



Sun Java System Application Server Platform Edition 9 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 Platform, Enterprise Edition (Java EE platform), version 5
- Extensible Markup Language (XML)

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 Uniform Resource Locator (URL) for stand-alone Application Server documentation is <http://docs.sun.com/app/docs/coll/1343.3>. 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>Documentation Center</i>	Application Server documentation topics organized by task and subject.

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

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, Java Development Kit (JDK™), and database drivers.
<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>Application Deployment Guide</i>	Deployment of applications and application components to the Application Server. Includes information about deployment descriptors.
<i>Developer's Guide</i>	Creating and implementing Java Platform, Enterprise Edition (Java EE platform) applications intended to run on the Application Server that follow the open Java standards model for Java EE components and APIs. Includes information about developer tools, security, debugging, and creating lifecycle modules.
<i>Java EE 5 Tutorial</i>	Using Java EE 5 platform technologies and APIs to develop Java EE applications.
<i>Administration Guide</i>	Configuring, managing, and deploying Application Server subsystems and components from the Admin Console.
<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.x, and 8.x. This guide also describes differences between adjacent product releases and configuration options that can result in incompatibility with the product specifications.
<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 documentation about other stand-alone Sun Java System server products, go to the following:

- [Message Queue documentation \(http://docs.sun.com/app/docs/coll/1343.3\)](http://docs.sun.com/app/docs/coll/1343.3)
- [Directory Server documentation \(http://docs.sun.com/app/docs/coll/1316.1\)](http://docs.sun.com/app/docs/coll/1316.1)
- [Web Server documentation \(http://docs.sun.com/app/docs/coll/1308.1\)](http://docs.sun.com/app/docs/coll/1308.1)

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.	Solaris™ and Linux operating system installations, non-root user: <i>user's-home-directory/SUNWappserver</i> Solaris and Linux installations, root user: <i>/opt/SUNWappserver</i> Windows, all installations: <i>SystemDrive:\Sun\AppServer</i>
<i>domain-root-dir</i>	Represents the directory containing all domains.	<i>install-dir/domains/</i>
<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>

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>
AaBbCc123	What you type, contrasted with onscreen computer output	<code>machine_name% su</code> <code>Password:</code>
<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> .

TABLE P-3 Typographic Conventions (Continued)

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

Accessing Sun Resources Online

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- 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 18](#)

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

About the domain.xml File

The `domain.xml` file contains most of the Sun 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_2.dtd File” on page 14](#)
- [“Default Values” on page 14](#)
- [“Variables” on page 14](#)
- [“Element Referencing” on page 15](#)
- [“Element Hierarchy” on page 16](#)

Note – Settings in the Application Server deployment descriptors override corresponding settings in the `domain.xml` file unless otherwise stated. For more information about the Application Server deployment descriptors, see the *Sun Java System Application Server Platform Edition 9 Application Deployment Guide*.

The sun-domain_1_2.dtd File

The sun-domain_1_2.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_2.dtd file is located in the *install-dir/lib/dtds* directory.

Note – Do not edit the sun-domain_1_2.dtd file; its contents change only with new versions of the Application Server.

The sun-domain_1_2.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_2.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.
- 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 106 element or the “[jvm-options](#)” on page 71 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 100, “[config](#)” on page 29, and “[domain](#)” on page 41 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 → config → jvm-options → domain → System
```

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

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

Element Referencing

One element *references* another when an attribute of the referencing element has the same value as an attribute of the referenced element. For example, the “[application-ref](#)” on page 24 element references an application or module that is deployed to its parent “[server](#)” on page 100 element. The `application-ref` element’s `ref` attribute has the same value as the `name` attribute of a “[lifecycle-module](#)” on page 72, “[j2ee-application](#)” on page 60, “[ejb-module](#)” on page 44, “[web-module](#)” on page 116, “[connector-module](#)” on page 35, 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 90](#) 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      P
.    .    .  description
.    .    .  web-service-endpoint
.    .    .    .  registry-location
.    .    .    .  transformation-rule
.    .  web-module      P
.    .    .  description
.    .    .  web-service-endpoint
.    .    .    .  registry-location
.    .    .    .  transformation-rule
.    .  ejb-module      P
.    .    .  description
.    .    .  web-service-endpoint
.    .    .    .  registry-location
.    .    .    .  transformation-rule
.    .  connector-module      P
.    .    .  description
.    .  appclient-module      P
.    .    .  description
.    .  mbean      P
.    .    .  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
. . . . http-listener P
. . . . . ssl
. . . . virtual-server P
. . . iiop-service
. . . . orb P
. . . . ssl-client-config
. . . . . ssl
. . . . iiop-listener P
. . . . . ssl
. . . admin-service P
. . . . 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
. . . . diagnostic-service      P
. . . . java-config      P
. . . . . profiler      P
. . . . . jvm-options
. . . . . jvm-options
. . . . 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
. system-property
. . description

```

Alphabetical List of Elements

[“A” on page 18](#)
[“B” on page 28](#)
[“C” on page 29](#)
[“D” on page 38](#)
[“E” on page 42](#)
[“F” on page 51](#)
[“H” on page 52](#)
[“I” on page 59](#)
[“J” on page 60](#)
[“K” on page 71](#)
[“L” on page 72](#)
[“M” on page 76](#)
[“O” on page 86](#)
[“P” on page 87](#)
[“R” on page 92](#)
[“S” on page 98](#)
[“T” on page 107](#)
[“U” on page 111](#)
[“V” on page 112](#)
[“W” on page 115](#)

A

access-log

Defines access log settings for each [“http-access-log” on page 52](#) subelement of each [“virtual-server” on page 112](#).

Superelements

“[http-service](#)” on page 56

Subelements

none

Attributes

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

TABLE 1-1 access-log Attributes

Attribute	Default	Description
<code>format</code>	<code>%client.name% %auth-user-name% %datetime% %request% %status% %response.length%</code>	(optional) Specifies the format of the access log.
<code>rotation-policy</code>	<code>time</code>	(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.
<code>rotation-interval-in-minutes</code>	<code>15</code>	(optional) Specifies the time interval between log rotations if <code>rotation-policy</code> is set to <code>time</code> .
<code>rotation-suffix</code>	<code>yyyy-MM-dd</code>	<p>(optional) Specifies the format of the timestamp appended to the access log name when log rotation occurs.</p> <p>For supported formats, see http://java.sun.com/j2se/1.5.0/docs/api/java/text/SimpleDateFormat.html.</p> <p>The following value is supported for backward compatibility. It results in the same format as the default.</p> <p><code>%YYYY;%MM;%DD;-%hh;h:mm;m:ss;s</code></p>
<code>rotation-enabled</code>	<code>true</code>	(optional) If <code>true</code> , enables log rotation.

action

Specifies the action of a management rule. The action is implemented as an MBean.

Superelements

“[management-rule](#)” on page 78

Subelements

none

Attributes

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

TABLE 1-2 `action` Attributes

Attribute	Default	Description
<code>action-mbean-name</code>	none	Specifies the name of the “ mbean ” on page 80 that performs the action of a management rule. This MBean must implement <code>javax.management.NotificationListener</code> .

admin-object-resource

Defines an administered object for an inbound resource adapter.

Superelements

“[resources](#)” on [page 96](#)

Subelements

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

TABLE 1-3 `admin-object-resource` Subelements

Element	Required	Description
“ description ” on page 39	zero or one	Contains a text description of this element.
“ property ” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-4 `admin-object-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.
<code>res-adapter</code>	none	Specifies the name of the inbound resource adapter, as specified in the <code>name</code> attribute of a “ connector-module ” on page 35 element.

TABLE 1-4 admin-object-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"> ■ system-all - A system resource for all server instances and the domain application server. ■ system-admin - A system resource only for the domain application server. ■ system-instance - A system resource for all server instances only. ■ user - A user resource.
enabled	true	(optional) Determines whether this resource is enabled at runtime.

Properties

Properties of the `admin-object-resource` element are the names of setter methods of the `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 the Message Queue software), see the *Sun Java System Message Queue 3.7 UR1 Administration Guide*.

admin-service

Determines whether the server instance is a regular instance, a domain administration server, or a combination. In the Platform Edition, there is only one server instance, and it is a combination.

Superelements

[“config” on page 29](#)

Subelements

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

TABLE 1-5 admin-service Subelements

Element	Required	Description
“das-config” on page 38	only one	Defines a domain administration server configuration.

TABLE 1-5 admin-service Subelements (Continued)

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-6 admin-service Attributes

Attribute	Default	Description
type	das-and-server	Specifies whether the server instance is a regular instance (server), a domain administration server (das), or a combination (das-and-server). modifying this value is not recommended. For the Platform Edition, the default is the only value allowed.

alert-service

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

Superelements

[“config” on page 29](#)

Subelements

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

TABLE 1-7 alert-service Subelements

Element	Required	Description
“alert-subscription” on page 22	zero or more	Configures a subscription to system status alerts.
“property” on page 90	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 1-8 `alert-subscription` Subelements

Element	Required	Description
“listener-config” on page 73	only one	Configures the listener class that listens for alerts from notification emitters.
“filter-config” on page 51	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 1-9 `alert-subscription` Attributes

Attribute	Default	Description
name	none	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 `appclient-module` element.

TABLE 1-10 `appclient-module` Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-11 appclient-module Attributes

Attribute	Default	Description
name	none	The name of the ACC module.
location	none	The location of the ACC module in the Application Server file system.
directory-deployed	false	(optional) Specifies whether the application has been deployed to a directory.
java-web-start-enabled	true	(optional) Specifies whether Java Web Start access is permitted for this application client.

application-ref

References an application or module deployed to the server instance.

Superelements

[“server” on page 100](#)

Subelements

none

Attributes

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

TABLE 1-12 application-ref Attributes

Attribute	Default	Description
enabled	true	(optional) Determines whether the application or module is enabled.
virtual-servers	all virtual servers	(optional) In a comma-separated list, references id attributes of the “virtual-server” on page 112 elements to which the “web-module” on page 116 or the web modules within this “j2ee-application” on page 60 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 72 , “j2ee-application” on page 60 , “ejb-module” on page 44 , “web-module” on page 116 , “connector-module” on page 35 , or “appclient-module” on page 23 element.

applications

Contains deployed Java EE applications, Java EE modules, and Lifecycle modules.

Superelements

[“domain” on page 41](#)

Subelements

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

TABLE 1-13 applications Subelements

Element	Required	Description
“lifecycle-module” on page 72	zero or more	Specifies a deployed lifecycle module.
“j2ee-application” on page 60	zero or more	Specifies a deployed Java EE application.
“ejb-module” on page 44	zero or more	Specifies a deployed EJB module.
“web-module” on page 116	zero or more	Specifies a deployed web module.
“connector-module” on page 35	zero or more	Specifies a deployed connector module.
“appclient-module” on page 23	zero or more	Specifies a deployed application client container (ACC) module.
“mbean” on page 80	zero or more	Specifies an MBean.

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 98](#)

Subelements

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

TABLE 1-14 audit-module Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-15 audit-module Attributes

Attribute	Default	Description
name	none	Specifies the name of this audit module.
classname	none	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 Platform Edition 9 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

[“security-service” on page 98](#)

Subelements

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

TABLE 1-16 auth-realm Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-17 auth-realm Attributes

Attribute	Default	Description
<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 1-18 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, passwords, and group names. The default is <code>domain-dir/config/keyfile</code> .
<code>assign-groups</code>	<code>certificate</code>	(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.
<code>directory</code>	<code>ldap</code>	Specifies the LDAP URL to your server.
<code>base-dn</code>	<code>ldap</code>	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.
<code>search-filter</code>	<code>ldap</code>	(optional) Specifies the search filter to use to find the user. The default is <code>uid=%s</code> (<code>%s</code> expands to the subject name).
<code>group-base-dn</code>	<code>ldap</code>	(optional) Specifies the base DN for the location of groups data. By default, it is same as the <code>base-dn</code> , but it can be tuned, if necessary.

TABLE 1-18 auth-realm Properties (Continued)

Property	Realms	Description
group-search-filter	ldap	(optional) Specifies the search filter to find group memberships for the user. The default is <code>uniquemember=%d</code> (%d expands to the user element DN).
group-target	ldap	(optional) Specifies the LDAP attribute name that contains group name entries. The default is <code>CN</code> .
search-bind-dn	ldap	(optional) Specifies an optional DN used to authenticate to the directory for performing the <code>search-filter</code> 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 <code>search-bind-dn</code> .

B

backend-principal

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

Superelements

[“security-map” on page 98](#)

Subelements

none

Attributes

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

TABLE 1-19 backend-principal Attributes

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

C

config

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

Superelements

[“configs” on page 30](#)

Subelements

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

TABLE 1–20 `config` Subelements

Element	Required	Description
“http-service” on page 56	only one	Configures the HTTP service.
“iiop-service” on page 59	only one	Configures the IIOP service.
“admin-service” on page 21	only one	Determines whether the server to which the configuration applies is an administration server.
“connector-service” on page 36	zero or one	Configures the connector service.
“web-container” on page 115	only one	Configures the web container.
“ejb-container” on page 42	only one	Configures the Enterprise JavaBeans™ (EJB™) container.
“mdb-container” on page 81	only one	Configures the message-driven bean (MDB) container.
“jms-service” on page 69	zero or one	Configures the Java Message Service (JMS) provider.
“log-service” on page 74	only one	Configures the system logging service.
“security-service” on page 98	only one	Configures the Java EE security service.
“transaction-service” on page 108	only one	Configures the transaction service.
“monitoring-service” on page 86	only one	Configures the monitoring service.
“diagnostic-service” on page 40	zero or one	Configures the diagnostic service.
“java-config” on page 62	only one	Configures the Java Virtual Machine (JVM™).
“thread-pools” on page 108	only one	Configures thread pools.

TABLE 1–20 config Subelements *(Continued)*

Element	Required	Description
“alert-service” on page 22	zero or one	Configures the alert service.
“management-rules” on page 79	zero or one	Configures self-management rules.
“system-property” on page 106	zero or more	Specifies a system property.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the config element.

TABLE 1–21 config Attributes

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

configs

Contains configurations. In the Platform Edition, there is only one configuration.

Superelements

[“domain” on page 41](#)

Subelements

The following table describes subelements for the configs element.

TABLE 1–22 configs Subelements

Element	Required	Description
“config” on page 29	only one	Defines a configuration.

connection-pool

Defines a pool of client HTTP connections used by the “[http-listener](#)” on [page 53](#) subelements of the parent “[http-service](#)” on [page 56](#) element.

Superelements

“[http-service](#)” on [page 56](#)

Subelements

none

Attributes

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

TABLE 1-23 `connection-pool` Attributes

Attribute	Default	Description
<code>queue-size-in-bytes</code>	4096	(optional) Specifies the size in bytes of the connection queue for “ http-listener ” on page 53 elements.
<code>max-pending-count</code>	4096	(optional) Specifies the maximum number of pending connections on an “ http-listener ” on page 53 .
<code>receive-buffer-size-in-bytes</code>	4096	(optional) Specifies the size of the receive buffer for all “ http-listener ” on page 53 elements.
<code>send-buffer-size-in-bytes</code>	8092	(optional) Specifies the size of the send buffer for all “ http-listener ” on page 53 elements.

connector-connection-pool

Defines a connector connection pool.

Superelements

“[resources](#)” on [page 96](#)

Subelements

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

TABLE 1-24 connector-connection-pool Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“security-map” on page 98	zero or more	Maps the principal received during servlet or EJB authentication to the credentials accepted by the EIS.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-25 connector-connection-pool Attributes

Attribute	Default	Description
name	none	Specifies the name of the connection pool. A “connector-resource” on page 35 element’s pool-name attribute refers to this name.
resource-adapter-name	none	Specifies the name attribute of the deployed “connector-module” on page 35 . If no name is specified during deployment, the name of the .rar file is used. If the resource adapter is embedded in an application, then it is <i>app_name#rar_name</i> .
connection-definition-name	none	Specifies a unique name, identifying a resource adapter’s connection-definition element in the ra.xml file. This is usually the connectionfactory-interface of the connection-definition element.
steady-pool-size	8	(optional) Specifies the initial and minimum number of connections maintained in the pool.
max-pool-size	32	(optional) Specifies the maximum number of connections that can be created to satisfy client requests.
max-wait-time-in-millis	60000	(optional) Specifies the amount of time, in milliseconds, that the caller is willing to wait for a connection. If 0, the caller is blocked indefinitely until a resource is available or an error occurs.
pool-resize-quantity	2	(optional) Specifies the number of idle connections to be destroyed if the existing number of connections is above the steady-pool-size (subject to the max-pool-size limit). This is enforced periodically at the idle-timeout-in-seconds interval. An idle connection is one that has not been used for a period of idle-timeout-in-seconds. When the pool size reaches steady-pool-size, connection removal stops.
idle-timeout-in-seconds	300	(optional) Specifies the maximum time that a connection can remain idle in the pool. After this amount of time, the pool can close this connection.
fail-all-connections	false	(optional) If true, closes all connections in the pool if a single validation check fails.

TABLE 1-25 connector-connection-pool Attributes (Continued)

Attribute	Default	Description
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"> ■ XATransaction - Supports distributed transactions. ■ LocalTransaction - Supports local transactions only. ■ NoTransaction - No transaction support.
is-connection-validation-required	false	(optional) Specifies whether connections have to be validated before being given to the application. If a resource's validation fails, it is destroyed, and a new resource is created and returned.

Properties

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

All but the last four properties in the following table are `connector-connection-pool` properties of `jmsra`, the resource adapter used to communicate with the Sun Java System Message Queue software. For a complete list of the available properties (called *administered object attributes* in the Message Queue software), see the *Sun Java System Message Queue 3.7 UR1 Administration Guide*.

TABLE 1-26 connector-connection-pool Properties

Property	Default	Description
AddressList	none	Specifies a list of host/port combinations of the Message Queue software. For JMS resources of the Type <code>javax.jms.TopicConnectionFactory</code> or <code>javax.jms.QueueConnectionFactory</code> .
ClientId	none	Specifies the JMS Client Identifier to be associated with a <code>Connection</code> created using the <code>createTopicConnection</code> method of the <code>TopicConnectionFactory</code> class. For JMS resources of the Type <code>javax.jms.TopicConnectionFactory</code> . Durable subscription names are unique and only valid within the scope of a client identifier. To create or reactivate a durable subscriber, the connection must have a valid client identifier. The JMS specification ensures that client identifiers are unique and that a given client identifier is allowed to be used by only one active connection at a time.
UserName	guest	Specifies the user name for connecting to the Message Queue software. For JMS resources of the Type <code>javax.jms.TopicConnectionFactory</code> or <code>javax.jms.QueueConnectionFactory</code> .

TABLE 1-26 connector-connection-pool Properties (Continued)

Property	Default	Description
Password	guest	Specifies the password for connecting to the Message Queue software. For JMS resources of the Type <code>javax.jms.TopicConnectionFactory</code> or <code>javax.jms.QueueConnectionFactory</code> .
ReconnectAttempts	6	Specifies the number of attempts to connect (or reconnect) for each address in the <code>imqAddressList</code> before the client runtime moves on to try the next address in the list. A value of -1 indicates that the number of reconnect attempts is unlimited (the client runtime attempts to connect to the first address until it succeeds).
ReconnectInterval	30000	Specifies the interval between reconnect attempts in milliseconds. This applies to attempts on each address in the <code>imqAddressList</code> and on successive addresses in the list. If too short, this time interval does not give a broker time to recover. If too long, the reconnect might represent an unacceptable delay.
ReconnectEnabled	false	If true, specifies that the client runtime attempts to reconnect to a message server (or the list of addresses in <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.
LazyConnectionEnlistment	true	If true, a connection is not enlisted in a transaction until it is used. If false, any connection object available to a transaction is enlisted in the transaction.
LazyConnectionAssociation	true	If true, a physical connection is not associated with a logical connection until it is used. If false, a physical connection is associated with a logical connection even before it is used.
AssociateWithThread	false	If true, allows a connection to be saved as a <code>ThreadLocal</code> in the calling thread. This connection gets reclaimed only when the calling thread dies or when the calling thread is not in use and the pool has run out of connections.
MatchConnections	true	If true, enables connection matching. You can set to false if connections are homogeneous.

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

connector-module

Specifies a deployed connector module.

Superelements

[“applications” on page 25](#)

Subelements

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

TABLE 1–27 `connector-module` Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1–28 `connector-module` Attributes

Attribute	Default	Description
<code>name</code>	<code>.rar</code> file name	The name of the connector module.
<code>location</code>	<code>none</code>	The location of the connector 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">■ <code>system-all</code> - A system resource for all server instances and the domain application server.■ <code>system-admin</code> - A system resource only for the domain application server.■ <code>system-instance</code> - A system resource for all server instances only.■ <code>user</code> - A user resource.
<code>enabled</code>	<code>true</code>	(optional) Determines whether the connector module is enabled.
<code>directory-deployed</code>	<code>false</code>	(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 96](#)

Subelements

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

TABLE 1–29 connector - resource Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1–30 connector - resource Attributes

Attribute	Default	Description
jndi-name	none	Specifies the JNDI name for the resource.
pool-name	none	Specifies the name of the associated connector connection pool, defined in a “connector-connection-pool” on page 31 element.
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none">■ system-all - A system resource for all server instances and the domain application server.■ system-admin - A system resource only for the domain application server.■ system-instance - A system resource for all server instances only.■ user - A user resource.
enabled	true	(optional) Determines whether this resource is enabled at runtime.

connector-service

Configures the connector service.

Superelements

[“config” on page 29](#)

Subelements

none

Attributes

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

TABLE 1-31 `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 96](#)

Subelements

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

TABLE 1-32 `custom-resource` Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-33 custom-resource Attributes

Attribute	Default	Description
jndi-name	none	Specifies the JNDI name for the resource.
res-type	none	Specifies the fully qualified type of the resource.
factory-class	none	Specifies the fully qualified name of the user-written factory class, which implements <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">■ <code>system-all</code> - A system resource for all server instances and the domain application server.■ <code>system-admin</code> - A system resource only for the domain application server.■ <code>system-instance</code> - A system resource for all server instances only.■ <code>user</code> - A user resource.
enabled	true	(optional) Determines whether this resource is enabled at runtime.

D

das-config

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

Superelements

[“admin-service” on page 21](#)

Subelements

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

TABLE 1-34 das-config Subelements

Element	Required	Description
“property” on page 90	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 Platform Edition 9 Developer’s Guide*.

TABLE 1-35 das-config Attributes

Attribute	Default	Description
dynamic-reload-enabled	false	(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.
dynamic-reload-poll-interval-in-seconds	2	(optional) Controls the polling frequency of dynamic reloading.
autodeploy-enabled	false	(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.
autodeploy-polling-interval-in-seconds	2	(optional) Controls the polling frequency of autodeployment.
autodeploy-dir	autodeploy	(optional) Specifies the source directory (absolute or relative to <i>domain-dir</i>) in which autodeployment looks for deployable components.
autodeploy-verifier-enabled	false	(optional) If <code>true</code> , the verifier is run before autodeployment. If verification fails, deployment is not performed.
autodeploy-jsp-precompilation-enabled	false	(optional) If <code>true</code> , JSP pages are precompiled during autodeployment.
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"> ■ <code>full</code> - If XML validation fails, deployment fails. ■ <code>parsing</code> - XML validation errors are reported but deployment occurs. ■ <code>none</code> - No XML validation is performed.
admin-session-timeout-in-minutes	sun-web.xml timeoutSeconds property value or web.xml session-timeout attribute value	(optional) Specifies the Administration Console timeout.

description

Contains a text description of the parent element.

Superelements

“[admin-object-resource](#)” on page 20, “[applicant-module](#)” on page 23,
“[connector-connection-pool](#)” on page 31, “[connector-module](#)” on page 35,

“connector-resource” on page 35, “custom-resource” on page 37, “ejb-module” on page 44, “external-jndi-resource” on page 50, “j2ee-application” on page 60, “jdbc-connection-pool” on page 64, “jdbc-resource” on page 67, “lifecycle-module” on page 72, “mail-resource” on page 76, “mbean” on page 80, “persistence-manager-factory-resource” on page 87, “property” on page 90, “system-property” on page 106, “transformation-rule” on page 110, “web-module” on page 116

Subelements

none - contains data

diagnostic-service

Configures the Diagnostic Service, which lets you generate a diagnostic report for troubleshooting in case of Application Server malfunctioning such as exceptions, performance bottlenecks, or unexpected results.

Superelements

“config” on page 29

Subelements

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

TABLE 1-36 diagnostic-service Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-37 diagnostic-service Attributes

Attribute	Default	Description
compute-checksum	true	(optional) If true, computes a checksum of binaries.
verify-config	true	(optional) If true, captures the output of the asadmin verify-domain-xml command.
capture-install-log	true	(optional) If true, captures the log generated during Application Server installation.

TABLE 1-37 diagnostic-service Attributes (Continued)

Attribute	Default	Description
capture-system-info	true	(optional) If true, collects operating system level information.
capture-app-dd	true	(optional) If true, captures application deployment descriptors in plain text. If any deployment descriptors contain confidential information, you should set it to false.
min-log-level	INFO	(optional) Specifies the log level for the diagnostic report. See “module-log-levels” on page 83 for a description of log levels. If set to OFF, log contents are not captured.
max-log-entries	500	(optional) Specifies the maximum number of log entries captured.

domain

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

Superelements

none

Subelements

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

TABLE 1-38 domain Subelements

Element	Required	Description
“applications” on page 25	zero or one	Contains deployed Java EE applications, Java EE modules, and lifecycle modules.
“resources” on page 96	zero or one	Contains configured resources.
“configs” on page 30	only one	Contains configurations.
“servers” on page 101	only one	Contains server instances.
“system-property” on page 106	zero or more	Specifies a system property.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1–39 domain Attributes

Attribute	Default	Description
application-root	<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 74 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 29

Subelements

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

TABLE 1–40 `ejb-container` Subelements

Element	Required	Description
“ejb-timer-service” on page 45	zero or one	Configures the EJB timer service.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-41 ejb-container Attributes

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

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

Attribute	Default	Description
<code>removal-timeout-in-seconds</code>	5400	(optional) Specifies the amount of time that a bean can remain passivated before it is removed from the session store. A value of 0 specifies that the container does not remove inactive beans automatically. If <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. The <code>session-store</code> attribute of the “ server ” on page 100 element determines the location of the session store. Applies to stateful session beans.
<code>victim-selection-policy</code>	<code>nru</code>	(optional) Specifies how stateful session beans are selected for passivation. Allowed values are <code>fifo</code> , <code>lru</code> , and <code>nru</code> : <ul style="list-style-type: none">■ <code>fifo</code> - Selects the oldest instance.■ <code>lru</code> - Selects the least recently accessed instance.■ <code>nru</code> - Selects a not recently used instance.
<code>commit-option</code>	<code>B</code>	(optional) Determines which commit option is used for entity beans. Legal values are <code>B</code> or <code>C</code> .
<code>session-store</code>	<code>domain-dir/session-store</code>	(optional) Specifies the directory where passivated stateful session beans and persisted HTTP sessions are stored in the file system.

ejb-module

Specifies a deployed EJB module.

Superelements

“[applications](#)” on [page 25](#)

Subelements

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

TABLE 1-42 `ejb-module` Subelements

Element	Required	Description
“ description ” on page 39	zero or one	Contains a text description of this element.
“ web-service-endpoint ” on page 117	zero or more	Configures a web service endpoint.
“ property ” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1–43 `ejb-module` Attributes

Attribute	Default	Description
<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"> ■ <code>system-all</code> - A system resource for all server instances and the domain application server. ■ <code>system-admin</code> - A system resource only for the domain application server. ■ <code>system-instance</code> - A system resource for all server instances only. ■ <code>user</code> - A user resource.
<code>enabled</code>	<code>true</code>	(optional) Determines whether the EJB module is enabled.
<code>libraries</code>	<code>none</code>	(optional) Specifies an absolute or relative path to libraries specific to this module or application. A relative path is relative to <i>domain-dir/lib/applibs</i> . If the path is absolute, the path must be accessible to the domain administration server (DAS), which means it must be under <i>domain-dir</i> . To include more than one path, use a system-specific separator, such as a colon for Solaris or a semicolon for Windows. The libraries are made available to the application in the order in which they are specified.
<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 42](#)

Subelements

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

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

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

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

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

event

Defines the event that triggers the action associated with a management rule.

Predefined events are provided with the Application Server. You can configure these events by changing event element attributes and properties.

You can create custom events by creating custom MBeans that implement the JMX `NotificationEmitter` interface. For more information about MBeans, see the *Sun Java System Application Server Platform Edition 9 Developer's Guide* and <http://java.sun.com/j2se/1.5.0/docs/api/javax/management/package-summary.html>. For information about monitor MBeans, see <http://java.sun.com/j2se/1.5.0/docs/api/javax/management/monitor/package-summary.html>.

Note – If multiple rules are associated with the same event, ordering of action execution is not guaranteed.

Superelements

“[management-rule](#)” on page 78

Subelements

The following table describes subelements for the event element.

TABLE 1–46 event Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the event element.

TABLE 1–47 event Attributes

Attribute	Default	Description
type	none	<p>Specifies the type of event that triggers the management rule's action. Allowed values are as follows. The lifecycle, log, monitor, timer, and trace types are predefined events provided by the Application Server.</p> <ul style="list-style-type: none"> ■ <code>lifecycle</code> — A lifecycle event. For more information about the server life cycle, see the <i>Sun Java System Application Server Platform Edition 9 Developer's Guide</i>. ■ <code>log</code> — An event in the server log. For more information about the server log, see “log-service” on page 74. ■ <code>monitor</code> — A monitoring event, which is a change in the attribute of a monitored “mbean” on page 80. ■ <code>notification</code> — A JMX notification event. Any custom “mbean” on page 80 that implements the JMX NotificationEmitter interface can be a notification event. ■ <code>timer</code> — An event that occurs at a specified time. ■ <code>trace</code> — A trace event. <p>For descriptions of required and optional properties corresponding to each of these types, see the following table.</p>
level	INFO	(optional) Specifies the level at which to log the event occurrence. For information about log levels, see “module-log-levels” on page 83 . Applicable only if <code>record-event</code> is set to <code>true</code> .
record-event	true	<p>(optional) Specifies whether the occurrence of the event is logged. If no “action” on page 19 is specified for the parent “management-rule” on page 78, the event is logged regardless of this setting.</p> <p>Note – Setting the type to <code>log</code> is different from setting <code>record-event</code> to <code>true</code>. The former specifies what the event is. The latter specifies what happens after the event occurs.</p>

Properties

The following table describes properties for the event element. Property names are case insensitive.

TABLE 1-48 event Properties

Event Type	Property	Values	Description
lifecycle	name	ready, shutdown, termination	Specifies a server life cycle event. Values correspond to events defined in the <code>com.sun.appserv.server.LifecycleEvent</code> interface.
log	loggerNames	A comma-separated list of logger names, or * for all loggers, which is the default	(optional) Notifies when the specified loggers write messages to the server log. For a list of logger names, see “module-log-levels” on page 83 .
log	level	A comma-separated list of log levels	(optional) Notifies when messages of the specified level are written to the server log. For information about log levels, see “module-log-levels” on page 83 .
monitor	observedMbean	A name attribute of a user-defined “mbean” on page 80 , or a JMX <code>ObjectName</code> for a system mbean	Specifies the name of the monitored MBean. Either this property or <code>observedObject</code> must be specified.
monitor	observedObject	An object-name attribute of a user-defined “mbean” on page 80 , or a JMX <code>ObjectName</code> for a system mbean	Specifies the name of the monitored MBean. Either this property or <code>observedMbean</code> must be specified.
monitor	observedAttribute	An “mbean” on page 80 Attribute name	Specifies the monitored attribute of the monitored MBean.
monitor	monitorType	<code>CounterMonitor</code> , <code>GaugeMonitor</code> , <code>StringMonitor</code>	The type of monitoring of the attribute.
monitor	granularityPeriod	Time interval in seconds (<code>long int</code>)	(optional) Specifies the granularity at which the monitoring data should be collected.
monitor	notifyMatch	true or false	Specifies that the attribute value must match the <code>stringToCompare</code> value. Either this property or <code>notifyDiffer</code> is required if the monitor type is <code>StringMonitor</code> .
monitor	notifyDiffer	true or false	Specifies that the attribute value must not match the <code>stringToCompare</code> value. Either this property or <code>notifyMatch</code> is required if the monitor type is <code>StringMonitor</code> .
monitor	stringToCompare	A String	Specifies the value to which the attribute value is compared. Required if the monitor type is <code>StringMonitor</code> .
monitor	numberType	byte, double, float, int, long, short	Specifies the type of the numeric value being monitored. Required if the monitor is of type <code>CounterMonitor</code> or <code>GaugeMonitor</code> .

TABLE 1–48 event Properties (Continued)

Event Type	Property	Values	Description
monitor	differenceMode	true or false	Specifies the difference mode flag value common to all observed MBeans. Required if the monitor is of type CounterMonitor or GaugeMonitor.
monitor	initThreshold	A positive number of the type specified by numberType	Specifies a value above which notification occurs. Required if the monitor is of type CounterMonitor.
monitor	offset	A positive number of the type specified by numberType	(optional) Specifies that the event should be re-triggered when the initThreshold value plus this offset value is reached. Applicable if the monitor is of type CounterMonitor.
monitor	modulus	A positive number of the type specified by numberType	(optional) Specifies the modulus value common to all observed MBeans. Applicable if the monitor is of type CounterMonitor.
monitor	highThreshold	A positive number of the type specified by numberType	Specifies the upper limit of the range within which notification occurs. Required if the monitor is of type GaugeMonitor.
monitor	lowThreshold	A positive number of the type specified by numberType	Specifies the lower limit of the range within which notification occurs. Required if the monitor is of type GaugeMonitor.
notification	sourceMBean	name of “mbean” on page 80	Specifies a custom MBean that implements the JMX NotificationEmitter interface. Either this property or sourceObjectName must be specified.
notification	sourceObjectName	object-name of “mbean” on page 80	Specifies a custom MBean that implements the JMX NotificationEmitter interface. Either this property or sourceMBean must be specified.
notification	type	The notification type	(optional) Specifies the notification type. If this property is specified, the action of the parent “management-rule” on page 78 is performed only if the notification type emitted is same as this property's value.
timer	dateString	Input format determined by pattern property	Begins notification at the specified date and time.
timer	pattern	SimpleDateFormat pattern	(optional) Specifies the date and time input format. The default is mm/dd/yyyy hh:mm:ss.
timer	period	Time interval in milliseconds (long int)	(optional) Notification repeats at the specified time interval.
timer	numberOfOccurrences	A positive number (long int)	(optional) Specifies the number of times notification occurs.

TABLE 1-48 event Properties (Continued)

Event Type	Property	Values	Description
timer	message	A String	(optional) Specifies a message that is delivered as part of timer notification.
trace	name	web_component_method_entry, web_component_method_exit, ejb_component_method_entry, ejb_component_method_exit, request_start, request_end	Notifies at the specified trace point.
trace	ipAddress	An IP address	Specifies the IP address for which trace notifications are sent.
trace	callerPrincipal	A String	Specifies the caller principal for which trace notifications are sent.
trace	componentName	A String	Specifies the component name for which trace notifications are sent.

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 96](#)

Subelements

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

TABLE 1-49 external-jndi-resource Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-50 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 Platform Edition 9 Developer's Guide</i> .
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> ■ <code>system-all</code> - A system resource for all server instances and the domain application server. ■ <code>system-admin</code> - A system resource only for the domain application server. ■ <code>system-instance</code> - A system resource for all server instances only. ■ <code>user</code> - A user resource.
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 73](#).

Superelements

[“alert-subscription” on page 22](#)

Subelements

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

TABLE 1-51 filter-config Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-52 `filter-config` Attributes

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

H

http-access-log

Defines an access log file for a [“virtual-server” on page 112](#). The [“access-log” on page 18](#) subelement of the virtual server’s parent [“http-service” on page 56](#) element determines the access log file’s format and rotation settings.

Superelements

[“virtual-server” on page 112](#)

Subelements

`none`

Attributes

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

TABLE 1-53 `http-access-log` Attributes

Attribute	Default	Description
<code>log-directory</code>	<code>\${com.sun.aas.instanceRoot}/logs/access</code>	(optional) Specifies the location of the access log file.
<code>iponly</code>	<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 56](#)

Subelements

none

Attributes

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

TABLE 1-54 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>small-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.

Superelements

[“http-service” on page 56](#)

Subelements

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

TABLE 1-55 `http-listener` Subelements

Element	Required	Description
“ssl” on page 103	zero or one	Defines Secure Socket Layer (SSL) parameters.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-56 `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>acceptor-threads</code>	<code>1</code>	(optional) Specifies the number of processors in the machine. The only legal value is 1. To set the number of request processing threads, use the <code>thread-count</code> attribute of the “request-processing” on page 94 element.
<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.
<code>default-virtual-server</code>	<code>none</code>	References the <code>id</code> attribute of the default “virtual-server” on page 112 for this particular listener.
<code>server-name</code>	<code>none</code>	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.

TABLE 1-56 http-listener Attributes (Continued)

Attribute	Default	Description
redirect-port	none	(optional) If the listener is supporting non-SSL requests and a request is received for which a matching <security-constraint> requires SSL transport, the request is automatically redirected to the port number specified here.
xpowered-by	true	(optional) If true, X-Powered-By headers are used according to the Servlet 2.4 and JSP 2.0 specifications.
enabled	true	(optional) Determines whether the listener is active.

Properties

The following table describes properties for the `http-listener` element. Any of these properties can be defined as an [“http-service” on page 56](#) property, so that it applies to all `http-listener` elements.

TABLE 1-57 http-listener Properties

Property	Default	Description
recycle-objects	true	If true, recycles internal objects instead of using the VM garbage collector.
reader-threads	0	Specifies the number of reader threads, which read bytes from the non-blocking socket.
acceptor-queue-length	4096	Specifies the length of the acceptor thread queue. Once full, connections are rejected.
reader-queue-length	4096	Specifies the length of the reader thread queue. Once full, connections are rejected.
use-nio-direct-bytebuffer	true	If true, specifies that the NIO direct ByteBuffer is used. In a limited resource environment, it might be faster to use non-direct Java's ByteBuffer by setting a value of false.
authPassthroughEnabled	false	If true, indicates that this <code>http-listener</code> element receives traffic from an SSL-terminating proxy server. Overrides the <code>authPassthroughEnabled</code> property of the parent “http-service” on page 56 element.
proxyHandler	<code>com.sun.enterprise.web.ProxyHandlerImpl</code>	Specifies the fully qualified class name of a custom implementation of the <code>com.sun.appserv.ProxyHandler</code> abstract class that this <code>http-listener</code> uses. Only used if the <code>authPassthroughEnabled</code> property of this <code>http-listener</code> and the parent “http-service” on page 56 element are both set to true. Overrides the <code>proxyHandler</code> property of the parent <code>http-service</code> element.
bufferSize	4096	Specifies the size, in bytes, of the buffer to be provided for input streams created by HTTP listeners.

TABLE 1-57 http-listener Properties (Continued)

Property	Default	Description
connectionTimeout	12000 (12 seconds)	Specifies the number of milliseconds HTTP listeners wait, after accepting a connection, for the request URI line to be presented.
maxKeepAliveRequests	1000	Specifies the maximum number of HTTP requests that can be pipelined until the connection is closed by the server. Set this property to 1 to disable HTTP/1.0 keep-alive, as well as HTTP/1.1 keep-alive and pipelining.
traceEnabled	true	If true, enables the TRACE operation. Set this property to false to make the Application Server less susceptible to cross-site scripting attacks.

http-service

Defines the HTTP service.

Superelements

[“config” on page 29](#)

Subelements

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

TABLE 1-58 http-service Subelements

Element	Required	Description
“access-log” on page 18	zero or one	Defines access log settings for each “http-access-log” on page 52 subelement of each “virtual-server” on page 112 .
“http-listener” on page 53	one or more	Defines an HTTP listen socket.
“virtual-server” on page 112	one or more	Defines a virtual server.
“request-processing” on page 94	zero or one	Configures request processing threads.
“keep-alive” on page 71	zero or one	Configures keep-alive threads.
“connection-pool” on page 31	zero or one	Defines a pool of client HTTP connections.
“property” on page 90	zero or more	Specifies a property or a variable.

Properties

The following table describes properties for the http-service element. These properties apply to all [“http-listener” on page 53](#) subelements, except for `accessLogBufferSize` and `accessLogWriterInterval`, which apply to all [“virtual-server” on page 112](#) subelements.

TABLE 1-59 http-service Properties

Property	Default	Description
monitoring-cache-enabled	true	If true, enables the monitoring cache.
monitoring-cache-refresh-in-millis	5000	Specifies the interval between refreshes of the monitoring cache.
ssl-cache-entries	10000	Specifies the number of SSL sessions to be cached.
ssl3-session-timeout	86400	Specifies the interval at which SSL3 sessions are cached.
ssl-session-timeout	100	Specifies the interval at which SSL2 sessions are cached.
recycle-objects	true	If true, recycles internal objects instead of using the VM garbage collector.
reader-threads	0	Specifies the number of reader threads, which read bytes from the non-blocking socket.
acceptor-queue-length	4096	Specifies the length of the acceptor thread queue. Once full, connections are rejected.
reader-queue-length	4096	Specifies the length of the reader thread queue. Once full, connections are rejected.
use-nio-direct-bytebuffer	true	If true, specifies that the NIO direct ByteBuffer is used. In a limited resource environment, it might be faster to use non-direct Java's ByteBuffer by setting a value of false.
authPassthroughEnabled	false	<p>If true, indicates that the “http-listener” on page 53 subelements receive traffic from an SSL-terminating proxy server, which is responsible for forwarding any information about the original client request (such as client IP address, SSL keysize, and authenticated client certificate chain) to the HTTP listeners using custom request headers.</p> <p>Each http-listener subelement can override this setting for itself.</p>

TABLE 1-59 http-service Properties (Continued)

Property	Default	Description
proxyHandler	com.sun.enterprise. web.ProxyHandlerImpl	<p>Specifies the fully qualified class name of a custom implementation of the <code>com.sun.appserv.ProxyHandler</code> abstract class, which allows a back-end application server instance to retrieve information about the original client request that was intercepted by an SSL-terminating proxy server (for example, a load balancer). An implementation of this abstract class inspects a given request for the custom request headers through which the proxy server communicates the information about the original client request to the Application Server instance, and returns that information to its caller.</p> <p>The default implementation reads the client IP address from an HTTP request header named <code>Proxy-ip</code>, the SSL key size from an HTTP request header named <code>Proxy-keysize</code>, and the SSL client certificate chain from an HTTP request header named <code>Proxy-auth-cert</code>. The <code>Proxy-auth-cert</code> value must contain the BASE-64 encoded client certificate chain without the BEGIN CERTIFICATE and END CERTIFICATE boundaries and with <code>\n</code> replaced with <code>% d% a</code>.</p> <p>Only used if <code>authPassthroughEnabled</code> is set to <code>true</code>. Each “http-listener” on page 53 subelement can override the <code>proxyHandler</code> setting for itself.</p>
bufferSize	4096	Specifies the size, in bytes, of the buffer to be provided for input streams created by HTTP listeners.
connectionTimeout	12000 (12 seconds)	Specifies the number of milliseconds HTTP listeners wait, after accepting a connection, for the request URI line to be presented.
maxKeepAliveRequests	1000	Specifies the maximum number of HTTP requests that can be pipelined until the connection is closed by the server. Set this property to 1 to disable HTTP/1.0 keep-alive, as well as HTTP/1.1 keep-alive and pipelining.
traceEnabled	true	If <code>true</code> , enables the TRACE operation. Set this property to <code>false</code> to make the Application Server less susceptible to cross-site scripting attacks.
accessLogBufferSize	32768	Specifies the size, in bytes, of the buffer where access log calls are stored. If the value is less than 5120, a warning message is issued, and the value is set to 5120.
accessLogWriterInterval	300	Specifies the number of seconds before the log is written to the disk. The access log is written when the buffer is full or when the interval expires. If the value is 0, the buffer is always written even if it is not full. This means that each time the server is accessed, the log message is stored directly to the file.

iiop-listener

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

Superelements

[“iiop-service” on page 59](#)

Subelements

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

TABLE 1-60 `iiop-listener` Subelements

Element	Required	Description
“ssl” on page 103	zero or one	Defines SSL parameters.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-61 `iiop-listener` Attributes

Attribute	Default	Description
<code>id</code>	<code>none</code>	The listener name. An <code>iiop-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, or just a name.
<code>port</code>	<code>1072</code>	(optional) Port number for the listener. Legal values are 1 - 65535. On UNIX, creating sockets that listen on ports 1 - 1024 requires superuser privileges.
<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 29](#)

Subelements

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

TABLE 1-62 `iiop-service` Subelements

Element	Required	Description
“orb” on page 86	only one	Configures the ORB.
“ssl-client-config” on page 104	zero or one	Defines SSL parameters for the ORB.
“iiop-listener” on page 59	zero or more	Defines an IIOP listen socket.

Attributes

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

TABLE 1-63 `iiop-service` Attributes

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

j2ee-application

Specifies a deployed Java EE application.

Superelements

[“applications” on page 25](#)

Subelements

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

TABLE 1-64 j2ee-application Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“web-service-endpoint” on page 117	zero or more	Configures a web service endpoint.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-65 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"> ■ <code>system-all</code> - A system resource for all server instances and the domain application server. ■ <code>system-admin</code> - A system resource only for the domain application server. ■ <code>system-instance</code> - A system resource for all server instances only. ■ <code>user</code> - A user resource.
<code>enabled</code>	<code>true</code>	(optional) Determines whether the application is enabled.
<code>libraries</code>	<code>none</code>	(optional) Specifies an absolute or relative path to libraries specific to this module or application. A relative path is relative to <i>domain-dir/lib/applibs</i> . If the path is absolute, the path must be accessible to the domain administration server (DAS), which means it must be under <i>domain-dir</i> . To include more than one path, use a system-specific separator, such as a colon for Solaris or a semicolon for Windows. The libraries are made available to the application in the order in which they are specified.
<code>directory-deployed</code>	<code>false</code>	(optional) Specifies whether the application has been deployed to a directory.
<code>java-web-start-enabled</code>	<code>true</code>	(optional) Specifies whether Java Web Start access is permitted for application clients in this application.

jacc-provider

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

Superelements

[“security-service” on page 98](#)

Subelements

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

TABLE 1-66 `jacc-provider` Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-67 `jacc-provider` Attributes

Attribute	Default	Description
<code>name</code>	<code>default</code>	Specifies the name of the JACC provider.
<code>policy-provider</code>	<code>none</code>	Corresponds to and can be overridden by the system property <code>javax.security.jacc.policy.provider</code> .
<code>policy-configuration-factory-provider</code>	<code>none</code>	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 29](#)

Subelements

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

TABLE 1-68 `java-config` Subelements

Element	Required	Description
“profiler” on page 89	zero or one	Configures a profiler for use with the Application Server.

TABLE 1-68 java-config Subelements (Continued)

Element	Required	Description
“jvm-options” on page 71	zero or more	Contains JVM command line options.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-69 java-config Attributes

Attribute	Default	Description
<code>java-home</code>	<code>none</code>	The path to the directory where the JDK is installed.
<code>debug-enabled</code>	<code>false</code>	(optional) If <code>true</code> , the server starts up in debug mode ready for attachment with a JPDA-based debugger.
<code>debug-options</code>	<code>-Xdebug -Xrunjdpw: transport=dt_socket, server=y,suspend=n</code>	(optional) Specifies JPDA (Java Platform Debugger Architecture) options. A list of debugging options is available at http://java.sun.com/products/jpda/doc/conninv.html#Invocation . For more information about debugging, see the <i>Sun Java System Application Server Platform Edition 9 Developer's Guide</i> .
<code>rmic-options</code>	<code>-iiop -poa -alwaysgenerate -keepgenerated -g</code>	(optional) Specifies options passed to the RMI compiler at application deployment time. The <code>-keepgenerated</code> option saves generated source for stubs and ties. For details about the <code>rmic</code> command, see http://java.sun.com/j2se/1.5.0/docs/tooldocs/solaris/rmic.html .
<code>javac-options</code>	<code>-g</code>	(optional) Specifies options passed to the Java compiler at application deployment time.
<code>classpath-prefix</code>	<code>none</code>	(optional) Specifies a prefix for the server classpath. Only prefix this classpath to override Application Server classes. Use this attribute with caution.
<code>classpath-suffix</code>	<code>none</code>	(optional) Specifies a suffix for the server classpath.
<code>server-classpath</code>	<code>none</code>	(optional) Specifies additions to the server classpath. Supported for backward compatibility. Use <code>classpath-suffix</code> instead.
<code>system-classpath</code>	JVM classes	(optional) Specifies additions to the system classpath, which is supplied to the JVM at server startup. These classes are loaded by the System Classloader. Note – Do not remove the default path.

TABLE 1-69 java-config Attributes (Continued)

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

jdbc-connection-pool

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

Superelements

[“resources” on page 96](#)

Subelements

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

TABLE 1-70 jdbc-connection-pool Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-71 `jdbc-connection-pool` Attributes

Attribute	Default	Description
<code>name</code>	<code>none</code>	Specifies the name of the connection pool. A “ <code>jdbc-resource</code> ” on page 67 element’s <code>pool-name</code> attribute refers to this name.
<code>datasource-classname</code>	<code>none</code>	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>	<code>8</code>	(optional) Specifies the initial and minimum number of connections maintained in the pool.
<code>max-pool-size</code>	<code>32</code>	(optional) Specifies the maximum number of connections that can be created to satisfy client requests.
<code>max-wait-time-in-millis</code>	<code>60000</code>	(optional) Specifies the amount of time, in milliseconds, that the caller is willing to wait for a connection. If <code>0</code> , the caller is blocked indefinitely until a resource is available or an error occurs.
<code>pool-resize-quantity</code>	<code>2</code>	(optional) Specifies the number of idle 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-timeout-in-seconds</code> interval. An idle connection is one that has not been used for a period of <code>idle-timeout-in-seconds</code> . When the pool size reaches <code>steady-pool-size</code> , connection removal stops.
<code>idle-timeout-in-seconds</code>	<code>300</code>	(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.
<code>transaction-isolation-level</code>	default JDBC driver isolation level	(optional) Specifies the transaction isolation level on the pooled database connections. Allowed values are <code>read-uncommitted</code> , <code>read-committed</code> , <code>repeatable-read</code> , or <code>serializable</code> . Applications that change the isolation level on a pooled connection programmatically risk polluting the pool, which can lead to errors. See <code>is-isolation-level-guaranteed</code> for more details.

TABLE 1-71 jdbc-connection-pool Attributes (Continued)

Attribute	Default	Description
is-isolation-level-guaranteed	true	(optional) Applicable only when transaction-isolation-level is explicitly set. If true, every connection obtained from the pool is guaranteed to have the desired isolation level. This might impact performance on some JDBC drivers. Only set this attribute to false if you are certain that the hosted applications do not return connections with altered isolation levels.
is-connection-validation-required	false	(optional) Specifies whether connections have to be validated before being given to the application. If a resource's validation fails, it is destroyed, and a new resource is created and returned.
connection-validation-method	auto-commit	(optional) Legal values are as follows: <ul style="list-style-type: none"> ■ auto-commit (default), which uses <code>Connection.setAutoCommit()</code> (<code>Connection.getAutoCommit()</code>) ■ meta-data, which uses <code>Connection.getMetaData()</code> ■ table, which performs a query on a table specified in the validation-table-name attribute
validation-table-name	none	(optional) Specifies the table name to be used to perform a query to validate a connection. This parameter is mandatory if and only if connection-validation-method is set to table.
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.
non-transactional-connections	false	(optional) If true, non-transactional connections can be made to the JDBC connection pool. These connections are not automatically enlisted with the transaction manager.
allow-non-component-callers	false	(optional) If true, non-Java-EE components, such as servlet filters, lifecycle modules, and third party persistence managers, can use this JDBC connection pool. The returned connection is automatically enlisted with the transaction context obtained from the transaction manager. Standard Java EE components can also use such pools. Connections obtained by non-component callers are not automatically closed at the end of a transaction by the container. They must be explicitly closed by the caller.

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 1-72 `jdbc-connection-pool` Properties

Property	Description
<code>user</code>	Specifies the user name for connecting to the database.
<code>password</code>	Specifies the password for connecting to the database.
<code>databaseName</code>	Specifies the database for this connection pool.
<code>serverName</code>	Specifies the database server for this connection pool.
<code>port</code>	Specifies the port on which the database server listens for requests.
<code>networkProtocol</code>	Specifies the communication protocol.
<code>roleName</code>	Specifies the initial SQL role name.
<code>datasourceName</code>	Specifies an underlying <code>XADataSource</code> , or a <code>ConnectionPoolDataSource</code> if connection pooling is done.
<code>description</code>	Specifies a text description.
<code>url</code>	Specifies the URL for this connection pool. Although this is not a standard property, it is commonly used.
<code>LazyConnection Enlistment</code>	If <code>true</code> , a connection is not enlisted in a transaction until it is used. If <code>false</code> , any connection object available to a transaction is enlisted in the transaction. Default is <code>true</code> .
<code>LazyConnection Association</code>	If <code>true</code> , a physical connection is not associated with a logical connection until it is used. If <code>false</code> , a physical connection is associated with a logical connection even before it is used. Default is <code>true</code> .
<code>AssociateWithThread</code>	If <code>true</code> , allows a connection to be saved as a <code>ThreadLocal</code> in the calling thread. This connection gets reclaimed only when the calling thread dies or when the calling thread is not in use and the pool has run out of connections. Default is <code>false</code> .
<code>MatchConnections</code>	If <code>true</code> , enables connection matching. You can set to <code>false</code> if connections are homogeneous. Default is <code>true</code> .

jdbc-resource

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

Superelements

[“resources” on page 96](#)

Subelements

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

TABLE 1-73 `jdbc-resource` Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-74 `jdbc-resource` Attributes

Attribute	Default	Description
<code>jndi-name</code>	<code>none</code>	Specifies the JNDI name for the resource.
<code>pool-name</code>	<code>none</code>	Specifies the name of the associated “jdbc-connection-pool” on page 64 .
<code>object-type</code>	<code>user</code>	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none">▪ <code>system-all</code> - A system resource for all server instances and the domain application server.▪ <code>system-admin</code> - A system resource only for the domain application server.▪ <code>system-instance</code> - A system resource for all server instances only.▪ <code>user</code> - A user resource.
<code>enabled</code>	<code>true</code>	(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 69](#)

Subelements

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

TABLE 1-75 `.jms-host` Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-76 `.jms-host` Attributes

Attribute	Default	Description
<code>name</code>	<code>none</code>	Specifies the name of the JMS host.
<code>host</code>	<i>machine-name</i>	(optional) Specifies the host name of the JMS host.
<code>port</code>	<code>7676</code>	(optional) Specifies the port number used by the JMS provider.
<code>admin-user-name</code>	<code>admin</code>	(optional) Specifies the administrator user name for the JMS provider.
<code>admin-password</code>	<code>admin</code>	(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 29](#)

Subelements

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

TABLE 1-77 `.jms-service` Subelements

Element	Required	Description
“jms-host” on page 68	zero or more	Specifies a host.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1–78 `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.
<code>type</code>	EMBEDDED	(optional) Specifies the type of JMS service: <ul style="list-style-type: none"> EMBEDDED means the JMS provider is started in the same JVM as the Application Server. This is the default for the Domain Administration Server (DAS). LOCAL means the JMS provider is started along with the Application Server. REMOTE means the JMS provider is remote and is not started by the Application Server.
<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 page 68. 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>	5	(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 1–79 `.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 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 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> .

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 62, “`profiler`” on page 89

Subelements

`none` - contains data

K

keep-alive

Configures keep-alive threads.

Superelements

“`http-service`” on page 56

Subelements

`none`

Attributes

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

TABLE 1–80 `keep-alive` Attributes

Attribute	Default	Description
<code>thread-count</code>	1	(optional) Specifies the number of keep-alive threads.
<code>max-connections</code>	256	(optional) Specifies the maximum number of keep-alive connections.
<code>timeout-in-seconds</code>	60	(optional) Specifies the maximum time for which a keep alive connection is kept open.

L

lifecycle-module

Specifies a deployed lifecycle module. For more information about lifecycle modules, see the *Sun Java System Application Server Platform Edition 9 Developer's Guide*.

Superelements

[“applications” on page 25](#)

Subelements

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

TABLE 1–81 `lifecycle-module` Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-82 lifecycle-module Attributes

Attribute	Default	Description
name	none	The name of the lifecycle module.
class-name	none	The fully qualified name of the lifecycle module's class file, which must implement the <code>com.sun.appserv.server.LifecycleListener</code> interface.
classpath	value of application - root attribute of "server" on page 100 element	(optional) The classpath for the lifecycle module. Specifies where the module is located.
load-order	none	(optional) Determines the order in which lifecycle modules are loaded at startup. Modules with smaller integer values are loaded sooner. Values can range from 101 to the operating system's MAXINT. Values from 1 to 100 are reserved.
is-failure-fatal	false	(optional) Determines whether the server is shut down if the lifecycle module fails.
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 22](#)

Subelements

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

TABLE 1-83 listener-config Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-84 listener-config Attributes

Attribute	Default	Description
listener-class-name	none	Specifies the class name of the listener. The com.sun.appserv.admin.notification.MailAlert 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 LogMBean and ServerStatusMonitor 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 112](#).
- The *access log* file stores HTTP access messages from the default virtual server. The default name is access.log. See [“access-log” on page 18](#) and [“http-access-log” on page 52](#).
- 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 108](#).

Superelements

[“config” on page 29](#)

Subelements

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

TABLE 1-85 log-service Subelements

Element	Required	Description
“module-log-levels” on page 83	zero or one	Specifies log levels.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-86 log-service Attributes

Attribute	Default	Description
file	server.log in the directory specified by the log-root attribute of the “domain” on page 41 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 41 element. A relative path is relative to the log-root attribute of the “domain” on page 41 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.
retain-error-statistics-for-hours	5	(optional) Specifies the number of most recent hours for which error statistics are retained in memory. The default and minimum value is 5 hours. The maximum value allowed is 500 hours. Larger values incur additional memory overhead.

M

mail-resource

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

Superelements

[“resources” on page 96](#)

Subelements

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

TABLE 1-87 mail - resource Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-88 mail - resource Attributes

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

TABLE 1-88 mail-resource Attributes (Continued)

Attribute	Default	Description
transport-protocol	smtp	(optional) Specifies the transport protocol service, which sends messages. Allowed values are smtp and smtps.
transport-protocol-class	com.sun.mail.smtp.SMTPTransport	(optional) Specifies the service provider implementation class for transport. Allowed values are: com.sun.mail.smtp.SMTPTransport com.sun.mail.smtp.SMTPSSLTransport
host	none	The mail server host name.
user	none	The mail server user name.
from	none	The email address the mail server uses to indicate the message sender.
debug	false	(optional) Determines whether debugging for this resource is enabled.
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> ■ system-all - A system resource for all server instances and the domain application server. ■ system-admin - A system resource only for the domain application server. ■ system-instance - A system resource for all server instances only. ■ user - A user resource.
enabled	true	(optional) Determines whether this resource is enabled at runtime.

Properties

You can set properties for the mail-resource element and then get these properties in a JavaMail Session object later. Every property name must start with a mail- prefix. The Application Server changes the dash (-) character to a period (.) in the name of the property, then saves the property to the MailConfiguration and JavaMail Session objects. If the name of the property doesn't start with mail-, the property is ignored.

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

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

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

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

management-rule

Configures a self-management rule, which associates a custom self-tuning, self-configuring, or self-healing action with an event in the Application Server. The action is implemented by an MBean.

Superelements

[“management-rules” on page 79](#)

Subelements

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

TABLE 1–89 `management-rule` Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element. This description is included in server log messages about the management rule. For more information on logging, see “log-service” on page 74 and “module-log-levels” on page 83 .
“event” on page 46	only one	Defines the event that triggers the action associated with a management rule.
“action” on page 19	zero or one	Specifies the action of this management rule. If no action is specified, occurrence of the associated event is logged.

Attributes

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

TABLE 1–90 `management-rule` Attributes

Attribute	Default	Description
<code>name</code>	<code>none</code>	Specifies the name of this management rule.
<code>enabled</code>	<code>true</code>	(optional) If <code>false</code> , disables this management rule.

management-rules

Configures self-management rules, which associate custom self-tuning, self-configuring, and self-healing actions with events in the Application Server.

Superelements

[“config” on page 29](#)

Subelements

The following table describes subelements for the `management - rules` element.

TABLE 1-91 `management - rules` Subelements

Element	Required	Description
“management-rule” on page 78	zero or more	Specifies a management rule.

Attributes

The following table describes attributes for the `management - rules` element.

TABLE 1-92 `management - rules` Attributes

Attribute	Default	Description
<code>enabled</code>	<code>true</code>	(optional) If <code>false</code> , disables all management rules. If <code>true</code> , the <code>enabled</code> attribute of each rule determines whether it is enabled.

manager-properties

Specifies session manager properties.

Superelements

[“session-manager” on page 102](#)

Subelements

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

TABLE 1-93 manager-properties Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-94 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.
reap-interval-in-seconds	60	(optional) Specifies the time between checks for expired sessions. 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.
session-id-generator-classname	internal class generator	(optional) Not implemented. Do not use.

mbean

Specifies an MBean, which implements the `javax.management.NotificationListener` interface.

Superelements

[“applications” on page 25](#)

Subelements

The following table describes subelements for the mbean element.

TABLE 1–95 mbean Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property. Property subelements of the mbean element store the names and values of attributes defined in the MBean implementation class.

Attributes

The following table describes attributes for the mbean element.

TABLE 1–96 mbean Attributes

Attribute	Default	Description
name	value of impl-class-name	The name of the MBean. The name must represent a value of a property in the <code>property-list</code> of an MBean <code>ObjectName</code> . The name is a primary key for the MBean. This is read-only.
object-type	user	(optional) Defines the type of the resource. This is read-only. Allowed values are: <ul style="list-style-type: none"> ■ <code>system-all</code> - A system resource for all server instances and the domain application server. ■ <code>system-admin</code> - A system resource only for the domain application server. ■ <code>system-instance</code> - A system resource for all server instances only. ■ <code>user</code> - A user resource.
impl-class-name	none	Defines the fully qualified class name of the MBean implementation. This is read-only.
object-name	none	Defines a system-generated object name for this MBean. This is read-only.
enabled	true	(optional) Determines whether the MBean is enabled. If <code>false</code> , the MBean is not registered in the runtime environment even if the reference is enabled.

mdb-container

Configures the message-driven bean (MDB) container.

Superelements

[“config” on page 29](#)

Subelements

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

TABLE 1-97 mdb-container Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-98 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 removed when the <code>idle-timeout-in-seconds</code> timer expires. A cleaner thread removes any unused instances. 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> .
<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 1-99 mdb-container Properties

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

message-security-config

Specifies configurations for message security providers.

Superelements

[“security-service” on page 98](#)

Subelements

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

TABLE 1-100 `message-security-config` Subelements

Element	Required	Description
“provider-config” on page 91	one or more	Specifies a configuration for one message security provider.

Attributes

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

TABLE 1-101 `message-security-config` Attributes

Attribute	Default	Description
<code>auth-layer</code>	none	Specifies the message layer at which authentication is performed. The value must be SOAP or <code>HttpServlet</code> .
<code>default-provider</code>	none	(optional) Specifies the server provider that is invoked for any application not bound to a specific server provider.
<code>default-client-provider</code>	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 (levels) of each subsystem attribute are, from highest to lowest: `FINEST`, `FINER`, `FINE`, `CONFIG`, `INFO`, `WARNING`, `SEVERE`, and `OFF`. Each value logs all messages for all lower values. The default value is `INFO`, which logs all `INFO`, `SEVERE`, and `WARNING` messages.

Superelements

[“log-service” on page 74](#)

Subelements

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

TABLE 1-102 `module-log-levels` Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-103 `module-log-levels` Attributes

Attribute	Default	Description
<code>root</code>	INFO	(optional) Specifies the default level of messages logged by the entire Application Server installation.
<code>server</code>	INFO	(optional) Specifies the default level of messages logged by the server instance.
<code>ejb-container</code>	INFO	(optional) Specifies the level of messages logged by the EJB container.
<code>cmp-container</code>	INFO	(optional) Specifies the level of messages logged by the CMP subsystem of the EJB container.
<code>mdb-container</code>	INFO	(optional) Specifies the level of messages logged by the MDB container.
<code>web-container</code>	INFO	(optional) Specifies the level of messages logged by the web container.
<code>classloader</code>	INFO	(optional) Specifies the level of messages logged by the classloader hierarchy.
<code>configuration</code>	INFO	(optional) Specifies the level of messages logged by the configuration subsystem.
<code>naming</code>	INFO	(optional) Specifies the level of messages logged by the naming subsystem.
<code>security</code>	INFO	(optional) Specifies the level of messages logged by the security subsystem.
<code>jts</code>	INFO	(optional) Specifies the level of messages logged by the Java Transaction Service.
<code>jta</code>	INFO	(optional) Specifies the level of messages logged by the Java Transaction API.
<code>admin</code>	INFO	(optional) Specifies the level of messages logged by the Administration Console subsystem.
<code>deployment</code>	INFO	(optional) Specifies the level of messages logged by the deployment subsystem.
<code>verifier</code>	INFO	(optional) Specifies the level of messages logged by the deployment descriptor verifier.
<code>jaxr</code>	INFO	(optional) Specifies the level of messages logged by the XML registry.
<code>jaxrpc</code>	INFO	(optional) Specifies the level of messages logged by the XML RPC module.
<code>saaaj</code>	INFO	(optional) Specifies the level of messages logged by the SOAP with Attachments API for Java module.
<code>corba</code>	INFO	(optional) Specifies the level of messages logged by the ORB.
<code>javamail</code>	INFO	(optional) Specifies the level of messages logged by the JavaMail subsystem.
<code>jms</code>	INFO	(optional) Specifies the level of messages logged by the Java Message Service.
<code>connector</code>	INFO	(optional) Specifies the level of messages logged by the connector subsystem.
<code>jdo</code>	INFO	(optional) Specifies the level of messages logged by the Java Data Objects module.

TABLE 1-103 module-log-levels Attributes (Continued)

Attribute	Default	Description
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.
self-management	INFO	(optional) Specifies the level of messages logged by the self-management (management rules) subsystem.
management-event	INFO	(optional) Specifies the level of messages logged by the self-management event subsystem.

module-monitoring-levels

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

Superelements

[“monitoring-service” on page 86](#)

Subelements

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

TABLE 1-104 module-monitoring-levels Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

TABLE 1-105 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.

TABLE 1-105 module-monitoring-levels Attributes (Continued)

Attribute	Default	Description
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 29](#)

Subelements

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

TABLE 1-106 monitoring-service Subelements

Element	Required	Description
“module-monitoring-levels” on page 85	zero or one	Controls the level of monitoring of server subsystems.
“property” on page 90	zero or more	Specifies a property or a variable.

0

orb

Configures the ORB.

To enable SSL for outbound connections, include an [“ssl-client-config” on page 104](#) subelement in the parent `iiop-service` element.

Superelements

[“iio-service” on page 59](#)

Subelements

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

TABLE 1-107 `orb` Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-108 `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 “thread-pool” on page 107 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).
 Deprecated, and included for backward compatibility only. Use a [“jdbc-resource” on page 67](#) element instead.

Superelements

[“resources” on page 96](#)

Subelements

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

TABLE 1-109 persistence-manager-factory-resource Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-110 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 “jdbc-resource” on page 67 from which database connections are obtained. Must be the jndi-name of an existing jdbc-resource.
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none">■ system-all - A system resource for all server instances and the domain application server.■ system-admin - A system resource only for the domain application server.■ system-instance - A system resource for all server instances only.■ user - A user resource.
enabled	true	(optional) Determines whether this resource is enabled at runtime.

principal

Contains the principal of the servlet or EJB client.

Superelements

[“security-map” on page 98](#)

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 Platform Edition 9 Developer's Guide*.

Superelements

[“java-config” on page 62](#)

Subelements

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

TABLE 1-111 profiler Subelements

Element	Required	Description
“jvm-options” on page 71	zero or more	Contains profiler-specific JVM command line options.
“property” on page 90	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 1-112 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, “`appclient-module`” on page 23, “`audit-module`” on page 25, “`auth-realm`” on page 26, “`config`” on page 29, “`connector-connection-pool`” on page 31, “`connector-module`” on page 35, “`connector-resource`” on page 35, “`custom-resource`” on page 37, “`das-config`” on page 38, “`diagnostic-service`” on page 40, “`domain`” on page 41, “`ejb-container`” on page 42, “`ejb-module`” on page 44, “`ejb-timer-service`” on page 45, “`external-jndi-resource`” on page 50, “`filter-config`” on page 51, “`http-listener`” on page 53, “`http-service`” on page 56, “`iiop-listener`” on page 59, “`j2ee-application`” on page 60, “`jacc-provider`” on page 61, “`java-config`” on page 62, “`jdbc-connection-pool`” on page 64, “`jdbc-resource`” on page 67, “`jms-host`” on page 68, “`jms-service`” on page 69, “`lifecycle-module`” on page 72, “`listener-config`” on page 73, “`log-service`” on page 74, “`mail-resource`” on page 76, “`manager-properties`” on page 79, “`mbean`” on page 80, “`mdb-container`” on page 81, “`module-log-levels`” on page 83, “`module-monitoring-levels`” on page 85, “`monitoring-service`” on page 86, “`orb`” on page 86, “`persistence-manager-factory-resource`” on page 87, “`profiler`” on page 89, “`provider-config`” on page 91, “`resource-adapter-config`” on page 94, “`security-service`” on page 98, “`server`” on page 100, “`session-properties`” on page 102, “`store-properties`” on page 105, “`transaction-service`” on page 108, “`virtual-server`” on page 112, “`web-container`” on page 115, “`web-module`” on page 116

Subelements

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

TABLE 1-113 property Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.

Attributes

The following table describes attributes for the property element.

TABLE 1-114 property Attributes

Attribute	Default	Description
name	none	Specifies the name of the property or variable.
value	none	Specifies the value of the property or variable.

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 82](#)

Subelements

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

TABLE 1-115 provider-config Subelements

Element	Required	Description
“request-policy” on page 93	zero or one	Defines the authentication policy requirements of the authentication provider’s request processing.
“response-policy” on page 97	zero or one	Defines the authentication policy requirements of the authentication provider’s response processing.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-116 provider-config Attributes

Attribute	Default	Description
provider-id	none	Specifies a unique identifier for this <code>provider-config</code> element.
provider-type	none	Specifies whether the provider is a <code>client</code> , <code>server</code> , or <code>client-server</code> authentication provider.
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.

Properties

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

TABLE 1-117 provider-config Properties

Property	Default	Description
security.config	none	Specifies the location of the message security configuration file. To point to a configuration file in the <i>domain-dir</i> /config directory, use the prefix <code>\${com.sun.aas.instanceRoot}/config/</code> , for example: <code>\${com.sun.aas.instanceRoot}/config/wss-server-config-2.0.xml</code>
debug	false	If <code>true</code> , enables dumping of server provider debug messages to the server log.
dynamic.username.password	false	If <code>true</code> , signals the provider runtime to collect the user name and password from the <code>CallbackHandler</code> for each request. If <code>false</code> , the user name and password for <code>wsse:UsernameToken(s)</code> is collected once, during module initialization. This property is only applicable for a <code>ClientAuthModule</code> .
encryption.key.alias	slas	Specifies the encryption key used by the provider. The key is identified by its <code>keystore</code> alias.
signature.key.alias	slas	Specifies the signature key used by the provider. The key is identified by its <code>keystore</code> alias.

R

registry-location

Specifies the registry where web service endpoint artifacts are published.

Superelements

[“web-service-endpoint” on page 117](#)

Subelements

none

Attributes

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

TABLE 1-118 registry-location Attributes

Attribute	Default	Description
connector-resource-jndi-name	none	Specifies the jndi-name of the “connector-resource” on page 35 used as the registry.

request-policy

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

Superelements

[“provider-config” on page 91](#)

Subelements

none

Attributes

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

TABLE 1-119 request-policy Attributes

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

request-processing

Configures request processing threads.

Superelements

[“http-service” on page 56](#)

Subelements

none

Attributes

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

TABLE 1–120 request-processing Attributes

Attribute	Default	Description
thread-count	5	(optional) Specifies the maximum number of request processing threads.
initial-thread-count	2	(optional) Specifies the number of request processing threads that are available when the server starts up.
thread-increment	1	(optional) Specifies the number of request processing threads added when the number of requests exceeds the initial-thread-count.
request-timeout-in-seconds	60	(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 96](#)

Subelements

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

TABLE 1–121 resource-adapter-config Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1–122 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 page 107 element.
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> ■ system-all - A system resource for all server instances and the domain application server. ■ system-admin - A system resource only for the domain application server. ■ system-instance - A system resource for all server instances only. ■ user - A user resource.
resource-adapter-name	none	Specifies the name attribute of a deployed “connector-module” on page 35 . 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

[“server” on page 100](#)

Subelements

none

Attributes

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

TABLE 1–123 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 37, “external-jndi-resource” on page 50, “jdbc-resource” on page 67, “mail-resource” on page 76, “persistence-manager-factory-resource” on page 87, “admin-object-resource” on page 20 “resource-adapter-config” on page 94, “jdbc-connection-pool” on page 64, or “connector-connection-pool” on page 31 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 41

Subelements

The following table describes subelements for the resources element.

TABLE 1–124 resources Subelements

Element	Required	Description
“custom-resource” on page 37	zero or more	Defines a custom resource.
“external-jndi-resource” on page 50	zero or more	Defines a resource that resides in an external JNDI repository.
“jdbc-resource” on page 67	zero or more	Defines a JDBC (Java Database Connectivity) resource.
“mail-resource” on page 76	zero or more	Defines a JavaMail resource.
“persistence-manager-factory-resource” on page 87	zero or more	Defines a persistence manager factory resource for CMP. Deprecated. Use a “jdbc-resource” on page 67 element instead.

TABLE 1-124 resources Subelements (Continued)

Element	Required	Description
“admin-object-resource” on page 20	zero or more	Defines an administered object for an inbound resource adapter.
“connector-resource” on page 35	zero or more	Defines a connector (resource adapter) resource.
“resource-adapter-config” on page 94	zero or more	Defines a resource adapter configuration.
“jdbc-connection-pool” on page 64	zero or more	Defines the properties that are required for creating a JDBC connection pool.
“connector-connection-pool” on page 31	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 91](#)

Subelements

none

Attributes

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

TABLE 1-125 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 31](#)

Subelements

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

TABLE 1-126 security-map Subelements

Element	Required	Description
“principal” on page 88	one or more	Contains the principal of the servlet or EJB client.
“user-group” on page 111	one or more	Contains the group to which the principal belongs.
“backend-principal” on page 28	only one	Specifies the user name and password required by the EIS.

Attributes

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

TABLE 1-127 security-map Attributes

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

security-service

Defines parameters and configuration information needed by the Java EE security service. For SSL configuration, see [“ssl” on page 103](#). For connector module security, see [“security-map” on page 98](#).

Superelements

[“config” on page 29](#)

Subelements

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

TABLE 1-128 `security-service` Subelements

Element	Required	Description
“auth-realm” on page 26	one or more	Defines a realm for authentication.
“jacc-provider” on page 61	one or more	Specifies a Java Authorization Contract for Containers (JACC) provider for pluggable authorization.
“audit-module” on page 25	zero or more	Specifies an optional plug-in module that implements audit capabilities.
“message-security-config” on page 82	zero or more	Specifies configurations for message security providers.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-129 `security-service` Attributes

Attribute	Default	Description
<code>default-realm</code>	<code>file</code>	(optional) Specifies the active authentication realm (an <code>auth-realm</code> name attribute) for this server instance.
<code>default-principal</code>	<code>none</code>	(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.
<code>default-principal-password</code>	<code>none</code>	(optional) The password of the default principal. This attribute need not be set for normal server operation.
<code>anonymous-role</code>	<code>ANYONE</code>	(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 Java EE deployment descriptors to grant access to anyone.
<code>audit-enabled</code>	<code>false</code>	(optional) If <code>true</code> , additional access logging is performed to provide audit information. Audit information consists of: <ul style="list-style-type: none"> ■ Authentication success and failure events ■ Servlet and EJB access grants and denials
<code>jacc</code>	<code>default</code>	(optional) Specifies the name of the “jacc-provider” on page 61 element to use for setting up the JACC infrastructure. Do not change the default value unless you are adding a custom JACC provider.

TABLE 1-129 security-service Attributes (Continued)

Attribute	Default	Description
audit-modules	default	(optional) Specifies a space-separated list of audit provider modules used by the audit subsystem. The default value refers to the internal log-based audit module.
activate-default-principal-to-role-mapping	false	(optional) Applies a default principal for role mapping to any application that does not have an application-specific mapping defined. Every role is mapped to an instance of a <code>java.security.Principal</code> implementation class defined by <code>mapped-principal-class</code> . This class has the same name as the role.
mapped-principal-class	<code>com.sun.enterprise.deployment.Group</code>	(optional) Customizes the <code>java.security.Principal</code> implementation class used when <code>activate-default-principal-to-role-mapping</code> is set to true.

server

Defines a server instance, which is a Java EE compliant container.

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 101](#)

Subelements

The following table describes subelements for the server element.

TABLE 1-130 server Subelements

Element	Required	Description
“application-ref” on page 24	zero or more	References an application or module deployed to the server instance.
“resource-ref” on page 95	zero or more	References a resource deployed to the server instance.
“system-property” on page 106	zero or more	Specifies a system property.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

The following table describes attributes for the server element.

TABLE 1–131 server Attributes		
Attribute	Default	Description
name	none	Specifies the name of the server instance.
config-ref	default “ config ” on page 29 element’s name, server-config	(optional) References the name of the “ config ” on page 29 used by the server instance. For the Platform Edition, the default is the only value allowed.

servers

Contains server instances. In the Platform Edition, there is only one server instance.

Superelements

“[domain](#)” on [page 41](#)

Subelements

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

TABLE 1–132 servers Subelements		
Element	Required	Description
“ server ” on page 100	only one	Defines a server instance.

session-config

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

Superelements

“[web-container](#)” on [page 115](#)

Subelements

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

TABLE 1-133 session-config Subelements

Element	Required	Description
“session-manager” on page 102	zero or one	Specifies session manager configuration information.
“session-properties” on page 102	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 101](#)

Subelements

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

TABLE 1-134 session-manager Subelements

Element	Required	Description
“manager-properties” on page 79	zero or one	Specifies session manager properties.
“store-properties” on page 105	zero or one	Specifies session persistence (storage) properties.

session-properties

Specifies session properties.

Superelements

[“session-config” on page 101](#)

Subelements

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

TABLE 1-135 session-properties Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

TABLE 1-136 session-properties Attributes

Attribute	Default	Description
timeout-in-seconds	600	(optional) Specifies the default maximum inactive interval (in seconds) for all sessions created in this web module. If set to 0 or less, sessions in this web module never expire. If a session-timeout element is specified in the web.xml file, the session-timeout value overrides any timeout-in-seconds value. If neither session-timeout nor timeout-in-seconds is specified, the timeout-in-seconds default is used. Note that the session-timeout element in web.xml is specified in minutes, not seconds.

Properties

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

TABLE 1-137 session-properties Properties

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

ssl

Defines SSL (Secure Socket Layer) parameters.

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

In Platform Edition, SSL is globally disabled.

Superelements

[“http-listener” on page 53](#), [“iiop-listener” on page 59](#), [“ssl-client-config” on page 104](#)

Subelements

none

Attributes

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

TABLE 1-138 `ssl` Attributes

Attribute	Default	Description
<code>cert-nickname</code>	<code>none</code>	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.
<code>ssl2-enabled</code>	<code>false</code>	(optional) Determines whether SSL2 is enabled. If both SSL2 and SSL3 are enabled for a “ virtual-server ” on page 112 , the server tries SSL3 encryption first. If that fails, the server tries SSL2 encryption.
<code>ssl2-ciphers</code>	<code>none</code>	(optional) A comma-separated list of the SSL2 ciphers used, with the prefix <code>+</code> to enable or <code>-</code> to disable, for example <code>+rc4</code> . Allowed values are <code>rc4</code> , <code>rc4export</code> , <code>rc2</code> , <code>rc2export</code> , <code>idea</code> , <code>des</code> , <code>desede3</code> .
<code>ssl3-enabled</code>	<code>true</code>	(optional) Determines whether SSL3 is enabled. The default is <code>true</code> . If both SSL2 and SSL3 are enabled for a “ virtual-server ” on page 112 , the server tries SSL3 encryption first. If that fails, the server tries SSL2 encryption.
<code>ssl3-tls-ciphers</code>	<code>none</code>	(optional) A comma-separated list of the SSL3 ciphers used, with the prefix <code>+</code> to enable or <code>-</code> to disable, for example <code>+SSL_RSA_WITH_RC4_128_MD5</code> . Allowed values are <code>SSL_RSA_WITH_RC4_128_MD5</code> , <code>SSL_RSA_WITH_3DES_EDE_CBC_SHA</code> , <code>SSL_RSA_WITH_DES_CBC_SHA</code> , <code>SSL_RSA_EXPORT_WITH_RC4_40_MD5</code> , <code>SSL_RSA_WITH_NULL_MD5</code> , <code>SSL_RSA_WITH_RC4_128_SHA</code> , and <code>SSL_RSA_WITH_NULL_SHA</code> . Values available in previous releases are supported for backward compatibility.
<code>tls-enabled</code>	<code>true</code>	(optional) Determines whether TLS is enabled.
<code>client-auth-enabled</code>	<code>false</code>	(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 59](#)

Subelements

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

TABLE 1-139 `ssl-client-config` Subelements

Element	Required	Description
“ssl” on page 103	only one	Defines SSL parameters.

store-properties

Specifies session persistence (storage) properties.

Superelements

[“session-manager” on page 102](#)

Subelements

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

TABLE 1-140 `store-properties` Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

TABLE 1-141 `store-properties` Attributes

Attribute	Default	Description
directory	<i>domain-dir</i> /generated/jsp /j2ee-apps/ <i>appname</i> / <i>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.
reap-interval-in-seconds	60	(optional) Not implemented. Use the <code>reap-interval-in-seconds</code> attribute of the “manager-properties” on page 79 element instead.

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 41, “server” on page 100, or “config” on page 29. A value set at a higher level can be overridden at a lower level. Some system properties are predefined; see “system-property” on page 106. You can also create system properties using this element.

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

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

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

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

Superelements

“config” on page 29, “domain” on page 41, “server” on page 100

Subelements

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

TABLE 1-142 system-property Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.

Attributes

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

TABLE 1–143 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 1–144 Predefined System Properties

Property	Default	Description
com.sun.aas.installRoot	depends on operating system	Specifies the directory where the Application Server is installed.
com.sun.aas.instanceRoot	depends on operating system	Specifies the top level directory for a server instance.
com.sun.aas.hostName	none	Specifies the name of the host (machine).
com.sun.aas.javaRoot	depends on operating system	Specifies the installation directory for the Java runtime.
com.sun.aas.imqLib	depends on operating system	Specifies the library directory for the Sun Java System Message Queue software.
com.sun.aas.configName	server-config	Specifies the name of the “ config ” on page 29 used by a server instance.
com.sun.aas.instanceName	server1	Specifies the name of the server instance. This property is not used in the default configuration, but can be used to customize configuration.
com.sun.aas.domainName	domain1	Specifies the name of the domain. This property is not used in the default configuration, but can be used to customize configuration.

T

thread-pool

Defines a thread pool.

Superelements

“[thread-pools](#)” on page 108

Subelements

none

Attributes

TABLE 1-145 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 29](#)

Subelements

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

TABLE 1-146 thread-pools Subelements

Element	Required	Description
“thread-pool” on page 107	one or more	Defines a thread pool.

transaction-service

Configures the Java Transaction Service (JTS).

Superelements

[“config” on page 29](#)

Subelements

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

TABLE 1-147 `transaction-service` Subelements

Element	Required	Description
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-148 `transaction-service` Attributes

Attribute	Default	Description
<code>automatic-recovery</code>	<code>false</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 “domain” on page 41 element	(optional) Specifies the parent directory of the transaction log directory <i>instance-name/tx</i> . 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 “domain” on page 41 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> .
<code>retry-timeout-in-seconds</code>	<code>600</code>	(optional) Determines the retry time in the following scenarios: <ul style="list-style-type: none"> At the transaction recovery time, if resources are unreachable. If there are any transient exceptions in the second phase of a two phase commit protocol. A negative value specifies infinite retries. A value of <code>0</code> (zero) specifies no retries. A positive value indicates the time after which a retry is attempted.
<code>keypoint-interval</code>	<code>2048</code>	(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, <code>4096</code>) results in a larger transaction log file, but fewer keypoint operations and potentially better performance. A smaller value (for example, <code>100</code>) 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 1-149 transaction-service Properties

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

transformation-rule

Configures an eXtensible Stylesheet Language Transformation (XSLT) rule, which transforms a web service message.

Superelements

[“web-service-endpoint” on page 117](#)

Subelements

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

TABLE 1-150 transformation-rule Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.

Attributes

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

TABLE 1-151 transformation-rule Attributes

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

U

user-group

Contains the group to which the principal belongs.

Superelements

[“security-map” on page 98](#)

Subelements

none - contains data

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 53](#) 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 hosts attribute of a virtual server. If no Host header is present or no hosts attribute matches, the default virtual server for the listener is selected.

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

Superelements

[“http-service” on page 56](#)

Subelements

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

TABLE 1-152 `virtual-server` Subelements

Element	Required	Description
“http-access-log” on page 52	zero or one	Defines an access log file.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-153 `virtual-server` Attributes

Attribute	Default	Description
<code>id</code>	<code>none</code>	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.
<code>http-listeners</code>	<code>none</code>	(optional) In a comma-separated list, references <code>id</code> attributes of “http-listener” on page 53 elements that specify the connection(s) the virtual server uses. Required only for a <code>virtual-server</code> that is not referenced by the <code>default-virtual-server</code> attribute of an <code>http-listener</code> .
<code>default-web-module</code>	system default web module	(optional) References the name attribute of the default “web-module” on page 116 for this virtual server, which responds to requests that cannot be resolved to other web modules deployed to this virtual server (see the “application-ref” on page 24 element).
<code>hosts</code>	<code>none</code>	A comma-separated list of values, each of which selects the current virtual server when included in the Host request header. Two or more <code>virtual-server</code> elements that reference or are referenced by the same <code>http-listener</code> cannot have any <code>hosts</code> values in common.
<code>state</code>	<code>on</code>	(optional) Determines whether a <code>virtual-server</code> is active (<code>on</code>) or inactive (<code>off</code> , <code>disabled</code>). The default is <code>on</code> (active). When inactive, a <code>virtual-server</code> does not service requests. If a <code>virtual-server</code> is disabled, only the global server administrator can turn it on.
<code>log-file</code>	<code>server.log</code> in the directory specified by the <code>log-root</code> attribute of the “domain” on page 41 element	(optional) Writes this virtual server’s log messages to a log file separate from the server log. The file and directory in which the virtual server log is kept must be writable by the user account under which the server runs. See the “log-service” on page 74 description for details about logs.

Properties

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

TABLE 1-154 `virtual-server` Properties

Property	Default	Description
<code>sso-enabled</code>	<code>true</code>	If <code>true</code> , single sign-on is enabled for web applications on this virtual server that are configured for the same realm. If <code>false</code> , single sign-on is disabled for this virtual server, and users must authenticate separately to every application on the virtual server.

TABLE 1-154 virtual-server Properties (Continued)

Property	Default	Description
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 http://www.ietf.org/rfc/rfc2616.txt .
accessLogBufferSize	32768	Specifies the size, in bytes, of the buffer where access log calls are stored. If the value is less than 5120, a warning message is issued, and the value is set to 5120. To set this property for all virtual servers, set it as a property of the parent "http-service" on page 56 element.
accessLogWriterInterval	300	Specifies the number of seconds before the log is written to the disk. The access log is written when the buffer is full or when the interval expires. If the value is 0, the buffer is always written even if it is not full. This means that each time the server is accessed, the log message is stored directly to the file. To set this property for all virtual servers, set it as a property of the parent "http-service" on page 56 element.
allowRemoteAddress	none	Specifies a comma-separated list of regular expression patterns that the remote client's IP address is compared to. If this property is specified, the remote address <i>must</i> match for this request to be accepted. If this property is not specified, all requests are accepted <i>unless</i> the remote address matches a denyRemoteAddress pattern.
denyRemoteAddress	none	Specifies a comma-separated list of regular expression patterns that the remote client's IP address is compared to. If this property is specified, the remote address <i>must not</i> match for this request to be accepted. If this property is not specified, request acceptance is governed solely by the allowRemoteAddress property.
allowRemoteHost	none	Specifies a comma-separated list of regular expression patterns that the remote client's hostname (as returned by <code>[java.net.]Socket.getInetAddress().getHostName()</code>) is compared to. If this property is specified, the remote hostname <i>must</i> match for this request to be accepted. If this property is not specified, all requests are accepted <i>unless</i> the remote hostname matches a denyRemoteHost pattern.
denyRemoteHost	none	Specifies a comma-separated list of regular expression patterns that the remote client's hostname (as returned by <code>[java.net.]Socket.getInetAddress().getHostName()</code>) is compared to. If this property is specified, the remote hostname <i>must not</i> match for this request to be accepted. If this property is not specified, request acceptance is governed solely by the allowRemoteHost property.

TABLE 1-154 virtual-server Properties (Continued)

Property	Default	Description
redirect_ <i>n</i>	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_<i>n</i></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><property name="redirect_1" value="from=/dummy url-prefix=http://etude"/></pre>

W

web-container

Configures the web container.

Superelements

[“config” on page 29](#)

Subelements

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

TABLE 1-155 web-container Subelements

Element	Required	Description
“session-config” on page 101	zero or one	Specifies session configuration information for the web container.
“property” on page 90	zero or more	Specifies a property or a variable.

Properties

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

TABLE 1-156 web-container Properties

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

web-module

Specifies a deployed web module.

Superelements

[“applications” on page 25](#)

Subelements

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

TABLE 1-157 web-module Subelements

Element	Required	Description
“description” on page 39	zero or one	Contains a text description of this element.
“web-service-endpoint” on page 117	zero or more	Configures a web service endpoint.
“property” on page 90	zero or more	Specifies a property or a variable.

Attributes

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

TABLE 1-158 web-module Attributes

Attribute	Default	Description
name	none	The name of the web module.
context-root	none	The context root at which the web module is deployed. The context root can be the empty string or just /. The context root can start with the / character, but doesn’t have to.
location	none	A fully qualified or relative path to the directory to which the contents of the .war file have been extracted. If relative, it is relative to the following directory: <i>domain-dir/applications/j2ee-modules/</i>

TABLE 1-158 web-module Attributes (Continued)

Attribute	Default	Description
object-type	user	(optional) Defines the type of the resource. Allowed values are: <ul style="list-style-type: none"> ■ system-all - A system resource for all server instances and the domain application server. ■ system-admin - A system resource only for the domain application server. ■ system-instance - A system resource for all server instances only. ■ user - A user resource.
enabled	true	(optional) Determines whether the web module is enabled.
libraries	none	(optional) Specifies an absolute or relative path to libraries specific to this module or application. A relative path is relative to <i>domain-dir/lib/applibs</i> . If the path is absolute, the path must be accessible to the domain administration server (DAS), which means it must be under <i>domain-dir</i> . To include more than one path, use a system-specific separator, such as a colon for Solaris or a semicolon for Windows. The libraries are made available to the application in the order in which they are specified.
directory-deployed	false	(optional) Specifies whether the application has been deployed to a directory.

web-service-endpoint

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

Superelements

[“ejb-module” on page 44](#), [“j2ee-application” on page 60](#), [“web-module” on page 116](#)

Subelements

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

TABLE 1-159 web-service-endpoint Subelements

Element	Required	Description
“registry-location” on page 92	zero or more	Specifies the registry where web service endpoint artifacts are published.
“transformation-rule” on page 110	zero or more	Configures an eXtensible Stylesheet Language Transformation (XSLT) rule.

Attributes

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

TABLE 1-160 web-service-endpoint Attributes

Attribute	Default	Description
name	none	<p>The fully qualified name of the web service. For a web service endpoint within an application, the format is as follows:</p> <p><i>module-name#endpoint-name</i></p> <p>For example:</p> <p><code>jaxrpc-simple.war#HelloIF</code></p> <p>For a web service endpoint that is a stand-alone module, the name is just the <i>endpoint-name</i>.</p>
monitoring	OFF	(optional) Specifies the monitoring level for this web service. For information about monitoring levels, see “module-monitoring-levels” on page 85 .
max-history-size	25	(optional) Specifies the maximum number of monitoring records stored for this endpoint.
jbi-enabled	true	(optional) Determines whether the visibility of this endpoint as a Java Business Integration service is enabled or disabled.

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