



# **Sun Java System Application Server Platform Edition 9.0 Update 1 Release Notes**



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# Overview

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The Sun Java™ System **Application Server Platform Edition 9.0 Update 1** product is a 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 Java System Application Server Platform Edition is free for development, deployment and redistribution. Customers interested in redistribution should contact [Sun OEM sales](http://www.sun.com/software/products/appsrvr/appsrvr_oem.html) ([http://www.sun.com/software/products/appsrvr/appsrvr\\_oem.html](http://www.sun.com/software/products/appsrvr/appsrvr_oem.html)) for a redistribution license.

This document contains the following sections:

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- “[Accessibility Features](#)” on page 4
- “[Related Documentation](#)” on page 4
- “[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 Java System Application Server Platform Edition 9.0 Update 1. New features and enhancements, known issues and limitations, and other information are addressed here. Read this document before you begin using Application Server 9.0 Update 1.

The most up-to-date version of these release notes can be found at the Sun [documentation Web site](http://docs.sun.com/app/docs/coll/1343.3) (<http://docs.sun.com/app/docs/coll/1343.3>). 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.

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## Release Notes Revision History

This section lists the revision history of these release notes.

TABLE 1-1 Release Notes Revision History

Revision Date	Description
October 2006	FCS release of the Sun Java System Application Server Platform Edition 9.0 Update 1 product.
May 2008	Added “System Virtualization Support” section.

## 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://sun.com/access>.

## Related Documentation

In addition to these Release Notes, the Application Server product includes an entire [set of documentation \(http://docs.sun.com/app/docs/prod/sjs.asse#hic\)](http://docs.sun.com/app/docs/prod/sjs.asse#hic).

The following table summarizes the books included in the Application Server Platform Edition core application documentation set.

TABLE 1-2 Books in This Documentation Set

Book Title	Description
<i>Sun Java System Application Server Platform Edition 9 Documentation Center</i>	<b>One stop location to access all Application Server topics.</b>
<i>Sun Java System Application Server Platform Edition 9 Quick Start Guide</i>	How to get started with the Sun Java System Application Server product.

**TABLE 1–2 Books in This Documentation Set** *(Continued)*

Book Title	Description
<i>Sun Java System Application Server Platform Edition 9 Documentation Center</i>	<b>One stop location to access all Application Server topics.</b>
<i>Sun Java System Application Server Platform Edition 9 Installation Guide</i>	Installing the Sun Java System Application Server software and its components.
<i>Sun Java System Application Server Platform Edition 9 Application Deployment Guide</i>	Information assembling and deploying Java EE applications on the Sun Java System Application Server.
<i>Sun Java System Application Server Platform Edition 9 Developer's Guide</i>	Creating and implementing Java 2 Platform, Enterprise Edition (Java EE™ platform) applications intended to run on the Sun Java System Application Server that follow the open Java standards model for Java EE components and APIs. Includes general information about developer tools, security, assembly, deployment, debugging, and creating lifecycle modules.
<i>Sun Java System Application Server Platform Edition 9 Java EE Tutorial</i>	Using Java EE 5 platform technologies and APIs to develop Java EE applications and deploying the applications on the Sun Java System Application Server.
<i>Sun Java System Application Server Platform Edition 9 Administration Guide</i>	Configuring, managing, and deploying the Sun Java System Application Server subsystems and components from the Administration Console.
<i>Sun Java System Application Server Platform Edition 9 Administration Reference</i>	Editing the Sun Java System Application Server configuration file, <code>domain.xml</code> .
<i>Sun Java System Application Server Platform Edition 9 Upgrade and Migration Guide</i>	Migrating your applications to the new Sun Java System Application Server programming model, specifically from Application Server 6.x, 7, and 8.x. This guide also describes differences between adjacent product releases and configuration options that can result in incompatibility with the product specifications.
<i>Sun Java System Application Server Platform Edition 9 Troubleshooting Guide</i>	Solving Sun Java System Application Server problems.
<i>Sun Java System Application Server Platform Edition 9 Error Message Reference</i>	Solving Sun Java System Application Server error messages.
<i>Sun Java System Application Server Platform Edition 9 Reference Manual</i>	Utility commands available with the Sun Java System Application Server; written in manpage style. Includes the <code>asadmin</code> command line interface.

## Sun Welcomes Your Comments

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

To share your comments, go to <http://docs.sun.com> and click Send Comments. In the online form, provide the 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 Java System Application Server Platform Edition 9.0 Update 1 Release Notes*, and the part number is 820-0135.

## Additional Sun Resources

Useful information about the Application Server product can be obtained from the following locations:

- [Java EE Feedback Submittal Form](http://java.sun.com/docs/forms/javaeesubmittalform.html) (<http://java.sun.com/docs/forms/javaeesubmittalform.html>) — Submit feedback about the Sun Java System Application Server
- [J2EE-INTEREST List](http://archives.java.sun.com/archives/j2ee-interest.html) (<http://archives.java.sun.com/archives/j2ee-interest.html>) — Mailing list for questions about the Java EE platform
- [Bug Database on Java Developer Connection](http://developer.java.sun.com/developer/bugParade/index.jshtml) (<http://developer.java.sun.com/developer/bugParade/index.jshtml>) — View or submit bugs related to the Sun Java System Application Server
- [Glassfish Community](http://java.sun.com/javaee/glassfish) (<http://java.sun.com/javaee/glassfish>) — Free, open source project community through which Application Server and other implementations of the newest features in the Java EE 5 platform are developed
- [Java Enterprise Community](http://community.java.net/java-enterprise/) (<http://community.java.net/java-enterprise/>) — Part of [java.net](http://java.net/) (<http://java.net/>) centered around Java EE applications, components, and tools
- [EJB 3.0 Tech Tips](http://java.sun.com/developer/EJTechTips/) (<http://java.sun.com/developer/EJTechTips/>) — Useful EJB 3.0 tech tips in the Developer area of [java.sun.com](http://java.sun.com/developer/) (<http://java.sun.com/developer/>); in particular:
  - [Accessing the Bean Environment in EJB Session Beans](http://java.sun.com/developer/EJTechTips/2005/tt0930.html#1) (<http://java.sun.com/developer/EJTechTips/2005/tt0930.html#1>)
  - [Converting a POJO to a Persistent Entity](http://java.sun.com/developer/EJTechTips/2005/tt1122.html#2) (<http://java.sun.com/developer/EJTechTips/2005/tt1122.html#2>)
- [Sun Developer Forums](http://developers.sun.com/forums/) (<http://developers.sun.com/forums/>) — Interactive message boards for sharing knowledge and questions about technologies and programming techniques; use the [Application & Integration Servers](http://swforum.sun.com/jive/category.jspa?categoryID=10) (<http://swforum.sun.com/jive/category.jspa?categoryID=10>) forum for discussions related to the Application Server
- [Java Technology Forums](http://forum.java.sun.com/index.jspa) (<http://forum.java.sun.com/index.jspa>) — Interactive message boards for sharing information about Java technologies in general

- [Java EE SDK Forums \(http://forum.java.sun.com/forum.jspa?forumID=136\)](http://forum.java.sun.com/forum.jspa?forumID=136) — Interactive message boards for sharing information about the Java EE SDK in particular
- [Sun Software Support Service Standard \(http://www.sun.com/service/support/software/standard.html\)](http://www.sun.com/service/support/software/standard.html) — Contracts are available for purchase
- [Sun Developer Network \(http://developers.sun.com/user\\_registration/whyregister.html\)](http://developers.sun.com/user_registration/whyregister.html) — Join to obtain further help and to keep on top of the latest Java developments
- [docs.sun.com \(http://docs.sun.com/\)](http://docs.sun.com/) — Complete documentation for Application Server and other Sun products
- [Sun Java System Application Server home page \(http://www.sun.com/appserver\)](http://www.sun.com/appserver) — Data sheets, press information, news, and other information about Application Server



# About Application Server Platform Edition 9.0 Update 1

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The Sun Java™ System **Application Server Platform Edition 9.0 Update 1** is a Java EE 5 platform-compatible server for the development and deployment of Java EE applications and Java technology-based web services.

This section includes:

- [“What’s New in the 9.0 Update 1 Release” on page 9](#)
- [“Hardware and Software Requirements” on page 11](#)
- [“Java EE 5 Platform APIs” on page 19](#)
- [“Java EE 5 SDK” on page 20](#)
- [“Switching to Another Supported Java Version” on page 20](#)

## What’s New in the 9.0 Update 1 Release

The Sun Java System Application Server Platform Edition 9.0 Update 1 implements many new features:

- **Java EE 5 platform support** — Sun Java System Application Server Platform Edition 9.0 Update 1 implements the Java EE 5 specification to deliver one of the best application runtimes for next-generation enterprise applications and web services. Application Server 9.0 Update 1 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, in [“Java EE 5 Platform APIs” on page 19](#)

- **Improved Developer Productivity** — Application Server 9.0 Update 1 provides a rich developer experience with its open modular extensible architecture and lightweight, low footprint, high performance runtime. Fast application deployment makes iterative application development quick and easy. The product can be easily integrated into popular IDEs. NetBeans and Sun Java Studio Creator integrate Application Server 9.0 Update 1, providing a superior development environment.
- **Java 2 Standard Edition 5.0 Support** — Application Server 9.0 Update 1 supports [Java 2 Standard Edition 5.0 \(<http://java.sun.com/j2se/1.5.0/>\)](#), which includes enhanced management and monitoring features and many performance and scalability improvements.
- **Sophisticated Administration** — Application Server 9.0 Update 1 provides remote secure management using a browser-based Administration Console and a scriptable command line interface. New Admin Console features include:
  - Comprehensive web services management support including web services discovery, management, monitoring, and provisioning.
  - Enhanced application monitoring, visualization, and diagnosis.
  - JMX MBean API to provide for remote secure programmatic administration and monitoring using JMX.
  - Built-in management rules and triggers that can be expanded programmatically.
- **Platform Support** — Application Server 9.0 Update 1 supports wide range of operating systems, databases, web servers, locales, and hardware. See the [“Platform Requirements” on page 12](#) later in these notes for the complete list.
- **64-bit Support** — Application Server 9.0 Update 1 adds support for the 64-bit Solaris Operating System.
- **Java Web Services Developer Pack Integration** — Application Server 9.0 Update 1 is integrated with the [Java Web Services Developer Pack \(<http://java.sun.com/webservices/downloads/webservicespack.html>\)](#) (Java WSDP) 2.0 to provide support for the latest web services standard--including Web Services Metadata 1.0 (specifies annotations for web services), JAX-WS 2.0 (specifies web services API for Java platform), and JAXB 2.0 (specifies Java and XML binding). In addition, it includes a Java EE Service Engine based on the Java Business Integration (JBI) standard.
- **JMS Connectivity** — Application Server 9.0 Update 1 provides built-in connectivity with IBM MQ Series and Sun Java System Message Queue Server.
- **Long-Running Transactions** — Application Server 9.0 Update 1 adds support for long-running distributed transactions.
- **JDBC™ Drivers** — Application Server 9.0 Update 1 connects to any database server with a JDBC driver. For a list of components that Sun has tested and found to be acceptable for constructing Java EE compatible database configurations, see [“JDBC Drivers and](#)

[Databases](#)” on page 13 later in these notes. Application Server includes DataDirect™ JDBC drivers for major databases that can be used for deployment.

- **Java DB Database** — Application Server 9.0 Update 1 bundles a Java DB database based on the [Apache Derby](#) database, making it possible to develop and deploy end-to-end Java EE applications.
- **Call Flow Monitoring** — Application Server 9.0 Update 1 can be configured to monitor an incoming request as it flows through various containers in the application server, and through the user application code. For example, the Application Server can break down the time spent in the web container, web application code, EJB container, and EJB application code. The collected information is stored in a database, and is then available for query and analysis.
- **Self Management Rules** — Application Server 9.0 Update 1 provides a powerful and flexible infrastructure to automate application server management tasks. A self-management rule consists of an event and an action. Examples of events include message logging, monitoring threshold, timer, and JMX notifications. Actions are logic defined by the user, which are then encapsulated in a JMX MBean. When an event is triggered, and it matches one of the events defined in a self management rule, the associated action will be executed. For example, an administrator might define a management rule such that he or she receives an email when a SEVERE message is logged in the application server.
- **Migration and Upgrade Tools** — Included tools enable you to verify Java EE applications for standards conformance and portability, help with migrations from other Java EE application servers (JBoss, WebLogic, WebSphere), and aid in upgrading from previous versions of Sun's Application Servers. These migration tools are also available separately at <http://java.sun.com/j2ee/tools/migration/index.html>
- **Open Source and GlassFish Community** — In June 2005, Sun launched the [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. Application Server Platform Edition 9.0 Update 1 is based on the source code developed by Sun engineers and the GlassFish community.

## Hardware and Software Requirements

This section lists the requirements that must be met before installing the Sun Java System Application Server Platform Edition 9.0 Update 1 product.

- “Platform Requirements” on page 12
- “System Virtualization Support” on page 12
- “Important Patch Information” on page 13
- “JDBC Drivers and Databases” on page 13
- “Using the Bundled Java DB Database” on page 14
- “Browsers” on page 17
- “Upgrading the Sun Java System Application Server” on page 18

- [“Other Requirements” on page 18](#)

**Platform Requirements**

The following table lists the operating systems with which the Sun Java System Application Server Platform Edition 9.0 Update 1 is compatible.

**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 (when available)
64-bit Sun Solaris 10 (SPARC, x86)	512 MB	512 MB	250 MB free	500 MB free	J2SE 5.0  Java SE 6 (when available)
Redhat Enterprise Linux 3.0 U1, 4.0	512 MB	1 GB	250 MB free	500 MB free	J2SE 5.0  Java SE 6 (when available)
Windows Server 2000 SP4+  Windows 2000 Advanced Server SP4+  Windows Server 2003  Windows XP Pro SP1+	1 GB	2 GB	500 MB free	1 GB free	J2SE 5.0  Java SE 6 (when available)

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

**Note** – You must use the NTFS file system rather than FAT or FAT32 when running the Application Server on any Microsoft Windows platform.

**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 9, 10 (x86, SPARC) users have the “Sun recommended patch cluster” installed. This patch cluster is available under “Recommended and Security Patches” on the [SunSolve \(http://sunsolve.sun.com/pub-cgi/show.pl?target=patchpage\)](http://sunsolve.sun.com/pub-cgi/show.pl?target=patchpage) Web site.

### JDBC Drivers and Databases

[Table 2–2](#) lists databases and drivers that meet the Java EE compatibility requirements. All supported configurations of the Sun Java System Application Server Platform Edition must contain at least one database/driver combination from this table, such as the bundled Java DB database and driver. In addition, the Application 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
Java DB Network Client	Type 4	Apache Derby 10.1
DataDirect 3.5	Type 4	Oracle 9i, 10g
IBM db2	Type 2	DB2 (8.2)

[Table 2–3](#) lists all the additional databases and drivers Sun has tested internally.

**TABLE 2–3** Additional Supported JDBC Drivers and Databases

JDBC Driver Vendor	JDBC Driver Type	Supported Database Server
DataDirect 3.5	Type 4	Sybase ASE 12.5, 15 Microsoft SQL Server 2000, 2005 IBM DB2 8.1, 8.2
Microsoft MS SQL	Type 4	SQLServer 2000, 2005
MySQL Connector/J Driver 3.1	Type 4	MySQL 5
Oracle	Type 4	Oracle 9i, 10g

TABLE 2-3 Additional Supported JDBC Drivers and Databases (Continued)

JDBC Driver Vendor	JDBC Driver Type	Supported Database Server
Postgres	Type 4	Postgres 8.1
Sybase	Type 4	ASE 12.5, 15

In general, the Application Server Platform Edition 9.0 Update 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 Application Server 9.0 Update 1. Java DB is based on the [Apache Derby database](#).

- “Starting and Stopping the Java DB Database” on page 14
- “Java DB Utility Scripts” on page 14
- “Exporting Tables from Pointbase to Java DB” on page 15

### Starting and Stopping the Java DB Database

Sun Java System Application Server 9.0 Update 1 introduces two new `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:

```
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 `appserver_install_dir/javadb`.

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

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

### Java DB Utility Scripts

The Java DB configuration that ships with Application Server 9.0 Update 1 also includes several useful scripts which can help you use Java DB. The following scripts are available for use in the `<appserver_install_dir>/javadb/frameworks/NetworkServer/bin` directory:

- `startNetworkServer.ksh/bat` — Script to start the network server
- `stopNetworkServer.ksh/bat` — Script to stop the network server
- `ij.ksh/bat` — interactive JDBC scripting tool
- `dblook.ksh/bat` — Script to view all or part of the DDL for a database

- `sysinfo.ksh/bat` — Script to display versioning info regarding the Java DB environment
- `NetworkServerControl.ksh/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 **Set the `DERBY_INSTALL` environment variable to point to the `<appserver_install_dir>/javadb` directory.**
- 2 **Unset your `CLASSPATH` environment variable.**
- 3 **You can also optionally set the following properties:**
  - a. **`DERBY_SERVER_HOST` to the host on which the network server will listen.**  
Can also be set to `0.0.0.0` to enable all listeners.
  - b. **`DERBY_SERVER_PORT` to the port number on which the network server will listen.**

**See Also** For more information about these utilities, see the Derby [Tools](http://db.apache.org/derby/docs/10.1/tools/) (<http://db.apache.org/derby/docs/10.1/tools/>) and [Admin](http://db.apache.org/derby/docs/10.1/adminguide/) (<http://db.apache.org/derby/docs/10.1/adminguide/>) guides.

### Exporting Tables from Pointbase to Java DB

This example shows how to capture the DDL for a Pointbase table in commander and create the same table in Java DB using NetBeans 5.0. Another option for doing this is by using the commander tool and the `unload database` command:

```
./startcommander.sh
Do you wish to create a new Database. (Yes (Y) or No (N))? [default: N]:
Enter product to connect with: (Embedded (E) or Server (S))? [default: E]: e
Enter driver to use? [default: [com.pointbase.jdbc.jdbcUniversalDriver]:
Enter database URL? [default: [jdbc:pointbase:embedded:sample]:
Enter Username? [default: PBPUBLIC]:
Enter Password? [default: PBPUBLIC]:
```

PointBase Commander 5.2 ECF build 294 size restricted version EMBEDDED

Interactive SQL command language. SunOS/5.9

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WEBSITE: [www.pointbase.com](http://www.pointbase.com)

```
SQL>unload database sampledb.sql;
SQL> unload database sampledb.sql;
SQL> 13 Row(s) Unloaded. (PBPUBLIC.CUSTOMER_TBL)
SQL> 4 Row(s) Unloaded. (PBPUBLIC.DISCOUNT_CODE_TBL)
SQL> 30 Row(s) Unloaded. (PBPUBLIC.MANUFACTURE_TBL)
SQL> 11 Row(s) Unloaded. (PBPUBLIC.MICRO_MARKETS_TBL)
SQL> 9 Row(s) Unloaded. (PBPUBLIC.OFFICE_TBL)
SQL> 4 Row(s) Unloaded. (PBPUBLIC.OFFICE_TYPE_CODE_TBL)
SQL> 15 Row(s) Unloaded. (PBPUBLIC.ORDER_TBL)
SQL> 6 Row(s) Unloaded. (PBPUBLIC.PRODUCT_CODE_TBL)
SQL> 30 Row(s) Unloaded. (PBPUBLIC.PRODUCT_TBL)
SQL> 10 Row(s) Unloaded. (PBPUBLIC.SALES_REP_DATA_TBL)
SQL> 10 Row(s) Unloaded. (PBPUBLIC.SALES_REP_TBL)
SQL> 52 Row(s) Unloaded. (PBPUBLIC.SALES_TAX_CODE_TBL)
SQL> 12 Table(s) Unloaded.
SQL> quit;
```

The results from executing the unload database command is written in the above example to the file `sampledb.sql`. The `sampledb.sql` file contains all of the DDL required to create the necessary tables and indexes. It also contains the DML to insert the data back into the database. The commander command `RUN` is intended to be used import the data into another Pointbase database using the script that was generated. Here is an example of what the `INSERT` statements and associated data look like in the generated file:

```
INSERT INTO "ADVENTURE"."CATEGORY" (
"CATID", "LOCALE", "NAME", "DESCRIPTION", "IMAGEURI" )
VALUES( ?, ?, ?, ?, ? );
{
'ISLAND          ','en_US','Island Adventures','Experience an island /
paradise in a way fit for your needs.','Island_Adventures.gif'
'JUNGLE          ','en_US','Jungle Adventures','Experience a jungle /
paradise in a way fit for your needs.','Jungle_Adventures.gif'
'MOUNTAIN        ','en_US','Mountain Adventures','Experience an /
elevated paradise with a view.','Mountain_Adventures.gif'
'ORBITAL         ','en_US','Orbital Adventures','Experience a vacuum /
paradise with a beautiful view and where no one can hear you scream.',' /
'Space_Adventures.gif'
'WESTERN         ','en_US','Western Adventures','Enjoy the Wild West. /
','Western_Adventures.gif'
'SOUTH_POLE      ','en_US','South Pole Adventures','Experience a /
frozen paradise in a way fit for your needs.','SouthPole_Adventures.gif'
};
```

You could easily edit the file generated from the `commander unload database` command so that it only consisted of the DDL (for example, it would not be hard to write a program which would process the `insert` statements). As a simple test, we use the `unload database` command against the Pointbase sample database, and then edit the generated script, making the following changes:

- Removed the phrase `Organization Heap` from the end of all `CREATE Table` statements
- Removed the `COMMIT` command
- Changed the `Boolean` datatype to be `smallint`
- Removed all of the `INSERT` statements and associated data

Next, a simple Ant script is used to execute the DDL using the `sql` target. Finally, the same experiment is repeated for the `sun-appserv-samples` database requiring the following additional changes to the generated SQL file:

- Make all changes as described above for the sample database
- Remove the `create user` commands
- Remove the `SET PATH` commands
- Change the `Decimal` precision from 38 to max of 31
- Change the `float` precision from 64 to max of 52
- The `SPECIFIC` keyword for `CREATE PROCEDURE` is not currently supported
- Removed the `GRANT` commands

Converting Pointbase Java procedures to work with Java DB requires some changes to the Java code as well as to the `CREATE PROCEDURE` statements. Information on creating Java DB Java procedures can be found in the [Derby Reference manual](http://db.apache.org/derby/docs/10.1/ref/) (<http://db.apache.org/derby/docs/10.1/ref/>). Support for the `Boolean` datatype should be in the next release of Java DB.

## Browsers

This section lists the browsers that are supported with the Sun Java System Application Server Platform Edition 9.0 Update 1 administration console and Quick Start Guide. The browsers supported when running applications on the Application Server depend on the applications being run.

TABLE 2-4 Browsers Supported

Browser	Version
Mozilla	1.4, 1.5, 1.6, 1.7, 1.8
Netscape Navigator	6.2, 7.0
Internet Explorer	5.5 Service Pack 2, 6.0

TABLE 2-4 Browsers Supported (Continued)

Browser	Version
Firefox	1.5

Upgrading the Sun Java System Application Server

Refer to the *Sun Java System Application Server Platform Edition 9 Upgrade and Migration Guide* for complete instructions for upgrading from a previous version of the Application Server to the Sun Java System Application Server Platform Edition 9.0 Update 1.

Other Requirements

The following additional requirements should be met before installing the Sun Java System Application Server software.

- **Free space** — Your temporary directory must have a minimum of 200 MB free for Sun Java System Application Server installation, and 250 MB of free space for the SDK installation.
- **Using the uninstall program**– If you need to remove the Application 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 settings. By default, the initial default ports are 8080 for HTTP, 8181 for HTTPS, and 4848 for the Administration Server.
  - The installation program will detect used ports and assign two others for you: Sun Java™ System Message Queue (by default, 7676), and IIOP (by default, 3700 for IIOP and 3820 and 3890 for IIOP/SSL). If these default port numbers are in use, the installation program will assign a random port number from the dynamic port range (note that this may not be the next available port number).

**Starting previously-installed servers (UNIX)** – Unless you are replacing the previously installed server, you should start it before you begin the Sun Java System Application Server 9.0 Update 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)** – If you have an older version on the Sun Java System Application Server installed that you wish to replace with the current Application Server, you should stop it before installing the new server.
- **Shutting down firewall (Microsoft Windows)** – You must stop any firewall software before installing the Sun Java System Application 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 Java System Application Server Platform Edition 9 Upgrade and Migration Guide*.

## Java EE 5 Platform APIs

The Sun Java System Application Server Platform Edition 9.0 Update 1 supports the Java EE 5 platform. The following table lists the enhanced APIs available on the Java EE 5 platform.

TABLE 2-5 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/">http://java.sun.com/javaee/5/</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	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	JSR 101 ( <a href="http://jcp.org/en/jsr/detail?id=101">http://jcp.org/en/jsr/detail?id=101</a> )
Java Architecture for XML Binding (JAXB) 2.0 ( <a href="http://java.sun.com/webservices/jaxb/">http://java.sun.com/webservices/jaxb/</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)	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/javaxserverfaces/">http://java.sun.com/j2ee/javaxserverfaces/</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>	

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

API	JSR
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> )
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 Java System Application Server 9.0 Update 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 Update 1 (<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 tools. For more information, access the download page at <http://java.sun.com/javaee/downloads/index.jsp>.

## Switching to Another Supported Java Version

Sun Java System Application Server 9.0 Update 1 requires J2SE 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)

## ▼ To switch to another supported Java version

- 1 **Download the 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 **Completely stop the Application Server.**

You can use the following command line:

```
as-install/bin/asadmin stop-domain
```

Alternatively, you can use the Administration Console GUI:

- 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 J2SE home directory.**

- 4 **Edit the `as-install/samples/common.properties` file, changing the line beginning `com.sun.aas.javaRoot...` to reference the new J2SE home directory.**

- 5 **Restart the Application Server.**

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



## Known Issues and Limitations

---

This section describes known problems and associated workarounds for the Sun Java System Application Server Platform Edition 9.0 Update 1 product. 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 23](#)
- [“Application Client” on page 25](#)
- [“Installation” on page 25](#)
- [“Lifecycle Management” on page 26](#)
- [“Java Persistence API” on page 27](#)
- [“Upgrade” on page 28](#)
- [“Web Container” on page 29](#)

### Administration

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

By default, there is a hard-coded value in `$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:

- Leave `domain1` intact, and create your other domains around it.
- Remove `domain1` and replace the hard-coded value for `domain1` in `$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 Application Server with additional JMX Agent is not supported. (ID 6200011)**

J2SE 1.4.x, 5.0, or later can be configured on the Application 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 Application Server VM. An undesirable side-effect of this is that the administration functions are affected adversely, and the Application Server administration GUI and CLI 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 j console (or any other JMX-compliant client), consider reusing the standard JMX Connector Server that is started with Application 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 JMXServiceURL 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 Java System Application Server 9.0 Update 1 Administration Guide*.

**InvalidJvmOptionException is thrown on stopping server if JDK path contains spaces (Windows) (ID 6475341)**

When the Application Server is installed in a location with space(s) in the path, you will see a message similar to the following in the log when the instance is stopped. Note that Application Server functionality is not affected by this condition.

```
InvalidJvmOptionException: Invalid Jvm Option Files/Java/jdk1.5.0_07/jre/lib/ext;
C:/Sun/AppServer/domains/domain1/lib/ext;C:/Sun/AppServer/javadb/lib.
Option must start with -.
```

### display-error-statistics brings negative stats

The Admin Console GUI is able to differentiate between a real zero (0) and a state for which statistics are not available (N/A). The command-line interface currently displays negative 1 (-1) instead of N/A. For example, the following output for the display-error-statistics command shows -1 instead of N/A.

```
# asadmin display-error-statistics
Please enter the admin user name>admin
Please enter the admin password>
Timestamp                               Severity  Warning
-----
1143659837750(Mar 29, 2006 11:17:17 AM)    0         0
1143656237750(Mar 29, 2006 10:17:17 AM)    0         0
1143652637750(Mar 29, 2006 9:17:17 AM)     -1        -1
1143649037750(Mar 29, 2006 8:17:17 AM)     -1        -1
1143645437750(Mar 29, 2006 7:17:17 AM)     -1        -1
-----
Command display-error-statistics executed successfully.
```

### Solution

Use the Admin Console GUI to display error statistics. This issue will be fixed in a later release.

## Application Client

This section describes known application client issues and associated solutions.

## Installation

This section describes known installation/uninstallation issues and associated solutions.

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

This problem has been observed on several Linux systems. It is most common on Java Desktop System 2 but has also been observed on RedHat 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://install_dir/docs/about.html`

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

### **Intermittent J2SE detection and bootstrap issues in install wrapper on Linux. (6172980)**

The setup executable that launches the Linux installer sometimes hangs. Instead of resolving the J2SE location and starting the install wizard, the wrapper hangs and returns the following messages:

```
Chcking available disk space....
Checking Java(TM) 2 Runtime Environment....
Extracting Java(TM) 2 Runtime Environment....
Deleting temporary files.....
```

This issue is seen only in some versions of Linux, and seems to depend on environment settings, especially the presence of the `JAVA_HOME` variable.

#### **Solutions**

To work around this issue:

### **▼ To work around the bootstrap issues on Linux**

- 1 Unset the `JAVA_HOME` variable by running `unset` or `unsetenv` depending on your shell.**
- 2 Run setup with the `-javahome` option to specify the `JAVA_HOME` used by the installer.**

## **Lifecycle Management**

This section describes known lifecycle management issues and associated solutions.

**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: (ID 6193449)**

```
[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-mills` 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 Application Server 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.

## Java Persistence API

This section lists known issues and associated solutions related to the Java Persistence API.

### The query compiler does not check all the rules as defined in the Java Persistence Language specification.

The query compiler does not check all the rules as defined in the Java Persistence Language chapter of the specification. In particular, it does not check:

- Type compatibility of function arguments.
- Type compatibility of operands of arithmetic, logical, and comparison operators
- SELECT clause requirements for an ORDER BY query.

An invalid query may compile but may cause a `SQLException` at runtime. Or it might happen that the underlying database is less restrictive and supports the generated SQL, but executing the same query on a different database fails with a `SQLException`.

### Solution

Verify the above conditions manually.

**In some cases, the query compiler throws a misleading error message, because it mentions the wrong token in the error message. (Glassfish ID 550)**

For more information, see

[https://glassfish.dev.java.net/issues/show\\_bug.cgi?id=550](https://glassfish.dev.java.net/issues/show_bug.cgi?id=550).

### Solution

Manually verify what is wrong in the query.

**Two persistence units containing the same class cannot currently be deployed in the same EAR file.**

#### **Solution**

Use different class names.

**You cannot list `MappedSuperclass` explicitly using class element in `persistence.xml`. (Glassfish ID 558)**

For more information, see

[https://glassfish.dev.java.net/issues/show\\_bug.cgi?id=558](https://glassfish.dev.java.net/issues/show_bug.cgi?id=558).

#### **Solution**

Do not list `MappedSuperclass` explicitly.

**Unable to map null database values to primitives.**

#### **Solution**

Use Java wrapper types for mapping to nullable database columns.

## **Upgrade**

This section describes known issues and associated solutions related to upgrading and using the Upgrade Tool.

**Domains created in custom-path other than `install_dir/domains` directory are not upgraded directly while upgrading from Application Server Platform Edition 8 to Application Server Platform Edition 9.0 Update 1. (ID 6165528)**

When running the Upgrade Utility and identifying the `install_dir` as the source installation directory, the upgrade process upgrades only those domains that are created under `install_dir/domains` directory. Domains created in other locations are not upgraded.

#### **Solution**

Before starting the upgrade process, copy all the domain directories from their different locations to the `install_dir/domains` directory.

**The installer running “Upgrade in place” fails to start upgrade tool on some Linux systems after clicking on the “Start Upgrade Wizard” button. (6207337)**

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

### ▼ To use command line installation mode

- 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:  

```
install_dir/bin/asupgrade --source install_dir/domains --target install_dir
--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://install_dir/docs/about.html`

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

### Must close Application Server files when running Upgrade Tool on Windows

While running Upgrade Tool on Windows, you must close all files in the installation being upgraded. If a file is left open, then the Upgrade Tool has been observed to hang.

## Web Container

This section describes known web container issues and associated solutions.

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

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 `${S1AS_HOME}/domains/domain1/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.