



Sun GlassFish Enterprise Server v2.1.1 Upgrade Guide



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Preface

This Upgrade guide describes how to upgrade from older versions of application server to Sun GlassFish™ Enterprise Server v2.1.1.

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

Sun GlassFish Enterprise Server Documentation Set

TABLE P-1 Books in the Enterprise Server Documentation Set

Book Title	Description
<i>Documentation Center</i>	Enterprise Server documentation topics organized by task and subject.
<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 Enterprise 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 Enterprise 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 Enterprise 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>Java WSIT Tutorial</i>	Developing web applications using the Web Service Interoperability Technologies (WSIT). Describes how, when, and why to use the WSIT technologies and the features and options that each technology supports.
<i>Administration Guide</i>	System administration for the Enterprise Server, including configuration, monitoring, security, resource management, and web services management.

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

Book Title	Description
<i>High Availability Administration Guide</i>	Setting up clusters, working with node agents, and using load balancers.
<i>Administration Reference</i>	Editing the Enterprise Server configuration file, <code>domain.xml</code> .
<i>Performance Tuning Guide</i>	Tuning the Enterprise Server to improve performance.
<i>Reference Manual</i>	Utility commands available with the Enterprise Server; written in man page style. Includes the <code>asadmin</code> command line interface.

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>as-install</i>	Represents the base installation directory for Enterprise Server.	Solaris™ and Linux 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.	All installations: <i>as-install/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>
<i>instance-dir</i>	Represents the directory for a server instance.	<i>domain-dir/instance-dir</i>
<i>samples-dir</i>	Represents the directory containing sample applications.	<i>as-install/samples</i>
<i>docs-dir</i>	Represents the directory containing documentation.	<i>as-install/docs</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> Password:
<i>AaBbCc123</i>	A placeholder to be replaced with a real name or value	The command to remove a file is <i>rm filename</i> .
<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> . <i>A cache</i> is a copy that is stored locally. Do <i>not</i> save the file.

Symbol Conventions

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

TABLE P-4 Symbol Conventions

Symbol	Description	Example	Meaning
[]	Contains optional arguments and command options.	<code>ls [-l]</code>	The <code>-l</code> option is not required.
{ }	Contains a set of choices for a required command option.	<code>-d {y n}</code>	The <code>-d</code> option requires that you use either the <code>y</code> argument or the <code>n</code> argument.
`\${ }`	Indicates a variable reference.	<code>\${com.sun.javaRoot}</code>	References the value of the <code>com.sun.javaRoot</code> variable.
-	Joins simultaneous multiple keystrokes.	Control-A	Press the Control key while you press the A key.
+	Joins consecutive multiple keystrokes.	Ctrl+A+N	Press the Control key, release it, and then press the subsequent keys.

TABLE P-4 Symbol Conventions (Continued)

Symbol	Description	Example	Meaning
→	Indicates menu item selection in a graphical user interface.	File → New → Templates	From the File menu, choose New. From the New submenu, choose Templates.

Documentation, Support, and Training

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

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

Third-Party Web Site References

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

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Enterprise Server Compatibility Issues

Enterprise Server is binary compatible with Application Server 9.1, 8.2, 8.1, 8.0, and 7.x. Java applications that run on versions 8.1, 8.0, and 7.x also work on Enterprise Server v2.1.1 except for the incompatibilities listed in this chapter.

The topics in this chapter discuss the incompatibilities in the following areas:

- “Application Client Interoperability” on page 10
- “HTTP File Caching” on page 10
- “Default Admin Port” on page 10
- “`domain.xml` Elements” on page 10
- “Deprecated Attributes” on page 11
- “System Properties” on page 11
- “Implicit URL Rewriting” on page 11
- “Web Server Features” on page 11
- “Realms” on page 12
- “Sun Deployment Descriptor: `sun-web.xml`” on page 13
- “The `encodeCookies` Property” on page 13
- “CORBA Performance Option” on page 13
- “File Formats” on page 13
- “System Properties” on page 11
- “Implicit URL Rewriting” on page 11
- “Cluster Scripts” on page 14
- “Primary Key Attribute Values” on page 14
- “Command Line Interface: `hadbm`” on page 16
- “Command Line Interface: `start-appserv` and `stop-appserv`” on page 16
- “Command Line Interface: `asadmin`” on page 17

Application Client Interoperability

Application clients use EJBs, web services, or other enterprise components that are in the application server (on the server side). The application client and the application server must use the same version and implementation of the RMI-IIOP protocol. Enterprise Server does not support communication between different versions of the protocol implementation. You cannot run application clients with one version of the application server runtime with a server that has a different version. Most often, this would happen if you upgraded the server but had not upgraded all the application client installations.

You can use the Java Web Start support to distribute and launch the application client. If the runtime on the server has changed since the end-user last used the application client, Java Web Start automatically retrieves the updated runtime. Java Web Start enables you to keep the clients and servers synchronized and using the same runtime.

HTTP File Caching

HTTP file caching, which was present in Application Server 8, is no longer present in Enterprise Server.

Default Admin Port

The default admin port in Application Server 7 was 4848. The default port in Application Server 8.x was 4849. In Enterprise Server, the default port is 4848.

`domain.xml` Elements

If you have not configured message-level security providers for a server instance, Application Server 8 applies default configurations from the Domain Administration Server (DAS). Enterprise Server does not apply default configurations. You need to manually introduce the message-level security providers — `ClientProvider` and `ServerProvider` — for each server instance that wants to use message-level security. If you have upgraded from an older version to Enterprise Server, the Upgrade tool does not add these missing elements in the `domain.xml` file.

Deprecated Attributes

The `anonymous-role` attribute is present in the DTD but the use of this attribute is deprecated. This attribute has been removed from the template that generates `domain.xml`. The `forced-response-type` and `default-response-type` attributes are deprecated. Use `forced-type` and `default-type` instead.

System Properties

The default security policy of Enterprise Server does not allow you to change some system properties. For example, in Application Server 8, the read/write permission of `java.util.PropertyPermission` property is `"*, "read,write"`; In Enterprise Server the read/write permission for `java.util.PropertyPermission` is `"*, "read"`;

Implicit URL Rewriting

Application Server 6.x supported implicit URL rewriting, in which the web connector plugin parsed the HTML stream being sent to the browser and appended session IDs to attributes such as `href=` and `frame=`. In Application Server 7,8, and Enterprise Server, this feature is not available. You need to review your applications and use `encodeURL` and `encodeRedirectURL` on every URL that the applications present to clients (such as mobile phones) that do not support cookies.

Web Server Features

The following web-server-specific features are no longer supported in version v2.1.1:

- `cgi-bin, shtml`
- Simple Network Management Protocol (SNMP) support
- Netscape API (NSAPI) plugin APIs
- Native-content-handling features
- Web server tools (`flexanlg, httpasswd`)
- HTTP QoS
- Web server configuration files (`*.conf, *.acl, mime.types`)
- Web server-specific log rotation facility
- Watch dog process (`appserv-wdog`)

Realms

The upgrade tool transfers the realms and role mapping configurations, any custom realm classes, and file-based user keyfiles for each domain. The XML tag, `security-service`, defines the realms and role mapping configuration. This tag is defined in `sun-server_1_0.dtd` and `sun-domain_1_0.dtd`. For Application Server 8, the tag data resides in the `server.xml` and for in Enterprise Server, in `domain.xml`.

The upgrade tool locates the class file defined for custom realms and makes it available to the Enterprise Server environment. The custom realm class is defined in the `class-name` attribute of tag `auth-realm`. In the `security-service` tag, the `default-realm` attribute points to the realm the server is using. It must point to one of the configured `auth-realm` names. The default realm is file. If the class name for `default-realm` cannot be found, the upgrade tool will log this as an error.

The package names of the security realm implementations have been renamed from `com.iplanet.ias.security.auth.realm` in Application Server 8 to `com.sun.enterprise.security.auth.realm` in Enterprise Server. Custom realms written using the `com.iplanet.*` classes must be modified.

The `com.sun.enterprise.security.AuthenticationStatus` class has been removed.

The `com.sun.enterprise.security.auth.login.PasswordLoginModule` `authenticate` method implementation has changed as follows:

```
/**
 * Perform authentication decision.
 * <P> Note: AuthenticationStatus and AuthenticationStatusImpl
 * classes have been removed.
 * Method returns silently on success and returns a LoginException
 * on failure.
 *
 * @return void authenticate returns silently on
 *         successful authentication.
 * @throws LoginException on authentication failure.
 */
abstract protected void authenticate()
    throws LoginException;
```

Sun Deployment Descriptor: sun-web.xml

In Application Server 8, the default value for the optional attribute `delegate` was `false`. In Enterprise Server, this attribute defaults to `true`. This change means that by default the Web application classloader first delegates to the parent classloader before attempting to load a class by itself.

The `encodeCookies` Property

URL encoding of cookies is performed, if the `encodeCookies` property of the `sun-web-app` element in the `sun-web.xml` file is set to `true`. In Application Server 8, the default value of the `encodeCookies` property was `true`. This property was not present in Application Server 8. In Enterprise Server, the default value is `false`.

URL encoding of cookies is unnecessary. Setting this property to `true` is strongly discouraged. This property is provided only for those rare applications that depended on this behavior in Application Server 8.

CORBA Performance Option

In Application Server 8, users were able to specify the following system property to optionally turn on some Object Request Broker (ORB) performance optimization:

```
-Djavax.rmi.CORBA.UtilClass=com.ipplanet.ias.util.orbutil.IasUtilDelegate
```

The ORB performance optimization is turned on, by default, in Enterprise Server. If you are using the preceding system property reference, you must remove it to avoid interfering with the default optimization.

File Formats

In Enterprise Server, `domain.xml` is the main server configuration file. In Application Server 7, the main server configuration file was `server.xml`. The DTD file of `domain.xml` is found in `lib/dtds/sun-domain_1_1.dtd`. The upgrade tool included in Enterprise Server can be used to move from `server.xml` in Application Server 8 to `domain.xml` in Enterprise Server.

The DTD file for Enterprise Server is fully backward compatible with the corresponding file for DTD file for older versions of Application Server.

In general, the configuration file formats are *not* backward compatible. The following configuration files are *not* supported:

- *.conf
- *.acl
- mime.types
- server.xml (replaced by domain.xml)

Cluster Scripts

The `clsetup` and `cladmin` scripts in Application Server 8 are not supported in Enterprise Server. In Enterprise Server, the `asadmin configure-ha-cluster` command replaces the `clsetup` script, and `asadmin` commands that operate on clusters replace the commands supported by the `cladmin` script. For more information about the `asadmin` commands, see the [Sun GlassFish Enterprise Server 2.1.1 Reference Manual](#).

Primary Key Attribute Values

In Application Server 8, it was possible to change any field (in the Admin Console) or attribute (in the Command Line Interface (CLI)). In Enterprise Server, a field or attribute that is the primary key of an item cannot be changed. However, an item can be deleted and then recreated with a new primary key value. In most cases, the primary key is a name, ID, reference, or JNDI name. The following table lists the primary keys that cannot be changed.

Note – In the `domain.xml` file, a field or attribute is called an *attribute*, and an item is called an *element*. For more information about `domain.xml`, see the [Sun GlassFish Enterprise Server v2.1.1 Administration Reference](#).

TABLE 1-1 Primary Key Attributes

Item	Primary Key Field or Attribute
admin-object-resource	jndi-name
alert-subscription	name
appclient-module	name
application-ref	ref
audit-module	name
auth-realm	name
cluster-ref	ref
cluster	name

TABLE 1-1 Primary Key Attributes (Continued)

Item	Primary Key Field or Attribute
config	name
connector-connection-pool	name
connector-module	name
connector-resource	jndi-name
custom-resource	jndi-name
ejb-module	name
external-jndi-resource	jndi-name
http-listener	id
iiop-listener	id
j2ee-application	name
jacc-provider	name
jdbc-connection-pool	name
jdbc-resource	jndi-name
jms-host	name
jmx-connector	name
lb-config	name
lifecycle-module	name
mail-resource	jndi-name
message-security-config	auth-layer
node-agent	name
profiler	name
element-property	name
provider-config	provider-id
resource-adapter-config	resource-adapter-name
resource-ref	ref
security-map	name
server	name
server-ref	ref

TABLE 1-1 Primary Key Attributes (Continued)

Item	Primary Key Field or Attribute
system-property	name
thread-pool	thread-pool-id
virtual-server	id
web-module	name
persistence-manager-factory-resource	jndi-name

Command Line Interface: hadbm

The following table lists options for the command line utility hadbm that are no longer supported. For more information about the hadbm commands, see the [Sun GlassFish Enterprise Server 2.1.1 Reference Manual](#).

TABLE 1-2 Unsupported hadbm Options

Option	Unsupported in Subcommands
--inetdsetup	Not supported for the addnodes subcommand.
--inetd	Not supported for the create subcommand.
--inetdsetupdir	Not supported for the create subcommand.
--configpath	Not supported for the create subcommand.
--set managementProtocol	Not supported for the create subcommand.
--set DataDeviceSize	Not supported for the create or set subcommand.
--set TotalDatadeviceSizePerNode	

Command Line Interface: start-appserv and stop-appserv

The start-appserv and stop-appserv commands are deprecated. Use of these commands results in a warning. Use asadmin start-domain and asadmin stop-domain instead.

In Enterprise Server, the Log Messages to Standard Error field has been removed from the Admin Console. The log-to-console attribute in the domain.xml file is deprecated and ignored. The asadmin set command has no effect on the log-to-console attribute. Use the --verbose option of the asadmin start-domain command to print messages to the window in which you executed the asadmin start-domain command. This option works only if you execute the asadmin start-domain command on the machine that has the domain you are starting.

Command Line Interface: asadmin

The following sections describe changes to the command line utility `asadmin`:

- “`asadmin` Subcommands” on page 17
- “Error Codes for Start and Stop Subcommands” on page 18
- “Deprecated and Unsupported Options” on page 18
- “Dotted Names” on page 19
- “Tokens in Attribute Values” on page 21
- “Nulls in Attribute Values” on page 21

For more information about the `asadmin` commands, see the *Sun GlassFish Enterprise Server 2.1.1 Reference Manual*.

asadmin Subcommands

Subcommands are backward compatible except as noted below.

The `reconfigsubcommand` is deprecated and ignored.

The following subcommands are not supported in Enterprise Server:

- `show-instance-status` (use `list-instances`)
- `restart-instance` (use `stop-instance` followed by `start-instance`)
- `configure-session-persistence` (renamed to `configure-ha-persistence`)
- `create-session-store` (renamed to `create-ha-store`)
- `clear-session-store` (renamed to `clear-ha-store`)

The following subcommands are no longer supported in Enterprise Server. The software license key and web core were removed, and Enterprise Server no longer supports controlled functions from web server features.

- `install-license`
- `display-license`
- `create-http-qos`
- `delete-http-qos`
- `create-mime`
- `delete-mime`
- `list-mime`
- `create-authdb`
- `delete-authdb`
- `list-authdbs`
- `create-acl`
- `delete-acl`
- `list-acls`

Error Codes for Start and Stop Subcommands

For Application Server 8, the error codes for the `start` and `stop` subcommands of the `asadmin` command were based on the desired end state. For example, for `asadmin start -domain`, if the domain was already running, the exit code was 0 (success). If domain startup failed, the exit code was 1 (error).

For Enterprise Server, the exit codes are based on whether the commands execute as expected. For example, the `asadmin start -domain` command returns exit code 1 if the domain is already running or if domain startup fails. Similarly, `asadmin stop -domain` returns exit code 1 if the domain is already not running or cannot be stopped.

Deprecated and Unsupported Options

Options in the following table are deprecated or no longer supported.

TABLE 1-3 Deprecated and Unsupported asadmin Options

Option	Deprecated or Unsupported in Subcommands
<code>--acceptlang</code>	Deprecated for the <code>create-virtual-server</code> subcommand.
<code>--acls</code>	Deprecated for the <code>create-virtual-server</code> subcommand.
<code>--adminpassword</code>	Deprecated for all relevant subcommands. Use <code>--passwordfile</code> instead.
<code>--blockingenabled</code>	Deprecated for the <code>create-http-listener</code> subcommand.
<code>--configfile</code>	Deprecated for the <code>create-virtual-server</code> subcommand.
<code>--defaultobj</code>	Deprecated for the <code>create-virtual-server</code> subcommand.
<code>--domain</code>	Deprecated for the <code>stop-domain</code> subcommand.
<code>--family</code>	Deprecated for the <code>create-http-listener</code> subcommand.
<code>--instance</code>	Deprecated for all remote subcommands. Use <code>--target</code> instead.
<code>--mime</code>	Deprecated for the <code>create-virtual-server</code> subcommand.
<code>--optionsfile</code>	No longer supported for any commands.
<code>--password</code>	Deprecated for all remote subcommands. Use <code>--passwordfile</code> instead.
<code>--path</code>	Deprecated for the <code>create-domain</code> subcommand. Use <code>--domaindir</code> instead.
<code>--resourcetype</code>	Deprecated for all relevant subcommands. Use <code>--restype</code> instead.
<code>--storeurl</code>	No longer supported for any commands.

TABLE 1-3 Deprecated and Unsupported asadmin Options (Continued)

Option	Deprecated or Unsupported in Subcommands
--target	Deprecated for all jdbc-connection-pool, connector-connection-pool, connector-security-map, and resource-adapter-config subcommands.
--type	Deprecated for all relevant subcommands.

Dotted Names

The following use of dotted names in asadmin get and set subcommands are not backward compatible:

- The default server name is server instead of server1.
- server_instance.resource becomes domain.resources.resource.
- server_instance.app-module becomes domain.applications.app-module.
- Attributes names format is different. For example, poolResizeQuantity is now pool-resize-quantity.
- Some aliases supported in Application Server 8 are not supported in Enterprise Server .

In Enterprise Server, the --password-file option of the asadmin command does not read the password.conf file, and the upgrade tool does not upgrade this file. For information about creating a password file in Enterprise Server, see the [Sun GlassFish Enterprise Server v2.1.1 Administration Guide](#).

This table displays a one-to-one mapping of the incompatibilities in dotted names between Application Server 8 and v2.1.1. The compatible dotted names are not listed in this table.

TABLE 1-4 Incompatible Dotted Names Between Versions

Application Server 7 Dotted Names	2.1 Dotted Names
server_instance.http-listener. listener_idserver_instance.http-service. http-listener.listener_id	server_instance.http-service .http-listener.listener_id config_name.http-service .http-listener.listener_id
server_instance.orbserver_instance.iiop-service	server_instance.iiop-serviceconfig_name .iiop-service
server_instance.orblistenerserver_instance .iiop-listener	server_instance.iiop-service .iiop-listener.listener_id config_name.iiop-service .iiop-listener.listener_id

TABLE 1-4 Incompatible Dotted Names Between Versions (Continued)

Application Server 7 Dotted Names	2.1 Dotted Names
<i>server_instance.jdbc-resource.jndi_name</i>	<i>server_instance.resources</i> <i>.jdbc-resource.jndi_name</i> <i>domain.resources.jdbc-resource.jndi_name</i>
<i>server_instance.jdbc-connection-pool.pool_id</i>	<i>server_instance.resources.jdbc-connection-pool.</i> <i>pool_iddomain.resources.</i> <i>jdbc-connection-pool.pool_id</i>
<i>server_instance.external-jndi-resource.</i> <i>jndi_nameserver_instance.</i> <i>jndi-resource.jndi_name</i>	<i>server_instance.resources.</i> <i>external-jndi-resource</i> <i>.jndi_namedomain.resources</i> <i>.external.jndi-resource.jndi_name</i>
<i>server_instance.custom-resource.jndi_name</i>	<i>server_instance.resources.</i> <i>custom-resource.jndi_name</i> <i>domain.resources.custom-resource.jndi_name</i>
<i>server_instance.web-container.logLevel</i> (see note below)	<i>server_instance.log-service.module-</i> <i>log-levels.web-containerconfig_name</i> <i>.log-service.module-log-levels.web-container</i>
<i>server_instance.web-container.</i> <i>monitoringEnabled</i> (see note below)	<i>server_instance.monitoring-service.module-</i> <i>monitoring-levels.web-containerconfig_name</i> <i>.monitoring-service.module</i> <i>-monitoring-levels.web-container</i>
<i>server_instance.j2ee-application.</i> <i>application_nameserver_instance.application.</i> <i>application_name</i>	<i>server_instance.applications.j2ee-</i> <i>application.application_name</i> <i>domain.applications.j2ee-</i> <i>application.application_name</i>
<i>server_instance.ejb-module.ejb-module_name</i>	<i>server_instance.applications.ejb-module</i> <i>.ejb-module_namedomain.</i> <i>applications.ejb-module.ejb-module_name</i>
<i>server_instance.web-module.web-module_name</i>	<i>server_instance.applications.web-module</i> <i>.web-module_namedomain.</i> <i>applications.web-module.web-module_name</i>
<i>server_instance.connector-</i> <i>module.connector_module_name</i>	<i>server_instance.applications.connector</i> <i>-module.connector_module_name</i> <i>domain.applications</i> <i>.connector-module.connector_module_name</i>
<i>server_instance.lifecycle-module.</i> <i>lifecycle_module_name</i>	<i>server_instance.applications.lifecycle</i> <i>-module.lifecycle_module_name</i> <i>domain.application.lifecycle-</i> <i>module.lifecycle_module_name</i>
<i>server_instance.virtual-server-class</i>	N/A*

TABLE 1-4 Incompatible Dotted Names Between Versions (Continued)

Application Server 7 Dotted Names	2.1 Dotted Names
<i>server_instance.virtual-server.virtual-server_id</i>	<i>server_instance.http-service.virtual-server.virtual-server_idconfig_name</i> <i>.http-service.virtual-server.virtual-server_id</i>
<i>server_instance.mime.mime_id</i>	N/A*
<i>server_instance.acl.acl_id</i>	N/A*
<i>server_instance.virtual-server.virtual-server_id.auth-db.auth-db_id</i>	N/A*
<i>server_instance.authrealm.realm_idserver_instance.security-service.authrealm.realm_id</i>	<i>server_instance.security-service.auth-realm.realm_idconfig_name.security-service-auth-realm.realm_id</i>
<i>server_instance.persistence-manager-factory-resource.jndi_nameserver_instance.resources.persistence-manager-factory-resource.jndi_name</i>	<i>server_instance.resources.persistence-manager-factory-resource.jndi_namedomain.resources.persistence-manager-factory-resource.jndi_name</i>
<i>server_instance.http-service.acl.acl_id</i>	N/A*
<i>server_instance.mail-resource.jndi_name</i>	<i>server_instance.resources.mail-resource.jndi_namedomain.resources.mail-resource.jndi_name</i>
<i>server_instance.profiler</i>	<i>server_instance.java-config.profilerconfig_name.java-config.profiler</i>

Tokens in Attribute Values

The `asadmin get` command shows raw values in Enterprise Server instead of resolved values as in Application Server 8. These raw values may be tokens. For example, execute the following command:

```
asadmin get domain.log-root
```

The preceding command displays the following value:

```
#{com.sun.aas.instanceRoot}/logs
```

Nulls in Attribute Values

In Application Server 8, attributes with no values contained null. This caused problems in attributes that specified paths. In Enterprise Server, attributes with no values contain empty strings, as they did in Application Server.

Upgrading an Enterprise Server Installation

The Upgrade tool, which is bundled with Enterprise Server, replicates the configuration of a previously installed server in the target installation. The Upgrade tool assists in upgrading the configuration, applications, and certificate data from an earlier version of the Enterprise Server to Enterprise Server v2.1.1. To view a list of the older versions from which you can upgrade, refer [Table 2-1](#)

This chapter discusses the following topics:

- “Upgrade Overview” on page 23
- “Upgrade Scenarios” on page 27
- “Upgrading Enterprise Server Runtime Binaries” on page 28
- “Upgrading Configuration, Deployed Applications, and Certificate Databases” on page 30
- “Upgrading Node Agents” on page 32
- “Correcting Potential Upgrade Problems” on page 35

Upgrade Overview

You can upgrade file-based installations or package-based installations to Enterprise Server v2.1.1. The following table shows supported Enterprise Server upgrade paths for file-based installations.

In this table, PE indicates Platform Edition and EE indicates Enterprise Edition.

TABLE 2-1 Supported Upgrade Paths

Source Installation	Enterprise Server v2.1.1
Application Server 7.X PE/EE/SE	Not supported
Application Server 8.0 PE	Supported. Upgrade from 8.0 PE domain to v2.1.1 developer domain is supported.

TABLE 2-1 Supported Upgrade Paths (Continued)

Source Installation	Enterprise Server v2.1.1
Application Server 8.1 PE	Supported. Upgrade from 8.1 PE domain to v2.1.1 developer domain is supported.
Application Server 8.1 EE	Supported. Upgrade from 8.1 EE domain to v2.1.1 enterprise domain is supported.
Application Server 8.2 PE	Supported. Upgrade from 8.2 PE domain to v2.1.1 developer domain is supported.
Application Server 8.2 EE	Supported. Upgrade from 8.2 EE domain to v2.1.1 enterprise domain is supported.
Application Server 9.0 PE	Supported. Upgrade from 9.0 PE domain to v2.1.1 developer domain is supported.
Application Server 9.1 or GlassFish v2 developer domain	Supported. You can upgrade from 9.1/GlassFish v2 developer domain to v2.1.1 developer domain.
Application Server 9.1 or GlassFish v2 cluster domain	Supported. You can upgrade from 9.1/GlassFish v2 cluster domain to v2.1.1 cluster domain.
Application Server 9.1 enterprise domain	Supported. You can upgrade from 9.1 enterprise domain to 9.1 Update 1 enterprise domain.
GlassFish v2 Update 1	Supported.
GlassFish v2.1.	Supported.

Note – Only the enterprise profile supports upgrades from Application Server Enterprise Edition 8.x.

The following table shows supported Enterprise Server upgrade paths for package-based installations.

TABLE 2-2 Supported Upgrade Paths (package-based)

Source Installation	Enterprise Server v2.1.1
Java Enterprise System 4 (Application Server 8.1 Update 2)	Upgrade to Java ES 5 Update 1 first. See the Upgrading From Java Enterprise System section for more details.
Java Enterprise System 5 (Application Server 8.2)	Upgrade to Application Server 9.1 IFR, which is included as an optional download. Then, apply the appropriate patch to upgrade to Enterprise Server v2.1.1. See the Upgrading From Java Enterprise System section for more details.

TABLE 2-2 Supported Upgrade Paths (package-based) (Continued)

Source Installation	Enterprise Server v2.1.1
Java Enterprise System 5 Update 1 (Application Server 8.2 Update 2, Application Server 9.1 IFR as optional download)	Upgrade to Application Server 9.1 IFR, which is included as an optional download. Then, apply the appropriate patch to upgrade to Enterprise Server v2.1.1. See the Upgrading From Java Enterprise System section for more details.

Upgrade Tool Interfaces

You can use the tool through the command-line interface (CLI) or the GUI.

To use the Upgrade tool in GUI mode, issue the `asupgrade` command with no options.

To run the Upgrade tool in CLI mode, invoke the `asupgrade` command with the `-c/- - console` option. You can run the upgrade CLI in the interactive or non-interactive mode. If you supply all required arguments when invoking `asupgrade` on the console, the upgrade is performed in non-interactive mode and no further input is required. For a complete list of `asupgrade` options, refer [Table 2-3](#). If you invoke the tool only with the `-c/- - console` option, the tool enters the interactive CLI mode, where the user is asked for a series of inputs.

Note – Ensure that the `-c/- - console` option is the first option in the command line, if you want to run `asupgrade` in CLI mode. Do not run upgrades through the silent installation mode.

Upgrade Terminology

The following are important terms related to the upgrade process:

- **Source Server:** the installation from which you are upgrading to the new version.
- **Target Server:** the installation to which you are upgrading.
- **Domains Root :** the directory where the domains are created. This directory, by default, is the location specified as `AS_DEF_DOMAINS_PATH` in the `asenv.conf` file (on Solaris) or the `asenv.bat` file (on Windows).
- **Domain Directory or *domain-dir*:** the directory (within the Domains Root) corresponding to a specific domain. All the configuration and other data pertaining to the domain exists in this directory.
- **Install Root:** the directory where the Application Server is installed.
- **Administration User Name:** Name of the user who administers the server. This term refers to the admin user of the Application Server installation from which you want to upgrade.
- **Password:** Administration user's password to access the Domain Administration Server (DAS)(8-character minimum) of the Application Server installation from which you want to upgrade.

- **Master Password:** SSL certificate database password used in operations such as Domain Administration Server startup. This term refers to the master password of the Application Server installation from which you want to upgrade.

Upgrade Tool Functionality

The Upgrade Tool migrates the configuration, deployed applications, and certificate databases from an earlier version of the Application Server to the current version. The Upgrade Tool does not upgrade the binaries of the Application Server. The installer is responsible for upgrading the binaries. Database migrations or conversions are also beyond the scope of this upgrade process.

Only those instances that do not use Sun GlassFish Web Server-specific features are upgraded seamlessly. Configuration files related to HTTP path, CGI bin, SHTML, and NSAPI plug-ins are not be upgraded.

Note – Before starting the upgrade process, make sure that you stop all server instances, node agents, and domains (in that order) in the source server (the server from which you are upgrading) and the target server (the server to which you are upgrading).

Migration of Deployed Applications

Application archives (EAR files) and component archives (JAR, WAR, and RAR files) that are deployed in the Application Server 8.x environment do not require any modification to run on Enterprise Server.

Applications and components that are deployed in the source server are deployed on the target server during the upgrade. Applications that do not deploy successfully on the target server must be deployed manually on the target server by the user1

If a domain contains information about a deployed application and the installed application components do not agree with the configuration information, the configuration is migrated as is without any attempt to reconfigure the incorrect configurations.

Upgrade of Clusters

In Application Server 8.x, the clusters are defined in the `domain.xml` file and there is no need to specify clusters separately. Another notable difference is that in Application Server 8.x, all the instances within a cluster reside within the same domain and therefore, in the same `domain.xml` file.

Transfer of Certificates and Realm Files

The Upgrade tool transfers certificates from the source certificate database to the target. The tool transfers security policies, password files from standard, file-based realms, and custom realm classes.

Upgrade Verification

An upgrade log records the upgrade activity. The upgrade log file is named as the `upgrade.log` and is created in the domains root where the upgrade is carried out.

After you have upgrade a domain, you can see a file whose name is in the following format: `upgradedTo<releasename>`. For example, a domain that has been upgraded to 9.1 Update 1 will have a file called `upgradeTo91` in its `config` folder.

Upgrade Rollback

If an upgrade in progress is cancelled, the configuration before the upgrade was started is restored.

Note – You can cancel the upgrade process only if you are running the Upgrade Tool in GUI mode.

Upgrade Scenarios

The upgrade scenarios are as follows:

- [“Side-by-Side Upgrade” on page 27](#)
- [“In-Place Upgrade” on page 28](#)

Side-by-Side Upgrade

The source server and the target server are installed on the same machine, but under different install locations. You can choose to perform this type of upgrade if you wish to have the configuration corresponding to these installations on the same machine in different locations.

A side-by-side upgrade involves the following sequence of tasks

1. [“Upgrading Enterprise Server Runtime Binaries” on page 28](#)
2. [“Upgrading Configuration, Deployed Applications, and Certificate Databases” on page 30.](#)
3. [“To Upgrade Remote Node Agents \(Side-by-side\)” on page 33](#) (only if you have remote agents in the source application server).

If all existing node agents (from the source application server installation) run on a single machine, the upgrade tool automatically detects node agents, if any, on the source installation.

In-Place Upgrade

The target server is installed in the same installation location as the source server. You can choose to perform this type of upgrade if you wish to install the configuration (that is, the domains) in the same location as before. In this scenario, you install the binaries in the same location as the existing binaries using the installer.

Note – For an in-place upgrade from Sun Java System Application Server 9.1, 9.1 Update1, 9.1 Update 2 to Enterprise Server v2.1.1, do not use the `asupgrade` utility. It is sufficient to upgrade the runtime binaries by using the installer. After upgrading the binaries to Enterprise Server v2.1.1, start the domain with the `asadmin start-domain` command.

An in-place upgrade involves the following sequence of tasks:

1. “Upgrading Enterprise Server Runtime Binaries” on page 28
2. “Upgrading Configuration, Deployed Applications, and Certificate Databases” on page 30.
3. “To Upgrade Remote Node Agents (In-place)” on page 32 (only if you have remote agents in the source application server).

If all existing node agents (from the source application server installation) run on a single machine, the upgrade tool automatically detects node agents, if any, on the source installation.

Upgrading Enterprise Server Runtime Binaries

The Upgrade tool does not update the runtime binaries of the server. The Upgrade tool upgrades the configuration information and deployed applications of a previously installed server. Before you run the Upgrade tool to upgrade the configuration data, you need to upgrade the runtime binaries. You can upgrade the binaries in one of the following ways:

- “Upgrading the Runtime Binaries of a File-Based Installation of Application Server” on page 28
- “Upgrading the Runtime Binaries of a Package-Based Installation of Application Server” on page 29

Upgrading the Runtime Binaries of a File-Based Installation of Application Server

Use the Enterprise Server file-based installer to install the target application server binaries. You can install in-place (in the same location as your earlier installation) or side-by-side (in a different location). For instructions on how to use the file-based installer, see [Sun GlassFish Enterprise Server v2.1.1 Installation Guide](#).

After installing the target application server binaries, run the `asupgrade` command for “Upgrading Configuration, Deployed Applications, and Certificate Databases” on page 30.

Upgrading the Runtime Binaries of a Package-Based Installation of Application Server

Patches for the Solaris operating system and the Linux operating system are available from the SunSolveSM program site (<http://sunsolve.sun.com>).

▼ To Upgrade a Package-Based Installation of Application Server 9.1 Update 1

This procedure applies to package-based upgrades to Enterprise Server v2.1.1.

- 1 Stop all instances, node agents, clusters, and domains in the source application server.
- 2 Download the appropriate patch from the SunSolve program site (<http://sunsolve.sun.com>).

The patches are available at the following locations on SunSolve:

- Sun GlassFish Enterprise Server v2.1.1 (Solaris SPARC, SVR4) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128640-08-1>)
- Sun GlassFish Enterprise Server v2.1.1 (Solaris x86, SVR4) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128641-08-1>)
- Sun GlassFish Enterprise Server v2.1.1 (Solaris x86, File-based) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128648-08-1>)
- Sun GlassFish Enterprise Server v2.1.1 (Linux, Package-based) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128642-08-1>)
- Sun GlassFish Enterprise Server v2.1.1 (Linux, File-based) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128649-08-1>)
- Sun GlassFish Enterprise Server v2.1.1 (AIX, File-based) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-137916-07-1>)
- Sun GlassFish Enterprise Server v2.1.1 (Windows, File-based) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128650-08-1>)
- Sun GlassFish Enterprise Server v2.1.1 with HADB (Solaris SPARC, File-based) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128643-08-1>)
- Sun GlassFish Enterprise Server v2.1.1 with HADB (Solaris x86, File-based) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128644-08-1>)
- Sun GlassFish Enterprise Server v2.1.1 with HADB (Linux, File-based) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128645-08-1>)
- Sun GlassFish Enterprise Server v2.1.1 with HADB (Windows, File-based) (<http://sunsolve.sun.com/search/document.do?assetkey=1-21-128646-08-1>)

- 3 On the machine where the application server is installed, log in as root or become superuser.

4 Apply the patch.

`patchadd patch-id`

patch-id is the patch. For example, `/var/sadm/spool/patch/128640-08-01`

5 Start the server.

Next Steps Run the `asupgrade` command for “Upgrading Configuration, Deployed Applications, and Certificate Databases” on page 30.

Then, log in to the Admin Console. You can register your installation of application server with [Sun Connection \(http://www.sun.com/service/sunconnection/index.jsp\)](http://www.sun.com/service/sunconnection/index.jsp) from the Admin Console by clicking Common Tasks -> Registration. For detailed instructions for registering the Enterprise Server with Sun Connection, see TBDlink.

Upgrading Configuration, Deployed Applications, and Certificate Databases

You cannot perform an upgrade if the source and target server file systems, specifically the domain root file system, are not accessible from the same machine. To perform the upgrade, the user who runs the upgrade needs to have Read permissions for the source and target directories and Write permission for the target directory.

Note – Ensure that you have stopped all instances, node agents, clusters, and domains in the source Application Server before you start the upgrade process. Do not run the `asupgrade` utility if you are upgrading from Sun Java System Application Server 9.x.

For upgrading your installation you can choose:

- “To Upgrade From the Command Line” on page 30
- “To Upgrade by Using the Upgrade Tool Wizard” on page 31

To Upgrade From the Command Line

To run Upgrade Tool in command-line mode, use the `-c` option. You can run the upgrade tool in command-line mode using the following syntax:

```
asupgrade
[ --console ]
[ --version ]
[ --help ]
```

```
[--source applicationserver_installation_domaindirectory]
[--target enterpriseserver_v2.1.1_installation]
[--adminuser enterpriseserver_v2.1.1_admin_user_name]
[--passwordfile passwords.txt]
```

The following table describes the command options in greater detail, including the short form, the long form, and a description.

TABLE 2-3 asupgrade Utility Command Options

Short Form	Long Form	Description
-c	--console	Launches the upgrade command line utility.
-v or -V	--version	The version of the Upgrade Tool.
-h	--help	Displays the arguments for launching the upgrade utility.
-t	--target	The domains directory of the Application Server 9.1 Update 1 installation.
-s	--source	The installation directory of the older Application Server installation.
-a	--adminuser	The admin user for the source server.
-f	--passwordfile	The file containing the admin password and the master password.

The following examples show how to use the `asupgrade` command-line utility to upgrade an existing application server installation to Enterprise Server v2.1.1.

This example shows how to perform a side-by-side upgrade of a Sun GlassFishApplication Server 8.x installation to Enterprise Server v2.1.1.

```
asupgrade -c --source /home/sunas8.2/domains/domain1 --target /home/sjsas9.1/domains
```

▼ To Upgrade by Using the Upgrade Tool Wizard

To start the wizard,

- On UNIX, change to the `<install_dir>/bin` directory and type `asupgrade`.
- On Windows, double click the `asupgrade` icon in the `<install_dir>/bin` directory.

If the Upgrade checkbox was selected during the Enterprise Server installation process, the Upgrade Wizard screen automatically displays after the installation completes.

- 1 **In the Source Installation Directory field, enter the location of the existing installation from which to import the configuration. Enter the domain directory.**

For example, `as-install/domains/domain1`

- 2 In the **Target Installation Directory** field, enter the location of the Enterprise Server installation to which to transfer the configuration. Provide the domains root directory of the target Application Server installation as the input to this field.
- 3 Provide the admin user name, the admin password, and master password of the source application server. The target domain is created with these credentials.
- 4 The **Upgrade Results** panel is displayed showing the status of the upgrade operation.
- 5 Click the **Finish** button to close the Upgrade Tool when the upgrade process is complete.

Next Steps To upgrade node agents, see [“Upgrading Node Agents” on page 32](#). After you complete the upgrade, start the Application Server using the `asadmin start-domain` command. Log on to the Admin Console. You can register your installation of application server from the Admin Console by clicking **Common Tasks -> Registration**. For step-by-step instructions on the registration process, click the **Help** button on the Admin Console.

Upgrading Node Agents

The upgrade tool automatically detects clusters, if any, on the source installation.

If all existing node agents (from the source application server installation) run on a single machine, the upgrade tool automatically detects node agents, if any, on the source installation. The user need not take any special action. If you have remote node agents running on other machines, use the following steps to perform the upgrade.

- [“To Upgrade Remote Node Agents \(In-place\)” on page 32](#)
- [“To Upgrade Remote Node Agents \(Side-by-side\)” on page 33](#)

▼ To Upgrade Remote Node Agents (In-place)

- 1 Perform the upgrade to Enterprise Server v2.1.1 on Machine A by [“Upgrading Enterprise Server Runtime Binaries” on page 28](#) and [“Upgrading Configuration, Deployed Applications, and Certificate Databases” on page 30](#).
- 2 Install Enterprise Server v2.1.1 on Machine B without the DAS but with the Node Agent feature.

Note – Machine A is the primary machine. It runs the DAS. Machine B is a secondary machine, which is not running the DAS. Machine B runs remote node agents that are configured to communicate with Machine A.

- 3 On Machine A, start each node agent using the `start-node-agent` command with the `--syncinstances` option. This option resynchronizes all associated instances. Example:
`asadmin start-node-agent --user admin --syncinstances nodeagent1`
- 4 On Machine B, start each node agent using the `start-node-agent` command with the `--syncinstances` option. This option resynchronizes all associated instances

▼ To Upgrade Remote Node Agents (Side-by-side)

- 1 Perform the upgrade to Enterprise Server v2.1.1 on Machine A by [“Upgrading Enterprise Server Runtime Binaries” on page 28](#) and [“Upgrading Configuration, Deployed Applications, and Certificate Databases” on page 30](#).
- 2 Install Enterprise Server v2.1.1 on Machine B without the DAS but with the Node Agent feature.

Note – Machine A is the primary machine. It runs the DAS. Machine B is a secondary machine, which is not running the DAS. Machine B runs remote node agents that are configured to communicate with Machine A.

- 3 Check the value of the `agent.das.port` property in the `das.properties` file before starting the node agent for the first time. Perform this check on the `das.properties` file on Machine B. The value of the `agent.das.port` property must reflect the same value as the `jmx-connector` port defined in the `domain.xml` file on Machine A.

There are two ways to determine this port number:

- It is displayed as part of the message for the `start-domain(1)` command run on the DAS machine. Look for the following line in the command output of `asadmin start-domain`:
`[service:jmx:rmi:///jndi/rmi://comet:8686/jmxrmi]` for domain management purposes. This line indicates that the JMX port number is 8686.
- It is recorded in the domain's `domain.xml` file on the Machine A. Find the `admin-service` element with `das-and-server` attribute type. Look at the `jmx-connector` sub-element for this element and find the attribute `port`. The value of this attribute is the port number of the JMX port.

Edit the `agent.das.port` property in the `das.properties` file on Machine B, as required.

- 4 Check the value of the `agent.bind.status` property in the `nodeagent.properties` file before starting the node agent for the first time. Perform this check on the `nodeagent.properties` file on Machine B. The value of the `agent.bind.status` property must be `BOUND`. Edit the `agent.bind.status` property in the `nodeagent.properties` files on Machine B, as required.
- 5 On Machine A, start each node agent using the `start-node-agent` command.

- 6 On Machine B, start each node agent using the `start-node-agent` command.
- 7 If you are using non-default admin ports, you must additionally perform the following steps:

Before you perform these steps, ensure that you start the node agents so that the required configuration files are created. However, the startup of node agents will not be successful.

 - a. **Change directory to the node agents config directory** (*as-install/nodeagents/nodeagent-name/agent/config*). **Edit the `das.properties` file. The value of `agent.das.port` property is the admin port number of the DAS machine with which this node-agent communicates. Edit this value to match the value of the `jmxrmi` port number of the DAS machine.**

There are two ways to find the `jmxrmi` port number:

 - The DAS' `start-domain` command output displays the `jmxrmi` value. Look for the following line: `Standard JMX Clients (like JConsole) can connect to JMXServiceURL: [service:jmx:rmi:///jndi/rmi://comet:8696/jmxrmi]` for domain management purposes. The `jmxrmi` port is 8696. Set `agent.das.port` to this value.
 - Search the `domain.xml` file in the appropriate domain on the DAS machine. Find element `admin-service` element with `das-and-server` attribute type. Look at the `jmx-connector` sub-element for this element and find the attribute `port`. The value of this attribute is the port number of the `jmxrmi` port. Update the property value, save, and exit the file
 - b. **Edit the `nodeagent.properties` file. If the `agent.bind.status` property is set to `UNBOUND`, change the value to `BOUND`. Save and exit the file.**
- 8 Start the node agent. The `--syncinstances=true` option need not be used.

After You Upgrade

After you upgrade to Enterprise Server v2.1.1, to ensure that the Admin Console works as expected, you need to perform the following steps.

▼ To Remove Duplicate Admin GUI JAR Files

- 1 **Navigate to `as-install/lib/install/applications/admingui/adminGUI_war/WEB-INF/lib`.**
- 2 **List the contents of the directory.**

On UNIX platforms, use the `ls -l` command.

- 3 **Remove the following older JAR files:** `jsftemplating-dynafaces-0.1.jar` and `jsftemplating.jar`
- 4 **Rename the newer** `jsftemplating-dynafaces-0.1-1.0.jar` and `jsftemplating-1.2-SAILFIN.jar` **as** `jsftemplating-dynafaces-0.1.jar` and `jsftemplating.jar`, **respectively**
- 5 **Restart the domain and log into Admin Console.**

Correcting Potential Upgrade Problems

This section addresses the following issues that could occur during an upgrade to Enterprise Server:

- “Cluster Profile Security Setting” on page 35
- “_TimerPool Resource” on page 36
- “Missing Client JAR Files” on page 36
- “Applications that Use JavaDB” on page 36
- “classpath-prefix and classpath-suffix Not Transferred” on page 37
- “JVM Options That are Not Transferred” on page 37
- “Port Conflicts” on page 37
- “Single Domain with Multiple Certificate Database Passwords” on page 38
- “Load balancer Plug-in Problems During Side-by-Side Upgrade” on page 38
- “Additional HTTP Listeners ” on page 39
- “Additional HTTP and IIOP Listeners ” on page 39

Cluster Profile Security Setting

When you upgrade a cluster domain from Application Server 9.1/GlassFish v2 to Enterprise Server v2.1.1, you could encounter problems because the security setting is incorrect for the `admin-service` whose `type` attribute is `das-and-server` in the `target-domain.xml`. The solution is to edit the `domain.xml` file in the corresponding upgraded domain and correct the setting of the `security-enabled` attribute. Look for the following statements in the `domain.xml` file.

```
<admin-service system-jmx-connector-name="system" type="das-and-server">
<!-- The JSR 160 "system-jmx-connector"-->
<jmx-connector accept-all="false" address="0.0.0.0"
auth-realm-name="admin-realm" enabled=true" name="system" port="8686"
protocol="rmi_jrmp" security-enabled="true">
```

Cluster Profile Upgrade on Windows

On Windows, when you upgrade cluster profile domains, you could encounter the following error:

```
Fatal error while backing up the domain directory
```

To resolve this error, look for and remove any hidden files in the source domain's directory and run Upgrade tool.

`_`TimerPool Resource

The `datasource` class used for a `jdbc-connection-pool` resource named `_TimerPool` has changed from `org.apache.derby.jdbc.EmbeddedXADataSource` in Application Server 8.x EE to `org.apache.derby.jdbc.ClientDataSource` in Application Server 9.1 Update 1. This change requires a addition of two property elements, `User` and `Password` to the `jdbc-connection-pool` element in the `domain.xml` file. Edit the Application Server 9.1 Update 1 `domain.xml` file and add the appropriate user name and password. Example:

```
<property name="User" value="APP"/> <property name="Password" value="APP"/>
```

Missing Client JAR Files

You have deployed applications that use client JARs in Application Server 8.x. You upgrade your existing installation to Enterprise Server v2.1.1. You could run into problems while trying to run these applications (that were deployed in Application Server 8.x) in Enterprise Server v2.1.1.

To solve this problem, perform the following steps:

1. After upgrade, start Enterprise Server v2.1.1.
2. Use the `asadmin get-client-stubs` command to transfer the missing client stubs to a local directory. See [get-client-stubs\(1\)](#).
3. Run the appclient pointing to the client JAR files in the local directory.

Applications that Use JavaDB

You have deployed applications that use JavaDB databases in Application Server 8.x. You upgrade your existing installation to Enterprise Server v2.1.1. You run the `asadmin start-database` command and successfully start JavaDB. In this scenario, you could run into problems while trying to run these applications (that were deployed in Application Server 8.x) in Enterprise Server v2.1.1 because the instance directory of JavaDB in Enterprise Server v2.1.1 has changed.

To solve this problem, perform the following steps:

1. After upgrade, start Enterprise Serverv2.1.1.
2. Use the `asadmin start-database` command with `--dbhome` option pointing to older (Application Server 8.x) version of JavaDB. Example `asadmin start-database --dbhome /home/johnsmith/appserver8.2/databases`
3. Deploy the migrated applications.

classpath-prefix and classpath-suffix Not Transferred

Upgrade tool may fail to transfer `java-config` attributes, `classpath-suffix`, `classpath-prefix`, `java-home`, or `server-classpath`, because the information provided can be implementation-specific. Certain attributes may be partially transferred.

JVM Options That are Not Transferred

When you upgrade from a previous version of the application server, transfer of the previous configuration is required. Since the target configuration files may have new parameters and new preconfigured features, copying the old configuration files to the new server installation is not possible. The values of the old configurations must be transferred to the Enterprise Serverv2.1.1 configuration format.

The following JVM options are not transferred from the source to the target installation:

- `Dorg.xml.sax.driver`
- `Dcom.sun.jdo.api.persistence.model.multipleClassLoaders`
- `Djava.util.logging.manager`
- `Dcom.sun.aas.imqLib`
- `Dcom.sun.aas.imqBin`
- `Dcom.sun.aas.webServicesLib`
- `Dcom.sun.aas.configRoot 8. Xmx<...>m`

The options that are not transferred are listed down in the upgrade log. The user can manually change such attributes in the configuration file.

Port Conflicts

After upgrading the source server to Enterprise Serverv2.1.1, start the domain and then the node agent, which, by default, starts the server instances. If you have upgraded from Application Server 8.x EE, you might face problems while attempting to start the node agent. The domain, clusters, and instances have admin port set to 4849 and the node agent points to 4848. You need to manually modify the admin port to which the node agent points. To change the node agent port, edit the `agent.das.port` property in the `install_dir/nodeagents/node-agent-name/server_name/config/das.properties` file.

Start the Admin Console and verify that these servers are started. If any of the servers are not running, in the `install_dir/nodeagents/node-agent-name/server_name/logs/server.log` file, check for failures that are caused by port conflicts. If there are any failures due to port conflicts, use the Admin Console and modify the port numbers so there are no more conflicts. Stop and restart the node agent and servers.

Note – The default ports in Enterprise Server are:

- 4848 for admin port
 - 8080 for HTTP Instance (DAS instance)
 - 7676 for JMS
 - 3700 for IIOP
 - 8181 for HTTP_SSL.
 - 3820 for IIOP_SSL
 - 3920 for IIOP_MUTUALAUTH
 - 8686 for JMX_ADMIN
-

Single Domain with Multiple Certificate Database Passwords

If the upgrade includes certificates, provide the passwords for the source PKCS12 file and the target JKS keyfile for each domain that contains certificates to be migrated. Since Application Server 8 uses a different certificate store format (NSS) than that of Application Server 8 PE (JSSE), the migration keys and certificates are converted to the new format. Only one certificate database password per domain is supported. If multiple certificate database passwords are used in a single domain, make all of the passwords the same before starting the upgrade. Reset the passwords after the upgrade has been completed.

Load balancer Plug-in Problems During Side-by-Side Upgrade

While upgrading from Application Server 8.x EE to Enterprise Server v2.1.1, during a side-by-side upgrade, you will not be able to point your new load balancer plug-in to the old 8.x web server installation, if the load balancer plug-in is colocated with other Application server components on a single system. You need to install web server again and point the older load balancer plug-in installation to the instance belonging to the new installation.

▼ Additional HTTP Listeners

If additional HTTP listeners have been defined in the source server, those listeners need to be added to the target server after the upgrade:

- 1 Start the Admin Console.
- 2 Expand Configuration.
- 3 Expand HTTP Service.
- 4 Expand Virtual Servers.
- 5 Select <server>.
- 6 In the right hand pane, add the additional HTTP listener name to the HTTP Listeners field.
- 7 Click Save when done.

▼ Additional HTTP and IIOP Listeners

If additional HTTP listeners or IIOP listeners have been defined in the source server, the IIOP ports must be manually updated for the target EE servers before any clustered instances are started. For example, `MyHttpListener` was defined as an additional HTTP listener in `server1`, which is part of the cluster. The other instances in the cluster also have the same HTTP listener, because server instances are symmetrical in a cluster. In the target configuration named `<cluster_name>-config`, this listener must be added with its port set to a system property, `{myHttpListener_HTTP_LISTENER_PORT}`. In the target server, each server instance in this cluster that uses this configuration would have system property named `myHttpListener_HTTP_LISTENER_PORT`. The value of this property for all server instances is set to the port value in the source server, `server1`. These system properties for these server instances must be manually updated with nonconflicting port numbers before the server is started.

If additional HTTP listeners have been defined in the source server, those listeners need to be added to the target server after the upgrade:

- 1 Start the Admin Console.
- 2 Expand Configuration and select the appropriate `<server>-config` configuration.
- 3 Expand HTTP Service.
- 4 Expand Virtual Servers.

- 5 **Select** *<server>*.
- 6 **In the right hand pane, add the additional HTTP listener name(s) to the HTTP Listeners field.**
- 7 **Click Save when done.**

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