure that the JDK 5 or JDK 6 release bin directory is in your PATH so that the java binary used with Enterprise Server comes from the JDK release rather than a JRE implementation. For more information about system requirements and dependencies, see the *Sun GlassFish Enterprise Server v3 Prelude Release Notes*. For complete installation information and guidelines, see the *Sun GlassFish Enterprise Server v3 Prelude Installation Guide*.

## Cannot Upgrade

### Description

You cannot upgrade from Sun Java System Application Server 9.1 (GlassFish v2) to Enterprise Server v3 Prelude. No upgrade option is available.

### Solution

Upgrade support is not provided in Enterprise Server v3 Prelude. You cannot upgrade from Sun Java System Application Server 9.1 (GlassFish v2) to Enterprise Server v3 Prelude.

For information about updating an existing Enterprise Server v3 Prelude installation, see Chapter 2, “Updating an Existing Enterprise Server v3 Prelude Installation,” in *Sun GlassFish Enterprise Server v3 Prelude Installation Guide*.

## Issues Related to JavaMail

### Cannot Configure JavaMail Resources

#### Description

You cannot configure JavaMail resources using the Administration Console.

#### Solution

JavaMail resources are not supported by Enterprise Server v3 Prelude. The `mail.jar` and `activation.jar` files are bundled so that you can create and use mail sessions. However, you cannot obtain mail sessions from a predefined XML resource.

## Issues Related to JNDI

### Cannot Deploy a Mail Session as a JNDI Resource

#### Description

You cannot deploy a mail session as a Java Naming and Directory Interface™ (JNDI) resource.

#### Solution

This functionality is not available in Enterprise Server v3 Prelude. You must use the mail session directly. You cannot perform this task in the Administration Console or by using the `asadmin` utility.

## Issues Related to MySQL

### Exception When Creating MySQL Connection Pool

#### Description

On Windows, you get an exception when creating a MySQL connection pool using the Administration Console.

#### Solution

See “Attempt to Use Administration Console to Create a Connection Pool Fails Even if the Driver Is Present (Issue 6671)” in *Sun GlassFish Enterprise Server v3 Prelude Release Notes*.

## Issues Related to Security

### java.security.AccessControlException: Access Denied Error

#### Description

The following error occurs from an application client, or appears in the server.log file:

```
java.security.AccessControlException: access denied
(java.util.PropertyPermission name write...)
```

There is a permissions issue in the policy files. Either the `client.policy` file for the application client or the `server.policy` file for server side components does not have permission to set the property.

#### Solution

Add the permission in `client.policy` (for the application client), or in `server.policy` (for web modules) for the application that needs to set the property. By default, applications only have “read” permission for properties.

For example, to grant read/write permission for all files in the codebase directory, add or append the following to `client.policy` or `server.policy`:

```
grant codeBase "file:/../build/sparc_SunOS/sec/-" {  
    permission java.util.PropertyPermission "*", "read,write";  
};
```

## Mutual Authentication Not Working With the Application Client

### Description

This failure can occur when the keystore and truststore properties are not set properly.

### Solution

Set the following properties on the JVM:

```
javax.net.ssl.keyStore=  
<keystore-file-path>;javax.net.ssl.trustStore=<truststore-file-path>
```

To use the application client, set the environment variable VMARGS to the following value:

```
-Djavax.net.ssl.keyStore=${admin.domain.dir}/${admin.domain}/config/keystore.jks  
-Djavax.net.ssl.trustStore=${admin.domain.dir}/${admin.domain}/config/cacerts.jks
```



## Frequently Asked Questions

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This chapter lists Frequently Asked Questions (FAQs) related to Sun GlassFish Enterprise Server v3 Prelude. This list is certain to grow. For the latest FAQs, also see the GlassFish wiki at <http://wiki.glassfish.java.net/Wiki.jsp?page=GlassFishFAQIndex>.

This chapter contains the following:

- “Administration FAQs” on page 39
- “Application FAQs” on page 40
- “Eclipse FAQs” on page 40
- “Extensibility FAQs” on page 41
- “Java Persistence FAQs” on page 42
- “JDBC FAQs” on page 42
- “Jersey FAQs” on page 42
- “OpenESB FAQs” on page 43
- “Rails and JRuby FAQs” on page 43
- “Security FAQs” on page 45
- “Update Tool FAQs” on page 45

## Administration FAQs

### Which `asadmin` Commands are Supported?

Use `asadmin list-commands` to determine which commands are supported and available for use. For related information, see Appendix A, “The `asadmin` Utility Commands,” in *Sun GlassFish Enterprise Server v3 Prelude Administration Guide*.

## Application FAQs

### How Do I Debug Applications?

See Chapter 3, “Debugging Applications,” in *Sun GlassFish Enterprise Server v3 Prelude Developer’s Guide*.

### How Do I Change Application Permissions?

See “Changing Permissions for an Application” in *Sun GlassFish Enterprise Server v3 Prelude Developer’s Guide*.

### What Are the Restrictions and Optimizations for Session Beans?

See “Session Bean Restrictions and Optimizations” in *Sun GlassFish Enterprise Server v3 Prelude Developer’s Guide*.

### How Do I Move Tomcat Toplink Applications to Enterprise Server v3 Prelude?

Enterprise Server v3 Prelude and NetBeans 6.5 enable you to move applications that run on Tomcat using TopLink/EclipseLink to Enterprise Server. As a start, see “Moving Tomcat Toplink Apps to GlassFish v3 Prelude” ([http://blogs.sun.com/Lance/entry/moving\\_tomcat\\_toplink\\_apps\\_to](http://blogs.sun.com/Lance/entry/moving_tomcat_toplink_apps_to)).

## Eclipse FAQs

### Where Can I Find More Information About Eclipse and Enterprise Server Integration?

Eclipse is a development environment that provides a framework, tools, and runtime for deploying and managing software. The GlassFish plugin for Eclipse provides important changes to better support Enterprise Server v3 Prelude and to provide optimal redeployment of web applications. For more information, see the following:



- Download: Download the plugin from within Eclipse using the Download Additional Server Adapters link on the New Server Wizard. See the Downloads page for additional information (<https://glassfishplugins.dev.java.net/download/index.html>). If you have difficulty downloading the plugin from within Eclipse, you could be experiencing an Eclipse update center network problem. Try again at another time.
- Release Notes: <https://ajax.dev.java.net/eclipse/releasenotes.html>
- Documentation: <https://glassfishplugins.dev.java.net/eclipse34>

## Extensibility FAQs

### How Do I Develop Add-On Components?

See the *Sun GlassFish Enterprise Server v3 Prelude Add-On Component Development Guide* for complete details.

### How Do I Add Containers?

Enterprise Server has a highly modular architecture that enables you to add new types of containers that handle many application types, not just Java EE. Enterprise Server defines a service provider interface (SPI), which container developers implement. The Enterprise Server framework then invokes the container's implementation of the SPI to detect, deploy, and manage applications of the new type.

For more information, see Chapter 6, “Adding Container Capabilities,” in *Sun GlassFish Enterprise Server v3 Prelude Add-On Component Development Guide*.

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**Note** – Web applications are the only Java EE application type supported by Enterprise Server v3 Prelude.

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### How Do I Extend the Administration Console?

See Chapter 3, “Extending the Administration Console,” in *Sun GlassFish Enterprise Server v3 Prelude Add-On Component Development Guide*.

## Java Persistence FAQs

### What Are the Restrictions and Optimizations for the Java Persistence API?

See “Restrictions and Optimizations” in *Sun GlassFish Enterprise Server v3 Prelude Developer’s Guide*.

### What Java Persistence Support Is Available?

Java Persistence 1.0 support in Enterprise Server v3 Prelude is available as follows:

- EclipseLink 1.0
- Hibernate EntityManager
- OpenJPA

## JDBC FAQs

### Is JDBC Support Provided?

Yes, Enterprise Server v3 Prelude includes JDBC support. The JDBC connection pooling infrastructure is the same as that of Sun Java System Application Server 9.1 (GlassFish v2). See “JDBC support in v3 Prelude” (<http://blogs.sun.com/technical>) for more information.

## Jersey FAQs

### How Do I Use Jersey?

Jersey 1.0 is the production-quality Reference Implementation of JAX-RS. It is part of Enterprise Server v3 Prelude and is available from Update Tool. For additional details, including installation instructions, see the *RESTful Web Services Developer’s Guide*.

## OpenESB FAQs

### Does Enterprise Server v3 Prelude Support OpenESB?

No, OpenESB v2 runs on Sun Java System Application Server 9.1 (GlassFish v2). For more information about OpenESB, see <https://open-esb.dev.java.net>.

## Rails and JRuby FAQs

### Should I Start an Enterprise Server Domain and Deploy My Application Into It, or Should I Use the `glassfish_rails` Gem?

To continue the question: I'm not sure what the second option does, or why I might choose one over the other.

Response: In a nutshell, a gem is an application runner. It can run your Rails application but nothing else. If you use the Enterprise Server v3 Prelude installation, start the domain and deploy. You can deploy several Rails applications (or Java EE applications even) concurrently with a different context root. This gives you access to different containers such as web and EJB and also to the Update Tool. Enterprise Server enables you to host not only multiple Rails applications, but also any other Java EE application.

### If I Deploy an Application Using the `glassfish_rails` Gem, Can I Still Access the Administration Console?

No, the gem only runs Rails applications with no extensions or extra features. You must have Enterprise Server v3 Prelude with a web container to access the Administration Console.

### Where in a Rails Application Structure Does Enterprise Server Look for `jar` Files to Add to the Classpath for That Application?

To continue the question: WAR files and exploded Java webapp directories have a `WEB-INF/lib` directory. Rails applications also have a `lib` directory, but this is for Ruby libraries. Where in a Rails application can I put application-specific `jar` files? Is there such a place, or must I place them in the `domain/lib` directory?

Response: Place them in the `domain/lib` directory, or in `glassfish/lib`. If those bundles are OSGi bundles, you should place them in the `glassfish/modules` directory. If you want to package your own set of jar files with the Rails application, instead of copying the jars in the `glassfish/lib` or `glassfish/modules` directory, you might want to use Warbler. The Warbler gem lets you package your own jars and creates a WAR file from your Rails applications.

## Where Can I Find More Information About Rails Applications and Enterprise Server?

See the following:

- Related documentation: *Getting Started With JRuby on Rails for Sun GlassFish Enterprise Server v3 Prelude*
- Blog post: “New and Improved GlassFish Gem” ([http://weblogs.java.net/blog/vivekp/archive/2008/11/new\\_and\\_improve\\_1.html](http://weblogs.java.net/blog/vivekp/archive/2008/11/new_and_improve_1.html))
- Getting Started Guide: <http://wiki.glassfish.java.net/Wiki.jsp?page=GettingStartedGuide>
- Gem documentation: <http://glassfishgem.rubyforge.org>
- Warbler information: <http://caldersphere.rubyforge.org/warbler/>
- Related screencasts: <http://wiki.glassfish.java.net/Wiki.jsp?page=Screencasts>

## What Options Are Available for Running JRuby With Enterprise Server?

JRuby applications can be deployed natively, without the use of the servlet container. Enterprise Server v3 Prelude can run JRuby applications directly on top of the servlet container. Warbler can also be used to deploy JRuby applications to the servlet container.

For screencasts related to JRuby and Enterprise Server, see the GlassFish screencasts page at <http://wiki.glassfish.java.net/Wiki.jsp?page=Screencasts>. Also see *Getting Started With JRuby on Rails for Sun GlassFish Enterprise Server v3 Prelude*.

## Security FAQs

### What Happens When No Server Side Realm Is Configured?

When the application is configured (within XML files), but no server side realm is configured, the application is authenticated in the default realm. No error is thrown that indicates “No such realm.”

### Can I See the TLS/SSL Handshake Information for an SSL Client?

Yes. Set the Java debugging property on the JVM. To see the handshake information from the application client, append the following to the VMARGS variable:

```
-Djavax.net.debug=ssl,handshake
```

### Can I Change the Keystore Password?

Yes. Use the following Java 2 Platform, Standard Edition (J2SE™) properties to change the keystore password:

```
-Djavax.net.ssl.keyStorePassword=password  
-Djavax.net.ssl.trustStorePassword=password
```

Note that the keystore password must match the individual key passwords to perform operations on the keys, so you must change the keystore password with the property mentioned above, and then change the password to each key to match that password.

## Update Tool FAQs

### How Do I Use Update Tool to Extend My Enterprise Server Installation?

Update Tool enables you to extend your Enterprise Server v3 Prelude installation by adding add-on components such as JRuby and Groovy, Jersey, and Metro web services. Update Tool can be accessed from within the Administration Console or on the command line.

After you start your Enterprise Server instance, the default location for the Administration Console is `http://localhost:4848/` (at least one Enterprise Server domain must be started before you can launch the Administration Console). Unless you declined to check for updates during installation, you will be notified of available updates in the message area. Update Tool can also be accessed on the command line by running the `updatetool` command in the `as-install/bin` directory. Extensive online help is provided for both versions.

For more information about Update Tool, see [Chapter 3, “Extending Enterprise Server,”](#) in *Sun GlassFish Enterprise Server v3 Prelude Administration Guide*. Also see the Administration Console online help.

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