Sun GlassFish Enterprise Server v3 Domain File Format Reference

Sun Microsystems, Inc.
4150 Network Circle
Santa Clara, CA 95054
U.S.A.

Part No: 820–7694–11
January 2010

100114@23031

Contents

Preface 9

1 The domain.xml File 15
About the domain.xml File 15
Verification 16
Extensibility 16
Backup 16
Default Values 17
Variables 17
Element Referencing 18
Element Hierarchy 18
Alphabetical List of Elements 21
A 22
access-log 22
admin-object-resource 23
admin-service 24
appclient-module 25
application 26
application-ref 30
applications 30
audit-module 31
auth-realm 32
B 35
backend-principal 35
C 35
config 35
configs 37
connection-pool 37

connector-connection-pool 38
connector-module 42
connector-resource 43
connector-service 44
context-param 45
custom-resource 46
D 47
das-config 47
description 48
domain 49
E 50
ejb-container 50
ejb-module 52
ejb-timer-service 53
engine 54
env-entry 56
env-entry-name 56
env-entry-type 57
env-entry-value 57
extension-module 57
external-jndi-resource 58
F 59
file-cache 59
G 60
group-map 60
H 61
http 61
http-access-log 64
http-file-cache 64
http-listener 65
http-protocol 68
http-service 69
I 71
iiop-listener 71
iiop-service 72
J 73

j2ee-application ... 73
jacc-provider ... 74
java-config ... 75
jdbc-connection-pool ... 77
jdbc-resource ... 83
jms-host ... 84
jms-service ... 85
jmx-connector ... 87
jruby-container ... 88
jruby-runtime-pool ... 89
jvm-options ... 90
K ... 90
keep-alive ... 90
L ... 91
lifecycle-module ... 91
log-service ... 92
M ... 94
mail-resource ... 94
manager-properties ... 96
mdb-container ... 97
message-security-config ... 98
module ... 99
module-log-levels ... 100
module-monitoring-levels ... 101
monitoring-service ... 102
N ... 103
network-config ... 103
network-listener ... 103
network-listeners ... 104
O ... 105
orb ... 105
P ... 106
param-name ... 106
param-value ... 106
port-unification ... 106
principal ... 107

principal-map 107
profiler 108
property 109
protocol 110
protocol-chain 111
protocol-chain-instance-handler 112
protocol-filter 112
protocol-finder 113
protocols 113
provider-config 114
R 115
registry-location 115
request-policy 116
request-processing 117
resource-adapter-config 117
resource-ref 118
resources 119
response-policy 120
S 121
security-map 121
security-service 121
selection-key-handler 123
server 123
servers 124
session-config 125
session-manager 125
session-properties 126
ssl 127
ssl-client-config 128
store-properties 129
system-applications 130
system-property 130
T 132
thread-pool 132
thread-pools 133
transaction-service 133

transformation-rule 135
transport 136
transports 137
U 138
user-group 138
V 138
virtual-server 138
W 146
web-container 146
web-module 146
web-module-config 147
web-service-endpoint 148
work-security-map 149

Index 151

Preface

This *Domain File Format Reference* provides information about the Sun GlassFish™ Enterprise Server configuration file, `domain.xml`. This file contains most of the Enterprise Server configuration.

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

Enterprise Server v3 is developed through the GlassFish project open-source community at `https://glassfish.dev.java.net/`. The GlassFish project provides a structured process for developing the Enterprise Server platform that makes the new features of the Java EE platform available faster, while maintaining the most important feature of Java EE: compatibility. It enables Java developers to access the Enterprise Server source code and to contribute to the development of the Enterprise Server. The GlassFish project is designed to encourage communication between Sun engineers and the community.

The following topics are addressed here:

- "Enterprise Server Documentation Set" on page 9
- "Related Documentation" on page 11
- "Typographic Conventions" on page 12
- "Symbol Conventions" on page 12
- "Default Paths and File Names" on page 13
- "Documentation, Support, and Training" on page 14
- "Searching Sun Product Documentation" on page 14
- "Third-Party Web Site References" on page 14
- "Sun Welcomes Your Comments" on page 14

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/1343.9`. 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.
Upgrade Guide	Explains how to upgrade to the latest version of Enterprise Server. This guide also describes differences between adjacent product releases and configuration options that can result in incompatibility with the product specifications.
Administration Guide	Explains how to configure, monitor, 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.
Application Deployment Guide	Explains how to assemble and deploy applications to the Enterprise Server and provides information about deployment descriptors.
Your First Cup: An Introduction to the Java EE Platform	Provides a short tutorial for beginning Java EE programmers that explains the entire process for developing a simple enterprise application. The sample application is a web application that consists of a component that is based on the Enterprise JavaBeans™ specification, a JAX-RS web service, and a JavaServer™ Faces component for the web front end.
Application Development 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.
Add-On Component Development Guide	Explains how to use published interfaces of Enterprise Server to develop add-on components for Enterprise Server. This document explains how to perform *only* those tasks that ensure that the add-on component is suitable for Enterprise Server.
Embedded Server Guide	Explains how to run applications in embedded Enterprise Server and to develop applications in which Enterprise Server is embedded.
Scripting Framework Guide	Explains how to develop scripting applications in languages such as Ruby on Rails and Groovy on Grails for deployment to Enterprise Server.
Troubleshooting Guide	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
Error Message Reference	Describes error messages that you might encounter when using Enterprise Server.
Reference Manual	Provides reference information in man page format for Enterprise Server administration commands, utility commands, and related concepts.
Domain File Format Reference	Describes the format of the Enterprise Server configuration file, `domain.xml`.
Java EE 6 Tutorial, Volume I	Explains how to use Java EE 6 platform technologies and APIs to develop Java EE applications.
Message Queue Release Notes	Describes new features, compatibility issues, and existing bugs for Sun GlassFish Message Queue.
Message Queue Administration Guide	Explains how to set up and manage a Sun GlassFish Message Queue messaging system.
Message Queue Developer's Guide for JMX Clients	Describes the application programming interface in Sun GlassFish Message Queue for programmatically configuring and monitoring Message Queue resources in conformance with the Java Management Extensions (JMX).
System Virtualization Support in Sun Java System Products	Summarizes Sun support for Sun Java System products when used in conjunction with system virtualization products and features.

Related Documentation

The Java EE 6 Tutorial, Volume II (`https://www.sun.com/offers/details/java_ee6_tutorial.xml`) contains all the topics in *Java EE 6 Tutorial, Volume I* and adds advanced topics, additional technologies, and case studies. The document is available to registered users of Enterprise Server.

Javadoc™ tool reference documentation for packages that are provided with Enterprise Server is available as follows:

- The API specification for version 6 of Java EE is located at `http://java.sun.com/javaee/6/docs/api/`.
- The API specification for Enterprise Server v3, including Java EE 6 platform packages and nonplatform packages that are specific to the Enterprise Server product, is located at: `https://glassfish.dev.java.net/nonav/docs/v3/api/`.

Additionally, the following resources might be useful:

- The Java EE Specifications (`http://java.sun.com/javaee/technologies/index.jsp`)
- 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/`.

The sample applications demonstrate a broad range of Java EE technologies. The samples are bundled with the Java EE Software Development Kit (SDK).

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 `.login` file. Use `ls -a` to list all files. `machine_name% you have mail.`
`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–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.

TABLE P–3 Symbol Conventions *(Continued)*

Symbol	Description	Example	Meaning
`${ }`	Indicates a variable reference.	`${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
as-install	Represents the base installation directory for Enterprise Server. In configuration files, *as-install* is represented as follows: `${com.sun.aas.installRoot}`	Installations on the Solaris™ operating system, Linux operating system, and Mac operating system: *user's-home-directory*`/glassfishv3/glassfish` Windows, all installations: *SystemDrive*`:\glassfishv3\glassfish`
as-install-parent	Represents the parent of the base installation directory for Enterprise Server.	Installations on the Solaris operating system, Linux operating system, and Mac operating system: *user's-home-directory*`/glassfishv3` Windows, all installations: *SystemDrive*`:\glassfishv3`
domain-root-dir	Represents the directory in which a domain is created by default.	*as-install*`/domains/`
domain-dir	Represents the directory in which a domain's configuration is stored. In configuration files, *domain-dir* is represented as follows: `${com.sun.aas.instanceRoot}`	*domain-root-dir*`/`*domain-name*

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℠ 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.

Note – Sun is not responsible for the availability of third-party web sites mentioned in this document. Sun does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Sun will not be responsible or liable for any actual or alleged damage or loss caused or alleged to be caused by or in connection with use of or reliance on any such content, goods, or services that are available on or through such sites or resources.

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 820-7694.

◆ ◆ ◆ CHAPTER 1

The domain.xml File

This chapter describes the `domain.xml` configuration file for Sun GlassFish™ Enterprise Server v3 in these sections:

- "About the domain.xml File" on page 15
- "Alphabetical List of Elements" on page 21

Note – Some features are not available if you have installed the Web Profile. Elements related to these features are ignored.

Note – Sun GlassFish Enterprise Server v3 does not support clustering or load balancing features. Elements related to these features are ignored.

Note – Subelements must be defined in the order in which they are listed under each **Subelements** heading in this chapter unless otherwise noted.

About the domain.xml File

The `domain.xml` file contains most of the Sun GlassFish Enterprise Server configuration. The `domain.xml` file is located in the domain configuration directory, which is typically *domain-dir*`/config`.

There is no DTD file or schema that determines the format of the `domain.xml` file. The server's configuration is dictated by the Java interfaces with appropriate annotations and `domain.xml` serves as a seed for that configuration. At any point in time, the overall structure of an XML

element present in `domain.xml` is clearer when one sees the Java interface in the package `com.sun.enterprise.config.serverbeans`. Thus these Java interfaces take the place of the DTD file in previous releases.

This file is further described in the following sections:

- "Verification" on page 16
- "Extensibility" on page 16
- "Backup" on page 16
- "Default Values" on page 17
- "Variables" on page 17
- "Element Referencing" on page 18
- "Element Hierarchy" on page 18

Note – Settings in the Enterprise Server deployment descriptors override corresponding settings in the `domain.xml` file unless otherwise stated. For more information about the Enterprise Server deployment descriptors, see the *Sun GlassFish Enterprise Server v3 Application Deployment Guide*.

Verification

To verify that the structure and content of the `domain.xml` file are correct, use the `asadmin verify-domain-xml` command. To use this command on the default domain in the default location, simply type `asadmin verify-domain-xml` at the command line. Any errors found are printed on the screen. For more information about this command, see `verify-domain-xml(1)`.

Extensibility

If you create new add-on components for the Enterprise Server, you can add any configuration these components require to the `domain.xml` file. For more information on extending the Enterprise Server by creating add-on components, see the *Sun GlassFish Enterprise Server v3 Add-On Component Development Guide*.

Backup

A backup of the `domain.xml` file is created whenever the configuration is changed using the Administration Console or the `asadmin` command. The backup file is located in the domain configuration directory, typically *domain-dir*`/config`, and is named `domain.xml.bak`. If you make a mistake editing the `domain.xml` file, you can overwrite it using the backup file.

Default Values

In this manual, the term *default* is used in its broader sense, and not in the specific way it is used in the XML 1.0 standard. A default value is an initial value or the value used if no value is present in the XML file. A default value can be any of the following:

- A value supplied by the XML parser when no value is found in the `domain.xml` file. The relevant element or attribute is optional.
- A value supplied by the Enterprise Server when no value is found in the `domain.xml` file and the XML parser doesn't provide a value. The relevant element or attribute is optional.
- An initial value supplied when the `domain.xml` file is created. The relevant element or attribute might or might not be optional.

Note – Removal of initial values in `domain.xml` is not recommended because attributes may be left without values or values may revert to internal defaults. Explicitly changing values is recommended.

Only values that differ from internal defaults are included in the `domain.xml` file.

Variables

Variables and variable references are needed for two reasons:

- Parts of the Enterprise Server share much configuration information but differ in specific details.
- Parts of the configuration come from the system environment but must still be captured in the configuration.

Variable references appear in the `domain.xml` file as strings that begin with the characters `${` and end with the character `}`. For example, the string `${com.sun.enterprise.myVar}` is a reference to the variable `com.sun.enterprise.myVar`.

Variables are defined both outside of and within `domain.xml`. Predefined variables that exist outside of `domain.xml` are defined as Java System Properties. Within `domain.xml`, a variable is defined using the "system-property" on page 130 element or the "jvm-options" on page 90 element.

The `system-property` element's `name` attribute is the name of a variable; its `value` attribute is the definition of the variable. For example, the following `system-property` element defines a `port-number` variable with the value `6500`:

```
<system-property name="port-number" value="6500"/>
```

Multiple `system-property` subelements are permitted within "server" on page 123, "config" on page 35, and "domain" on page 49 elements.

A variable defined in the `jvm-options` element is a Java System Property with the `-D` flag. For example, the following `jvm-options` element defines a `port-number` variable with the value `5500`:

```
<jvm-option>-Dport-number=5500</jvm-option>
```

Multiple definitions for the same variable are permitted. The Enterprise Server determines the actual value of a variable by searching for its first definition in a strict hierarchy of the elements within `domain.xml`. The hierarchy is as follows:

```
server → config → jvm-options → domain → System
```

Implicit in this hierarchy is the notion of reference and containment. A variable referenced in a `server` element is only looked up:

- In the `config` element that references that specific `server`
- In the `jvm-options` subelements of the `config` element referenced by that `server`

Element Referencing

One element *references* another when an attribute of the referencing element has the same value as an attribute of the referenced element. For example, the "application-ref" on page 30 element references an application that is deployed to its parent "server" on page 123 element. The `application-ref` element's `ref` attribute has the same value as the `name` attribute of an "application" on page 26 element.

The referencing `application-ref` element might look like this:

```
<application-ref ref="MyServlet"/>
```

The referenced "application" on page 26 element might look like this:

```
<application name="MyServlet" location="myservletdir"/>
```

Element Hierarchy

The element hierarchy for the `domain.xml` file is as follows. To make the hierarchy more readable, elements having "property" on page 109 as their last or only subelement are marked with a `P`, and the `property` subelements are not shown. Parent/child relationships between elements are shown, but not cardinality. For those details, see the element descriptions.

```
domain      P
.    system-applications
.    .    application      P
```

```
. . . engine P
. . . module
. . . . engine P
. . . . . web-module-config
. . . . . . env-entry
. . . . . . . env-entry-name
. . . . . . . env-entry-type
. . . . . . . env-entry-value
. . . . . . context-param
. . . . . . . param-name
. . . . . . . param-value
. applications
. . application P
. . . engine P
. . . module
. . . . engine P
. . . . . web-module-config
. . . . . . env-entry
. . . . . . . env-entry-name
. . . . . . . env-entry-type
. . . . . . . env-entry-value
. . . . . context-param
. . . . . . param-name
. . . . . . param-value
. . lifecycle-module P
. . j2ee-application P
. . web-module P
. . . web-service-endpoint
. . . . registry-location
. . . . transformation-rule
. . ejb-module P
. . . web-service-endpoint
. . . . registry-location
. . . . transformation-rule
. . connector-module P
. . appclient-module P
. . extension-module P
. resources
. . custom-resource P
. . external-jndi-resource P
. . jdbc-resource P
. . mail-resource P
. . admin-object-resource P
. . connector-resource P
. . resource-adapter-config P
. . jdbc-connection-pool P
. . connector-connection-pool P
. . . security-map
```

```
.    .    .    .    principal
.    .    .    .    user-group
.    .    .    .    backend-principal
.    .    work-security-map
.    .    .    principal-map
.    .    .    group-map
.    configs
.    .    config     P
.    .    .    http-service     P
.    .    .    .    access-log
.    .    .    .    virtual-server     P
.    .    .    .    .    http-access-log
.    .    .    network-config
.    .    .    .    transports
.    .    .    .    .    selection-key-handler
.    .    .    .    .    transport
.    .    .    .    protocols
.    .    .    .    .    protocol
.    .    .    .    .    .    http
.    .    .    .    .    .    .    file-cache
.    .    .    .    .    .    port-unification
.    .    .    .    .    .    .    protocol-finder
.    .    .    .    .    .    protocol-chain-instance-handler
.    .    .    .    .    .    .    protocol-chain
.    .    .    .    .    .    protocol-filter
.    .    .    .    .    .    ssl
.    .    .    .    network-listeners
.    .    .    .    .    network-listener
.    .    .    iiop-service
.    .    .    .    orb     P
.    .    .    .    ssl-client-config
.    .    .    .    .    ssl
.    .    .    .    iiop-listener     P
.    .    .    .    .    ssl
.    .    .    admin-service     P
.    .    .    .    jmx-connector     P
.    .    .    .    .    ssl
.    .    .    .    das-config     P
.    .    .    connector-service
.    .    .    web-container     P
.    .    .    .    session-config
.    .    .    .    .    session-manager
.    .    .    .    .    .    manager-properties     P
.    .    .    .    .    .    store-properties     P
.    .    .    .    .    session-properties     P
.    .    .    ejb-container     P
.    .    .    .    ejb-timer-service     P
.    .    .    mdb-container     P
```

```
.    .    .    jms-service      P
.    .    .    .    jms-host      P
.    .    .    log-service      P
.    .    .    .    module-log-levels      P
.    .    .    security-service      P
.    .    .    .    auth-realm      P
.    .    .    .    jacc-provider      P
.    .    .    .    audit-module      P
.    .    .    .    message-security-config
.    .    .    .    .    provider-config      P
.    .    .    .    .    .    request-policy
.    .    .    .    .    .    response-policy
.    .    .    transaction-service      P
.    .    .    monitoring-service      P
.    .    .    .    module-monitoring-levels      P
.    .    .    java-config      P
.    .    .    .    profiler      P
.    .    .    .    .    jvm-options
.    .    .    .    jvm-options
.    .    .    thread-pools
.    .    .    .    thread-pool      P
.    .    .    system-property
.    .    .    jruby-container
.    .    .    .    jruby-runtime-pool
.    servers
.    .    server      P
.    .    .    application-ref
.    .    .    resource-ref
.    .    .    system-property
.    system-property
```

Alphabetical List of Elements

- "A" on page 22
- "B" on page 35
- "C" on page 35
- "D" on page 47
- "E" on page 50
- "F" on page 59
- "G" on page 60
- "H" on page 61
- "I" on page 71
- "J" on page 73
- "K" on page 90
- "L" on page 91
- "M" on page 94

- "N" on page 103
- "O" on page 105
- "P" on page 106
- "R" on page 115
- "S" on page 121
- "T" on page 132
- "U" on page 138
- "V" on page 138
- "W" on page 146

A

access-log

Defines access log settings for each "http-access-log" on page 64 subelement of each "virtual-server" on page 138.

Superelements

"http-service" on page 69

Subelements

none

Attributes

The following table describes attributes for the `access-log` element.

TABLE 1–1 `access-log` Attributes

Attribute	Default	Description
`format`	`%client.name% %auth-user-name% %datetime% %request% %status% %response.length%`	(optional) Specifies the format of the access log. For a complete list of token values you can use in the format, see the online help for the Access Log tab of the HTTP Service page in the Administration Console.
`rotation-policy`	`time`	(optional) Specifies the condition that triggers log rotation. The only legal value is `time`, which rotates log files at the `rotation-interval-in-minutes` interval.

TABLE 1–1 `access-log` Attributes *(Continued)*

Attribute	Default	Description
`rotation-interval-in-minutes`	`1440`	(optional) Specifies the time interval between log rotations if `rotation-policy` is set to `time`.
`rotation-suffix`	`yyyy-MM-dd`	(optional) Specifies the format of the timestamp appended to the access log name when log rotation occurs. For supported formats, see http://java.sun.com/javase/6/docs/api/java/text/SimpleDateFormat.html. The following value is supported for backward compatibility. It results in the same format as the default. `%YYYY;%MM;%DD;-%hh;h%mm;m%ss;s`
`rotation-enabled`	`true`	(optional) If `true`, enables log rotation.

admin-object-resource

Defines an administered object for a resource adapter.

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `admin-object-resource` element.

TABLE 1–2 `admin-object-resource` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `admin-object-resource` element.

TABLE 1–3 `admin-object-resource` Attributes

Attribute	Default	Description
`jndi-name`	none	Specifies the JNDI name for the resource.

TABLE 1–3 `admin-object-resource` Attributes *(Continued)*

Attribute	Default	Description
`res-type`	none	Specifies the fully qualified type of the resource.
`res-adapter`	none	Specifies the name of the resource adapter, as specified in the `name` attribute of a connector "application" on page 26 element.
`object-type`	`user`	(optional) Defines the type of the resource. Allowed values are: ■ `system-all` - A system resource for all server instances and the domain application server. ■ `system-admin` - A system resource only for the domain application server. ■ `system-instance` - A system resource for all server instances only. ■ `user` - A user resource.
`enabled`	`true`	(optional) Determines whether this resource is enabled at runtime.

Properties

Properties of the `admin-object-resource` element are the names of setter methods of the class referenced by the `adminobject-class` element of the `ra.xml` file. Some of the property names can be specified in the `adminobjectType` element.

admin-service

Contains configuration for JMX connectors, the domain admin server (DAS), and related properties.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `admin-service` element.

TABLE 1–4 `admin-service` Subelements

Element	Required	Description
"jmx-connector" on page 87	zero or more	Configures a JSR 160/255 compliant remote JMX connector, which responds to JConsole port 8686.
"das-config" on page 47	only one	Defines a domain administration server configuration.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `admin-service` element.

TABLE 1–5 `admin-service` Attributes

Attribute	Default	Description
`type`	`das-and-server`	Specifies whether the server instance is a regular instance (`server`), a domain administration server (`das`), or a combination (`das-and-server`). modifying this value is not recommended.
`system-jmx-connector-name`	none	Specifies the name of the internal "jmx-connector" on page 87.

appclient-module

This element is deprecated. Use an "application" on page 26 element instead.

Specifies a deployed application client container (ACC) module.

Superelements

"applications" on page 30

Subelements

The following table describes subelements for the `appclient-module` element.

TABLE 1–6 `appclient-module` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `appclient-module` element.

TABLE 1–7 `appclient-module` Attributes

Attribute	Default	Description
`name`	none	The name of the ACC module.

TABLE 1–7 `appclient-module` Attributes *(Continued)*

Attribute	Default	Description
`location`	none	A fully qualified or relative path to the directory to which the contents of the client `.jar` file have been extracted. If relative, it is relative to the following directory: *domain-dir*`/applications/`
`directory-deployed`	`false`	(optional) Specifies whether the application has been deployed as a directory.
`java-web-start-enabled`	`true`	(optional) Specifies whether Java Web Start access is permitted for this application client.

application

Specifies a system application, a Java EE module or application, or an application created using another supported technology such as JRuby.

The `application` element replaces the `web-module`, `j2ee-application`, `appclient-module`, `connector-module`, `lifecycle-module`, `extension-module`, and `ejb-module` elements of previous releases, which are converted to `application` elements during the upgrade process.

Superelements

"system-applications" on page 130, "applications" on page 30

Subelements

The following table describes subelements for the `application` element.

TABLE 1–8 `application` Subelements

Element	Required	Description
"module" on page 99	one or more	Specifies a stand-alone module or a component of a Java EE application.
"engine" on page 54	one or more	Specifies an engine.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `application` element.

TABLE 1–9 `application` Attributes

Attribute	Default	Description
`name`	none	The name of the application.
`description`	none	(optional) Specifies a text description of this element.
`location`	none	(optional) The location of the application in the Enterprise Server file system. If a relative path is specified, it is relative to the *domain-dir*`/applications/` directory. **Note –** Deployment directories may change between Enterprise Server releases.
`libraries`	none	(optional) Specifies a comma-separated list of absolute or relative paths to libraries specific to this module or application. A relative path is relative to *domain-dir*`/lib/applibs`. If the path is absolute, the path must be accessible to the domain administration server (DAS), which means it must be under *domain-dir*. The libraries are made available to the application in the order in which they are specified.
`object-type`	`user`	(optional) Defines the type of the resource. For an application, the only allowed value is `user`.
`enabled`	`true`	(optional) Determines whether the application is enabled.
`context-root`	none	(optional) The context root at which the application is deployed. The context root can be the empty string or just `/`. The context root can start with the `/` character, but doesn't have to.
`directory-deployed`	`false`	(optional) Specifies whether the application has been deployed as a directory.

Properties

The following table describes properties for the `application` element. These properties are specified during deployment using one of the following:

- The `--property` or `--properties` option of the `asadmin deploy` command. For more information, see `deploy(1)`.
- The properties table on the deployment page for the application or module type in the Administration Console. For more information, see the Administration Console Online Help.

The properties that are valid for a given application depend on the `sniffer` attribute values of the child or grandchild "engine" on page 54 elements.

TABLE 1–10 `application` Properties

Property	Default	Description
`java-web-start-enabled`	`true`	Specifies whether Java Web Start access is permitted for an application client module.

TABLE 1–10 `application` Properties *(Continued)*

Property	Default	Description
`jar-signing-alias`	`s1as`	Specifies the alias for the security certificate with which the application client container JAR file is signed. Java Web Start won't execute code requiring elevated permissions unless it resides in a JAR file signed with a certificate that the user's system trusts. For your convenience, Enterprise Server signs the JAR file automatically using the self-signed certificate from the domain, `s1as`. Java Web Start then asks the user whether to trust the code and displays the Enterprise Server certificate information. To sign this JAR file with a different certificate, add the certificate to the domain keystore, then use this property. To add a certificate to the domain keystore, see "Administering JSSE Certificates " in *Sun GlassFish Enterprise Server v3 Administration Guide*. For example, you can use a certificate from a trusted authority, which avoids the Java Web Start prompt, or from your own company, which users know they can trust.
`class-name`	none	The fully qualified name of a lifecycle module class file. A lifecycle module class must implement the `com.sun.appserv.server.LifecycleListener` interface.
`classpath`	value of `application-root` attribute of "domain" on page 49 element	The classpath for a lifecycle module. Specifies where the module is located.
`load-order`	none	Determines the order in which lifecycle modules are loaded at startup. Modules with smaller integer values are loaded sooner. Values can range from `101` to the operating system's `MAXINT`. Values from `1` to `100` are reserved.
`is-failure-fatal`	`false`	Determines whether the server is shut down if a lifecycle module fails.
`keepSessions`	`false`	If `true`, specifies that active sessions of the application being redeployed are preserved and then restored when redeployment is complete. If any active session of the application fails to be preserved or restored, none of the sessions are available when the redeployment is complete. However, redeployment continues and a warning is logged. To preserve active sessions, the Enterprise Server serializes the sessions and saves them in memory. To restore the sessions, the class loader of the newly redeployed application deserializes any sessions that were previously saved.

TABLE 1–10 `application` Properties *(Continued)*

Property	Default	Description
`compatibility`	none (no backward compatibility)	Specifies the Enterprise Server release with which to be backward compatible in terms of JAR visibility requirements for applications. The only allowed value is `v2`, which refers to GlassFish version 2 or Enterprise Server version 9.1 or 9.1.1. The Java EE 6 platform specification imposes stricter requirements than Java EE 5 did on which JAR files can be visible to various modules within an EAR file. In particular, application clients must not have access to EJB JAR files or other JAR files in the EAR file unless references use the standard Java SE mechanisms (extensions, for example) or the Java EE `library-directory` mechanism. Setting this property to `v2` removes these Java EE 6 restrictions.
`jruby.home`	*as-install*`/jruby`	Specifies the directory where JRuby itself (not the Enterprise Server JRuby container) is installed. Overrides the `jruby-home` attribute of "jruby-container" on page 88.
`jruby.runtime`	`1`	Specifies the initial number of JRuby runtimes to start. Must be at greater than zero, at least `jruby.runtime.min`, and `jruby.runtime.max` or less. Overrides the `jruby-runtime` attribute of "jruby-runtime-pool" on page 89.
`jruby.runtime.min`	`1`	Specifies the minimum number of JRuby runtimes in the pool. Must be greater than zero, `jruby.runtime` or less, and `jruby.runtime.max` or less. Overrides the `jruby-runtime-min` attribute of "jruby-runtime-pool" on page 89.
`jruby.runtime.max`	`1`	Specifies the maximum number of JRuby runtimes in the pool. Must be greater than zero, at least `jruby.runtime.min`, and at least `jruby.runtime`. Overrides the `jruby-runtime-max` attribute of "jruby-runtime-pool" on page 89.
`jruby.rackEnv`	`development`	Specifies the environment in which a JRuby application such as Rails or Merb runs. Allowed values are `development`, `production`, or `test`.
`jruby.applicationType`	Computed through auto-detection	Specifies the name of a supported framework or the path to a script that initializes the user's framework. Allowed values corresponding to supported frameworks are `rails`, `merb`, or `sinatra`. Setting this property bypasses the normal, and potentially lengthy, auto-detection process and forces deployment on the specified framework. If the deployed application is not written for the specified framework, errors result.
`jruby.MTSafe`	Computed through auto-detection	If `true`, specifies that a framework being started using `jruby.applicationType` is thread-safe and therefore does not need a pool created for it. This property affects applications started using an auto-detected user-provided startup script. If `jruby.applicationType` is set and `jruby.MTsafe` is not set or is set to `false`, the application starts with a pool of application instances, and each instance of the application is accessed by one thread at a time. This property only affects frameworks being launched where the thread safety cannot be automatically determined. Setting `jruby.MTsafe` to `true` does not cause an auto-detected Rails 2.1.*x* application to be launched in thread-safe mode, nor can it be used to force a thread-safe framework to start in pooled mode.

application-ref

References an application or module deployed to the server.

Superelements

"server" on page 123

Subelements

none

Attributes

The following table describes attributes for the `application-ref` element.

TABLE 1–11 `application-ref` Attributes

Attribute	Default	Description
`enabled`	`true`	(optional) Determines whether the application or module is enabled on the server on which it is deployed.
`virtual-servers`	all virtual servers	(optional) In a comma-separated list, references `id` attributes of the "virtual-server" on page 138 elements to which the web "application" on page 26 is deployed. If you deploy a web application and don't specify any assigned virtual servers, the web application is assigned to all currently defined virtual servers. If you then create additional virtual servers and want to assign existing web applications to them, you must redeploy the web applications. For more information about deployment, see the *Sun GlassFish Enterprise Server v3 Application Deployment Guide*.
`disable-timeout-in-minutes`	`30`	(optional) Specifies the time it takes this application to reach a quiescent state after having been disabled.
`ref`	none	References the `name` attribute of an "application" on page 26 element.

applications

Contains deployed Java EE applications, Java EE modules, and applications created using other supported technologies.

Superelements

"domain" on page 49

Subelements

The following table describes subelements for the `applications` element.

TABLE 1–12 `applications` Subelements

Element	Required	Description
"application" on page 26	zero or more	Specifies an application. The `application` element replaces the `web-module`, `j2ee-application`, `appclient-module`, `connector-module`, `lifecycle-module`, `extension-module`, and `ejb-module` elements of previous releases, which are converted to `application` elements during the upgrade process.
"lifecycle-module" on page 91	zero or more	Deprecated. Use `application` instead.
"j2ee-application" on page 73	zero or more	Deprecated. Use `application` instead.
"ejb-module" on page 52	zero or more	Deprecated. Use `application` instead.
"web-module" on page 146	zero or more	Deprecated. Use `application` instead.
"connector-module" on page 42	zero or more	Deprecated. Use `application` instead.
"appclient-module" on page 25	zero or more	Deprecated. Use `application` instead.
"extension-module" on page 57	zero or more	Deprecated. Use `application` instead.

audit-module

Specifies an optional plug-in module that implements audit capabilities. Audit modules collect and store information on incoming requests (servlets, EJB components) and outgoing responses.

Superelements

"security-service" on page 121

Subelements

The following table describes subelements for the `audit-module` element.

TABLE 1–13 `audit-module` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `audit-module` element.

TABLE 1–14 `audit-module` Attributes

Attribute	Default	Description
`name`	`default`	Specifies the name of this audit module.
`classname`	`com.sun.enterprise.security.Audit`	Specifies the Java class that implements this audit module.

Properties

The following table describes properties for the `audit-module` element.

TABLE 1–15 `audit-module` Properties

Attribute	Default	Description
`auditOn`	`false`	If `true`, causes the loading of the audit module and ensures that it is called by the Enterprise Server's audit library at audit points.

auth-realm

Defines a realm for authentication.

Authentication realms require provider-specific properties, which vary depending on what a particular implementation needs.

For more information about how to define realms, see the *Sun GlassFish Enterprise Server v3 Administration Guide*.

Here is an example of the default `file` realm:

```
<auth-realm name="file"
     classname="com.sun.enterprise.security.auth.realm.file.FileRealm">
     <property name="file" value="${com.sun.aas.instanceRoot}/config/admin-keyfile"/>
     <property name="jaas-context" value="fileRealm"/>
 </auth-realm>
```

Which properties an `auth-realm` element uses depends on the value of the `auth-realm` element's `name` attribute. The `file` realm uses `file` and `jaas-context` properties. Other realms use different properties.

Superelements

"security-service" on page 121

Subelements

The following table describes subelements for the `auth-realm` element.

TABLE 1–16 `auth-realm` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `auth-realm` element.

TABLE 1–17 `auth-realm` Attributes

Attribute	Default	Description
`name`	none	Specifies the name of this realm.
`classname`	none	Specifies the Java class that implements this realm.

Properties

The standard realms provided with Enterprise Server have required and optional properties. A custom realm might have different properties.

The following table describes properties for the `auth-realm` element.

TABLE 1–18 `auth-realm` Properties

Property	Realms	Description
`jaas-context`	all	Specifies the JAAS (Java Authentication and Authorization Service) context.
`assign-groups`	all	(optional) If this property is set, its value is taken to be a comma-separated list of group names. All clients who present valid certificates are assigned membership to these groups for the purposes of authorization decisions in the web and EJB containers.
`file`	`file`	Specifies the file that stores user names, passwords, and group names. The default is *domain-dir*`/config/keyfile`.
`clientAuth`	`certificate`	If `true`, specifies that client authentication is required for all applications that use the certificate realm. The default is `false`. To require client authentication for a specific web application, set the method of authentication in the `web.xml` file to `CLIENT-CERT`.
`directory`	`ldap`	Specifies the LDAP URL to your server.
`base-dn`	`ldap`	Specifies the LDAP base DN for the location of user data. This base DN can be at any level above the user data, since a tree scope search is performed. The smaller the search tree, the better the performance.

TABLE 1–18 `auth-realm` Properties *(Continued)*

Property	Realms	Description
`search-filter`	`ldap`	(optional) Specifies the search filter to use to find the user. The default is `uid=%s` (`%s` expands to the subject name).
`group-base-dn`	`ldap`	(optional) Specifies the base DN for the location of groups data. By default, it is same as the `base-dn`, but it can be tuned, if necessary.
`group-search-filter`	`ldap`	(optional) Specifies the search filter to find group memberships for the user. The default is `uniquemember=%d` (`%d` expands to the user element DN).
`group-target`	`ldap`	(optional) Specifies the LDAP attribute name that contains group name entries. The default is `CN`.
`search-bind-dn`	`ldap`	(optional) Specifies an optional DN used to authenticate to the directory for performing the `search-filter` lookup. Only required for directories that do not allow anonymous search.
`search-bind-password`	`ldap`	(optional) Specifies the LDAP password for the DN given in `search-bind-dn` .
`datasource-jndi`	`jdbc`	Specifies the `jndi-name` of the "jdbc-resource" on page 83 for the database.
`user-table`	`jdbc`	Specifies the name of the user table in the database.
`user-name-column`	`jdbc`	Specifies the name of the user name column in the database's user table.
`password-column`	`jdbc`	Specifies the name of the password column in the database's user table.
`group-table`	`jdbc`	Specifies the name of the group table in the database.
`group-name-column`	`jdbc`	Specifies the name of the group name column in the database's group table.
`db-user`	`jdbc`	(optional) Allows you to specify the database user name in the realm instead of the "jdbc-connection-pool" on page 77. This prevents other applications from looking up the database, getting a connection, and browsing the user table. By default, the `jdbc-connection-pool` configuration is used.
`db-password`	`jdbc`	(optional) Allows you to specify the database password in the realm instead of the "jdbc-connection-pool" on page 77. This prevents other applications from looking up the database, getting a connection, and browsing the user table. By default, the `jdbc-connection-pool` configuration is used.
`digest-algorithm`	`jdbc`	(optional) Specifies the digest algorithm. The default is `MD5`. You can use any algorithm supported in the JDK, or `none`.
`encoding`	`jdbc`	(optional) Specifies the encoding. Allowed values are `Hex` and `Base64`. If `digest-algorithm` is specified, the default is `Hex`. If `digest-algorithm` is not specified, by default no encoding is specified.
`charset`	`jdbc`	(optional) Specifies the charset for the digest algorithm.

B

backend-principal

Specifies the user name and password required by the Enterprise Information System (EIS).

Superelements

"security-map" on page 121

Subelements

none

Attributes

The following table describes attributes for the `backend-principal` element.

TABLE 1–19 `backend-principal` Attributes

Attribute	Default	Description
`user-name`	none	Specifies the user name required by the EIS.
`password`	none	(optional) Specifies the password required by the EIS, if any.

C

config

Defines a configuration, which is a collection of settings that controls how a server instance functions.

Superelements

"configs" on page 37

Subelements

The following table describes subelements for the `config` element.

TABLE 1–20 `config` Subelements

Element	Required	Description
"http-service" on page 69	only one	Configures the HTTP service.
"network-config" on page 103	only one	Configures the communication network for the Enterprise Server.
"iiop-service" on page 72	only one	Configures the IIOP service.
"admin-service" on page 24	only one	Determines whether the server to which the configuration applies is an administration server.
"connector-service" on page 44	zero or one	Configures the connector service.
"web-container" on page 146	only one	Configures the web container.
"ejb-container" on page 50	only one	Configures the Enterprise JavaBeans™ (EJB™) container.
"mdb-container" on page 97	only one	Configures the message-driven bean (MDB) container.
"jms-service" on page 85	zero or one	Configures the Java™ Message Service (JMS) provider.
"log-service" on page 92	only one	Configures the system logging service.
"security-service" on page 121	only one	Configures the Java EE security service.
"transaction-service" on page 133	only one	Configures the transaction service.
"monitoring-service" on page 102	only one	Configures the monitoring service.
"java-config" on page 75	only one	Configures the Virtual Machine for the Java platform (JVM™ software).
"thread-pools" on page 133	only one	Configures thread pools.
"system-property" on page 130	zero or more	Specifies a system property.
"property" on page 109	zero or more	Specifies a property or a variable.
"jruby-container" on page 88	zero or one	Configures the JRuby container.

Attributes

The following table describes attributes for the `config` element.

TABLE 1–21 `config` Attributes

Attribute	Default	Description
`name`	`server-config`	Specifies the name of the configuration.
`dynamic-reconfiguration-enabled`	`true`	(optional) If `true`, any changes to the system (for example, applications deployed, resources created) are automatically applied to the affected servers without a restart being required. If false, such changes are only picked up by the affected servers when each server restarts.

configs

Contains configurations.

Superelements

"domain" on page 49

Subelements

The following table describes subelements for the `configs` element.

TABLE 1–22 `configs` Subelements

Element	Required	Description
"config" on page 35	only one	Defines a configuration.

connection-pool

This element is not supported. If this element is present in the `domain.xml` file, its attributes are remapped to other elements and then it is deleted. For remapping details, see the Attributes table for this element.

Superelements

"http-service" on page 69

Subelements

none

Attributes

The following table describes attributes for the `connection-pool` element.

TABLE 1–23 `connection-pool` Attributes

Attribute	Default	Description
`queue-size-in-bytes`	`4096`	Remapped to the `max-queue-size` attribute of the "thread-pool" on page 132 element.
`max-pending-count`	`4096`	Remapped to the `max-connections-count` attribute of the "transport" on page 136 element.

TABLE 1–23 `connection-pool` Attributes *(Continued)*

Attribute	Default	Description
`receive-buffer-size-in-bytes`	`4096`	Remapped to the `request-body-buffer-size-bytes` attribute of the "http" on page 61 element.
`send-buffer-size-in-bytes`	`8192`	Remapped to the `send-buffer-size-bytes` attribute of the "http" on page 61 element.

connector-connection-pool

Defines a connector connection pool.

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `connector-connection-pool` element.

TABLE 1–24 `connector-connection-pool` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"security-map" on page 121	zero or more	Maps the principal received during servlet or EJB authentication to the credentials accepted by the EIS.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `connector-connection-pool` element. Changing the following attributes requires a server restart: `resource-adapter-name`, `connection-definition-name`, `transaction-support`, `associate-with-thread`, `lazy-connection-association`, and `lazy-connection-enlistment`. In addition, when you change a `connector-connection-pool` configuration, you should also redeploy or disable and re-enable the referring modules and applications.

TABLE 1–25 `connector-connection-pool` Attributes

Attribute	Default	Description
`name`	none	Specifies the name of the connection pool. A "connector-resource" on page 43 element's `pool-name` attribute refers to this `name`.

TABLE 1–25 `connector-connection-pool` Attributes *(Continued)*

Attribute	Default	Description
`resource-adapter-name`	none	Specifies the `name` attribute of the deployed connector "application" on page 26 element. If no name is specified during deployment, the name of the `.rar` file is used. If the resource adapter is embedded in an application, then it is *app_name#rar_name*.
`connection-definition-name`	none	Specifies a unique name, identifying a resource adapter's `connection-definition` element in the `ra.xml` file. This is usually the `connectionfactory-interface` of the `connection-definition` element.
`steady-pool-size`	`8`	(optional) Specifies the initial and minimum number of connections maintained in the pool.
`max-pool-size`	`32`	(optional) Specifies the maximum number of connections that can be created to satisfy client requests.
`max-wait-time-in-millis`	`60000`	(optional) Specifies the amount of time, in milliseconds, that the caller is willing to wait for a connection. If `0`, the caller is blocked indefinitely until a resource is available or an error occurs.
`pool-resize-quantity`	`2`	(optional) Specifies the number of idle connections to be destroyed if the existing number of connections is above the `steady-pool-size` (subject to the `max-pool-size` limit). This is enforced periodically at the `idle-timeout-in-seconds` interval. An idle connection is one that has not been used for a period of `idle-timeout-in-seconds`. When the pool size reaches `steady-pool-size`, connection removal stops.
`idle-timeout-in-seconds`	`300`	(optional) Specifies the maximum time that a connection can remain idle in the pool. After this amount of time, the pool can close this connection.
`fail-all-connections`	`false`	(optional) If `true`, closes all connections in the pool if a single validation check fails.
`transaction-support`	none	(optional) Specifies the transaction support for this connection pool. Overrides the transaction support defined in the resource adapter in a downward compatible way: supports a transaction level lower than or equal to the resource adapter's, but not higher. Allowed values in descending order are: ■ `XATransaction` - Supports distributed transactions. ■ `LocalTransaction` - Supports local transactions only. ■ `NoTransaction` - No transaction support.
`is-connection-validation-required`	`false`	(optional) Specifies whether connections have to be validated before being given to the application. If a resource's validation fails, it is destroyed, and a new resource is created and returned.
`validate-atmost-once-period-in-seconds`	`0`	Specifies the time interval within which a connection is validated at most once. Minimizes the number of validation calls. A value of zero allows unlimited validation calls.
`connection-leak-timeout-in-seconds`	`0`	Detects potential connection leaks by the application. A connection that is not returned back to the pool by the application within the specified period is assumed to be potentially leaking, and a stack trace of the caller is logged. A zero value disables leak detection. A nonzero value enables leak tracing.

TABLE 1–25 `connector-connection-pool` Attributes *(Continued)*

Attribute	Default	Description
`connection-leak-reclaim`	`false`	If `true`, the pool will reclaim a connection after `connection-leak-timeout-in-seconds` occurs.
`connection-creation-retry-attempts`	`0`	Specifies the number of attempts to create a new connection.
`connection-creation-retry-interval-in-seconds`	`10`	Specifies the time interval between attempts to create a connection when `connection-creation-retry-attempts` is greater than `0`.
`lazy-connection-enlistment`	`false`	If `true`, a connection is not enlisted in a transaction until it is used. If `false`, any connection object available to a transaction is enlisted in the transaction.
`lazy-connection-association`	`false`	If `true`, a physical connection is not associated with a logical connection until it is used. If `false`, a physical connection is associated with a logical connection even before it is used.
`associate-with-thread`	`false`	If `true`, allows connections to be saved as `ThreadLocal` in the calling thread. Connections get reclaimed only when the calling thread dies or when the calling thread is not in use and the pool has run out of connections. If `false`, the thread must obtain a connection from the pool each time the thread requires a connection. This attribute associates connections with a thread such that when the same thread is in need of connections, it can reuse the connections already associated with that thread. In this case, the overhead of getting connections from the pool is avoided. However, when this value is set to `true`, you should verify that the value of the `max-pool-size` attribute is comparable to the `max-thread-pool-size` attribute of the "thread-pool" on page 132 element. If the `max-thread-pool-size` value is much higher than the `max-pool-size` value, a lot of time is spent associating connections with a new thread after dissociating them from an older one. Use this attribute in cases where the thread pool should reuse connections to avoid this overhead.
`match-connections`	`true`	If `true`, enables connection matching. You can set to `false` if connections are homogeneous.
`max-connection-usage-count`	`0`	Specifies the number of times a connections is reused by the pool, after which it is closed. A zero value disables this feature. By limiting the maximum number of times a connection can be reused, you can avoid statement leaks if the application does not close statements.
`ping`	`false`	(optional) Specifies whether to ping the pool during pool creation or reconfiguration to identify and warn of any erroneous attribute values.
`pooling`	`true`	(optional) If `false`, disables connection pooling.

Properties

Most properties of the `connector-connection-pool` element are the names of setter methods of the `managedconnectionfactory-class` element in the `ra.xml` file. Properties of the `connector-connection-pool` element override the `ManagedConnectionFactory` JavaBean configuration settings.

All but the last four properties in the following table are `connector-connection-pool` properties of `jmsra`, the resource adapter used to communicate with the Sun GlassFish Message Queue software. For a complete list of the available properties (called *administered object attributes* in the Message Queue software), see the *Sun GlassFish Message Queue 4.4 Administration Guide*.

Changes to `connector-connection-pool` properties require a server restart.

TABLE 1–26 `connector-connection-pool` Properties

Property	Default	Description
`AddressList`	none	Specifies a list of host/port combinations of the Message Queue software. For JMS resources of the Type `javax.jms.TopicConnectionFactory` or `javax.jms.QueueConnectionFactory`.
`ClientId`	none	Specifies the JMS Client Identifier to be associated with a `Connection` created using the `createTopicConnection` method of the `TopicConnectionFactory` class. For JMS resources of the Type `javax.jms.TopicConnectionFactory` . Durable subscription names are unique and only valid within the scope of a client identifier. To create or reactivate a durable subscriber, the connection must have a valid client identifier. The JMS specification ensures that client identifiers are unique and that a given client identifier is allowed to be used by only one active connection at a time.
`UserName`	`guest`	Specifies the user name for connecting to the Message Queue software. For JMS resources of the Type `javax.jms.TopicConnectionFactory` or `javax.jms.QueueConnectionFactory`.
`Password`	`guest`	Specifies the password for connecting to the Message Queue software. For JMS resources of the Type `javax.jms.TopicConnectionFactory` or `javax.jms.QueueConnectionFactory`.
`ReconnectAttempts`	`6`	Specifies the number of attempts to connect (or reconnect) for each address in the `imqAddressList` before the client runtime moves on to try the next address in the list. A value of `-1` indicates that the number of reconnect attempts is unlimited (the client runtime attempts to connect to the first address until it succeeds).
`ReconnectInterval`	`30000`	Specifies the interval between reconnect attempts in milliseconds. This applies to attempts on each address in the `imqAddressList` and on successive addresses in the list. If too short, this time interval does not give a broker time to recover. If too long, the reconnect might represent an unacceptable delay.
`ReconnectEnabled`	`false`	If `true`, specifies that the client runtime attempts to reconnect to a message server (or the list of addresses in `imqAddressList`) when a connection is lost.
`AddressListBehavior`	`priority`	Specifies whether connection attempts are in the order of addresses in the `imqAddressList` attribute (`priority`) or in a random order (`random`). If many clients are attempting a connection using the same connection factory, use a random order to prevent them from all being connected to the same address.
`AddressListIterations`	`-1`	Specifies the number of times the client runtime iterates through the `imqAddressList` in an effort to establish (or reestablish) a connection. A value of `-1` indicates that the number of attempts is unlimited.

TABLE 1–26 `connector-connection-pool` Properties *(Continued)*

Property	Default	Description
`prefer-validate-over-recreate`	`false`	Specifies that validating idle connections is preferable to closing them. This property has no effect on non-idle connections. If set to `true`, idle connections are validated during pool resizing, and only those found to be invalid are destroyed and recreated. If `false`, all idle connections are destroyed and recreated during pool resizing.
`LazyConnectionEnlistment`	`false`	Deprecated. Use the equivalent attribute.
`LazyConnectionAssociation`	`false`	Deprecated. Use the equivalent attribute.
`AssociateWithThread`	`false`	Deprecated. Use the equivalent attribute.
`MatchConnections`	`true`	Deprecated. Use the equivalent attribute.

Note – All JMS administered object resource properties that worked with version 7 of the Enterprise Server are supported for backward compatibility.

connector-module

This element is deprecated. Use an "application" on page 26 element instead.

Specifies a deployed connector module.

Superelements

"applications" on page 30

Subelements

The following table describes subelements for the `connector-module` element.

TABLE 1–27 `connector-module` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `connector-module` element.

TABLE 1–28 `connector-module` Attributes

Attribute	Default	Description
`name`	none	The name of the connector module.
`location`	none	A fully qualified or relative path to the directory to which the contents of the `.rar` file have been extracted. If relative, it is relative to the following directory: *domain-dir*`/applications/`
`object-type`	`user`	(optional) Defines the type of the resource. Allowed values are: ■ `system-all` - A system resource for all server instances and the domain application server. ■ `system-admin` - A system resource only for the domain application server. ■ `system-instance` - A system resource for all server instances only. ■ `user` - A user resource.
`enabled`	`true`	(optional) Determines whether the connector module is enabled.
`directory-deployed`	`false`	(optional) Specifies whether the application has been deployed as a directory.

connector-resource

Defines the connection factory object of a specific connection definition in a connector (resource adapter).

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `connector-resource` element.

TABLE 1–29 `connector-resource` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `connector-resource` element.

TABLE 1–30 `connector-resource` Attributes

Attribute	Default	Description
`jndi-name`	none	Specifies the JNDI name for the resource.
`pool-name`	none	Specifies the `name` of the associated connector connection pool, defined in a "connector-connection-pool" on page 38 element.
`object-type`	`user`	(optional) Defines the type of the resource. Allowed values are: ■ `system-all` - A system resource for all server instances and the domain application server. ■ `system-admin` - A system resource only for the domain application server. ■ `system-instance` - A system resource for all server instances only. ■ `user` - A user resource.
`enabled`	`true`	(optional) Determines whether this resource is enabled at runtime.

connector-service

Configures the connector service.

Superelements

"config" on page 35

Subelements

none

Attributes

The following table describes attributes for the `connector-service` element.

TABLE 1–31 `connector-service` Attributes

Attribute	Default	Description
`shutdown-timeout-in-seconds`	`30`	(optional) Specifies the maximum time allowed during application server shutdown for the `ResourceAdapter.stop()` method of a connector module's instance to complete. Resource adapters that take longer to shut down are ignored, and Enterprise Server shutdown continues.

TABLE 1–31 `connector-service` Attributes *(Continued)*

Attribute	Default	Description
`class-loading-policy`	`derived`	(optional) Specifies the resource adapters accessible to applications. Allowed values are: ■ `derived` — Applications access resource adapters based on references in their deployment descriptors. These references can be `resource-ref`, `resource-env-ref`, `resource-adapter-mid`, or equivalent annotations. ■ `global` — All stand-alone resource adapters are available to all applications.

context-param

Configures a context parameter for a web module at deployment time. This is an alternative to setting a `context-param` in the `web.xml` file. To override a `context-param` in the `web.xml` file, set the `ignore-descriptor-item` attribute to `true`.

Superelements

"web-module-config" on page 147

Subelements

The following table describes subelements for the `context-param` element.

TABLE 1–32 `context-param` Subelements

Element	Required	Description
"param-name" on page 106	only one	Contains a context parameter name.
"param-value" on page 106	only one	Contains a context parameter value.
"description" on page 48	zero or one	Contains a text description of this element.

Attributes

The following table describes attributes for the `context-param` element.

TABLE 1–33 `context-param` Attributes

Attribute	Default	Description
`ignore-descriptor-item`	`false`	(optional) If `true`, specifies that if the same context parameter occurs in the deployment descriptor it is ignored.

custom-resource

Defines a custom resource, which specifies a custom server-wide resource object factory. Such object factories implement the `javax.naming.spi.ObjectFactory` interface.

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `custom-resource` element.

TABLE 1–34 `custom-resource` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `custom-resource` element.

TABLE 1–35 `custom-resource` Attributes

Attribute	Default	Description
`jndi-name`	none	Specifies the JNDI name for the resource.
`res-type`	none	Specifies the fully qualified type of the resource.
`factory-class`	none	Specifies the fully qualified name of the user-written factory class, which implements `javax.naming.spi.ObjectFactory`.
`object-type`	`user`	(optional) Defines the type of the resource. Allowed values are: ■ `system-all` - A system resource for all server instances and the domain application server. ■ `system-admin` - A system resource only for the domain application server. ■ `system-instance` - A system resource for all server instances only. ■ `user` - A user resource.
`enabled`	`true`	(optional) Determines whether this resource is enabled at runtime.

D

das-config

Defines a domain administration server configuration. The domain administration server runs the Administration Console.

Superelements

"admin-service" on page 24

Subelements

The following table describes subelements for the `das-config` element.

TABLE 1–36 `das-config` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `das-config` element. For more information about deployment topics such as dynamic reloading and autodeployment, see the *Sun GlassFish Enterprise Server v3 Application Development Guide*.

TABLE 1–37 `das-config` Attributes

Attribute	Default	Description
`dynamic-reload-enabled`	`true`	(optional) If `true`, checks the timestamp on a `.reload` file at every module and application directory level, to trigger dynamic reloading.
`dynamic-reload-poll-interval-in-seconds`	2	(optional) Controls the polling frequency of dynamic reloading.
`autodeploy-enabled`	`true`	(optional) If `true`, enables autodeployment, which lets you quickly deploy applications and modules to a running Enterprise Server without performing an explicit server instance restart or a separate deployment operation.
`autodeploy-polling-interval-in-seconds`	2	(optional) Controls the polling frequency of autodeployment.

TABLE 1–37 `das-config` Attributes *(Continued)*

Attribute	Default	Description
`autodeploy-dir`	`autodeploy`	(optional) Specifies the source directory (absolute or relative to *domain-dir*) in which autodeployment looks for deployable components.
`autodeploy-verifier-enabled`	`false`	(optional) If `true`, the verifier is run before autodeployment. If verification fails, deployment is not performed.
`autodeploy-jsp-precompilation-enabled`	`false`	(optional) If `true`, JSP pages are precompiled during autodeployment.
`auto-deploy-retry-timeout`	`4`	(optional) Specifies the number of autodeployment retry attempts before autodeployment times out.
`deploy-xml-validation`	`full`	(optional) Specifies the type of XML validation performed on standard and Enterprise Server deployment descriptors: ■ `full` - If XML validation fails, deployment fails. ■ `parsing` - XML validation errors are reported but deployment occurs. ■ `none` - No XML validation is performed.
`admin-session-timeout-in-minutes`	`sun-web.xml timeoutSeconds` property value or `web.xml session-timeout` attribute value	(optional) Specifies the Administration Console timeout.

description

Contains a text description of the parent element.

Superelements

"admin-object-resource" on page 23, "appclient-module" on page 25, "application" on page 26, "connector-connection-pool" on page 38, "connector-module" on page 42, "connector-resource" on page 43, "context-param" on page 45, "custom-resource" on page 46, "ejb-module" on page 52, "env-entry" on page 56, "extension-module" on page 57, "external-jndi-resource" on page 58, "j2ee-application" on page 73, "jdbc-connection-pool" on page 77, "jdbc-resource" on page 83, "lifecycle-module" on page 91, "mail-resource" on page 94, "property" on page 109, "system-property" on page 130, "transformation-rule" on page 135, "web-module" on page 146

Subelements

none - contains data

domain

Defines a domain. This is the root element; there can only be one `domain` element in a `domain.xml` file.

Superelements

none

Subelements

The following table describes subelements for the `domain` element.

TABLE 1–38 `domain` Subelements

Element	Required	Description
"system-applications" on page 130	zero or one	Contains system applications.
"applications" on page 30	zero or one	Contains deployed Java EE applications, Java EE modules, and applications created using other supported technologies.
"resources" on page 119	zero or one	Contains configured resources.
"configs" on page 37	only one	Contains configurations.
"servers" on page 124	only one	Contains server instances.
"system-property" on page 130	zero or more	Specifies a system property.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `domain` element.

TABLE 1–39 `domain` Attributes

Attribute	Default	Description
`application-root`	*domain-dir*`/applications`	(optional) Specifies the absolute path where deployed applications reside for this domain.
`log-root`	*domain-dir*`/logs`	(optional) Specifies where the domain's log files are kept. The directory in which the log is kept must be writable by whatever user account the server runs as. See the "log-service" on page 92 description for details about logs.
`locale`	operating system default	(optional) Specifies the domain's language.

TABLE 1–39 `domain` Attributes *(Continued)*

Attribute	Default	Description
`version`	none; value changes with each major release	Specifies the version of the Enterprise Server as returned by the `fullVersion` field of the `com.sun.appserv.server.util.Version` class.

E

ejb-container

Configures the EJB container. Stateless session beans are maintained in pools. Stateful session beans have session affinity and are cached. Entity beans associated with a database primary key are also cached. Entity beans not yet associated with a primary key are maintained in pools. Pooled entity beans are used to run `ejbCreate()` and finder methods.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `ejb-container` element.

TABLE 1–40 `ejb-container` Subelements

Element	Required	Description
"ejb-timer-service" on page 53	zero or one	Configures the EJB timer service.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `ejb-container` element.

TABLE 1–41 `ejb-container` Attributes

Attribute	Default	Description
`steady-pool-size`	`32`	(optional) Specifies the initial and minimum number of beans maintained in the pool. Must be `0` or greater and less than `max-pool-size` . Bean instances are removed from the pool and returned after use. The pool is replenished or cleaned up periodically to maintain this size. Applies to stateless session beans and entity beans.
`pool-resize-quantity`	`16`	(optional) Specifies the number of beans to be removed when the `pool-idle-timeout-in-seconds` timer expires. A cleaner thread removes any unused instances. Must be `0` or greater and less than `max-pool-size` . The pool is not resized below the `steady-pool-size`. Applies to stateless session beans and entity beans.
`max-pool-size`	`64`	(optional) Specifies the maximum number of beans that can be created to satisfy client requests. A value of `0` indicates an unbounded pool. Applies to stateless session beans and entity beans.
`cache-resize-quantity`	`32`	(optional) Specifies the number of beans to be: ■ created if a request arrives when the pool has no available beans (subject to the `max-cache-size` limit) ■ passivated when the `cache-idle-timeout-in-seconds` timer expires and a cleaner thread removes any unused instances, or when the cache size exceeds `max-cache-size`. Must be greater than `1` and less than `max-cache-size`. Applies to stateful session beans and entity beans.
`max-cache-size`	`512`	(optional) Specifies the maximum number of beans in the cache. A value of `0` indicates an unbounded cache. Applies to stateful session beans and entity beans.
`pool-idle-timeout-in-seconds`	`600`	(optional) Specifies the maximum time that a bean can remain idle in the pool. After this amount of time, the pool can remove this bean. A value of `0` specifies that idle beans can remain in the pool indefinitely. Applies to stateless session beans and entity beans.
`cache-idle-timeout-in-seconds`	`600`	(optional) Specifies the maximum time that a bean can remain idle in the cache. After this amount of time, the container can passivate this bean. A value of `0` specifies that beans never become candidates for passivation. Applies to stateful session beans and entity beans.

TABLE 1–41 `ejb-container` Attributes *(Continued)*

Attribute	Default	Description
`removal-timeout-in-seconds`	`5400`	(optional) Specifies the amount of time that a bean can remain passivated before it is removed from the session store. A value of `0` specifies that the container does not remove inactive beans automatically. If `removal-timeout-in-seconds` is less than or equal to `cache-idle-timeout-in-seconds`, beans are removed immediately without being passivated. The `session-store` attribute of the "server" on page 123 element determines the location of the session store. Applies to stateful session beans.
`victim-selection-policy`	`nru`	(optional) Specifies how stateful session beans are selected for passivation. Allowed values are `fifo`, `lru`, and `nru`: ■ `fifo` - Selects the oldest instance. ■ `lru` - Selects the least recently accessed instance. ■ `nru` - Selects a not recently used instance.
`commit-option`	`B`	(optional) Determines which commit option is used for entity beans. Legal values are `B` or `C`.
`session-store`	*domain-dir*`/session-store`	(optional) Specifies the directory where passivated stateful session beans and persisted HTTP sessions are stored in the file system.

ejb-module

This element is deprecated. Use an "application" on page 26 element instead.

Specifies a deployed EJB module.

Superelements

"applications" on page 30

Subelements

The following table describes subelements for the `ejb-module` element.

TABLE 1–42 `ejb-module` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"web-service-endpoint" on page 148	zero or more	Configures a web service endpoint.

TABLE 1–42 `ejb-module` Subelements *(Continued)*

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `ejb-module` element.

TABLE 1–43 `ejb-module` Attributes

Attribute	Default	Description
`name`	none	The name of the EJB module.
`location`	none	A fully qualified or relative path to the directory to which the contents of the EJB `.jar` file have been extracted. If relative, it is relative to the following directory: *domain-dir*`/applications/`
`object-type`	`user`	(optional) Defines the type of the resource. For an EJB module, the only allowed value is `user`.
`enabled`	`true`	(optional) Determines whether the EJB module is enabled.
`libraries`	none	(optional) Specifies an absolute or relative path to libraries specific to this module or application. A relative path is relative to *domain-dir*`/lib/applibs`. If the path is absolute, the path must be accessible to the domain administration server (DAS), which means it must be under *domain-dir*. To include more than one path, use a system-specific separator, such as a colon for Solaris or a semicolon for Windows. The libraries are made available to the application in the order in which they are specified.
`directory-deployed`	`false`	(optional) Specifies whether the application has been deployed as a directory.

ejb-timer-service

Configures the EJB timer service.

Superelements

"ejb-container" on page 50

Subelements

The following table describes subelements for the `ejb-timer-service` element.

TABLE 1–44 `ejb-timer-service` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `ejb-timer-service` element.

TABLE 1–45 `ejb-timer-service` Attributes

Attribute	Default	Description
`minimum-delivery-interval-in-millis`	`1000`	(optional) Specifies the minimum time before an expiration for a particular timer can occur. This guards against extremely small timer increments that can overload the server.
`max-redeliveries`	`1`	(optional) Specifies the maximum number of times the EJB timer service attempts to redeliver a timer expiration due for exception or rollback.
`timer-datasource`	`jdbc/__TimerPool`	(optional) Overrides, for the server instance, the `cmp-resource` value specified in `sun-ejb-jar.xml` for the timer service system application (`__ejb_container_timer_app`).
`redelivery-interval-internal-in-millis`	`5000`	(optional) Specifies how long the EJB timer service waits after a failed `ejbTimeout` delivery before attempting a redelivery.

engine

Specifies an engine for an "application" on page 26 or "module" on page 99. An engine runs a sniffer during deployment, which is responsible for identifying a type of deployment artifact (such as a WAR file) and setting up the associated container (such as the web container). Multiple engines, each with its own sniffer, can be associated with a given application or module.

Superelements

"application" on page 26, "module" on page 99

Subelements

The following table describes subelements for the `engine` element.

TABLE 1–46 `engine` Subelements

Element	Required	Description
"web-module-config" on page 147	zero or one	Configures the parent web module. Applicable only if this `engine` element has a `sniffer` value of `web`.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `engine` element.

TABLE 1–47 `engine` Attributes

Attribute	Default	Description
`sniffer`	none	Specifies the type of sniffer. Allowed values include the following: ■ `web` — Specifies that the parent `module` is a web application. ■ `security` — Specifies that security is enabled for the parent `module`. ■ `jpa` — Specifies that the parent `module` uses the Java Persistence API. ■ `connector` — Specifies that the parent `module` is a connector. ■ `ejb` — Specifies that the parent `module` is an EJB module. The EJB container add-on component must be installed in the Enterprise Server. ■ `webservices` — Specifies that the parent `module` is a web service endpoint. The Metro add-on component must be installed in the Enterprise Server. ■ `appclient` — Specifies that the parent `module` is an application client. This value is valid only in the full platform distribution of the Enterprise Server. ■ `ear` — Specifies that the parent `application` is a Java EE application (EAR file). This value is valid only in the full platform distribution of the Enterprise Server. ■ `webbeans` — Specifies that the parent `module` is a Web Bean. The Web Beans add-on component must be installed in the Enterprise Server. ■ `jruby` — Specifies that the parent `module` is a JRuby application. The JRuby add-on component must be installed in the Enterprise Server. ■ `osgi` — Specifies that the parent `module` is an OSGi add-on component. ■ `grizzly` — Specifies that the parent `module` is a Grizzly add-on component.
`description`	none	(optional) Specifies a text description for this element.

env-entry

Configures an environment entry for a web module at deployment time. This is an alternative to setting an `env-entry` in the `web.xml` file. To override an `env-entry` in the `web.xml` file, set the `ignore-descriptor-item` attribute to `true`.

Superelements

"web-module-config" on page 147

Subelements

The following table describes subelements for the `env-entry` element.

TABLE 1–48 `env-entry` Subelements

Element	Required	Description
"env-entry-name" on page 56	only one	Contains an environment entry name.
"env-entry-type" on page 57	only one	Contains an environment entry type.
"env-entry-value" on page 57	only one	Contains an environment entry value.
"description" on page 48	zero or one	Contains a text description of this element.

Attributes

The following table describes attributes for the `env-entry` element.

TABLE 1–49 `env-entry` Attributes

Attribute	Default	Description
`ignore-descriptor-item`	`false`	(optional) If `true`, specifies that if the same environment entry occurs in the deployment descriptor it is ignored.

env-entry-name

Contains an environment entry name.

Superelements

"env-entry" on page 56

Subelements

none - contains data

env-entry-type

Contains an environment entry type.

Superelements

"env-entry" on page 56

Subelements

none - contains data

env-entry-value

Contains an environment entry value.

Superelements

"env-entry" on page 56

Subelements

none - contains data

extension-module

This element is deprecated. Use an "application" on page 26 element instead.

Specifies a deployed extension module.

Superelements

"applications" on page 30

Subelements

The following table describes subelements for the `extension-module` element.

TABLE 1–50 `extension-module` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.

TABLE 1–50 `extension-module` Subelements *(Continued)*

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `extension-module` element.

TABLE 1–51 `extension-module` Attributes

Attribute	Default	Description
`name`	none	The name of the extension module.
`location`	none	A fully qualified or relative path to the directory to which the contents of the `.jar` or `.war` file have been extracted. If relative, it is relative to the following directory: *domain-dir*`/applications/`
`module-type`	none	Specifies a `String` that identifies the extension module type, which the runtime uses to find the appropriate add-on container. When an extension module is registered with the Enterprise Server, the Enterprise Server specifies the module type automatically.
`object-type`	`user`	(optional) Defines the type of the resource. For an extension module, the only allowed value is `user`.
`enabled`	`true`	(optional) Determines whether the extension module is enabled.
`libraries`	none	(optional) Specifies an absolute or relative path to libraries specific to this module or application. A relative path is relative to *domain-dir*`/lib/applibs`. If the path is absolute, the path must be accessible to the domain administration server (DAS), which means it must be under *domain-dir*. To include more than one path, use a system-specific separator, such as a colon for Solaris or a semicolon for Windows. The libraries are made available to the application in the order in which they are specified.
`directory-deployed`	`false`	(optional) Specifies whether the application has been deployed as a directory.

external-jndi-resource

Defines a resource that resides in an external JNDI repository. For example, a generic Java object could be stored in an LDAP server. An external JNDI factory must implement the `javax.naming.spi.InitialContextFactory` interface.

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `external-jndi-resource` element.

TABLE 1–52 `external-jndi-resource` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `external-jndi-resource` element.

TABLE 1–53 `external-jndi-resource` Attributes

Attribute	Default	Description
`jndi-name`	none	Specifies the JNDI name for the resource.
`jndi-lookup-name`	none	Specifies the JNDI lookup name for the resource.
`res-type`	none	Specifies the fully qualified type of the resource.
`factory-class`	none	Specifies the fully qualified name of the factory class, which implements `javax.naming.spi.InitialContextFactory`. For more information about JNDI, see the *Sun GlassFish Enterprise Server v3 Application Development Guide*.
`object-type`	`user`	(optional) Defines the type of the resource. Allowed values are: ■ `system-all` - A system resource for all server instances and the domain application server. ■ `system-admin` - A system resource only for the domain application server. ■ `system-instance` - A system resource for all server instances only. ■ `user` - A user resource.
`enabled`	`true`	(optional) Determines whether this resource is enabled at runtime.

F

file-cache

Configures the HTTP file cache.

Superelements

"http" on page 61

Subelements

none

Attributes

The following table describes attributes for the `file-cache` element.

TABLE 1–54 `file-cache` Attributes

Attribute	Default	Description
`enabled`	`false`	(optional) If `true`, enables caching of the file content.
`max-age-seconds`	`30`	(optional) Specifies the maximum age of a file cache entry.
`max-cache-size-bytes`	`1048576`	(optional) Specifies the total size of all files that are cached as memory mapped files.
`max-files-count`	`1024`	(optional) Specifies the maximum number of files in the file cache.

G

group-map

Maps an EIS group to a group defined in the Enterprise Server domain.

Superelements

"work-security-map" on page 149

Subelements

none

Attributes

The following table describes attributes for the `group-map` element.

TABLE 1–55 `group-map` Attributes

Attribute	Default	Description
`eis-group`	none	Specifies an EIS group.
`mapped-group`	none	Specifies a group defined in the Enterprise Server domain.

H

http

Configures HTTP parameters.

Superelements

"protocol" on page 110

Subelements

The following table describes subelements for the `http` element.

TABLE 1–56 `http` Subelements

Element	Required	Description
"file-cache" on page 59	zero or one	Configures the HTTP file cache.

Attributes

The following table describes attributes for the `http` element.

TABLE 1–57 `http` Attributes

Attribute	Default	Description
`default-virtual-server`	none	Specifies the `id` attribute of the default "virtual-server" on page 138 for the "network-listener" on page 103 that references the parent "protocol" on page 110 element.
`server-name`	none	(optional) Tells the server what to put in the host name section of any URLs it sends to the client. This affects URLs the server automatically generates; it doesn't affect the URLs for directories and files stored in the server. If your server uses an alias, the `server-name` should be the alias name. If a colon and port number are appended, that port is used in URLs the server sends to the client.
`redirect-port`	none	(optional) If the "network-listener" on page 103 that references the parent "protocol" on page 110 element is supporting non-SSL requests and a request is received for which a matching `<security-constraint>` requires SSL transport, the request is automatically redirected to the port number specified here.

TABLE 1–57 `http` Attributes *(Continued)*

Attribute	Default	Description
`xpowered-by`	`true`	(optional) If true, `X-Powered-By` headers are used according to the Servlet 2.4 and JSP 2.0 specifications.
`request-body-buffer-size-bytes`	`4096`	(optional) Specifies the size of the request buffer for "network-listener" on page 103 elements that reference the parent "protocol" on page 110 element.
`send-buffer-size-bytes`	`8192`	(optional) Specifies the size of the send buffer for "network-listener" on page 103 elements that reference the parent "protocol" on page 110 element.
`auth-pass-through-enabled`	`false`	(optional) If `true`, indicates that the "network-listener" on page 103 that references the parent "protocol" on page 110 element receives traffic from an SSL-terminating proxy server.
`max-connections`	`250`	(optional) Specifies the maximum number of requests that can be pipelined until the connection is closed by the server. Set this property to `1` to disable HTTP/1.0 keep-alive, as well as HTTP/1.1 keep-alive and pipelining. A value of `0` means requests are always rejected. A value of `-1` sets no limit to the number of keep-alive connections. The default of `250` is the initial value set in `domain.xml`. The internal configuration default is `256`.
`trace-enabled`	`true`	(optional) If `true`, enables the TRACE operation. Set this property to `false` to make the Enterprise Server less susceptible to cross-site scripting attacks.

`comet-support-enabled`	`false`	(optional) If `true`, enables Comet support for the "network-listener" on page 103 that references the parent "protocol" on page 110 element.
		
		If your servlet or JSP page uses Comet technology, make sure it is initialized when the Enterprise Server starts up by adding the `load-on-startup` element to your `web.xml` file. For example:
		
		`<servlet>`
		`  <servlet-name>CheckIn</servlet-name>`
		`  <servlet-class>CheckInServlet</servlet-class>`
		`  <load-on-startup>0</load-on-startup>`
		`</servlet>`

`compression`	`off`	(optional) Specifies use of HTTP/1.1 GZIP compression to save server bandwidth. Allowed values are: ■ `off` — Disables compression. ■ `on` — Compresses data. ■ `force` — Forces data compression in all cases. If `compression` is set to `on` or `force`, you must set `compression-min-size-bytes` as well.
`compression-min-size-bytes`	none	(optional) Specifies the minimum size of a file when compression is applied. Required if `compression` is set to `on` or `force`.

TABLE 1–57 `http` Attributes *(Continued)*

Attribute	Default	Description
`compressable-mime-type`	`text/html,text/xml, text/plain`	(optional) Specifies a comma-separated list of MIME types for which HTTP compression is used.
`no-compression-user-agents`	empty `String` (`regexp` matching disabled)	(optional) Specifies a comma-separated list of regular expressions matching user-agents of HTTP clients for which compression should not be used.
`upload-timeout-enabled`	`false`	(optional) If `true`, the connection for a servlet that reads bytes slowly is closed after the `connection-upload-timeout-millis` is reached.
`connection-upload-timeout-millis`	`5`	(optional) Specifies the timeout for uploads. Applicable only if `upload-timeout-enabled` is set to `true`.
`uri-encoding`	`UTF-8`	(optional) Specifies the character set used to decode the request URIs received on the "network-listener" on page 103 that references the parent "protocol" on page 110 element. Must be a valid IANA character set name.
`restricted-user-agents`	none	(optional) Specifies a list of restricted user agents on which HTTP compression is applied. If no user agents are specified (the default), HTTP compression is applied to all user agents.
`chunking-enabled`	`true`	(optional) If `true`, enables HTTP response chunking.
`version`	`HTTP/1.1`	(optional) Specifies the version of the HTTP protocol used.
`forced-response-type`	`text/html; charset=iso-8859-1`	(optional) Specifies the request type used if no MIME mapping is available that matches the file extension. The format is a semicolon-delimited string consisting of the content-type, encoding, language, and charset.
`default-response-type`	`text/html; charset=iso-8859-1`	(optional) Specifies the default response type. The format is a semicolon-delimited string consisting of the content-type, encoding, language, and charset.
`timeout-seconds`	`30`	(optional) Specifies the maximum time for which a keep alive connection is kept open. A value of `0` or less means keep alive connections are kept open indefinitely.
`header-buffer-length-bytes`	`8192`	(optional) Specifies the size of the buffer used by the request processing threads to read the request data.
`adapter`	`com.sun.grizzly.tcp.StaticResourcesAdapter`	(Optional) Specifies the class name of the static resources adapter.
`max-post-size-bytes`	`2097152`	(Optional) Specifies the maximum size of the body of a POST request. POST requests greater than this size are rejected. A value of zero means the maximum post size is unlimited.
`request-timeout-seconds`	`30`	(Optional) Specifies the request timeout. If the request is not processed before the timeout is reached, the request is ignored.
`dns-lookup-enabled`	`false`	(optional) If `true`, looks up the DNS entry for the client.

TABLE 1–57 `http` Attributes *(Continued)*

Attribute	Default	Description
`rcm-support-enabled`	`false`	(optional) If `true`, enables support for resource consumption management (RCM). A `ResourceAllocationFilter` is added to the HTTP protocol chain, and a thread pool for request processing is assigned to each HTTP resource (such as a web application).

http-access-log

Defines an access log file for a "virtual-server" on page 138. The "access-log" on page 22 subelement of the virtual server's parent "http-service" on page 69 element determines the access log file's format and rotation settings.

Superelements

"virtual-server" on page 138

Subelements

none

Attributes

The following table describes attributes for the `http-access-log` element.

TABLE 1–58 `http-access-log` Attributes

Attribute	Default	Description
`log-directory`	`${com.sun.aas.instanceRoot}/logs/access`	(optional) Specifies the location of the access log file. The `${com.sun.aas.instanceRoot}` system property refers to the *domain-dir*. See "system-property" on page 130.
`iponly`	`true`	(optional) If `true`, specifies that only the IP address of the user agent is listed. If `false`, performs a DNS lookup.

http-file-cache

This element is not supported. If this element is present in the `domain.xml` file, its attributes are remapped to other elements and then it is deleted. For remapping details, see the Attributes table for this element.

Superelements

"http-service" on page 69

Subelements

none

Attributes

The following table describes attributes for the `http-file-cache` element.

TABLE 1–59 `http-file-cache` Attributes

Attribute	Default	Description
`globally-enabled`	`false`	Not implemented. Do not use.
`file-caching-enabled`	`false`	Remapped to the `enabled` attribute of the "file-cache" on page 59 element.
`max-age-in-seconds`	`30`	Remapped to the `max-age-seconds` attribute of the "file-cache" on page 59 element.
`medium-file-size-limit-in-bytes`	`537600`	Not implemented. Do not use.
`medium-file-space-in-bytes`	`1048576`	Remapped to the `max-cache-size-bytes` attribute of the "file-cache" on page 59 element.
`small-file-size-limit-in-bytes`	`2048`	Not implemented. Do not use.
`small-file-space-in-bytes`	`1048576`	Not implemented. Do not use.
`file-transmission-enabled`	`false`	Not implemented. Do not use.
`max-files-count`	`1024`	Remapped to the `max-files-count` attribute of the "file-cache" on page 59 element.
`hash-init-size`	`0`	Not implemented. Do not use.

http-listener

This element is not supported. If this element is present in the `domain.xml` file, its attributes and properties are remapped to other elements and then it is deleted. For remapping details, see the Attributes and Properties tables for this element.

Superelements

"http-service" on page 69

Subelements

The following table describes subelements for the `http-listener` element.

TABLE 1–60 `http-listener` Subelements

Element	Required	Description
"ssl" on page 127	zero or one	Defines Secure Socket Layer (SSL) parameters.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `http-listener` element.

TABLE 1–61 `http-listener` Attributes

Attribute	Default	Description
`id`	none	Remapped to the `name` attribute of a "network-listener" on page 103 element.
`address`	none	Remapped to the `address` attribute of a "network-listener" on page 103 element.
`port`	none	Remapped to the `port` attribute of a "network-listener" on page 103 element.
`external-port`	none	Not implemented. Do not use.
`family`		Not implemented. Do not use.
`blocking-enabled`	`false`	Not implemented. Do not use.
`acceptor-threads`	`1`	Remapped to the `acceptor-threads` attribute of a "transport" on page 136 element.
`security-enabled`	`false`	Remapped to the `security-enabled` attribute of a "protocol" on page 110 element.
`default-virtual-server`	none	Remapped to the `default-virtual-server` attribute of an "http" on page 61 element.
`server-name`	none	Remapped to the `server-name` attribute of an "http" on page 61 element.
`redirect-port`	none	Remapped to the `redirect-port` attribute of an "http" on page 61 element.
`xpowered-by`	`true`	Remapped to the `xpowered-by` attribute of an "http" on page 61 element.
`enabled`	`true`	Remapped to the `enabled` attribute of a "network-listener" on page 103 element.

Properties

The following table describes property remappings for the `http-listener` element. A few of these properties can be defined as "http-service" on page 69 properties, applying to all "network-listener" on page 103 elements.

TABLE 1–62 `http-listener` Properties

Property	Default	Description
`monitoring-cache -enabled`	`true`	Not implemented. Do not use.
`monitoring-cache -refresh-in-millis`	`5000`	Not implemented. Do not use.
`ssl-cache-entries`	`10000`	Implemented only for "http-service" on page 69.
`ssl3-session-timeout`	`86400`	Implemented only for "http-service" on page 69.
`ssl-session-timeout`	`100`	Implemented only for "http-service" on page 69.
`recycle-objects`	`true`	Not implemented. Do not use.
`reader-threads`	`0`	Not implemented. Do not use.
`acceptor-queue-length`	`4096`	Not implemented. Do not use.
`reader-queue-length`	`4096`	Not implemented. Do not use.
`use-nio-direct-bytebuffer`	`true`	Remapped to the `byte-buffer-type` attribute of a "transport" on page 136 element.
`authPassthrough Enabled`	`false`	Remapped to the `auth-pass-through-enabled` attribute of an "http" on page 61 element.
`proxyHandler`	`com.sun.enterprise. web.ProxyHandlerImpl`	Implemented only for "http-service" on page 69.
`proxiedProtocol`	none	Not implemented. Do not use.
`bufferSize`	`4096`	Remapped to the `buffer-size-bytes` attribute of a "transport" on page 136 element.
`connectionTimeout`	`30`	Implemented only for "http-service" on page 69.
`maxKeepAliveRequests`	`250`	Remapped to the `max-connections` attribute of an "http" on page 61 element.
`traceEnabled`	`true`	Remapped to the `trace-enabled` attribute of an "http" on page 61 element.
`cometSupport`	`false`	Remapped to the `comet-support-enabled` attribute of an "http" on page 61 element.
`jkEnabled`	`false`	Remapped to the `jk-enabled` attribute of a "network-listener" on page 103 element.
`compression`	`off`	Remapped to the `compression` attribute of an "http" on page 61 element.
`compressableMimeType`	`text/html,text/xml, text/plain`	Remapped to the `compressable-mime-type` attribute of an "http" on page 61 element.

TABLE 1–62 `http-listener` Properties *(Continued)*

Property	Default	Description
`noCompression UserAgents`	empty `String` (`regexp` matching disabled)	Remapped to the `no-compression-user-agents` attribute of an "http" on page 61 element.
`minCompressionSize` or `compressionMinSize`	none	Remapped to the `compression-min-size-bytes` attribute of an "http" on page 61 element.
`crlFile`	none	Remapped to the `crl-file` attribute of an "ssl" on page 127 element.
`trustAlgorithm`	none	Remapped to the `trust-algorithm` attribute of an "ssl" on page 127 element.
`trustMaxCertLength`	`5`	Remapped to the `trust-max-cert-length` attribute of an "ssl" on page 127 element.
`disableUploadTimeout`	`true`	Remapped to the `upload-timeout-enabled` attribute of an "http" on page 61 element.
`connectionUpload Timeout`	`5`	Remapped to the `connection-upload-timeout-millis` attribute of an "http" on page 61 element.
`uriEncoding`	`UTF-8`	Remapped to the `uri-encoding` attribute of an "http" on page 61 element.

http-protocol

This element is not supported. If this element is present in the `domain.xml` file, its attributes are remapped to other elements and then it is deleted. For remapping details, see the Attributes table for this element.

Superelements

"http-service" on page 69

Subelements

none

Attributes

The following table describes attributes for the `http-protocol` element.

TABLE 1–63 `http-protocol` Attributes

Attribute	Default	Description
`version`	`HTTP/1.1`	Remapped to the `version` attribute of an "http" on page 61 element.

TABLE 1–63 `http-protocol` Attributes *(Continued)*

Attribute	Default	Description
`dns-lookup-enabled`	`false`	Remapped to the `dns-lookup-enabled` attribute of an "http" on page 61 element. (optional) If `true`, looks up the DNS entry for the client.
`forced-type`	`text/html; charset=iso-8859-1`	Remapped to the `forced-response-type` attribute of an "http" on page 61 element.
`default-type`	`text/html; charset=iso-8859-1`	Remapped to the `default-response-type` attribute of an "http" on page 61 element.
`forced-response-type`	`text/plain; charset=iso-8859-1`	Remapped to the `forced-response-type` attribute of an "http" on page 61 element.
`default-response-type`	`text/plain; charset=iso-8859-1`	Remapped to the `default-response-type` attribute of an "http" on page 61 element.
`ssl-enabled`	`true`	Not implemented. Use `ssl` subelements of "protocol" on page 110 elements.

http-service

Defines the HTTP service.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `http-service` element.

TABLE 1–64 `http-service` Subelements

Element	Required	Description
"access-log" on page 22	zero or one	Defines access log settings for each "http-access-log" on page 64 subelement of each "virtual-server" on page 138.
"http-listener" on page 65	one or more	Not implemented. See the element description for attribute and property remapping.
"virtual-server" on page 138	one or more	Defines a virtual server.
"request-processing" on page 117	zero or one	Not implemented. See the element description for attribute remapping.
"keep-alive" on page 90	zero or one	Not implemented. See the element description for attribute remapping.

TABLE 1–64 `http-service` Subelements *(Continued)*

Element	Required	Description
"connection-pool" on page 37	zero or one	Not implemented. See the element description for attribute remapping.
"http-protocol" on page 68	zero or one	Not implemented. See the element description for attribute remapping.
"http-file-cache" on page 64	zero or one	Not implemented. See the element description for attribute remapping.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `http-service` element.

TABLE 1–65 `http-service` Attributes

Attribute	Default	Description
`access-logging-enabled`	`false`	If `true`, enables access logging for all `virtual-server` subelements that specify this attribute as `true` or `inherit`. If `false`, disables access logging for all `virtual-server` subelements that specify this attribute as `false` or `inherit`.
`sso-enabled`	`false`	If `true`, single sign-on is enabled by default for all web applications on all virtual servers on this server instance that are configured for the same realm. If `false`, single sign-on is disabled by default for all virtual servers, and users must authenticate separately to every application on each virtual server. A `true` or `false` setting of the `sso-enabled` property of the "virtual-server" on page 138 element overrides this setting for an individual virtual server. An `inherit` setting of the `sso-enabled` property of the "virtual-server" on page 138 element uses this setting for an individual virtual server. At the `http-service` level, you cannot change the `sso-max-inactive-seconds` and `sso-reap-interval-seconds` values from their defaults. However, you can change these values at the `virtual-server` level.

Properties

The following table describes properties for the `http-service` element that are still supported. These properties apply to all "network-listener" on page 103 elements.

Most properties for this element are no longer supported. For information about how other properties have been remapped, see the Properties table for "http-listener" on page 65.

TABLE 1–66 `http-service` Properties

Property	Default	Description
`ssl-cache-entries`	`10000`	Specifies the number of SSL sessions to be cached.
`ssl3-session-timeout`	`86400`	Specifies the interval at which SSL3 sessions are cached.
`ssl-session-timeout`	`100`	Specifies the interval at which SSL2 sessions are cached.
`proxyHandler`	`com.sun.enterprise.web.ProxyHandlerImpl`	Specifies the fully qualified class name of a custom implementation of the `com.sun.appserv.ProxyHandler` abstract class, which allows a back-end application server instance to retrieve information about the original client request that was intercepted by an SSL-terminating proxy server. An implementation of this abstract class inspects a given request for the custom request headers through which the proxy server communicates the information about the original client request to the Enterprise Server instance, and returns that information to its caller. The default implementation reads the client IP address from an HTTP request header named `Proxy-ip`, the SSL `keysize` from an HTTP request header named `Proxy-keysize`, and the SSL client certificate chain from an HTTP request header named `Proxy-auth-cert`. The `Proxy-auth-cert` value must contain the BASE-64 encoded client certificate chain without the `BEGIN CERTIFICATE` and `END CERTIFICATE` boundaries and with `\n` replaced with `% d% a`. Only used if the `auth-pass-through-enabled` attribute of the "network-listener" on page 103 element's grandchild "http" on page 61 element is set to `true`.
`connectionTimeout`	`30`	Specifies the number of seconds an HTTP "network-listener" on page 103 waits, after accepting a connection, for the request URI line to be presented.

I

iiop-listener

Defines an IIOP listen socket. To enable SSL for this listener, include an `ssl` subelement.

Superelements

"iiop-service" on page 72

Subelements

The following table describes subelements for the `iiop-listener` element.

TABLE 1–67 `iiop-listener` Subelements

Element	Required	Description
"ssl" on page 127	zero or one	Defines SSL parameters.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `iiop-listener` element.

TABLE 1–68 `iiop-listener` Attributes

Attribute	Default	Description
`id`	none	The listener name. An `iiop-listener` name cannot begin with a number.
`address`	none	IP address of the listener. Can be in dotted-pair or IPv6 notation, or just a name.
`port`	`1072`	(optional) Port number for the listener. Legal values are `1` - `65535`. On UNIX, creating sockets that listen on ports `1` - `1024` requires superuser privileges.
`security -enabled`	`false`	(optional) Determines whether the listener runs SSL. To turn SSL2 or SSL3 on or off and set ciphers, use an `ssl` element.
`enabled`	`true`	(optional) Determines whether the listener is active.

iiop-service

Defines the IIOP service.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `iiop-service` element.

TABLE 1–69 `iiop-service` Subelements

Element	Required	Description
"orb" on page 105	only one	Configures the ORB.
"ssl-client-config" on page 128	zero or one	Defines SSL parameters for the ORB.
"iiop-listener" on page 71	zero or more	Defines an IIOP listen socket.

Attributes

The following table describes attributes for the `iiop-service` element.

TABLE 1–70 `iiop-service` Attributes

Attribute	Default	Description
`client-authentication-required`	`false`	(optional) If `true`, the server rejects unauthenticated requests and inserts an authentication-required bit in IORs sent to clients.

J

j2ee-application

This element is deprecated. Use an "application" on page 26 element instead.

Specifies a deployed Java EE application.

Superelements

"applications" on page 30

Subelements

The following table describes subelements for the `j2ee-application` element.

TABLE 1–71 `j2ee-application` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"web-service-endpoint" on page 148	zero or more	Configures a web service endpoint.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `j2ee-application` element.

TABLE 1–72 `j2ee-application` Attributes

Attribute	Default	Description
`name`	none	The name of the application.
`location`	none	A fully qualified or relative path to the directory to which the contents of the `.ear` file have been extracted. If relative, it is relative to the following directory: *domain-dir*`/applications/`
`object-type`	`user`	(optional) Defines the type of the resource. For an application, the only allowed value is `user`.
`enabled`	`true`	(optional) Determines whether the application is enabled.
`libraries`	none	(optional) Specifies an absolute or relative path to libraries specific to this module or application. A relative path is relative to *domain-dir*`/lib/applibs`. If the path is absolute, the path must be accessible to the domain administration server (DAS), which means it must be under *domain-dir*. To include more than one path, use a system-specific separator, such as a colon for Solaris or a semicolon for Windows. The libraries are made available to the application in the order in which they are specified.
`directory-deployed`	`false`	(optional) Specifies whether the application has been deployed as a directory.
`java-web-start-enabled`	`true`	(optional) Specifies whether Java Web Start access is permitted for application clients in this application.

jacc-provider

Specifies a Java Authorization Contract for Containers (JACC) provider for pluggable authorization.

Superelements

"security-service" on page 121

Subelements

The following table describes subelements for the `jacc-provider` element.

TABLE 1–73 `jacc-provider` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `jacc-provider` element.

TABLE 1–74 `jacc-provider` Attributes

Attribute	Default	Description
`name`	`default`	Specifies the name of the JACC provider.
`policy-provider`	`com.sun.enterprise.security.provider.PolicyWrapper`	Specifies the fully qualified class name of the JACC policy provider. Corresponds to and can be overridden by the system property `javax.security.jacc.policy.provider`.
`policy-configuration-factory-provider`	`com.sun.enterprise.security.provider.PolicyConfigurationFactoryImpl`	Specifies the fully qualified class name of the JACC policy configuration factory provider. Corresponds to and can be overridden by the system property `javax.security.jacc.PolicyConfigurationFactory.provider`.

Properties

The following table describes properties for the `jacc-provider` element.

TABLE 1–75 `jacc-provider` Properties

Attribute	Default	Description
`repository`	*domain-dir*`/generated/policy`	Specifies the directory containing the policy file.

java-config

Specifies the Virtual Machine for the Java platform (JVM software) configuration parameters.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `java-config` element.

TABLE 1–76 `java-config` Subelements

Element	Required	Description
"profiler" on page 108	zero or one	Configures a profiler for use with the Enterprise Server.
"jvm-options" on page 90	zero or more	Contains JVM command line options.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `java-config` element.

TABLE 1–77 `java-config` Attributes

Attribute	Default	Description
`java-home`	`${com.sun.aas.javaRoot}`	The path to the directory where the JDK is installed.
`debug-enabled`	`false`	(optional) If `true`, the server starts up in debug mode ready for attachment with a JPDA-based debugger.
`debug-options`	`-Xdebug -Xrunjdwp: transport=dt_socket, server=y,suspend=n`	(optional) Specifies JPDA (Java Platform Debugger Architecture) options. A list of debugging options is available at http://java.sun.com/products/jpda/doc/conninv.html#Invocation. For more information about debugging, see the *Sun GlassFish Enterprise Server v3 Application Development Guide*.
`rmic-options`	`-iiop -poa -alwaysgenerate -keepgenerated -g`	(optional) Specifies options passed to the RMI compiler at application deployment time. The `-keepgenerated` option saves generated source for stubs and ties. For details about the `rmic` command, see http://java.sun.com/javase/6/docs/technotes/tools/solaris/rmic.html.
`javac-options`	`-g`	(optional) Specifies options passed to the Java compiler at application deployment time.
`classpath-suffix`	none	Not implemented. Do not use.
`system-classpath`	none	Not implemented. Do not use.
`native-library-path-prefix`	none	(optional) Specifies a prefix for the native library path. The native library path is the automatically constructed concatenation of the Enterprise Server installation relative path for its native shared libraries, the standard JRE native library path, the shell environment setting (`LD_LIBRARY_PATH` on UNIX), and any path specified in the `profiler` element. Since this is synthesized, it does not appear explicitly in the server configuration.
`native-library-path-suffix`	none	(optional) Specifies a suffix for the native library path.
`bytecode-preprocessors`	none	(optional) A comma separated list of class names, each of which must implement the `com.sun.appserv.BytecodePreprocessor` interface. Each of the specified preprocessor classes is called in the order specified.
`env-classpath-ignored`	`true`	Not implemented. Do not use.

jdbc-connection-pool

Defines the properties that are required for creating a JDBC connection pool.

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `jdbc-connection-pool` element.

TABLE 1–78 `jdbc-connection-pool` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `jdbc-connection-pool` element. Changing the following attributes requires a server restart: `datasource-classname`, `driver-classname`, `associate-with-thread`, `lazy-connection-association`, and `lazy-connection-enlistment`. In addition, when you change a `jdbc-connection-pool` configuration, you should also redeploy or disable and re-enable the referring modules and applications.

TABLE 1–79 `jdbc-connection-pool` Attributes

Attribute	Default	Description
`name`	none	Specifies the name of the connection pool. A "jdbc-resource" on page 83 element's `pool-name` attribute refers to this `name`.
`description`	none	(optional) Specifies a text description of this element.
`datasource-classname`	none	(optional) Specifies the class name of the associated vendor-supplied data source. This class must implement `javax.sql.DataSource`, `javax.sql.XADataSource` , `javax.sql.ConnectionPoolDatasource`, or a combination.
`res-type`	none	(optional) Specifies the interface the data source class implements. The value of this attribute can be `javax.sql.DataSource`, `javax.sql.XADataSource` , `javax.sql.ConnectionPoolDatasource`, or `java.sql.Driver`. To support configuration of JDBC drivers and applications that use `java.sql.Driver` implementations, set this attribute to `java.sql.Driver`. This attribute must be specified to avoid ambiguity when a data source class implements two or more of these interfaces or when a `driver-classname` is specified. An error occurs if this attribute has a legal value and the indicated interface is not implemented by the data source class.

TABLE 1–79 `jdbc-connection-pool` Attributes *(Continued)*

Attribute	Default	Description
`driver-classname`	none	(optional) Specifies the vendor-supplied JDBC driver class name. This driver must implement the `java.sql.Driver` interface.
`ping`	`false`	(optional) Specifies whether to ping the pool during pool creation or reconfiguration to identify and warn of any erroneous attribute values.
`steady-pool-size`	`8`	(optional) Specifies the initial and minimum number of connections maintained in the pool.
`max-pool-size`	`32`	(optional) Specifies the maximum number of connections that can be created to satisfy client requests.
`max-wait-time-in-millis`	`60000`	(optional) Specifies the amount of time, in milliseconds, that the caller is willing to wait for a connection. If `0`, the caller is blocked indefinitely until a resource is available or an error occurs.
`pool-resize-quantity`	`2`	(optional) Specifies the number of idle connections to be destroyed if the existing number of connections is above the `steady-pool-size` (subject to the `max-pool-size` limit). This is enforced periodically at the `idle-timeout-in-seconds` interval. An idle connection is one that has not been used for a period of `idle-timeout-in-seconds`. When the pool size reaches `steady-pool-size`, connection removal stops.
`idle-timeout-in-seconds`	`300`	(optional) Specifies the maximum time that a connection can remain idle in the pool. After this amount of time, the pool can close this connection. This timeout value must be kept shorter than the server side (database) timeout value to prevent the accumulation of unusable connections in the application.
`transaction-isolation-level`	default JDBC driver isolation level	(optional) Specifies the transaction isolation level on the pooled database connections. Allowed values are `read-uncommitted`, `read-committed` , `repeatable-read`, or `serializable`. Applications that change the isolation level on a pooled connection programmatically risk polluting the pool, which can lead to errors. See `is-isolation-level-guaranteed` for more details.
`is-isolation-level-guaranteed`	`true`	(optional) Applicable only when `transaction-isolation-level` is explicitly set. If `true`, every connection obtained from the pool is guaranteed to have the desired isolation level. This might impact performance on some JDBC drivers. Only set this attribute to `false` if you are certain that the hosted applications do not return connections with altered isolation levels.
`is-connection-validation-required`	`false`	(optional) Specifies whether connections have to be validated before being given to the application. If a resource's validation fails, it is destroyed, and a new resource is created and returned.

TABLE 1–79 `jdbc-connection-pool` Attributes *(Continued)*

Attribute	Default	Description
`connection-validation-method`	`table`	(optional) Legal values are as follows: ■ `auto-commit`, which uses `Connection.setAutoCommit(Connection.getAutoCommit())` ■ `meta-data`, which uses `Connection.getMetaData()` ■ `table`, which performs a query on a table specified in the `validation-table-name` attribute ■ `custom-validation`, which uses a user-defined validation mechanism specified by the custom implementation class in `validation-classname`. Because many JDBC drivers cache the results of `auto-commit` and `meta-data` calls, they do not always provide reliable validations. Check with the driver vendor to determine whether these calls are cached or not. The `table` must exist and be accessible, but it doesn't require any rows. Do not use an existing table that has a large number of rows or a table that is already frequently accessed. More details can be found at Connection Validation in GlassFish JDBC.
`validation-table-name`	none	(optional) Specifies the table name to be used to perform a query to validate a connection. This parameter is mandatory if and only if `connection-validation` is enabled and `connection-validation-method` is set to `table`.

`validation-classname`	none	(optional) Specifies the custom validation implementation class name. This parameter is mandatory if and only if `connection-validation` is enabled and `connection-validation-method` is set to `custom-validation`. The classname provided must be accessible to the Enterprise Server. The specified class must implement the `org.glassfish.api.jdbc.ConnectionValidation` interface.
		Some of the built-in validation classes for commonly used databases are:
		`org.glassfish.jdbc.validation.DerbyConnectionValidation,`
		`org.glassfish.jdbc.validation.MySQLConnectionValidation,`
		`org.glassfish.jdbc.validation.OracleConnectionValidation,`
		`org.glassfish.jdbc.validation.PostgresConnectionValidation`
		`org.glassfish.jdbc.validation.JDBC40ConnectionValidation`
		The last class can apply to any JDBC 4.0 compliant driver.

`init-sql`	none	(optional) Specifies an SQL string to be executed whenever a physical connection to the database is created (not reused) from the pool. This initializes the state of the connection.
`fail-all-connections`	`false`	(optional) If `true`, closes all connections in the pool if a single validation check fails. This parameter is applicable if and only if `is-connection-validation-required` is set to `true`.
`non-transactional-connections`	`false`	(optional) If `true`, non-transactional connections can be made to the JDBC connection pool. These connections are not automatically enlisted with the transaction manager.

TABLE 1–79 `jdbc-connection-pool` Attributes *(Continued)*

Attribute	Default	Description
`allow-non-component-callers`	`false`	(optional) If `true`, non-Java-EE components, such as servlet filters, lifecycle modules, and third party persistence managers, can use this JDBC connection pool. The returned connection is automatically enlisted with the transaction context obtained from the transaction manager. Standard Java EE components can also use such pools. Connections obtained by non-component callers are not automatically closed at the end of a transaction by the container. They must be explicitly closed by the caller.
`validate-atmost-once-period-in-seconds`	`0`	(optional) Specifies the time interval within which a connection is validated at most once. Minimizes the number of validation calls. A value of zero allows unlimited validation calls.
`connection-leak-timeout-in-seconds`	`0`	(optional) Detects potential connection leaks by the application. A connection that is not returned back to the pool by the application within the specified period is assumed to be potentially leaking, and a stack trace of the caller is logged. A zero value disables leak detection. A nonzero value enables leak tracing. Use this attribute along with `connection-leak-reclaim` to avoid potential connection leaks from the application. More details are at Connection Leak Tracing.
`connection-leak-reclaim`	`false`	(optional) If `true`, the pool will reclaim a connection after `connection-leak-timeout-in-seconds` occurs.
`connection-creation-retry-attempts`	`0`	(optional) Specifies the number of attempts to create a new connection in case of a failure.
`connection-creation-retry-interval-in-seconds`	`10`	(optional) Specifies the time interval between attempts to create a connection when `connection-creation-retry-attempts` is greater than `0`.
`statement-timeout-in-seconds`	`-1`	(optional) Sets the query timeout property of a statement to enable termination of abnormally long running queries. The default value of `-1` disables this feature. An abnormally long running JDBC query executed by an application may leave it in a hanging state unless a timeout is explicitly set on the statement. This attribute guarantees that all queries automatically time out if not completed within the specified period. When statements are created, the `queryTimeout` is set according to the value specified in this attribute. This works only when the underlying JDBC driver supports `queryTimeout` for `Statement`, `PreparedStatement`, `CallableStatement`, and `ResultSet`.
`lazy-connection-enlistment`	`false`	(optional) If `true`, a connection is not enlisted in a transaction until it is used. If `false`, any connection object available to a transaction is enlisted in the transaction.
`lazy-connection-association`	`false`	(optional) If `true`, a physical connection is not associated with a logical connection until it is used. If `false`, a physical connection is associated with a logical connection even before it is used.

TABLE 1–79 `jdbc-connection-pool` Attributes *(Continued)*

Attribute	Default	Description
`associate-with-thread`	`false`	(optional) Specifies whether connectionsare associated with the thread to enable the thread to reuse the connections. If `true`, allows connections to be saved as `ThreadLocal` in the calling thread. Connections get reclaimed only when the calling thread dies or when the calling thread is not in use and the pool has run out of connections. If `false`, the thread must obtain a connection from the pool each time the thread requires a connection. This attribute associates connections with a thread such that when the same thread is in need of connections, it can reuse the connections already associated with that thread. In this case, the overhead of getting connections from the pool is avoided. However, when this value is set to `true`, you should verify that the value of the `max-pool-size` attribute is comparable to the `max-thread-pool-size` attribute of the "thread-pool" on page 132 element. If the `max-thread-pool-size` value is much higher than the `max-pool-size` value, a lot of time is spent associating connections with a new thread after dissociating them from an older one. Use this attribute in cases where the thread pool should reuse connections to avoid this overhead.
`match-connections`	`false`	(optional) Specifies whether a connection that is selected from the pool should be matched with the connections with certain credentials. If `true`, enables connection matching. You can set to `false` if connections are homogeneous. If the connection pool is used by applications that have multiple user credentials, `match-connections` must be `true`. The connection pool matches the request's credential with the connections in the pool and returns a matched connection for use. For new requests with different credentials, unmatched free connections are automatically purged to provide new connections to satisfy the new requests. This attribute need not be `true` if it is known that there is only one credential used by the applications and therefore the pool has homogeneous connections.
`max-connection-usage-count`	`0`	(optional) Specifies the number of times a connections is reused by the pool, after which it is closed. A zero value disables this feature. By limiting the maximum number of times a connection can be reused, you can avoid statement leaks if the application does not close statements.
`sql-trace-listeners`	none	(optional) Specifies that SQL statements executed by applications need to be traced. Helps administrators analyze the statements. Expects as a value a comma-separated list of listener implementation class names. Enables easy filtering of log messages for the SQL statements. SQL trace listeners must implement the `org.glassfish.api.jdbc.SQLTraceListener` interface.
`statement-cache-size`	`0`	(optional) Specifies the number of statements to be cached using the `lru` (Least Recently Used) caching mechanism. The default value of `0` disables statement caching.
`pooling`	`true`	(optional) If `false`, disables connection pooling.

TABLE 1–79 `jdbc-connection-pool` Attributes *(Continued)*

Attribute	Default	Description
`wrap-jdbc-objects`	`true`	(optional) If `true`, wrapped JDBC objects are returned for `Statement`, `PreparedStatement`, `CallableStatement`, `ResultSet`, and `DatabaseMetaData`. This option ensures that `Statement.getConnection()` is the same as `DataSource.getConnection()`. Therefore, this option should be `true` when both `Statement.getConnection()` and `DataSource.getConnection()` are done.

Properties

Most JDBC drivers allow use of standard property lists to specify the user, password, and other resource configuration information. Although properties are optional with respect to the Enterprise Server, some properties might be necessary for most databases. For details, see the JDBC 4.0 Standard Extension API.

When properties are specified, they are passed to the vendor's data source class (specified by the `datasource-classname` attribute) as is using set*Name*(*value*) methods.

The `user` and `password` properties are used as the default principal if container managed authentication is specified and a `default-resource-principal` is not found in the application deployment descriptors.

The following table describes some common properties for the `jdbc-connection-pool` element.

Changing JDBC driver properties requires a server restart.

TABLE 1–80 `jdbc-connection-pool` Properties

Property	Description
`user`	Specifies the user name for connecting to the database.
`password`	Specifies the password for connecting to the database.
`databaseName`	Specifies the database for this connection pool.
`serverName`	Specifies the database server for this connection pool.
`port`	Specifies the port on which the database server listens for requests.
`networkProtocol`	Specifies the communication protocol.
`roleName`	Specifies the initial SQL role name.
`datasourceName`	Specifies an underlying `XADataSource`, or a `ConnectionPoolDataSource` if connection pooling is done.
`description`	Specifies a text description.

TABLE 1–80 `jdbc-connection-pool` Properties *(Continued)*

Property	Description
`url`	Specifies the URL for this connection pool. Although this is not a standard property, it is commonly used.
`prefer-validate-over-recreate`	Specifies that validating idle connections is preferable to closing them. This property has no effect on non-idle connections. If set to `true`, idle connections are validated during pool resizing, and only those found to be invalid are destroyed and recreated. If `false`, all idle connections are destroyed and recreated during pool resizing. The default is false.
`LazyConnectionEnlistment`	Deprecated. Use the equivalent attribute.
`LazyConnectionAssociation`	Deprecated. Use the equivalent attribute.
`AssociateWithThread`	Deprecated. Use the equivalent attribute.
`MatchConnections`	Deprecated. Use the equivalent attribute.

jdbc-resource

Defines a JDBC (`javax.sql.DataSource`) resource.

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `jdbc-resource` element.

TABLE 1–81 `jdbc-resource` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `jdbc-resource` element.

TABLE 1–82 `jdbc-resource` Attributes

Attribute	Default	Description
`jndi-name`	none	Specifies the JNDI name for the resource.

TABLE 1–82 `jdbc-resource` Attributes *(Continued)*

Attribute	Default	Description
`description`	none	(optional) Specifies a text description of this element.
`pool-name`	none	Specifies the `name` of the associated "jdbc-connection-pool" on page 77.
`object-type`	`user`	(optional) Defines the type of the resource. Allowed values are: ■ `system-all` - A system resource for all server instances and the domain application server. ■ `system-admin` - A system resource only for the domain application server. ■ `system-instance` - A system resource for all server instances only. ■ `user` - A user resource.
`enabled`	`true`	(optional) Determines whether this resource is enabled at runtime.

jms-host

Configures the host of the built-in Java Message Service (JMS) that is managed by the Enterprise Server.

Superelements

"jms-service" on page 85

Subelements

The following table describes subelements for the `jms-host` element.

TABLE 1–83 `jms-host` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `jms-host` element.

TABLE 1–84 `jms-host` Attributes

Attribute	Default	Description
`name`	none	Specifies the name of the JMS host.
`host`	*machine-name*	(optional) Specifies the host name of the JMS host.

TABLE 1–84 `jms-host` Attributes *(Continued)*

Attribute	Default	Description
`port`	`7676`	(optional) Specifies the port number used by the JMS provider.
`admin-user-name`	`admin`	(optional) Specifies the administrator user name for the JMS provider.
`admin-password`	`admin`	(optional) Specifies the administrator password for the JMS provider.

jms-service

Configures the built-in Java Message Service (JMS) that is managed by the Enterprise Server.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `jms-service` element.

TABLE 1–85 `jms-service` Subelements

Element	Required	Description
"jms-host" on page 84	zero or more	Specifies a host.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `jms-service` element.

TABLE 1–86 `jms-service` Attributes

Attribute	Default	Description
`init-timeout-in-seconds`	`60`	(optional) Specifies the amount of time the server instance waits at startup for its configured default JMS host to respond. If there is no response, startup is aborted. If set to `0`, the server instance waits indefinitely.

TABLE 1–86 `jms-service` Attributes *(Continued)*

Attribute	Default	Description
`type`	`EMBEDDED`	Specifies the type of JMS service: ■ `EMBEDDED` means the JMS provider is started in the same JVM machine as the Enterprise Server, and the networking stack is bypassed. Lazy initialization starts the default embedded broker on the first access of JMS services rather than at Enterprise Server startup. ■ `LOCAL` means the JMS provider is started along with the Enterprise Server. The `LOCAL` setting implicitly sets up a 1:1 relationship between an Enterprise Server instance and a Message Queue broker. ■ `REMOTE` means the JMS provider is remote and is not started by the Enterprise Server.
`start-args`	none	(optional) Specifies the string of arguments supplied for startup of the corresponding JMS instance.
`default-jms-host`	none	Specifies the name of the default "jms-host" on page 84. If `type` is set to `LOCAL`, this `jms-host` is automatically started at Enterprise Server startup.
`reconnect-interval-in-seconds`	`5`	(optional) Specifies the interval between reconnect attempts.
`reconnect-attempts`	`3`	(optional) Specifies the number of reconnect attempts.
`reconnect-enabled`	`true`	(optional) If `true`, reconnection is enabled. The JMS service automatically tries to reconnect to the JMS provider when the connection is broken. When the connection is broken, depending on the message processing stage, the `onMessage()` method might not be able to complete successfully or the transaction might be rolled back due to a JMS exception. When the JMS service reestablishes the connection, JMS message redelivery semantics apply.
`addresslist-behavior`	`random`	(optional) Specifies whether the reconnection logic selects the broker from the `imqAddressList` in a `random` or sequential (`priority`) fashion.
`addresslist-iterations`	`3`	(optional) Specifies the number of times the reconnection logic iterates over the `imqAddressList` if `addresslist-behavior` is set to `PRIORITY`.
`mq-scheme`	`mq`	(optional) Specifies the scheme for establishing connection with the broker. For example, specify `http` for connecting to the broker over HTTP.
`mq-service`	`jms`	(optional) Specifies the type of broker service. If a broker supports SSL, the type of service can be `ssljms`.

Properties

The following table describes properties for the `jms-service` element.

TABLE 1–87 `jms-service` Properties

Property	Default	Description
`instance-name`	`imqbroker`	Specifies the full Sun GlassFish Message Queue broker instance name.
`instance-name-suffix`	none	Specifies a suffix to add to the full Message Queue broker instance name. The suffix is separated from the instance name by an underscore character (_). For example, if the instance name is `imqbroker`, appending the suffix `xyz` changes the instance name to `imqbroker_xyz`.
`append-version`	`false`	If `true`, appends the major and minor version numbers, preceded by underscore characters (_), to the full Message Queue broker instance name. For example, if the instance name is `imqbroker`, appending the version numbers changes the instance name to `imqbroker_8_0`.
`user-name`	`guest`	Specifies the user name for creating the JMS connection. Needed only if the default username/password of guest/guest is not available in the broker.
`password`	`guest`	Specifies the password for creating the JMS connection. Needed only if the default username/password of guest/guest is not available in the broker.

jmx-connector

Configures a JSR 160/255 compliant remote JMX connector, which handles the JMX communication between the domain administration server, the node agents, and the remote server instances. This JMX connector also handles JMX communication between an external management client and the domain administration server.

Only the system JMX connector is started by the server processes at startup. Do not configure additional JMX connectors.

Superelements

"admin-service" on page 24

Subelements

The following table describes subelements for the `jmx-connector` element.

TABLE 1–88 `jmx-connector` Subelements

Element	Required	Description
"ssl" on page 127	zero or one	Defines SSL parameters.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `jmx-connector` element.

TABLE 1–89 `jmx-connector` Attributes

Attribute	Default	Description
`name`	none	Specifies the name of the connector used by the designated system JMX connector for JMX communication between server instances. Do not modify this name.
`protocol`	`rmi_jrmp`	(optional) Specifies the protocol that this JMX connector supports. The only supported protocol is `rmi_jrmp`. Do not modify this value.
`address`	`0.0.0.0`	Specifies the IP address of the naming service where the JMX connector server stub is registered. This is not the port of the server socket that does the actual JMX communication. This is the address of the network interface where the RMI registry is started. If your system has multiple network interfaces, modify this value so that only a particular interface is selected.
`port`	`8686`	Specifies the port number on with the naming service (RMI registry) listens for RMI client connections. The only use of this naming service is to download the RMI stubs. If the default port is occupied, a free port is used. Legal values are `1` - `65535`. On UNIX, creating sockets that listen on ports `1` - `1024` requires superuser privileges.
`auth-realm-name`	`admin-realm`	Specifies the `name` of an "auth-realm" on page 32 subelement of the "security-service" on page 121 element for the server instance that is running this JMX connector's server end. Note that this is a dedicated administration security realm.
`security-enabled`	`false`	(optional) Determines whether JMX communication is encrypted.
`enabled`	`true`	(optional) Enables the JMX connector. Do not modify this value.

jruby-container

Configures the JRuby container. This element is present only if at least one JRuby application is deployed.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `jruby-container` element.

TABLE 1–90 `jruby-container` Subelements

Element	Required	Description
"jruby-runtime-pool" on page 89	only one	Configures the JRuby runtime pool.

Attributes

The following table describes attributes for the `jruby-container` element.

TABLE 1–91 `jruby-container` Attributes

Attribute	Default	Description
`jruby-home`	*as-install*`/jruby`	Specifies the directory where JRuby itself (not the Enterprise Server JRuby container) is installed. Overridden by the `jruby.home` property of "application" on page 26 if defined.

jruby-runtime-pool

Configures the JRuby runtime pool. This element is present only if at least one JRuby application is deployed.

Superelements

"jruby-container" on page 88

Subelements

none

Attributes

The following table describes attributes for the `jruby-runtime-pool` element.

TABLE 1–92 `jruby-runtime-pool` Attributes

Attribute	Default	Description
`jruby-runtime`	`1`	Specifies the initial number of JRuby runtimes to start. Must be greater than zero, at least `jruby-runtime-min`, and `jruby-runtime-max` or less. Overridden by the `jruby.runtime` property of "application" on page 26 if defined.
`jruby-runtime-min`	`1`	Specifies the minimum number of JRuby runtimes in the pool. Must be greater than zero, `jruby-runtime` or less, and `jruby-runtime-max` or less. Overridden by the `jruby.runtime.min` property of "application" on page 26 if defined.
`jruby-runtime-max`	`1`	Specifies the maximum number of JRuby runtimes in the pool. Must be greater than zero, at least `jruby-runtime-min` and at least `jruby-runtime`. Overridden by the `jruby.runtime.max` property of "application" on page 26 if defined.

jvm-options

Contains JVM command line options, for example:

```
<jvm-options>-Xdebug -Xmx128m</jvm-options>
```

For information about JVM options, see `http://java.sun.com/docs/hotspot/VMOptions.html`.

Superelements

"java-config" on page 75, "profiler" on page 108

Subelements

none - contains data

K

keep-alive

This element is not supported. If this element is present in the `domain.xml` file, its attributes are remapped to other elements and then it is deleted. For remapping details, see the Attributes table for this element.

Superelements

"http-service" on page 69

Subelements

none

Attributes

The following table describes attributes for the `keep-alive` element.

TABLE 1–93 `keep-alive` Attributes

Attribute	Default	Description
`thread-count`	1	Not implemented. Do not use.

TABLE 1–93 `keep-alive` Attributes *(Continued)*

Attribute	Default	Description
`max-connections`	`250`	Remapped to the `max-connections` attribute of an "http" on page 61 element.
`timeout-in-seconds`	`30`	Remapped to the `timeout-seconds` attribute of an "http" on page 61 element.

L

lifecycle-module

This element is deprecated. Use an "application" on page 26 element instead.

Specifies a deployed lifecycle module. For more information about lifecycle modules, see the *Sun GlassFish Enterprise Server v3 Application Development Guide*.

Superelements

"applications" on page 30

Subelements

The following table describes subelements for the `lifecycle-module` element.

TABLE 1–94 `lifecycle-module` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `lifecycle-module` element.

TABLE 1–95 `lifecycle-module` Attributes

Attribute	Default	Description
`name`	none	The name of the lifecycle module.
`class-name`	none	The fully qualified name of the lifecycle module's class file, which must implement the `com.sun.appserv.server.LifecycleListener` interface.

TABLE 1–95 `lifecycle-module` Attributes *(Continued)*

Attribute	Default	Description
`classpath`	value of `application-root` attribute of "domain" on page 49 element	(optional) The classpath for the lifecycle module. Specifies where the module is located.
`load-order`	none	(optional) Determines the order in which lifecycle modules are loaded at startup. Modules with smaller integer values are loaded sooner. Values can range from `101` to the operating system's `MAXINT`. Values from `1` to `100` are reserved.
`is-failure-fatal`	`false`	(optional) Determines whether the server is shut down if the lifecycle module fails.
`object-type`	`user`	(optional) Defines the type of the resource. For a lifecycle module, the only allowed value is `user`.
`enabled`	`true`	(optional) Determines whether the lifecycle module is enabled.

log-service

Configures the *server log* file, which stores messages from the default virtual server. Messages from other configured virtual servers also go here, unless the `log-file` or `access-log` attribute is explicitly specified in the `virtual-server` element. The default name is `server.log`.

Other log files are configured by other elements:

- A *virtual server log* file stores messages from a `virtual-server` element that has an explicitly specified `log-file` attribute. See "virtual-server" on page 138.
- The *access log* file stores HTTP access messages from the default virtual server. The default name is `access.log`. See "access-log" on page 22 and "http-access-log" on page 64.
- The *transaction log* files store transaction messages from the default virtual server. The default name of the directory for these files is `tx`. See "transaction-service" on page 133.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `log-service` element.

TABLE 1–96 `log-service` Subelements

Element	Required	Description
"module-log-levels" on page 100	zero or one	Specifies log levels.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `log-service` element.

TABLE 1–97 `log-service` Attributes

Attribute	Default	Description
`file`	`server.log` in the directory specified by the `log-root` attribute of the "domain" on page 49 element	(optional) Overrides the name or location of the server log. The file and directory in which the server log is kept must be writable by the user account under which the server runs. An absolute path overrides the `log-root` attribute of the "domain" on page 49 element. A relative path is relative to the `log-root` attribute of the "domain" on page 49 element. If no `log-root` value is specified, it is relative to *domain-dir*`/config`.
`use-system-logging`	`false`	(optional) If `true`, uses the UNIX `syslog` service to produce and manage logs.
`log-handler`	`java.util.logging.ConsoleHandler`	(optional) Specifies a custom log handler to be added to end of the chain of system handlers to log to a different destination.
`log-filter`	none	(optional) Specifies a log filter to do custom filtering of log records.
`log-to-console`	`false`	(optional) Deprecated and ignored.
`log-rotation-limit-in-bytes`	`2000000`	(optional) Log files are rotated when the file size reaches the specified limit.
`log-rotation-timelimit-in-minutes`	`0`	(optional) Enables time-based log rotation. The valid range is `60` minutes (1 hour) to `14400` minutes (10*24*60 minutes or 10 days). If the value is zero, the files are rotated based on the size specified in `log-rotation-limit-in-bytes`. If the value is greater than zero, `log-rotation-timelimit-in-minutes` takes precedence over `log-rotation-limit-in-bytes`.
`alarms`	`false`	(optional) If `true`, displays alarms for "module-log-levels" on page 100 values of `WARNING` or `SEVERE`.
`retain-error-statistics-for-hours`	`0`	(optional) Specifies the number of most recent hours for which error statistics are retained in memory. The default and minimum value is `5` hours. The maximum value allowed is `500` hours. Larger values incur additional memory overhead.

Properties

The following table describes properties for the `log-service` element.

TABLE 1–98 `log-service` Properties

Attribute	Default	Description
`max-queue-size`	`5000`	Specifies the number of entries the log queue holds. When the log queue is full, the system blocks until a record is written to the log file. Changing this property requires a server restart.
`flush-frequency`	`1`	Specifies the maximum number of messages written from the log queue to the log file at once.

M

mail-resource

Defines a JavaMail (`javax.mail.Session`) resource.

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `mail-resource` element.

TABLE 1–99 `mail-resource` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `mail-resource` element.

TABLE 1–100 `mail-resource` Attributes

Attribute	Default	Description
`jndi-name`	none	Specifies the JNDI name for the resource.
`store-protocol`	`imap`	(optional) Specifies the storage protocol service, which connects to a mail server, retrieves messages, and saves messages in folder(s). Allowed values are `imap`, `pop3`, `imaps`, and `pop3s` .

`store-protocol-class`	`com.sun.mail.imap.IMAPStore`	(optional) Specifies the service provider implementation class for storage. Allowed values are:
		`com.sun.mail.imap.IMAPStore`
		`com.sun.mail.pop3.POP3Store`
		`com.sun.mail.imap.IMAPSSLStore`
		`com.sun.mail.pop3.POP3SSLStore`

`transport-protocol`	`smtp`	(optional) Specifies the transport protocol service, which sends messages. Allowed values are `smtp` and `smtps`.

`transport-protocol-class`	`com.sun.mail.smtp.SMTPTransport`	(optional) Specifies the service provider implementation class for transport. Allowed values are:
		`com.sun.mail.smtp.SMTPTransport`
		`com.sun.mail.smtp.SMTPSSLTransport`

`host`	none	The mail server host name.
`user`	none	The mail server user name.
`from`	none	The email address the mail server uses to indicate the message sender.
`debug`	`false`	(optional) Determines whether debugging for this resource is enabled.
`object-type`	`user`	(optional) Defines the type of the resource. Allowed values are: ■ `system-all` - A system resource for all server instances and the domain application server. ■ `system-admin` - A system resource only for the domain application server. ■ `system-instance` - A system resource for all server instances only. ■ `user` - A user resource.
`enabled`	`true`	(optional) Determines whether this resource is enabled at runtime.

Properties

You can set properties for the `mail-resource` element and then get these properties in a JavaMail `Session` object later. Every property name must start with a `mail-` prefix. The Enterprise Server changes the dash (`-`) character to a period (`.`) in the name of the property,

then saves the property to the `MailConfiguration` and JavaMail `Session` objects. If the name of the property doesn't start with `mail-`, the property is ignored.

For example, to define the property `mail.password` in a JavaMail Session object, first edit `domain.xml` as follows:

```
...
 <mail-resource jndi-name="mail/Session" ...>
     <property name="mail-password" value="adminadmin"/>
 </mail-resource>
 ...
```

After getting the JavaMail `Session` object, get the `mail.password` property to retrieve the value `adminadmin`, as follows:

```
String password = session.getProperty("mail.password");
```

For more information about JavaMail properties, see JavaMail API Documentation (`http://java.sun.com/products/javamail/javadocs/index.html`).

manager-properties

Specifies session manager properties.

Superelements

"session-manager" on page 125

Subelements

The following table describes subelements for the `manager-properties` element.

TABLE 1–101 `manager-properties` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `manager-properties` element.

TABLE 1–102 `manager-properties` Attributes

Attribute	Default	Description
`session-file-name`	none; state is not preserved across restarts	(optional) Specifies the absolute or relative path to the directory in which the session state is preserved between application restarts, if preserving the state is possible. A relative path is relative to the temporary directory for this web application. To disable this behavior and not preserve the session state, specify an empty string as the value of this attribute.
`reap-interval-in-seconds`	`60`	(optional) Specifies the time between checks for expired sessions. If the `persistence-frequency` attribute of the `web-container-availability` element is set to `time-based`, active sessions are stored at this interval. Set this value lower than the frequency at which session data changes. For example, this value should be as low as possible (`1` second) for a hit counter servlet on a frequently accessed web site, or you could lose the last few hits each time you restart the server.
`max-sessions`	`-1`	(optional) Specifies the maximum number of sessions that can be in cache, or `-1` for no limit. After this, an attempt to create a new session causes an `IllegalStateException` to be thrown.
`session-id-generator-classname`	internal class generator	(optional) Not implemented.

mdb-container

Configures the message-driven bean (MDB) container.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `mdb-container` element.

TABLE 1–103 `mdb-container` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `mdb-container` element.

TABLE 1–104 `mdb-container` Attributes

Attribute	Default	Description
`steady-pool-size`	`10`	(optional) Specifies the initial and minimum number of beans maintained in the pool.
`pool-resize-quantity`	`2`	(optional) Specifies the number of beans to be removed when the `idle-timeout-in-seconds` timer expires. A cleaner thread removes any unused instances. Must be `0` or greater and less than `max-pool-size` . The pool is not resized below the `steady-pool-size`.
`max-pool-size`	`60`	(optional) Specifies the maximum number of beans that can be created to satisfy client requests.
`idle-timeout-in-seconds`	`600`	(optional) Specifies the maximum time that a bean can remain idle in the pool. After this amount of time, the bean is destroyed. A value of `0` means a bean can remain idle indefinitely.

Properties

The following table describes properties for the `mdb-container` element.

TABLE 1–105 `mdb-container` Properties

Property	Default	Description
`cmt-max-runtime-exceptions`	`1`	Specifies the maximum number of `RuntimeException` occurrences allowed from a message-driven bean's `onMessage()` method when container-managed transactions are used. Deprecated.

message-security-config

Specifies configurations for message security providers.

Superelements

"security-service" on page 121

Subelements

The following table describes subelements for the `message-security-config` element.

TABLE 1–106 `message-security-config` Subelements

Element	Required	Description
"provider-config" on page 114	one or more	Specifies a configuration for one message security provider.

Attributes

The following table describes attributes for the `message-security-config` element.

TABLE 1–107 `message-security-config` Attributes

Attribute	Default	Description
`auth-layer`	`HttpServlet`	Specifies the message layer at which authentication is performed. The value must be `SOAP` or `HttpServlet`.
`default-provider`	none	(optional) Specifies the server provider that is invoked for any application not bound to a specific server provider.
`default-client-provider`	none	(optional) Specifies the client provider that is invoked for any application not bound to a specific client provider.

module

Defines a stand-alone module or a component of a Java EE application.

An "engine" on page 54 runs a sniffer during deployment, which is responsible for identifying a type of deployment artifact (such as a WAR file) and setting up the associated container (such as the web container). Multiple engines, each with its own sniffer, can be associated with a given module.

Superelements

"application" on page 26

Subelements

The following table describes subelements for the `module` element.

TABLE 1–108 `module` Subelements

Element	Required	Description
"engine" on page 54	one or more	Specifies an engine.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `module` element.

TABLE 1–109 `module` Attributes

Attribute	Default	Description
`name`	none	The name of the module.

module-log-levels

Controls the level of messages logged by server subsystems to the server log. Allowed values (levels) of each subsystem attribute are, from highest to lowest: `FINEST` , `FINER`, `FINE`, `CONFIG`, `INFO`, `WARNING`, `SEVERE`, and `OFF`. Each value logs all messages for all lower values. The default value is `INFO`, which logs all `INFO`, `SEVERE` , and `WARNING` messages.

Superelements

"log-service" on page 92

Subelements

The following table describes subelements for the `module-log-levels` element.

TABLE 1–110 `module-log-levels` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `module-log-levels` element. The attribute names are the names of the Enterprise Server system loggers.

TABLE 1–111 `module-log-levels` Attributes

Attribute	Default	Description
`root`	`INFO`	(optional) Specifies the default level of messages logged by the entire Enterprise Server installation.
`server`	`INFO`	(optional) Specifies the default level of messages logged by the server instance.
`ejb-container`	`INFO`	(optional) Specifies the level of messages logged by the EJB container.
`cmp-container`	`INFO`	(optional) Specifies the level of messages logged by the CMP subsystem of the EJB container.
`mdb-container`	`INFO`	(optional) Specifies the level of messages logged by the MDB container.
`web-container`	`INFO`	(optional) Specifies the level of messages logged by the web container.
`classloader`	`INFO`	(optional) Specifies the level of messages logged by the classloader hierarchy.
`configuration`	`INFO`	(optional) Specifies the level of messages logged by the configuration subsystem.
`naming`	`INFO`	(optional) Specifies the level of messages logged by the naming subsystem.
`security`	`INFO`	(optional) Specifies the level of messages logged by the security subsystem.

TABLE 1–111 `module-log-levels` Attributes *(Continued)*

Attribute	Default	Description
`jts`	`INFO`	(optional) Specifies the level of messages logged by the Java Transaction Service.
`jta`	`INFO`	(optional) Specifies the level of messages logged by the Java Transaction API.
`admin`	`INFO`	(optional) Specifies the level of messages logged by the Administration Console subsystem.
`deployment`	`INFO`	(optional) Specifies the level of messages logged by the deployment subsystem.
`verifier`	`INFO`	(optional) Specifies the level of messages logged by the deployment descriptor verifier.
`jaxr`	`INFO`	(optional) Specifies the level of messages logged by the XML registry.
`jaxrpc`	`INFO`	(optional) Specifies the level of messages logged by the XML RPC module.
`saaj`	`INFO`	(optional) Specifies the level of messages logged by the SOAP with Attachments API for Java module.
`corba`	`INFO`	(optional) Specifies the level of messages logged by the ORB.
`javamail`	`INFO`	(optional) Specifies the level of messages logged by the JavaMail subsystem.
`jms`	`INFO`	(optional) Specifies the level of messages logged by the Java Message Service.
`connector`	`INFO`	(optional) Specifies the level of messages logged by the connector subsystem.
`jdo`	`INFO`	(optional) Specifies the level of messages logged by the Java Data Objects module.
`cmp`	`INFO`	(optional) Specifies the level of messages logged by the CMP subsystem.
`util`	`INFO`	(optional) Specifies the level of messages logged by the utility subsystem.
`resource-adapter`	`INFO`	(optional) Specifies the level of messages logged by the resource adapter subsystem.
`synchronization`	`INFO`	(optional) Specifies the level of messages logged by the synchronization subsystem.
`node-agent`	`INFO`	(optional) Specifies the level of messages logged by the node agent subsystem.
`self-management`	`INFO`	(optional) Specifies the level of messages logged by the self-management (management rules) subsystem.
`group-management-service`	`INFO`	(optional) Specifies the level of messages logged by the Group Management Service.
`management-event`	`INFO`	(optional) Specifies the level of messages logged by the self-management event subsystem.

module-monitoring-levels

Controls the level of monitoring of server subsystems. Allowed values of each subsystem attribute are `LOW`, `HIGH`, and `OFF`.

Superelements

"monitoring-service" on page 102

Subelements

The following table describes subelements for the `module-monitoring-levels` element.

TABLE 1–112 `module-monitoring-levels` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

TABLE 1–113 `module-monitoring-levels` Attributes

Attribute	Default	Description
`thread-pool`	`OFF`	(optional) Specifies the level of monitoring of the thread pool subsystem.
`orb`	`OFF`	(optional) Specifies the level of monitoring of the ORB.
`ejb-container`	`OFF`	(optional) Specifies the level of monitoring of the EJB container.
`web-container`	`OFF`	(optional) Specifies the level of monitoring of the web container.
`transaction-service`	`OFF`	(optional) Specifies the level of monitoring of the transaction service.
`http-service`	`OFF`	(optional) Specifies the level of monitoring of the HTTP service.
`jdbc-connection-pool`	`OFF`	(optional) Specifies the level of monitoring of the JDBC connection pool subsystem.
`connector-connection-pool`	`OFF`	(optional) Specifies the level of monitoring of the connector connection pool subsystem.
`connector-service`	`OFF`	(optional) Specifies the level of monitoring of the connector service.
`jms-service`	`OFF`	(optional) Specifies the level of monitoring of the JMS service.
`jvm`	`OFF`	(optional) Specifies the level of monitoring of the JVM subsystem.

monitoring-service

Configures the monitoring service.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `monitoring-service` element.

TABLE 1–114 `monitoring-service` Subelements

Element	Required	Description
"module-monitoring-levels" on page 101	zero or one	Controls the level of monitoring of server subsystems.
"property" on page 109	zero or more	Specifies a property or a variable.

N

network-config

Configures the communication network for the Enterprise Server. The network configuration includes most of the features that were in the HTTP Service in previous Enterprise Server releases. HTTP Service elements that are no longer supported are converted to network configuration elements. For additional information, see "http-service" on page 69.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `network-listeners` element.

TABLE 1–115 `network-listeners` Subelements

Element	Required	Description
"network-listeners" on page 104	only one	Contains network listeners.
"protocols" on page 113	only one	Contains protocols.
"transports" on page 137	only one	Contains transports.

network-listener

Configures a network listener.

When you first install the Enterprise Server, three `network-listener` elements exist by default, with `name` values of `admin-listener`, `http-listener1`, and `http-listener2`. The `http-listener2`, which is set up with SSL, is disabled by default.

Note – Network listeners are affected by properties of "http-service" on page 69.

Superelements

"network-listeners" on page 104

Subelements

none

Attributes

The following table describes attributes for the `network-listener` element.

TABLE 1–116 `network-listener` Attributes

Attribute	Default	Description
`name`	none	The unique listener name. A `network-listener` name cannot begin with a number.
`address`	none	IP address of the listener. Can be in dotted-pair or IPv6 notation. Can be `any` (for `INADDR_ANY`) to listen on all IP addresses. Can be a hostname.
`enabled`	`true`	(optional) Determines whether the listener is active. If set to `false`, any attempts to connect to the listener result in a socket exception (`java.net.ConnectException`). In Enterprise Server versions prior to 9.1, a listener whose `enabled` attribute was set to `false` returned a 404 response code for any requests sent to it. To achieve this behavior in the current Enterprise Server version, set the listener's `enabled` attribute to `true`, and set every associated virtual server's state to `off`. A "virtual-server" on page 138 lists its associated listeners in its `network-listeners` attribute.
`jk-enabled`	`false`	(optional) If `true`, enables `mod_jk` support for this listener.
`port`	none	Port number on which the listener listens. Legal values are `1` - `65535`. On UNIX, creating sockets that listen on ports `1` - `1024` requires superuser privileges. Configuring an SSL listener to listen on port 443 is standard.
`protocol`	none	Specifies the name of the "protocol" on page 110 associated with this network listener. Although this attribute is required, a protocol is automatically created with the same name as the network listener when you use the `asadmin create-http-listener` command to create a network listener.
`thread-pool`	none	(Optional) Specifies the name of the "thread-pool" on page 132 associated with this network listener.
`transport`	none	Specifies the name of the "transport" on page 136 associated with this network listener. Although this attribute is required, the default transport is used when you use the `asadmin create-http-listener` command to create a network listener.

network-listeners

Contains network listeners.

Superelements

"network-config" on page 103

Subelements

The following table describes subelements for the `network-listeners` element.

TABLE 1–117 `network-listeners` Subelements

Element	Required	Description
"network-listener" on page 103	one or more	Configures a network listener.

O

orb

Configures the ORB.

To enable SSL for outbound connections, include an "ssl-client-config" on page 128 subelement in the parent `iiop-service` element.

Superelements

"iiop-service" on page 72

Subelements

The following table describes subelements for the `orb` element.

TABLE 1–118 `orb` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `orb` element.

TABLE 1–119 `orb` Attributes

Attribute	Default	Description
`use-thread-pool-ids`	none	Specifies a comma-separated list of `name` values defined in "thread-pool" on page 132 elements used by the ORB.
`message-fragment-size`	`1024`	(optional) GIOPv1.2 messages larger than this number of bytes are fragmented.
`max-connections`	`1024`	(optional) The maximum number of incoming connections on all IIOP listeners. Legal values are integers.

P

param-name

Contains a context parameter name.

Superelements

"context-param" on page 45

Subelements

none - contains data

param-value

Contains a context parameter value.

Superelements

"context-param" on page 45

Subelements

none - contains data

port-unification

Configures port unification.

Superelements

"protocol" on page 110

Subelements

The following table describes subelements for the `port-unification` element.

TABLE 1–120 `port-unification` Subelements

Element	Required	Description
"protocol-finder" on page 113	zero or one	Configures the protocol finder.

Attributes

The following table describes attributes for the `port-unification` element.

TABLE 1–121 `port-unification` Attributes

Attribute	Default	Description
`name`	none	Specifies a unique name for the `port-unification`.
`classname`	none	Specifies the class name of the `port-unification` implementation.

principal

Contains the principal of the servlet or EJB client.

Superelements

"security-map" on page 121

Subelements

none - contains data

principal-map

Maps an EIS principal to a principal defined in the Enterprise Server domain.

Superelements

"work-security-map" on page 149

Subelements

none

Attributes

The following table describes attributes for the `principal-map` element.

TABLE 1–122 `principal-map` Attributes

Attribute	Default	Description
`eis-principal`	none	Specifies an EIS principal.
`mapped-principal`	none	Specifies a principal defined in the Enterprise Server domain.

profiler

Configures a profiler for use with the Enterprise Server. For more information about profilers, see the *Sun GlassFish Enterprise Server v3 Application Development Guide*.

Superelements

"java-config" on page 75

Subelements

The following table describes subelements for the `profiler` element.

TABLE 1–123 `profiler` Subelements

Element	Required	Description
"jvm-options" on page 90	zero or more	Contains profiler-specific JVM command line options.
"property" on page 109	zero or more	Specifies a property or a variable.

Note – Subelements of a `profiler` element can occur in any order.

Attributes

The following table describes attributes for the `profiler` element.

TABLE 1–124 `profiler` Attributes

Attribute	Default	Description
`name`	none	Specifies the name of the profiler.

TABLE 1–124 `profiler` Attributes *(Continued)*

Attribute	Default	Description
`classpath`	none	(optional) Specifies the classpath for the profiler.
`native-library-path`	none	(optional) Specifies the native library path for the profiler.
enabled	`true`	(optional) Determines whether the profiler is enabled.

property

Specifies a property. A property adds configuration information to its parent element that is one or both of the following:

- Optional with respect to the Enterprise Server
- Needed by a system or object that the Enterprise Server doesn't have knowledge of, such as an LDAP server or a Java class

  For example, an `auth-realm` element can include `property` subelements:

```
<auth-realm name="file"
     classname="com.sun.enterprise.security.auth.realm.file.FileRealm">
     <property name="file" value="domain-dir/config/keyfile"/>
     <property name="jaas-context" value="fileRealm"/>
 </auth-realm>
```

  Which properties an `auth-realm` element uses depends on the value of the `auth-realm` element's `name` attribute. The `file` realm uses `file` and `jaas-context` properties. Other realms use different properties.

Superelements

"admin-object-resource" on page 23, "admin-service" on page 24, "appclient-module" on page 25, "application" on page 26, "audit-module" on page 31, "auth-realm" on page 32, "config" on page 35, "connector-connection-pool" on page 38, "connector-module" on page 42, "connector-resource" on page 43, "custom-resource" on page 46, "das-config" on page 47, "domain" on page 49, "ejb-container" on page 50, "ejb-module" on page 52, "ejb-timer-service" on page 53, "engine" on page 54, "extension-module" on page 57, "external-jndi-resource" on page 58, "http-service" on page 69, "iiop-listener" on page 71, "j2ee-application" on page 73, "jacc-provider" on page 74, "java-config" on page 75, "jdbc-connection-pool" on page 77, "jdbc-resource" on page 83, "jms-host" on page 84, "jms-service" on page 85, "jmx-connector" on page 87, "lifecycle-module" on page 91, "log-service" on page 92, "mail-resource" on page 94, "manager-properties" on page 96, "mdb-container" on page 97, "module-log-levels" on page 100, "module-monitoring-levels" on page 101, "monitoring-service" on page 102, "orb" on page 105, "profiler" on page 108, "provider-config" on page 114, "resource-adapter-config" on page 117, "security-service" on page 121, "server" on page 123,

"session-properties" on page 126, "store-properties" on page 129, "thread-pool" on page 132, "transaction-service" on page 133, "virtual-server" on page 138, "web-container" on page 146, , "web-module" on page 146

Subelements

none

Attributes

The following table describes attributes for the `property` element.

TABLE 1–125 `property` Attributes

Attribute	Default	Description
`name`	none	Specifies the name of the property or variable.
`value`	none	Specifies the value of the property or variable.
`description`	none	(optional) Specifies a text description of this element.

protocol

Configures a network protocol. A protocol can be defined in one of the following ways according to its subelements:

- "http" on page 61 — Defines HTTP or HTTPS protocol.
- "protocol-chain-instance-handler" on page 112 — Defines a custom protocol as a chain of "protocol-filter" on page 112 links.
- "port-unification" on page 106 — Defines a composite protocol, which can consist of several protocol definitions. Port unification makes it possible for a single "network-listener" on page 103 to host several protocols at the same time. For example, HTTP and IIOP can work simultaneously on port 8080.

Superelements

"protocols" on page 113

Subelements

The following table describes subelements for the `protocol` element.

TABLE 1–126 `protocol` Subelements

Element	Required	Description
"http" on page 61	zero or one	Configures HTTP parameters.
"port-unification" on page 106	zero or one	Configures port unification.
"protocol-chain-instance-handler" on page 112	zero or one	Configures a protocol chain instance handler.
"protocol-filter" on page 112	zero or one	Configures a protocol filter.
"ssl" on page 127	zero or one	Defines SSL parameters.

Attributes

The following table describes attributes for the `protocol` element.

TABLE 1–127 `protocol` Attributes

Attribute	Default	Description
`name`	none	Specifies a unique name for the protocol.
`security-enabled`	`false`	(optional) Determines whether the "network-listener" on page 103 that references this protocol runs SSL. To turn SSL2 or SSL3 on or off and set ciphers, use an `ssl` subelement.

protocol-chain

Configures a protocol chain.

Superelements

"protocol-chain-instance-handler" on page 112

Subelements

none

Attributes

The following table describes attributes for the `protocol-chain` element.

TABLE 1–128 `protocol-chain` Attributes

Attribute	Default	Description
`name`	none	Specifies a unique name for the protocol chain.

TABLE 1–128 protocol-chain Attributes *(Continued)*

Attribute	Default	Description
classname	none	Specifies the class name of the protocol chain implementation.
type	STATELESS	Specifies the type of protocol chain.

protocol-chain-instance-handler

Configures a protocol chain instance handler.

Superelements

"protocol" on page 110

Subelements

The following table describes subelements for the protocol-chain-instance-handler element.

TABLE 1–129 protocol-chain-instance-handler Subelements

Element	Required	Description
"protocol-chain" on page 111	one or more	Configures a protocol chain.

Attributes

The following table describes attributes for the protocol-chain-instance-handler element.

TABLE 1–130 protocol-chain-instance-handler Attributes

Attribute	Default	Description
name	none	Specifies a unique name for the protocol chain instance handler.
classname	none	Specifies the class name of the protocol chain instance handler implementation.

protocol-filter

Configures a protocol filter.

Superelements

"protocol" on page 110

Subelements

none

Attributes

The following table describes attributes for the `protocol-filter` element.

TABLE 1–131 `protocol-filter` Attributes

Attribute	Default	Description
`name`	none	Specifies a unique name for the protocol filter.
`classname`	none	Specifies the class name of the protocol filter implementation.

protocol-finder

Configures a protocol finder.

Superelements

"port-unification" on page 106

Subelements

none

Attributes

The following table describes attributes for the `protocol-finder` element.

TABLE 1–132 `protocol-finder` Attributes

Attribute	Default	Description
`name`	none	Specifies a unique name for the protocol finder.
`classname`	none	Specifies the class name of the protocol finder implementation.
`protocol`	none	Specifies the `name` of the "protocol" on page 110 associated with this protocol finder.

protocols

Contains protocols.

Superelements

"network-config" on page 103

Subelements

The following table describes subelements for the `protocols` element.

TABLE 1–133 `protocols` Subelements

Element	Required	Description
"protocol" on page 110	one or more	Configures a protocol.

provider-config

Specifies a configuration for one message security provider.

Although the `request-policy` and `response-policy` subelements are optional, the `provider-config` element does nothing if they are not specified.

Use property subelements to configure provider-specific properties. Property values are passed to the provider when its `initialize` method is called.

Superelements

"message-security-config" on page 98

Subelements

The following table describes subelements for the `provider-config` element.

TABLE 1–134 `provider-config` Subelements

Element	Required	Description
"request-policy" on page 116	zero or one	Defines the authentication policy requirements of the authentication provider's request processing.
"response-policy" on page 120	zero or one	Defines the authentication policy requirements of the authentication provider's response processing.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `provider-config` element.

TABLE 1–135 `provider-config` Attributes

Attribute	Default	Description
`provider-id`	none	Specifies a unique identifier for this `provider-config` element.
`provider-type`	none	Specifies whether the provider is a `client`, `server`, or `client-server` authentication provider.
`class-name`	none	Specifies the Java implementation class of the provider. Client authentication providers must implement the `com.sun.enterprise.security.jauth.ClientAuthModule` interface. Server authentication providers must implement the `com.sun.enterprise.security.jauth.ServerAuthModule` interface. Client-server providers must implement both interfaces.

Properties

The following table describes properties for the `provider-config` element.

TABLE 1–136 `provider-config` Properties

Property	Default	Description
`security.config`	*domain-dir*`/config/wss-server-config-1.0.xml`	Specifies the location of the message security configuration file. To point to a configuration file in the *domain-dir*`/config` directory, use the system property `${com.sun.aas.instanceRoot}/config/`, for example: `${com.sun.aas.instanceRoot}/config/wss-server-config-1.0.xml` See "system-property" on page 130.
`debug`	`false`	If `true`, enables dumping of server provider debug messages to the server log.
`dynamic.username.password`	`false`	If `true`, signals the provider runtime to collect the user name and password from the `CallbackHandler` for each request. If `false`, the user name and password for `wsse:UsernameToken(s)` is collected once, during module initialization. This property is only applicable for a `ClientAuthModule`.
`encryption.key.alias`	`s1as`	Specifies the encryption key used by the provider. The key is identified by its `keystore` alias.
`signature.key.alias`	`s1as`	Specifies the signature key used by the provider. The key is identified by its `keystore` alias.

R

registry-location

This element is deprecated. Web services are implemented in the "engine" on page 54 element.

Specifies the registry where web service endpoint artifacts are published.

Superelements

"web-service-endpoint" on page 148

Subelements

none

Attributes

The following table describes attributes for the `registry-location` element.

TABLE 1–137 `registry-location` Attributes

Attribute	Default	Description
`connector-resource-jndi-name`	none	Specifies the `jndi-name` of the "connector-resource" on page 43 used as the registry.

request-policy

Defines the authentication policy requirements of the authentication provider's request processing.

Superelements

"provider-config" on page 114

Subelements

none

Attributes

The following table describes attributes for the `request-policy` element.

TABLE 1–138 `request-policy` Attributes

Attribute	Default	Description
`auth-source`	none	Specifies the type of required authentication, either `sender` (user name and password) or `content` (digital signature).
`auth-recipient`	none	Specifies whether recipient authentication occurs before or after content authentication. Allowed values are `before-content` and `after-content`.

request-processing

This element is not supported. If this element is present in the `domain.xml` file, its attributes are remapped to other elements and then it is deleted. For remapping details, see the Attributes table for this element.

Superelements

"http-service" on page 69

Subelements

none

Attributes

The following table describes attributes for the `request-processing` element.

TABLE 1–139 `request-processing` Attributes

Attribute	Default	Description
`thread-count`	`20`	Remapped to the `max-thread-pool-size` attribute of a "thread-pool" on page 132 element.
`initial-thread-count`	`2`	Remapped to the `min-thread-pool-size` attribute of a "thread-pool" on page 132 element.
`thread-increment`	`1`	Not implemented. Do not use.
`request-timeout-in-seconds`	`30`	Remapped to the `request-timeout-seconds` attribute of an "http" on page 61 element.
`header-buffer-length-in-bytes`	`8192`	Remapped to the `header-buffer-length-bytes` attribute of an "http" on page 61 element.

resource-adapter-config

Defines a connector (resource adapter) configuration. Stores configuration information for the resource adapter JavaBean in `property` subelements.

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `resource-adapter-config` element.

TABLE 1–140 `resource-adapter-config` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `resource-adapter-config` element.

TABLE 1–141 `resource-adapter-config` Attributes

Attribute	Default	Description
`name`	none	(optional) Not used. See `resource-adapter-name`.
`thread-pool-ids`	none	(optional) Specifies a comma-separated list of the `name` attributes of "thread-pool" on page 132 elements.
`object-type`	`user`	(optional) Defines the type of the resource. Allowed values are: ■ `system-all` - A system resource for all server instances and the domain application server. ■ `system-admin` - A system resource only for the domain application server. ■ `system-instance` - A system resource for all server instances only. ■ `user` - A user resource.
`resource-adapter-name`	none	Specifies the `name` attribute of a deployed connector "application" on page 26 element. If the resource adapter is embedded in an application, then it is *app_name#rar_name*.

Properties

Properties of the `resource-adapter-config` element are the names of setter methods of the class referenced by the `resourceadapter-class` element in the `ra.xml` file, which defines the class name of the resource adapter JavaBean. Any properties defined here override the default values present in `ra.xml`.

resource-ref

References a resource deployed to the server.

Superelements

"server" on page 123

Subelements

none

Attributes

The following table describes attributes for the `resource-ref` element.

TABLE 1–142 `resource-ref` Attributes

Attribute	Default	Description
`enabled`	`true`	(optional) Determines whether the resource is enabled.
`ref`	none	References the `name` attribute of a "custom-resource" on page 46, "external-jndi-resource" on page 58, "jdbc-resource" on page 83, "mail-resource" on page 94, "admin-object-resource" on page 23"resource-adapter-config" on page 117, "connector-connection-pool" on page 38, or "jdbc-connection-pool" on page 77 element.

resources

Contains configured resources, such as database connections, JavaMail™ sessions, and so on.

Note – You must specify a Java Naming and Directory Interface™ (JNDI) name for each resource. To avoid collisions with names of other enterprise resources in JNDI, and to avoid portability problems, all names in an Enterprise Server application should begin with the string `java:comp/env`.

Superelements

"domain" on page 49

Subelements

The following table describes subelements for the `resources` element.

TABLE 1–143 `resources` Subelements

Element	Required	Description
"custom-resource" on page 46	zero or more	Defines a custom resource.
"external-jndi-resource" on page 58	zero or more	Defines a resource that resides in an external JNDI repository.
"jdbc-resource" on page 83	zero or more	Defines a JDBC (Java Database Connectivity) resource.
"mail-resource" on page 94	zero or more	Defines a JavaMail resource.
"admin-object-resource" on page 23	zero or more	Defines an administered object for an inbound resource adapter.
"connector-resource" on page 43	zero or more	Defines a connector (resource adapter) resource.

TABLE 1–143 `resources` Subelements *(Continued)*

Element	Required	Description
"resource-adapter-config" on page 117	zero or more	Defines a resource adapter configuration.
"jdbc-connection-pool" on page 77	zero or more	Defines the properties that are required for creating a JDBC connection pool.
"connector-connection-pool" on page 38	zero or more	Defines the properties that are required for creating a connector connection pool.
"work-security-map" on page 149	zero or more	Defines a work security map.

Note – Subelements of a `resources` element can occur in any order.

response-policy

Defines the authentication policy requirements of the authentication provider's response processing.

Superelements

"provider-config" on page 114

Subelements

none

Attributes

The following table describes attributes for the `response-policy` element.

TABLE 1–144 `response-policy` Attributes

Attribute	Default	Description
`auth-source`	none	Specifies the type of required authentication, either `sender` (user name and password) or `content` (digital signature).
`auth-recipient`	none	Specifies whether recipient authentication occurs before or after content authentication. Allowed values are `before-content` and `after-content`.

S

security-map

Maps the principal received during servlet or EJB authentication to the credentials accepted by the EIS. This mapping is optional. It is possible to map multiple Enterprise Server principals to the same back-end principal.

This is different from a "work-security-map" on page 149, which maps a principal associated with an incoming work instance to a principal in the Enterprise Server's security domain.

Superelements

"connector-connection-pool" on page 38

Subelements

The following table describes subelements for the `security-map` element.

TABLE 1–145 `security-map` Subelements

Element	Required	Description
"principal" on page 107	one or more	Contains the principal of the servlet or EJB client.
"user-group" on page 138	one or more	Contains the group to which the principal belongs.
"backend-principal" on page 35	only one	Specifies the user name and password required by the EIS.

Attributes

The following table describes attributes for the `security-map` element.

TABLE 1–146 `security-map` Attributes

Attribute	Default	Description
`name`	none	Specifies a name for the security mapping.

security-service

Defines parameters and configuration information needed by the Java EE security service. For SSL configuration, see "ssl" on page 127. For connector module security, see "security-map" on page 121.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `security-service` element.

TABLE 1–147 `security-service` Subelements

Element	Required	Description
"auth-realm" on page 32	one or more	Defines a realm for authentication.
"jacc-provider" on page 74	one or more	Specifies a Java Authorization Contract for Containers (JACC) provider for pluggable authorization.
"audit-module" on page 31	zero or more	Specifies an optional plug-in module that implements audit capabilities.
"message-security-config" on page 98	zero or more	Specifies configurations for message security providers.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `security-service` element.

TABLE 1–148 `security-service` Attributes

Attribute	Default	Description
`default-realm`	`file`	(optional) Specifies the active authentication realm (an "auth-realm" on page 32 `name` attribute) for this server instance.
`default-principal`	none	(optional) Used as the identity of the default security context when necessary and when no principal is provided. This attribute need not be set for normal server operation.
`default-principal-password`	none	(optional) The password of the default principal. This attribute need not be set for normal server operation.
`anonymous-role`	`attribute is deprecated`	(optional) Deprecated. Do not use.
`audit-enabled`	`false`	(optional) If `true`, additional access logging is performed to provide audit information. Audit information consists of: ■ Authentication success and failure events ■ Servlet and EJB access grants and denials

TABLE 1–148 `security-service` Attributes *(Continued)*

Attribute	Default	Description
`jacc`	`default`	(optional) Specifies the name of the "jacc-provider" on page 74 element to use for setting up the JACC infrastructure. Do not change the default value unless you are adding a custom JACC provider.
`audit-modules`	`default`	(optional) Specifies a space-separated list of audit provider modules used by the audit subsystem. The default value refers to the internal log-based audit module.
`activate-default-principal-to-role-mapping`	`false`	(optional) Applies a default principal for role mapping to any application that does not have an application-specific mapping defined. Every role is mapped to an instance of a `java.security.Principal` implementation class defined by `mapped-principal-class`. This class has the same name as the role.
`mapped-principal-class`	none	(optional) Customizes the `java.security.Principal` implementation class used when `activate-default-principal-to-role-mapping` is set to `true`.

selection-key-handler

Configures a selection key handler.

Superelements

"transports" on page 137

Subelements

none

Attributes

The following table describes attributes for the `selection-key-handler` element.

TABLE 1–149 `selection-key-handler` Attributes

Attribute	Default	Description
`name`	none	Specifies a unique name for the selection key handler.
`classname`	none	Specifies the class name of the selection key handler implementation.

server

Defines a server instance, which is a Java EE compliant container. One server instance is specially designated as a domain administration server (DAS). The "admin-service" on page 24 subelement of the "config" on page 35 element referenced by a server's `config-ref` attribute determines whether the server is the DAS.

Note – Server instances are not the same thing as virtual servers. Each server instance is a completely separate server that contains one or more virtual servers.

Superelements

"servers" on page 124

Subelements

The following table describes subelements for the `server` element.

TABLE 1–150 `server` Subelements

Element	Required	Description
"application-ref" on page 30	zero or more	References an application or module deployed to the server instance.
"resource-ref" on page 118	zero or more	References a resource deployed to the server instance.
"system-property" on page 130	zero or more	Specifies a system property.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `server` element.

TABLE 1–151 `server` Attributes

Attribute	Default	Description
`name`	none	Specifies the name of the server instance.
`config-ref`	default "config" on page 35 element's `name`, `server-config`	(optional) References the `name` of the "config" on page 35 used by the server instance.

servers

Contains server instances.

Superelements

"domain" on page 49

Subelements

The following table describes subelements for the `servers` element.

TABLE 1–152 `servers` Subelements

Element	Required	Description
"server" on page 123	only one	Defines a server instance.

session-config

Specifies session configuration information for the entire web container. Individual web applications can override these settings using the corresponding elements in their `sun-web.xml` files.

Superelements

"web-container" on page 146

Subelements

The following table describes subelements for the `session-config` element.

TABLE 1–153 `session-config` Subelements

Element	Required	Description
"session-manager" on page 125	zero or one	Specifies session manager configuration information.
"session-properties" on page 126	zero or one	Specifies session properties.

session-manager

Specifies session manager information.

Note – The session manager interface is unstable. An unstable interface might be experimental or transitional, and hence might change incompatibly, be removed, or be replaced by a more stable interface in the next release.

Superelements

"session-config" on page 125

Subelements

The following table describes subelements for the `session-manager` element.

TABLE 1–154 `session-manager` Subelements

Element	Required	Description
"manager-properties" on page 96	zero or one	Specifies session manager properties.
"store-properties" on page 129	zero or one	Specifies session persistence (storage) properties.

session-properties

Specifies session properties.

Superelements

"session-config" on page 125

Subelements

The following table describes subelements for the `session-properties` element.

TABLE 1–155 `session-properties` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

TABLE 1–156 `session-properties` Attributes

Attribute	Default	Description
`timeout-in-seconds`	`1800`	(optional) Specifies the default maximum inactive interval (in seconds) for all sessions created in this web module. If set to `0` or less, sessions in this web module never expire. If a `session-timeout` element is specified in the `web.xml` file, the `session-timeout` value overrides any `timeout-in-seconds` value. If neither `session-timeout` nor `timeout-in-seconds` is specified, the `timeout-in-seconds` default is used. Note that the `session-timeout` element in `web.xml` is specified in minutes, not seconds.

Properties

The following table describes properties for the `session-properties` element.

TABLE 1–157 `session-properties` Properties

Property	Default	Description
`enableCookies`	`true`	Uses cookies for session tracking if set to `true`.
`enableURLRewriting`	`true`	Enables URL rewriting. This provides session tracking via URL rewriting when the browser does not accept cookies. You must also use an `encodeURL` or `encodeRedirectURL` call in the servlet or JavaServer Pages™ (JSP™) page.
`idLengthBytes`	`128`	Specifies the number of bytes in this web module's session ID.

ssl

Defines SSL (Secure Socket Layer) parameters.

An `ssl` element is required inside an `http-listener` or `iiop-listener` element that has its `security-enabled` attribute set to `on`.

The grandparent "http-service" on page 69 element has properties that configure global SSL settings.

Superelements

"protocol" on page 110, "http-listener" on page 65, "iiop-listener" on page 71, "jmx-connector" on page 87, "ssl-client-config" on page 128

Subelements

none

Attributes

The following table describes attributes for the `ssl` element.

TABLE 1–158 `ssl` Attributes

Attribute	Default	Description
`cert-nickname`	`s1as`	The nickname of the server certificate in the certificate database or the PKCS#11 token. In the certificate, the name format is *tokenname*:*nickname*. Including the *tokenname*: part of the name in this attribute is optional.
`ssl2-enabled`	`false`	(optional) Determines whether SSL2 is enabled. If both SSL2 and SSL3 are enabled for a "virtual-server" on page 138, the server tries SSL3 encryption first. If that fails, the server tries SSL2 encryption.

TABLE 1–158 `ssl` Attributes *(Continued)*

Attribute	Default	Description
`ssl2-ciphers`	none	(optional) A comma-separated list of the SSL2 ciphers used, with the prefix + to enable or - to disable, for example `+rc4` . Allowed values are `rc4`, `rc4export`, `rc2`, `rc2export`, `idea`, `des` , `desede3`.
`ssl3-enabled`	`true`	(optional) Determines whether SSL3 is enabled. The default is `true` . If both SSL2 and SSL3 are enabled for a "virtual-server" on page 138, the server tries SSL3 encryption first. If that fails, the server tries SSL2 encryption.
`ssl3-tls-ciphers`	none	(optional) A comma-separated list of the SSL3 ciphers used, with the prefix + to enable or - to disable, for example `+SSL_RSA_WITH_RC4_128_MD5` . Allowed values are `SSL_RSA_WITH_RC4_128_MD5`, `SSL_RSA_WITH_3DES_EDE_CBC_SHA`, `SSL_RSA_WITH_DES_CBC_SHA`, `SSL_RSA_EXPORT_WITH_RC4_40_MD5`, `SSL_RSA_WITH_NULL_MD5`, `SSL_RSA_WITH_RC4_128_SHA`, and `SSL_RSA_WITH_NULL_SHA`. Values available in previous releases are supported for backward compatibility.
`tls-enabled`	`true`	(optional) Determines whether TLS is enabled.
`tls-rollback-enabled`	`true`	(optional) Determines whether TLS rollback is enabled. TLS rollback should be enabled for Microsoft Internet Explorer 5.0 and 5.5. For more information, see the*Sun GlassFish Enterprise Server v3 Administration Guide*.
`client-auth-enabled`	`false`	(optional) Determines whether SSL3 client authentication is performed on every request, independent of ACL-based access control.
`crl-file`	none	(optional) Specifies the location of the Certificate Revocation List (CRL) file to consult during SSL client authentication. This can be an absolute or relative file path. If relative, it is resolved against *domain-dir*. If unspecified, CRL checking is disabled.
`trust-algorithm`	none	(optional) Specifies the name of the trust management algorithm (for example, `PKIX`) to use for certification path validation.
`trust-max-cert-length`	`5`	(optional) Specifies the maximum number of non-self-issued intermediate certificates that can exist in a certification path. This property is considered only if `trustAlgorithm` is set to `PKIX`. A value of zero implies that the path can only contain a single certificate. A value of `-1` implies that the path length is unconstrained (there is no maximum). Setting a value less than `-1` causes an exception to be thrown.
`key-store`	none	(optional) Specifies a key store.
`trust-store`	none	(optional) Specifies a trust store.

ssl-client-config

Defines SSL parameters for the ORB when it makes outbound SSL connections and behaves as a client.

Superelements

"iiop-service" on page 72

Subelements

The following table describes subelements for the `ssl-client-config` element.

TABLE 1–159 `ssl-client-config` Subelements

Element	Required	Description
"ssl" on page 127	only one	Defines SSL parameters.

store-properties

Specifies session persistence (storage) properties.

Superelements

"session-manager" on page 125

Subelements

The following table describes subelements for the `store-properties` element.

TABLE 1–160 `store-properties` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

TABLE 1–161 `store-properties` Attributes

Attribute	Default	Description
`directory`	*domain-dir* `/generated/jsp/j2ee-apps/`*appname*`/`*appname*`_war`	(optional) Specifies the absolute or relative pathname of the directory into which individual session files are written. A relative path is relative to the temporary work directory for this web application.
`reap-interval-in-seconds`	`60`	(optional) Not implemented. Use the `reap-interval-in-seconds` attribute of the "manager-properties" on page 96 element instead.

system-applications

Contains system applications. Do not delete or edit these applications.

Superelements

"domain" on page 49

Subelements

The following table describes subelements for the `system-applications` element.

TABLE 1–162 `system-applications` Subelements

Element	Required	Description
"application" on page 26	zero or more	Specifies an application.

system-property

Specifies a system property. A system property defines a common value for a setting at one of these levels, from highest to lowest: "domain" on page 49, "server" on page 123, or "config" on page 35. A value set at a higher level can be overridden at a lower level. Some system properties are predefined; see "system-property" on page 130. You can also create system properties using this element.

The following example shows the use of a predefined system property:

```
<log-service file="${com.sun.aas.instanceRoot}/logs/server.log">
    <module-log-levels admin=INFO .../>
</log-service>
```

The following example shows the creation and use of a system property:

```
<config name="config1">
    ...
    <http-service>
        ...
        <http-listener id="ls1" host="0.0.0.0" port="${ls1-port}"/>
        ...
    </http-service>
    ...
    <system-property name="ls1-port" value="8080"/>
</config>
```

Superelements

"config" on page 35, "domain" on page 49, "server" on page 123

Subelements

none

Attributes

The following table describes attributes for the `system-property` element.

TABLE 1–163 `system-property` Attributes

Attribute	Default	Description
`name`	none	Specifies the name of the system property.
`value`	none	Specifies the value of the system property.
`description`	none	(optional) Specifies a text description of this element.

Properties

The following table lists predefined system properties.

TABLE 1–164 Predefined System Properties

Property	Default	Description
`com.sun.aas.installRoot`	depends on operating system	Specifies the directory where the Enterprise Server is installed.
`com.sun.aas.instanceRoot`	depends on operating system	Specifies the top level directory for a server instance.
`com.sun.aas.hostName`	none	Specifies the name of the host (machine).
`com.sun.aas.javaRoot`	depends on operating system	Specifies the installation directory for the Java runtime.
`com.sun.aas.imqLib`	depends on operating system	Specifies the library directory for the Sun GlassFish Message Queue software.
`com.sun.aas.configName`	`server-config`	Specifies the name of the "config" on page 35 used by a server instance.
`com.sun.aas.instanceName`	`server1`	Specifies the name of the server instance. This property is not used in the default configuration, but can be used to customize configuration.
`com.sun.aas.domainName`	`domain1`	Specifies the name of the domain. This property is not used in the default configuration, but can be used to customize configuration.
`com.sun.aas.derbyRoot`	*as-install*`/javadb`	Specifies the directory where Java DB is installed.

T

thread-pool

Defines a thread pool.

Superelements

"thread-pools" on page 133

Subelements

The following table describes subelements for the `thread-pool` element.

TABLE 1–165 `thread-pool` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

TABLE 1–166 `thread-pool` Attributes

Attribute	Default	Description
`name`	none	Specifies the thread pool name.
`classname`	`com.sun.grizzly.http.StatsThreadPool`	(Optional) Specifies the class name of the thread pool implementation.
`min-thread-pool-size`	`2`	(optional) Specifies the minimum number of threads in the pool. These are created when the thread pool is instantiated.
`max-thread-pool-size`	`5`	(optional) Specifies the maximum number of threads the pool can contain. To optimize this thread pool for use with an "iiop-listener" on page 71, set this value to `200`.
`idle-thread-timeout-seconds`	`900`	(optional) Specifies the amount of time after which idle threads are removed from the pool.
`max-queue-size`	`4096`	(optional) Specifies the maximum number of messages that can be queued until threads are available to process them for , "network-listener" on page 103 or "iiop-listener" on page 71 elements. A value of `-1` specifies no limit.

thread-pools

Contains thread pools.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `thread-pools` element.

TABLE 1–167 `thread-pools` Subelements

Element	Required	Description
"thread-pool" on page 132	one or more	Defines a thread pool.

transaction-service

Configures the Java Transaction Service (JTS).

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `transaction-service` element.

TABLE 1–168 `transaction-service` Subelements

Element	Required	Description
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `transaction-service` element.

TABLE 1–169 `transaction-service` Attributes

Attribute	Default	Description
`automatic-recovery`	`false`	(optional) If `true`, the server instance attempts transaction recovery during startup.

TABLE 1–169 `transaction-service` Attributes *(Continued)*

Attribute	Default	Description
`timeout-in-seconds`	`0`	(optional) Specifies the amount of time after which the transaction is aborted. If set to `0`, the transaction never times out.
`tx-log-dir`	directory specified by the `log-root` attribute of the "domain" on page 49 element	(optional) Specifies the parent directory of the transaction log directory *instance-name*`/tx`. The directory in which the transaction logs are kept must be writable by the user account under which the server runs. A relative path is relative to the `log-root` attribute of the "domain" on page 49 element.
`heuristic-decision`	`rollback`	(optional) If the outcome of a distributed transaction cannot be determined because other participants are unreachable, this property determines the outcome. Allowed values are `rollback` and `commit`.
`retry-timeout-in-seconds`	`600`	(optional) Determines the retry time in the following scenarios: ■ At the transaction recovery time, if resources are unreachable. ■ If there are any transient exceptions in the second phase of a two phase commit protocol. A negative value specifies infinite retries. A value of `0` (zero) specifies no retries. A positive value indicates the time after which a retry is attempted.
`keypoint-interval`	`65536` (64 K)	(optional) Specifies the number of transactions between keypoint operations in the log. Keypoint operations reduce the size of the transaction log file by compressing it. A larger value for this attribute results in a larger transaction log file, but fewer keypoint operations and potentially better performance. A smaller value results in smaller log files, but slightly reduced performance due to the greater frequency of keypoint operations.

Properties

The following table describes properties for the `transaction-service` element.

TABLE 1–170 `transaction-service` Properties

Property	Default	Description
`oracle-xa-recovery-workaround`	`true`	If `true`, the Oracle XA Resource workaround is used in transaction recovery.
`disable-distributed-transaction-logging`	`false`	If `true`, disables transaction logging, which might improve performance. If the `automatic-recovery` attribute is set to `true` , this property is ignored.
`xaresource-txn-timeout`	specific to the `XAResource` used	Changes the `XAResource` timeout. In some cases, the `XAResource` default timeout can cause transactions to be aborted, so it is desirable to change it.

TABLE 1–170 `transaction-service` Properties *(Continued)*

Property	Default	Description
`pending-txn-cleanup-interval`	none if this property is absent, `60` if this property is present but has no value	Specifies the interval, in seconds, at which an asynchronous thread checks for pending transactions and completes them.
`use-last-agent-optimization`	`true`	If `true`, enables last agent optimization, which improves the throughput of transactions. If one non-XA resource is used with XA resources in the same transaction, the non XA resource is the last agent.
`db-logging-resource`	none	Specifies the JNDI name of the JDBC resource for the database to which transactions are logged. For more information, see Chapter 15, "Using the Transaction Service," in *Sun GlassFish Enterprise Server v3 Application Development Guide*.
`xa-servername`	host name on which the Enterprise Server runs	Specifies the host name that the transaction service uses to identify transactions being managed by the installed Enterprise Server. This can sometimes be useful for recovering transactions from the log file that was created on a different host running the Enterprise Server.

transformation-rule

This element is deprecated. Web services are implemented in the "engine" on page 54 element.

Configures an e**X**tensible **S**tylesheet **L**anguage **T**ransformation (XSLT) rule, which transforms a web service message.

Superelements

"web-service-endpoint" on page 148

Subelements

The following table describes subelements for the `transformation-rule` element.

TABLE 1–171 `transformation-rule` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.

Attributes

The following table describes attributes for the `transformation-rule` element.

TABLE 1–172 `transformation-rule` Attributes

Attribute	Default	Description
`name`	none	The name of the rule.
`enabled`	`true`	(optional) Determines whether the rule is enabled.
`apply-to`	`request`	(optional) Specifies whether the rule is applied to the request, the response, or both. Allowed values are: ■ `request` - Transformations are applied to the request in the order specified. ■ `response` - Transformations are applied to the response in the order specified. ■ `both` - Transformations are applied to both the request and the response. The order is reversed for the response.
`rule-file-location`	*domain-dir*`/generated/xml/`*app-or-module*`/`*xslt-file*	A fully qualified or relative path to the rule file that performs the transformation. Only XSLT files are allowed.

transport

Configures a transport. You can configure a TCP or UDP transport or provide a custom transport implementation.

Superelements

"transports" on page 137

Subelements

none

Attributes

The following table describes attributes for the `transport` element.

TABLE 1–173 `transport` Attributes

Attribute	Default	Description
`name`	none	Specifies a unique name for the transport.
`classname`	`com.sun.grizzly.TCPSelectorHandler`	(Optional) Specifies the class name of the transport implementation.
`selection-key-handler`	none	(optional) Specifies the `name` of the "selection-key-handler" on page 123 associated with this transport.

TABLE 1–173 `transport` Attributes *(Continued)*

Attribute	Default	Description
`idle-key-timeout-seconds`	`30`	(Optional) Specifies the idle key timeout.
`read-timeout-millis`	`30000` (30 seconds)	(optional) Specifies the amount of time the Enterprise Server waits during the header and body parsing phase.
`write-timeout-millis`	`30000` (30 seconds)	(optional) Specifies the amount of time the Enterprise Server waits before considering the remote client disconnected when writing the response.
`selector-poll-timeout-millis`	`1000` (1 second)	(optional) Specifies the time a NIO Selector blocks waiting for events (user requests).
`display-configuration`	`false`	(optional) If `true`, flushes the internal network configuration to the server log. Useful for debugging, but reduces performance.
`snoop-enabled`	`false`	(optional) If `true`, writes request/response information to the server log. Useful for debugging, but reduces performance.
`tcp-no-delay`	`false`	(optional) If `true`, enables `TCP_NODELAY` (also called Nagle's algorithm).
`max-connections-count`	`4096`	(optional) Specifies the maximum number of pending connections on a "network-listener" on page 103 that references this transport.
`acceptor-threads`	`1`	(optional) Specifies the number of processors in the machine. To set the number of request processing threads, use the `max-thread-pool-size` attribute of the "thread-pool" on page 132element.
`byte-buffer-type`	`HEAP`	(optional) Specifies the type of the buffer to be provided for input streams created by a "network-listener" on page 103. Allowed values are `HEAP` and `DIRECT`.
`buffer-size-bytes`	`8192`	(optional) Specifies the size, in bytes, of the buffer to be provided for input streams created by a "network-listener" on page 103.

transports

Contains transports.

Superelements

"network-config" on page 103

Subelements

The following table describes subelements for the `transports` element.

TABLE 1–174 `transports` Subelements

Element	Required	Description
"selection-key-handler" on page 123	zero or more	Configures a selection key handler.
"transport" on page 136	one or more	Configures a transport.

U

user-group

Contains the group to which the principal belongs.

Superelements

"security-map" on page 121

Subelements

none - contains data

V

virtual-server

Defines a virtual server. A virtual server, also called a virtual host, is a virtual web server that serves content targeted for a specific URL. Multiple virtual servers can serve content using the same or different host names, port numbers, or IP addresses. The HTTP service can direct incoming web requests to different virtual servers based on the URL.

When the Enterprise Server is first installed, a default virtual server is created. (You can also assign a default virtual server to each new "http-listener" on page 65 you create.)

Note – Virtual servers are not the same thing as server instances. Each server instance is a completely separate server that contains one or more virtual servers.

Before the Enterprise Server can process a request, it must accept the request via a listener, then direct the request to the correct virtual server. The virtual server is determined as follows:

- If the listener is configured to only a default virtual server, that virtual server is selected.
- If the listener has more than one virtual server configured to it, the request `Host` header is matched to the `hosts` attribute of a virtual server. If no `Host` header is present or no `hosts` attribute matches, the default virtual server for the listener is selected.

If a virtual server is configured to an SSL listener, its `hosts` attribute is checked against the subject pattern of the certificate at server startup, and a warning is generated and written to the server log if they don't match.

Superelements

"http-service" on page 69

Subelements

The following table describes subelements for the `virtual-server` element.

TABLE 1–175 `virtual-server` Subelements

Element	Required	Description
"http-access-log" on page 64	zero or one	Defines an access log file.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `virtual-server` element.

TABLE 1–176 `virtual-server` Attributes

Attribute	Default	Description
`id`	none	Virtual server ID. This is a unique ID that allows lookup of a specific virtual server. A virtual server ID cannot begin with a number.
`http-listeners`	none	(optional) Remapped to the `network-listeners` attribute of this element.
`network-listeners`	none	(optional) In a comma-separated list, references `id` attributes of "network-listener" on page 103 elements that specify the connection(s) the virtual server uses. Required only for a `virtual-server` that is not referenced by the `default-virtual-server` attribute of an "http" on page 61 element.
`default-web-module`	none	(optional) References the `name` attribute of the default web "application" on page 26 for this virtual server, which responds to requests that cannot be resolved to other web modules deployed to this virtual server (see the "application-ref" on page 30 element).

TABLE 1–176 `virtual-server` Attributes *(Continued)*

Attribute	Default	Description
`hosts`	`${com.sun.aas.hostName}`	A comma-separated list of values, each of which selects the current virtual server when included in the `Host` request header. Two or more `virtual-server` elements that reference or are referenced by the same `http-listener` cannot have any `hosts` values in common.
`state`	`on`	(optional) Determines whether a `virtual-server` is active (`on`) or inactive (`off`, `disabled`). The default is `on` (active). When inactive, a `virtual-server` does not service requests. If a `virtual-server` is `disabled`, only the global server administrator can turn it `on`.
`docroot`	*domain-dir*`/docroot`	(optional) Specifies the document root for this virtual server.
`access-log`	*domain-dir*`/logs/access`	(optional) Specifies the access log location. The file and directory in which the access log is kept must be writable by the user account under which the server runs. See the "log-service" on page 92 description for details about logs.
`log-file`	`server.log` in the directory specified by the `log-root` attribute of the "domain" on page 49 element	(optional) Writes this virtual server's log messages to a log file separate from the server log. The file and directory in which the virtual server log is kept must be writable by the user account under which the server runs. See the "log-service" on page 92 description for details about logs.
`access-logging-enabled`	`inherit`	If `true`, enables access logging for this virtual server. If `false`, disables access logging for this virtual server. A `true` or `false` setting overrides the `access-logging-enabled` attribute setting of the "http-service" on page 69 element. An `inherit` setting uses the `access-logging-enabled` attribute setting of the "http-service" on page 69 element.
`sso-enabled`	`inherit`	If `true`, single sign-on is enabled for web applications on this virtual server that are configured for the same realm. If `false`, single sign-on is disabled for this virtual server, and users must authenticate separately to every application on the virtual server. A `true` or `false` setting overrides the `sso-enabled` attribute setting of the "http-service" on page 69 element. An `inherit` setting uses the `sso-enabled` attribute setting of the "http-service" on page 69 element.

TABLE 1–176 `virtual-server` Attributes *(Continued)*

Attribute	Default	Description
`sso-cookie-secure`	`dynamic`	Sets the `Secure` attribute of any `JSESSIONIDSSO` cookies associated with the web applications deployed to this virtual server. Applicable only if the `sso-enabled` attribute is set to `true`. Allowed values are as follows: ■ `true` — Sets `Secure` to `true`. ■ `false` — Sets `Secure` to `false`. ■ `dynamic` — The `JSESSIONIDSSO` cookie inherits the `Secure` setting of the first session participating in SSO. To set the `Secure` attribute of a `JSESSIONID` cookie, use the `cookieSecure` `cookie-properties` property in the `sun-web.xml` file. For details, see "cookie-properties" in *Sun GlassFish Enterprise Server v3 Application Deployment Guide*.

Properties

The following table describes properties for the `virtual-server` element.

TABLE 1–177 `virtual-server` Properties

Property	Default	Description
`sso-enabled`	`false`	Deprecated. Use the `sso-enabled` attribute instead.
`sso-max-inactive-seconds`	`300`	Specifies the time after which a user's single sign-on record becomes eligible for purging if no client activity is received. Since single sign-on applies across several applications on the same virtual server, access to any of the applications keeps the single sign-on record active. Higher values provide longer single sign-on persistence for the users at the expense of more memory use on the server.
`sso-reap-interval-seconds`	`60`	Specifies the interval between purges of expired single sign-on records.
`ssoCookieSecure`	`dynamic`	Deprecated. Use the `sso-cookie-secure` attribute instead.
`setCacheControl`	none	Specifies a comma-separated list of `Cache-Control` response directives. For a list of valid directives, see section 14.9 of the document at http://www.ietf.org/rfc/rfc2616.txt.
`accessLogging Enabled`	`false`	Deprecated. Use the `access-logging-enabled` attribute instead.
`accessLogBuffer Size`	`32768`	Specifies the size, in bytes, of the buffer where access log calls are stored. If the value is less than `5120`, a warning message is issued, and the value is set to `5120`.

TABLE 1–177 `virtual-server` Properties *(Continued)*

Property	Default	Description
`accessLogWrite Interval`	`300`	Specifies the number of seconds before the log is written to the disk. The access log is written when the buffer is full or when the interval expires. If the value is `0`, the buffer is always written even if it is not full. This means that each time the server is accessed, the log message is stored directly to the file.
`allowRemoteAddress`	none	Specifies a comma-separated list of regular expression patterns that the remote client's IP address is compared to. If this property is specified, the remote address *must* match for this request to be accepted. If this property is not specified, all requests are accepted *unless* the remote address matches a `denyRemoteAddress` pattern.
`denyRemoteAddress`	none	Specifies a comma-separated list of regular expression patterns that the remote client's IP address is compared to. If this property is specified, the remote address must *not* match for this request to be accepted. If this property is not specified, request acceptance is governed solely by the `allowRemoteAddress` property.
`allowRemoteHost`	none	Specifies a comma-separated list of regular expression patterns that the remote client's hostname (as returned by `[java.net.]Socket.getInetAddress().getHostName()`) is compared to. If this property is specified, the remote hostname *must* match for this request to be accepted. If this property is not specified, all requests are accepted *unless* the remote hostname matches a `denyRemoteHost` pattern.
`denyRemoteHost`	none	Specifies a comma-separated list of regular expression patterns that the remote client's hostname (as returned by `[java.net.]Socket.getInetAddress().getHostName()`) is compared to. If this property is specified, the remote hostname must *not* match for this request to be accepted. If this property is not specified, request acceptance is governed solely by the `allowRemoteHost` property. Setting this property has no effect if `jk-enabled` is set to `true` for a "network-listener" on page 103.
`authRealm`	none	Specifies the `name` attribute of an "auth-realm" on page 32 element, which overrides the server instance's default realm for stand-alone web applications deployed to this virtual server. A realm defined in a stand-alone web application's `web.xml` file overrides the virtual server's realm.

TABLE 1–177 `virtual-server` Properties *(Continued)*

Property	Default	Description
`securePages WithPragma`	`true`	Set this property to `false` to ensure that for all web applications on this virtual server file downloads using SSL work properly in Internet Explorer. You can set this property for a specific web application. For details, see "sun-web-app" in *Sun GlassFish Enterprise Server v3 Application Deployment Guide*.

`alternatedocroot_n`	none	Specifies an alternate document root (docroot), where *n* is a positive integer that allows specification of more than one. Alternate docroots allow web applications to serve requests for certain resources from outside their own docroot, based on whether those requests match one (or more) of the URI patterns of the web application's alternate docroots.
		
		If a request matches an alternate docroot's URI pattern, it is mapped to the alternate docroot by appending the request URI (minus the web application's context root) to the alternate docroot's physical location (directory). If a request matches multiple URI patterns, the alternate docroot is determined according to the following precedence order:
		■ Exact match
		■ Longest path match
		■ Extension match
		
		For example, the following properties specify three alternate docroots. The URI pattern of the first alternate docroot uses an exact match, whereas the URI patterns of the second and third alternate docroots use extension and longest path prefix matches, respectively.
		
		`<property name="alternatedocroot_1"`
		`value="from=/my.jpg dir=/srv/images/jpg"/>`
		`<property name="alternatedocroot_2"`
		`value="from=*.jpg dir=/srv/images/jpg"/>`
		`<property name="alternatedocroot_3"`
		`value="from=/jpg/* dir=/src/images"/>`
		
		The `value` of each alternate docroot has two components: The first component, `from`, specifies the alternate docroot's URI pattern, and the second component, `dir`, specifies the alternate docroot's physical location (directory). Spaces are allowed in the `dir` component.
		
		You can set this property for a specific web application. For details, see "sun-web-app" in *Sun GlassFish Enterprise Server v3 Application Deployment Guide*.

TABLE 1–177 `virtual-server` Properties *(Continued)*

Property	Default	Description
`contextXmlDefault`	none	Specifies the location, relative to *domain-dir*, of the `context.xml` file for this virtual server, if one is used. For more information about the `context.xml` file, see "Using a context.xml File" in *Sun GlassFish Enterprise Server v3 Application Development Guide* and The Context Container (`http://tomcat.apache.org/tomcat-5.5-doc/config/context.html`). Context parameters, environment entries, and resource definitions in `context.xml` are supported in the Enterprise Server.
`allowLinking`	`false`	If `true`, resources that are symbolic links in web applications on this virtual server are served. The value of this property in the `sun-web.xml` file takes precedence if defined. For details, see "sun-web-app" in *Sun GlassFish Enterprise Server v3 Application Deployment Guide*. **Caution –** Setting this property to `true` on Windows systems exposes JSP source code.

`send-error_n`	none	Specifies custom error page mappings for the virtual server, which are inherited by all web applications deployed on the virtual server. A web application can override these custom error page mappings in its `web.xml` deployment descriptor. The value of each `send-error_n` property has three components, which may be specified in any order:
		
		The first component, `code`, specifies the three-digit HTTP response status code for which the custom error page should be returned in the response.
		
		The second component, `path`, specifies the absolute or relative file system path of the custom error page. A relative file system path is interpreted as relative to the *domain-dir*`/config` directory.
		
		The third component, `reason`, is optional and specifies the text of the reason string (such as `Unauthorized` or `Forbidden`) to be returned.
		
		For example:
		
		`<property name="send-error_1"`
		`value="code=401 path=/myhost/401.html reason=MY-401-REASON"/>`
		
		This example property definition causes the contents of `/myhost/401.html` to be returned with 401 responses, along with this response line:
		
		`HTTP/1.1 401 MY-401-REASON`

TABLE 1–177 `virtual-server` Properties *(Continued)*

Property	Default	Description
`redirect_n`	none	Specifies that a request for an old URL is treated as a request for a new URL. These properties are inherited by all web applications deployed on the virtual server. The value of each `redirect_n` property has two components, which may be specified in any order: The first component, `from`, specifies the prefix of the requested URI to match. The second component, `url-prefix`, specifies the new URL prefix to return to the client. The from prefix is simply replaced by this URL prefix. For example: `<property name="redirect_1" value="from=/dummy url-prefix=http://etude"/>`
`valve_n`	none	Specifies a fully qualified class name of a custom valve, where *n* is a positive integer that allows specification of more than one. The valve class must implement the `org.apache.catalina.Valve` interface from Tomcat or previous Enterprise Server releases, or the `org.glassfish.web.valve.GlassFishValve` interface from the current Enterprise Server release. For example: `<property name="valve_1" value="org.glassfish.extension.Valve"/>` You can set this property for a specific web application. For details, see "sun-web-app" in *Sun GlassFish Enterprise Server v3 Application Deployment Guide*.
`listener_n`	none	Specifies a fully qualified class name of a custom Catalina listener, where *n* is a positive integer that allows specification of more than one. The listener class must implement the `org.apache.catalina.ContainerListener` or `org.apache.catalina.LifecycleListener` interface. For example: `<property name="listener_1" value="org.glassfish.extension.MyLifecycleListener"/>` You can set this property for a specific web application. For details, see "sun-web-app" in *Sun GlassFish Enterprise Server v3 Application Deployment Guide*.
`errorReportValve`	`org.apache.catalina.valves.ErrorReportValve`	Specifies a fully qualified class name of a custom valve that produces default error pages for applications on this virtual server. Specify an empty string to disable the default error page mechanism for this virtual server.

W

web-container

Configures the web container.

Superelements

"config" on page 35

Subelements

The following table describes subelements for the `web-container` element.

TABLE 1–178 `web-container` Subelements

Element	Required	Description
"session-config" on page 125	zero or one	Specifies session configuration information for the web container.
"property" on page 109	zero or more	Specifies a property or a variable.

Properties

The following table describes properties for the `web-container` element.

TABLE 1–179 `web-container` Properties

Property	Default	Description
`dispatcher-max-depth`	`20`	Prevents recursive `include` or `forward` statements from creating an infinite loop by setting a maximum nested dispatch level. If this level is exceeded, the following message is written to the server log: `Exceeded maximum depth for nested request dispatches`

web-module

This element is deprecated. Use an "application" on page 26 element instead.

Specifies a deployed web module.

Superelements

"applications" on page 30

Subelements

The following table describes subelements for the `web-module` element.

TABLE 1–180 `web-module` Subelements

Element	Required	Description
"description" on page 48	zero or one	Contains a text description of this element.
"web-service-endpoint" on page 148	zero or more	Configures a web service endpoint.
"property" on page 109	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the `web-module` element.

TABLE 1–181 `web-module` Attributes

Attribute	Default	Description
`name`	none	The name of the web module.
`context-root`	none	The context root at which the web module is deployed. The context root can be the empty string or just `/`. The context root can start with the `/` character, but doesn't have to.
`location`	none	A fully qualified or relative path to the directory to which the contents of the `.war` file have been extracted. If relative, it is relative to the following directory: *domain-dir*`/applications/`
`object-type`	`user`	(optional) Defines the type of the resource. For a web module, the only allowed value is `user`.
`enabled`	`true`	(optional) Determines whether the web module is enabled.
`libraries`	none	(optional) Specifies an absolute or relative path to libraries specific to this module or application. A relative path is relative to *domain-dir*`/lib/applibs`. If the path is absolute, the path must be accessible to the domain administration server (DAS), which means it must be under *domain-dir*. To include more than one path, use a system-specific separator, such as a colon for Solaris or a semicolon for Windows. The libraries are made available to the application in the order in which they are specified.
`directory-deployed`	`false`	(optional) Specifies whether the application has been deployed as a directory.

web-module-config

Configures the grandparent web "module" on page 99. Applicable only if the parent "engine" on page 54 element has a `sniffer` value of `web`.

Superelements

"engine" on page 54

Subelements

The following table describes subelements for the `web-module-config` element.

TABLE 1–182 `web-module-config` Subelements

Element	Required	Description
"env-entry" on page 56	zero or more	Configures an environment entry for a web module.
"context-param" on page 45	zero or more	Configures a context parameter for a web module.

web-service-endpoint

This element is deprecated. Web services are implemented in the "engine" on page 54 element.

Configures a web service endpoint, which can be a JAX-RPC/JAXWS 2.0 or JSR-109 web service.

Superelements

"ejb-module" on page 52, "j2ee-application" on page 73, "web-module" on page 146

Subelements

The following table describes subelements for the `web-service-endpoint` element.

TABLE 1–183 `web-service-endpoint` Subelements

Element	Required	Description
"registry-location" on page 115	zero or more	Specifies the registry where web service endpoint artifacts are published.
"transformation-rule" on page 135	zero or more	Configures an e**X**tensible **S**tylesheet **L**anguage **T**ransformation (XSLT) rule.

Attributes

The following table describes attributes for the `web-service-endpoint` element.

TABLE 1–184 `web-service-endpoint` Attributes

Attribute	Default	Description
`name`	none	The fully qualified name of the web service. For a web service endpoint within an application, the format is as follows: *module-name#endpoint-name* For example: `jaxrpc-simple.war#HelloIF` For a web service endpoint that is a stand-alone module, the name is just the *endpoint-name*.
`monitoring`	`OFF`	(optional) Specifies the monitoring level for this web service. For information about monitoring levels, see "module-monitoring-levels" on page 101.
`max-history-size`	`25`	(optional) Specifies the maximum number of monitoring records stored for this endpoint.
`jbi-enabled`	`false`	(optional) Determines whether the visibility of this endpoint as a Java Business Integration service is enabled or disabled.

work-security-map

Defines a work security map, which maps a principal associated with an incoming work instance to a principal in the Enterprise Server's security domain. It is possible to map multiple EIS group or user principals to the same Enterprise Server principal.

This is different from a "security-map" on page 121, which maps the principal received during servlet or EJB authentication to the credentials accepted by the EIS.

Superelements

"resources" on page 119

Subelements

The following table describes subelements for the `work-security-map` element.

TABLE 1–185 `work-security-map` Subelements

Element	Required	Description
"principal-map" on page 107	zero or more	Maps an EIS principal to a principal defined in the Enterprise Server domain.
"group-map" on page 60	zero or more	Maps an EIS group to a group defined in the Enterprise Server domain.

Attributes

The following table describes attributes for the `work-security-map` element.

TABLE 1–186 `work-security-map` Attributes

Attribute	Default	Description
`name`	none	Specifies a unique name for the work security map.
`description`	none	Specifies a text description for this element.

Index

A

acceptor-queue-length property, 67
acceptor-threads attribute, 66, 137
access-log attribute, 140
access-log element, 22-23
access log file, 92
access-logging-enabled attribute, 70, 140
accessLogBufferSize property, 141
accessLoggingEnabled property, 141
accessLogWriteInterval property, 142
activate-default-principal-to-role-mapping attribute, 123
adapter attribute, 63
address attribute, 66, 72, 88, 104
addresslist-behavior attribute, 86
addresslist-iterations attribute, 86
AddressList property, 41
admin-object-resource element, 23-24
admin-password attribute, 85
admin-service element, 24-25
admin-session-timeout-in-minutes attribute, 48
admin-user-name attribute, 85
alarms attribute, 93
allow-non-component-callers attribute, 80
allowLinking property, 144
allowRemoteAddress property, 142
allowRemoteHost property, 142
alternatedocroot_*n* property, 143
anonymous-role attribute, 122
appclient-module element, 25-26
append-version property, 87
application element, 26-30
application-ref element, 30
application-root attribute, 49
applications, location, 49
applications element, 30-31
apply-to attribute, 136
assign-groups property, 33
associate-with-thread attribute, 40, 81
AssociateWithThread property, 42, 83
audit-enabled attribute, 122
audit-module element, 31-32
audit-modules attribute, 123
auditOn property, 32
auth-layer attribute, 99
auth-pass-through-enabled attribute, 62
auth-realm element, 32-34
auth-realm-name attribute, 88
auth-recipient attribute, 116, 120
auth-source attribute, 116, 120
authPassthroughEnabled property, 67
authRealm property, 142
auto-deploy-retry-timeout attribute, 48
autodeploy-dir attribute, 48
autodeploy-enabled attribute, 47
autodeploy-jsp-precompilation-enabled attribute, 48
autodeploy-polling-interval-in-seconds attribute, 47
autodeploy-verifier-enabled attribute, 48
automatic-recovery attribute, 133

B

backend-principal element, 35

base-dn property, 33
blocking-enabled attribute, 66
buffer-size-bytes attribute, 137
bufferSize property, 67
byte-buffer-type attribute, 137
bytecode-preprocessors attribute, 76

C

cache-idle-timeout-in-seconds attribute, 51
cache-resize-quantity attribute, 51
cert-nickname attribute, 127
certificates, 33
charset property, 34
class-loading-policy attribute, 45
class-name attribute
  lifecycle-module element, 91
  provider-config element, 115
class-name property, application element, 28
classname attribute
  audit-module element, 32
  auth-realm element, 33
  port-unification element, 107
  protocol-chain element, 112
  protocol-chain-instance-handler element, 112
  protocol-filter element, 113
  protocol-finder element, 113
  selection-key-handler element, 123
  thread-pool element, 132
  transport element, 136
classpath attribute, 92, 109
classpath property, 28
classpath-suffix attribute, 76
client-auth-enabled attribute, 128
client-authentication-required attribute, 73
clientAuth property, 33
ClientId property, 41
cmt-max-runtime-exceptions property, 98
comet-support-enabled attribute, 62
cometSupport property, 67
commit-option attribute, 52
compatibility property, 29
compressable-mime-type attribute, 63
compressableMimeType property, 67
compression attribute, 62
compression-min-size-bytes attribute, 62
compression property, 67
compressionMinSize property, 68
config element, 35-37
config-ref attribute, 124
configs element, 37
connection-creation-retry-attempts attribute, 40, 80
connection-creation-retry-interval-in-seconds attribute, 40, 80
connection-definition-name attribute, 39
connection-leak-reclaim attribute, 40, 80
connection-leak-timeout-in-seconds attribute, 39, 80
connection-pool element, 37-38
connection-upload-timeout-millis attribute, 63
connection-validation-method attribute, 79
connectionTimeout property, 67, 71
connectionUploadTimeout property, 68
connector-connection-pool element, 38-42
connector-module element, 42-43
connector-resource element, 43-44
connector-resource-jndi-name attribute, 116
connector-service element, 44-45
context-param element, 45-46
context-root attribute, 27, 147
context.xml file, 144
contextXmlDefault property, 144
crl-file attribute, 128
crlFile property, 68
custom-resource element, 46

D

das-config element, 47-48
databaseName property, 82
datasource-classname attribute, 77
datasource-jndi property, 34
datasourceName property, 82
db-logging-resource property, 135
db-password property, 34
db-user property, 34
debug-enabled attribute, 76
debug-options attribute, 76
debug property, 115

default-client-provider attribute, 99
default-jms-host attribute, 86
default-principal attribute, 122
default-principal-password attribute, 122
default-provider attribute, 99
default-realm attribute, 122
default-response-type attribute, 63, 69
default-type attribute, 69
default virtual server
  for a network-listener element, 61
  for the entire server, 138
default-virtual-server attribute, 61, 66
default-web-module attribute, 139
denyRemoteAddress property, 142
denyRemoteHost property, 142
deploy-xml-validation attribute, 48
description attribute
  application element, 27
  jdbc-connection-pool element, 77
  jdbc-resource element, 84
  property element, 110
  system-property element, 131
description element, 48
description property, 82
digest-algorithm property, 34
directory attribute, 129
directory-deployed attribute
  appclient-module element, 26
  application element, 27
  connector-module element, 43
  ejb-module element, 53
  extension-module element, 58
  j2ee-application element, 74
  web-module element, 147
directory property, 33
disable-distributed-transaction-logging property, 134
disable-timeout-in-minutes attribute, 30
disableUploadTimeout property, 68
dispatcher-max-depth property, 146
display-configuration attribute, 137
dns-lookup-enabled attribute, 63, 69
docroot attribute, 140
domain element, 49-50
domain.xml file
  backup of, 16
  element hierarchy, 18-21
  elements in, 21-22
  extensibility, 16
  location, 15-21
  verification, 16
driver-classname attribute, 78
dynamic-reconfiguration-enabled attribute, 36
dynamic-reload-enabled attribute, 47
dynamic-reload-poll-interval-in-seconds attribute, 47
dynamic.username.password property, 115

E

eis-group attribute, 60
eis-principal attribute, 108
ejb-container element, 50-52
ejb-module element, 52-53
ejb-timer-service element, 53-54
elements
  descriptions of, 21-22
  hierarchy, 18-21
  referencing, 18
enableCookies property, 127
enabled attribute, 88
enableURLRewriting property, 127
encoding property, 34
encryption.key.alias property, 115
engine element, 54-56
env-classpath-ignored attribute, 76
env-entry element, 56
env-entry-name element, 56
env-entry-type element, 57
errorReportValve property, 145
extension-module element, 57-58
external-jndi-resource element, 58-59
external-port attribute, 66

F

factory-class attribute, 46, 59
fail-all-connections attribute, 39, 79

family attribute, 66
file attribute, 93
file-cache element, 59-60
file-caching-enabled attribute, 65
file property, 33
file-transmission-enabled attribute, 65
flush-frequency property, 94
forced-response-type attribute, 63, 69
forced-type attribute, 69
format attribute, 22

G

globally-enabled attribute, 65
group-base-dn property, 34
group-map element, 60-61
group-name-column property, 34
group-search-filter property, 34
group-table property, 34
group-target property, 34

H

hash-init-size attribute, 65
header-buffer-length-bytes attribute, 63
header-buffer-length-in-bytes attribute, 117
heuristic-decision attribute, 134
host attribute, 84
hosts attribute, 140
  checking against subject pattern, 139
http-access-log element, 64
http element, 61-64
http-file-cache element, 64-65
HTTP listen socket, 65-68
http-listener element, 65-68
http-listeners attribute, 139
http-protocol element, 68-69
http-service element, 69-71

I

id attribute
  http-listener element, 66
  iiop-listener element, 72
  virtual-server element, 139
idle-key-timeout-seconds attribute, 137
idle-thread-timeout-seconds attribute, 132
idle-timeout-in-seconds attribute, 39, 78, 98
idLengthBytes property, 127
ignore-descriptor-item attribute, 45, 56
iiop-listener element, 71-72
iiop-service element, 72-73
init-sql attribute, 79
init-timeout-in-seconds attribute, 85
initial-thread-count attribute, 117
instance-name property, 87
instance-name-suffix property, 87
iponly attribute, 64
is-connection-validation-required attribute, 39, 78
is-failure-fatal attribute, 92
is-failure-fatal property, 28
is-isolation-level-guaranteed attribute, 78

J

j2ee-application element, 73-74
jaas-context property, 33
jacc attribute, 123
jacc-provider element, 74-75
jar-signing-alias property, 28
Java Business Integration, 149
java-config element, 75-77
Java Database Connectivity, *See* JDBC
java-home attribute, 76
Java Naming and Directory Interface, *See* JNDI
Java Platform Debugger Architecture, *See* JPDA
Java Transaction Service, *See* JTS
Java Virtual Machine, *See* JVM
java-web-start-enabled attribute, 26, 74
java-web-start-enabled property, 27
javac-options attribute, 76
JavaMail, 94
JBI, *See* Java Business Integration
jbi-enabled attribute, 149

JDBC connection pool, 77-83
jdbc-connection-pool element, 77-83
JDBC resource, 83
jdbc-resource element, 83-84
jk-enabled attribute, 104
jkEnabled property, 67
JMS, 84, 85
jms-host element, 84-85
jms-service element, 85-87
jmx-connector element, 87-88
JNDI, 58
jndi-lookup-name attribute, 59
jndi-name attribute
  admin-object-resource element, 23
  custom-resource element, 46
  external-jndi-resource element, 59
  jdbc-resource element, 44, 83
  mail-resource element, 95
JPDA debugging options, 76
jruby.applicationType property, 29
jruby-container element, 88-89
jruby-home attribute, 89
jruby.home property, 29
jruby.MTSafe property, 29
jruby.rackEnv property, 29
jruby-runtime attribute, 89
jruby-runtime-max attribute, 89
jruby.runtime.max property, 29
jruby-runtime-min attribute, 89
jruby.runtime.min property, 29
jruby-runtime-pool element, 89-90
jruby.runtime property, 29
JTS, 133
JVM, 75-77
  adding options to the server, 90
jvm-options element, 90

K

keep-alive element, 90-91
keepSessions property, 28
key-store attribute, 128
keypoint-interval attribute, 134

L

lazy-connection-association attribute, 40, 80
lazy-connection-enlistment attribute, 40, 80
LazyConnectionAssociation property, 42, 83
LazyConnectionEnlistment property, 42, 83
libraries attribute
  application element, 27
  ejb-module element, 53
  extension-module element, 58
  j2ee-application element, 74
  web-module element, 147
lifecycle-module element, 91-92
listen socket, 65-68
listener_*n* property, 145
load-on-startup element in web.xml, 62
load-order attribute, 92
load-order property, 28
locale attribute, 49
location attribute
  appclient-module element, 26
  application element, 27
  connector-module element, 43
  ejb-module element, 53
  extension-module element, 58
  j2ee-application element, 74
  web-module element, 147
log-directory attribute, 64
log-file attribute, 140
log-filter attribute, 93
log-handler attribute, 93
log levels, 100-101
log-root attribute, 49
log-rotation-limit-in-bytes attribute, 93
log-rotation-timelimit-in-minutes attribute, 93
log-service element, 92-94
log-to-console attribute, 93
logger names, 100-101
logging settings in domain.xml, 92-94

M

mail-resource element, 94-96
manager-properties element, 96-97
mapped-group attribute, 60

mapped-principal attribute, 108
mapped-principal-class attribute, 123
match-connections attribute, 40, 81
MatchConnections property, 42, 83
max-age-in-seconds attribute, 65
max-age-seconds attribute, 60
max-cache-size attribute, 51
max-cache-size-bytes attribute, 60
max-connection-usage-count attribute, 40, 81
max-connections attribute, 62, 91, 106
max-connections-count attribute, 137
max-files-count attribute, 60, 65
max-history-size attribute, 149
max-pending-count attribute, 37
max-pool-size attribute, 39, 51, 78, 98
max-post-size-bytes attribute, 63
max-queue-size attribute, 132
max-queue-size property, 94
max-redeliveries attribute, 54
max-sessions attribute, 97
max-thread-pool-size attribute, 132
max-wait-time-in-millis attribute, 39, 78
maxKeepAliveRequests property, 67
mdb-container element, 97-98
medium-file-size-limit-in-bytes attribute, 65
medium-file-space-in-bytes attribute, 65
message-driven beans, 97
message-fragment-size attribute, 106
message-security-config element, 98-99
min-thread-pool-size attribute, 132
minCompressionSize property, 68
minimum-delivery-interval-in-millis attribute, 54
module element, 99-100
module-log-levels element, 100-101
module-monitoring-levels element, 101-102
module-type attribute, extension-module element, 58
monitoring attribute, 149
monitoring-cache-enabled property, 67
monitoring-cache-refresh-in-millis property, 67
monitoring-service element, 102-103
mq-scheme attribute, 86
mq-service attribute, 86

N

name attribute, 84, 88, 132
  appclient-module element, 25
  application element, 27
  audit-module element, 32
  auth-realm element, 33
  config element, 36
  connector-connection-pool element, 38
  connector-module element, 43
  ejb-module element, 53
  extension-module element, 58
  j2ee-application element, 74
  jacc-provider element, 75
  jdbc-connection-pool element, 77
  lifecycle-module element, 91
  module element, 99
  network-listener element, 104
  profiler element, 108
  property element, 110
  resource-adapter-config element, 118
  security-map element, 121
  server element, 124
  system-property element, 131
  transformation-rule element, 136
  web-module element, 147
  web-service-endpoint element, 149
native library path, configuring, 76
native-library-path attribute, 109
native-library-path-prefix attribute, 76
native-library-path-suffix attribute, 76
network-config element, 103
network-listener element, 103-104
network-listeners attribute, 139
network-listeners element, 104-105
networkProtocol property, 82
no-compression-user-agents attribute, 63
noCompressionUserAgents property, 68
non-transactional-connections attribute, 79

O

object-type attribute
  admin-object-resource element, 24
  application element, 27

object-type attribute *(Continued)*
connector-module element, 43
connector-resource element, 44
custom-resource element, 46
ejb-module element, 53
extension-module element, 58
external-jndi-resource element, 59
j2ee-application element, 74
jdbc-resource element, 84
lifecycle-module element, 92
mail-resource element, 95
resource-adapter-config element, 118
web-module element, 147
oracle-xa-recovery-workaround property, 134
orb element, 105-106

P

param-name element, 106
param-value element, 57, 106
password attribute, 35
password-column property, 34
Password property, 41
password property, 82, 87
pending-txn-cleanup-interval property, 135
ping attribute, 40, 78
policy-configuration-factory-provider attribute, 75
policy-provider attribute, 75
pool-idle-timeout-in-seconds attribute, 51
pool-name attribute, 44, 84
pool-resize-quantity attribute, 39, 51, 78, 98
pooling attribute, 40, 81
port attribute
http-listener element, 66
iiop-listener element, 72
jms-host element, 85
jmx-connector element, 88
network-listener element, 104
port property, 82
port-unification element, 106-107
prefer-validate-over-recreate property, 42, 83
principal element, 107
principal-map element, 107-108
profiler element, 108-109
properties
about, 109-110
system, 130-132
property element, 109-110
protocol attribute, 88, 104
protocol-chain element, 111-112
protocol-chain-instance-handler element, 112
protocol element, 110-111
protocol-filter element, 112-113
protocol-finder element, 113
protocols element, 113-114
provider-config element, 114-115
provider-id attribute, 115
provider-type attribute, 115
proxiedProtocol property, 67
proxyHandler property, 67, 71

Q

queue-size-in-bytes attribute, 37

R

rcm-support-enabled attribute, 64
read-timeout-millis attribute, 137
reader-queue-length property, 67
reader-threads property, 67
reap-interval-in-seconds attribute, 97, 129
receive-buffer-size-in-bytes attribute, 38
reconnect-attempts attribute, 86
reconnect-enabled attribute, 86
reconnect-interval-in-seconds attribute, 86
recycle-objects property, 67
redelivery-interval-internal-in-millis attribute, 54
redirect_*n* property, 145
redirect-port attribute, 61, 66
ref attribute
application-ref element, 30
resource-ref element, 119
referencing elements, 18
registry-location element, 115-116
removal-timeout-in-seconds attribute, 52
repository property, 75

request-body-buffer-size-bytes attribute, 62
request-policy element, 116-117
request-processing element, 117
request-timeout-in-seconds attribute, 117
request-timeout-seconds attribute, 63
res-adapter attribute, 24
res-type attribute, 24, 46, 59, 77
resource-adapter-config element, 117-118
resource-adapter-name attribute, 39, 118
resource adapters, 42-43
resource-ref element, 118-119
resources element, 119-120
response-policy element, 120
retain-error-statistics-for-hours attribute, 93
retry-timeout-in-seconds attribute, 134
rmic-options attribute, 76
roleName property, 82
rotation-enabled attribute, 23
rotation-interval-in-minutes attribute, 23
rotation-policy attribute, 22
rotation-suffix attribute, 23
rule-file-location attribute, 136

S

search-bind-dn property, 34
search-bind-password property, 34
search-filter property, 34
Secure Socket Layer, *See* SSL
securePagesWithPragma property, 143
security, 121-123
security.config property, 115
security-enabled attribute, 66, 72, 88, 111
security-map element, 121
security-service element, 121-123
selection-key-handler attribute, 136
selection-key-handler element, 123
selector-poll-timeout-millis attribute, 137
send-buffer-size-bytes attribute, 62
send-buffer-size-in-bytes attribute, 38
send-error_*n* property, 144
server element, 123-124
server log file, 49, 92-94
server-name attribute, 61, 66
serverName property, 82
servers element, 124-125
session-config element, 125
session-file-name attribute, 97
session-id-generator-classname attribute, 97
session-manager element, 125-126
session-properties element, 126-127
session-store attribute, 52
session-timeout element, 126
setCacheControl property, 141
shutdown-timeout-in-seconds attribute, 44
signature.key.alias property, 115
single sign-on, 70, 140
small-file-size-limit-in-bytes attribute, 65
small-file-space-in-bytes attribute, 65
sniffer attribute, 55
snoop-enabled attribute, 137
sql-trace-listeners attribute, 81
SSL, configuring, 127-128
ssl-cache-entries property, 67, 71
ssl-client-config element, 128-129
ssl element, 127-128
ssl-enabled attribute, 69
ssl-session-timeout property, 67, 71
ssl2-ciphers attribute, 128
ssl2-enabled attribute, 127
SSL3 client authentication, 128
ssl3-enabled attribute, 128
ssl3-session-timeout property, 67, 71
ssl3-tls-ciphers attribute, 128
sso-cookie-secure property, 141
sso-enabled attribute, 70, 140
sso-enabled property, 141
sso-max-inactive-seconds property, 141
sso-reap-interval-seconds property, 141
ssoCookieSecure property, 141
start-args attribute, 86
state attribute, 140
statement-cache-size attribute, 81
statement-timeout-in-seconds attribute, 80
steady-pool-size attribute, 39, 51, 78, 98
store-properties element, 129-130
store-protocol attribute, 95
store-protocol-class attribute, 95

Sun Java System Message Queue, 87
system-applications element, 130
system-classpath attribute, 76
system-jmx-connector-name attribute, 25
system-property element, 130-132

T

tcp-no-delay attribute, 137
thread-count attribute, 90, 117
thread-increment attribute, 117
thread-pool attribute, 104
thread-pool element, 132-133
thread-pool-ids attribute, 118
thread-pools element, 133
timeout-in-seconds attribute, 91, 126, 134
timeout-seconds attribute, 63
timer-datasource attribute, 54
tls-enabled attribute, 128
tls-rollback-enabled attribute, 128
trace-enabled attribute, 62
traceEnabled property, 67
transaction-isolation-level attribute, 78
transaction log file, 92, 134
transaction-service element, 133-135
transaction-support attribute, 39
transformation-rule element, 135-136
transport attribute, 104
transport element, 136-137
transport-protocol attribute, 95
transport-protocol-class attribute, 95
transports element, 137-138
trust-algorithm attribute, 128
trust-max-cert-length attribute, 128
trust-store attribute, 128
trustAlgorithm property, 68
trustMaxCertLength property, 68
tx-log-dir attribute, 134
type attribute, 25, 86, 112

U

upload-timeout-enabled attribute, 63
uri-encoding attribute, 63
uriEncoding property, 68
url property, 83
use-last-agent-optimization property, 135
use-nio-direct-bytebuffer property, 67
use-system-logging attribute, 93
use-thread-pool-ids attribute, 106
user-group element, 138
user-name attribute, 35
user-name-column property, 34
user-name property, 87
user property, 82
user-table property, 34
UserName property, 41

V

validate-atmost-once-period-in-seconds attribute, 39, 80
validation-classname attribute, 79
validation-table-name attribute, 79
value attribute, 110, 131
valve_*n* property, 145
variables, 17-18
verify-domain-xml command, 16
version attribute, 50, 63, 68
victim-selection-policy attribute, 52
virtual-server element, 138-146
virtual servers, log file for, 92
virtual-servers attribute, 30

W

web-container element, 146
web module, default, 139
web-module-config element, 147-148
web-module element, 146-147
web-service-endpoint element, 148-149
web.xml file session-timeout element, 126
work-security-map element, 149-150
wrap-jdbc-objects attribute, 82
write-timeout-millis attribute, 137

X

xa-servername property, 135
xaresource-txn-timeout property, 134
xpowered-by attribute, 62, 66
XSLT, 135-136