GlassFish v3 “Prelude”
Alexis Moussine-Pouchkine
GlassFish Team
Timeline of Project GlassFish

<table>
<thead>
<tr>
<th>Release</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>GlassFish Launch</td>
<td>June 2005</td>
</tr>
<tr>
<td>v1</td>
<td>May 2006</td>
</tr>
<tr>
<td>v2</td>
<td>Sept. 2007</td>
</tr>
<tr>
<td>v2.1</td>
<td>Oct/Nov 2008</td>
</tr>
<tr>
<td>v3 “Prelude”</td>
<td>Feb 2009</td>
</tr>
<tr>
<td>v3</td>
<td>Mid-2009</td>
</tr>
</tbody>
</table>

- Tomcat
- Jasper
- Catalina
- JSTL
- Struts
- Crimson
- XSLTC
- Xalan
- Xerces
- JAXB
- JAX-RPC
- JSF
- (you are here)
GlassFish Community/Adoption
Actual Users
GlassFish around You
GlassFish around You (really)
GlassFish around You (really, really)
GlassFish around You (really, really)
All this ....

... with a boring application server

(although with built-in full Web-Services Stack, full clustering, great monitoring tools, record performance, complete documentation, and heavily deployed in production)
What is a “lightweight” Application Server?
Tomcat ?
Fast startup ?
Load on-demand?
Introducing
GlassFish v3 Prelude
Admin Console
Modular and Dynamic

- Modular: Apache Felix (OSGi)
- Extensible: HK2
- Yet very Fast!
Painless Java EE development!

- Java EE development doesn't have to be painful :)
- Incremental compile of all Java EE artifacts
- Auto-deploy of all Java EE and static artifacts
Demo

Startup
Compile on Save
Deploy on Change
Preserve Session
Session Retention

Deployment option to maintain stateful sessions across re-deployments

```
$ asadmin redeploy --properties keepSessions=true myapp.war
```

Greatly simplifies the development paradigm.

Integrated in NetBeans 6.5:
Yes, Eclipse too!
Update Center

GlassFish v3 Prelude

There are 1 update(s) available.

Common Tasks
- Registration
- Application Server
- Applications
- Resources
- JDBC
- Configuration
- Web Container
- HTTP Service
- Monitoring
- Security
- Update Tool

1 component will be installed (7.7 MB)

<table>
<thead>
<tr>
<th>Component</th>
<th>Category</th>
<th>Published</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>GlassFish Nucleus Localization</td>
<td>Application Servers</td>
<td>10/30/2008</td>
<td>3.0–28.3</td>
</tr>
<tr>
<td>GlassFish Web Container Console</td>
<td>Application Servers</td>
<td>10/30/2008</td>
<td>3.0–28.3</td>
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<tr>
<td>GlassFish support for Grails framework</td>
<td>Scripting</td>
<td>11/03/2008</td>
<td>1.0.3–1.4</td>
</tr>
<tr>
<td>jMaki Ajax Framework</td>
<td>Scripting</td>
<td>11/06/2008</td>
<td>1.8.1–2.0</td>
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<tr>
<td>JRuby on GlassFish</td>
<td>Scripting</td>
<td>10/03/2008</td>
<td>1.1.4–1.1</td>
</tr>
<tr>
<td>JRuby Gems</td>
<td>Scripting</td>
<td>10/17/2008</td>
<td>2.1.1–1.2</td>
</tr>
<tr>
<td>Image Packaging System Extra Tool</td>
<td>System Tools</td>
<td>10/08/2008</td>
<td>0.1.0–15.1</td>
</tr>
<tr>
<td>Jersey RESTful Web services for GlassFish</td>
<td>Web Services</td>
<td>10/23/2008</td>
<td>1.0–0.3</td>
</tr>
<tr>
<td>Metro Web Services Stack</td>
<td>Web Services</td>
<td>10/23/2008</td>
<td>1.4–5010</td>
</tr>
</tbody>
</table>

**Jersey RESTful Web services for GlassFish**

Jersey is the open source (under dual CDDL+GPL license) JAX-RS (JSR 311) Reference Implementation for building RESTful Web services. But, it is also more than the Reference Implementation. Jersey provides additional APIs and extension points (SPIs), so that developers...

```
% bin/pkg
Usage:
  pkg [options] command [cmd_options] [operands]

Unique Identifier: pkg://jersey@1.0.0-0.3.20081023T091426Z
```

Getting manifest for pkg://jersey@1.0.0-0.3:20081023T091426Z...done.
Not just Java!
And right from the Update Center

- **Groovy / Grails**
  - Uses GlassFish Embedded on `%grails run-app`
  - Smaller archives with `%grails shared-war`

- **JRuby on Rails**
  > Multiple deploys strategies including “Native” directory-based
  - One command, one instance, one process

- **Grizzly, admin, JDBC pooling, Metro, available to all!**
Demo
Single GlassFish hosting JavaEE, Rails & Grails
Prelude to Java EE 6
(via GlassFish Update Center)

- JSF 2.0 Preview
  - Integrated Facelets
  - First-class Ajax support
  - Pub/Sub Events
  - Composite components
  - Better resource handling
  - Groovy integration

- EJB 3.1 Preview
  - WAR packaging
  - Singleton
  - No Interface View
  - TimerService
  - Asynchronous operations
  - ...

- Servlet 3.0 soon
JAX-RS (JSR 311) with Jersey

• Making it easy to build RESTful Web services
• Production-quality Reference Implementation

@Path("/users/{id}")
public class UserResource {
    @GET
    @Produces("text/xml")
    public String getUser(@PathParam("id") String userName) {
        ...
    }
}

• Final and supported v1.0
• Fine client API too
import javax.ejb.Singleton;
@Singleton
public class CounterBean {
  private int hitCount;
  public synchronized int incrementAndGetHitCount() {
    return hitCount++;
  }
}

public class SimpleServlet extends HttpServlet {
  @EJB CounterBean counterBean;
  void processRequest(... req, ... resp) {
    PrintWriter out = response.getWriter();
    try {
      counterBean.incrementAndGetHitCount();
    } finally {
      out.close();
    }
  }
}
Demo

simple ejb 3.1

war packaging
GlassFish Embedded

AppServer glassfish = new AppServer(8080);
glassfish.deployWar(warFile);

```
INFO: GlassFish V3 Prelude startup time : Embedded(430ms) startup services(592ms) total(1022ms)
```
public class Main {
    public static void main (String[] args) {
        AppServer glassfish = new AppServer(8080);
        glassfish.deployWar(warFile);
    }
}
@BeforeClass
public static void setUpClass () {
    AppServer glassfish = new AppServer(8080);
    glassfish.deployWar(warFile);
}

@Test
public void pingApplication () {
    ...
}
A lot more ...

- Comet, Cometd/Bayeux
- Full support for mod_jk, WebDAV, CGI, SSI
- Metro 1.4 Web Services (.NET 3.5)
- pkg and IPS
- RESTful admin
- Monitoring
- Extensible
  - Runtime
  - Admin console
  - Config file
GlassFish v3 Prelude – Practical

• Get it from http://glassfish.org
• Download size: 26MB
  > Graphical Installer
  > Zip version
  > Community-contributed IzPack installer
• Runs on Java 5 and Java 6
• Questions and feedback to: USERS@glassfish.dev.java.net or GlassFish forum.
• Supported product, subscriptions available
## v3 Prelude vs. GlassFish v2

<table>
<thead>
<tr>
<th>Feature</th>
<th>GlassFish Server v2</th>
<th>GlassFish v3 Prelude</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Java Platform, Enterprise Edition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Java Compatible, Enterprise Edition (Java EE 5) Certified</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Web Application and Service Technologies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Java Web Technologies (Servlet 2.5, JSP 2.1, JSF 1.2)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Metro Web Services Stack</td>
<td>X</td>
<td>X [1][4]</td>
</tr>
<tr>
<td>.NET 3.0 Web Services Interoperability</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>.NET 3.5 Web Services Interoperability</td>
<td></td>
<td>X [1][4]</td>
</tr>
<tr>
<td><strong>Next Generation Web</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admin Console and CLI (Centralized Administration)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>JMX</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Node Agent &amp; Cluster Mgmt</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Upgrade Tool</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Client</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application Client Container</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Java WebStart support</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enterprise Application Technologies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Java DB, JDBC Connection Pooling</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>JTA/JTS</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>J2EE Connector Architecture 1.5</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>EJB 3.0</td>
<td>X</td>
<td></td>
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<tr>
<td>JMS</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>JPA 1.0 (TopLink)</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
## v3 Prelude vs. GlassFish v2 (2)

<table>
<thead>
<tr>
<th>Feature</th>
<th>GlassFish Server v2</th>
<th>GlassFish v3 Prelude</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scripting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Native” jRuby/Rails deployment – without need for Servlet container</td>
<td>X[4]</td>
<td></td>
</tr>
<tr>
<td>Dynamic resizing of jRuby Runtime Pool</td>
<td>X[4]</td>
<td></td>
</tr>
<tr>
<td>Groovy/Grails</td>
<td>X[4]</td>
<td></td>
</tr>
<tr>
<td><strong>Developer Tools</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated Development Support (Eclipse and NetBeans)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Rapid Redeployment - Maintain session state on application redeploy</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Update Center</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Update Center integration with Administration Console</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Verification Tools</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Image Packaging System (IPS) Tools</td>
<td></td>
<td>X</td>
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<tr>
<td><strong>Framework Technologies</strong></td>
<td></td>
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</tr>
<tr>
<td>Grizzly (Java NIO)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Comet (HTTP Push)</td>
<td>X</td>
<td>X</td>
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<tr>
<td>CORBA</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Modular Architecture Based on OSGi</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>GlassFish Embedded</strong></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Extend GlassFish Functionality (Extensibility APIs) (Administration Console, asadmin CLI utility, more)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>System/Performance Technologies</strong></td>
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<td></td>
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<tr>
<td>Clustering</td>
<td>X</td>
<td>X[3]</td>
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<tr>
<td>Load Balancer Plugin</td>
<td>X</td>
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<tr>
<td>Centralized Administration of Load Balancer Plugin Configuration</td>
<td>X</td>
<td>X</td>
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<tr>
<td>High Availability</td>
<td>X</td>
<td></td>
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<tr>
<td><strong>Integration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integration with Identity Manager, OpenSSO, OpenESB, OpenPortal...</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
v3 Prelude Usage

- SailFin (Telco AppServer)
- EHCACHE
  - EHCache Server
  - GlassFish v3 Embedded
  - Jersey
- Project Fuji
  - OpenESB.next
- WebSynergy
  - Portal, Liferay
- xWiki
  - GlassFishV3
  - JavaDB
- WebEngine
  - GlassFish v3 Embedded
  - Jersey
  - Nuxeo 5
GlassFish v3 Roadmap

• V3 Final aligned with Java EE 6
  > Targeted for June 2009
  > Clustering, central admin likely on the update center

• V3.1 full clustering
  > Late 2009
http://glassfish.org

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