



# Sun GlassFish Enterprise Server 2.1 Release Notes



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

Part No: 820-4329-20  
January 2010

Copyright 2010 Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology embodied in the product that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more U.S. patents or pending patent applications in the U.S. and in other countries.

U.S. Government Rights – Commercial software. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

This distribution may include materials developed by third parties.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, the Solaris logo, the Java Coffee Cup logo, docs.sun.com, Java, Java, and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. or its subsidiaries in the U.S. and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

Products covered by and information contained in this publication are controlled by U.S. Export Control laws and may be subject to the export or import laws in other countries. Nuclear, missile, chemical or biological weapons or nuclear maritime end uses or end users, whether direct or indirect, are strictly prohibited. Export or reexport to countries subject to U.S. embargo or to entities identified on U.S. export exclusion lists, including, but not limited to, the denied persons and specially designated nationals lists is strictly prohibited.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

---

Copyright 2010 Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 U.S.A. Tous droits réservés.

Sun Microsystems, Inc. détient les droits de propriété intellectuelle relatifs à la technologie incorporée dans le produit qui est décrit dans ce document. En particulier, et ce sans limitation, ces droits de propriété intellectuelle peuvent inclure un ou plusieurs brevets américains ou des applications de brevet en attente aux Etats-Unis et dans d'autres pays.

Cette distribution peut comprendre des composants développés par des tierces personnes.

Certains composants de ce produit peuvent être dérivés du logiciel Berkeley BSD, licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays; elle est licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, le logo Solaris, le logo Java Coffee Cup, docs.sun.com, Java, Java et Solaris sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc., ou ses filiales, aux Etats-Unis et dans d'autres pays. Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciés de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui, en outre, se conforment aux licences écrites de Sun.

Les produits qui font l'objet de cette publication et les informations qu'il contient sont régis par la législation américaine en matière de contrôle des exportations et peuvent être soumis au droit d'autres pays dans le domaine des exportations et importations. Les utilisations finales, ou utilisateurs finaux, pour des armes nucléaires, des missiles, des armes chimiques ou biologiques ou pour le nucléaire maritime, directement ou indirectement, sont strictement interdites. Les exportations ou réexportations vers des pays sous embargo des Etats-Unis, ou vers des entités figurant sur les listes d'exclusion d'exportation américaines, y compris, mais de manière non exclusive, la liste de personnes qui font objet d'un ordre de ne pas participer, d'une façon directe ou indirecte, aux exportations des produits ou des services qui sont régis par la législation américaine en matière de contrôle des exportations et la liste de ressortissants spécifiquement désignés, sont rigoureusement interdites.

LA DOCUMENTATION EST FOURNIE "EN L'ETAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFACON.

# Overview

---

Sun GlassFish™ Enterprise Server product is a Java™ Platform, Enterprise Edition (Java EE) 5 platform-compatible server for the development and deployment of Java EE applications and Java Web Services. Production use of this server is free of charge. Sun GlassFish Enterprise Server is free for development, deployment, and redistribution. If you are a customer who is interested in redistribution, contact [Sun OEM](#) sales for a redistribution license.

The Sun GlassFish Enterprise Server is an easy, fast, and industry-leading application server based on Java Platform, Enterprise Edition (Java EE) technology for developing and delivering web applications and web services. It provides superior performance, clustering, and high availability features for scalable, carrier-grade services that continue to operate despite software and hardware faults.

- [“About These Notes” on page 3](#)
- [“Accessibility Features” on page 4](#)
- [“Related Documentation” on page 5](#)
- [“How to Report Problems and Provide Feedback” on page 5](#)
- [“Sun Welcomes Your Comments” on page 6](#)
- [“Additional Sun Resources” on page 6](#)

## About These Notes

These Release Notes contain important information available at the time of release of Sun GlassFish Enterprise Server. Enhancements, known problems, and other late-breaking issues are addressed here. Read this document before you begin using Enterprise Server.

The most up-to-date version of these release notes can be found at the Enterprise Server [documentation web site \(http://docs.sun.com/coll/1343.6\)](http://docs.sun.com/coll/1343.6). Check the web site prior to installing and setting up your software and then periodically thereafter to view the most up-to-date release notes and product documentation.

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

---

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

---

## Release Notes Revision History

This section lists the changes that have been made in these release notes after the initial release of the Sun GlassFish Enterprise Server product.

TABLE 1-1 Release Notes Revision History

Revision Date	Description
January 2009	FCS release of the Enterprise Server product.
February 2009	Added the following known issues: 6739013, 6207337, 6739013, and 6741572
May 2009	Added support for Red Hat Enterprise Linux 4 and 5 as being supported platforms for HADB.  Added bug 6831429 to known issues for upgrade.  Added a link to description of enterprise profile in Features Not Supported on the Linux Operating System for SUSE Linux.
July 2009	Added bug 6808339 to known issues for documentation.  Added statement about support for service packs.
October 2009	Added bug 6879701 to known issues for administration.
November 2009	Added bug 6881540 to Known issues for documentation.
January 2010	Added text to clarify support for 32-bit and 64-bit platforms.

## Accessibility Features

To obtain accessibility features that have been released since the publishing of this media, consult Section 508 product assessments available from Sun upon request to determine which versions are best suited for deploying accessible solutions. Updated versions of applications can be found at: <http://sun.com/software/javaenterprisesystem/get.html>

For information on Sun's commitment to accessibility, visit <http://www.sun.com/accessibility/index.jsp>.

## Related Documentation

TABLE 1-2 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>Deployment Planning guide</i>	Deployment planning and setup.
<i>Upgrade guide</i>	Upgrading from an older version of the product to Enterprise Server 2.1.
<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.
<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.

## How to Report Problems and Provide Feedback

If you have problems with Sun GlassFish Enterprise Server, contact Sun using one of the following mechanisms:

- [GlassFish mailing lists \(https://glassfish.dev.java.net/servlets/ProjectMailingListList\)](https://glassfish.dev.java.net/servlets/ProjectMailingListList) — A variety of GlassFish community mailing lists for various interests and feedback
  - [Bug database on Java Developer Connection \(http://developer.java.sun.com/servlet/SessionServlet?url=/developer/bugParade/index.jshtml\)](http://developer.java.sun.com/servlet/SessionServlet?url=/developer/bugParade/index.jshtml) — To view bugs or to submit a bug, use the Java Developer Connection Bug Parade
  - [Bug database on Java Developer Connection \(http://developer.java.sun.com/servlet/SessionServlet?url=/developer/bugParade/index.jshtml\)](http://developer.java.sun.com/servlet/SessionServlet?url=/developer/bugParade/index.jshtml) — To view bugs or to submit a bug, use the Java Developer Connection Bug Parade
  - [GlassFish Issue Tracker \(https://glassfish.dev.java.net/servlets/ProjectIssues\)](https://glassfish.dev.java.net/servlets/ProjectIssues)
  - [Java Technology Forums \(http://forum.java.sun.com/\)](http://forum.java.sun.com/) — An interactive message board for sharing knowledge and questions about Java technologies and programming techniques.
  - [Sun Software Support services \(http://www.sun.com/service/sunone/software\)](http://www.sun.com/service/sunone/software) — Links to the Knowledge Base, Online Support Center, and Product Tracker, as well as to maintenance programs and support contact numbers
  - The telephone dispatch number associated with your maintenance contract
- So that we can best assist you in resolving problems, please have the following information available when you contact support:
- Description of the problem, including the situation where the problem occurs and its impact on your operation
  - Machine type, operating system version, and product version, including any patches and other software that might be affecting the problem
  - Detailed steps on the methods you have used to reproduce the problem
  - Any error logs or core dumps

## Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions.

To share your comments, go to <http://docs.sun.com> and click Feedback. In the online form, provide the document title and part number. The part number is a seven-digit or nine-digit number that can be found on the title page of the book or at the top of the document. For example, the title of this book is *Sun GlassFish Enterprise Server 2.1 Release Notes*, and the part number is 820-4329-14.

## Additional Sun Resources

Useful information can be found at the following locations:

- [Enterprise Server product information \(http://www.sun.com/software/products/appsrvr/home\\_appsrvr.html\)](http://www.sun.com/software/products/appsrvr/home_appsrvr.html)

- Professional Services (<http://www.sun.com/service/sunps/sunone>)
- Software Products and Service (<http://www.sun.com/software>)
- Software Support Services (<http://www.sun.com/service/sunone/software>)
- Support and Knowledge Base (<http://www.sun.com/service/support/software>)
- Sun Support and Training Services (<http://training.sun.com>)
- Consulting and Professional Services (<http://www.sun.com/service/sunps/sunone>)
- Developer Information (<http://developers.sun.com>)
- Sun Developer Support Services (<http://www.sun.com/developers/support>)
- Software Training (<http://www.sun.com/training>)
- Sun Software Data Sheets (<http://www.sun.com/software>)
- Sun Microsystems product documentation (<http://docs.sun.com/>)





# About Sun GlassFish Enterprise Server

---

Enterprise Server is a Java EE 5 platform-compatible server for the development and deployment of Java EE applications and Java technology-based web services in large-scale production environments.

This chapter includes:

- “What's New in Sun GlassFish Enterprise Server 2.1” on page 9
- “Sun GlassFish Enterprise Server Features” on page 10
- “Hardware and Software Requirements” on page 13
- “Using the Update Center” on page 26

## What's New in Sun GlassFish Enterprise Server 2.1

**Bug fixes and enhancements** – To view the complete list of bugs fixed in the release, see the [GlassFish IssueTracker](#) and [bugs.sun.com](#). The following table lists some of the bugs fixed in this release.

Bug ID	Description
6571044	Unable to start domain , missing sunpkcs11 . jar
6165528	Domains created in custom-path other than <i>as-install/domains</i> directory are not upgraded directly
6742432	Synchronization issue in FileDirContext
6655731	monitor command doesn't work in AIX
6669339	Adminui throws 500 status when enabling call flow
6681941	Reload changes the context-uri to application name

Bug ID	Description
6719403	Diagnostic report files are huge (MBs) due to bundling admin-gui application
6654360	Could not start domain when domain created using cluster profile
6664315	asadmin monitor command will not allow the monitoring of clustered instances
6768817	User-defined load balancer does not work on Windows.
6655568	Generated granted.policy file gets truncated when you redeploy the application
6670488	System properties which have not been overridden do not show up in the cluster
6663524	Company name field in registration installer UI
6705325	Unable to synchronize applications across instance
6726167	JSP compilation does not take into consideration delegate=false

---

## Sun GlassFish Enterprise Server Features

These features were introduced in Sun Java System Application Server 9.1. Sun GlassFish Enterprise Server includes the following features:

- **Registration with Sun Connection** — You can use the installer, the Admin Console GUI, or the Update Center to register the product with **Sun Connection** (<http://www.sun.com/service/sunconnection/index.jsp>). By registering the Enterprise Server with Sun Connection you receive benefits such as:
  - Patch information and bug updates
  - Screencasts and tutorials
  - News and events
  - Support and training offerings
- **AIX operating system support** — Enterprise Server is supported on the AIX operating system for domains that are created with the developer profile or the cluster profile.

---

**Note** – The enterprise profile is not supported on the AIX operating system because HADB and NSS are not supported on the AIX operating system.

---

- **Ubuntu operating system support** — Enterprise Server is bundled with the Ubuntu Linux operating system.

---

**Note** – Installation information in the Enterprise Server documentation set is not relevant to this operating system. The enterprise profile is not supported on the Ubuntu Linux operating system because HADB and NSS are not supported on the Ubuntu Linux operating system.

---

- **SUSE Linux 64-bit support**
- **Multilevel relationship prefetching support**— Multilevel relationship prefetching for container-managed persistence (CMP) 2.1 entity beans is now supported. For more information, see [“Enabling Multilevel Relationship Prefetching” on page 27](#).
- **Enhanced JBI support** — You can update a JBI component through the Admin Console GUI or from the command line without the need to redeploy any service assemblies that are already deployed.
- **Java EE 5 platform support** — Sun GlassFish Enterprise Server implements the Java EE 5 specification to deliver one of the best application runtimes for next-generation enterprise applications and web services. Enterprise Server implements the following Java EE standards:
  - Enterprise Java Beans 3.0
  - JAXB 2.0
  - Java Persistence
  - Java Server Faces 1.2
  - Java Server Pages 2.1 (JSP 2.1)
  - Java Server Pages Standard Tag Library (JSTL) 1.2
  - Streaming API for XML (StAX)
  - Web Services Metadata
  - Java API for XML based Web Services 2.0 (JAX-WS 2.0)
  - Common Annotations for the Java Platform 1.0 (CAJ 1.0)
  - Java Servlet 2.5

The complete list of Java EE 5 platform technologies is provided later in these notes.

- **Web Services Interoperability Technologies (WSIT) support** – Sun is working closely with Microsoft to ensure interoperability of Web services enterprise technologies such as message optimization, reliable messaging, and security. The initial release of WSIT is a product of this joint effort. WSIT is an implementation of a number of open web services specifications to support enterprise features. In addition to message optimization, reliable messaging, and security, WSIT includes a bootstrapping and configuration technology. Starting with the core XML support currently built into the Java platform, WSIT uses or extends existing features and adds new support for interoperable web services, including:
  - Bootstrapping and Configuration
  - Message Optimization Technology
  - Reliable Messaging Technology
  - Security Technology

See “[More About WSIT Integration](#)” on page 28 later in this chapter for more information about WSIT integration in Enterprise Server.

- **JBI support** – JBI extends Java EE with business integration Service Provider Interfaces (SPI). These SPI enable developers to create or implement a Java business integration environment for specifications such as WSCI, BPEL4WS and the W3C Choreography Working Group. A JBI implementation is installed directly by the Enterprise Server installer, mostly in the *as-install/jbi* directory. This directory contains all common JAR files and system components for the JBI including a *lifecycle* module that starts the JBI framework in the Enterprise Server JVM.
- **In-memory replication support** – In-memory replication on other servers provides lightweight storage of session state data without the need to obtain a separate database, such as HADB. This type of replication uses memory on other servers for high availability storage of HTTP session and stateful session bean data. Clustered server instances replicate session state in a ring topology. Each backup instance stores the replicated data in memory. Replication of session state data in memory on other servers enables sessions to be distributed. The use of in-memory replication requires the Group Management Service (GMS) to be enabled (which is true by default).
- **Usage profiles** – Every administrative domain is associated with a usage profile, which identifies the capabilities of that domain. Enterprise Server provides the following profiles:
  - *Developer* – Use this profile if you are running your domain in a development environment and if your applications do not need clustering features, such as load balancing, high availability, and session replication. Note that the actual name of the profile is “*developer*” (case sensitive).
  - *Cluster* – Use this profile if you want to create clusters of application server instances imparting scalability and high availability to the deployed Java EE applications. The state of the applications is persisted *in-memory*. Note that the actual name of the profile is “*cluster*” (case sensitive).
  - *Enterprise* – Use this profile if you need HADB and NSS. This profile is not usable unless you install HADB and NSS separately or install the Enterprise Server as part of the Java Enterprise System (Java ES).
- **Load balancing enhancements** – Several enhancements have been added to the load balancing plugin. Briefly, these include
  - *Weighted Round Robin* – An optional attribute called *weight* has been added to the instance *Loadbalancer.xml* file. This option enables the load balancer plugin to route requests according to the weight. For example, for every 500 requests, 100 will go to *instance1* and 400 would go to *instance2*. The default weight is 100. The weight is assigned to each instance from the admin console or command line, and the server *domain.xml* has an attribute for every instance indicating the weight.
  - *User-Defined Load Balancer Decision* – Enables users to define custom logic for load balancing; for example, user identity-based redirects and mime-based load balancing. This feature is implemented by means of a user-defined shared library that gets loaded

by the load balancer. This custom shared library implements the interface as defined in `loadbalancer.h`, which is placed in `as-install/lib/install/templates/`.

- **Administration Enhancements** – Previous versions of Enterprise Server required that the `loadbalancer.xml` file be manually copied to the particular server's `config` directory. Enterprise Server includes push automations for performing such copies between the Web server and Enterprise Server. The load balancer itself is configured in the server's `domain.xml` file.
- **Open Source and GlassFish Community** — In June 2005, Sun launched the [GlassFish](http://java.sun.com/javaee/glassfish/) (<http://java.sun.com/javaee/glassfish/>) community with the goal of developing a free, open source, commercial-grade application server that implements the newest features of the Java EE 5 platform and related enterprise technologies. Enterprise Server is based on the source code developed by Sun engineers and the GlassFish community.
- **Update Center Support** – The Enterprise Server Update Center provides automated Enterprise Server updates and easy access to additional components. See “[Using the Update Center](#)” on page 26 for more information.

## Hardware and Software Requirements

This section lists the requirements that must be met before installing Sun GlassFish Enterprise Server.

- “[Supported Platforms](#)” on page 13
- “[Important Patch Information](#)” on page 16
- “[JDK Version](#)” on page 16
- “[To Switch to the Supported Java SE Version](#)” on page 16
- “[Apache Ant Version](#)” on page 17
- “[JDBC Drivers and Databases](#)” on page 17
- “[Using the Bundled Java DB Database](#)” on page 18
- “[Message Queue Versions](#)” on page 19
- “[Web Servers](#)” on page 19
- “[Browsers](#)” on page 20
- “[HADB Requirements and Supported Platforms](#)” on page 20
- “[Upgrading the Enterprise Server](#)” on page 21
- “[Other Requirements](#)” on page 21

### Supported Platforms

All supported operating systems are 32-bit unless indicated otherwise. The 64-bit JDK is supported only on 64-bit supported operating systems.

The following table lists the operating systems with which the Sun GlassFish Enterprise Server 2.1 is compatible.

**Note** – The table lists the minimum required version of each supported operating system.

**TABLE 2-1** Supported Operating Systems

Operating System	Minimum Memory	Recommended Memory	Minimum Disk Space	Recommended Disk Space	JVM
Sun Solaris 9, 10 (SPARC)  Solaris 9, 10 (x86)	512 MB	512 MB	250 MB free	500 MB free	J2SE 5.0  Java SE 6
64-bit Sun Solaris 10 (SPARC, x86)	512 MB	512 MB	250 MB free	500 MB free	J2SE 5.0  Java SE 6
Red Hat Enterprise Linux 3.0 Update 1, 4.0, and 5.x	512 MB	1 GB	250 MB free	500 MB free	J2SE 5.0  Java SE 6
64-bit Red Hat Enterprise Linux 5.x	512 MB	1 GB	250 MB free	500 MB free	J2SE 5.0  Java SE 6
SUSE Linux Enterprise Server 10 SP1	512 MB	1 GB	250 MB free	500 MB free	J2SE 5.0  Java SE 6
64-bit SUSE Linux Enterprise Server 10 SP1	512 MB	1 GB	250 MB free	500 MB free	J2SE 5.0  Java SE 6
Ubuntu Linux, Hardy Release  Supported only as a developer platform.	512 MB	1 GB	250 MB free	500 MB free	J2SE 5.0  Java SE 6
AIX 5.2, 5.3	512 MB	1 GB	250 MB free	500 MB free	J2SE 5.0

TABLE 2-1 Supported Operating Systems (Continued)

Operating System	Minimum Memory	Recommended Memory	Minimum Disk Space	Recommended Disk Space	JVM
Windows 2000 SP4+ Advanced Server SP4+ Windows Server 2003, 2008 Windows XP Pro SP1+ Windows Vista Windows 2008	1 GB	2 GB	500 MB free	1 GB free	J2SE 5.0 Java SE 6
Macintosh OS 10.4, 10.5 (Intel, Power) Supported only as a developer platform.	512 MB	512 MB	250 MB free	500 MB free	Java SE 5
OpenSolaris Evaluation support only	512 MB	512 MB	250 MB free	500 MB free	Java SE 5 Java SE 6

---

**Note** – Its recommended that you use the NTFS file system rather than FAT or FAT32 when running the Enterprise Server on any Microsoft Windows platform.

---

On UNIX™, you can check your operating system version using the `uname` command. Disk space can be checked using the `df` command.

---

**Note** – Although Mac OS is not supported for production deployments, it is supported for development purposes. You can get information on downloading the Macintosh operating system from the GlassFish downloads page, or through the SDK page where Mac is listed. For example, on the Java EE 5 SDK Update 5 download page [https://cds.sun.com/is-bin/INTERSHOP.enfinity/WFS/CDS-CDS\\_Developer-Site/en\\_US/-/USD/ViewProductDetail-Start?ProductRef=java\\_ee\\_sdk-5\\_05-nojdk-oth-JPR@CDS-CDS\\_Developer](https://cds.sun.com/is-bin/INTERSHOP.enfinity/WFS/CDS-CDS_Developer-Site/en_US/-/USD/ViewProductDetail-Start?ProductRef=java_ee_sdk-5_05-nojdk-oth-JPR@CDS-CDS_Developer).

---

## System Virtualization Support

System virtualization is a technology that enables multiple operating system (OS) instances to execute independently on shared hardware. Functionally, software deployed to an OS hosted in a virtualized environment is generally unaware that the underlying platform has been virtualized. Sun performs testing of its Sun Java System products on select system virtualization and OS combinations to help validate that the Sun Java System products continue to function on properly sized and configured virtualized environments as they do on non-virtualized systems. For information about Sun support for Sun Java System products in virtualized environments, see [System Virtualization Support in Sun Java System Products](#).

## Important Patch Information

### Solaris Patch Requirements

It is recommended that Solaris 10 (x86, SPARC) users have the “Sun recommended patch cluster” installed. This patch cluster is available under “Recommended and Security Patches” on the SunSolve (<http://sunsolve.sun.com/pub-cgi/show.pl?target=patchpage>) Web site.

### JDK Version

The minimum (and certified) version of JDK required for Enterprise Server is 1.5.0\_14.

## ▼ To Switch to the Supported Java SE Version

You can switch to a supported Java SE version by editing the `asenv` file as described here.

### 1 If you have not already done so, install the new Java SE version on your system.

The Java SE SDK can be downloaded from <http://java.sun.com/javase>

### 2 Stop the Enterprise Server.

- From the command line:  
`install_dir/bin/asadmin stop-domain`
- From the Administration Console:
  - a. Click the Application Server node.
  - b. Click Stop Instance.

### 3 Edit the `install_dir/config/asenv.conf` file (`asenv.bat` on Windows), changing the value for `AS_JAVA` to point to the new Java home directory:

### 4 Edit the `as-install/samples/common.properties` file, changing the line beginning `com.sun.aas.javaRoot...` to reference the new Java home directory.

### 5 Restart the Application Server.



- From the command line:
 

```
as-install/bin/asadmin start-domain
```
- From the Administration Console:
  - a. Click the Application Server node.
  - b. Click Start Instance.

### Apache Ant Version

Version **1.6.5** of Apache Ant is bundled with Enterprise Server on all operating systems except Ubuntu Linux. Version **1.7.0** of Apache Ant is bundled with Ubuntu Linux and used with Enterprise Server .

### JDBC Drivers and Databases

[Table 2–2](#) lists databases and drivers that meet the Java EE compatibility requirements. All supported configurations of the Sun GlassFish Enterprise Server must contain at least one database/driver combination from this table, such as the bundled Java DB database and driver. In addition, the Enterprise Server is designed to support JDBC connectivity to any additional DBMS with a corresponding JDBC driver.

**TABLE 2–2** Java EE-Compatible JDBC Drivers

JDBC Driver Vendor	JDBC Driver Type	Supported Database Server
Derby Network Client	Type 4	Derby 10.2
DataDirect 3.6.x, 3.7.x	Type 4	Oracle 10g Oracle 9i Sybase ASE 12.5, 15 MS SQL 2000, 2005 DB2 9.1 DB2 8.1, 8.2
MySQL Connector/J Driver 5.1.6	Type 4	MySQL 5.0
Oracle 10G	Type 4	Oracle 10g -RAC
PostGres	Type 4	8.2.x

[Table 2–3](#) lists all the additional databases and drivers scheduled to be supported in the Enterprise Server FCS release.

TABLE 2-3 Supported JDBC Drivers and Databases (Enterprise Server FCS)

JDBC Driver Vendor	JDBC Driver Type	Supported Database Server
Oracle OCI	Type 2	Oracle 9i
IBM DB2	Type 2	DB2 9.1

In general, the Enterprise Server 2.1 supports all JDBC drivers that meet the Java EE specification.

### Using the Bundled Java DB Database

This section provides instructions for using the Java DB database implementation bundled with Enterprise Server 2.1. Java DB is based on the [Apache Derby database](#).

- “Starting and Stopping the Java DB Database” on page 18
- “Java DB Utility Scripts” on page 18

### Starting and Stopping the Java DB Database

Sun GlassFish Enterprise Server has the following `asadmin` commands for starting and stopping the Java DB Network Server.

- Use the `asadmin start-database` command to start an instance of the Java DB network server:

```
asadmin start-database [--dbhost 0.0.0.0] [--dbport 1527] [--dbhome path]
```

The default value for the host is `0.0.0.0`, which enables Java DB to listen on `localhost` as well as the IP/hostname interfaces. The value for the `dbhome` property is the location of where the Java DB databases reside. The default path is `as-install/javadb`.

- Use the `asadmin stop-database` command to shut down a running instance of the Java DB network server:

```
asadmin stop-database [--dbhost 0.0.0.0] [--dbport 1527]
```

### Java DB Utility Scripts

The Java DB configuration that is supplied with Enterprise Server 2.1 includes scripts that can help you use Java DB. The following scripts are available for use in the `as-install/javadb/bin` directory:

- `startNetworkServer`, `startNetworkServer.bat`— Script to start the network server
- `stopNetworkServer`, `stopNetworkServer.bat`— Script to stop the network server
- `ij`, `ij.bat`— Interactive JDBC scripting tool
- `dblook`, `dblook.bat`— Script to view all or part of the DDL for a database
- `sysinfo`, `sysinfo.bat`— Script to display versioning information about the Java DB environment

- `NetworkServerControl`, `NetworkServerControl.bat` — Script which provides a means of executing commands on the `NetworkServerControl` API

## ▼ To Configure Your Environment to Run the Java DB Utility Scripts

- 1 Ensure that the `JAVA_HOME` environment variable specifies the directory where the JDK is installed.
- 2 Set the `DERBY_HOME` environment variable to point to the `as-install/javadb` directory.

**See Also** For more information about these utilities, see the following Derby documentation:

- [Derby Tools and Utilities Guide \(http://db.apache.org/derby/docs/10.1/tools/\)](http://db.apache.org/derby/docs/10.1/tools/)
- [Derby Server and Administration Guide \(http://db.apache.org/derby/docs/10.1/adminguide/\)](http://db.apache.org/derby/docs/10.1/adminguide/)

### Message Queue Versions

For file-based installations, Message Queue 4.3 is co-packaged with Enterprise Server. For UNIX package-based installations, Message Queue 4.1.1, which is functionally equivalent to 4.3, is provided. Despite the version numbering, Message Queue 4.1.1 is actually backward-compatible with Message Queue 4.2.

The embedded Sun GlassFish Message Queue code that is supplied as part of Enterprise Server is only tested and certified (typically) against the equivalent version of the Message Queue broker. This means that using the supplied embedded Message Queue code to connect to a remote (not managed by Enterprise Server) Message Queue broker running a different version of the Message Queue code is not supported.

### Web Servers

This section lists the web servers that are supported for the Sun GlassFish Enterprise Server.

TABLE 2-4 Supported Web Servers

Web Server	Version	Operating System
Sun Java System Web Server (32-bit)	6.1, 7.0	Solaris SPARC 8, 9, 10 Solaris x86 9, 10 Red Hat Enterprise Linux 2.1 Update 2, 3.0 Update 1
Apache Web Server (32-bit)	2.0.x, 2.2.x	Solaris SPARC 9, 10 Solaris x86 10 Red Hat Enterprise Linux 2.1 Update 2, 3.0 Update 1

TABLE 2-4 Supported Web Servers (Continued)

Web Server	Version	Operating System
Microsoft IIS (32-bit)	5.0+	Windows Server 2003 Windows 2000 Advanced Server Service Pack 4+

Only 32-bit platforms are supported.

## Browsers

This section lists the browsers that are supported with the Sun GlassFish Enterprise Server 2.1.

TABLE 2-5 Supported Web Browsers

Browser	Version
Mozilla	1.7.12
Internet Explorer	6.0 Service Pack 2, 7.0
Firefox	1.5.x, 2.x
Safari	2
Netscape	8.0.4, 8.1, 9.0, 9.0.x

## HADB Requirements and Supported Platforms

In addition to the requirements listed in “[Hardware and Software Requirements](#)” on page 13, verify that your system meets the requirements listed below for running HADB.

- “[Supported Platforms](#)” on page 20
- “[HADB Server Host Requirements](#)” on page 21
- “[HADB Management Host Requirements](#)” on page 21
- “[HADB Client Host Requirements](#)” on page 21

---

**Note** – HADB is only bundled with the Enterprise Server 2.1 Enterprise profile. Also note that the Java components of the system have been built with JDK 5 and has been tested on JDK 1.5.

---

## Supported Platforms

- **Solaris (SPARC).** – Solaris 8 MU7, Solaris 9 MU7, Solaris 10 RR.
- **Solaris (x86).** – Solaris 9 MU7, Solaris 10 RR.
- **Red Hat Enterprise Linux.** 2.1 U5 (only ext2 file system is supported, not ext3). 3.0 U4 (both ext2 and ext3 are supported. Updates before U4 are not recommended due to excessive swapping.) Note that HADB is tested on these operating system versions in 32-bit mode only. Also, note that HADB does not support Red Hat Enterprise Linux 3.0 running in

64-bit mode due to a bug in the operating system (see known bug 6249685 in the “[High Availability](#)” on page 45 section for details about impact on HADB). Versions 4 and 5 are also supported.

- **Microsoft Windows.** – Microsoft Windows 2000 Advanced Server Service Pack 4 and Microsoft Windows 2003 Enterprise Edition. Note that HADB does not support any of the forthcoming Microsoft Windows operating system versions in 64-bit mode.

#### HADB Server Host Requirements

- **Minimum memory** - 320 MB per node.
- **Minimum free disk space** - 70 MB for HADB binaries per host. In addition, disk space is needed for the data devices, 512 MB for a test installation per node.
- **Recommended memory** - 512 MB per node.
- **Recommended free disk space** - 70 MB for HADB binaries per host. In addition, disk space is needed for the data devices, 1200 MB for a test installation per node.

---

**Note** – Make sure write caching is disabled on devices storing HADB data and log files. Write caching is enabled by default on some Solaris platforms; for example, Solaris x86.

---

#### HADB Management Host Requirements

- **Minimum memory** - 128 MB
- **Minimum free disk space** - 70 MB for HADB binaries per node

#### HADB Client Host Requirements

- **Minimum memory** - 120 MB
- **Minimum free disk space** - 20 MB

#### Upgrading the Enterprise Server

Refer to the *Sun GlassFish Enterprise Server 2.1 Upgrade guide* for complete instructions for upgrading from a previous version of the Enterprise Server to the current version.

#### Other Requirements

The following additional requirements should be met before installing the Sun GlassFish Enterprise Server software.

- **Free space:** your temporary directory must have a minimum of 35MB free for Sun GlassFish Enterprise Server installation, and 250 MB of free space for the SDK installation.
- **Using the uninstall program:** If you need to remove the Enterprise Server from your system, it is important to use the uninstall program that is included with the software. If you attempt to use another method, problems will arise when you try to reinstall the same version, or when you install a new version.

- **Free ports:** You must have seven unused ports available. The installation program automatically detects ports in use and suggests currently unused ports for the default domain. By default, the initial default ports are:
  - 8080 for HTTP, 8181 for HTTPS
  - 3700 for IIOP, 3820 for IIOP/SSL and 3920 for IIOP/SSL with Mutual Authentication
  - 4848 (HTTP) for the Administration Server
  - 8686 (RMI) port for pure JMX Clients

**Starting previously-installed servers** (UNIX) — unless you are replacing the previously installed server, you should start it before you begin the Sun GlassFish Enterprise Server 2.1 installation process. This allows the installation program to detect ports that are in use and avoid assigning them for other uses.

- **Replacing previously-installed servers** (UNIX) — Refer to the *Sun GlassFish Enterprise Server 2.1 Upgrade guide* for complete instructions for upgrading from a previous version of the Enterprise Server.
- **Shutting down firewall** (Microsoft Windows) — You must stop any firewall software before installing the Sun GlassFish Enterprise Server software, because some of this software disables all ports by default. The installation program must be able to accurately determine which ports are available.

For further compatibility information, see the *Sun GlassFish Enterprise Server 2.1 Upgrade guide*.

## Java EE 5 Platform APIs

The Sun GlassFish Enterprise Server 2.1 supports the Java EE 5 platform. The following table lists the enhanced APIs available on the Java EE 5 platform.

TABLE 2-6 Major API changes on the Java EE 5 Platform

API	JSR
<b>Java EE 5</b>	
Java Platform, Enterprise Edition 5 ( <a href="http://java.sun.com/javaee/5/docs/api/">http://java.sun.com/javaee/5/docs/api/</a> )	JSR 244 ( <a href="http://jcp.org/aboutJava/communityprocess/pr/jsr244/">http://jcp.org/aboutJava/communityprocess/pr/jsr244/</a> )
<b>Web Services Technologies</b>	
Implementing Enterprise Web Services	JSR 109 ( <a href="http://jcp.org/en/jsr/detail?id=109">http://jcp.org/en/jsr/detail?id=109</a> )
Java API for XML-Based Web Services (JAX-WS) 2.0 ( <a href="https://jax-ws.dev.java.net/">https://jax-ws.dev.java.net/</a> )	JSR 224 ( <a href="http://jcp.org/en/jsr/detail?id=224">http://jcp.org/en/jsr/detail?id=224</a> )
Java API for XML-Based RPC (JAX-RPC) 1.1 ( <a href="https://jax-rpc.dev.java.net/">https://jax-rpc.dev.java.net/</a> )	JSR 101 ( <a href="http://jcp.org/en/jsr/detail?id=101">http://jcp.org/en/jsr/detail?id=101</a> )

TABLE 2-6 Major API changes on the Java EE 5 Platform (Continued)

API	JSR
Java Architecture for XML Binding (JAXB) 2.0 ( <a href="https://jaxb.dev.java.net/">https://jaxb.dev.java.net/</a> )	JSR 222 ( <a href="http://jcp.org/en/jsr/detail?id=222">http://jcp.org/en/jsr/detail?id=222</a> )
SOAP with Attachments API for Java (SAAJ) ( <a href="https://saaj.dev.java.net/">https://saaj.dev.java.net/</a> )	JSR 67 ( <a href="http://jcp.org/en/jsr/detail?id=67">http://jcp.org/en/jsr/detail?id=67</a> )
Streaming API for XML ( <a href="http://java.sun.com/webservices/docs/1.6/tutorial/doc/SJSXP.html">http://java.sun.com/webservices/docs/1.6/tutorial/doc/SJSXP.html</a> )	JSR 173 ( <a href="http://jcp.org/en/jsr/detail?id=173">http://jcp.org/en/jsr/detail?id=173</a> )
Web Service Metadata for the Java Platform	JSR 181 ( <a href="http://jcp.org/en/jsr/detail?id=181">http://jcp.org/en/jsr/detail?id=181</a> )
<b>Component Model Technologies</b>	
Enterprise JavaBeans 3.0 ( <a href="http://java.sun.com/products/ejb/">http://java.sun.com/products/ejb/</a> )	JSR 220 ( <a href="http://jcp.org/en/jsr/detail?id=220">http://jcp.org/en/jsr/detail?id=220</a> )
J2EE Connector Architecture 1.5 ( <a href="http://java.sun.com/j2ee/connector/">http://java.sun.com/j2ee/connector/</a> )	JSR 112 ( <a href="http://jcp.org/en/jsr/detail?id=112">http://jcp.org/en/jsr/detail?id=112</a> )
Java Servlet 2.5 ( <a href="http://java.sun.com/products/servlet/">http://java.sun.com/products/servlet/</a> )	JSR 154 ( <a href="http://jcp.org/en/jsr/detail?id=154">http://jcp.org/en/jsr/detail?id=154</a> )
JavaServer Faces 1.2 ( <a href="http://java.sun.com/j2ee/javaserverfaces/">http://java.sun.com/j2ee/javaserverfaces/</a> )	JSR 252 ( <a href="http://jcp.org/en/jsr/detail?id=252">http://jcp.org/en/jsr/detail?id=252</a> )
JavaServer Pages 2.1 ( <a href="http://java.sun.com/products/jsp/">http://java.sun.com/products/jsp/</a> )	JSR 245 ( <a href="http://jcp.org/en/jsr/detail?id=245">http://jcp.org/en/jsr/detail?id=245</a> )
JavaServer Pages Standard Tag Library 1.2 ( <a href="http://java.sun.com/products/jsp/jstl/">http://java.sun.com/products/jsp/jstl/</a> )	JSR 52 ( <a href="http://jcp.org/en/jsr/detail?id=52">http://jcp.org/en/jsr/detail?id=52</a> )
<b>Management Technologies</b>	
J2EE Management ( <a href="http://java.sun.com/j2ee/tools/management/">http://java.sun.com/j2ee/tools/management/</a> )	JSR 77 ( <a href="http://jcp.org/en/jsr/detail?id=77">http://jcp.org/en/jsr/detail?id=77</a> )
J2EE Application Deployment ( <a href="http://java.sun.com/j2ee/tools/deployment/">http://java.sun.com/j2ee/tools/deployment/</a> )	JSR 88 ( <a href="http://jcp.org/en/jsr/detail?id=88">http://jcp.org/en/jsr/detail?id=88</a> )
Java Authorization Contract for Containers ( <a href="http://java.sun.com/j2ee/javaacc/">http://java.sun.com/j2ee/javaacc/</a> )	JSR 115 ( <a href="http://jcp.org/en/jsr/detail?id=115">http://jcp.org/en/jsr/detail?id=115</a> )
<b>Other Java EE Technologies</b>	
Common Annotations for the Java Platform	JSR 250 ( <a href="http://jcp.org/en/jsr/detail?id=250">http://jcp.org/en/jsr/detail?id=250</a> )
Java Transaction API (JTA) ( <a href="http://java.sun.com/products/jta/">http://java.sun.com/products/jta/</a> )	JSR 907 ( <a href="http://jcp.org/en/jsr/detail?id=907">http://jcp.org/en/jsr/detail?id=907</a> )
JavaBeans Activation Framework (JAF) 1.1 ( <a href="http://java.sun.com/products/javabeans/glasgow/jaf.html">http://java.sun.com/products/javabeans/glasgow/jaf.html</a> )	JSR 925 ( <a href="http://jcp.org/en/jsr/detail?id=925">http://jcp.org/en/jsr/detail?id=925</a> )

TABLE 2-6 Major API changes on the Java EE 5 Platform (Continued)

API	JSR
JavaMail ( <a href="http://java.sun.com/products/javamail/">http://java.sun.com/products/javamail/</a> )	JSR 919 ( <a href="http://jcp.org/en/jsr/detail?id=919">http://jcp.org/en/jsr/detail?id=919</a> )
Java Message Service API ( <a href="http://java.sun.com/products/jms/">http://java.sun.com/products/jms/</a> )	JSR 914 ( <a href="http://www.jcp.org/en/jsr/detail?id=914">http://www.jcp.org/en/jsr/detail?id=914</a> )
Java Persistence API ( <a href="http://java.sun.com/j2ee/persistence/faq.html">http://java.sun.com/j2ee/persistence/faq.html</a> )	JSR 220 ( <a href="http://www.jcp.org/en/jsr/detail?id=220">http://www.jcp.org/en/jsr/detail?id=220</a> )

## Java EE 5 SDK

Sun GlassFish Enterprise Server 2.1 is available as part of the Java EE 5 SDK.

There are two Java EE 5 SDK versions:

- Java Application Platform SDK (<http://java.sun.com/javaee/downloads/>)
- Java EE 5 SDK (<http://java.sun.com/javaee/downloads/index.jsp>)

In addition, you can download these SDK distributions with the JDK or with the NetBeans 5.5.1 tools. For more information, access the download page at <http://java.sun.com/javaee/downloads/index.jsp>.

---

**Note** – GlassFish v2.1 and Enterprise Server 2.1 *does not work* with NetBeans 5.5 for developing Java EE applications. You *must* use NetBeans 5.5.1.

---

## Switching to Another Supported Java Version

Sun GlassFish Enterprise Server 2.1 requires Java SE 5.0 or greater as the underlying JVM. If you want to switch from one Java version to another, perform the following general steps. (Windows and Unix)

---

**Note** – Downgrading to an earlier Java version is not recommended after a domain has been created with a newer Java VM. If you must downgrade your JVM, it is recommended that you do it on a per-domain basis. The following procedure describes how to do this.

---

### ▼ To Switch to Another Supported Java Version

- 1 Download the desired Java SDK (not the JRE) and install it on your system, if you have not already done so.

The Java SDK can be downloaded from <http://java.sun.com/j2se>.



**2 Start the domain for which you want to change the JDK:**

```
as-install/bin/asadmin start-domain domain-name
```

**3 Log in to the Admin console and change the JVM attributes for the domain.**

In particular, you may want to change the JAVA\_HOME variable on the JVM Settings page for the domain.

Alternatively, you can use the asadmin command:

```
as-install/bin/asadmin set "server.java-config.java-home=Path-To-Java-Home"
```

**Known Java ES 5 Compatibility Issues**

There are two known compatibility issues between Enterprise Server 2.1 and Java ES 5 (JES5).

1. The JES5 Service Registry is not compatible with Enterprise Server 2.1 because of the JSF 1.2 version provided by Enterprise Server 2.1. The Service Registry needs to be upgraded to JES5u1 prior the Enterprise Server upgrade to 2.1. This limitation is also documented in the Service Registry documentation.
2. The JES5 Portal Server is not compatible with Enterprise Server 2.1 because of the JSF 1.2 version provided by Enterprise Server 2.1. Portal Server needs to be upgraded to JES5u1 prior the 2.1 upgrade to 2.1.

On a Java ES 5 setup that has Portal Server on Enterprise Server 8.2, upgrading Enterprise Server 8.2 to 2.1 makes the Portal Server unusable. Enterprise Server 2.1 uses JSF 1.2, but the JSF-Portlet bridge in Release 5 Portal Server does not support JSF 1.2. On Solaris/Linux the Portal Server needs to be upgraded to JavaES5 Update 1. On Windows do not upgrade Enterprise Server to 2.1 if you want to continue using the Release 5 Portal Server, as Portal Server is not supported in Java ES 5 Update 1 on Windows.

**Features Not Supported on All Operating Systems**

Some features of the Enterprise Server are not supported on all operating systems. Details about these features are provided in the subsections that follow.

**Features Not Supported on the AIX Operating System**

If you are using the AIX operating system, the following limitations apply:

- Enterprise Server 2.1 is supported on the AIX operating system *only* for domains that are created with the developer profile or the cluster profile. The enterprise profile is *not* supported on the AIX operating system because HADB and NSS are not supported on the AIX operating system.
- For the AIX operating system, the native launcher is not available.

**Features Not Supported on the Linux Operating System**

If you are using the Linux operating system, the following limitations apply:

- For the SUSE Linux 64-bit operating system and RHEL 64-bit operating system on 64-bit JVM, the native application server launcher is not available. Use 32-bit JVM instead.
- For the SUSE Linux 64-bit operating system and RHEL 64-bit operating system on 64-bit JVM, the installer is not available. Use 32-bit JVM instead.
- The enterprise profile is *not* supported on the following platforms:

---

**Note** – For a description of the supported profiles, see “Usage Profiles” in *Sun GlassFish Enterprise Server 2.1 Administration Guide*.

---

- Red Hat Enterprise Linux 64-bit operating system and 64-bit JVM
- SUSE Linux 64-bit operating system and 64-bit JVM

### Features Not Supported on the Ubuntu Operating System

If you are using the Ubuntu Linux operating system, the following limitations apply:

- Because Enterprise Server 2.1 is bundled with the Ubuntu Linux operating system, installation information in the Enterprise Server 2.1 documentation set is not relevant to this operating system.
- The enterprise profile is *not* supported on the Ubuntu Linux operating system because HADB and NSS are not supported on the Ubuntu Linux operating system.

## Using the Update Center

The Update Center provides automated Enterprise Server updates and easy access to additional components.

When the Update Center is enabled, it performs an automated software update. During this automated update process, the Update Center collects and transmits the following data to Sun Microsystems (or its service provider):

- Unique installation ID (GUID)
- IP address
- Operating system information (name, version, architecture, locale)
- JDK version
- Module download information (module name, date, time, status, download time, number of bytes downloaded)

No personally identifiable information is tracked. No personally identifiable information is associated with any other data or used for reporting purposes.

## ▼ To Use the Update Center

To ensure explicit agreement of the automated update, the Update Center is disabled by default. To enable the Update Center to perform periodic checks and automated updates:

### 1 Start the Update Center.

- On Unix: `<installdir>/updatecenter/bin/updatetool`
- On Windows: `<installdir>\updatecenter\bin\updatetool.bat`

### 2 Select the Preferences tab.

### 3 In the Update Scheduling window, change the Check for Updates drop-down box value from Never (Manual) to a desired value. For example, daily or weekly.

### 4 Specify the desired day of the week and time of the day for the update.

### 5 Select the Save button to save your changes.

The Update Center will now automatically check for Enterprise Server component updates according to the schedule specified. When an update is available, the Update Center will launch and notify you of the component available to update.

## Upgrading the Enterprise Server on the Ubuntu Operating System

On the Ubuntu Linux operating system, installing GlassFish v2 does not override an existing installation of GlassFish v1. The `asadmin` script in `/usr/bin` administers GlassFish v2. To administer GlassFish v1, use its local `asadmin` utility in `/usr/share/sunappserver/bin`. To upgrade the v1 domain to v2, use the `asupgrade` tool located in `/usr/share/glassfishv2/bin`.

Using the global `asadmin` script to start a v1 domain results in the upgrade tool being invoked automatically. However, this causes an error due to a bug that uses the default domain location of the server for other (non-Ubuntu) platforms. To avoid this error, use the `asupgrade` tool instead.

## Enabling Multilevel Relationship Prefetching

Multilevel relationship prefetching is supported for CMP 2.1 entity beans.

To enable multilevel relationship prefetching, set the following property:

```
-Dcom.sun.jdo.spi.persistence.support.sqlstore.MULTILEVEL_PREFETCH=true
```

For more information about relationship prefetching, see “[Relationship Prefetching](#)” in *Sun GlassFish Enterprise Server 2.1 Developer’s Guide*.

## More About WSIT Integration

For detailed information about WSIT status, refer to the [WSIT Status Notes](https://wsit.dev.java.net/source/browse/*checkout*/wsit/wsit/status-notes/status-notes-1-0-1-FCS.html) ([https://wsit.dev.java.net/source/browse/\\*checkout\\*/wsit/wsit/status-notes/status-notes-1-0-1-FCS.html](https://wsit.dev.java.net/source/browse/*checkout*/wsit/wsit/status-notes/status-notes-1-0-1-FCS.html)) page. Also refer to the *The WSIT Tutorial* for information about using WSIT with Enterprise Server.

## Known Issues and Limitations

---

This chapter describes known problems and associated workarounds for the Sun GlassFish Enterprise Server 2.1 software. If a summary statement does not specify a particular platform, the problem applies to all platforms.

This information is organized into the following sections:

- “Administration” on page 29
- “Apache and Load Balancer Plugin” on page 39
- “Application Client” on page 40
- “Bundled Sun JDBC Drivers” on page 41
- “Deployment” on page 43
- “Documentation” on page 43
- “EJB” on page 44
- “High Availability” on page 45
- “Installation” on page 53
- “Java EE Tutorial” on page 57
- “Java Persistence” on page 58
- “Lifecycle Management” on page 58
- “Logging” on page 60
- “Message Queue” on page 60
- “Monitoring” on page 62
- “Packaging” on page 62
- “Samples” on page 63
- “Security” on page 64
- “Upgrade” on page 65
- “Web Container” on page 68
- “Web Server” on page 72
- “Web Services” on page 73

### **Administration**

This section describes known administration issues and associated solutions.

## Stand-alone instances sometimes obtain files from other instances (6698604)

### Description

In some circumstances, files installed on the DAS intending to be synchronized with a specific instance actually get sent to additional instances.

### Solution

No known solution.

## Startup Message from the start-cluster command are too verbose (6728317)

### Description

The `asadmin start-cluster` command shows too many messages even when non-critical components fail during startup. See the following example command output when non-critical elements (related to the instances in the cluster) fail:

```
./asadmin start-cluster --port 9898 cluster1
Please enter the admin user name>admin
Please enter the admin password>
The clustered instance, instance2, was successfully started.
error 0 [#|2008-07-17T14:58:16.496+0200|WARNING|sun-appserver9.1|javax.jms|
_ThreadID=10;_ThreadName=main;
_RequestID=90bbbe3a-d654-4480-b295-7e317d945a4a;|[C4003]:
Error occurred on connection creation [localhost:37676]. - cause:
java.net.ConnectException: Connection refused|#]
```

```
error 1 [#|2008-07-17T14:58:17.517+0200|WARNING|sun-appserver9.1|javax.jms|
_ThreadID=10;_ThreadName=main;
_RequestID=90bbbe3a-d654-4480-b295-7e317d945a4a;|[C4003]:
Error occurred on connection creation [localhost:37676]. - cause:
java.net.ConnectException: Connection refused|#]
```

```
error 2 [#|2008-07-17T14:58:30.596+0200|WARNING|sun-appserver9.1|
javax.enterprise.system.container.ejb|
_ThreadID=13;_ThreadName=pool-1-thread-4;TimerBean;
_RequestID=5954a044-df06-4a3e-902a-0c40b4b6cddb;
|EJB5108:Unable to initialize EJB Timer Service.
The likely cause is the database has not been
started or the timer database table has not been created.|#]
```

```
error 3 [#|2008-07-17T14:58:32.512+0200|WARNING|sun-appserver9.1|
javax.enterprise.resource.resourceadapter|_ThreadID=10;_ThreadName=main;
```

```
__CallFlowPool;_RequestID=90bbbe3a-d654-4480-b295-7e317d945a4a;|
RAR5005:Error in accessing XA resource with JNDI name [__CallFlowPool] for recovery|#]
```

```
The clustered instance, instance1, was successfully started.
error 0 [#|2008-07-17T14:58:21.117+0200|WARNING|sun-appserver9.1|
javax.enterprise.system.container.ejb|
_ThreadID=13;_ThreadName=pool-1-thread-4;TimerBean;
_RequestID=30827d9a-72ac-4854-b216-06494b6a9fb5;
|EJB5108:Unable to initialize EJB Timer Service. The likely cause is the database has
not been started or the timer database table has not been created.|#]
```

```
error 1 [#|2008-07-17T14:58:23.106+0200|WARNING|sun-appserver9.1|
javax.enterprise.resource.resourceadapter|
_ThreadID=10;_ThreadName=main;__CallFlowPool;
_RequestID=b41d76fa-0203-49f7-a2ae-83bf242d3e7a;
|RAR5005:Error in accessing XA resource with JNDI name [__CallFlowPool] for recovery|#]
```

Command start-cluster executed successfully.

## Solution

No known solution. These (exceptions) messages can be ignored.

## Failed to Deploy Generic RA Resource Adapter against IBM MQ (Issue 6605)

### Description

Deployment of a generic RA adapter against IBM Message Queue product fails. The permissions granted in the server.policy file is as follows.

```
grant {
    permission java.util.logging.LoggingPermission "control";
    permission java.util.PropertyPermission "*", "read,write";
}
```

### Solution

Change the permissions in the server.policy file as follows:

```
grant codeBase
"file:${com.sun.aas.installRoot}/lib/install/applications/adminapp/-" {
    permission java.util.logging.LoggingPermission "control";
};
```

## The package-appclient script does not work if domain1 is not present (6171458)

### Description

By default, there is a hard-coded value in *as-install/lib/package-appclient.xml* for the `AS_ACC_CONFIG` variable for `domain1` that is pointed to by *asenv.conf*. If `domain1` is deleted and a new domain created, the `AS_ACC_CONFIG` variable is not updated with the new domain name, which causes the `package-appclient` script to fail.

### Solution

Do one of the following:

1. Leave `domain1` intact, and create your other domains around it.
2. Remove `domain1` and replace the hard-coded value for `domain1` in *as-install/lib/package-appclient.xml* with the new domain name.

This will have to be done every time a new domain is created if `domain1` is not present.

## Starting the Server with additional JMX Agent is not supported (6200011)

### Description

J2SE 1.4.x, 5.0, or later can be configured on the server. An integral feature of J2SE 5.0 platform is the ability to start a JMX agent. This is activated when you explicitly set system properties at the server startup.

Example values include:

```
name="com.sun.management.jmxremote" value="true"  
name="com.sun.management.jmxremote.port" value="9999"  
name="com.sun.management.jmxremote.authenticate" value="false"  
name="com.sun.management.jmxremote.ssl" value="false"
```

After configuring JMX properties and starting the server, a new `jmx-connector` server is started within the Virtual Machine. An undesirable side-effect of this is that the administration functions are affected adversely, and the Administration Console and command—line interface may produce unexpected results. The problem is that there are some conflicts between the built in `jmx-connector` server and the new `jmx-connector` server.

### Solution

If using `jconsole` (or any other JMX-compliant client), consider reusing the standard JMX Connector Server that is started with server startup.

When the server starts up, a line similar to the one shown below appears in the `server.log`. You can connect to the JMXService URL specified there and perform the same `management/configuration` operations after successfully providing the credentials; for example:



```
[#|2004-11-24T17:49:08.203-0800|INFO|sun-appserver-ee8.1|
javax.enterprise.system.tools.admin|_ThreadID=10;|ADM1501:
Here is the JMXServiceURL for the JMXConnectorServer:
[service:jmx:rmi:///jndi/rmi://hostname:8686/management/
rmi-jmx-connector]. This is where the remote administrative
clients should connect using the JSR 160 JMX Connectors.|#]
```

For more information, refer to the [Sun GlassFish Enterprise Server 2.1 Administration Guide](#).

## Load balancer configuration file does not get created with the endpoint URL of any web service (6236544, 6275436)

### Description

When setting up the load balancer configuration with an application that has an EJB module that exports a web service URL, the context root for the web service isn't in the resulting `loadbalancer.xml` file.

### Solution

1. Edit the `loadbalancer.xml` file to add the missing web module as follows:

```
<web-module context-root="context-root-name"
disable-timeout-in-minutes="30" enabled="true"/>
```

2. Replace `context-root-name` value with the context root name of the web service that was exposed as an EJB.

## .asadmintruststore file not described in the Enterprise Server documentation (6315957)

### Description

The `.asadmintruststore` file is not described in the Enterprise Server documentation. If this file does not exist in the server administrator's home directory, you may experience serious bugs when upgrading certain applications hosted on the server.

### Solution

- If possible, the `asadmin start-domain domain1` command should be run by user who installed the server.
- If it is not run by that user, the `.asadmintruststore` should be moved or copied from the home directory of installing user to the home directory of the running user.
- Note that if the file is moved (not copied) from the installing user's home directory to the running user's home directory, you might experience application upgrade problems, as described in bugs 6309079, 6310428 and 6312869, because the upgrade/install user (normally root in Java ES) will no longer have the `.asadmintruststore` file in his or her home directory.

## Clustered instances fail to start due to a timeout in reaching the JMS broker (6523663)

### Description

The default MQ integration mode for a Enterprise Server cluster instance is LOCAL. When Enterprise Server is installed in a location (PATH) that is long (read “not short”), `imqbrokersvc.exe` crashes when the cluster instance starts. The problem is a memory allocation problem in `imqbrokersvc`.

### Solution

The JMS service type for the cluster instance must be changed from the default LOCAL to REMOTE. In this configuration, all the instances point back to the DAS broker. Follow the instructions below to configure a cluster in REMOTE mode.

---

**Note** – When using REMOTE mode, all instances are using one broker (DAS), and therefore no broker cluster is created when the Enterprise Server cluster starts up. See “Auto-clustering” in Section 4.1, Division iii of the one-pager at <http://www.glassfishwiki.org/gfwiki/attach/OnePagersOrFunctionalSpecs/as-mq-integration-gfv2.txt> for more information. The above functionality will not be available!

---

## ▼ Using the command-line

### Before You Begin

Modify the port and password file according to your environment. Note that in the instructions below, the cluster name is `racluster`, the DAS admin port is 5858, and the DAS JMS port is 7676.

#### 1 Modify the cluster configuration, changing the JMS type to REMOTE.

```
as-install/bin/asadmin.bat set --port 5858 --user admin --passwordfile \
as-install/bin/password_file racluster.jms-service.type=REMOTE
```

#### 2 Create a JMS host corresponding to the DAS JMS host.

```
as-install/bin/asadmin.bat create-jms-host --port 5858 --user admin --passwordfile \
as-install/bin/password_file --target racluster --mqhost localhost --mqport 7676 \
--mquser admin --mqpassword admin dashost
```

#### 3 Set the default JMS host to be the DAS JMS host created in the previous step.

```
as-install/bin/asadmin.bat set --port 5858 --user admin --passwordfile \
as-install/bin/password_file racluster.jms-service.default-jms-host=dashost
```

## ▼ Using the Admin GUI

#### 1 Go to Configurations->*cluster-name-config*->Java Message Service->JMS Hosts.

#### 2 Click *New* to create a new JMS host; name it dashost.

**3 Enter configuration settings corresponding to the JMS service for the DAS; defaults are as follows:**

- Hostname: localhost
- Port: 7676
- Admin user: admin
- Password: admin

Modify these settings as appropriate for your DAS JMS service.

**4 Navigate back to the Java Message Service tab, and change the JMS service type to REMOTE (default is LOCAL).**

**5 Choose dashost from the default-jms-host drop-down list.**

**6 Save the changes, and then start your node-agent or cluster.**

**Cannot display jmaki chart in Netscape 8.1.3, Mozilla 1.7 and Safari 2.0.4 browsers (6543014)**

**Description**

When trying to display a chart from the Log Statistics Monitoring page using some unsupported browsers, the following error may be thrown:

```
Error loading jmaki.widgets.jmaki.charting.line.Widget : id=form1:jmaki_chart11
Script: http://easqelx5.red.ipplanet.com:4848/resources/jmaki/charting/ \
line/component.js (line:5437).
Message: area.initialize is not a function
```

**Solution**

Use a supported browser. Refer to “[Browsers](#)” on page 20 for a list of browsers supported by Enterprise Server 2.1.

**Default ports changing in each AS major release (6566481)**

**Description**

The default admin port has changed in each of the past three major Enterprise Server releases. Specifically, the default admin ports in 7.x, 8.x, and 9.x are as follows:

- AS 7.x: 4848
- AS 8.x: 4849
- AS 9.x: 4848

**Solution**

This is not a bug, but something to be aware of. The default admin port is just a recommendation. It is anticipated that future Enterprise Server releases going forward will retain the default 4848 port.

## The create-domain command fails with custom master password in AIX (6628170)

### Description

On the AIX operating system, an attempt to create a domain with a custom master password fails with the following error:

```
keytool error (likely untranslated): java.lang.NullPointerException
Enter keystore password: New keystore password:
```

## ▼ Solution: (AIX) To Create a Domain With a Custom Master Password

**Note** – In the procedure that follows, only the options that are required in each step are provided. If you require additional options for a command, specify these options in the command. For information about Enterprise Server commands, see [Sun GlassFish Enterprise Server 2.1 Reference Manual](#).

### 1 Create a shell script that contains the following lines of code:

```
#!/bin/sh
changeKeystorePass() {
    keytool -storepasswd -keystore ${KEYSTORE} -storepass ${OLD} -new ${NEW}
}
changeTruststorePass() {
    keytool -storepasswd -keystore ${TRUSTSTORE} -storepass ${OLD} -new ${NEW}
}
changeKeyPass() {
    keytool -keypasswd -alias s1as -keystore ${KEYSTORE} -storepass ${NEW} -keypass ${OLD} -new ${NEW}
}
changeDomainPasswordEntry() {
    keytool -storepasswd -storetype JCEKS -keystore ${DOMAINPASSWORDS} -storepass ${OLD} -new ${NEW}
}
deleteMasterPasswordFile() {
    if [ -f ${DOMAIN_PATH}/master-password ] ; then
        echo Deleting ${DOMAIN_PATH}/master-password
        rm -f ${DOMAIN_PATH}/master-password
    fi
}
DOMAIN_PATH=$1
OLD=$2
NEW=$3
if [ $# != 3 ] ; then
    echo Usage: $0 domain-path old-master-pass new-master-pass
    exit 1
fi
echo Processing ...
if [ ! -f ${DOMAIN_PATH}/config/domain.xml ] ; then
```

```

echo "Domain with folder ${DOMAIN_PATH} does not exist, create it first"
exit 2
else
KEYSTORE=${DOMAIN_PATH}/config/keystore.jks
TRUSTSTORE=${DOMAIN_PATH}/config/cacerts.jks
DOMAINPASSWORDS=${DOMAIN_PATH}/config/domain-passwords
changeKeystorePass
changeTruststorePass
changeKeyPass
changeDomainPasswordEntry
deleteMasterPasswordFile
fi

```

## 2 Create a domain, specifying the default master password.

```

asadmin create-domain {--adminport aminportno|--portbase portbase} domain-name
Please enter the admin user name>admin-user
Please enter the admin password>admin-user-password
Please enter the admin password again>admin-user-password
Please enter the master password [Enter to accept the default]:>
Please enter the master password again [Enter to accept the default]:>

The default master password is changeit.

```

## 3 Change the master password of the domain that you have just created.

To change the master password, run the script that you created in [Step 1](#).

```

script-name domain-path old-password new-password

```

## 4 Start the domain that you created in [Step 2](#).

```

asadmin start-domain domain-name

```

Because the domain has a custom master password, you are prompted for the master password.

## 5 In response to the prompt, type the new master password.

## 6 For domains that are configured to support clusters, create and start a node agent.

### a. Create a node agent for the domain that you created in [Step 2](#).

```

asadmin create-node-agent --port portno --user admin-user

```

### b. Start the node agent that you created in [Step a](#).

```

asadmin start-node-agent

```

Because the domain has a custom master password, you are prompted for the master password.

### c. In response to the prompt, type the new master password.

**See Also** The following Enterprise Server man pages:

- `create-domain(1)`
- `create-node-agent(1)`
- `start-domain(1)`
- `start-node-agent(1)`

### **AIX: 0403-027 The parameter list is too long (6625591)**

#### **Description**

On the AIX operating system, some OS-related operations might fail with the following error:

```
0403-027 The parameter list is too long
```

Examples of OS-related operations are deploying applications or running the application client container.

This issue is commonly caused by long file paths in the CLASSPATH environment variable.

#### **Solution**

Use one of the following solutions:

- Increase the maximum length of the command line. For more information, see “(AIX) To Increase the Maximum Length of the Command Line” on page 38.
- Use the `xargs` command to construct the argument list and start the command. The `xargs` command allows commands to exceed the maximum length of the command line.

## ▼ **(AIX) To Increase the Maximum Length of the Command Line**

The `ncargs` attribute determines maximum length of the command line, including environment variables. On the AIX operating system, the default value of the `ncargs` attribute is four, 4-Kbyte blocks. To ensure that Enterprise Server commands do not exceed the maximum length of the command line, increase this value to 16 4-Kbyte blocks.

---

**Note** – After the value of the `ncargs` attribute is changed, no reboot or refresh of daemons is required.

---

### **1 Determine the value of the `ncargs` attribute.**

```
lsattr -EH -l sys0 | grep ncargs
```

### **2 If the value of the `ncargs` attribute is less than 16 4-Kbyte blocks, increase the value to 16.**

```
chdev -l sys0 -a ncargs=16
```

---

**In Bourne shell, all DAS, node agent, and instance processes exit when console window is closed. (6879701)****Description**

If you log in as root with the Bourne shell (`/bin/sh`) and run `asadmin` commands, then log out of the console window, all the domain administration server (DAS), node agent, and instance processes are killed. This is because in the Bourne shell all child terminals inherit the TTY by default, so when the terminal is logged out, all child processes are killed too.

**Solution**

Before running any `asadmin` commands, do the following:

1. Log in to the server.
2. Change to K shell:  

```
# exec /bin/ksh
```
3. In K shell, run all the `asadmin` commands to bring up the DAS, node agents, and instances.

**Apache and Load Balancer Plugin**

This section describes known Apache Web server and load balancer plugin issues and associated solutions.

**Deployment of Java EE application with EJB as a Web Service is not captured by load balancing plug-in (Issue 685)****Description**

When you deploy any WAR (or EAR) with a servlet-based web service, the HTTP Load Balancer is updated with information about the web service. When an EJB-based web service is deployed, the configuration of the HTTP Load Balancer is not updated to reflect the new object.

**Solution**

Add these context roots manually to the load balancer configuration file (`loadbalancer.xml`). However, dynamic reconfiguration of load balancer configuration (using the auto-apply feature) would result in older manual edits being lost.

Turn off the auto-apply feature from DAS and instead use the manual export feature to edit and apply the load balancer configuration onto the Web Server.

**The High-Availability Administration Guide does not contain instructions for using a certificate for Apache 2.0 (6307976)**

To run Apache security, you must use a certificate. For instructions on obtaining a certificate from a certificate authority, see the information on certificates in the [modssl FAQ](http://www.modssl.org/docs/2.8/ssl_faq.html#ToC24) ([http://www.modssl.org/docs/2.8/ssl\\_faq.html#ToC24](http://www.modssl.org/docs/2.8/ssl_faq.html#ToC24)).

**Must start Apache Web Server as root (6308021)**

On Solaris, if your Application Server was installed under root, you must start the Apache Web Server as root. Java Enterprise System installations are installed as root. For Apache 2.0, after starting as root, Apache switches and runs as another user you designate. You designate that user in the `/conf/httpd.conf` file. To start as root, on many systems you must edit the `httpd.conf` file to designate the correct group. Replace the line:

```
Group #-1
```

with

```
Group nobody
```

More information on user/group use is included in the `httpd.conf` file.

## Application Client

This section describes known application client issues and associated solutions.

**Library JAR packaged in Application Client Archive overwrites MANIFEST file (6193556)****Description**

If you have a top level JAR file inside your client JAR (in this case, `reporter.jar`), when you deploy the client JAR, the MANIFEST file for that JAR overwrites the MANIFEST file for the client JAR.

**Solution**

None at this time.

**ACC always tries to connect to localhost:3700 (6527987)****Description**

The application client always tries to connect to `localhost:3700`. The problem is that several system properties need to be read before the client code is invoked.

**Solution**

Set the following as system properties (`-D` in your `JAVA_CMD`). Do *not* set them in your appclient code:

```
org.omg.CORBA.ORBInitialHost = server-instance-host  
org.omg.CORBA.ORBInitialPort = server-instance-port
```



**Unable to start domain , missing sunpkcs11.jar (6571044)****Description**

Running on 64-bit Linux, the following exception when starting a domain. The issue is a missing sunpkcs11.jar under jdk1.5.0\_11/jre/lib/ext/.

**Solution**

This is a known JDK bug with 64-bit Linux, and will be fixed in JDK 1.5.0\_13.

ASQuickStartup **breaks** SocketChannel.keyFor(), **returning null instead of the** SelectionKey (Issue Tracker 3027)

**Description**

When a SocketChannel is registered on several Selectors, doing socketChannel.keyFor(lastRegisteredSelector) returns null instead of the SelectionKey.

**Solution**

This is related to a JDK bug, 6562829, and is expected to be fixed in 6.0 U3. A workaround has been included in Enterprise Server 2.1, such that the selector is unwrapped before the keyFor API is called. This enables the keyFor to succeed until JDK bug is fixed.

**Bundled Sun JDBC Drivers**

This section describes known bundled Sun JDBC driver issues and associated solutions.

PreparedStatement **errors (6170432)**

**Description 1**

If an application generates more than 3000 PreparedStatement objects in one transaction, the following error may occur with DB2:

```
[sunm][DB2 JDBC Driver] No more available statements.Please recreate your package with a larger dynamicSections value.
```

**Solution 1**

Add following properties to the connection pool definition to get the driver to rebind DB2 packages with a larger dynamic sections value:

```
createDefaultPackage=true replacePackage=true dynamicSections=1000
```

See the [Sun GlassFish Enterprise Server 2.1 Administration Guide](#) for details about configuring connection pools.

### Description 2

Related to the PreparedStatement error above, another error message that may be thrown is:

```
[sunm][DB2 JDBC Driver][DB2]Virtual storage or database resource is not available.
```

### Solution 2

Increase the DB2 server configuration parameter *APPLHEAPSZ*. A good value is 4096.

### Description 3

Isolation level TRANSACTION\_SERIALIZABLE. If your application uses isolation level TRANSACTION\_SERIALIZABLE and uses one of the parameters suggested above, it might hang while obtaining a connection.

### Solution 3

To set desired isolation level for a connection, the corresponding connection pool has to be created at that isolation level. See the *Sun GlassFish Enterprise Server 2.1 Administration Guide* for instructions.

## Java DB is not started after machine reboot or server start (6515124)

### Description

The bundled Java DB database is not automatically restarted after a host system or Solaris zone reboot, or an Enterprise Server start. This is not a bug, but expected behavior for any bundled or third-party application. The problem is that the Java DB must be started before the Enterprise Server instance.

### Solution

After rebooting the host machine or Solaris zone, be sure to start the Java DB *before* starting Enterprise Server; for example:

```
/opt/SUNWappserver/appserver/bin/asadmin start-database
```

Refer to “Administration Tools” in *Sun GlassFish Enterprise Server 2.1 Quick Start Guide* in the *Sun GlassFish Enterprise Server 2.1 Quick Start Guide* for more information about `asadmin` command options.

## Deployment

### Autodeployment fails on a cluster sometimes (6610527)

#### Description

Timing issues sometimes cause autodeployment to fail in domains that are configured to support clusters. The issue is not observed in domains that do not support clusters.

#### Solution

Use one of the following solutions:

- Use autodeployment as follows:
  - Automatically deploy individual applications sequentially.
  - Introduce a delay between autodeployments of individual applications
- Deploy applications manually by using either the Admin Console GUI or the command line.

### Bundled ANT throws `java.lang.NoClassDefFoundError` (6265624)

#### Description

The following exception is thrown in thread "main" `java.lang.NoClassDefFoundError: org/apache/tools/ant/launch/Launcher`.

#### Solution

Use of the bundled ANT for things outside the Enterprise Server is not recommended.

### Application specific classloader not used by JSP compilation (6693246)

#### Description

The application-specific classloader (aplibs or --libraries) is not used by the JSP compilation. As a result, JSPs referencing these JARs will not compile.

#### Solution

No known solution.

## Documentation

This section describes known documentation issues and associated solutions.

### Javadoc Inconsistencies (various IDs)

The Javadoc for several AMX interfaces and methods is either missing or incorrect:

- Getter methods for NumConnAcquired and NumConnReleased statistics are missing from ConnectorConnectionPoolStats and AltJDBCConnectionPoolStats. These getter methods will be added in a future release as `getNumConnAcquired()` and `getNumConnReleased()`.
- Calling the following methods in EJBCacheStats will throw an exception: `getPassivationSuccesses()`, `getExpiredSessionsRemoved()`, `getPassivationErrors()`, `getPassivations()`. This will be fixed in a future release.
- The AMX MBeans may require several seconds after server startup before they are all registered and available for use. A future release will make it possible to determine when the AMX MBeans are fully loaded.
- The constant `XTypes.CONNNECTOR_CONNECTION_POOL_MONITOR` is misspelled ("NNN"). This will be corrected in a future release.

**Online help does not describe how to create a JMS physical destination for a specific server instance or cluster. (6808339)**

**Solution**

Use the following procedure to create configuration-specific JMS physical destinations:

1. Log on to the Admin Console.
2. In the left-hand pane, click Standalone Instances > *instance\_name*. If you are using clusters, click Clusters > *cluster\_name*.
3. Click the JMS Physical Destinations tab.
4. Click New.
5. Create a Queue and Topic.

**Operand is missing from man page example for ping-connection-pool. (6881540)**

The example in the man page is missing the operand at the end of the command. An error occurs if the command is entered as shown in the example. Correct example is:

```
asadmin> ping-connection-pool --user admin1
--passwordfile pwordfile sampleConnectionPool
```

## EJB

**Resource Injection does not work in HandlerChain (6750245)**

**Description**

Resource Injection does not work in HandlerChain due to EJB initialization order.

**Solution**

No known solution.

## High Availability

This section describes known high availability database (HADB) issues and associated solutions.

### **Load balancer plugin healthcheck generates a large number of connection/disconnection at the background (load) (6453946)**

#### **Description**

Load balancer plug-in healthcheck generates a large number of connection/disconnection at the background (load). For health check purposes, a `runDaemonMonitor` thread performs connect/disconnect for every Application Server listener. This can lead to connection saturation on Enterprise Server.

#### **Solution**

A new attribute, `monitor-interval-in-seconds`, has been developed for the `loadbalancer.xml` file. This attribute can be used to insert a pause between connect/disconnect events in the case where hundreds of listeners are configure for the load balancer plug-in. Default pause value is 0.

### **HADB Configuration with Double Networks (no ID)**

HADB configured with double networks on two subnets works properly on Solaris SPARC. However, due to problems in the operating system or network drivers on some hardware platforms, it has been observed that Solaris x86 and Linux platforms do not always handle double networks properly. This causes the following problems with HADB:

- On Linux, some of the HADB processes are blocked when sending messages. This causes HADB node restarts and network partitioning.
- On Solaris x86, some problems may arise after a network failure that prevent switching to the other network interface. This does not happen all the time, so it is still better to have two networks than one. These problems are partially solved in Solaris 10.
- Trunking is not supported.
- HADB does not support double networks on Windows 2003 (ID 5103186).

### **HADB Database Creation Fails (no ID)**

#### **Description**

Creating a new database may fail with the following error, stating that too few shared memory segments are available:

```
HADB-E-21054: System resource is unavailable: HADB-S-05512: Attaching shared memory segment with key "xxxxx" failed, OS status=24 OS error message: Too many open files.
```

## Solution

Verify that shared memory is configured and the configuration is working. In particular, on Solaris 8, inspect the file `/etc/system`, and check that the value of the variable `shmsys:shminfo_shmseg` is at least six times the number of nodes per host.

`hadbm set` **does not check resource availability (disk and memory space) (5091280)**

## Description

When increasing device or buffer sizes using `hadbm set`, the management system checks resource availability when creating databases or adding nodes, but does not check if there are sufficient resources available when device or main-memory buffer sizes are changed.

## Solution

Verify that there is enough free disk/memory space on all hosts before increasing any of the `devicesize` or `buffersize` configuration attributes.

## Heterogeneous paths for `packagepath` not supported (5091349)

### Description

It is not possible to register the same software package with the same name with different locations at different hosts; for example:

```
hadbm registerpackage test --packagepath=/var/install1 --hosts europa11
Package successfully registered.
hadbm registerpackage test --packagepath=/var/install2 --hosts europa12
hadbm:Error 22171: A software package has already been registered with
the package name test.
```

### Solution

HADB does not support heterogeneous paths across nodes in a database cluster. Make sure that the HADB server installation directory (`--packagepath`) is the same across all participating hosts.

`hadbm createdomain` **may fail (6173886, 6253132)**

### Description

If running the management agent on a host with multiple network interfaces, the `createdomain` command may fail if not all network interfaces are on the same subnet:

```
hadbm:Error 22020: The management agents could not establish a
domain, please check that the hosts can communicate with UDP multicast.
```

The management agents will (if not configured otherwise) use the "first" interface for UDP multicasts ("first" as defined by the result from `java.net.NetworkInterface.getNetworkInterfaces()`).

### Solution

The best solution is to tell the management agent which subnet to use (set `ma.server.maininternal.interfaces` in the configuration file, e.g., `ma.server.maininternal.interfaces=10.11.100.0`). Alternatively one may configure the router between the subnets to route multicast packets (the management agent uses multicast address 228.8.8.8).

Before retrying with a new configuration of the management agents, you may have to clean up the management agent repository. Stop all agents in the domain, and delete all files and directories in the repository directory (identified by `repository.dr.path` in the management agent configuration file). This must be done on all hosts before restarting the agents with a new configuration file.

### Starting, stopping, and reconfiguring HADB may fail or hang (6230792, 6230415)

#### Description

On Solaris 10 Opteron, starting, stopping or reconfiguring HADB using the `hadbm` command may fail or hang with one of the following errors:

```
hadbm:Error 22009: The command issued had no progress in the last
300 seconds.
HADB-E-21070: The operation did not complete within the time limit,
but has not been cancelled and may complete at a later time.
```

This may happen if there are inconsistencies reading/writing to a file (nomandevic) which the `clu_noman_srv` process uses. This problem can be detected by looking for the following messages in the HADB history files:

```
n:3 NSUP INF 2005-02-11 18:00:33.844 p:731 Child process noman3 733
does not respond.
n:3 NSUP INF 2005-02-11 18:00:33.844 p:731 Have not heard from it in
104.537454 sec.
n:3 NSUP INF 2005-02-11 18:00:33.844 p:731 Child process noman3 733
did not start.
```

#### Solution

The following workaround is unverified, as the problem has not been reproduced manually. However, running this command for the affected node should solve the problem.

```
hadbm restartnode --level=clear nodeno dbname
```

Note that all devices for the node will be reinitialized. You may have to stop the node before reinitializing it.

**The management agent terminates with the exception "IPV6\_MULTICAST\_IF failed" (6232140)**

**Description**

When starting on a host running Solaris 8 with several NIC cards installed, if there is a mixture of cards with IPv6 and IPv4 enabled, the management agent may terminate with the exception "IPV6\_MULTICAST\_IF failed."

**Solution**

Set the environment variable `JAVA_OPTIONS` to `-Djava.net.preferIPv4Stack=true`; for example:

```
export JAVA_OPTIONS="-Djava.net.preferIPv4Stack=true"
```

Alternatively, use Solaris 9 or later, which do not exhibit this problem.

**clu\_trans\_srv cannot be interrupted (6249685)**

**Description**

There is a bug in the 64-bit version of Red Hat Enterprise Linux 3.0 that makes the `clu_trans_srv` process end up in an uninterruptible mode when performing asynchronous I/O. This means that `kill -9` does not work and the operating system must be rebooted.

**Solution**

Use a 32-bit version of Red Hat Enterprise Linux 3.0.

**hadbm does not support passwords containing capital letters (6262824)**

**Description**

Capital letters in passwords are converted to lowercase when the password is stored in `hadb`.

**Solution**

Do not use passwords containing capital letters.

**Downgrading from HADB Version 4.4.2.5 to HADB Version 4.4.1.7 causes ma to fail with different error codes (6265419)**

**Description**

When downgrading to a previous HADB version, the management agent may fail with different error codes.



## Solution

It is possible to downgrade the HADB database, however the management agent cannot be downgraded if there changes have been made in the repository objects. After a downgrade, you must keep use the management agent from the latest HADB version.

## Install/removal and `symlink` preservation (6271063)

### Description

Regarding install/removal of HADB `c` package (Solaris: SUNWhadb, Linux: `sun-hadb-c`) version `<m.n.u-p>`, the `symlink /opt/SUNWhadb/<m>` is never touched once it exists. Thus, it is possible that an orphaned `symlink` will exist.

### Solution

Delete the `symlink` before install or after uninstall unless in use.

## Management agents in global and local zones may interfere (6273681)

### Description

On Solaris 10, stopping a management agent by using the `ma-initd` script in a global zone stops the management agent in the local zone as well.

### Solution

Do not install the management agent both in the global and local zone.

## `hadbm/ma` should give a better error message when a session object has timed out and deleted at MA (6275103)

### Description

Sometimes, a resource contention problem on the server may cause a management client to become disconnected, When reconnecting, a misleading error message "`hadbm:Error 22184: A password is required to connect to the management agent`" may be returned.

### Solution

Sometimes, a resource contention problem on the server may cause a management client to become disconnected, When reconnecting, a misleading error message "`hadbm:Error 22184: A password is required to connect to the management agent`" may be returned.

Check if there is a resource problem on the server, take proper action (e.g., add more resources), and retry the operation.

**Non-root users cannot manage HADB (6275319)****Description**

Installing with Java Enterprise System (as root) does not permit non-root users to manage HADB.

**Solution**

Always login as root to manage HADB.

**The Management Agent should not use special-use interfaces (6293912)****Description**

Special use interfaces with IP addresses like 0.0.0.0 should not be registered as valid interfaces to be used for HADB nodes in the Management Agent. Registering such interfaces may cause problems if HADB nodes are set up on these interfaces by means of a user issuing a `hadbm create` command using host names instead of IP addresses. The nodes will then be unable to communicate, causing the `create` command to hang.

**Solution**

When using `hadbm create` on hosts with multiple interfaces, always specify the IP addresses explicitly using DDN notation.

**Reassembly failures on Windows (6291562)****Description**

On the Windows platform, with certain configurations and loads, there may be a large number of reassembly failures in the operating system. The problem has been seen with configurations of more than twenty nodes when running several table scans (`select *`) in parallel. The symptoms may be that transactions abort frequently, repair or recovery may take a long time to complete, and there may be frequent timeouts in various parts of the system.

**Solution**

To fix the problem, the Windows registry variable `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters` can be set to a value higher than the default 100. It is recommended that you increase this value to 0x1000 (4096). For more information, see article 811003 (<http://support.microsoft.com/default.aspx?scid=kb;en-us;811003>) from the Microsoft support pages.

## Session state not maintained if the browser has another cookie with / path (6553415)

### Description

Cookies with a path equal to “/” interfere with the cookies of a highly available web application deployed at a context root other than “/” that uses in-memory replication as its persistence type, making it impossible for the highly available web application to maintain any HTTP session state. One common scenario where this may happen is when using the same browser to access both the Admin GUI (which is deployed at “/”) and the highly available web application.

### Solution

Access the web application deployed at “/” from a different browser.

## LB does not work with IIS 6; SASL32.DLL and ZLIB.DLL missing under *as-install/lib* (6572184)

### Description

SASL32.DLL and ZLIB.DLL are required files for Load Balancer to work with Windows IIS 6. These files are currently not available under *as-install/lib*.

### Solution

Copy the two DLL files manually to *as-install/lib*. These files can be downloaded from:

<http://download.java.net/javaee5/external/OS/aslb/jars/>

Where *OS* represents the desired platform, and can be one of the following values:

- SunOS
- SunOS\_X86
- Linux
- WINNT

## DAS creation/startup and HA package propagation issues in Global Zone (6573511)

### Description

Two issues arise when installing or uninstalling Enterprise Server with High Availability packages in a Global Zone:

1. HA packages get installed in all zones, which may not be desirable.
2. When uninstalling, HA, MQ, JDK packages get removed from all zones, which may not be desirable.

This problem does not occur when installing or uninstalling from a root local zone.

### Solution

Perform installation and uninstalls from a local root zone rather than a global zone.

### Highly available webapps deployed at “/” unable to resume in-memory replicated HTTP sessions (Issue Tracker 2972)

#### Description

Highly available web applications deployed at “/” are unable to maintain any HTTP sessions when using in-memory replication as their persistence type.

#### Solution

Deploy highly available web applications that use in-memory replication as their persistence type to a context root other than “/”. If you want to make such a web application available at “/”, you may designate it as the default-web-module of the virtual server to which the web application has been deployed.

### AS LB installer did not put /usr/lib/mps path in apachectl LD\_LIBRARY\_PATH, can not start Apache SSL (6591878)

#### Description

During Enterprise Server Load Balancer installation for Apache on Solaris, the installer updates LD\_LIBRARY\_PATH in the apachectl script. However, the installer does not correctly write the /usr/lib/mps path. On Solaris, the Apache security instance will not start without this path in LD\_LIBRARY\_PATH.

#### Solution

This issue exists only on Solaris platforms. To work around the issue, add /opt/SUNWappserver/appserver/lib/lbplugin/lib to your LD\_LIBRARY\_PATH.

### Enable/disable LB for an instance/cluster should show correct status (6595113)

#### Description

The *Enable LoadBalance* button is always enabled on the Clustered/Instance general page, regardless of what is saved in domain.xml.

#### Solution

- For clustered instances, select *Instances* tab, and then click the *Quiesce* action from the table pull-down.
- For standalone instances, make sure the instance is running, and then click the *Quiesce* button on instance General screen.

### **AS9.1 EE IFR b58f/JES5 UR1. Cannot install Registry Server, because “incomplete” HA was detected. (6602508)**

#### **Description**

*(Solaris only)* After installing Enterprise Server 2.1 on SPARC Solaris 10 with HADB, you may receive the following error after starting Enterprise Server and then attempting to install JES 5 UR1 with Registry Server:

Dependency Error: Installation can not proceed because the version of HA Session Store 4.4.3 detected on this host is incomplete , and a compatible version is required by Servservice Registry Deployment Support.

#### **Solution**

It is not possible to install Registry Server from JES 5 UR1 with Enterprise Server 2.1 IFR on Solaris machines. The Registry Server packages have to be installed manually using the `pkgadd` command from the following JES5 UR1 distribution directory:

`path/OS/Products/registry-svr/Packages`

### **Internet Explorer 6.0/7.0 browser specific: Exporting load balancer configuration file throws error (6516068)**

#### **Description**

*(Internet Explorer 6 and 7 only)* When attempting to export the Load Balancer configuration file (`loadbalancer.xml`) from Internet Explorer 6 or 7, the browser displays an error message saying that the `sun-loadbalancer_1_2.dtd` DTD file cannot be located.

#### **Solution**

To save the file, use the following workaround:

1. Click *Export* on the Load Balancer page in Internet Explorer.  
The “XML page cannot be displayed” message is displayed.
2. Click the error frame, and then choose *File->Save As* from the Internet Explorer.
3. Save the `loadbalancer.xml` file to the directory of your choice.

## **Installation**

This section describes known installation issues and associated solutions.

### **The start-domain Command Times Out on OpenSolaris 2008.11 (6820169 and 6741572)**

#### **Description**

On OpenSolaris 2008.11, when you attempt to start the domain with the `asadmin start-domain` command, the following error message is displayed:

Timeout waiting for domain domain1 to go to starting state.  
CLI156 Could not start the domain domain1.

### **Solution**

The domain has started successfully. Correct the time and date after rebooting the machine.

### **Installation with 64-bit JDK Fails (6796171)**

#### **Description**

Installation fails on 64-bit systems that have 64-bit JDK because the installer tries to use the 64-bit JDK.

#### **Solution**

If you are installing Sun GlassFish Enterprise Server on a 64-bit system, download the 32-bit JDK and use it to install Sun GlassFish Enterprise Server on your 64-bit machine. You will need to use the following command: *./distribution\_filename -javahome path to 32-bit JDK location*

After installation, to ensure that Sun GlassFish Enterprise Server uses a 64-bit JDK, edit the value of the `AS_JAVA` variable in the `asenv.conf` file to point to the 64-bit JDK installation.

### **Enterprise Server installer crashes on Linux (6739013)**

#### **Description**

This problem has been observed on systems running Linux with the environment variable, `MALLOC_CHECK_`, set to 2.

#### **Solution**

Set the environment variable, `MALLOC_CHECK_` to 0. Run one of the following commands:

- For Bourne shell:

```
MALLOC_CHECK_=0;
export MALLOC_CHECK_
```
- For bash shell:

```
export MALLOC_CHECK_=0
```
- For csh, tcsh shell:

```
setenv MALLOC_CHECK_ 0
```

### **Installation shutdown hanging on some Linux systems after clicking the "Finish" button (5009728)**

#### **Description**

This problem has been observed on several Linux systems. It is most common on Java Desktop System 2 but has also been observed on Linux Red Hat distributions.

After clicking the "Finish" button on the last installer screen, the installer fails to launch a browser window containing the product About page or product registration page, and hangs indefinitely, not returning the command prompt.

### Solution

Exit the installer by pressing Ctrl+C in the terminal window in which the installer was started. After doing this, browser window containing product About page or registration page will sometimes be launched, but if it does not show up, start the browser and enter following URL in order to review About page:

```
file://as-install/docs-ee/about.html
```

If you also selected the installation option to register the product, follow the link to registration page available on product About page.

### On Windows, the `imq` directory needs to be created during installation (6199697)

#### Description

On Windows, immediately after installation, the Message Queue broker fails on startup with a message saying the directory `drive:\as\domains\domain1\imq` does not exist.

Note that if the broker is started after starting `domain1`, the directory will be created by the Application Server and the problem will not occur.

### Solution

1. Create the `var_home_dir_location` before creating the broker:

```
$imqbrokerd -varhome var_home_dir_location
```

For example:

```
$imqbrokerd -varhome D:\as\domains\domain1\imq
```

### Uninstall does not update product registry file properly; unable to use silent mode to install (6571598)

#### Description

If the Enterprise Server product registry file contains shared component configurations, an Enterprise Server uninstallation procedure does not update the product registry file correctly, and you will not be able to use silent mode in a subsequent installation unless the product registry file is renamed or removed. Leaving the shared components entries in the product registry file intact is by design, but it leads to confusion with subsequent silent installs.

## Solution

After a successful uninstallation is reported back through uninstall log files, delete the product registry file prior to running a subsequent installation. To verify that a previous uninstallation has completed successfully, look for a `appserv_uninstall.class` file in *as-install*. This file will *not* be present if the uninstallation was successful.

---

**Note** – Do not delete the product registry if the uninstallation was not successful.

---

The product registry file is located in `/var/sadm/install` on Solaris and `/var/tmp` on Linux.

## IFR. Was not able to install AS in the sparse local zone, MQ packages issue. (655578)

### Description

When installing Enterprise Server in a sparse local zone, the installation fails if Message Queue (MQ) is not installed first. The installer attempts to install MQ, and then the whole installation fails.

### Solution

MQ must be manually installed in the global zone before installing Enterprise Server in a sparse local zone. There are two work-arounds for this issue:

1. Install MQ 4.1 manually in the global zone from the same media on which Enterprise Server 2.1 IFR installation is located to get the latest MQ packages.

- a. Use the installer that corresponds to your platform:

```
mq4_1-installer-SunOS.zip
mq4_1-installer-SunOS_X86.zip
mq4_1-installer-Linux_X86.zip
mq4_1-installer-WINNT.zip
```

- b. Unzip the bits and run the installer.

The installer will be in the `mq4_1-installer` directory.

2. Install any component of IFR installation in global zone. This action would check the version of MQ in GZ and if required upgrade it to the one bundled in Enterprise Server 2.1 IFR. Even Selecting and Installing the Sample Applications component upgrades MQ to IFR version.

- a. Run the Enterprise Server installation in the global zone, but select only the sample components.

The sample component installation also installs MQ and Enterprise Server shared components in all zones.

- b. Run the Enterprise Server installation again, this time in the local sparse zone.

Installation should complete without any problems.



## IFR Installation - console prompt has to be removed: "Do you want to upgrade from previous Application?" (6592454)

### Description

When running the Enterprise Server 2.1 IFR installer with the `-console` option (command-line mode), you are prompted:

```
Do you want to upgrade from previous Application Server version?
```

Unfortunately, the IFR installer does not support such upgrades, and so this prompt is erroneous. If you answer yes to the prompt, the installation proceeds normally, but no indication that a complete installation was performed, rather than an upgrade.

### Solution

Use the upgrade tool if you want to upgrade your Enterprise Server installation.

## After upgrade, the following exceptions are seen in the log when a domain is started. (6774663)

### Description

The following exceptions might be thrown:

```
#|2008-11-19T01:44:37.422+0530|SEVERE|sun-appserver9.1|org.apache.catalina.session.Man
uestID=cc0ddf54-a42e-400a-9788-e30d79a25d88;|PWC2768: IOException while loading
persisted sessions: java.io.InvalidClassException: org.apache
.catalina.session.StandardSession; local class incompatible: stream classdesc
serialVersionUID = 8647852380089530442, local class serialVersi onUID =
-8515037662877107054 java.io.InvalidClassException:
org.apache.catalina.session.StandardSession; local class incompatible: stream
classdesc serialVersionUID = 864 7852380089530442, local class serialVersionUID
= -8515037662877107054..... ..
```

### Solution

After upgrade is done and the upgrade domain is started, these exceptions can be ignored if they occur.

## Java EE Tutorial

When using the Administration Console to create any resource, use the Targets tab to specify the server as the target. If you use the command line or an asant target, the server is the default target, no further action is required.

## Java Persistence

### TopLink expects my Collection field/property to be cloneable (Issue Tracker 556)

#### Description

If the `java.util.Arrays.asList()` API is used to convert an `Object[]` to `Collection`, the JDK returns an implementation of `java.util.ArrayList` that is not cloneable. This results in the following exception:

```
The method invocation of the method [protected native java.lang.Object
java.lang.Object.clone() throws java.lang.CloneNotSupportedException] on the object
[[pkg.A id = xxx]], of class [class java.util.Arrays$ArrayList], triggered an
exception. Internal Exception: java.lang.reflect.InvocationTargetException Target
Invocation Exception: java.lang.CloneNotSupportedException:
java.util.Arrays$ArrayList
```

This issue is tracked at [https://glassfish.dev.java.net/issues/show\\_bug.cgi?id=556](https://glassfish.dev.java.net/issues/show_bug.cgi?id=556).

#### Solution

Create another collection using its constructor; for example:

```
myCollection = new ArrayList(java.util.Arrays.asList(a))
```

### GenerationType.IDENTITY and DataDirect Driver with SyBase (Issue Tracker 2431)

#### Description

An attempt to insert an entity that uses `GenerationType.IDENTITY` fails when the `DataDirect` driver is used with `SyBase`. The attempt fails because the `DataDirect` driver creates a stored procedure for every parameterized prepared statement.

#### Solution

In the `domain.xml` file, set the property `PrepareMethod=direct` on the corresponding data source.

## Lifecycle Management

This section describes known lifecycle management issues and associated solutions.

### Setting ejb-timer-service property causes set command to fail (6193449)

#### Description

After setting the `ejb-timer-service` property `minimum-delivery-interval` to `9000`, an attempt to set the `ejb-timer-service` property `redelivery-interval-in-mills` to `7000` causes the set command to fail with the following error:

```
[echo] Doing admin task set
[exec] [Attribute(id=redelivery-interval-internal-in-millis) :
Redelivery-Interval (7,000)
should be greater than or equal to Minimum-delivery-interval-
in-millis (9,000)]
[exec] CLI137 Command set failed.
```

- `minimum-delivery-interval` is the minimal interval duration between deliveries of the same periodic timer.
- `redelivery-interval-in-millis` is the time the timer service will wait after a failed `ejbTimeout` before attempting redelivery.

The problem is that the logic that relates the redelivery interval property to the minimum delivery property is incorrect and prevents you from using the GUI or the CLI to set any value where the minimum delivery interval is greater than redelivery interval.

The `minimum-delivery-interval-in-millis` must always be set equal to or higher than `ejb-timer-service` property `redelivery-interval-in-millis`. The problem is that there is an erroneous validation check in the aerver to verify that the value for `redelivery-interval-in-millis` is greater than the value for `minimum-delivery-interval-in-millis`.

### Solution

Use the default values for these properties, as follows:

```
minimum-delivery-interval(default)=7000
redelivery-interval-in-millis(default)=5000
```

Values other than these defaults will generate an error.

### Error thrown when list JMS physical destinations within non-DAS config (6532532)

#### Description

If you are trying to view the JMS Physical Destinations using the `default-config`, you will see an error message.

#### Solution

This is expected behavior. In Enterprise Server 2.1, `default-config` is a template of configuration information and hence JMS operations (such as `list` and `create`) cannot be executed for the `default-config`. These JMS operations can, however, be executed for the configurations of your cluster or standalone instances.

**Win2003 only: Non-paged pool leak memory, breaking tcp stack and richaccess test (6575349)****Description**

(*Windows 2003 only*) There are memory leaks on Windows 2003 systems when performing rich access functions. The problem occurs because the Win32 nonpaged pool keeps growing, eventually bringing down the entire TCP/IP stack. Once the failure happens, the TCP/IP stack is left in an unrecoverable state, and the only way to restore it is by rebooting the Windows 2003 system.

**Workaround**

There are two workarounds to this issue:

- Use Grizzly blocking mode by configuring the `domain.xml http-listener` attribute, `blocking-enabled="true"` or add the following `http-listener` property:  

```
<property name="blocking" value="true"/>
```
- Use Windows Vista or Windows XP.

**Logging**

This section describes known logging issues and solutions.

**Setting debug statement for access, failure causes hang in server startup (6180095)****Description**

Setting the `java.security.debug` option for the JVM will cause the server instance startup to freeze with a deadlock; for example, setting the following in `domain.xml` causes the problem:

```
<jvm-options>-Djava.security.debug=access, failure</jvm-options>
```

**Solution**

None at this time. Please avoid setting this flag.

**Message Queue**

This section describes known Java message queue issues and associated solutions.

**Enterprise Server Does Not Start If MQ Broker is Not Started (6740797)****Description**

If you configure JMS to be REMOTE, Enterprise Server fails to start if the MQ broker is not started.

## Solution

Set the following JVM option as follows:

`com.sun.enterprise.jms.CONNECT_MQ_LAZILY=true`. After setting this JVM option, you can start Enterprise Server if the MQ broker is not started. However, it is recommended that you start MQ before starting the server.

### **JMS reconnection does not successfully complete in certain cases that are timing dependent (6173308, 6189645, 6198481, 6199510, 6208728)**

## Description

Failures to reconnect in timing-dependent scenarios can be caused by several problems.

## Solution

You can work around these problems by:

- Restarting the brokers involved
- Restarting the instances involved

### **MQ broker fails to start with cluster profile on Linux (6524871)**

## Description

After creating a domain with a cluster profile on a Linux system, you may encounter a `java.lang.OutOfMemoryError: Java heap space` error, and the server instance may fail to restart because the MQ broker does not start. The system never recovers after this condition. The problem is a misconfigured `/etc/hosts` file; specifically, the server host name is pointing to the loopback address `127.0.0.1`.

## Solution

By design, an MQ broker cluster cannot start with the network device configured to point to the loopback address. This is not a bug. The solution is to make sure that the `/etc/hosts` file for the Enterprise Server host does not point to `127.0.0.1`.

### **Mismatch of old and new classes is created when `imqjmsra.jar` is loaded before upgrade (6740794)**

## Description

During server startup, the server checks the Message Queue version. If the Message Queue version is incorrect, then the server upgrades using the `imqjmsra.jar`. This upgrade JAR and its classes will not be available to the server until the next restart. This situation only occurs if Message Queue is upgraded alone, or if Application Server is patched alone. A side effect of this situation is that sometimes server does not start.

**Solution**

Both Message Queue and Enterprise Server need to be maintained at the same patch level, or restart the server.

**Monitoring**

This section describes known monitoring issues and associated solutions.

**Some of the HTTP Service monitoring statistics do not present useful information and should be ignored (6174518)****Description**

When viewing the monitoring statistics of some elements of the HTTP Service, some values presented do not correspond to current values or are always 0. Specifically, the following HTTP Service statistics do not present information applicable to the Enterprise Server, and should be ignored:

- `http-service`
  - `load1MinuteAverage`
  - `load5MinuteAverage`
  - `load15MinuteAverage`
  - `rateBytesTransmitted`
  - `rateBytesReceived`
- `pwc-thread-pool` (the element)

**Solution**

These monitors will be removed in future releases and replaced with more appropriate information.

**Open JNDI Browsing from Admin UI dumps a huge amount of exceptions in the `server.log` (6591734)****Description**

Many exceptions are thrown when the JNDI browser is opened from the Admin GUI.

**Solution**

None at this time.

**Packaging**

This section describes known issues and associated solutions related to the packaging of the software code for the Enterprise Server 2.1 product.

**AIX:monitor command doesn't work on AIX (6655731)****Description**

The monitor command cannot be run on the AIX operating system because the libcliutil.so library file is not packaged in Enterprise Server 2.1.

**▼ Solution: To Install the Missing libcliutil.so Library File**

- 1 **Download the JAR file from** (<http://download.java.net/javaee5/external/AIX/appserv-native/jars/appserv-native-9.1.1-b16a.jar>).
- 2 **Change to the directory to where you downloaded the appserv-native-9.1.1-b16a.jar file.**  
prompt% `cd destination-dir`
- 3 **Extract the contents of the appserv-native-9.1.1-b16a.jar file.**  
prompt% `jar xf appserv-native-9.1.1-b16a.jar`
- 4 **Copy the libcliutil.so file to the as-install/lib directory.**  
prompt% `cp libcliutil.so as-install/lib`

**Samples**

This section describes known issues and associated solutions related to the sample code included with the Enterprise Server 2.1 product.

**After upgrade Enterprise Server samples and JES5 portal samples compete on derby port 1527 (6574563)****Description**

On Windows, after upgrading to Enterprise Server 2.1, the samples and JES5 portal samples compete on Derby port 1527. Specifically, Enterprise Server 2.1 automatically starts JavaDB on port 0.0.0.0:1527 with APP:APP, however the JES5 Portal JavaDB wants to bind to hostnameIP:1527 with portal:portal.

This bug describes an issue that was already seen for JES 5, Bug 6472173. The workaround for bug 6472173 is documented in the Sun Java Enterprise System 5 Installation Guide for Microsoft Windows on <http://docs.sun.com>.

**Solution**

Start the Derby database using the following command:

```
JES-installation-dir\appserver\bin\asadmin start-database --dbhome JES-installation-dir\portal\data\derby
```

## Security

This section describes known issues and associated solutions related to Enterprise Server and web application security and certificates.

### **OutOfMemory Error in SSL Scenarios During Heavy Stress (JDK 6 Issue 23)**

#### **Description**

A JDK bug (See: [https://jdk6.dev.java.net/issues/show\\_bug.cgi?id=23](https://jdk6.dev.java.net/issues/show_bug.cgi?id=23)) in JDK6 Sun PKCS11 Provider could cause an OutOfMemoryError when running certain SSL scenarios under heavy stress.

#### **Solution**

If you run into this issue, remove `sun.security.pkcs11.SunPKCS11` provider from the `java.security` file in your JRE installation.

### **AIX: WSS dynamic encrypt key test failed due to server side certification validation error (6627379)**

#### **Description**

On the AIX platform, dynamic encryption for the determination of an encryption key for a response is failing. The failure occurs during the validation of the certificate on the server side.

In response to the failure, the following error messages are written to the server's log file `server.log`:

```
Unable to validate certificate
```

```
Error occurred while resolving key information  
com.sun.xml.wss.impl.WssSoapFaultException: Certificate validation failed
```

#### **Solution**

Install Metro 1.1 on Enterprise Server 2.1

### **AIX: @RunAs at EJB module authorization test failed AccessLocalException: Client not authorized (6627385)**

#### **Description**

A method in an enterprise bean whose `run-as`, or propagated, security identity is defined by using the `@RunAs` annotation attempts to invoke a method in another enterprise bean. If no `run-as` principal is defined in the `sun-ejb-jar.xml` deployment descriptor file, the attempt might fail with a `javax.ejb.AccessLocalException` exception.

```
javax.ejb.AccessLocalException: Client not authorized for this invocation.
```



**Solution**

In the `sun-ejb-jar.xml` deployment descriptor file, define in the `principal-name` element the principal name for which the `run-as` role specified.

**SSL termination is not working (6269102)****Description**

SSL termination is not working; when Load Balancer (Hardware) is configured for SSL termination, the Enterprise Server changes the protocol from `https` to `http` during redirection.

**Solution**

Add a software load balancer between the hardware load balancer and the Enterprise Server.

**Socket connection leak with SSL (6492477)****Description**

Because of a JVM bug, there is a leak issue with some JDK versions when `security-enabled` is set to `true` on an HTTP listener. Specifically, the steps to reproduce this bug are as follows:

1. Set `security-enabled` to `true` on the HTTP listener:

```
<http-listener acceptor-threads="1" address="0.0.0.0"
blocking-enabled="false" default-virtual-server="server" enabled="true"
family="inet" id="http-listener-1" port="8080" security-enabled="true"
server-name="" xpowered-by="true">
```

2. Comment out stopping domain at the end of quicklook tests.
3. Run quicklook tests.
4. Check socket usage:

```
netstat -an | grep 8080
```

The following are shown to be in use:

```
*.8080          *.*           0      0 49152      0 LISTEN
*.8080          *.*           0      0 49152      0 BOUND
```

This issue is tracked on the GlassFish site at [https://glassfish.dev.java.net/issues/show\\_bug.cgi?id=849](https://glassfish.dev.java.net/issues/show_bug.cgi?id=849).

**Solution**

Upgrade to the latest JDK version.

**Upgrade**

This section describes known upgrade issues and associated solutions.

## On some Linux systems, the installer running "Upgrade in place" fails to start upgrade tool after clicking on the "Start Upgrade Wizard" button (6207337)

### Description

This problem has been observed on several Linux systems, it is most common on Java Desktop System 2 but has also been observed on Red Hat distributions.

After clicking the "Start Upgrade Tool" button on the final installer screen, the installer fails to launch the upgrade tool to complete the upgrade process, and hangs indefinitely, not returning the command prompt.

### Solution

This issue is not encountered if command line installation mode is used to run upgrade in place.

1. If you ran upgrade in place in GUI mode and encountered this problem, exit the installer by pressing Ctrl+C in the terminal window in which the installer was started.
2. Start upgrade tool from the terminal window, using following command:

```
as-install/bin/asupgrade --source as-install/domains --target
as-install --adminuser adminuser --adminpassword adminpassword
--masterpassword changeit
```

*adminuser* and *adminpassword* should match the values used for the installation you are upgrading.

3. When the upgrade tool completes the upgrade process you can also start the browser and enter following URL in order to review About page:

```
file://as-install/docs-ee/about.html
```

If you also selected the installation option to register the product, follow the link to registration page available on product About page.

## Self-signed certificate is not trusted during and after upgrade from 8.0 Platform Edition (PE) to 8.1 Enterprise Edition (EE) UR2 (6296105)

### Solution

Remove the following entries from the target `domain.xml` (after the upgrade) and restart the server:

```
<jvm-options>-Djavax.net.ssl.keyStore=${com.sun.aas.instanceRoot}
/config/keystore.jks</jvm-options>-
<jvm-options>Djavax.net.ssl.trustStore=${com.sun.aas.instanceRoot}
/config/cacerts.jks</jvm-options>
```

---

**(sbs-manual, sbs-installer) throws Server Instance server does not have a system connector named null (6545145)****Description**

When upgrading from Enterprise Server 8.0PE to 2.1, an error is thrown saying the server does not have system connector named null, and invalid user information as seen in sbs-manual. Even after changing the hardcoded values, the same error message is seen.

**Solution**

You can only encounter this bug while upgrading from a 8.0 PE to Enterprise Server. The workaround is to upgrade to either 8.1, 8.2, or 9.0 and then upgrade to Enterprise Server.

**Different domains are lost during upgrade when different build combinations are used (6546130)****Description**

When performing an inplace upgrade, in cases where there are multiple domains in the source, the installer invokes upgrade tool even though the process is killed. This happens when it is invoked in GUI mode.

**Solution**

1. Install inplace in the CLI mode, and exit when the installer prompts you to select the upgrade tool at the end of installation process. This does not delete any of the domains present in the domains directory. Upgrade tool should be manually invoked from the bin directory.
2. When installing inplace in GUI mode, make a backup of the domains present in the domains root to prevent losing any domains in the process. At the end of the installation process, exit when the installer prompts you to invoke the upgrade tool. Copy any backed up domains into the domains directory if they have been lost. Launch upgrade tool manually to do an upgrade.

**Solaris: pre-filled Master password in upgrade Tool is from Enterprise Server 2.1 and not from AS8.2 (6565825)****Description**

When upgrading from AS 8.2, the master password from the 8.2 installation is not inherited in the target installation. This subsequently causes an authentication error at the next admin login.

**Solution**

The default admin password in Enterprise Server 2.1 is changeit. To avoid problems when logging in to the Enterprise Server after upgrading from 8.2, do one of the three following things:

- Change the 8.2 admin password to change it before performing the upgrade.
- Do not accept the default admin password during the upgrade process, but instead explicitly enter the password you want to use.
- Log in to Enterprise Server 2.1 with the default password, and then immediately change it.

#### **Localized Online Help for asupgrade GUI Does Not Exist (6610170)**

##### **Description**

When running the asupgrade GUI in a language other than English, the online help for the GUI is not localized for the selected non-English language.

##### **Solution**

None at the time. Online help is scheduled to be localized in all non-English target languages.

#### **Upgrade Tool deleted nodeagents directory when upgrade (reverse order) with multiple domains (6636871)**

##### **Description**

After a side-by-side upgrade of a configuration that contains multiple domains, only the node agents of the last processed domain are present. This issue occurs because Upgrade Tool removes and re-creates the nodeagents directory in the target each time Upgrade Tool processes a domain.

#### **▼ Solution: To Preserve All Node Agents in a Side-by-Side Upgrade of Multiple Domains**

- 1 After processing each domain, create a zip file of the nodeagents directory.**
- 2 When all domains have been processed, unzip the files that you created.**

All node agents should now be present.

#### **In-place upgrade does not update the index.html file of existing domain (6831429)**

##### **Description**

While performing in-place upgrade, the `index.html` file of a domain that already exists is not replaced. It might still show the old version of the server. This `index.html` file could be replaced by the `index.html` file from `SGES_BASE`.

```
SGES_BASE/lib/install/templates/ee/index.html DOMAIN_DIR/docroot/index.html
```

## **Web Container**

This section describes known web container issues and associated solutions.

---

## On Windows, deploying an application using `--precompilejsp=true` can lock JAR files in the application, causing later undeployment or redeployment to fail (5004315)

### Description

If you request precompilation of JSPs when you deploy an application on Windows, later attempts to undeploy that application or to redeploy it (or any application with the same module ID) will not work as expected. The problem is that JSP precompilation opens JAR files in your application but does not close them, and Windows prevents the undeployment from deleting those files or the redeployment from overwriting them.

Note that undeployment succeeds to a point, in that the application is logically removed from the Application Server. Also note that no error message is returned by the `asadmin` utility, but the application's directory and the locked jar files remain on the server. The server's log file will contain messages describing the failure to delete the files and the application's directory.

Attempts to redeploy the application after undeploying fail because the server tries to remove the existing files and directory, and these attempts also fail. This can happen if you try to deploy any application that uses the same module ID as the originally deployed application, because the server uses the module ID in choosing a directory name to hold the application's files.

Attempts to redeploy the application without undeploying it first will fail for the same reasons.

### Diagnostics

If you attempt to redeploy the application or deploy it after undeploying it, the `asadmin` utility returns an error similar to the one below.

```
An exception occurred while running the command. The exception
message is: CLI171 Command deploy failed : Deploying application in
domain failed; Cannot deploy. Module directory is locked and can't
be deleted.
```

### Solution

If you specify `--precompilejps=false` (the default setting) when you deploy an application, then this problem will not occur. Be aware that the first use of the application will trigger the JSP compilation, so the response time to the first request will be longer than for later requests.

Note also that if you do precompile, you should stop and restart the server before undeploying or redeploying the application. The shutdown frees the locked JAR files so the undeployment or redeployment after the restart can succeed.

## Unable to deploy WAR with Servlet 2.4-based web.xml that contains an empty <load-on-startup> element (6172006)

### Description

The optional load-on-startup servlet element in a web.xml indicates that the associated servlet is to be loaded and initialized as part of the startup of the web application that declares it.

The optional content of this element is an integer indicating the order in which the servlet is to be loaded and initialized with respect to the web application's other servlets. An empty <load-on-startup> indicates that the order is irrelevant, as long as the servlet is loaded and initialized during the startup of its containing web application.

The Servlet 2.4 schema for web.xml no longer supports an empty <load-on-startup>, meaning that an integer must be specified when using a Servlet 2.4 based web.xml. If specifying an empty <load-on-startup>, as in <load-on-startup/>, the web.xml will fail validation against the Servlet 2.4 schema for web.xml, causing deployment of the web application to fail.

Backwards compatibility issue. Specifying an empty <load-on-startup> still works with Servlet 2.3 based web.xml.

### Solution

Specify <load-on-startup>0</load-on-startup> when using a Servlet 2.4 based web.xml to indicate that servlet load order does not matter.

## Unable to compile JSP page on resource constrained servers (6184122)

### Description

The JSP page is accessed but fails to compile, and the server log contains the error message "Unable to execute command" with the following stack trace:

```
at org.apache.tools.ant.taskdefs.Execute$Java13CommandLauncher.  
exec(Execute.java:655) at org.apache.tools.ant.taskdefs.Execute.  
launch(Execute.java:416)  
at org.apache.tools.ant.taskdefs.Execute.execute(Execute.java:427)  
at org.apache.tools.ant.taskdefs.compilers.DefaultCompilerAdapter.  
executeExternalCompile(DefaultCompilerAdapter.java:448)  
at org.apache.tools.ant.taskdefs.compilers.JavacExternal.execute  
(JavacExternal.java:81)  
at org.apache.tools.ant.taskdefs.Javac.compile(Javac.java:842)  
at org.apache.tools.ant.taskdefs.Javac.execute(Javac.java:682)  
at org.apache.jasper.compiler.Compiler.generateClass(Compiler.java:396)
```

### Solution

Set the JSP compilation switch "fork" to "false."

This can be done either of two ways:

- Globally, by setting the fork init parameter of the JspServlet in *domain-dir/config/default-web.xml* to false:

```
<servlet> <servlet-name>jsp</servlet-name>
<servlet-class>org.apache.jasper.servlet.JspServlet</servlet-class>
... <init-param>
<param-name>fork</param-name> <param-value>>false</param-value>
</init-param> ... </servlet>
```

- On a per-web application basis, by setting the fork JSP configuration property in *sun-web.xml* to false:

```
<sun-web-app> <jsp-config> <property name="fork" value="false" />
</jsp-config> </sun-web-app>
```

Either setting will prevent ant from spawning a new process for javac compilation.

## Enterprise Server does not support auth-passsthrough Web Server 6.1 Add-On (6188932)

### Description

The Sun GlassFish Enterprise Server 2.1 adds support for the functionality provided by the *auth-passthrough* plugin function available with Sun GlassFish Enterprise Server Enterprise Edition 7.1. However, in Enterprise Server 2.1, the *auth-passthrough* plugin feature is configured differently.

The *auth-passthrough* plugin function in Enterprise Server Enterprise Edition 7.1 has been useful in two-tier deployment scenarios, where:

- Application Server instance is protected by a second firewall behind the corporate firewall.
- No client connections are permitted directly to the Application Server instance.

In such network architectures, a client connects to a front-end web server, which has been configured with the *service-passthrough* plugin function and forwards HTTP requests to the proxied Application Server instance for processing. The Application Server instance can only receive requests from the web server proxy, but never directly from any client hosts. As a result of this, any applications deployed on the proxied Application Server instance that query for client information, such as the client's IP address, will receive the proxy host IP, since that is the actual originating host of the relayed request.

### Solution

In Application Server Enterprise Edition 7.1, the *auth-passthrough* plugin function could be configured on the proxied Application Server instance in order to make the remote client's information directly available to any applications deployed on it; as if the proxied Application Server instance had received the request directly, instead of via an intermediate web server running the *service-passthrough* plugin.

In Enterprise Server 2.1, the `auth-passthrough` feature may be enabled by setting the `authPassthroughEnabled` property of the `<http-service>` element in `domain.xml` to `TRUE`, as follows:

```
<property name="authPassthroughEnabled" value="true"/>
```

The same security considerations of the `auth-passthrough` plugin function in Application Server Enterprise Edition 7.1 also apply to the `authPassthroughEnabled` property in Enterprise Server 2.1. Since `authPassthroughEnabled` makes it possible to override information that may be used for authentication purposes (such as the IP address from which the request originated, or the SSL client certificate), it is essential that only trusted clients or servers be allowed to connect to an Enterprise Server 2.1 instance with `authPassthroughEnabled` set to `TRUE`. As a precautionary measure, it is recommended that only servers behind the corporate firewall should be configured with `authPassthroughEnabled` set to `TRUE`. A server that is accessible through the Internet must never be configured with `authPassthroughEnabled` set to `TRUE`.

Notice that in the scenario where a proxy web server has been configured with the `service-passthrough` plugin and forwards requests to an Enterprise Server instance with `authPassthroughEnabled` set to `TRUE`, SSL client authentication may be enabled on the web server proxy, and disabled on the proxied Enterprise Server instance. In this case, the proxied Enterprise Server instance will still treat the request as though it was authenticated via SSL, and provide the client's SSL certificate to any deployed applications requesting it.

## Web Server

**AS 9.1 b50e.Linux. Can not start WS after AS LB installation: libjvm.so: cannot open shared (6572654)**

### Description

This issue only applies you are using the Sun GlassFish Web Server with Enterprise Server and Load Balancer on a Linux system. In such a case, after installing Enterprise Server and a load balancer, the Web Server may fail to start because `libcui18n.so.2` and `libcuc.so.2` are in conflict. These libraries are present in both `/opt/sun/private/lib` and `/opt/sun/appserver/lib`.

### Solution

The correct libraries to use are the ones in `/opt/sun/appserver/lib` because `lbplugin` is built against those libraries. Once you remove the two libraries from `/opt/sun/private/lib`, Web Server should start without error.

Alternatively, if you do not want to delete the libraries from `/opt/sun/private/lib`, you can instead put `/opt/sun/appserver/lib` before `/opt/sun/private/lib` in `LD_LIBRARY_PATH` in the Web Server `startserv` script; that is, replace:



```
# Add instance-specific information to LD_LIBRARY_PATH for Solaris and Linux
LD_LIBRARY_PATH="${SERVER_LIB_PATH}:${SERVER_JVM_LIBPATH}:${LD_LIBRARY_PATH}:/opt/sun/appserver/lib:/opt/sun/appserver/lbplugin/lib"; export LD_LIBRARY_PATH
```

with:

```
# Add instance-specific information to LD_LIBRARY_PATH for Solaris and Linux
LD_LIBRARY_PATH="/opt/sun/appserver/lib:/opt/sun/appserver/lbplugin/lib:${SERVER_LIB_PATH}:${SERVER_JVM_LIBPATH}:${LD_LIBRARY_PATH}"; export LD_LIBRARY_PATH
```

## Web Services

This section describes known web container issues and associated solutions.

### Ant task `wsimport` fails with Java EE SDK b33d (using JDK 1.6) with `NoClassDefFoundError` (6527842)

#### Description

You may encounter a problem when running the JAX—WS tests with the JDK 1.6 included with the Java EE SDK b33d. The tests immediately abort with the following message:

```
[wsimport] Exception in thread "main" java.lang.NoClassDefFoundError: \
com/sun/tools/ws/WsImport
```

This error occurs even though the `webservices-tools.jar` does contain `com/sun/tools/ws/WsImport.class`, `com/sun/tools/ws/ant/WsImport.class`, and `com/sun/tools/ws/ant/WsImport2.class`. Moreover, the same test workspace works without problem using the 1.5.0-10 JDK.

#### Solution

Copy the `webservices-api.jar` to `$JAVA_HOME/jre/lib/endorsed` before running the JAX-WS tests.

### publish-to-registry commands fail in IFR EE builds (6602046)

#### Description

JAXR uses SAAJ to send soap messages to the registry. In the non-IFR case, the SAAJ impl classes are under `lib/webservices-rt.jar`. In the IFR case, the SAAJ classes are still under `lib/webservices-rt.jar`. In addition, `saaj-impl.jar` is located in the `/usr/share/lib` directory. This jar file is picked up by Enterprise Server and has precedence over classes from `webservices-rt.jar`. This jar file does not have the necessary security permissions to send soap messages to the Web services registry. The packaging should be modified to grant permissions to the jars under `/usr/share/lib` directory or not depend on the `/usr/share/lib` jars.

## Solution

Add the following to the `server.policy` file:

```
grant codeBase "file:/usr/share/lib/saaj-impl.jar" {  
    permission java.security.AllPermission;  
};
```

`wscmcompile` fails with **"package javax.xml.rpc does not exist" on JDK6 u4 b3 (6638567)**

## Description

The `wscmcompile` ant task fails for JDK 6 Update 4. For each JAX-RPC API class, the following error message is displayed:

```
package package-name does not exist
```

## Solution

Before running the `wscmcompile` ant task, ensure that `javaee.jar` is specified in the class path, *not* `j2ee.jar`.