

Project Glassfish: The Open Source Application Server from Sun

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GlassFish.dev.java.net



The Future of Java EE Glassfish

- **GlassFish Overview**
- Building GlassFish
- Sun Java System Application Server
- Grizzly

What is Project GlassFish?



The open source community for developing the Sun Java System application server and related Java EE 5 technologies

The GlassFish community includes Java EE 5, JWS DP and other application server related technologies

Project GlassFish

Sun Java System
Application Server PE 9.0

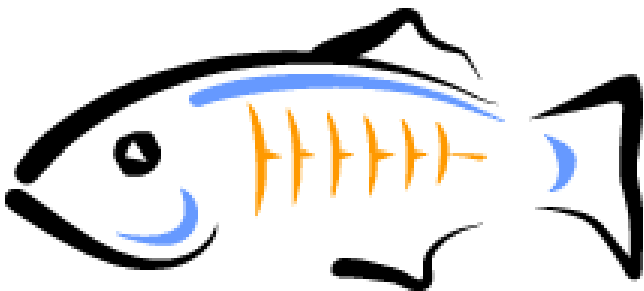
Commercial grade, robust,
high performing Java EE 5
App Server

1000+ member community

CDDL License

Announced at JavaOne
2005 (June 2005)

glassfish.dev.java.net



What is GlassFish?

- Sun's Open Source Application Server Platform Edition 9
 - > CDDL license
 - > Open process
- GlassFish is about creating a Developer and User Community around Sun's Application Server code base
 - > We want engagement from the community at large
 - > We accept non-Sun committers
 - > We already have several committers
 - > We welcome new ones
- Open access to code and binaries
 - > CVS access to source code
 - > Nightly builds, weekly promoted builds
- Must support Java EE compatibility

glassfish.dev.java.net

glassfish: GlassFish Community - Mozilla

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop Search Print

Home Bookmarks mozilla.org Latest Builds

java.net *The Source for Java Technology Collaboration* User: Password: **Login** [Register](#) | [Login help](#)

My pages Projects Communities java.net

Projects > java-enterprise > glassfish

GlassFish project

- GlassFish Project Home
- Downloads
- GlassFish FAQ
- Join GlassFish

Use it

- Tech Tips and Blogs
- javadocs
- Send us feedback
- Announcements
- Discussion forums

Improve it

- Mailing lists
- Source code - CVS
- FishEye for GlassFish
- Issue tracker
- issue #
- GlassFish Wiki

Search

This project

Advanced search

How do I...

- Learn more about this project?
- Use the project home page?

If you were [registered](#) and [logged in](#), you could join this project.

GlassFish Community
Building an Open Source Java EE 5 Application Server

[Download it](#) [Use it](#) [Improve it](#)

The GlassFish community is building a free, open source application server which implements the newest features in the Java EE 5 platform (the next version of the J2EE platform). The Java EE 5 platform includes the latest versions of technologies such as Enterprise JavaBeans (EJB) 3.0, JavaServer Faces (JSF) 1.2, Servlet 2.5, JavaServer Pages (JSP) 2.1, Java API for Web Services (JAX-WS) 2.0, Java Architecture for XML Binding (JAXB) 2.0, Java Persistence 1.0, Common Annotations 1.0, Streaming API for XML (StAX) 1.0, and many other new technologies.

Download NOW

About It
Follow this link to learn about the GlassFish community.

Use It
Follow this link if you are interested in using GlassFish to learn about the latest Java EE 5 technologies, and start developing applications on an early access version of the application server from the GlassFish community.

Improve It
Follow this link if you are interested in filing or tracking a bug, building a plug-in, porting a project to run on the application server built by the GlassFish community, or learning how the GlassFish community is implementing some of the new Java EE 5 technologies.

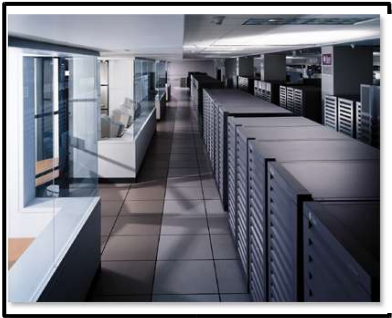
GlassFish Daily News now at [The Aquarium](#)

GlassFish Highlights (more...)
RSS feed: [XML](#)

- [Build 38](#) is also available.
- [Integration technologies pages](#) now available
- Download [Build 32g](#) now.
- Not sure which build to download? Check out Carla's

Common Development and Distribution License (CDDL)

- **Simple, understandable, readable by non-lawyers**
 - > OSI-compliant CDDL
 - > Takes the well known Mozilla Public License (MPL)
 - > Allows for use, modification and redistribution of bits
 - > Contributor agreement (SCA)
 - > Dual copyright provides for use by Sun and the contributor
 - > Meets the definition of **Open Source Definition** of **Open Source Initiative**
- **JCP still controls specs**
 - > Contributions need to be compatible and are reviewed by the module owners



The GlassFish Community

- More than just an application server
 - > Includes many related technologies
 - > WS & XML technologies
 - > JAX-WS, JAXB, etc.
 - > JavaServer Faces
 - > Blueprints (AJAX, JavaServer Faces, etc)
- NetBeans IDE
- Tutorials, forums, Blueprints, support
- Metrics (as of Dec 2005)
 - > More than 1100 members and 56 contributors
 - > More than 90 k downloads
 - > 67 reported issues / 19 resolved
 - > More than 3 million lines of code

Why/How to Become Part of GlassFish Project

- Access to nightly and promoted builds
 - > **Download** and **tryout** the binary builds
 - > Submit and fix bugs
 - > Try the new features on Java EE 5
 - > Contribute samples
 - > Try your favorite frameworks on GlassFish
 - > Springs, Jruby, Struts, Shale, Seams, etc
 - > Join discussions on mailing lists and forums
- Contribute to world class application server
 - > Involved in the implementation of cutting edge Enterprise Java, Web Services, SOA standards, **Grizzly**
 - > **Easy build** environment
- Interact with a great group of people inside and outside of Sun

GlassFish Supports

- Supports all platforms
 - > Solaris, Solarix_X86, Windows, Linux and MacOS
- Java Blueprints Solution Catalog EA release runs on GlassFish
 - > includes design guidelines, code and applications for JavaServer Faces and AJAX
- NetBeans 5.5 runs on GlassFish
 - > You can use NetBeans to develop applications on GlassFish



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Building GlassFish

- Full set of instructions on GlassFish site
 - > Really quite easy to build
 - > <https://glassfish.dev.java.net/public/BuildGlassFish.html>
- Full set of instructions on NetBeans site
 - > <http://www.netbeans.org/kb/41/glassfish.html>
- Build GlassFish in NetBeans
 - > Need NetBeans 4.1 or 5.0, Maven, JDK 5 and cvs client
 - > Create the workspace home
 - > Get the GlassFish Source
 - > Set the project properties
 - > Get, configure and test the GlassFish Image
- Over **30 GlassFish NetBeans Projects** available
- Checkout, open and modify a GlassFish module project in NetBeans

Code organization

- Modules - way of dividing up the app server to help navigate the code
 - > <https://glassfish.dev.java.net/public/ServerModules.html>
- Most of administration, JMS, JavaMail, etc online are up
- Webtier: JSP, Servlet and Grizzly
- Persistence/EJB 3.0: Enterprise JavaBeans
 - > CMP: Container Managed Persistence support
 - > Entity Persistence: Entity Persistence support
- Substantial portions of the code are in Java.Net projects (equivalent to modules)
 - > Includes JSF, JAXB, JAXP, JAX-WS/JAX-RPC, StaX, Fast Infoset, etc

GlassFish Modules

- <https://glassfish.dev.java.net/public/ServerModules.html>
- Administration and Monitoring:
 - > Appserver Management Extensions (AMX): MBean API
 - > CallFlow: Monitor requests flowing through AS
 - > Configuration Management:
 - > Domain configuration in AS 9.x is essential part of GlassFish
 - > Provides for configuration, administration, and management
 - > JSR77: Java EE Management Specification
 - > Provides server vendors and tool vendors with a standard model for managing Java EE
 - > Web Services Management: Management of Web Services

GlassFish Modules (cont.)

- Integration Technologies: Java Connector Architecture, Transactions and Connection Pooling
- Deployment: Application Deployment
- EJB: Enterprise JavaBeans
- Java EE Service Engine: JBI integration
- JavaMail
- Persistence
 - > CMP: Container Managed Persistence support
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Persistence (persistence@glassfish.dev.java.net)

- **CMP: Container Managed Persistence support**
 - > A set of entity beans for an application, relationships among them, without knowing anything about actual database access
- **Entity Persistence: Entity Persistence support**
 - > Persistence applications written to Enterprise JavaBeans™ 3.0 Specification use Entities as lightweight persistent domain objects instead of CMP beans.
- **EJB 3.0 Persistence support is now available as part of the open source GlassFish project**



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Java EE 5 SDK Preview/Application Server PE 9.0 beta Released!!!

- **Download**
<http://java.sun.com/javaee/downloads/>
- First robust, commercial **Java EE 5** compliant application server expected to release in Q2CY2006
- **100%** derived from the **Open GlassFish** community
- New Java EE 5 Technology to Improve Developer Efficiency
- Main themes
 - > Increased developer productivity
 - > Ease of Deployment
 - > Foundation for SOA
 - > Enhanced Security
 - > Enhanced Management and Administration

SJSAS PE 9.0 beta Features

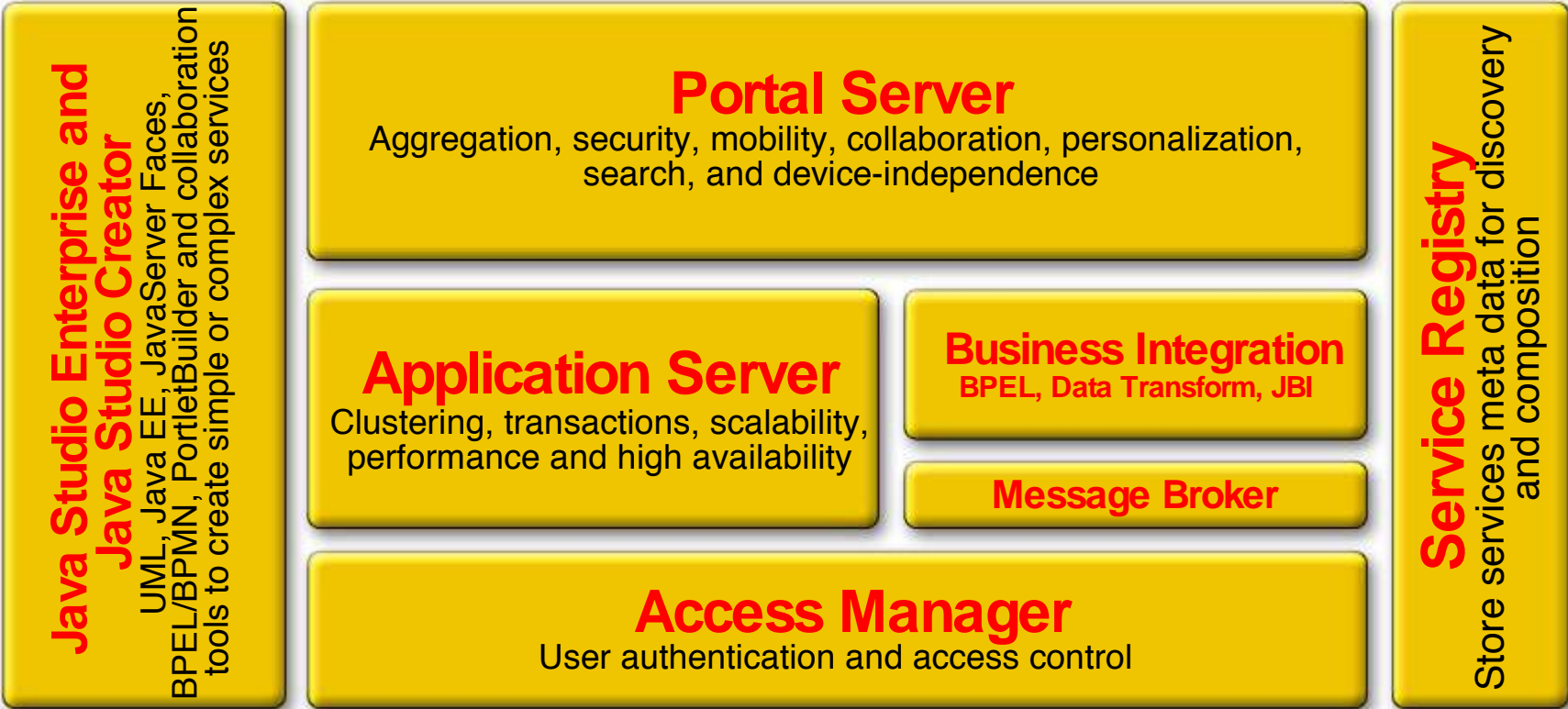
- Superset of AS PE 8.2
- Java Persistence / EJB 3.0
 - > Dramatically reduces the code developers need to write
- SOA Foundation
 - > WS registry, JBI, WS stack, WS management
- AJAX Clients
 - > Blueprints to develop Web 2.0 applications
- Integrated w/ NetBeans 5.5 Enterprise Developer Pack preview
 - > Eclipse plug in available
- New Connectivity
 - > Out-of-the-box connectivity with IBM MQ Series and Sun Java System Message Queue Server
- Enhanced Security
- Self Management Rules



AS PE 9 Alignment with Tools

- NetBeans 5.0
 - > Deploy J2EE 1.4 applications and control (register, start/stop, etc.) an instance of AS 9.0
- NetBeans 5.5 Enterprise Pack Preview
 - > Available as a bundle with ASPE 9.0 Beta, Java EE 5 sdk, SOA visual design tools (UML modeling, XML scema tools, WS orchestration) and tutorials/docs
 - > All features of NB 5.0, plus support for development of Java EE 5 applications, including web and EJB modules
- Java Studio Creator 2
 - > create J2EE 1.4 WAR files and exported to AS PE 9.0
 - > Future Creator will support AS 9.0 as a bundled container and add Java EE 5 support for web applications
- Eclipse
 - > Plugin for Eclipse v. 3.1 supports AS 9.0 / GlassFish and provides basic server control and project deployment.
 - > Support for Java EE 5 (e.g. EJB 3.0 / Java Persistence) is under development within the Eclipse community

Java Enterprise System Application Platform Suite Q4 2005



Sun Java System Application Server

- **Platform Edition**: fast and lightweight
 - > Basis for Java EE SDK
 - > Free for development, deployment and (re) distribution
 - > Integrates with NetBeans™, Sun Java Studio Enterprise, Sun Java Studio Creator software, and Eclipse
- **Standard Edition**
 - > Advanced security, out-of-the-box
 - > Self-managing and self-healing
 - > Clustering and multi-machine administration
- **Enterprise Edition supports 99.999% availability**
 - > Very small downtime, no data loss, full recovery

Developer View: Platform Edition

- Entirely Java technology
- Fast startup
- Fast deployment
- Available on all major platforms
 - > Solaris™ OS, Microsoft Windows, Linux, MacOS
- Same performance as the high-end versions
 - > Multi-machine admin and availability are omitted
 - > Seamless migration to advanced versions of product

Performance

- Highly **scalable** HTTP path
 - > **Grizzly**: thousands of connections with few threads,
all written in Java language
 - > Fast web services using Fast Infoset
- High-performance JMS broker
- Improved Enterprise JavaBeans™ (EJB™) specification performance
 - > Relationship prefetching
 - > Read-only EJB specification-based beans
- Optimized XA transactions



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Introduction to Grizzly

What Is the Grizzly HTTP Framework?

- Grizzly is a HTTP framework
 - > Uses lower level Java NIO primitives
 - > Easy-to-use, high-performance APIs for socket communications
- Grizzly brings non-blocking sockets to the HTTP processing layer

Introduction to Grizzly (Cont.)

What Is the Grizzly HTTP Framework?

- Grizzly integrates with the current Apache Tomcat HTTP Connector architecture (Coyote)
 - > Coyote is currently used in Tomcat 3.x/4.x/5.x
- Grizzly replaces Apache Tomcat Coyote HTTP front-end and thread pool
 - > Utilizes its high performant buffers and parsing classes

Grizzly Architecture

- A Task-based architecture has been used, each task representing an operation when manipulating the byte stream
 - > AcceptTask for managing OP_ACCEPT
 - > ReadTask for managing OP_READ
 - > ProcessorTask for parsing/processing the byte stream
- Tasks can execute on their own thread, on a shared thread or using the Selector thread

Benchmark Results

- Internally developed benchmark
- Designed to measure scalability
- How many concurrent clients can we support:
 - > Avg. client think time is 8 seconds
 - > 90% response time is 3 seconds
 - > Error rate < .1%



Resources and Summary & Call for Action



Demo

Demo Scenario

- Building GlassFish using NetBeans
 - > <http://www.netbeans.org/kb/41/glassfish.html>
- Checking out a couple of modules for modification
 - > `admin-cli`
 - > `appserv-docs`
- Modify the code
 - > `admin-cli`
- Rebuild the GlassFish and test the modification

Demo Scenario

- Building EJB 3.0 app through NetBeans over GlassFish (need special NetBeans build to show this)
 - > http://j2ee.netbeans.org/NetBeans_EJB3.html
 - > <http://www.netbeans.org/kb/articles/javaee5-hello-world.html>

Sun Developer Network

- Free resources for all developers
 - > Tools (Creator, Java Studio Enterprise Edition)
 - > Forums
 - > FAQs
 - > Early Access
 - > Newsletters
- Join Today!
 - > <http://developers.sun.com>



Get Connected

Sun Developer Network connects you to what you need, when you need it.

[Join Now >>](#)

Resources

- <http://java.sun.com/javaee/glassfish/index.jsp>
- <http://glassfish.dev.java.net>
- <http://blogs.sun.com/roller/page/theaquarium>
- [Java.net](http://java.net)
- <http://java.sun.com/javaee/5/index.jsp>

Call for Action For GlassFish Project

- Become a user and tell your friends
 - > Download a build
 - > Deploy your application
 - > Learn the new Java EE 5 technologies
 - > Give us feedback
- Become a contributor, we need your help
 - > Grizzly module is implementing new features
 - > Admin module looking for help implementing new features
 - > Bug fixes
 - > Improve build infrastructure and how maven is used
- Write tutorials and articles, get published

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