GlassFish Server Open Source Edition

Installation Guide

Release 5.0

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This book contains instructions for installing and uninstalling GlassFish Server Open Source Edition software.

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GlassFish Server Open Source Edition Installation Guide, Release 5.0

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Preface

This document contains instructions for installing and uninstalling GlassFish Server Open Source Edition 5.0 software.

This preface contains information about and conventions for the entire GlassFish Server Open Source Edition (GlassFish Server) documentation set.

GlassFish Server 5.0 is developed through the GlassFish project open-source community at `https://javaee.github.io/glassfish/`. The GlassFish project provides a structured process for developing the GlassFish Server platform that makes the new features of the Java EE platform available faster, while maintaining the most important feature of Java EE: compatibility. It enables Java developers to access the GlassFish Server source code and to contribute to the development of the GlassFish Server. The GlassFish project is designed to encourage communication between Oracle engineers and the community.

The following topics are addressed here:

- GlassFish Server Documentation Set

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- Default Paths and File Names

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GlassFish Server Documentation Set

The GlassFish Server documentation set describes deployment planning and system installation. For an introduction to GlassFish Server, refer to the books in the order in which they are listed in the following table.

Book Title	Description
Release Notes	Provides late-breaking information about the software and the documentation and includes a comprehensive, table-based summary of the supported hardware, operating system, Java Development Kit (JDK), and database drivers.
Quick Start Guide	Explains how to get started with the GlassFish Server product.

Book Title	Description
Installation Guide	Explains how to install the software and its components.
Upgrade Guide	Explains how to upgrade to the latest version of GlassFish Server. This guide also describes differences between adjacent product releases and configuration options that can result in incompatibility with the product specifications.
Deployment Planning Guide	Explains how to build a production deployment of GlassFish Server that meets the requirements of your system and enterprise.
Administration Guide	Explains how to configure, monitor, and manage GlassFish Server subsystems and components from the command line by using the asadmin utility. Instructions for performing these tasks from the Administration Console are provided in the Administration Console online help.
Security Guide	Provides instructions for configuring and administering GlassFish Server security.
Application Deployment Guide	Explains how to assemble and deploy applications to the GlassFish Server and provides information about deployment descriptors.
Application Development Guide	Explains how to create and implement Java Platform, Enterprise Edition (Java EE platform) applications that are intended to run on the GlassFish Server. These applications follow the open Java standards model for Java EE components and application programmer interfaces (APIs). This guide provides information about developer tools, security, and debugging.
Embedded Server Guide	Explains how to run applications in embedded GlassFish Server and to develop applications in which GlassFish Server is embedded.
High Availability Administration Guide	Explains how to configure GlassFish Server to provide higher availability and scalability through failover and load balancing.
Performance Tuning Guide	Explains how to optimize the performance of GlassFish Server.
Troubleshooting Guide	Describes common problems that you might encounter when using GlassFish Server and explains how to solve them.
Error Message Reference	Describes error messages that you might encounter when using GlassFish Server.
Reference Manual	Provides reference information in man page format for GlassFish Server administration commands, utility commands, and related concepts.
Message Queue Release Notes	Describes new features, compatibility issues, and existing bugs for Open Message Queue.
Message Queue Technical Overview	Provides an introduction to the technology, concepts, architecture, capabilities, and features of the Message Queue messaging service.
Message Queue Administration Guide	Explains how to set up and manage a Message Queue messaging system.
Message Queue Developer's Guide for JMX Clients	Describes the application programming interface in Message Queue for programmatically configuring and monitoring Message Queue resources in conformance with the Java Management Extensions (JMX).
Message Queue Developer's Guide for Java Clients	Provides information about concepts and procedures for developing Java messaging applications (Java clients) that work with GlassFish Server.

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Book Title	Description
Message Queue Developer's Guide for C Clients	Provides programming and reference information for developers working with Message Queue who want to use the C language binding to the Message Queue messaging service to send, receive, and process Message Queue messages.

Related Documentation

The following tutorials explain how to develop Java EE applications:

- Your First Cup: An Introduction to the Java EE Platform (https://javaee.github.io/firstcup/). For beginning Java EE programmers, this short tutorial explains the entire process for developing a simple enterprise application. The sample application is a web application that consists of a component that is based on the Enterprise JavaBeans specification, a JAX-RS web service, and a JavaServer Faces component for the web front end.

- The Java EE Tutorial (https://javaee.github.io/tutorial/). This comprehensive tutorial explains how to use Java EE 8 platform technologies and APIs to develop Java EE applications.

Javadoc tool reference documentation for packages that are provided with GlassFish Server is available as follows:

- The API specification of Java EE is located at https://javaee.github.io/javaee-spec/javadocs/.

- The API specification for GlassFish Server 5.0, including Java EE platform packages and nonplatform packages that are specific to the GlassFish Server product, is located at https://javaee.github.io/javaee-spec/javadocs/.

Additionally, the Java EE Specifications (https://javaee.github.io/javaee-spec/Specifications) might be useful.

For information about creating enterprise applications in the NetBeans Integrated Development Environment (IDE), see the NetBeans Documentation, Training & Support page (http://www.netbeans.org/kb/).

For information about the Java DB database for use with the GlassFish Server, see the Java DB product page (https://github.com/javaee/javadb).

The Java EE Samples project is a collection of sample applications that demonstrate a broad range of Java EE technologies. The Java EE Samples are bundled with the Java EE Software Development Kit (SDK) and are also available from the Java EE Samples project page (https://javaee.github.io/glassfish-samples/).

Typographic Conventions

The following table describes the typographic changes that are used in this book.

Typeface	Meaning	Example
AaBbCc123	The names of commands, files, and directories, and onscreen computer output	Edit your `.login` file. Use `ls a` to list all files. `machine_name% you have mail.`
AaBbCc123	What you type, contrasted with onscreen computer output	`machine_name% `**`su`** `Password:`

Typeface	Meaning	Example
AaBbCc123	A placeholder to be replaced with a real name or value	The command to remove a file is rm *filename*.
AaBbCc123	Book titles, new terms, and terms to be emphasized (note that some emphasized items appear bold online)	Read Chapter 6 in the *User's Guide*. A *cache* is a copy that is stored locally. Do *not* save the file.

Symbol Conventions

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

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

Default Paths and File Names

The following table describes the default paths and file names that are used in this book.

Placeholder	Description	Default Value
as-install	Represents the base installation directory for GlassFish Server. In configuration files, *as-install* is represented as follows: ${com.sun.aas.installRoot}	Installations on the Oracle Solaris operating system, Linux operating system, and Mac OS operating system: *user's-home-directory*/glassfish5/glassfish Installations on the Windows operating system: *SystemDrive*:\glassfish5\glassfish
as-install-parent	Represents the parent of the base installation directory for GlassFish Server.	Installations on the Oracle Solaris operating system, Linux operating system, and Mac operating system: *user's-home-directory*/glassfish5 Installations on the Windows operating system: *SystemDrive*:\glassfish5
domain-root-dir	Represents the directory in which a domain is created by default.	*as-install*/domains/

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Placeholder	Description	Default Value
domain-dir	Represents the directory in which a domain's configuration is stored. In configuration files, *domain-dir* is represented as follows: `${com.sun.aas.instanceRoot}`	*domain-root-dir*/*domain-name*
instance-dir	Represents the directory for a server instance.	*domain-dir*/*instance-name*

Documentation, Support, and Training

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

- Documentation (https://javaee.github.io/glassfish/documentation)

Searching Oracle Product Documentation

Besides searching Oracle product documentation from the Oracle Documentation (http://docs.oracle.com/) web site, you can use a search engine by typing the following syntax in the search field:

search-term **site:oracle.com**

For example, to search for "broker," type the following:

broker site:oracle.com

Documentation Accessibility

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Installing GlassFish Server 5.0

This chapter provides instructions for installing GlassFish Server Open Source Edition 5.0 software on Solaris, Linux, Mac OS X, and Windows systems.

The following topics are addressed here:

- Installation Requirements
- Installation Files for GlassFish Server 5.0
- Installing GlassFish Server From a ZIP File
- Installation Command-Line Options

Installation Requirements

Before installing GlassFish Server Open Source Edition 5.0, ensure that your system meets the requirements listed in "Hardware and Software Requirements" in *GlassFish Server Open Source Edition Release Notes*. If necessary, download and install the required JDK software. Problems are likely to arise if you attempt to install on a platform that is not supported or on a system that in some other way does not meet release requirements. Also see "Known Issues" in *GlassFish Server Open Source Edition Release Notes* for known issues related to installation.

- On Solaris, Linux, and Windows systems, JDK software is available from the Java SE downloads page (http://www.oracle.com/technetwork/java/javase/downloads/index.html).
- For Mac OS X systems, GlassFish Server uses the JDK that is part of the Macintosh operating system. If necessary, obtain the required JDK version from the Mac OS X Updates site (http://support.apple.com/downloads/).

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You are receiving a copy of the Javassist (Java Programming Assistant) Library in source form at https://github.com/jboss-javassist/javassist/archive/rel_3_22_0_cr2.zip and in object code form in the jar file glassfish5/glassfish/modules/javassit.jar included with the distribution. The terms of the Oracle license do NOT apply to the Javassist (Java Programming Assistant) program; it is licensed under the following license, separately from the Oracle programs you receive. If you do not wish to install this program, you may choose to not proceed with the installation of Oracle GlassFish Server.

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Installation Files for GlassFish Server 5.0

The following topics are addressed here:

- GlassFish Server Download Locations
- GlassFish Server Installation Methods
- Choosing an Installation Method
- GlassFish Server ZIP Files

GlassFish Server Download Locations

Installation files for GlassFish Server Open Source Edition 5.0 are available by download from the GlassFish Server Downloads (https://javaee.github.io/glassfish/download) page.

GlassFish Server Open Source Edition 5.0 is also part of the Java EE SDK distributions. The SDK distributions are available from the Java EE downloads page (http://www.oracle.com/technetwork/java/javaee/downloads/index.html) and are not described in this document.

GlassFish Server Installation Methods

Table 1–1 lists the various GlassFish Server Open Source Edition installation methods. The table also provides links to installation instructions for each method.

> **Note:** Before performing any GlassFish Server installation, ensure that your environment adheres to the JDK guidelines in "Paths and Environment Settings for the JDK Software" in *GlassFish Server Open Source Edition Release Notes*.

Table 1–1   GlassFish Server 5.0 Installation Methods

Installation Method	Installation Instructions
Multi-platform ZIP file	Installing GlassFish Server From a ZIP File.

Each of the installation methods listed in Table 1–1 also let you choose between installing the Full Platform or the Web Profile. These two distributions are explained in the next section.

Choosing an Installation Method

There are two general sets of questions you should consider when deciding which GlassFish Server 5.0 installation method to use.

- ZIP Package
- Full Platform or Web Profile Distribution?

ZIP Package

The relative features and strengths of the GlassFish Server ZIP packages are listed below.

- **ZIP Package**
  - Is simpler to install, but provides no configuration options during the installation
  - Any additional configurations must be performed manually, after installation
  - If uninstallation is desired, product must be uninstalled manually

Full Platform or Web Profile Distribution?

Each of the installation methods listed in Table 1–1 also let you choose to install either the GlassFish Server Full Platform or Web Profile distribution. Table 1–2 lists the features available in each of these two distributions. Note that some of these features are value-adds, and are not required by the Java EE specification.

Table 1–2   GlassFish Server Full Profile and Web Profile Features

Feature	Full Platform	Web Profile
Java Platform, Enterprise Edition 8	X	X
EJB 3.2 Lite (Support for Local Container only)	X	X
JTA 1.2	X	X
OSGi-based microkernel	X	X
Java Web Technologies (Servlet 4.0, JSP 2.2, JSF 2.3, JSTL 1.2, EL 3.0)	X	X
Grizzly/Comet	X	X
JPA 2.2, (EclipseLink), JDBC Connection Pooling	X	X
JDBC 4.0	X	X
JavaDB 10.13.1.1	X	X
Web Administration Console and CLI	X	X
Rapid Redeployment (Maintain session state on application redeploy)	X	X

Table 1–2 (Cont.) GlassFish Server Full Profile and Web Profile Features

Feature	Full Platform	Web Profile
OMG CORBA APIs 3.0	X	X
Debugging Support for Other Languages 1.0	X	X
Common Annotations for Java 1.3	X	X
Dependency Injection for Java 1.0	X	X
Managed Beans 1.0	X	X
Interceptors 1.2	X	X
Contexts and Dependency Injection for Java 2 (CDI, ex-Web Beans)	X	X
Bean Validation 2.0	X	X
JAX-RS 2.1 (Jersey)	X	X
EJB 3.2 Full API (Support for Remote Container)	X	-
Java EE Connector Architecture 1.7	X	-
JAX-WS 2.2	X	-
JAXB 2.2	X	-
Implementing Java Web Services 1.4	X	-
Web Services Metadata for the Java Platform 2.1	X	-
JMS 2.0	X	-
JavaMail 1.5	X	-
JACC 1.5	X	-
Java Authentication Service Provider Interface for Containers 1.1	X	-
Java EE Application Deployment 1.2	X	-
J2EE Management 1.1	X	-
JAX-RPC 1.1	X	-
JAXR 1.0	X	-
CORBA 3.0.0	X	*
Metro	X	-

* The Full Java EE Platform contains the complete CORBA package. The OMG CORBA v3.0 APIs are available in the Java EE Web Profile.

** Transaction propagation not supported.

> **Note:** Regardless of whether you choose the Full Platform or Web Profile distribution, you can add or removed packages after installation by using the Update Tool or `pkg` utility. See "Extending and Updating GlassFish Server" in *GlassFish Server Open Source Edition Administration Guide* for more information.

GlassFish Server ZIP Files

The GlassFish Server Open Source Edition 5.0 multi-platform ZIP files are compatible with Solaris, Linux, Mac OS, UNIX, and Windows operating systems. See GlassFish

Server Download Locations for a list of download locations.

Table 1–3 lists the available ZIP file downloads.

Table 1–3   GlassFish Server Downloadable ZIP Files

ZIP File	Description
glassfish-5.0.zip	Full Platform distribution of GlassFish Server Open Source Edition
glassfish-5.0-web.zip	Web Profile distribution GlassFish Server Open Source Edition

Installing GlassFish Server From a ZIP File

This section describes how to install GlassFish Server Open Source Edition 5.0 using the multi-platform ZIP file. GlassFish Server is installed by unzipping the file in the installation directory of your choice.

> **Note:**   It is not possible to specify any GlassFish Server configuration options during a ZIP file installation. Any configuration changes, such as creating domains, clusters, and server instances, must be made manually after installation.

To Install GlassFish Server Using the ZIP File

Before You Begin

Ensure that your system meets the requirements listed in "Hardware and Software Requirements" in *GlassFish Server Open Source Edition Release Notes*.

Also see "Known Issues" in *GlassFish Server Open Source Edition Release Notes* for known issues related to installation.

1. Download the desired GlassFish Server 5.0 ZIP file.

    See GlassFish Server Download Locations for a list of download locations. See Table 1–3 for a list of available ZIP files.

2. Change to the directory where you downloaded the ZIP file.

3. Unzip the file.

    - **Solaris, Linux, and Mac OS X systems:**

      unzip *zip-file-name*

      zip-file-name is the name of the file that you downloaded.

      For example:

      glassfish-5.0.zip

    - **Windows systems:**

      Unzip using your favorite file compression utility.

    GlassFish Server 5.0 is extracted into a new glassfish5 directory under your current directory. This glassfish5 directory is referred to throughout the GlassFish Server documentation set as *as-install-parent*.

4. Start GlassFish Server using the instructions in the *GlassFish Server Open Source Edition Quick Start Guide*.

    The guide explains how to perform basic tasks such as starting the server, accessing the Administration Console, and deploying a sample application.

Installation Command-Line Options

The following options can be used when you run the installation program from the command line using the self-extracting installation file (`.sh` or `.exe`). Specify the desired options after typing the installation file name at the command prompt.

For example:

```
glassfish-5.0-unix.sh -a 312-answer -l log-directory -s
```

The options are as follows:

-a *answer-file*
Run the installation program in silent mode using the answer file specified. Use this option with the `-s` option.

-l *log-directory*
Write log information to this directory.

-q
Set logging level to WARNING.

-v
Runs the installation program in verbose mode, which can be useful for troubleshooting. Also sets the logging level to FINEST.

-s
Run the installation program in silent mode.

-j *javahome*
Use this directory for the JDK software installation.

-n *answer-file*
Run the installation program in trial mode to generate the answer file for silent mode installation.

-h **or** **-help**
Display the help message listing these o

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Uninstalling GlassFish Server 5.0

This chapter describes how to uninstall GlassFish Server Open Source Edition 5.0 software.

Removing a GlassFish Server Installation

This section describes how to remove GlassFish Server Open Source Edition 5.0 software.

The following topics are addressed here:

- To Uninstall GlassFish Server Software After a ZIP File Installation

To Uninstall GlassFish Server Software After a ZIP File Installation

This procedure describes how to uninstall GlassFish Server software that was installed using a ZIP file, as described in Installing GlassFish Server From a ZIP File.

Before You Begin

Stop all domains and other related processes, including command prompts using the installation directory or its subdirectories and any applications using Java SE files.

To stop domains, use the `asadmin stop-domain` command. For more information about stopping a domain, see "To Stop a Domain" in *GlassFish Server Open Source Edition Administration Guide*.

If orphaned processes remain, identify and terminate the processes as follows:

- **Solaris, Linux, and Mac OS X systems:**

  Use the `ps -ef` command and terminate the processes using the `kill` command.

- **Windows systems:**

  Use the Task Manager and terminate the processes.

Also see "Known Issues" in *GlassFish Server Open Source Edition Release Notes* for known issues related to uninstallation.

1. Save any files in the installation directory that you may want to keep.

2. Manually delete installation directory and all its contents.