



GlassFish v3 Application Server Quick Start Guide



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

Part No: 820-4836-01
May 2008

Copyright 2008 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, and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. 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 2008 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 États-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 États-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 et Solaris sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc. aux États-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 États-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 États-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 CONTREFAÇON.

Application Server Quick Start

The *GlassFish Application Server v3 Technology Preview 2 Quick Start Guide* provides basic instructions for quickly getting up and running with GlassFish Application Server v3 Technology Preview 2 software.

File and Path Name Notes

By default, Application Server --v3 Technology Preview 2 is installed in the following directories:

- **UNIX/Linux** — *user_home_directory/glassfish-v3tp2*
- **Windows** — *C:\Program Files\glassfish-v3tp2*

Throughout this document, these directories are both referred to as *as-install*.

Note also that the instructions and examples in this document use UNIX-style forward slash (/) path separators in file and command names. If Application Server is installed on a Windows system, be sure to use backslashes (\) instead of forward slashes; for example:

- **UNIX/Linux** — *as-install/bin/asadmin*
- **Windows** — *as-install\bin\asadmin*

For more detailed information about conventions used in this document, see the GlassFish Application Server [Documentation Conventions](#) page.

Installing Application Server Software

Install the GlassFish Application Server software before continuing with the remainder of this document.

▼ To Install Application Server v3 Technology Preview 2 Software

Before You Begin

The Application Server v3 Technology Preview 2 installation requires [JDK 5](#) or [JDK 6](#). Also make sure that the JDK 5 or JDK 6 bin directory is in your PATH so that the java binary used with Application Server comes from the JDK rather than a JRE.

1 Download the GlassFish Application Server v3 Technology Preview 2 bundle you want to use.

GlassFish Application Server v3 Technology Preview 2 software is available in two formats from the [Application Server — V3 Technology Preview](#) page:

- [gfv3-preview2.zip](#) — Platform-independent download; **use this package if installing on a UNIX/Linux system**
- [gfv3-tp2-installer.exe](#) — GUI-based installer for Windows systems

2 Follow the installation instructions relevant to the download package you are using.

▪ ZIP (multiplatform) bundle:

- a. **Copy the package file (`gfv3-preview2.zip`) to the directory in which you want to install Application Server, and then change to that directory.**

- b. **Unzip the bundle.**

```
unzip gfv3-preview2.zip
```

This installs the v3 Technology Preview 2 distribution into a new `glassfish` directory under your current directory. In addition, a `javadb` and `bin` directory are created in the current directory.

- c. **On UNIX/Linux systems change permissions on executable files in `as-install/bin` and `as-install/glassfish/bin`.**

```
chmod +x as-install/bin/*
chmod +x as-install/glassfish/bin/*
```

▪ Windows installer:

- a. **Run the installer executable file (`gfv3-tp2-installer.exe`).**

- b. **Specify the installation directory.**
Default is `C:\Program Files\glassfish-v3tp2`.
- c. **Specify the Admin and HTTP ports.**
Default for both is port `8080`.
- d. **Decide whether you want to install Update Tool (recommended).**
- e. **Confirm your selections and click *OK* to complete the installation.**

▼ To Remove Application Server v3 Technology Preview 2 Software

- 1 **Delete the *as-install* directory, including all subdirectories.**
- 2 **If you used the Windows installer (`gfv3-tp2-installer.exe`), locate and delete the relevant program entries on the *Start->All Programs->GlassFish V3 TP2* menu.**

Application Server Update Tool

The GlassFish Application Server Update Tool is a convenient GUI-based tool for getting the latest versions of various Application Server plugins, extensions, and related applications.

Application Server also includes a related Image Packaging System (IPS) utility, which is a command-line counterpart to Update Tool. This IPS tool is started with the `as-install/bin/pkg` command.

See the [Update Center](#) wiki for more information about Update Tool and the `pkg` command.

▼ To Launch Update Tool

- 1 **Use the `updatetool` command in the Application Server `bin` directory.**
`as-install/bin/updatetool`

If you installed Application Server from the ZIP package, the complete Update Tool component is not initially installed. In this case, when you run `updatetool` for the first time only, you are prompted to install the required components.

- 2 **Press any key to install the Update Tool components.**
The installer starts and the required components are download automatically.

- 3 Follow the onscreen instructions to complete the installation and launch Update Tool.

▼ To Launch the pkg Tool

- 1 Use the `pkg` command in the Application Server `bin` directory.

as-install/bin/pkg

If you installed Application Server from the ZIP package, the complete `pkg` component is not initially installed. In this case, when you run `pkg` for the first time only, you are prompted to install the required components.

- 2 Press any key to install the `pkg` components.
The installer starts and the required components are download automatically.
- 3 Follow the onscreen instructions to complete the installation and launch the `pkg` CLI.
- 4 Enter `pkg --help` to display online help for the utility.

Starting and Stopping the Default Domain

By default, when you install Application Server, a default domain named `domain1` is created.

▼ To Start the Default Domain

- Use the `asadmin start-domain` command.

as-install/bin/asadmin start-domain

- Alternatively, you can enter the full command:

```
java -jar as-install/modules/admin-cli-10.0-SNAPSHOT.jar start-domain
```

Either of these commands starts the default domain, `domain1`.

▼ To Stop the Default Domain

- Use the `asadmin stop-domain` command.

as-install/bin/asadmin stop-domain

- Alternatively, you can enter the full command:

```
java -jar as-install/modules/admin-cli-10.0-SNAPSHOT.jar stop-domain
```

Either of these commands stops the default domain, `domain1`.

Starting and Stopping the GlassFish Java DB Server Implementation

▼ To Start the GlassFish Java DB Server

A database server is not started by default when you start the GlassFish Application Server, so if you have applications need a database backend, you need to start the database server manually. The instructions in this procedure describe how to start the Java DB server bundled with Application Server, but they apply for the most part to any database you want to use.

Note – At least one Application Server domain must be started *before* starting the database server.

- **Use the `asadmin start-database` command.**

The general form for the command is:

```
as-install/bin/asadmin start-database --dbhome directory_path
```

For example, to start the GlassFish from its default location:

```
as-install/bin/asadmin start-database --dbhome as-install/javadb
```

▼ To Stop the Java DB Server

- **Use the `asadmin stop-database` command.**

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

Using the Administration Console GUI

The Application Server Administration Console GUI (hereafter referred to as the *Admin Console*) provides a graphical, browser-based means for configuring, maintaining, and monitoring the Application Server and your domains.

Note – In the Application Server v3 Technology Preview 2 release, the Admin Console is not installed by default, but is instead installed when you invoke it for the first time after installing Application Server.

▼ To Launch the Admin Console

Before You Begin Make sure at least one Application Server domain is started, as described in [“To Start the Default Domain”](#) on page 6.

1 Open the Admin Console URL in a browser window.

The default URL for the Admin Console is:

```
http://localhost:8080/admin
```

You are prompted to install the Admin Console.

2 Enter a proxy host and proxy port, if necessary, and then click *OK* to start the Admin Console installation.

When installation page is complete, the Admin Console page is automatically reloaded. If the page is blank, click the Refresh button in your browser.

3 Log in to the Admin Console.

By default, the user name is anonymous and the Password field is left blank (no password).

See Also Refer to the *GlassFish v3 Application Server Administration Guide* and to the Admin Console online help for further instructions.

Deploying and Undeploying Applications

The process of configuring and enabling an application to run within the Application Server framework is referred to as *deployment*.

You can deploy applications in three ways:

- From the command line (Admin CLI) with the `asadmin deploy` command
- From the Admin Console GUI
- By placing the application in the `as-install/domains/domain_name/autodeploy` directory

Note – In the Application Server v3 Technology Preview 2 release, applications can be packaged for deployment in Web Archive (WAR) format only.

The remainder of this chapter explains how to deploy, list, and undeploy applications.

The instructions in this section use the `hello.war` sample file available at <http://glassfish.dev.java.net/downloads/quickstart/hello.war>.

- “To Get the Sample Application Used in This Section” on page 9
- “To Deploy an Application From the Admin CLI” on page 9
- “To List Deployed Applications From the Admin CLI” on page 10
- “To Undeploy an Application From the Admin CLI” on page 10
- “To Deploy an Application From the Admin Console GUI” on page 10
- “To View Deployed Applications in the Admin Console GUI” on page 11
- “To Undeploy an Application From the Admin Console GUI” on page 11
- “To Deploy an Application Using Autodeploy” on page 12
- “To Undeploy an Autodeployed Application” on page 12

▼ To Get the Sample Application Used in This Section

- **Download the `hello.war` sample from**
<http://glassfish.dev.java.net/downloads/quickstart/hello.war> and save it in the directory of your choice.

The procedures in the remainder of this chapter use this `hello.war` sample.

▼ To Deploy an Application From the Admin CLI

- 1 **Use the `asadmin deploy` command.**

The general form for the command is:

```
as-install/bin/asadmin deploy war_name
```

To deploy the `hello.war` sample, the command is:

```
as-install/bin/asadmin deploy sample_dir/hello.war
```

- 2 **Access the `hello` application by entering the following URL in a browser window:**

```
http://localhost:8080/hello
```

The application's start page is displayed, and you are prompted to fill in your name.

```
Hi, my name is Duke. What's yours?
```

3 Type your name and click *Submit*.

The application displays a customized response, giving you a personal Hello.

See Also See `deploy(1)` for more information about the `deploy` command.

▼ To List Deployed Applications From the Admin CLI

- **Use the `asadmin list-applications` command:**

```
as-install/bin/asadmin list-applications
```

▼ To Undeploy an Application From the Admin CLI

- **Use the `asadmin undeploy` command.**

The general form for the command is:

```
as-install/bin/asadmin undeploy war_name
```

Tip – Be sure to specify the name (operand) for the deployed WAR rather than the actual WAR file name. For example, for the `hello.war` file deployed above, use `hello`, rather than `hello.war`.

For the `hello.war` example, the command is:

```
as-install/bin/asadmin undeploy hello
```

See Also See `undeploy(1)` for more information about the `undeploy` command.

▼ To Deploy an Application From the Admin Console GUI

1 Open the Admin Console GUI by entering the following URL in a browser window:

```
http://localhost:8080/admin/
```

2 Click the *Applications* node in the tree on the left.

The node expands to display the *Web Applications* subnode.

3 Click the *Web Applications* subnode.

The Web Applications page is displayed.

- 4 **Click *Deploy*.**
The Deploy Enterprise Applications/Modules page is displayed.
- 5 **Select “Packaged file to be uploaded to the server,” if it is not already selected, and then click *Browse*.**
- 6 **Navigate to the location in which you saved the `hello.war` sample, and then click *Open*.**
You are returned to the Deploy Enterprise Applications/Modules page.
- 7 **Enter a description in the Description field; for example, `hello`.**
- 8 **Accept the other default settings, and click *OK*.**
You are returned to Web Applications page.
- 9 **Display the sample application by entering the following URL in a browser window:**
`http://localhost:8080/hello/`
 - **Alternatively, click the *Launch* link on the Web Applications page in the Admin Console GUI.**

▼ To View Deployed Applications in the Admin Console GUI

- 1 **Open the Admin Console GUI by entering the following URL in a browser window:**
`http://localhost:8080/admin/`
- 2 **Click the *Applications* node in the tree on the left.**
The node expands to display the *Web Applications* subnode.
- 3 **Click the *Web Applications* subnode.**
The list of deployed Web applications is displayed in the Deployed Web Applications table on the Web Applications page.

▼ To Undeploy an Application From the Admin Console GUI

- 1 **Open the Admin Console GUI by entering the following URL in a browser window:**
`http://localhost:8080/admin/`

- 2 **Click the *Applications* node in the tree on the left.**
The node expands to display the *Web Applications* subnode.
- 3 **Click the *Web Applications* subnode.**
The *Web Applications* page is displayed.
- 4 **Select the checkbox next to the application(s) you want to undeploy, and then click *Undeploy*.**
Alternatively, you can keep an application deployed, but disable it by clicking *Disable*.

▼ To Deploy an Application Using Autodeploy

- 1 **Create a directory named *as-install/domains/domain_name/autodeploy***
domain_name is the name of the domain for which you want to configure autodeployment. For this example, use the default `domain1` domain:
`as-install/domains/domain1/autodeploy`
- 2 **Copy the application WAR file to the *as-install/domains/domain_name/autodeploy* directory.**
The application is automatically discovered and started by Application Server.

▼ To Undeploy an Autodeployed Application

- Delete the application from the domain's `autodeploy` directory.

Application Server With Scripting and Development Tools

Application Server now supports several scripting languages, including JRuby-on-Rails, NetBeans, and Eclipse. This section provides a brief overview of using these three technologies with Application Server.

- [“Working With JRuby-on-Rails” on page 12](#)
- [“Working With Eclipse” on page 13](#)
- [“Working With NetBeans” on page 13](#)

Working With JRuby-on-Rails

JRuby is a Java implementation of the Ruby programming language, an interpreted language with a simple syntax that enables developers to create applications quickly and easily. *Rails* is a Web application framework that eliminates much of the repetition and configuration required

in other programming environments. With JRuby-on-Rails, you get the simplicity and productivity offered by Ruby and Rails and the access to Java libraries offered by the Java platform.

Refer to the following resources for more information about using JRuby-on-Rails with Application Server:

- [Getting Started With JRuby on Rails for the GlassFish v3 Application Server](#)
- [Deploy and Run Rails on GlassFish v3](#)
- [JRuby on Glassfish - Getting Started Guide](#)

Working With Eclipse

[Eclipse](#) is an open source community whose projects are focused on building an open development platform comprised of extensible frameworks, tools and runtimes for building, deploying and managing software across the lifecycle. A large and vibrant ecosystem of major technology vendors, innovative start-ups, universities, research institutions and individuals extend, complement and support the Eclipse platform.

For basic instructions on using Eclipse with Application Server, see [GlassFish Plugins](#) page.

Working With NetBeans

Application Server v3 Technology Preview 2 is compatible with NetBeans 6.1 (shipping soon).

▼ To Configure the Application Server v3 Technology Preview 2 NetBeans Module

- 1 Download the Application Server v3 Technology Preview 2 NetBeans module.**
The module will be available from the [NetBeans Beta Update Center](#).
- 2 Unpack and install the module according to the directions in the NetBeans module package.**
- 3 Open the *Services* tab in NetBeans.**
- 4 Click the *Add Server* menu item on the *Servers* node.**
- 5 Select the GlassFish v3 Technology Preview 2 server type and enter the server location.**
The Application Server will now be available to NetBeans.

More Information Configuration Notes

- Creating a Web application and deploying, running, debugging, undeploying, or redeploying it to the server target is not significantly different from performing these tasks in Application Server v2.
- You can see the list of applications deployed to Application Server (Web or JRuby-on-Rails) in the NetBeans *Services* tab. From this same tab, you can also undeploy applications and see a list of Sun resources registered on the Application Server.
- The v3 Technology Preview 2 NetBeans module supports the creation of Sun resources. It also registers the Eclipse Link libraries to both the NetBeans Library Manager and the Comet Library.
- You can enable the Application Server Comet features in the *Properties* pane on the Application Server server node. You can also select the JRuby platform (either the default platform shipped with NetBeans 6.1 or one available from another source) to enable JRuby support.
- If the v3 Technology Preview 2 EJB container is installed, you can create a Pojo class in a Web Application project, annotate it with `@Stateless` annotation, and call this EJB from a Servlet using `@EJB` annotation.

For More Information

The GlassFish Application Server is an open source community project for which numerous sources of additional information are available.

GlassFish Application Server Project Page	Starting point for Application Server downloads, documentation, wikis, and forums
Application Server Documentation Home Page	Complete Application Server documentation
Application Server Wiki	Community site that includes a wide range of topics related to Application Server
Application Server FAQ	Several FAQs covering various Application Server topics
Application Server user forums	Provide community support and tips for working with Application Server
Application Server Screencasts	Rapidly growing collection of screencasts that demonstrate numerous features and examples for working with Application Server and related projects
Java EE 5 Tutorial	Provides extensive instructions, examples, and sample code for working with all Java platform core technologies