For Review Purposes Only

Sun GlassFish Enterprise Server v3 Prelude Administration Guide

Prelude, 10 September 2008

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List of Remarks

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REMARK 9–1	Reviewer	CARLA: Is any of the material in this Log Records section correct for Prelude? 19
REMARK 9–2	Reviewer	CARLA: Is any of the material in this Namespace section correct for Prelude? 20
REMARK 9–3	Reviewer	Carla: Is it true that all changes are dynamic? I'm guessing. 21
REMARK 9–4	Reviewer	CARLA: What do you mean by facility? Component? modules and applications? I haven't used the term facility anywhere in administration. 22
REMARK 9–5	Reviewer	Carla: Are there default settings for the properties listed below? 23
REMARK 9–6	Reviewer	CARLA: Is any of the material in this Viewing Server Logs section correct for Prelude? It's all referring to the GUI, and mentions the get and list commands. Does any of this apply for Prelude? If not, how does user view logging recors? 24

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Preface

The *Sun GlassFish Enterprise Server v3 Prelude Administration Guide* provides instructions for configuring and administering the Sun GlassFish Enterprise Server.

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

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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
Release Notes	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.
Quick Start Guide	Explains how to get started with the Enterprise Server product.
Installation Guide	Explains how to install the software and its components.
Application Deployment Guide	Explains how to assemble and deploy applications to the Enterprise Server and provides information about deployment descriptors.

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

Book Title	Description
Developer's Guide	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.
Java EE 5 Tutorial	Explains how to use Java EE 5 platform technologies and APIs to develop Java EE applications.
Java WSIT Tutorial	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.
Administration Guide	Explains how to configure and manage Enterprise Server subsystems and components from the command line by using the `asadmin(1M)` utility. Instructions for performing these tasks from the Administration Console are provided in the Administration Console online help.
RESTful Web Services Developer's Guide	Explains how to develop Representational State Transfer (RESTful) web services for Enterprise Server.
Getting Started With JRuby on Rails for the GlassFish Application Server	Explains how to develop Ruby on Rails applications for deployment to Enterprise Server.
Getting Started With Project jMaki for the GlassFish Application Server	Explains how to use the jMaki framework to develop Ajax-enabled web applications that are centered on JavaScript™ technology for deployment to Enterprise Server.
Reference Manual	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 `http://glassfish.dev.java.net/nonav/javaee5/api/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 database for use with the Enterprise Server, see `http://developers.sun.com/javadb/`.

The GlassFish Samples project is a collection of sample applications that demonstrate a broad range of Java EE technologies. The GlassFish Samples are bundled with the Java EE Software Development Kit (SDK), and are also available from the GlassFish Samples project page at `https://glassfish-samples.dev.java.net/`.

Default Paths and File Names

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

TABLE P–2 Default Paths and File Names

Placeholder	Description	Default Value
as-install	Represents the base installation directory for Enterprise Server.	Installations on the Solaris™ operating system and Linux operating system: *user's-home-directory*`/glassfish-v3tp2/glassfish` Windows, all installations: *SystemDrive*`:\Program Files\glassfish-v3tp2\glassfish`
domain-root-dir	Represents the directory containing all domains.	*as-install*`/domains/`
domain-dir	Represents the directory for a domain. In configuration files, you might see *domain-dir* represented as follows: `${com.sun.aas.instanceRoot}`	*domain-root-dir*/*domain-name*
instance-dir	Represents the directory for a server instance.	*domain-dir*/*instance-name*

Typographic Conventions

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

TABLE P–3 Typographic Conventions

Typeface	Meaning	Example
`AaBbCc123`	The names of commands, files, and directories, and onscreen computer output	Edit your `.login` file. Use `ls -a` to list all files. `machine_name% you have mail.`

TABLE P–3 Typographic Conventions *(Continued)*

Typeface	Meaning	Example
`AaBbCc123`	What you type, contrasted with onscreen computer output	`machine_name%` **`su`** `Password:`
AaBbCc123	A placeholder to be replaced with a real name or value	The command to remove a file is `rm` *filename*.
AaBbCc123	Book titles, new terms, and terms to be emphasized (note that some emphasized items appear bold online)	Read Chapter 6 in the *User's Guide*. A *cache* is a copy that is stored locally. Do *not* save the file.

Symbol Conventions

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

TABLE P–4 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.

Documentation, Support, and Training

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

- Documentation (`http://www.sun.com/documentation/`)
- Support (`http://www.sun.com/support/`)
- Training (`http://www.sun.com/training/`)

Searching Sun Product Documentation

Besides searching Sun product documentation from the docs.sun.com[SM] 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, www.sun.com, and 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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CHAPTER 9

Administering Logging

This chapter contains instructions on how to configure logging and how to view server logs for the Sun GlassFish™ Enterprise Server.

The following topics are addressed here:

- "About Logging" on page 19
- "Configuring Logging" on page 21
- "Viewing Server Logs" on page 24

About Logging

Logging is the process by which the Enterprise Server captures data on the issues and events that occur in relation to the modules and applications of the Enterprise Server environment. The Enterprise Server logs are usually the first source of information when problems occur. Although application components can use the Apache Commons Logging Library to log messages, the platform standard JSR 047 API is recommended for better log configuration.

- "Log Records" on page 19
- "Logger Namespace Hierarchy" on page 20
- "The `logging.properties` File" on page 21

Log Records

[Remark 9–1 Reviewer: CARLA: Is any of the material in this Log Records section correct for Prelude?] Enterprise Server log messages are recorded in the server log, normally found at *domain-dir*/`logs/server.log`. In addition to the server log, the *domain-dir*/`logs` directory contains the following additional logs:

The Enterprise Server log records follow a uniform format:

[#|*yyyy-mm-dd*T*hh*:*mm*:*ss*.*SSS*-*Z*|*Log Level*|*ProductName-Version*|*LoggerName*|*Key Value Pairs*|*Message*|#]

- `[#` and `#]` mark the beginning and end of the record.
- The vertical bar (`|`) separates the fields of the record.
- *yyyy-mm-ddThh:mm:ss.SSSS-Z* specifies the date and time the record was created. For example: `2006-10-21T13:25:53.852-0400`
- *Log Level* specifies the desired log level. You can select any of the following values: `SEVERE`, `WARNING`, `INFO`, `CONFIG`, `FINE`, `FINER`, and `FINEST`. The default is `INFO`.
- *ProductName-Version* refers to the current version of the Enterprise Server. For example: `sun-appserver10`
- *LoggerName* is a hierarchical logger namespace that identifies the source of the log module. For example: `javax.enterprise.system.core`
- *Key Value Pairs* refers to pairs of key names and values, typically a thread ID. For example: `_ThreadID=14;`
- *Message* is the text of the log message. For all Enterprise Server `SEVERE` and `WARNING` messages and for many `INFO` messages, the message begins with a message ID that consists of a module code and a numerical value. For example: `CORE5004`

An example log record might look like this:

```
[#|2006-10-21T13:25:53.852-0400|INFO|sun-appserver10|javax.enterprise.
system.core|_ThreadID=13;|CORE5004: Resource Deployed:
[cr:jms/DurableConnectionFactory].|#]
```

Logger Namespace Hierarchy

[Remark 9–2 Reviewer: CARLA: Is any of the material in this Namespace section correct for Prelude?] A logger is provided for each of the Enterprise Server modules. The following table lists the names of the modules and the namespace for each logger. (The last three modules in the table do not appear on the Log Levels page of the Administration Console.)

TABLE 9–1 Logger Namespaces for Enterprise Server Modules

Module Name	Namespace
Admin	`javax.enterprise.system.tools.admin`
Classloader	`javax.enterprise.system.core.classloading`
Configuration	`javax.enterprise.system.core.config`
Deployment	`javax.enterprise.system.tools.deployment`
Persistence	`oracle.toplink.essentials`, `javax.enterprise.resource.jdo`, `javax.enterprise.system.container.cmp`

TABLE 9–1 Logger Namespaces for Enterprise Server Modules *(Continued)*

Module Name	Namespace
Root	`javax.enterprise`
Security	`javax.enterprise.system.core.security`
Util	`javax.enterprise.system.util`
Verifier	`javax.enterprise.system.tools.verifier`

Web container	`javax.enterprise.system.container.web`
	`org.apache.catalina`
	`org.apache.coyote`
	`org.apache.jasper`

The `logging.properties` File

You can configure logging for this release of Enterprise Server by editing the `logging.properties` file. The default `logging.properties` file is located in the same directory as the `domain.xml` file which is typically *domain-dir*/`config`. You can choose to use a different file by specifying a file name with the `java.util.logging.config.file` system property. For example:

```
java -Djava.util.logging.config.file=myfile
```

For instructions on configuring logging, see "Configuring Logging" on page 21.

Configuring Logging

Remark 9–3 Reviewer **Carla: Is it true that all changes are dynamic? I'm guessing.**

This section explains how to edit the `logging.properties` file to configure logging for the Prelude release of Enterprise Server. Logging configuration changes are dynamic and do not require server restart.

The following topics are addressed here:

- "Setting Global Properties" on page 22
- "Setting Default Global Logging" on page 22
- "Setting Handler-Specific Properties" on page 22
- "Logger-Specific Properties" on page 23

Setting Global Properties

A comma-separated list of log handlers is installed during startup of the Java Virtual Machine (JVM) and must be on the system classpath. The default handler, `ConsoleHandler`. is configured by default:

```
handlers= java.util.logging.ConsoleHandler
```

In this default case, messages at the INFO level and above are displayed.

You can add `FileHandler` as follows:

```
handlers= java.util.logging.FileHandler, java.util.logging.ConsoleHandler
```

However, in Enterprise Server, it is not a good idea to add a handler this way because the handler must be on the system classpath. A better approach to adding handlers is to define an HK2 component which implements the handler contract. For example:

```
@Service(name="console")
@ContractProvided(Handler.class)
public class MyConsoleHandler implements Handler {
       // implementation of Handler interface }
```

Setting Default Global Logging

The default global logging level specifies which kinds of events are logged across all loggers. For any given facility (such as EJB Logger), this global level can be overridden by a facility-specific level.

Remark 9–4 Reviewer

CARLA: What do you mean by facility? Component? modules and applications? I haven't used the term facility anywhere in administration.

The `ConsoleHandler` has a separate level setting that limits the messages that are displayed:

```
.level= INFO
```

Setting Handler-Specific Properties

The default handler in the `logging. properties` file is not registered through the handler's property because the implementation is not on the system class path. Enterprise Server will register this handler automatically because it is an HK2 component.

- "Handler-Specific Properties" on page 23
- "Setting the Message Level Limit" on page 23

- "Setting the Logging Output Directory" on page 23

Handler-Specific Properties

The following handler-specific properties apply:

Remark 9–5 Reviewer

Carla: Are there default settings for the properties listed below?

- **File Rotation Limit** Rotates the file based on time or size.

  ```
  com.sun.enterprise.server.logging.FileandSyslogHandler.file=logs/server.log
  ```

- **File Rotation Time Limit** Rotates the file based on time in minutes (if defined, takes precedence over size). If set to 0, there is no rotation based on time.

  ```
  com.sun.enterprise.server.logging.FileandSyslogHandler.rotationTimelimitInMinutes=0
  ```

- **File Rotation Size Limit** Rotates the file based on limit in bytes. If set to 0, there is no rotation based on file size. 500000 is the minimum.

  ```
  com.sun.enterprise.server.logging.FileandSyslogHandler.rotationLimitInBytes=0
  ```

- **Formatter** Uses formatter to format the log records in the server log file.

  ```
  com.sun.enterprise.server.logging.FileandSyslogHandler.formatter=com.
  sun.enterprise.server.logging.UniformLogFormatter
  ```

Setting the Logging Output Directory

The default file output destination is the user's home directory. For example:

```
java.util.logging.FileHandler.pattern = %h/java%u.log
java.util.logging.FileHandler.limit = 50000
java.util.logging.FileHandler.count = 1
java.util.logging.FileHandler.formatter = java.util.logging.XMLFormatter
```

Setting the Message Level Limit

The default limit for message output to the console is INFO level and above. For example:

```
java.util.logging.ConsoleHandler.level = INFO
java.util.logging.ConsoleHandler.formatter =
com.sun.enterprise.server.logging.UniformLogFormatter
```

Logger-Specific Properties

To use the additional properties provided in the `logging.properties` file for specific loggers, uncomment the line for the property you want to use and save the file. The logging code is automatically reconfigured.

Facility-specific properties provide extra control for each logger. These properties are set to level FINE by default.

- Tools Logger

  ```
  javax.enterprise.system.tools.level=FINE
  ```

- EJB Logger

  ```
  javax.enterprise.system.container.ejb.level=FINE
  ```

- Security Logger

  ```
  javax.enterprise.system.core.security.level=FINE
  ```

- Administration Logger

  ```
  javax.enterprise.system.tools.admin.level=FINE
  ```

- Root Logger

  ```
  javax.enterprise.level=FINE
  ```

- Web Logger

  ```
  javax.enterprise.system.container.web.level=FINE
  ```

For example, you can set the `com.xyz.foo` logger to log only SEVERE messages as follows:

```
com.xyz.foo.level = SEVERE
```

Viewing Server Logs

[Remark 9–6 Reviewer: CARLA: Is any of the material in this Viewing Server Logs section correct for Prelude? It's all referring to the GUI, and mentions the get and list commands. Does any of this apply for Prelude? If not, how does user view logging recors?] In the Administration Console View Logs page, you can provide search criteria for displaying only those records that you want to see.

To view log records on the command line, use the `get` and `list` commands of the `asadmin` utility.

The following filtering options are provided:

Instance Name	Choose an instance name from the drop-down list to view the log for that server instance. The default is the current server instance.
Log File	Choose a log file name from the drop-down list to view the contents of that log. The default is `server.log`.

Timestamp

To view the most recent messages, select Most Recent (the default). To view messages only from a certain period of time, select Specific Range and type a date and time value in the From and To fields that appear. For the Time value, the syntax must take the form *hh:mm:ss.SSS* (*SSS* stands for milliseconds). For example: `17:10:00.000`

Log Level

To filter messages by log level, choose a log level from the drop-down list. By default, the display includes all messages that appear in the server log at the chosen log level, including more severe levels. Select the checkbox labeled "Do not include more severe messages" to display messages at only the chosen level.

- The most recent 40 entries in the server log appear, with the settings specified on the Logging Settings and Log Levels pages.
- Click the arrow next to the Timestamp header to sort the messages so that the most recent message is displayed last.
- To view a formatted version of any message, click the link marked (details). A window labeled Log Entry Detail presents a formatted version of the message.
- At the end of the list of entries, click the buttons to view earlier or later entries in the log file.

Advanced Search

Click Advanced Search in the Search Criteria area to make additional refinements to your criteria. (Click Basic Search to hide the Advanced Options area.) Use the Advanced Options fields as follows:

Logger

To filter by module, choose one or more namespaces from the drop-down list. Use shift-click or control-click to choose multiple namespaces. Selecting a namespace at a higher level selects all the namespaces below it. For example, selecting `javax.enterprise.system` also selects the loggers for all the modules under that namespace: `javax.enterprise.system.core`, `javax.enterprise.system.tools.admin`, and so on.

Custom Logger

To view messages from loggers specific to a particular application, type the logger names in the text field, one per line. If the application has several modules, you can view any or all of them.

To view messages from all modules in the application, type `com.mycompany.myapp`. To view

	messages from `module2` only, type `com.mycompany.myapp.module2`. When you specify one or more custom loggers, messages from Enterprise Server modules appear only if you specify them explicitly in the Logger area.
Name-Value Pairs	To view output from a specific thread, type the key name and value for that thread in the text field. The key name is `_ThreadID`. For example: `_ThreadID=13` Suppose that `com.mycompany.myapp.module2` runs in several threads. To refine the log viewer to show only the output from a single thread, specify that module's logger in the Custom Logger field, and then specify the thread ID in this field.
Display	To view more than 40 messages at a time (the default), choose another of the available values from the drop-down list (100, 250, or 1000). To view stack traces, deselect the "Limit excessively long messages" checkbox. By default, stack traces do not appear in the viewer; to view them, click the `(details)` link for a message.

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