



# **Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Administration Reference**



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# Preface

---

This *Administration Reference* provides information about the Sun Java™ System Application Server configuration file, `domain.xml`. This file contains most of the Application Server configuration.

## Who Should Use This Book

This *Administration Reference* is intended for use by administrators and software developers who maintain and use Sun Java System servers and software. Application Server administrators and software developers should already understand the following technologies:

- Java technology
- The Java 2 Platform, Enterprise Edition (J2EE™ platform), version 1.4
- Extensible Markup Language (XML)

## Before You Read This Book

Application Server can be purchased by itself or as a component of Sun Java Enterprise System (Java ES), a software infrastructure that supports enterprise applications distributed across a network or Internet environment. If you purchased *ProductName* as a component of Java ES, you should be familiar with the system documentation at <http://docs.sun.com/coll/1286.1>.

## How This Book Is Organized

This book contains one chapter, [Chapter 1, “The domain.xml File”](#), which describes in detail the structure and content of this file. The file’s elements are listed in alphabetical order.

# Application Server Documentation Set

The Application Server documentation set describes deployment planning and system installation. The URL for stand-alone Application Server documentation is <http://docs.sun.com/app/docs/coll/1310.1>. For an introduction to Application Server, refer to the books in the order in which they are listed in the following table.

TABLE P-1 Books in the Application Server Documentation Set

Book Title	Description
<i>Release Notes</i>	Late-breaking information about the software and the documentation. Includes a comprehensive, table-based summary of the supported hardware, operating system, JDK, and JDBC/RDBMS.
<i>Quick Start Guide</i>	How to get started with the Application Server product.
<i>Installation Guide</i>	Installing the software and its components.
<i>Deployment Planning Guide</i>	Evaluating your system needs and enterprise to ensure that you deploy the Application Server in a manner that best suits your site. General issues and concerns that you must be aware of when deploying the server are also discussed.
<i>Developer's Guide</i>	Creating and implementing Java Platform, Enterprise Edition (J2EE platform) applications intended to run on the Application Server that follow the open Java standards model for J2EE components and APIs. Includes general information about developer tools, security, assembly, deployment, debugging, and creating lifecycle modules.
<i>J2EE 1.4 Tutorial</i>	Using J2EE 1.4 platform technologies and APIs to develop J2EE applications.
<i>Administration Guide</i>	Configuring, managing, and deploying Application Server subsystems and components from the Administration Console.
<i>High Availability Administration Guide</i>	Post-installation configuration and administration instructions for the high-availability database.
<i>Administration Reference</i>	Editing the Application Server configuration file, <code>domain.xml</code> .
<i>Upgrade and Migration Guide</i>	Migrating your applications to the new Application Server programming model, specifically from Application Server 6.x and 7. This guide also describes differences between adjacent product releases and configuration options that can result in incompatibility with the product specifications.
<i>Performance Tuning Guide</i>	Tuning the Application Server to improve performance.
<i>Troubleshooting Guide</i>	Solving Application Server problems.
<i>Error Message Reference</i>	Solving Application Server error messages.
<i>Reference Manual</i>	Utility commands available with the Application Server; written in man page style. Includes the <code>asadmin</code> command line interface.



## Related Books

For other Sun Java System server documentation, go to the following:

- Message Queue documentation
- Directory Server documentation
- Web Server documentation

The URL for all documentation about Java ES and its components is <http://docs.sun.com/prod/entsys.05q4>.

## Default Paths and File Names

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

TABLE P-2 Default Paths and File Names

Placeholder	Description	Default Value
<i>install-dir</i>	Represents the base installation directory for Application Server.	<p>Sun Java Enterprise System installations on the Solaris™ platform:</p> <p><code>/opt/SUNWappserver/appserver</code></p> <p>Sun Java Enterprise System installations on the Linux platform:</p> <p><code>/opt/sun/appserver/</code></p> <p>Other Solaris and Linux installations, non-root user:</p> <p><i>user's home directory</i>/SUNWappserver</p> <p>Other Solaris and Linux installations, root user:</p> <p><code>/opt/SUNWappserver</code></p> <p>Windows, all installations:</p> <p><i>SystemDrive</i>: \Sun\AppServer</p>

TABLE P-2 Default Paths and File Names (Continued)

Placeholder	Description	Default Value
<i>domain-root-dir</i>	Represents the directory containing all domains.	Sun Java Enterprise System installations on the Solaris platform:  <code>/var/opt/SUNWappserver/domains/</code>  Sun Java Enterprise System installations on the Linux platform:  <code>/var/opt/sun/appserver/domains/</code>  All other installations:  <code>install-dir/domains/</code>
<i>domain-dir</i>	Represents the directory for a domain.  In configuration files, you might see <i>domain-dir</i> represented as follows:  <code>\${com.sun.aas.instanceRoot}</code>	<i>domain-root-dir/domain-dir</i>
<i>instance-dir</i>	Represents the directory for a server instance.	<i>domain-dir/instance-dir</i>

## Typographic Conventions

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

TABLE P-3 Typographic Conventions

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

## Symbol Conventions

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

TABLE P-4 Symbol Conventions

Symbol	Description	Example	Meaning
[ ]	Contains optional arguments and command options.	<code>ls [-l]</code>	The <code>-l</code> option is not required.
{   }	Contains a set of choices for a required command option.	<code>-d {y n}</code>	The <code>-d</code> option requires that you use either the <code>y</code> argument or the <code>n</code> argument.
<code>\${ }</code>	Indicates a variable reference.	<code>\${com.sun.javaRoot}</code>	References the value of the <code>com.sun.javaRoot</code> 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.

## Accessing Sun Resources Online

The [docs.sun.com](http://docs.sun.com) web site enables you to access Sun technical documentation online. You can browse the docs.sun.com archive or search for a specific book title or subject. Books are available as online files in PDF and HTML formats. Both formats are readable by assistive technologies for users with disabilities.

To access the following Sun resources, go to <http://www.sun.com>:

- Downloads of Sun products
- Services and solutions
- Support (including patches and updates)
- Training
- Research
- Communities (for example, Sun Developer Network)

## Third-Party Web Site References

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

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# The domain.xml File

---

This chapter describes the `domain.xml` configuration file in these sections:

- “About the `domain.xml` File” on page 13
- “Alphabetical List of Elements” on page 19

## About the `domain.xml` File

The `domain.xml` file contains most of the Sun Java™ System Application Server configuration. The encoding is UTF-8 to maintain compatibility with regular UNIX text editors. The `domain.xml` file is located in the domain configuration directory, which is typically `domain-dir/config`. This file is further described in the following sections:

- “The `sun-domain_1_1.dtd` File” on page 13
- “Default Values” on page 14
- “Variables” on page 14
- “Element Referencing” on page 15
- “Element Hierarchy” on page 16

## The `sun-domain_1_1.dtd` File

The `sun-domain_1_1.dtd` file defines the structure of the `domain.xml` file, including the elements it can contain and the subelements and attributes these elements can have. The `sun-domain_1_1.dtd` file is located in the `install-dir/lib/dtds` directory.

---

**Note** – Do not edit the `sun-domain_1_1.dtd` file; its contents change only with new versions of the Application Server.

The `sun-domain_1_1.dtd` 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.

Elements or attributes that appear in the `sun-domain_1_1.dtd` file but are not described in this chapter are not implemented and should not be used.

---

For general information about DTD files and XML, see the [XML specification](http://www.w3.org/TR/REC-xml) (<http://www.w3.org/TR/REC-xml>).

## 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 Application 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.

## Variables

Variables and variable references are needed for two reasons:

- Parts of the Application Server share much configuration information but differ in specific details. For example, server instances in a cluster typically share the same configuration except for their port numbers.
- 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 118 element or the “[jvm-options](#)” on page 78 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 110, “[cluster](#)” on page 31, “[config](#)” on page 33, and “[domain](#)” on page 45 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 Application 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 → cluster → 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 `cluster` element referenced by that specific `server`
- 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 24 element references an application or module that is deployed to its parent “[server](#)” on page 110 element. The `application-ref` element’s `ref` attribute has the same value as the `name` attribute of a “[lifecycle-module](#)” on page 81, “[j2ee-application](#)” on page 65, “[ejb-module](#)” on page 52, “[web-module](#)” on page 132, “[connector-module](#)” on page 39, or “[appclient-module](#)” on page 23 element.

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

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

The referenced web-module element might look like this:

```
<web-module 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 100 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
.  applications
.  .  lifecycle-module      P
.  .  .  description
.  .  j2ee-application
.  .  .  description
.  .  web-module
.  .  .  description
.  .  ejb-module
.  .  .  description
.  .  connector-module
.  .  .  description
.  .  applient-module
.  .  .  description
.  resources
.  .  custom-resource      P
.  .  .  description
.  .  external-jndi-resource      P
.  .  .  description
.  .  jdbc-resource      P
.  .  .  description
.  .  mail-resource      P
.  .  .  description
.  .  persistence-manager-factory-resource      P
.  .  .  description
.  .  admin-object-resource      P
.  .  .  description
.  .  connector-resource      P
.  .  .  description
.  .  resource-adapter-config      P
.  .  jdbc-connection-pool      P
.  .  .  description
.  .  connector-connection-pool      P
.  .  .  description
.  .  security-map
```



```

. . . . principal
. . . . user-group
. . . . backend-principal
. configs
. . config P
. . . http-service P
. . . . access-log
. . . . request-processing
. . . . keep-alive
. . . . connection-pool
. . . . http-protocol
. . . . http-file-cache
. . . . http-listener P
. . . . . ssl
. . . . virtual-server P
. . . . . http-access-log
. . . . 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
. . . availability-service    P
. . . . web-container-availability    P
. . . . ejb-container-availability    P
. . . thread-pools
. . . . thread-pool
. . . alert-service          P
. . . . alert-subscription
. . . . . listener-config      P
. . . . . filter-config       P
. . . system-property
. . . . description
. servers
. . server                  P
. . . application-ref
. . . resource-ref
. . . system-property
. . . . description
. clusters
. . cluster                 P
. . . server-ref
. . . . health-checker
. . . resource-ref
. . . application-ref
. . . system-property
. . . . description
. node-agents
. . node-agent              P
. . . jmx-connector          P
. . . . ssl
. . . auth-realm            P
. . . log-service           P
. . . . module-log-levels      P
. lb-configs
. . lb-config               P
. . . cluster-ref
. . . . health-checker
. . . server-ref
. . . . health-checker
. system-property
. . description

```

# Alphabetical List of Elements

---

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

---

“A” on page 19 “B” on page 30 “C” on page 31 “D” on page 43 “E” on page 47 “F” on page 55  
 “H” on page 56 “I” on page 63 “J” on page 65 “K” on page 79 “L” on page 79 “M” on page 85  
 “N” on page 95 “O” on page 97 “P” on page 98 “R” on page 103 “S” on page 108 “T” on page 120  
 “U” on page 124 “V” on page 124 “W” on page 128

## A

### access-log

Defines access log settings for each “[http-access-log](#)” on page 57 subelement of each “[virtual-server](#)” on page 124.

#### Superelements

“[http-service](#)” on page 61

#### Subelements

none

#### Attributes

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

TABLE 1-1 access - log Attributes

Attribute	Default	Description
format	%client.dns;%auth-user-name; %system.date;%request;%status;%response.length;	(optional) Specifies the format of the access log.

TABLE 1-1 access-log Attributes (Continued)

Attribute	Default	Description
rotation-policy	time	(optional) Specifies the condition that triggers log rotation. The only legal value is <code>time</code> , which rotates log files at the <code>rotation-interval-in-minutes</code> interval.
rotation-interval-in-minutes	1440	(optional) Specifies the time interval between log rotations if <code>rotation-policy</code> is set to <code>time</code> .
rotation-suffix	%YYYY;%MM;%DD;-%hh;h%mm;m%ss;s	(optional) Specifies the format of the timestamp appended to the access log name when log rotation occurs.
rotation-enabled	true	(optional) If <code>true</code> , enables log rotation.

## admin-object-resource

Defines an administered object for an inbound resource adapter.

### Superelements

[“resources” on page 106](#)

### Subelements

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

TABLE 1-2 admin-object-resource Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.
<a href="#">“property” on page 100</a>	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.
res-type	none	Specifies the fully qualified type of the resource.
res-adapter	none	Specifies the name of the inbound resource adapter, as specified in the name attribute of a “connector-module” on page 39 element.
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>■ system-all - A system resource for all server instances and the domain application server.</li> <li>■ system-admin - A system resource only for the domain application server.</li> <li>■ system-instance - A system resource for all server instances only.</li> <li>■ user - A user resource.</li> </ul>
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 `adminobject` class specified in the `adminobject` element of the `ra.xml` file. Some of the property names can be specified in the `adminobject` element itself. For example, in `jmsra`, the resource adapter used to communicate with the Sun Java system Message Queue software, `jmsra`, `Name` and `Description` are valid properties.

For a complete list of the available properties (called *administered object attributes* in Sun Java System Message Queue), see the Message Queue administration material.

## admin-service

Determines whether the server instance is a regular instance, a domain administration server, or a combination.

## Superelements

“config” on page 33

## Subelements

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

TABLE 1-4 `admin-service` Subelements

Element	Required	Description
<a href="#">“jmx-connector” on page 77</a>	zero or more	Configures a JSR 160 compliant remote JMX connector.
<a href="#">“das-config” on page 43</a>	zero or one	Defines a domain administration server configuration.
<a href="#">“property” on page 100</a>	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
<code>type</code>	<code>server</code>	Specifies whether the server instance is a regular instance ( <code>server</code> ), a domain administration server ( <code>das</code> ), or a combination ( <code>das-and-server</code> ).
<code>system-jmx-connector-name</code>	<code>none</code>	Specifies the name of the internal <a href="#">“jmx-connector” on page 77</a> .

## alert-service

Configures the alert service, which allows you to register for and receive system status alerts.

## Superelements

[“config” on page 33](#)

## Subelements

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

TABLE 1-6 alert-service Subelements

Element	Required	Description
<a href="#">“alert-subscription” on page 23</a>	zero or more	Configures a subscription to system status alerts.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## alert-subscription

Configures a subscription to system status alerts.

### Superelements

[“alert-service” on page 22](#)

### Subelements

The following table describes subelements for the `alert-subscription` element.

TABLE 1-7 alert-subscription Subelements

Element	Required	Description
<a href="#">“listener-config” on page 82</a>	only one	Configures the listener class that listens for alerts from notification emitters.
<a href="#">“filter-config” on page 55</a>	zero or one	Configures the filter class that filters alerts from notification emitters.

### Attributes

The following table describes attributes for the `alert-subscription` element.

TABLE 1-8 alert-subscription Attributes

Attribute	Default	Description
<code>name</code>	<code>none</code>	Specifies the name of this alert subscription.

## appclient-module

Specifies a deployed application client container (ACC) module.

### Superelements

[“applications” on page 25](#)

## Subelements

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

TABLE 1-9 `applicant-module` Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.

## Attributes

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

TABLE 1-10 `applicant-module` Attributes

Attribute	Default	Description
<code>name</code>	<code>none</code>	The name of the ACC module.
<code>location</code>	<code>none</code>	The location of the ACC module in the Application Server file system.
<code>directory-deployed</code>	<code>false</code>	(optional) Specifies whether the application has been deployed to a directory.

## application-ref

References an application or module deployed to the server instance.

## Superelements

[“cluster” on page 31](#), [“server” on page 110](#)

## Subelements

`none`

## Attributes

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

TABLE 1-11 `application-ref` Attributes

Attribute	Default	Description
<code>enabled</code>	<code>true</code>	(optional) Determines whether the application or module is enabled.



TABLE 1-11 application-ref Attributes (Continued)

Attribute	Default	Description
virtual-servers	all virtual servers	(optional) In a comma-separated list, references id attributes of the “virtual-server” on page 124 elements to which the “web-module” on page 132 or the web modules within this “j2ee-application” on page 65 are deployed.
lb-enabled	false	(optional) If true, all load-balancers consider this application available to them.
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 a “lifecycle-module” on page 81, “j2ee-application” on page 65, “ejb-module” on page 52, “web-module” on page 132, “connector-module” on page 39, or “appclient-module” on page 23 element.

## applications

Contains deployed J2EE applications, J2EE modules, and Lifecycle modules.

### Superelements

“domain” on page 45

### Subelements

The following table describes subelements for the applications element.

TABLE 1-12 applications Subelements

Element	Required	Description
“lifecycle-module” on page 81	zero or more	Specifies a deployed lifecycle module.
“j2ee-application” on page 65	zero or more	Specifies a deployed J2EE application.
“ejb-module” on page 52	zero or more	Specifies a deployed EJB module.
“web-module” on page 132	zero or more	Specifies a deployed web module.
“connector-module” on page 39	zero or more	Specifies a deployed connector module.
“appclient-module” on page 23	zero or more	Specifies a deployed application client container (ACC) module.

**Note** – Subelements of an applications element can occur in any order.

## audit-module

Specifies an optional plug-in module that implements audit capabilities.

### Superelements

[“security-service” on page 109](#)

### Subelements

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

TABLE 1-13 `audit-module` Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	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
<code>name</code>	<code>none</code>	Specifies the name of this audit module.
<code>classname</code>	<code>none</code>	Specifies the Java class that implements this audit module.

## 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 Java System Application Server Enterprise Edition 8.1 2005Q2 Developer's Guide*.

Here is an example of the default file realm:

```
<auth-realm name="file"
  classname="com.iplanet.ias.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

“`node-agent`” on page 95, “`security-service`” on page 109

## Subelements

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

TABLE 1-15 `auth-realm` Subelements

Element	Required	Description
“ <code>property</code> ” on page 100	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-16 `auth-realm` Attributes

Attribute	Default	Description
<code>name</code>	<code>none</code>	Specifies the name of this realm.
<code>classname</code>	<code>none</code>	Specifies the Java class that implements this realm.

## Properties

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

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

TABLE 1-17 `auth-realm` Properties

Property	Realms	Description
<code>jaas-context</code>	<code>file</code> , <code>ldap</code> , <code>solaris</code>	Specifies the JAAS (Java Authentication and Authorization Service) context.
<code>file</code>	<code>file</code>	Specifies the file that stores user names. The default is <code>domain-dir/config/keyfile</code> .

TABLE 1-17 auth-realm Properties (Continued)

Property	Realms	Description
assign-groups	certificate	(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.
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.
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.

## availability-service

Configures the availability service. Enables high-availability features, such as HTTP session and stateful session bean state persistence to the Sun Java System high-availability database (HADB).

Availability can be enabled or disabled at the following levels:

1. The server instance (attribute of `availability-service`). Default is `true` (enabled).
2. The EJB or web container (attribute of `“ejb-container-availability”` on page 50 or `“web-container-availability”` on page 128). Default is `true` (enabled).
3. The application (attribute of `“j2ee-application”` on page 65). Default is `false` (disabled).
4. The stand-alone EJB or web module (attribute of `“ejb-module”` on page 52 or `“web-module”` on page 132). Default is `false` (disabled).
5. The stateful session bean. Default is `false` (disabled). See the *Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Developer’s Guide*.

For availability to be enabled at a given level, it must be enabled at all higher levels, as well. For example, to enable availability at the application level, you must also enable it at the server instance and container levels.

## Superelements

[“config” on page 33](#)

## Subelements

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

TABLE 1-18 `availability-service` Subelements

Element	Required	Description
<a href="#">“web-container-availability” on page 128</a>	only one	Enables availability in the web container.
<a href="#">“ejb-container-availability” on page 50</a>	only one	Enables availability in the EJB container.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-19 availability-service Attributes

Attribute	Default	Description
availability-enabled	true	(optional) If set to true, high-availability features apply to all applications deployed to the server instance that do not have availability disabled. All instances in a cluster should have the same availability value to ensure consistent behavior.
store-pool-name	jdbc/hastore	(optional) Specifies the jndi-name of the “jdbc-resource” on page 73 used for connections to the HADB for session persistence.  For more information about setting up a connection pool and JDBC resource for the HADB, see the description of the <code>configure-ha-cluster</code> command in the <i>Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Reference Manual</i> .

## B

### backend-principal

Specifies the user name and password required by the EIS.

#### Superelements

“security-map” on page 108

#### Subelements

none

#### Attributes

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

TABLE 1–20 backend-principal Attributes

Attribute	Default	Description
user-name	none	Specifies the user name required by the EIS.
password	none	Specifies the password required by the EIS.

## C

### cluster

Defines a cluster.

#### Superelements

“clusters” on page 32

#### Subelements

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

TABLE 1–21 cluster Subelements

Element	Required	Description
“server-ref” on page 111	zero or more	References a server instance that belongs to the cluster.
“resource-ref” on page 105	zero or more	References a resource deployed to the cluster.
“application-ref” on page 24	zero or more	References an application or module deployed to the cluster.
“system-property” on page 118	zero or more	Specifies a system property.
“property” on page 100	zero or more	Specifies a property or a variable.

#### Attributes

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

TABLE 1-22 cluster Attributes

Attribute	Default	Description
name	none	Specifies the name of the cluster.
config-ref	default “ <a href="#">config</a> ” on page 33 element’s name attribute value, server-config	References the configuration used by the cluster.

## cluster-ref

References a cluster.

### Superelements

“[lb-config](#)” on page 79

### Subelements

The following table describes subelements for the `cluster-ref` element.

TABLE 1-23 cluster-ref Subelements

Element	Required	Description
“ <a href="#">health-checker</a> ” on page 56	zero or one	Defines a health checker for the referenced cluster.

### Attributes

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

TABLE 1-24 cluster-ref Attributes

Attribute	Default	Description
ref	none	References the name attribute of a “ <a href="#">cluster</a> ” on page 31 element.

## clusters

Contains clusters.

### Superelements

“[domain](#)” on page 45



## Subelements

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

TABLE 1–25 `clusters` Subelements

Element	Required	Description
<a href="#">“cluster” on page 31</a>	zero or more	Defines a cluster.

## config

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

## Superelements

[“configs” on page 34](#)

## Subelements

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

TABLE 1–26 `config` Subelements

Element	Required	Description
<a href="#">“http-service” on page 61</a>	only one	Configures the HTTP service.
<a href="#">“iiop-service” on page 64</a>	only one	Configures the IIOP service.
<a href="#">“admin-service” on page 21</a>	only one	Determines whether the server to which the configuration applies is an administration server.
<a href="#">“connector-service” on page 41</a>	zero or one	Configures the connector service.
<a href="#">“web-container” on page 128</a>	only one	Configures the web container.
<a href="#">“ejb-container” on page 47</a>	only one	Configures the Enterprise JavaBeans™ (EJB™) container.
<a href="#">“mdb-container” on page 89</a>	only one	Configures the message-driven bean (MDB) container.
<a href="#">“jms-service” on page 75</a>	zero or one	Configures the Java Message Service (JMS) provider.
<a href="#">“log-service” on page 83</a>	only one	Configures the system logging service.

TABLE 1–26 `config` Subelements (Continued)

Element	Required	Description
“security-service” on page 109	only one	Configures the J2EE security service.
“transaction-service” on page 121	only one	Configures the transaction service.
“monitoring-service” on page 94	only one	Configures the monitoring service.
“java-config” on page 67	only one	Configures the Java Virtual Machine (JVM™).
“availability-service” on page 28	zero or one	Configures the availability service.
“thread-pools” on page 121	only one	Configures thread pools.
“alert-service” on page 22	zero or one	Configures the alert service.
“system-property” on page 118	zero or more	Specifies a system property.
“property” on page 100	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1–27 `config` Attributes

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

## configs

Contains configurations.

## Superelements

“domain” on page 45

## Subelements

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

TABLE 1–28 `configs` Subelements

Element	Required	Description
<a href="#">“config” on page 33</a>	one or more	Defines a configuration.

## connection-pool

Defines a pool of client HTTP connections.

### Superelements

[“http-service” on page 61](#)

### Subelements

none

### Attributes

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

TABLE 1–29 `connection-pool` Attributes

Attribute	Default	Description
<code>queue-size-in-bytes</code>	4096	(optional) Specifies the number of outstanding connections an <a href="#">“http-listener” on page 58</a> can have.
<code>max-pending-count</code>	4096	(optional) Specifies the maximum number of pending connections on an <a href="#">“http-listener” on page 58</a> .
<code>receive-buffer-size-in-bytes</code>	4096	(optional) Specifies the size of the receive buffer for all <a href="#">“http-listener” on page 58</a> elements.
<code>send-buffer-size-in-bytes</code>	8092	(optional) Specifies the size of the send buffer for all <a href="#">“http-listener” on page 58</a> elements.

## connector-connection-pool

Defines a connector connection pool.

## Superelements

[“resources” on page 106](#)

## Subelements

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

TABLE 1-30 `connector-connection-pool` Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.
<a href="#">“security-map” on page 108</a>	zero or more	Maps the principal received during servlet or EJB authentication to the credentials accepted by the EIS.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-31 `connector-connection-pool` Attributes

Attribute	Default	Description
<code>name</code>	none	Specifies the name of the connection pool. A <a href="#">“connector-resource” on page 40</a> element’s <code>pool-name</code> attribute refers to this name.
<code>resource-adapter-name</code>	none	Specifies the name attribute of the deployed <a href="#">“connector-module” on page 39</a> . If no name is specified during deployment, the name of the <code>.rar</code> file is used. If the resource adapter is embedded in an application, then it is <code>app_name#rar_name</code> .
<code>connection-definition-name</code>	none	Specifies a unique name, identifying a resource adapter’s <code>connection-definition</code> element in the <code>ra.xml</code> file. This is usually the <code>connectionfactory-interface</code> of the <code>connection-definition</code> element.
<code>steady-pool-size</code>	8	(optional) Specifies the initial and minimum number of connections maintained in the pool.
<code>max-pool-size</code>	32	(optional) Specifies the maximum number of connections that can be created to satisfy client requests.
<code>max-wait-time-in-millis</code>	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.

TABLE 1-31 connector-connection-pool Attributes (Continued)

Attribute	Default	Description
pool-resize-quantity	2	(optional) Specifies the number of 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-time-out-in-seconds interval. An idle connection is one that has not been used for a period of idle-time-out-in-seconds.
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: <ul style="list-style-type: none"> <li>■ XATransaction - Supports distributed transactions.</li> <li>■ LocalTransaction - Supports local transactions only.</li> <li>■ NoTransaction - No transaction support.</li> </ul>

## Properties

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 this element override the ManagedConnectionFactory JavaBean configuration settings.

The following table describes the connector-connection-pool properties of jmsra, the resource adapter used to communicate with the Sun Java System Message Queue software. For a complete list of the available properties (called *administered object attributes* in Sun Java System Message Queue), see the Message Queue administration material.

TABLE 1-32 connector-connection-pool Properties

Property	Default	Description
AddressList	none	Specifies a list of host/port combinations of the Sun Java System Message Queue. For JMS resources of the Type javax.jms.TopicConnectionFactory or javax.jms.QueueConnectionFactory.

TABLE 1-32 connector-connection-pool Properties (Continued)

Property	Default	Description
ClientId	none	<p>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.</p> <p>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.</p>
UserName	guest	<p>Specifies the user name for connecting to the Sun Java System Message Queue. For JMS resources of the Type javax.jms.TopicConnectionFactory or javax.jms.QueueConnectionFactory.</p>
Password	guest	<p>Specifies the password for connecting to the Sun Java System Message Queue. For JMS resources of the Type javax.jms.TopicConnectionFactory or javax.jms.QueueConnectionFactory.</p>
ReconnectAttempts	6	<p>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).</p>
ReconnectInterval	30000	<p>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.</p>

TABLE 1-32 connector-connection-pool Properties (Continued)

Property	Default	Description
ReconnectEnabled	false	If true, specifies that the client runtime attempts to reconnect to a message server (or the list of addresses in <code>imqAddressList</code> ) when a connection is lost.
AddressListBehavior	priority	Specifies whether connection attempts are in the order of addresses in the <code>imqAddressList</code> attribute ( <code>priority</code> ) or in a random order ( <code>random</code> ). 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 <code>imqAddressList</code> in an effort to establish (or reestablish) a connection. A value of -1 indicates that the number of attempts is unlimited.

---

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

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## connector-module

Specifies a deployed connector module.

### Superelements

“applications” on page 25

### Subelements

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

TABLE 1-33 connector-module Subelements

Element	Required	Description
“description” on page 45	zero or one	Contains a text description of this element.

## Attributes

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

TABLE 1-34 `connector-module` Attributes

Attribute	Default	Description
<code>name</code>	name of the <code>.rar</code> file	The name of the connector module.
<code>location</code>	none	The location of the connector module in the Application Server file system.
<code>object-type</code>	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>■ <code>system-all</code> - A system resource for all server instances and the domain application server.</li> <li>■ <code>system-admin</code> - A system resource only for the domain application server.</li> <li>■ <code>system-instance</code> - A system resource for all server instances only.</li> <li>■ <code>user</code> - A user resource.</li> </ul>
<code>enabled</code>	true	(optional) Determines whether the connector module is enabled.
<code>directory-deployed</code>	false	(optional) Specifies whether the application has been deployed to a directory.

## connector-resource

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

### Superelements

[“resources” on page 106](#)

### Subelements

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



TABLE 1-35 connector - resource Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-36 connector - resource Attributes

Attribute	Default	Description
<code>jndi-name</code>	none	Specifies the JNDI name for the resource.
<code>pool-name</code>	none	Specifies the name of the associated connector connection pool, defined in a <a href="#">“connector-connection-pool” on page 35</a> element.
<code>object-type</code>	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>■ <code>system-all</code> - A system resource for all server instances and the domain application server.</li> <li>■ <code>system-admin</code> - A system resource only for the domain application server.</li> <li>■ <code>system-instance</code> - A system resource for all server instances only.</li> <li>■ <code>user</code> - A user resource.</li> </ul>
<code>enabled</code>	true	(optional) Determines whether this resource is enabled at runtime.

## connector-service

Configures the connector service.

## Superelements

[“config” on page 33](#)

## Subelements

none

## Attributes

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

TABLE 1-37 `connector-service` Attributes

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

## 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 106](#)

### Subelements

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

TABLE 1-38 `custom-resource` Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-39 `custom-resource` Attributes

Attribute	Default	Description
<code>jndi-name</code>	none	Specifies the JNDI name for the resource.
<code>res-type</code>	none	Specifies the fully qualified type of the resource.

TABLE 1-39 custom-resource Attributes (Continued)

Attribute	Default	Description
factory-class	none	Specifies the fully qualified name of the user-written factory class, which implements <code>javax.naming.spi.ObjectFactory</code> .
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>▪ <code>system-all</code> - A system resource for all server instances and the domain application server.</li> <li>▪ <code>system-admin</code> - A system resource only for the domain application server.</li> <li>▪ <code>system-instance</code> - A system resource for all server instances only.</li> <li>▪ <code>user</code> - A user resource.</li> </ul>
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 21](#)

#### Subelements

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

TABLE 1-40 das-config Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	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 Java System Application Server Enterprise Edition 8.1 2005Q2 Developer's Guide*.

TABLE 1-41 `das-config` Attributes

Attribute	Default	Description
<code>dynamic-reload-enabled</code>	<code>false</code>	(optional) If <code>true</code> , checks the timestamp on a <code>.reload</code> file at every module and application directory level, to trigger dynamic reloading.
<code>dynamic-reload-poll-interval-in-seconds</code>	2	(optional) Controls the polling frequency of dynamic reloading.
<code>autodeploy-enabled</code>	<code>false</code>	(optional) If <code>true</code> , enables autodeployment, which lets you quickly deploy applications and modules to a running Application Server without performing an explicit server instance restart or a separate deployment operation.
<code>autodeploy-polling-interval-in-seconds</code>	2	(optional) Controls the polling frequency of autodeployment.
<code>autodeploy-dir</code>	<code>autodeploy</code>	(optional) Specifies the source directory (absolute or relative to <code>domain-dir</code> ) in which autodeployment looks for deployable components.
<code>autodeploy-verifier-enabled</code>	<code>false</code>	(optional) If <code>true</code> , the verifier is run before autodeployment. If verification fails, deployment is not performed.
<code>autodeploy-jsp-precompilation-enabled</code>	<code>false</code>	(optional) If <code>true</code> , JSP pages are precompiled during autodeployment.

TABLE 1-41 das-config Attributes (Continued)

Attribute	Default	Description
deploy-xml-validation	full	(optional) Specifies the type of XML validation performed on standard and Application Server deployment descriptors: <ul style="list-style-type: none"> <li>■ full - If XML validation fails, deployment fails.</li> <li>■ parsing - XML validation errors are reported but deployment occurs.</li> <li>■ none - No XML validation is performed.</li> </ul>
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 20, “appclient-module” on page 23, “connector-connection-pool” on page 35, “connector-module” on page 39, “connector-resource” on page 40, “custom-resource” on page 42, “ejb-module” on page 52, “external-jndi-resource” on page 54, “j2ee-application” on page 65, “jdbc-connection-pool” on page 69, “jdbc-resource” on page 73, “lifecycle-module” on page 81, “mail-resource” on page 85, “persistence-manager-factory-resource” on page 98, “property” on page 100, “system-property” on page 118, “web-module” on page 132

## 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 1-42 domain Subelements

Element	Required	Description
“applications” on page 25	zero or one	Contains deployed J2EE applications, J2EE modules, and lifecycle modules.
“resources” on page 106	zero or one	Contains configured resources.
“configs” on page 34	only one	Contains configurations.
“servers” on page 112	only one	Contains server instances.
“clusters” on page 32	zero or one	Contains clusters.
“node-agents” on page 96	zero or one	Contains node agents.
“lb-configs” on page 80	zero or one	Contains load balancing configurations.
“system-property” on page 118	zero or more	Specifies a system property.
“property” on page 100	zero or more	Specifies a property or a variable.

## Attributes

The following table describes attributes for the domain element.

TABLE 1-43 domain Attributes

Attribute	Default	Description
application-root	<i>domain-dir/applications</i>	(optional) Specifies the absolute path where deployed applications reside for this domain.
log-root	<i>domain-dir/logs</i>	(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 83 description for details about logs.
locale	operating system default	(optional) Specifies the domain’s language.

## 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 33

### Subelements

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

TABLE 1-44 `ejb-container` Subelements

Element	Required	Description
“ <a href="#">ejb-timer-service</a> ” on page 53	zero or one	Configures the EJB timer service.
“ <a href="#">property</a> ” on page 100	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-45 `ejb-container` Attributes

Attribute	Default	Description
<code>steady-pool-size</code>	32	<p>(optional) Specifies the initial and minimum number of beans maintained in the pool. Must be 0 or greater and less than <code>max-pool-size</code>.</p> <p>Bean instances are removed from the pool and returned after use. The pool is replenished or cleaned up periodically to maintain this size.</p> <p>Applies to stateless session beans and entity beans.</p>

TABLE 1-45 `ejb-container` Attributes (Continued)

Attribute	Default	Description
<code>pool-resize-quantity</code>	16	<p>(optional) Specifies the number of beans to be removed when the <code>pool-idle-timeout-in-seconds</code> timer expires. A cleaner thread removes any unused instances.</p> <p>Must be 0 or greater and less than <code>max-pool-size</code>. The pool is not resized below the <code>steady-pool-size</code>.</p> <p>Applies to stateless session beans and entity beans.</p>
<code>max-pool-size</code>	64	<p>(optional) Specifies the maximum number of beans that can be created to satisfy client requests. A value of 0 indicates an unbounded pool.</p> <p>Applies to stateless session beans and entity beans.</p>
<code>cache-resize-quantity</code>	32	<p>(optional) Specifies the number of beans to be:</p> <ul style="list-style-type: none"> <li>■ created if a request arrives when the pool has no available beans (subject to the <code>max-cache-size</code> limit)</li> <li>■ passivated when the <code>cache-idle-timeout-in-seconds</code> timer expires and a cleaner thread removes any unused instances, or when the cache size exceeds <code>max-cache-size</code>.</li> </ul> <p>Must be greater than 1 and less than <code>max-cache-size</code>.</p> <p>Applies to stateful session beans and entity beans.</p>
<code>max-cache-size</code>	512	<p>(optional) Specifies the maximum number of beans in the cache. A value of 0 indicates an unbounded cache.</p> <p>Applies to stateful session beans and entity beans.</p>



TABLE 1-45 `ejb-container` Attributes (Continued)

Attribute	Default	Description
<code>pool-idle-timeout-in-seconds</code>	600	<p>(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.</p> <p>Applies to stateless session beans and entity beans.</p>
<code>cache-idle-timeout-in-seconds</code>	600	<p>(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.</p> <p>Applies to stateful session beans and entity beans.</p>
<code>removal-timeout-in-seconds</code>	5400	<p>(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.</p> <p>If <code>removal-timeout-in-seconds</code> is less than or equal to <code>cache-idle-timeout-in-seconds</code>, beans are removed immediately without being passivated.</p> <p>The <code>session-store</code> attribute of the “<a href="#">server</a>” on <a href="#">page 110</a> element determines the location of the session store.</p> <p>Applies to stateful session beans.</p>
<code>victim-selection-policy</code>	nru	<p>(optional) Specifies how stateful session beans are selected for passivation. Allowed values are <code>fifo</code>, <code>lru</code>, and <code>nru</code>:</p> <ul style="list-style-type: none"> <li>■ <code>fifo</code> - Selects the oldest instance.</li> <li>■ <code>lru</code> - Selects the least recently accessed instance.</li> <li>■ <code>nru</code> - Selects a not recently used instance.</li> </ul>

TABLE 1-45 `ejb-container` Attributes (Continued)

Attribute	Default	Description
<code>commit-option</code>	B	(optional) Determines which commit option is used for entity beans. Legal values are B or C.
<code>session-store</code>	<i>domain-dir/session-store</i>	(optional) Specifies the directory where passivated stateful session beans and persisted HTTP sessions are stored in the file system.

## ejb-container-availability

Enables availability in the EJB container, including stateful session bean (SFSB) state persistence to the high-availability database (HADB).

### Superelements

[“availability-service” on page 28](#)

### Subelements

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

TABLE 1-46 `ejb-container-availability` Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-47 `ejb-container-availability` Attributes

Attribute	Default	Description
<code>availability-enabled</code>	<code>true</code>	(optional) If set to <code>true</code> , and if availability is enabled for the server instance (see <a href="#">“availability-service” on page 28</a> ), high-availability features apply to all SFSBs deployed to the server instance that do not have availability disabled. All instances in a cluster should have the same availability value to ensure consistent behavior.
<code>sfsb-ha-persistence-type</code>	<code>ha</code>	(optional) Specifies the session persistence and passivation mechanism for SFSBs that have availability enabled. Allowed values are <code>file</code> (the file system) and <code>ha</code> (the HADB). For production environments that require session persistence, use <code>ha</code> .  If set to <code>file</code> , the <a href="#">“ejb-container” on page 47</a> element’s <code>session-store</code> attribute specifies the file system location where the passivated session bean state is stored. Checkpointing to the file system is useful for internal testing but is not supported for production environments.
<code>sfsb-persistence-type</code>	<code>file</code>	(optional) Specifies the passivation mechanism for SFSBs that <i>do not</i> have availability enabled. Allowed values are <code>file</code> and <code>ha</code> .
<code>sfsb-store-pool-name</code>	<a href="#">“availability-service” on page 28</a> <code>store-pool-name</code> attribute value	(optional) Specifies the <code>jndi-name</code> of the <a href="#">“jdbc-resource” on page 73</a> used for connections to the HADB for session persistence.  For more information about setting up a connection pool and JDBC resource for the HADB, see the description of the <code>configure-ha-cluster</code> command in the <i>Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Reference Manual</i> .

## ejb-module

Specifies a deployed EJB module.

### Superelements

[“applications” on page 25](#)

### Subelements

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

TABLE 1-48 `ejb-module` Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.

### Attributes

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

TABLE 1-49 `ejb-module` Attributes

Attribute	Default	Description
<code>name</code>	<code>none</code>	The name of the EJB module.
<code>location</code>	<code>none</code>	The location of the EJB module in the Application Server file system.
<code>object-type</code>	<code>user</code>	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>■ <code>system-all</code> - A system resource for all server instances and the domain application server.</li> <li>■ <code>system-admin</code> - A system resource only for the domain application server.</li> <li>■ <code>system-instance</code> - A system resource for all server instances only.</li> <li>■ <code>user</code> - A user resource.</li> </ul>
<code>enabled</code>	<code>true</code>	(optional) Determines whether the EJB module is enabled.

TABLE 1-49 `ejb-module` Attributes (Continued)

Attribute	Default	Description
<code>availability-enabled</code>	<code>false</code>	(optional) Specifies whether availability is enabled in this EJB module for SFSB checkpointing (and potentially passivation). Availability must also be enabled for the application or stand-alone EJB module during deployment. For more information about availability, see <a href="#">“availability-service” on page 28</a> .
<code>directory-deployed</code>	<code>false</code>	(optional) Specifies whether the application has been deployed to a directory.

## ejb-timer-service

Configures the EJB timer service.

### Superelements

[“ejb-container” on page 47](#)

### Subelements

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

TABLE 1-50 `ejb-timer-service` Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-51 `ejb-timer-service` Attributes

Attribute	Default	Description
<code>minimum-delivery-interval-in-millis</code>	<code>7000</code>	(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.

TABLE 1-51 `ejb-timer-service` Attributes (Continued)

Attribute	Default	Description
<code>max-redeliveries</code>	1	(optional) Specifies the maximum number of times the EJB timer service attempts to redeliver a timer expiration due for exception or rollback.
<code>timer-datasource</code>	<code>jdbc/__TimerPool</code>	(optional) Overrides, for the cluster or server instance, the <code>cmp-resource</code> value specified in <code>sun-ejb-jar.xml</code> for the timer service system application ( <code>__ejb_container_timer_app</code> ).
<code>redelivery-interval-internal-in-millis</code>	5000	(optional) Specifies how long the EJB timer service waits after a failed <code>ejbTimeout</code> delivery before attempting a redelivery.

## 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 106](#)

### Subelements

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

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

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.
<a href="#">“property” on page 100</a>	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 <code>javax.naming.spi.InitialContextFactory</code> .  For more information about JNDI, see the <i>Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Developer's Guide</i> .
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>■ <code>system-all</code> - A system resource for all server instances and the domain application server.</li> <li>■ <code>system-admin</code> - A system resource only for the domain application server.</li> <li>■ <code>system-instance</code> - A system resource for all server instances only.</li> <li>■ <code>user</code> - A user resource.</li> </ul>
enabled	true	(optional) Determines whether this resource is enabled at runtime.

## F

### filter-config

Configures the filter class that filters alerts from notification emitters. See also [“listener-config” on page 82](#).

### Superelements

[“alert-subscription” on page 23](#)

### Subelements

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

TABLE 1-54 filter-config Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-55 filter-config Attributes

Attribute	Default	Description
<code>filter-class-name</code>	none	Specifies the class name of the filter.

# H

## health-checker

Defines a health checker for the parent [“server-ref” on page 111](#) or [“cluster-ref” on page 32](#) element.

### Superelements

[“cluster-ref” on page 32](#), [“server-ref” on page 111](#)

### Subelements

none

### Attributes

The following table describes attributes for the `health-checker` element.

TABLE 1-56 health-checker Attributes

Attribute	Default	Description
<code>url</code>	/	Specifies the URL to ping to determine the health state of a listener. This must be a relative URL.
<code>interval-in-seconds</code>	30	Specifies the interval between health checks. A value of zero means that health checking is disabled.



TABLE 1-56 health-checker Attributes (Continued)

Attribute	Default	Description
timeout-in-seconds	10	Specifies the maximum time in which a server must respond to a health check request to be considered healthy. If <code>interval-in-seconds</code> is greater than zero, <code>timeout-in-seconds</code> must be less than or equal to <code>interval-in-seconds</code> .

## http-access-log

Defines an access log file for a “[virtual-server](#)” on page 124. The “[access-log](#)” on page 19 subelement of the virtual server’s parent “[http-service](#)” on page 61 element determines the access log file’s format and rotation settings.

### Superelements

“[virtual-server](#)” on page 124

### Subelements

none

### Attributes

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

TABLE 1-57 http-access-log Attributes

Attribute	Default	Description
log-directory	<code>\${com.sun.aas.instanceRoot}/logs/access</code>	(optional) Specifies the location of the access log file.
iponly	<code>true</code>	(optional) If <code>true</code> , specifies that only the IP address of the user agent is listed. If <code>false</code> , performs a DNL lookup.

## http-file-cache

Configures the HTTP file cache.

### Superelements

“[http-service](#)” on page 61

## Subelements

none

## Attributes

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

TABLE 1-58 `http-file-cache` Attributes

Attribute	Default	Description
<code>globally-enabled</code>	<code>true</code>	(optional) If <code>true</code> , enables the file cache.
<code>file-caching-enabled</code>	<code>on</code>	(optional) If <code>on</code> , enables caching of the file content if the file size exceeds the <code>medium-file-size-limit-in-bytes</code> .
<code>max-age-in-seconds</code>	<code>30</code>	(optional) Specifies the maximum age of a file cache entry.
<code>medium-file-size-limit-in-bytes</code>	<code>537600</code>	(optional) Specifies the maximum size of a file that can be cached as a memory mapped file.
<code>medium-file-space-in-bytes</code>	<code>10485760</code>	(optional) Specifies the total size of all files that are cached as memory mapped files.
<code>small-file-size-limit-in-bytes</code>	<code>2048</code>	(optional) Specifies the maximum size of a file that can be read into memory.
<code>small-file-space-in-bytes</code>	<code>1048576</code>	(optional) Specifies the total size of all files that are read into memory.
<code>file-transmission-enabled</code>	<code>false</code>	(optional) If <code>true</code> , enables the use of <code>TransmitFileSystem</code> calls. Meaningful only for Windows.
<code>max-files-count</code>	<code>1024</code>	(optional) Specifies the maximum number of files in the file cache.
<code>hash-init-size</code>	<code>0</code>	(optional) Specifies the initial number of hash buckets.

## http-listener

Defines an HTTP listen socket. The “[connection-pool](#)” on page 35 subelement of the parent “[http-service](#)” on page 61 element also configures some listen socket settings.

## Superelements

“[http-service](#)” on page 61

## Subelements

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

TABLE 1-59 `http-listener` Subelements

Element	Required	Description
<a href="#">“ssl” on page 115</a>	zero or one	Defines SSL parameters.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-60 `http-listener` Attributes

Attribute	Default	Description
<code>id</code>	<code>none</code>	The unique listener name. An <code>http-listener</code> name cannot begin with a number.
<code>address</code>	<code>none</code>	IP address of the listener. Can be in dotted-pair or IPv6 notation. Can be any (for <code>INADDR_ANY</code> ) to listen on all IP addresses. Can be a hostname.
<code>port</code>	<code>none</code>	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.
<code>external-port</code>	<code>none</code>	(optional) Specifies the external port on which the connection is made.
<code>family</code>	<code>inet</code>	(optional) Specifies whether the IP address is an <code>inet</code> or <code>ncsa</code> address.
<code>blocking-enabled</code>	<code>false</code>	(optional) If <code>true</code> , enables blocking on both the external and listener ports.
<code>acceptor-threads</code>	<code>1</code>	(optional) Number of acceptor threads for the listener, typically the number of processors in the machine. Legal values are 1 - 1024.
<code>security-enabled</code>	<code>false</code>	(optional) Determines whether the listener runs SSL. To turn SSL2 or SSL3 on or off and set ciphers, use an <code>ssl</code> subelement.

TABLE 1-60 http-listener Attributes (Continued)

Attribute	Default	Description
default-virtual-server	none	References the <code>id</code> attribute of the default “virtual-server” on page 124 for this particular listener.
server-name	none	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 <code>server-name</code> 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 listener is supporting non-SSL requests and a request is received for which a matching <code>&lt;security-constraint&gt;</code> requires SSL transport, the request is automatically redirected to the port number specified here.
xpowered-by	true	(optional) If true, <code>X-Powered-By</code> headers are used according to the Servlet 2.4 and JSP 2.0 specifications.
enabled	true	(optional) Determines whether the listener is active.

## http-protocol

Configures HTTP protocol settings.

### Superelements

[“http-service” on page 61](#)

### Subelements

none

### Attributes

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

TABLE 1-61 protocol Attributes

Attribute	Default	Description
version	HTTP/1.1	(optional) Specifies the version of the HTTP protocol used.
dns-lookup-enabled	true	(optional) If true, looks up the DNS entry for the client.
forced-response-type	ISO-8859-1;en;ISO-8859-1	(optional) Specifies the response 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;ISO-8859-1;en;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.
ssl-enabled	true	(optional) If true, globally enables SSL for all “ <a href="#">http-listener</a> ” on page 58 subelements of the parent “ <a href="#">http-service</a> ” on page 61 element.

## http-service

Defines the HTTP service.

### Superelements

“[config](#)” on page 33

### Subelements

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

TABLE 1-62 http-service Subelements

Element	Required	Description
“ <a href="#">access-log</a> ” on page 19	zero or one	Defines access log settings for each “ <a href="#">http-access-log</a> ” on page 57 subelement of each “ <a href="#">virtual-server</a> ” on page 124.
“ <a href="#">http-listener</a> ” on page 58	one or more	Defines an HTTP listen socket.

TABLE 1-62 http-service Subelements (Continued)

Element	Required	Description
“virtual-server” on page 124	one or more	Defines a virtual server.
“request-processing” on page 103	zero or one	Configures request processing threads.
“keep-alive” on page 79	zero or one	Configures keep-alive threads.
“connection-pool” on page 35	zero or one	Defines a pool of client HTTP connections.
“http-protocol” on page 60	zero or one	Configures HTTP protocol settings.
“http-file-cache” on page 57	zero or one	Configures the HTTP file cache.
“property” on page 100	zero or more	Specifies a property or a variable.

## Properties

The following table describes properties for the `http-service` element, which configure SSL for all “`http-listener`” on page 58 subelements.

TABLE 1-63 http-service Properties

Property	Default	Description
<code>monitoring-cache-enabled</code>	<code>true</code>	If <code>true</code> , enables the monitoring cache.
<code>monitoring-cache-refresh-in-millis</code>	<code>5000</code>	Specifies the interval between refreshes of the monitoring cache.
<code>ssl-cache-entries</code>	<code>10000</code>	Specifies the number of SSL sessions to be cached.
<code>ssl3-session-timeout</code>	<code>86400</code>	Specifies the interval at which SSL3 sessions are cached.
<code>ssl-client-auth-data-limit</code>	<code>1048576</code>	Specifies the maximum amount of data cached during the handshake phase.
<code>ssl-client-auth-timeout</code>	<code>60</code>	Specifies the timeout for the client certificate phase.
<code>ssl-session-timeout</code>	<code>100</code>	Specifies the interval at which SSL2 sessions are cached.
<code>keep-alive-query-mean-time</code>	<code>100</code>	Specifies the keep-alive latency.
<code>keep-alive-query-max-sleep-time</code>	<code>100</code>	Specifies the upper limit to the time slept after polling keep-alive connections for further requests.

TABLE 1-63 http-service Properties (Continued)

Property	Default	Description
stack-size	depends on operating system	Specifies the maximum stack size of the native thread.

## I

## iiop-listener

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

### Superelements

[“iiop-service” on page 64](#)

### Subelements

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

TABLE 1-64 iiop-listener Subelements

Element	Required	Description
<a href="#">“ssl” on page 115</a>	zero or one	Defines SSL parameters.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-65 iiop-listener Attributes

Attribute	Default	Description
id	none	The listener name. An <code>iiop-listener</code> 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.

TABLE 1-65 `iiop-listener` Attributes (Continued)

Attribute	Default	Description
<code>security-enabled</code>	<code>false</code>	(optional) Determines whether the listener runs SSL. To turn SSL2 or SSL3 on or off and set ciphers, use an <code>ssl</code> element.
<code>enabled</code>	<code>true</code>	(optional) Determines whether the listener is active.

## iiop-service

Defines the IIOP service.

### Superelements

[“config” on page 33](#)

### Subelements

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

TABLE 1-66 `iiop-service` Subelements

Element	Required	Description
<a href="#">“orb” on page 97</a>	only one	Configures the ORB.
<a href="#">“ssl-client-config” on page 117</a>	zero or one	Defines SSL parameters for the ORB.
<a href="#">“iiop-listener” on page 63</a>	zero or more	Defines an IIOP listen socket.

### Attributes

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

TABLE 1-67 `iiop-service` Attributes

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



## J

## j2ee-application

Specifies a deployed J2EE application.

### Superelements

[“applications” on page 25](#)

### Subelements

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

TABLE 1-68 `j2ee-application` Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.

### Attributes

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

TABLE 1-69 `j2ee-application` Attributes

Attribute	Default	Description
<code>name</code>	<code>none</code>	The name of the application.
<code>location</code>	<code>none</code>	The location of the application in the Application Server file system.
<code>object-type</code>	<code>user</code>	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>■ <code>system-all</code> - A system resource for all server instances and the domain application server.</li> <li>■ <code>system-admin</code> - A system resource only for the domain application server.</li> <li>■ <code>system-instance</code> - A system resource for all server instances only.</li> <li>■ <code>user</code> - A user resource.</li> </ul>

TABLE 1-69 j2ee-application Attributes (Continued)

Attribute	Default	Description
enabled	true	(optional) Determines whether the application is enabled.
availability-enabled	false	(optional) Specifies whether availability is enabled in this J2EE application for HTTP session persistence and SFSB checkpointing (and potentially passivation). Availability must also be enabled for the application during deployment. For more information about availability, see <a href="#">“availability-service” on page 28</a> .
directory-deployed	false	(optional) Specifies whether the application has been deployed to a directory.

## jacc-provider

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

### Superelements

[“security-service” on page 109](#)

### Subelements

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

TABLE 1-70 jacc-provider Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-71 jacc-provider Attributes

Attribute	Default	Description
name	default	Specifies the name of the JACC provider.

TABLE 1-71 jacc-provider Attributes (Continued)

Attribute	Default	Description
policy-provider	none	Corresponds to and can be overridden by the system property <code>javax.security.jacc.policy.provider</code> .
policy-configuration-factory-provider	none	Corresponds to and can be overridden by the system property <code>javax.security.jacc.PolicyConfigurationFactory.provider</code> .

## java-config

Specifies Java Virtual Machine (JVM) configuration parameters.

### Superelements

[“config” on page 33](#)

### Subelements

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

TABLE 1-72 java-config Subelements

Element	Required	Description
<a href="#">“profiler” on page 99</a>	zero or one	Configures a profiler for use with the Application Server.
<a href="#">“jvm-options” on page 78</a>	zero or more	Contains JVM command line options.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-73 java-config Attributes

Attribute	Default	Description
java-home	none	The path to the directory where the JDK is installed.
debug-enabled	false	(optional) If <code>true</code> , the server starts up in debug mode ready for attachment with a JPDA-based debugger.

TABLE 1-73 java-config Attributes (Continued)

Attribute	Default	Description
debug-options	-Xdebug -Xrunjdpw:transport=dt_socket,server=y,suspend=n	(optional) Specifies JPDA (Java Platform Debugger Architecture) options. A list of debugging options is available at <a href="http://java.sun.com/products/jpda/doc/conninv.html#Invocation">http://java.sun.com/products/jpda/doc/conninv.html#Invocation</a> .  For more information about debugging, see the <i>Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Developer's Guide</i> .
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.
javac-options	-g	(optional) Specifies options passed to the Java compiler at application deployment time.
classpath-prefix	none	(optional) Specifies a prefix for the system classpath. Only prefix the system classpath to override system classes, such as the XML parser classes. Use this attribute with caution.
classpath-suffix	none	(optional) Specifies a suffix for the system classpath.
server-classpath	none	(optional) Specifies the classpath for the environment from which the server was started. This classpath can be accessed using <code>System.getProperty("java.class.path")</code> .
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 Application 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 <code>profiler</code> 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 <code>com.sun.appserv.BytecodePreprocessor</code> interface. Each of the specified preprocessor classes is called in the order specified.

TABLE 1-73 java-config Attributes (Continued)

Attribute	Default	Description
env-classpath-ignored	true	(optional) If false, the CLASSPATH environment variable is read and appended to the Application Server classpath. The CLASSPATH environment variable is added after the classpath-suffix, at the very end.  For a development environment, this value should be set to false. To prevent environment variable side effects in a production environment, set this value to true.

## jdbc-connection-pool

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

### Superelements

[“resources” on page 106](#)

### Subelements

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

TABLE 1-74 jdbc-connection-pool Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-75 jdbc-connection-pool Attributes

Attribute	Default	Description
name	none	Specifies the name of the connection pool. A <a href="#">“jdbc-resource” on page 73</a> element’s pool-name attribute refers to this name.

TABLE 1-75 jdbc-connection-pool Attributes (Continued)

Attribute	Default	Description
<code>datasource-classname</code>	none	Specifies the class name of the associated vendor-supplied data source. This class must implement <code>java.sql.DataSource</code> , <code>java.sql.XADataSource</code> , <code>javax.sql.ConnectionPoolDataSource</code> , or a combination.
<code>res-type</code>	<code>javax.sql.DataSource</code>	(optional) Specifies the interface the data source class implements. The value of this attribute can be <code>javax.sql.DataSource</code> , <code>javax.sql.XADataSource</code> , or <code>javax.sql.ConnectionPoolDataSource</code> . If the value is not one of these interfaces, the default is used. An error occurs if this attribute has a legal value and the indicated interface is not implemented by the data source class.
<code>steady-pool-size</code>	8	(optional) Specifies the initial and minimum number of connections maintained in the pool.
<code>max-pool-size</code>	32	(optional) Specifies the maximum number of connections that can be created to satisfy client requests.
<code>max-wait-time-in-millis</code>	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.
<code>pool-resize-quantity</code>	2	(optional) Specifies the number of connections to be destroyed if the existing number of connections is above the <code>steady-pool-size</code> (subject to the <code>max-pool-size</code> limit).  This is enforced periodically at the <code>idle-time-out-in-seconds</code> interval. An idle connection is one that has not been used for a period of <code>idle-time-out-in-seconds</code> .
<code>idle-timeout-in-seconds</code>	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.

TABLE 1-75 jdbc-connection-pool Attributes (Continued)

Attribute	Default	Description
transaction-isolation-level	default JDBC driver isolation level	<p>(optional) Specifies the transaction isolation level on the pooled database connections. Allowed values are read-uncommitted, read-committed, repeatable-read, or serializable.</p> <p>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.</p>
is-isolation-level-guaranteed	true	<p>(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.</p>
is-connection-validation-required	false	<p>(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.</p>
connection-validation-method	auto-commit	<p>(optional) Legal values are as follows:</p> <ul style="list-style-type: none"> <li>■ auto-commit (default), which uses <code>Connection.setAutoCommit(Connection.getAutoCommit())</code></li> <li>■ meta-data, which uses <code>Connection.getMetaData()</code></li> <li>■ table, which performs a query on a table specified in the <code>validation-table-name</code> attribute</li> </ul>
validation-table-name	none	<p>(optional) Specifies the table name to be used to perform a query to validate a connection. This parameter is mandatory if and only if <code>connection-validation-type</code> is set to <code>table</code>.</p>

TABLE 1-75 jdbc-connection-pool Attributes (Continued)

Attribute	Default	Description
fail-all-connections	false	(optional) If true, closes all connections in the pool if a single validation check fails. This parameter is mandatory if and only if is-connection-validation-required is set to true.

## Properties

Most JDBC 3.0 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 Application Server, some properties might be necessary for most databases. For details, see the JDBC 3.0 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 `setName(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.

TABLE 1-76 jdbc-connection-pool Properties

Property	Description
user	Specifies the user name for this connection pool.
password	Specifies the password for this connection pool.
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 <code>XADataSource</code> , or a <code>ConnectionPoolDataSource</code> if connection pooling is done.
description	Specifies a text description.



TABLE 1-76 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.

## jdbc-resource

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

### Superelements

[“resources” on page 106](#)

### Subelements

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

TABLE 1-77 jdbc-resource Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-78 jdbc-resource Attributes

Attribute	Default	Description
<code>jndi-name</code>	none	Specifies the JNDI name for the resource.
<code>pool-name</code>	none	Specifies the name of the associated <a href="#">“jdbc-connection-pool” on page 69</a> .

TABLE 1-78 jdbc-resource Attributes (Continued)

Attribute	Default	Description
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>■ system-all - A system resource for all server instances and the domain application server.</li> <li>■ system-admin - A system resource only for the domain application server.</li> <li>■ system-instance - A system resource for all server instances only.</li> <li>■ user - A user resource.</li> </ul>
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 Application Server.

### Superelements

[“jms-service” on page 75](#)

### Subelements

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

TABLE 1-79 jms-host Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-80 jms-host Attributes

Attribute	Default	Description
name	none	Specifies the name of the JMS host.

TABLE 1-80 `.jms-host` Attributes (Continued)

Attribute	Default	Description
<code>host</code>	<i>machine-name</i>	(optional) Specifies the host name of the JMS host.
<code>port</code>	7676	(optional) Specifies the port number used by the JMS provider.
<code>admin-user-name</code>	admin	(optional) Specifies the administrator user name for the JMS provider.
<code>admin-password</code>	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 Application Server.

### Superelements

“`config`” on page 33

### Subelements

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

TABLE 1-81 `.jms-service` Subelements

Element	Required	Description
“ <code>.jms-host</code> ” on page 74	zero or more	Specifies a host.
“ <code>property</code> ” on page 100	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-82 `.jms-service` Attributes

Attribute	Default	Description
<code>init-timeout-in-seconds</code>	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 1-82 `jms-service` Attributes (Continued)

Attribute	Default	Description
<code>type</code>	LOCAL	(optional) Specifies the type of JMS service: <ul style="list-style-type: none"> <li>■ LOCAL means the JMS provider is started along with the Application Server</li> <li>■ REMOTE means the JMS provider is remote and is not started by the Application Server</li> </ul>
<code>start-args</code>	none	(optional) Specifies the string of arguments supplied for startup of the corresponding JMS instance.
<code>default-jms-host</code>	none	Specifies the name of the default “ <code>jms-host</code> ” on <a href="#">page 74</a> . If <code>type</code> is set to LOCAL, this <code>jms-host</code> is automatically started at Application Server startup.
<code>reconnect-interval-in-seconds</code>	60	(optional) Specifies the interval between reconnect attempts.
<code>reconnect-attempts</code>	3	(optional) Specifies the number of reconnect attempts.
<code>reconnect-enabled</code>	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 <code>onMessage()</code> 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.
<code>addresslist-behavior</code>	random	(optional) Specifies whether the reconnection logic selects the broker from the <code>imqAddressList</code> in a random or sequential (priority) fashion.
<code>addresslist-iterations</code>	3	(optional) Specifies the number of times the reconnection logic iterates over the <code>imqAddressList</code> if <code>addresslist-behavior</code> is set to PRIORITY.
<code>mq-scheme</code>	mq	(optional) Specifies the scheme for establishing connection with the broker. For example, specify <code>http</code> for connecting to the broker over HTTP.
<code>mq-service</code>	jms	(optional) Specifies the type of broker service. If a broker supports SSL, the type of service can be <code>ssljms</code> .

## Properties

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

TABLE 1-83 `jms-service` Properties

Property	Default	Description
<code>instance-name</code>	<code>imqbroker</code>	Specifies the full Sun Java System Message Queue broker instance name.
<code>instance-name-suffix</code>	<code>none</code>	Specifies a suffix to add to the full Sun Java System Message Queue broker instance name. The suffix is separated from the instance name by an underscore character ( <code>_</code> ). For example, if the instance name is <code>imqbroker</code> , appending the suffix <code>xyz</code> changes the instance name to <code>imqbroker_xyz</code> .
<code>append-version</code>	<code>false</code>	If <code>true</code> , appends the major and minor version numbers, preceded by underscore characters ( <code>_</code> ), to the full Sun Java System Message Queue broker instance name. For example, if the instance name is <code>imqbroker</code> , appending the version numbers changes the instance name to <code>imqbroker_8_0</code> .

## jmx-connector

Configures a JSR 160 compliant remote JMX connector, which handles communication between the domain administration server and the node agents for remote server instances.

### Superelements

[“admin-service” on page 21](#), [“node-agent” on page 95](#)

### Subelements

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

TABLE 1-84 `jmx-connector` Subelements

Element	Required	Description
<a href="#">“ssl” on page 115</a>	zero or one	Defines SSL parameters.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-85 jmx-connector Attributes

Attribute	Default	Description
name	none	Specifies the JMX connector name.
protocol	rmi_j rmp	(optional) Specifies the protocol that this JMX connector supports.
address	none	Specifies the IP address of the JMX connector. Can be in dotted-pair or IPv6 notation. Can be any (for INADDR_ANY) to listen on all IP addresses. Can be a hostname.
port	none	Specifies the port number on which the JMX connector listens. Legal values are 1 - 65535. On UNIX, creating sockets that listen on ports 1 - 1024 requires superuser privileges. Configuring an SSL-enabled JMX connector to listen on port 443 is standard.
auth-realm-name	none	Specifies the name of the “auth-realm” on page 26 subelement of the parent “node-agent” on page 95 element that represents the special administrative realm. This realm handles all authentication for the Administration Console and the <code>asadmin</code> command.
security-enabled	true	(optional) Determines whether the JMX connector runs SSL. To turn SSL2 or SSL3 on or off and set ciphers, use an <code>ssl</code> subelement.

## 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 67, “profiler” on page 99

## Subelements

none - contains data

# K

## keep-alive

Configures keep-alive threads.

### Superelements

[“http-service” on page 61](#)

### Subelements

none

### Attributes

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

TABLE 1-86 keep-alive Attributes

Attribute	Default	Description
thread-count	1	(optional) Specifies the number of keep-alive threads.
max-connections	256	(optional) Specifies the maximum number of keep-alive connections.
timeout-in-seconds	30	(optional) Specifies the maximum time for which a keep alive connection is kept open.

# L

## lb-config

Defines a load balancer configuration.

### Superelements

[“lb-configs” on page 80](#)

### Subelements

The following table describes subelements for the lb-config element.

TABLE 1-87 lb-config Subelements

Element	Required	Description
<a href="#">“cluster-ref” on page 32</a>	zero or more; zero if a server-ref is defined	References a cluster.
<a href="#">“server-ref” on page 111</a>	zero or more; zero if a cluster-ref is defined	References a server instance that does not belong to a cluster.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

The following table describes attributes for the lb-config element.

TABLE 1-88 lb-config Attributes

Attribute	Default	Description
name	none	Specifies the name of the load balancer configuration.
response-timeout-in-seconds	60	(optional) Specifies the time within which a server must return a response or it is considered unhealthy.
https-routing	false	(optional) If true, HTTPS requests to the load balancer result in HTTPS requests to the server. If false, HTTPS requests to the load balancer result in HTTP requests to the server.
reload-poll-interval-in-seconds	60	(optional) Specifies the interval between checks for changes to the load balancer configuration file (loadbalancer.xml). When changes are detected, the file is reloaded. A value of zero disables reloading.
monitoring-enabled	false	(optional) If true, enables monitoring of load balancing.

## lb-configs

Contains load balancer configurations.

## Superelements

[“domain” on page 45](#)

## Subelements

The following table describes subelements for the lb-configs element.



TABLE 1-89 lb-configs Subelements

Element	Required	Description
<a href="#">“lb-config” on page 79</a>	zero or more	Defines a load balancer configuration.

## lifecycle-module

Specifies a deployed lifecycle module. For more information about lifecycle modules, see the *Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Developer’s Guide*.

### Superelements

[“applications” on page 25](#)

### Subelements

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

TABLE 1-90 lifecycle-module Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-91 lifecycle-module Attributes

Attribute	Default	Description
<code>name</code>	none	The name of the lifecycle module.
<code>class-name</code>	none	The fully qualified name of the lifecycle module’s class file, which must implement the <code>com.sun.appserv.server.LifecycleListener</code> interface.
<code>classpath</code>	value of <code>application-root</code> attribute of <a href="#">“server” on page 110</a> element	(optional) The classpath for the lifecycle module. Specifies where the module is located.

TABLE 1-91 lifecycle-module Attributes (Continued)

Attribute	Default	Description
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.
enabled	true	(optional) Determines whether the lifecycle module is enabled.

## listener-config

Configures the listener class that listens for alerts from notification emitters. For example:

```
<listener-config
  listener-class-name="com.sun.enterprise.admin.notification.MailAlert"
  subscribe-listener-with="LogMBean,ServerStatusMonitor" >
  <property name="recipients" value="Huey@sun.com,Dewey@sun.com" />
  <property name="fromAddress" value="Louie@sun.com" />
  <property name="subject" value="Help!" />
  <property name="includeDiagnostics" value="false" />
  <property name="mailSMTPHost" value="ducks.sun.com" />
</listener-config>
```

## Superelements

[“alert-subscription” on page 23](#)

## Subelements

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

TABLE 1-92 listener-config Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-93 listener-config Attributes

Attribute	Default	Description
listener-class-name	none	Specifies the class name of the listener. The <code>com.sun.appserv.admin.notification.MailAlert</code> class is provided with the Application Server, but a custom listener can be used.
subscribe-listener-with	none	Specifies a comma-separated list of notification emitters to which the listener listens. The <code>LogMBean</code> and <code>ServerStatusMonitor</code> notification emitters are provided with the Application Server, but custom emitters can be used.

## 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` 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 124.
- The *access log* file stores HTTP access messages from the default virtual server. The default name is `access.log`. See “[access-log](#)” on page 19 and “[http-access-log](#)” on page 57.
- 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 121.

## Superelements

“[config](#)” on page 33, “[node-agent](#)” on page 95

## Subelements

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

TABLE 1-94 log-service Subelements

Element	Required	Description
“ <a href="#">module-log-levels</a> ” on page 91	zero or one	Specifies log levels.
“ <a href="#">property</a> ” on page 100	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-95 log-service Attributes

Attribute	Default	Description
file	server.log in the directory specified by the log-root attribute of the “domain” on page 45 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 45 element.  A relative path is relative to the log-root attribute of the “domain” on page 45 element. If no log-root value is specified, it is relative to <i>domain-dir/config</i> .
use-system-logging	false	(optional) If true, uses the UNIX syslog service to produce and manage logs.
log-handler	none	(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) Deprecated and ignored.

# M

## mail-resource

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

### Superelements

“resources” on page 106

### Subelements

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

TABLE 1-96 mail - resource Subelements

Element	Required	Description
“description” on page 45	zero or one	Contains a text description of this element.
“property” on page 100	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-97 mail - resource Attributes

Attribute	Default	Description
<code>jndi-name</code>	none	Specifies the JNDI name for the resource.
<code>store-protocol</code>	<code>imap</code>	(optional) Specifies the storage protocol service, which connects to a mail server, retrieves messages, and saves messages in folder(s). Allowed values are <code>imap</code> , <code>pop3</code> , <code>imaps</code> , and <code>pop3s</code> .
<code>store-protocol-class</code>	<code>com.sun.mail.imap.IMAPStore</code>	(optional) Specifies the service provider implementation class for storage. Allowed values are:  <code>com.sun.mail.imap.IMAPStore</code> <code>com.sun.mail.pop3.POP3Store</code> <code>com.sun.mail.imap.IMAPSSLStore</code> <code>com.sun.mail.pop3.POP3SSLStore</code>

TABLE 1-97 mail-resource Attributes (Continued)

Attribute	Default	Description
transport-protocol	smtp	(optional) Specifies the transport protocol service, which sends messages. Allowed values are <code>smtp</code> and <code>smtps</code> .
transport-protocol-class	<code>com.sun.mail.smtp.SMTPTransport</code>	(optional) Specifies the service provider implementation class for transport. Allowed values are:  <code>com.sun.mail.smtp.SMTPTransport</code> <code>com.sun.mail.smtp.SMTPSSLTransport</code>
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: <ul style="list-style-type: none"> <li>■ <code>system-all</code> - A system resource for all server instances and the domain application server.</li> <li>■ <code>system-admin</code> - A system resource only for the domain application server.</li> <li>■ <code>system-instance</code> - A system resource for all server instances only.</li> <li>■ <code>user</code> - A user resource.</li> </ul>
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 `JavaMailSession` object later. Every property name must start with a `mail-` prefix. The Application Server changes the dash (-) character to a period (.) in the name of the property, then saves the property to the `MailConfiguration` and `JavaMailSession` 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 `JavaMailSession` 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");
```

## manager-properties

Specifies session manager properties.

### Superelements

[“session-manager” on page 113](#)

### Subelements

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

TABLE 1-98 `manager-properties` Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-99 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. Applicable only if the persistence-type attribute of the “web-container-availability” on page 128 element is memory.
reap-interval-in-seconds	60	(optional) Specifies the time between checks for expired sessions.  If the persistence-type attribute of the “web-container-availability” on page 128 element is file or ha, sessions are passivated if max-sessions has been exceeded.  If the persistence-frequency attribute of the “web-container-availability” on page 128 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 <code>IllegalStateException</code> to be thrown. If the persistence-type attribute of the “web-container-availability” on page 128 element is file or ha, the session manager passivates sessions to the persistent store when this maximum is reached.
session-id-generator-classname	internal class generator	(optional) Specifies the name of the class that generates session IDs.



## mdb-container

Configures the message-driven bean (MDB) container.

### Superelements

[“config” on page 33](#)

### Subelements

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

TABLE 1-100 `mdb-container` Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-101 `mdb-container` Attributes

Attribute	Default	Description
<code>steady-pool-size</code>	10	(optional) Specifies the initial and minimum number of beans maintained in the pool.
<code>pool-resize-quantity</code>	2	(optional) Specifies the number of beans to be created if a request arrives when the pool is empty (subject to the <code>max-pool-size</code> limit), or the number of beans to remove if idle for more than <code>idle-timeout-in-seconds</code> .
<code>max-pool-size</code>	60	(optional) Specifies the maximum number of beans that can be created to satisfy client requests.
<code>idle-timeout-in-seconds</code>	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 1-102 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 109](#)

### Subelements

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

TABLE 1-103 message-security-config Subelements

Element	Required	Description
<a href="#">“provider-config” on page 102</a>	one or more	Specifies a configuration for one message security provider.

### Attributes

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

TABLE 1-104 message-security-config Attributes

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

TABLE 1-104 message-security-config Attributes (Continued)

Attribute	Default	Description
default-client-provider	none	(optional) Specifies the client provider that is invoked for any application not bound to a specific client provider.

## module-log-levels

Controls the level of messages logged by server subsystems to the server log. Allowed values 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 83](#)

### Subelements

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

TABLE 1-105 module-log-levels Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-106 module-log-levels Attributes

Attribute	Default	Description
root	INFO	(optional) Specifies the default level of messages logged by the entire Application 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.

TABLE 1-106 module-log-levels Attributes (Continued)

Attribute	Default	Description
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.
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.

TABLE 1-106 module-log-levels Attributes (Continued)

Attribute	Default	Description
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.

## 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 94](#)

### Subelements

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

TABLE 1-107 module-monitoring-levels Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

TABLE 1-108 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.

## monitoring-service

Configures the monitoring service.

### Superelements

[“config” on page 33](#)

### Subelements

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

TABLE 1-109 monitoring-service Subelements

Element	Required	Description
<a href="#">“module-monitoring-levels” on page 93</a>	zero or one	Controls the level of monitoring of server subsystems.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## N

### node-agent

Defines a node agent, which manages server instances on a host machine.

#### Superelements

[“node-agents” on page 96](#)

#### Subelements

The following table describes subelements for the node-agent element.

TABLE 1-110 node-agent Subelements

Element	Required	Description
<a href="#">“jmx-connector” on page 77</a>	zero or one	Configures a JSR 160 compliant remote JMX connector.
<a href="#">“auth-realm” on page 26</a>	zero or one	Defines a realm for authentication.
<a href="#">“log-service” on page 83</a>	only one	Configures the system logging service.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

#### Attributes

The following table describes attributes for the node-agent element.

TABLE 1-111 node-agent Attributes

Attribute	Default	Description
name	none	Specifies the node agent name.

TABLE 1-111 node-agent Attributes (Continued)

Attribute	Default	Description
system-jmx-connector-name	none	Specifies the name of the internal “jmx-connector” on page 77.
start-servers-in-startup	true	(optional) If true, starts all managed server instances when the node agent is started.

## Properties

The following table describes properties for the node-agent element.

TABLE 1-112 node-agent Properties

Property	Default	Description
INSTANCE-SYNC-JVM-OPTIONS	default Application Server JVM options	Sets options for the server instance synchronization JVM. Setting options that limit memory usage helps prevent OutOfMemory errors when large applications are synchronized or when memory is constrained. For more information, see the <i>Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Administration Guide</i> .

## node-agents

Contains node agents.

## Superelements

“domain” on page 45

## Subelements

The following table describes subelements for the node-agents element.

TABLE 1-113 node-agents Subelements

Element	Required	Description
“node-agent” on page 95	zero or more	Defines a node agent, which manages server instances on a host machine.



# O

## orb

Configures the ORB.

To enable SSL for outbound connections, include an [“ssl-client-config” on page 117](#) subelement in the parent `iiop-service` element.

### Superelements

[“iiop-service” on page 64](#)

### Subelements

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

TABLE 1-114 orb Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-115 orb Attributes

Attribute	Default	Description
<code>use-thread-pool-ids</code>	none	Specifies a comma-separated list of <code>thread-pool-id</code> values defined in <a href="#">“thread-pool” on page 120</a> elements used by the ORB.
<code>message-fragment-size</code>	1024	(optional) GIOPv1.2 messages larger than this number of bytes are fragmented.
<code>max-connections</code>	1024	(optional) The maximum number of incoming connections on all IIOP listeners. Legal values are integers.

# P

## persistence-manager-factory-resource

Defines a persistence manager factory resource for container-managed persistence (CMP).

### Superelements

[“resources” on page 106](#)

### Subelements

The following table describes subelements for the persistence-manager-factory-resource element.

TABLE 1-116 persistence-manager-factory-resource Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

The following table describes attributes for the persistence-manager-factory-resource element.

TABLE 1-117 persistence-manager-factory-resource Attributes

Attribute	Default	Description
jndi-name	none	Specifies the JNDI name for the resource.
factory-class	com.sun.jdo.spi.persistence.support.sqlstore.impl.PersistenceManagerFactoryImpl	(optional) Deprecated. Do not specify this attribute for the built-in CMP implementation.
jdbc-resource-jndi-name	none	Specifies the <a href="#">“jdbc-resource” on page 73</a> from which database connections are obtained. Must be the jndi-name of an existing jdbc-resource.

TABLE 1-117 persistence-manager-factory-resource Attributes (Continued)

Attribute	Default	Description
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>■ system-all - A system resource for all server instances and the domain application server.</li> <li>■ system-admin - A system resource only for the domain application server.</li> <li>■ system-instance - A system resource for all server instances only.</li> <li>■ user - A user resource.</li> </ul>
enabled	true	(optional) Determines whether this resource is enabled at runtime.

## principal

Contains the principal of the servlet or EJB client.

### Superelements

[“security-map” on page 108](#)

### Subelements

none - contains data

## profiler

Configures a profiler for use with the Application Server. For more information about profilers, see the *Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Developer’s Guide*.

### Superelements

[“java-config” on page 67](#)

### Subelements

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

TABLE 1-118 profiler Subelements

Element	Required	Description
<a href="#">“jvm-options” on page 78</a>	zero or more	Contains profiler-specific JVM command line options.
<a href="#">“property” on page 100</a>	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 1-119 profiler Attributes

Attribute	Default	Description
name	none	Specifies the name of the profiler.
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 Application Server
- Needed by a system or object that the Application 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 20, “`admin-service`” on page 21, “`alert-service`” on page 22, “`audit-module`” on page 26, “`auth-realm`” on page 26, “`availability-service`” on page 28, “`cluster`” on page 31, “`config`” on page 33, “`connector-connection-pool`” on page 35, “`connector-resource`” on page 40, “`custom-resource`” on page 42, “`das-config`” on page 43, “`domain`” on page 45, “`ejb-container`” on page 47, “`ejb-container-availability`” on page 50, “`ejb-timer-service`” on page 53, “`external-jndi-resource`” on page 54, “`filter-config`” on page 55, “`http-listener`” on page 58, “`http-service`” on page 61, “`iiop-listener`” on page 63, “`jacc-provider`” on page 66, “`java-config`” on page 67, “`jdbc-connection-pool`” on page 69, “`jdbc-resource`” on page 73, “`jms-host`” on page 74, “`jms-service`” on page 75, “`jmx-connector`” on page 77, “`lb-config`” on page 79, “`lifecycle-module`” on page 81, “`listener-config`” on page 82, “`log-service`” on page 83, “`mail-resource`” on page 85, “`manager-properties`” on page 87, “`mdb-container`” on page 89, “`module-log-levels`” on page 91, “`module-monitoring-levels`” on page 93, “`monitoring-service`” on page 94, “`node-agent`” on page 95, “`orb`” on page 97, “`persistence-manager-factory-resource`” on page 98, “`profiler`” on page 99, “`provider-config`” on page 102, “`resource-adapter-config`” on page 104, “`security-service`” on page 109, “`server`” on page 110, “`session-properties`” on page 114, “`store-properties`” on page 117, “`transaction-service`” on page 121, “`virtual-server`” on page 124, “`web-container`” on page 128, “`web-container-availability`” on page 128

## Subelements

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

TABLE 1-120 `property` Subelements

Element	Required	Description
“ <code>description</code> ” on page 45	zero or one	Contains a text description of this element.

## Attributes

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

TABLE 1-121 `property` Attributes

Attribute	Default	Description
<code>name</code>	none	Specifies the name of the property or variable.
<code>value</code>	none	Specifies the value of the property or variable.

## 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 90](#)

### Subelements

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

TABLE 1-122 provider-config Subelements

Element	Required	Description
<a href="#">“request-policy” on page 103</a>	zero or one	Defines the authentication policy requirements of the authentication provider’s request processing.
<a href="#">“response-policy” on page 107</a>	zero or one	Defines the authentication policy requirements of the authentication provider’s response processing.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-123 provider-config Attributes

Attribute	Default	Description
<code>provider-id</code>	none	Specifies the provider ID.
<code>provider-type</code>	none	Specifies whether the provider is a <code>client</code> , <code>server</code> , or <code>client-server</code> authentication provider.

TABLE 1-123 provider-config Attributes (Continued)

Attribute	Default	Description
class-name	none	Specifies the Java implementation class of the provider. Client authentication providers must implement the <code>com.sun.enterprise.security.jauth.ClientAuthModule</code> interface. Server authentication providers must implement the <code>com.sun.enterprise.security.jauth.ServerAuthModule</code> interface. Client-server providers must implement both interfaces.

## R

### request-policy

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

#### Superelements

[“provider-config” on page 102](#)

#### Subelements

none

#### Attributes

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

TABLE 1-124 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 <code>before-content</code> and <code>after-content</code> .

### request-processing

Configures request processing threads.

## Superelements

[“http-service” on page 61](#)

## Subelements

none

## Attributes

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

TABLE 1–125 request-processing Attributes

Attribute	Default	Description
thread-count	128	(optional) Specifies the maximum number of request processing threads.
initial-thread-count	48	(optional) Specifies the number of request processing threads that are available when the server starts up.
thread-increment	10	(optional) Specifies the number of request processing threads added when the number of requests exceeds the initial-thread-count.
request-timeout-in-seconds	30	(optional) Specifies the time at which the request times out.
header-buffer-in-bytes	4096	(optional) Specifies the size of the buffer used by the request processing threads to read the request data.

## resource-adapter-config

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

## Superelements

[“resources” on page 106](#)

## Subelements

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



TABLE 1-126 resource-adapter-config Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-127 resource-adapter-config Attributes

Attribute	Default	Description
name	none	(optional) Not used. See resource-adapter-name.
thread-pool-ids	none	(optional) Specifies the id of a “thread-pool” on <a href="#">page 120</a> element.
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> <li>■ system-all - A system resource for all server instances and the domain application server.</li> <li>■ system-admin - A system resource only for the domain application server.</li> <li>■ system-instance - A system resource for all server instances only.</li> <li>■ user - A user resource.</li> </ul>
resource-adapter-name	none	Specifies the name attribute of a deployed “connector-module” on <a href="#">page 39</a> . If the resource adapter is embedded in an application, then it is <i>app_name#rar_name</i> .

## Properties

Properties of the resource-adapter-config element are the names of setter methods of 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 instance.

## Superelements

“cluster” on page 31, “server” on page 110

## Subelements

none

## Attributes

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

TABLE 1-128 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 42, “external-jndi-resource” on page 54, “jdbc-resource” on page 73, “mail-resource” on page 85, “persistence-manager-factory-resource” on page 98, “admin-object-resource” on page 20, “resource-adapter-config” on page 104, “jdbc-connection-pool” on page 69, or “connector-connection-pool” on page 35 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 Application Server application should begin with the string `java:comp/env`.

---

## Superelements

“domain” on page 45

## Subelements

The following table describes subelements for the resources element.

TABLE 1–129 resources Subelements

Element	Required	Description
<a href="#">“custom-resource” on page 42</a>	zero or more	Defines a custom resource.
<a href="#">“external-jndi-resource” on page 54</a>	zero or more	Defines a resource that resides in an external JNDI repository.
<a href="#">“jdbc-resource” on page 73</a>	zero or more	Defines a JDBC (Java Database Connectivity) resource.
<a href="#">“mail-resource” on page 85</a>	zero or more	Defines a JavaMail resource.
<a href="#">“persistence-manager-factory-resource” on page 98</a>	zero or more	Defines a persistence manager factory resource for CMP.
<a href="#">“admin-object-resource” on page 20</a>	zero or more	Defines an administered object for an inbound resource adapter.
<a href="#">“connector-resource” on page 40</a>	zero or more	Defines a connector (resource adapter) resource.
<a href="#">“resource-adapter-config” on page 104</a>	zero or more	Defines a resource adapter configuration.
<a href="#">“jdbc-connection-pool” on page 69</a>	zero or more	Defines the properties that are required for creating a JDBC connection pool.
<a href="#">“connector-connection-pool” on page 35</a>	zero or more	Defines the properties that are required for creating a connector connection pool.

---

**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 102](#)

### Subelements

none

## Attributes

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

TABLE 1-130 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.

#### Superelements

[“connector-connection-pool” on page 35](#)

#### Subelements

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

TABLE 1-131 security-map Subelements

Element	Required	Description
<a href="#">“principal” on page 99</a>	one or more	Contains the principal of the servlet or EJB client.
<a href="#">“user-group” on page 124</a>	one or more	Contains the group to which the principal belongs.
<a href="#">“backend-principal” on page 30</a>	only one	Specifies the user name and password required by the EIS.

#### Attributes

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

TABLE 1-132 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 J2EE security service.

### Superelements

[“config” on page 33](#)

### Subelements

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

TABLE 1-133 security-service Subelements

Element	Required	Description
<a href="#">“auth-realm” on page 26</a>	one or more	Defines a realm for authentication.
<a href="#">“jacc-provider” on page 66</a>	one or more	Specifies a Java Authorization Contract for Containers (JACC) provider for pluggable authorization.
<a href="#">“audit-module” on page 26</a>	zero or more	Specifies an optional plug-in module that implements audit capabilities.
<a href="#">“message-security-config” on page 90</a>	zero or more	Specifies configurations for message security providers.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

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

TABLE 1-134 security-service Attributes

Attribute	Default	Description
default-realm	file	(optional) Specifies the active authentication realm (an auth-realm name attribute) for this server instance.

TABLE 1-134 security-service Attributes (Continued)

Attribute	Default	Description
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	ANYONE	(optional) Used as the name for default, or anonymous, role. The anonymous role is always assigned to all principals. This role value can be used in J2EE deployment descriptors to grant access to anyone.
audit-enabled	false	(optional) If true, additional access logging is performed to provide audit information.  Audit information consists of: <ul style="list-style-type: none"> <li>■ Authentication success and failure events</li> <li>■ Servlet and EJB access grants and denials</li> </ul>
jacc	default	(optional) Specifies the name of the “jacc-provider” on page 66 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 comma-separated list of audit provider modules used by the audit subsystem. The default value refers to the internal log-based audit module.

## server

Defines a server instance.

---

**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 112

## Subelements

The following table describes subelements for the server element.

TABLE 1–135 server Subelements

Element	Required	Description
<a href="#">“application-ref” on page 24</a>	zero or more	References an application or module deployed to the server instance.
<a href="#">“resource-ref” on page 105</a>	zero or more	References a resource deployed to the server instance.
<a href="#">“system-property” on page 118</a>	zero or more	Specifies a system property.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

The following table describes attributes for the server element.

TABLE 1–136 server Attributes

Attribute	Default	Description
name	none	Specifies the name of the server instance.
config-ref	default <a href="#">“config” on page 33</a> element’s name, server-config	(optional) References the name of the <a href="#">“config” on page 33</a> used by the server instance.
node-agent-ref	node agent created when the server instance was created	(optional) References the name of the <a href="#">“node-agent” on page 95</a> used by the server instance.

## server-ref

References a server instance.

## Superelements

[“cluster” on page 31](#), [“lb-config” on page 79](#)

## Subelements

The following table describes subelements for the server-ref element.

TABLE 1-137 server-ref Subelements

Element	Required	Description
<a href="#">“health-checker” on page 56</a>	zero or one	Defines a health checker for the referenced server instance.

## Attributes

The following table describes attributes for the server-ref element.

TABLE 1-138 server-ref Attributes

Attribute	Default	Description
ref	none	References the name attribute of a <a href="#">“server” on page 110</a> element.
disable-timeout-in-minutes	30	(optional) Specifies the time it takes this server instance to reach a quiescent state after having been disabled.
lb-enabled	false	(optional) If true, all load-balancers consider this server instance available to them.
enabled	true	(optional) Determines whether the server instance is enabled.

## servers

Contains server instances.

## Superelements

[“domain” on page 45](#)

## Subelements

The following table describes subelements for the servers element.

TABLE 1-139 servers Subelements

Element	Required	Description
<a href="#">“server” on page 110</a>	zero or more	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 128

### Subelements

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

TABLE 1-140 session-config Subelements

Element	Required	Description
“session-manager” on page 113	zero or one	Specifies session manager configuration information.
“session-properties” on page 114	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 113

### Subelements

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

TABLE 1-141 session-manager Subelements

Element	Required	Description
“manager-properties” on page 87	zero or one	Specifies session manager properties.

TABLE 1-141 session-manager Subelements (Continued)

Element	Required	Description
<a href="#">“store-properties” on page 117</a>	zero or one	Specifies session persistence (storage) properties.

## session-properties

Specifies session properties.

### Superelements

[“session-config” on page 113](#)

### Subelements

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

TABLE 1-142 session-properties Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

### Attributes

TABLE 1-143 session-properties Attributes

Attribute	Default	Description
<code>timeout-in-seconds</code>	600	<p>(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.</p> <p>If a <code>session-timeout</code> element is specified in the <code>web.xml</code> file, the <code>session-timeout</code> value overrides any <code>timeout-in-seconds</code> value. If neither <code>session-timeout</code> nor <code>timeout-in-seconds</code> is specified, the <code>timeout-in-seconds</code> default is used.</p> <p>Note that the <code>session-timeout</code> element in <code>web.xml</code> is specified in minutes, not seconds.</p>

### Properties

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

TABLE 1-144 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 <code>encodeURL</code> or <code>encodeRedirectURL</code> 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 61 element has properties that configure global SSL settings, and the “[http-protocol](#)” on page 60 subelement of the grandparent “[http-service](#)” on page 61 element has the `ssl-enabled` attribute, which globally enables SSL.

## Superelements

“[http-listener](#)” on page 58, “[iiop-listener](#)” on page 63, “[jmx-connector](#)” on page 77, “[ssl-client-config](#)” on page 117

## Subelements

none

## Attributes

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

TABLE 1-145 ssl Attributes

Attribute	Default	Description
cert-nickname	none	The nickname of the server certificate in the certificate database or the PKCS#11 token. In the certificate, the name format is <i>tokenname: nickname</i> . Including the <i>tokenname</i> : 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 124, the server tries SSL3 encryption first. If that fails, the server tries SSL2 encryption.
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 124, 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 +rsa_des_sha . Allowed SSL3 values are rsa_rc4_128_md5, rsa_3des_sha , rsa_des_sha, rsa_rc4_40_md5, rsa_rc2_40_md5, rsa_null_md5. Allowed TLS values are rsa_des_56_sha, rsa_rc4_56_sha.
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 <i>Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Administration Guide</i> .

TABLE 1-145 ssl Attributes (Continued)

Attribute	Default	Description
client-auth-enabled	false	(optional) Determines whether SSL3 client authentication is performed on every request, independent of ACL-based access control.

## 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 64](#)

### Subelements

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

TABLE 1-146 ssl-client-config Subelements

Element	Required	Description
<a href="#">“ssl” on page 115</a>	only one	Defines SSL parameters.

## store-properties

Specifies session persistence (storage) properties.

### Superelements

[“session-manager” on page 113](#)

### Subelements

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

TABLE 1-147 store-properties Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

TABLE 1-148 store-properties Attributes

Attribute	Default	Description
directory	<i>domain-dir/generated/jsp/j2ee-apps/appname/appname_war</i>	(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. Applicable only if the <code>persistence-type</code> attribute of the <a href="#">“web-container-availability” on page 128</a> element is <code>file</code> .
reap-interval-in-seconds	60	(optional) Specifies the time between checks for expired sessions.  If the <code>persistence-type</code> attribute of the <a href="#">“web-container-availability” on page 128</a> element is <code>file</code> or <code>ha</code> , sessions are passivated if <code>maxSessions</code> has been exceeded.  If the <code>persistence-frequency</code> attribute of the <a href="#">“web-container-availability” on page 128</a> element is set to <code>time-based</code> , 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.

## 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 45](#), [“cluster” on page 31](#), [“server” on page 110](#), or [“config” on page 33](#). A value set at a higher level can be overridden at a lower level. Some system properties are predefined; see [“system-property” on page 118](#). 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

[“cluster” on page 31](#), [“config” on page 33](#), [“domain” on page 45](#), [“server” on page 110](#)

## Subelements

The following table describes subelements for the system-property element.

TABLE 1-149 system-property Subelements

Element	Required	Description
<a href="#">“description” on page 45</a>	zero or one	Contains a text description of this element.

## Attributes

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

TABLE 1-150 system-property Attributes

Attribute	Default	Description
name	none	Specifies the name of the system property.
value	none	Specifies the value of the system property.

## Properties

The following table lists predefined system properties.

TABLE 1–151 Predefined System Properties

Property	Default	Description
<code>com.sun.aas.installRoot</code>	depends on operating system	Specifies the directory where the Application Server is installed.
<code>com.sun.aas.instanceRoot</code>	depends on operating system	Specifies the top level directory for a server instance.
<code>com.sun.aas.hostName</code>	none	Specifies the name of the host (machine).
<code>com.sun.aas.javaRoot</code>	depends on operating system	Specifies the J2SE installation directory.
<code>com.sun.aas.imqLib</code>	depends on operating system	Specifies the library directory for Sun Java System Message Queue.
<code>com.sun.aas.configName</code>	<code>server-config</code>	Specifies the name of the “ <a href="#">config</a> ” on page 33 used by a server instance.
<code>com.sun.aas.instanceName</code>	<code>server1</code>	Specifies the name of the server instance. This property is not used in the default configuration, but can be used to customize configuration.
<code>com.sun.aas.clusterName</code>	<code>cluster1</code>	Specifies the name of the cluster. This property is only set on clustered server instances. This property is not used in the default configuration, but can be used to customize configuration.
<code>com.sun.aas.domainName</code>	<code>domain1</code>	Specifies the name of the domain. This property is not used in the default configuration, but can be used to customize configuration.

## T

## thread-pool

Defines a thread pool.

### Superelements

“[thread-pools](#)” on page 121

### Subelements

none



## Attributes

TABLE 1-152 thread-pool Attributes

Attribute	Default	Description
thread-pool-id	none	Specifies the thread pool ID.
min-thread-pool-size	0	(optional) Specifies the minimum number of threads in the pool. These are created when the thread pool is instantiated.
max-thread-pool-size	200	(optional) Specifies the maximum number of threads the pool can contain.
idle-thread-timeout-in-seconds	120	(optional) Specifies the amount of time after which idle threads are removed from the pool.
num-work-queues	1	(optional) Specifies the total number of work queues serviced by this thread pool.

## thread-pools

Contains thread pools.

### Superelements

[“config” on page 33](#)

### Subelements

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

TABLE 1-153 thread-pools Subelements

Element	Required	Description
<a href="#">“thread-pool” on page 120</a>	one or more	Defines a thread pool.

## transaction-service

Configures the Java Transaction Service (JTS).

### Superelements

[“config” on page 33](#)

## Subelements

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

TABLE 1-154 `transaction-service` Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-155 `transaction-service` Attributes

Attribute	Default	Description
<code>automatic-recovery</code>	<code>true</code>	(optional) If <code>true</code> , the server instance attempts transaction recovery during startup.
<code>timeout-in-seconds</code>	<code>0</code>	(optional) Specifies the amount of time after which the transaction is aborted. If set to <code>0</code> , the transaction never times out.
<code>tx-log-dir</code>	directory specified by the <code>log-root</code> attribute of the <a href="#">“domain” on page 45</a> element	(optional) Specifies the parent directory of the transaction log directory <code>tx</code> . 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 <code>log-root</code> attribute of the <a href="#">“domain” on page 45</a> element.
<code>heuristic-decision</code>	<code>rollback</code>	(optional) If the outcome of a distributed transaction cannot be determined because other participants are unreachable, this property determines the outcome. Allowed values are <code>rollback</code> and <code>commit</code> .

TABLE 1-155 transaction-service Attributes (Continued)

Attribute	Default	Description
retry-timeout-in-seconds	600	(optional) Determines the retry time in the following scenarios: <ul style="list-style-type: none"> <li>At the transaction recovery time, if resources are unreachable.</li> <li>If there are any transient exceptions in the second phase of a two phase commit protocol.</li> </ul> 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	2048	(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 (for example, 4096) results in a larger transaction log file, but fewer keypoint operations and potentially better performance. A smaller value (for example, 100) 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 1-156 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.

TABLE 1-156 transaction-service Properties (Continued)

Property	Default	Description
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.
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.

## U

**user-group**

Contains the group to which the principal belongs.

**Superelements**

[“security-map” on page 108](#)

**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 Application 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 58](#) 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 Application 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 host s attribute of a virtual server. If no Host header is present or no host s attribute matches, the default virtual server for the listener is selected.

If a virtual server is configured to an SSL listener, its host s 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 61](#)

## Subelements

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

TABLE 1-157 `virtual-server` Subelements

Element	Required	Description
“ <a href="#">http-access-log</a> ” on <a href="#">page 57</a>	zero or one	Defines an access log file.
“ <a href="#">property</a> ” on <a href="#">page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-158 `virtual-server` Attributes

Attribute	Default	Description
<code>id</code>	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.

TABLE 1-158 virtual-server Attributes (Continued)

Attribute	Default	Description
http-listeners	none	(optional) In a comma-separated list, references id attributes of “ <a href="#">http-listener</a> ” on <a href="#">page 58</a> 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-listener.
default-web-module	system default web module	(optional) References the name attribute of the default “ <a href="#">web-module</a> ” on <a href="#">page 132</a> for this virtual server, which responds to requests that cannot be resolved to other web modules deployed to this virtual server (see the “ <a href="#">application-ref</a> ” on <a href="#">page 24</a> element).
hosts	none	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	none	(optional) Specifies the document root for this virtual server.
log-file	server.log in the directory specified by the log-root attribute of the “ <a href="#">domain</a> ” on <a href="#">page 45</a> 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 “ <a href="#">log-service</a> ” on <a href="#">page 83</a> description for details about logs.

## Properties

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

TABLE 1-159 virtual-server Properties

Property	Default	Description
sso-enabled	true	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.
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.
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 <a href="http://www.ietf.org/rfc/rfc2616.txt">http://www.ietf.org/rfc/rfc2616.txt</a> .
redirect_n	none	<p>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 <code>redirect_n</code> property has two components, which may be specified in any order:</p> <p>The first component, <code>from</code>, specifies the prefix of the requested URI to match.</p> <p>The second component, <code>url-prefix</code>, specifies the new URL prefix to return to the client. The <code>from</code> prefix is simply replaced by this URL prefix. For example:</p> <pre>&lt;property name="redirect_1" value="from=/dummy url-prefix=http://etude"/&gt;</pre>

# W

## web-container

Configures the web container.

### Superelements

[“config” on page 33](#)

### Subelements

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

TABLE 1-160 web-container Subelements

Element	Required	Description
<a href="#">“session-config” on page 113</a>	zero or one	Specifies session configuration information for the web container.
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## web-container-availability

Enables availability in the web container, including HTTP session persistence to the high-availability database (HADB).

If availability is disabled, there is no high availability for HTTP session persistence. In other words, `persistence-type=memory`.

If availability is enabled but no other `web-container-availability` attributes are specified, the default session persistence configuration is as follows:

```
persistence-type=ha
persistence-frequency=time-based
persistence-scope=session
```

The default configuration for all applications can be changed by setting the various `web-container-availability` attributes and properties.

You can override the various `web-container-availability` attributes and properties for a specific application in `sun-web.xml`. For details, see the *Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Developer's Guide*.



## Superelements

[“availability-service” on page 28](#)

## Subelements

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

TABLE 1-161 `web-container-availability` Subelements

Element	Required	Description
<a href="#">“property” on page 100</a>	zero or more	Specifies a property or a variable.

## Attributes

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

TABLE 1-162 `web-container-availability` Attributes

Attribute	Default	Description
<code>availability-enabled</code>	<code>true</code>	(optional) If set to <code>true</code> , and if availability is enabled for the server instance (see <a href="#">“availability-service” on page 28</a> ), high-availability features apply to all web applications deployed to the server instance that do not have availability disabled. All instances in a cluster should have the same availability value to ensure consistent behavior.

TABLE 1-162 web-container-availability Attributes (Continued)

Attribute	Default	Description
persistence-type	memory	<p>(optional) Specifies the session persistence mechanism for web applications that have availability enabled. Allowed values are <code>memory</code> (no persistence) <code>file</code> (the file system) and <code>ha</code> (the HADB). For production environments that require session persistence, use <code>ha</code>.</p> <p>If set to <code>memory</code>, the “<a href="#">manager-properties</a>” on <a href="#">page 87</a> element’s <code>sessionFilename</code> property specifies the file system location where the HTTP session state is stored if the server instance is gracefully shut down. This is useful for internal testing but is not supported for production environments.</p> <p>If set to <code>file</code>, the “<a href="#">store-properties</a>” on <a href="#">page 117</a> element’s <code>directory</code> property specifies the file system location where the HTTP session state is stored. Persisting to the file system is useful for internal testing but is not supported for production environments.</p>
persistence-frequency	web-method	<p>(optional) Specifies how often the session state is stored. Applicable only if the <code>persistence-type</code> is <code>ha</code>. Allowed values are as follows:</p> <ul style="list-style-type: none"> <li>■ <code>web-method</code> - The session state is stored at the end of each web request prior to sending a response back to the client. This mode provides the best guarantee that the session state is fully updated in case of failure.</li> <li>■ <code>time-based</code> - The session state is stored in the background at the frequency set by the <code>reapIntervalSeconds</code> property. This mode provides less of a guarantee that the session state is fully updated. However, it can provide a significant performance improvement because the state is not stored after each request.</li> </ul>

TABLE 1-162 web-container-availability Attributes (Continued)

Attribute	Default	Description
persistence-scope	session	<p>(optional) Specifies how much of the session state is stored. Applicable only if the <code>persistence-type</code> is <code>ha</code>. Allowed values are as follows:</p> <ul style="list-style-type: none"> <li>■ <code>session</code> - The entire session state is stored every time. This mode provides the best guarantee that your session data is correctly stored for any distributable web application.</li> <li>■ <code>modified-session</code> - The entire session state is stored if it has been modified. A session is considered to have been modified if <code>HttpSession.setAttribute()</code> or <code>HttpSession.removeAttribute()</code> was called. You must guarantee that <code>setAttribute()</code> is called every time an attribute is changed. This is not a J2EE specification requirement, but it is required for this mode to work properly.</li> <li>■ <code>modified-attribute</code> - Only modified session attributes are stored. For this mode to work properly, you must follow some guidelines, which are explained immediately following this table.</li> </ul>
sso-failover-enabled	false	<p>(optional) If <code>true</code>, the single sign-on state is highly available. To enable single sign-on, use the <code>sso-enabled</code> property of the “<a href="#">virtual-server</a>” on page 124 element.</p>

TABLE 1-162 web-container-availability Attributes (Continued)

Attribute	Default	Description
http-session-store-pool-name	“availability-service” on page 28 store-pool-name attribute value	(optional) Specifies the jndi-name of the “jdbc-resource” on page 73 used for connections to the HADB for session persistence.  For more information about setting up a connection pool and JDBC resource for the HADB, see the description of the configure-ha-cluster command in the <i>Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Reference Manual</i> .

If the persistence-scope attribute is set to modified-attribute, your web application must follow these guidelines:

- Call `setAttribute()` every time the session state is modified.
- Make sure there are no cross-references between attributes. The object graph under each distinct attribute key is serialized and stored separately. If there are any object cross references between the objects under each separate key, they are not serialized and deserialized correctly.
- Distribute the session state across multiple attributes, or at least between a read-only attribute and a modifiable attribute.

## web-module

Specifies a deployed web module.

### Superelements

“applications” on page 25

### Subelements

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

TABLE 1-163 web-module Subelements

Element	Required	Description
“description” on page 45	zero or one	Contains a text description of this element.

## Attributes

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

TABLE 1-164 web-module Attributes

Attribute	Default	Description
<code>name</code>	none	The name of the web module.
<code>context-root</code>	none	<p>The context root at which the web module is deployed. The context root can be the empty string or just <code>/</code>. The context root can start with the <code>/</code> character, but doesn't have to.</p> <p>For load balancing to work, web module context roots must be unique within a cluster. See the <i>Sun Java System Application Server Enterprise Edition 8.1 2005Q2 Administration Guide</i> for more information about load balancing.</p>
<code>location</code>	none	<p>A fully qualified or relative path to the directory to which the contents of the <code>.war</code> file have been extracted. If relative, it is relative to the following directory:</p> <p><code>domain-dir/applications/j2ee-modules/</code></p>
<code>object-type</code>	user	<p>(optional) Defines the type of the resource. Allowed values are:</p> <ul style="list-style-type: none"> <li>■ <code>system-all</code> - A system resource for all server instances and the domain application server.</li> <li>■ <code>system-admin</code> - A system resource only for the domain application server.</li> <li>■ <code>system-instance</code> - A system resource for all server instances only.</li> <li>■ <code>user</code> - A user resource.</li> </ul>
<code>enabled</code>	true	(optional) Determines whether the web module is enabled.
<code>availability-enabled</code>	false	(optional) Specifies whether availability is enabled in this web application for HTTP session persistence (and potentially passivation). Availability must also be enabled for the application or stand-alone web module during deployment. For more information about availability, see <a href="#">“availability-service” on page 28</a> .
<code>directory-deployed</code>	false	(optional) Specifies whether the application has been deployed to a directory.



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