



# Welcome to GlassFish Day !

Milano, Italia  
26/09/2007

Thank you!

Welcome!

# Agenda

- 11:00 - 01:00pm - *Registration*
- 01:00 - 01:10pm - Welcome
- 01:10 - 02:00pm - Update on GlassFish v2 and v3 (Alexis)
- 02:10 - 03:00pm - Portal (Prashant)
- 03:00 - 03:15pm - *(Break)*
- 03:15 - 04:30pm - OpenESB & Imola (Sang and Raffaele)
- 04:30 - 05:05pm - OpenMQ (Alexis)
- 05:05 - 05:20pm - *(Break)*
- 05:20 - 06:10pm - JAX-RS & Jersey (Jakub)
- 06:20 - 07:10pm - Metro Web Services (Arun)



# **GlassFish Update and Directions**

**Update on GlassFish v2 and v3**

**Milano, Italia  
26/09/2007**

**Alexis Moussine-Pouchkine  
Sun Microsystems, Inc.**

# Java EE 5.0 = (J2EE 1.4).next

- Java EE 5 Theme: Ease of Development
- POJO-based programming
  - > More freedom, fewer requirements
- Extensive use of annotations
  - > Reduced need for deployment descriptors
  - > Annotations are the default
- Configure by exception
  - > Reasonable defaults wherever possible
- Resource Injection
- New APIs and frameworks
  - > EJB3, JAXB 2, JAX-WS, JSF, ...

# GlassFish



*“Various Interface21ers, including Costin and Juergen, have taken a look at GlassFish and given it the **thumbs up**.”*

Rod Johnson, Spring Framework Creator, Feb. 2007 [1]

[1]: [blog.interface21.com](http://blog.interface21.com), Feb. 2007

*“... we were seriously stressed when IBM declared war with Geronimo and then HP got in the game against us too. Red Hat and JOnAS didn't scare us at all (really – not at all), nor did we worry about Sun's foray into the market. Oddly enough, of that group **only Sun** has managed to mount **serious competition to JBoss.**”*

Marc Fleury, JBoss founder, August 2007 [2]

[2]: news.com, August 2007



*“Among major vendors, Sun Microsystems Inc., has **dramatically improved** its standing in this year’s evaluation of applications servers for service-oriented architecture (SOA) and business process management (BPM)”*

Forrester Research, August 2007 [3]

*Sun and the GlassFish open-source community have delivered the first production-scale open-source Java EE 5 application server. This challenges the dominance of market leaders like Red Hat and IBM.*

Gartner, September 2007 [4]

[3]: <http://www.forrester.com/Research/Document/0,,37138,00.html>, August 2007

[4]: [http://www.gartner.com/DisplayDocument?doc\\_cd=152044&ref=g\\_rss](http://www.gartner.com/DisplayDocument?doc_cd=152044&ref=g_rss), September 2007

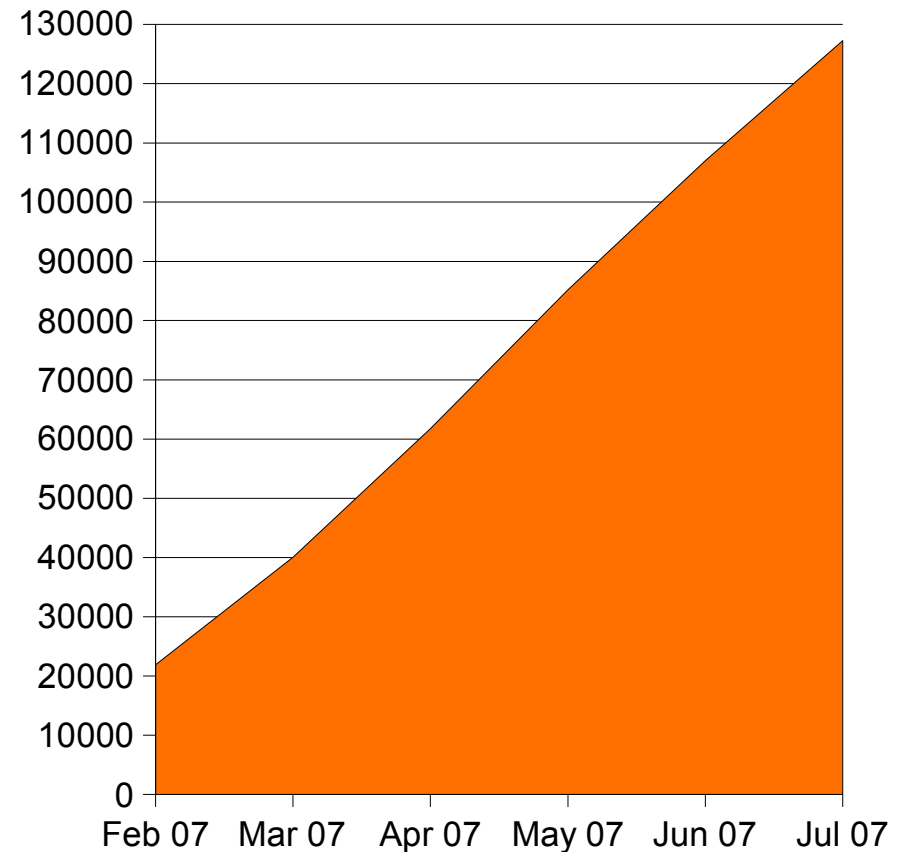
# What Is GlassFish?

- A Java EE 5 compliant Application Server
- Enterprise Quality
  - > Sun Java System Application Server 9.x
  - > Use it in production!
- Open Source
  - > CDDL (like OpenSolaris, NetBeans)
  - > GPLv2 (like Java and NetBeans)
  - > Use it in production!
- Community at <http://glassfish.java.net>
  - > Sources, bug DBs, discussions at Java.Net
  - > Roadmaps, Architecture Documents

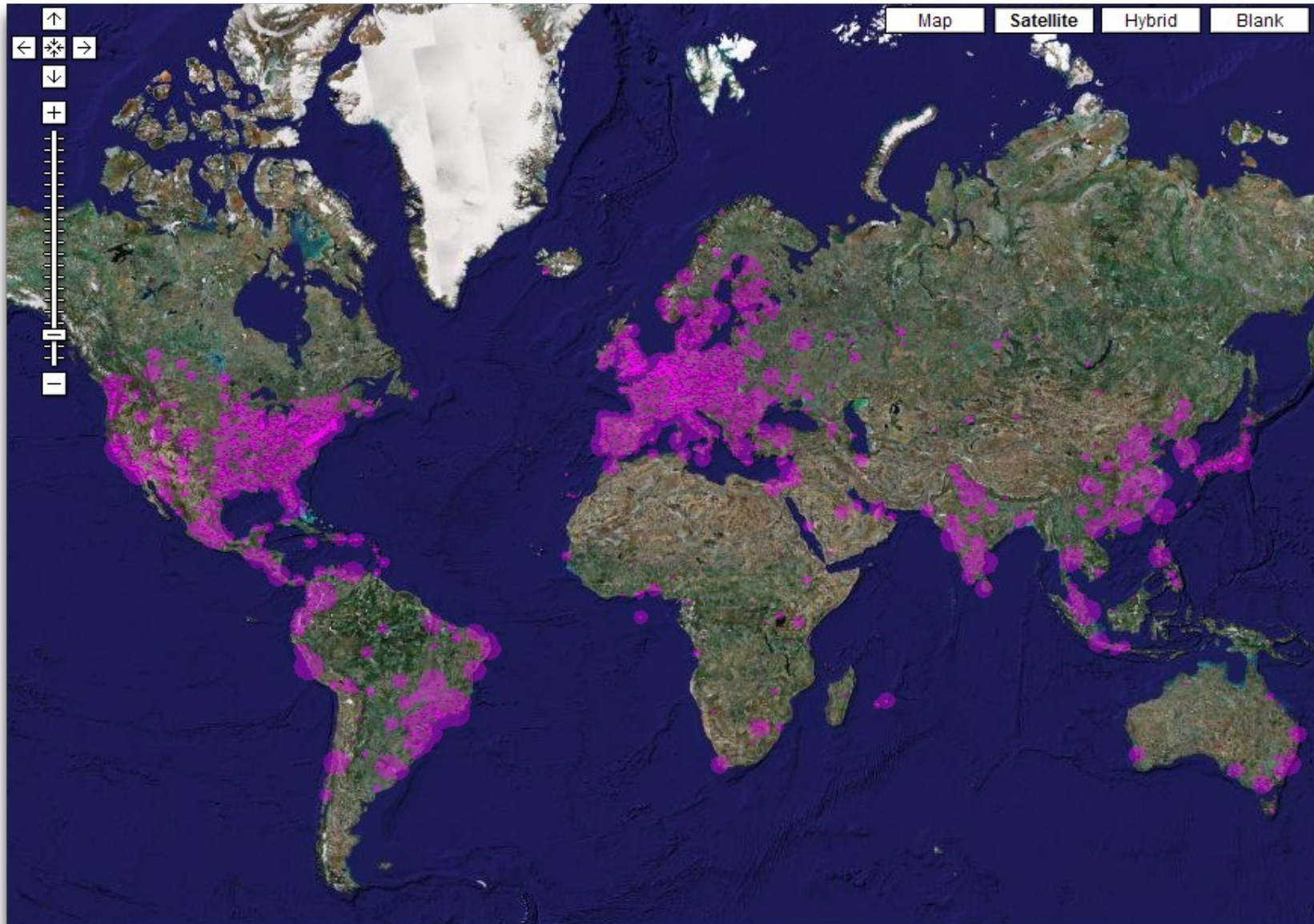
# GlassFish Adoption

- 3.5 million downloads since July '06
- Dozens of external committers
- Over 7,000 members
- Evans data survey of Linux users puts GlassFish at #3 behind JBoss and “other” (Tomcat)
  - > JBoss and IBM fell 5% while GlassFish / Sun increased

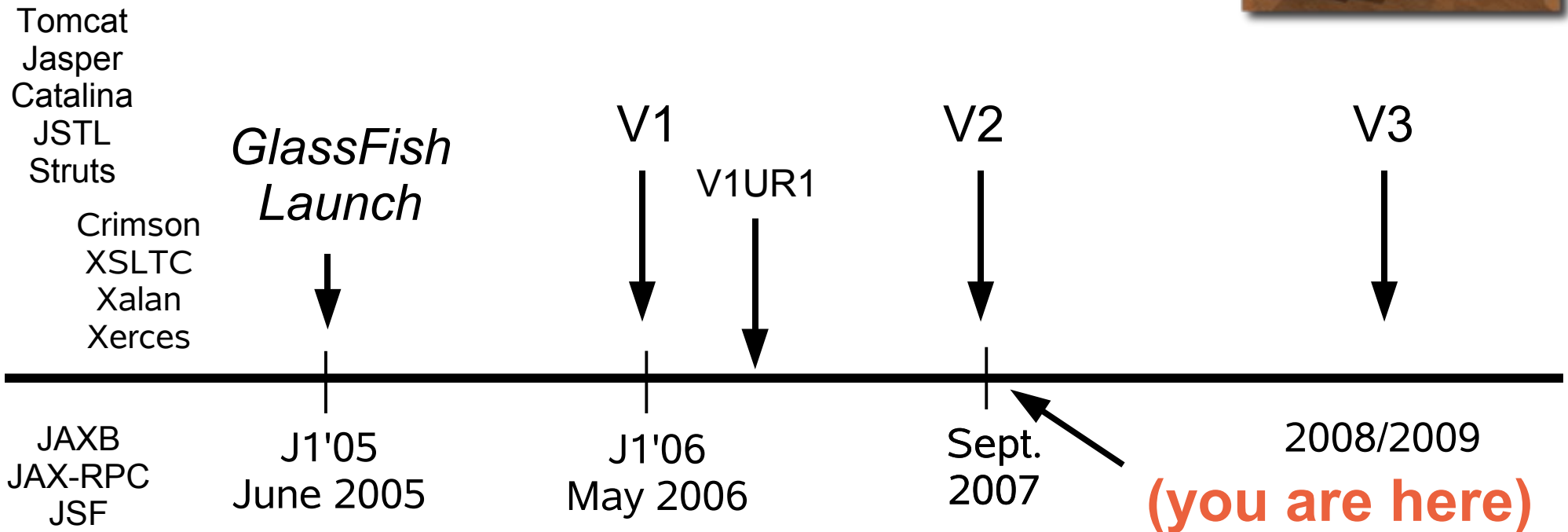
Unique Admin "Pings"



# GlassFish around you



# Timeline of Project GlassFish



# Releases in Project GlassFish

- GlassFish v1
  - > Victory! Java EE 5 Compliance!
  - > December 2006 : UR1 - bug fixes
  - > Good number of mission critical deployments
- GlassFish v2
  - > New WS stack, performance, startup time
  - > Cluster management, load balancing, failover
  - > Enhanced developer experience
  - > Community, Transparency, Adoption
- GlassFish v3
  - > Modularized kernel (HK2)
  - > The Web 2.0 engine





# GlassFish v2

## SJS Application Server 9.1

- Metro Web Services Stack
  - > Performance, Microsoft interoperability
- Clustering, Load-Balancing, HA
  - > Advanced Management
- JBI support (OpenESB 2.0)
- Better user experience
  - > Single, smaller, download
  - > Multiple User Profiles
  - > Better startup time
  - > Update Center
  - > New admin console: JSF, AJAX, Charts
- World Record Performance

**Available!**



# GlassFish Support Pricing

- **Yes!** GlassFish is totally free to use
- The business model for Sun is that of services
  - > Support subscription starting from \$4 500 for 4 sockets
  - > Premium support and volume pricing available
  - > Support from the source to secure your projects
- Also providing Consulting & Training
- All from Sun & Partners
- We want our partners, our customer and Sun to be successful



# GlassFish v2: Grizzly & JSP Containers

- JSP Container
  - > Can use JSR-199 (Javac APIs in Java 6)
  - > 10x performance improvement
- Grizzly
  - > Improved over GlassFish v1
  - > Very Flexible and Customizable
  - > Non-blocking SSL
  - > Support Quality of Service constraints
  - > Scalable Async Req Processing (ARP)
  - > Supports *Comet* (long-term HTTP connections)
  - > Used in Jetty, etc...
- Hosting features
  - > Alternate docroots, webcontainer dynamically reconfigurable, ..

# jMaki

- jMaki, not jMonkey!
- 'j' stands for JavaScript. Maku means to wrap in Japanese
- Framework for encapsulating AJAX libraries and widgets from Dojo, Yahoo!, scriptaculous, Google, and more
- Usable with JSP, JSF, PHP and Ruby on Rails
- Easy to build your own widget
- Common event model and proxy architecture
- Automatic handling of JavaScript resource files
- V 1.0 released yesterday!
- <http://ajax.dev.java.net> and <http://widget.dev.java.net>

# Management Features

- Centralized, secure, remote access
  - > Accessible as GUI, CLI, IDEs, Java-based programs
  - > Also available via provided ANT tasks
  - > JMX & Application Server Management eXtensions, AMX
  - > Can be monitored through *jConsole* and others
- Per-service monitoring levels
- Call Flow
- Self Management
- Resource consumption management

# Metro

## JAX-WS, WSIT, and JAXB implementations

- Dynamic JAX-WS Runtimes
- JAXB 2.0 fully support XML Schema
  - > A lot of reuse of GlassFish's JAXB implementation
- GlassFish JAX-WS 2.x
  - > Simple annotated POJO model
  - > WS Separation of Transport and Encoding
    - > HTTP, JMS, SMTP, TCP/IP
    - > MTOM, Fast Infoset (binary), Textual, Others
- WSIT (Project Tango)
  - > Microsoft Interoperability and Quality of Service
  - > Same (old) JAX-WS programming model

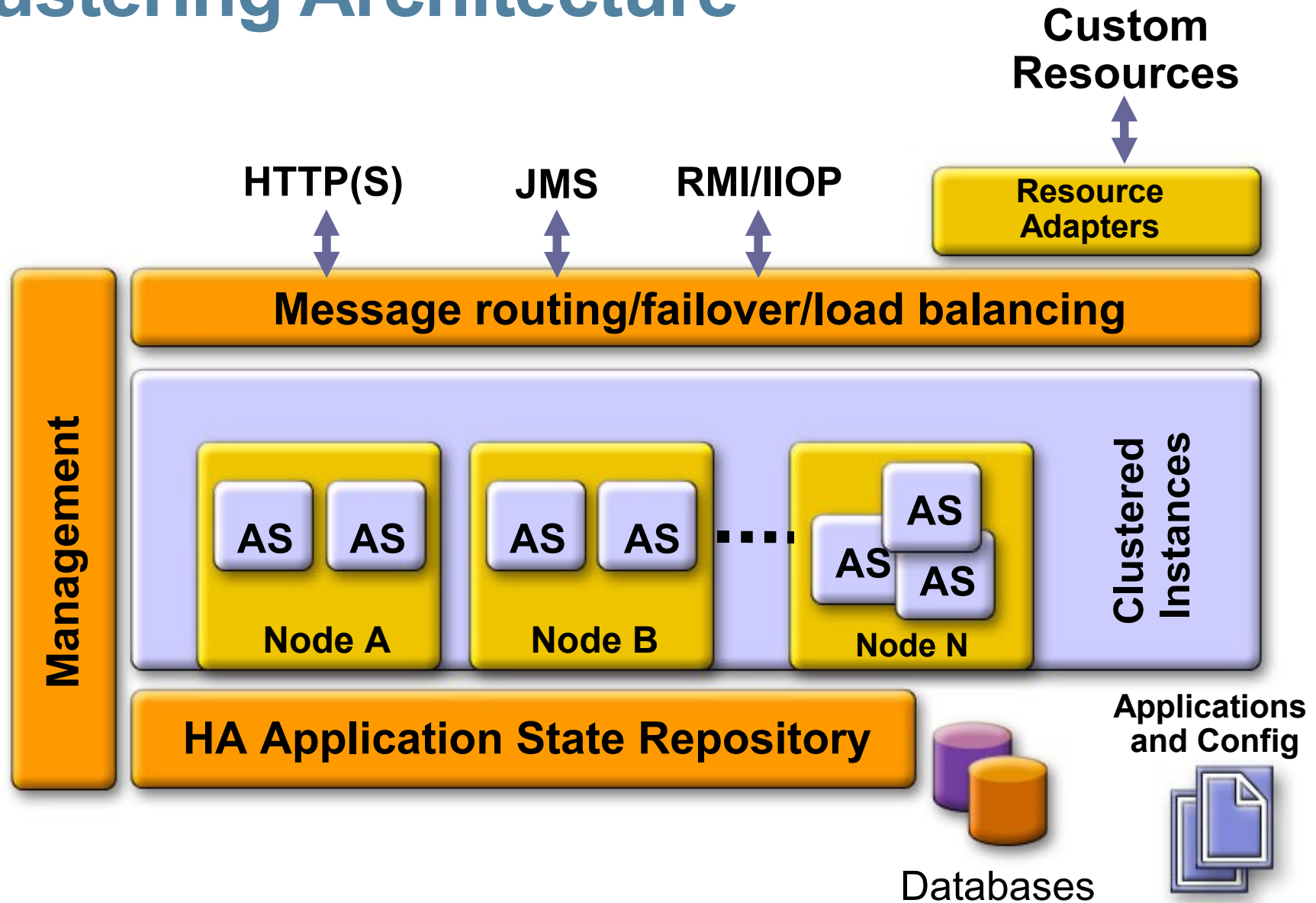
# Top Link Essentials / JPA

- JPA now a separate JSR
  - > 1.0 very well accepted
  - > Does not require a container
- Oracle Contribution to GlassFish
  - > Fully JPA-compliant and open source
- Very Active Community
  - > Oracle, Sun, TmaxSoft, independents
  - > Mail: [persistence@glassfish.dev.java.net](mailto:persistence@glassfish.dev.java.net)
- Pluggable (per spec)
  - > In GlassFish, JEUS, JOnAS, Tomcat, Geronimo, JBoss, Oracle
  - > Converse is true also: Hibernate & OpenJPA run on GlassFish

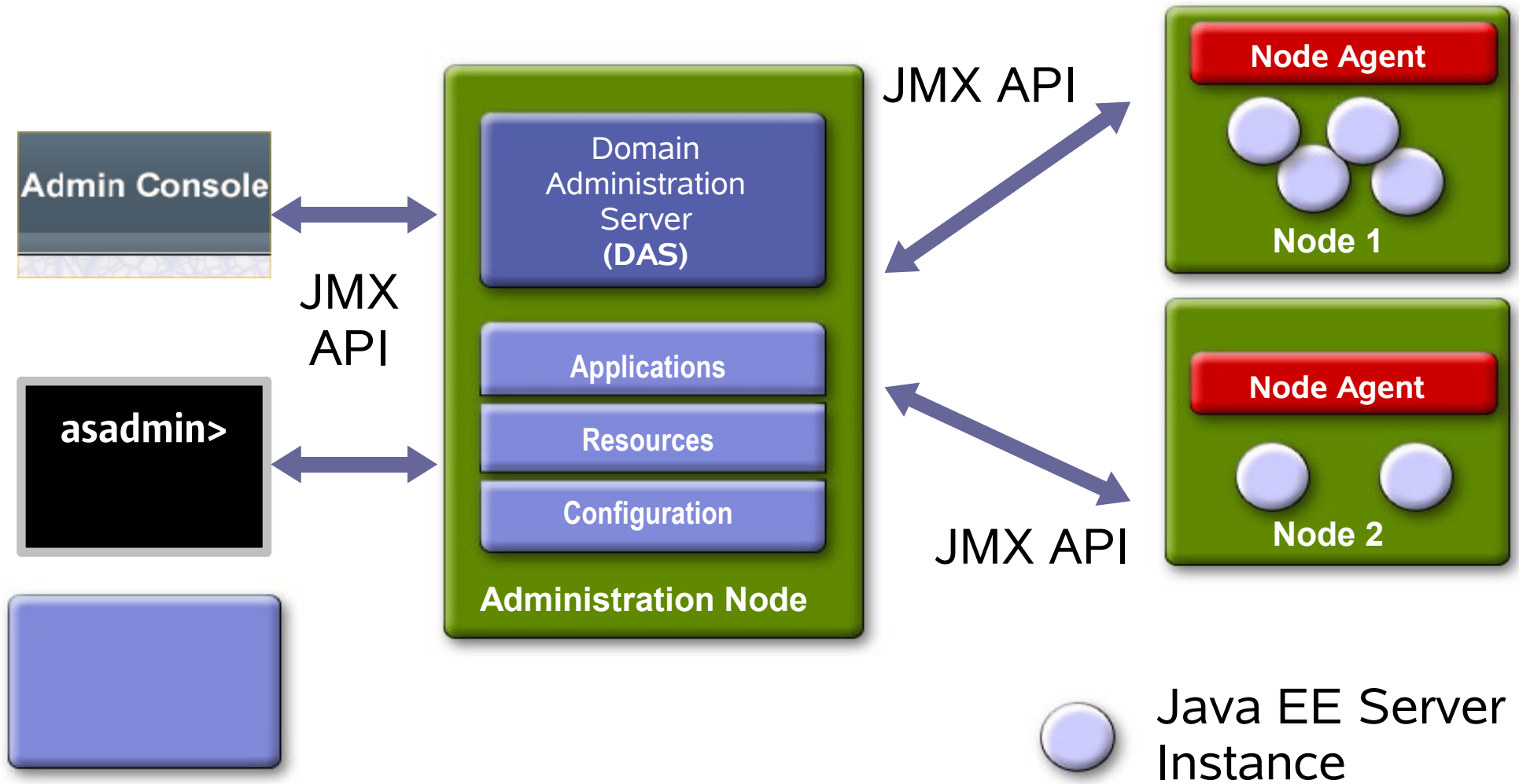
# JBI – Java Business Integration

- OpenESB 2.0 implementation
  - > Included in GlassFish v2
  - > Integrated as a life-cycle module
  - > Integrated admin tools (Web and CLI)
- Many components available from [openesb.org](http://openesb.org)
  - > Binding Components: HTTP, File, FTP, JMS, TCP, CICS, HL7, ...
  - > Service Engines: BPEL, XSLT, ETL, SQL, Scripting, Worklist, ...
  - > <https://open-esb.dev.java.net/Components.html>
- Tools support
  - > NetBeans SOA 6.0 Beta
- Possible to plug ServiceMix into GlassFish v2
  - > Support wider JBI story

# Clustering Architecture



# Clustering in GlassFish v2



JMX = Java Management Extensions





# Dynamic Clustering and In-Memory Replication

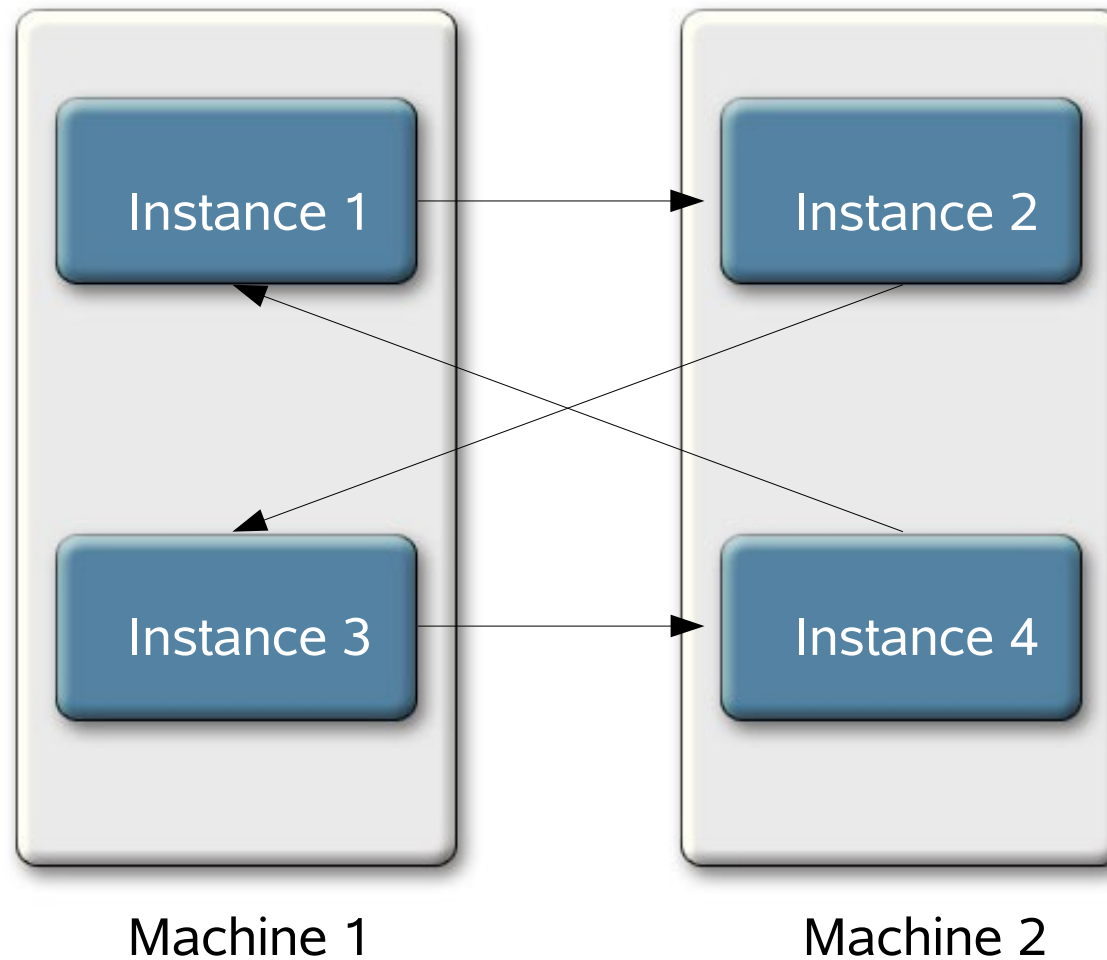
- GMS with Project Shoal
  - > <http://shoal.dev.java.net>
  - > Dynamic clusters implemented with JXTA by default
  - > Extreme ease of use in cluster setup
- Replication
  - > What?
    - > HTTP session state
    - > Stateful EJB session state
    - > Single Sign-On state
    - > Container state (timers, ...)
  - > How?
    - > Default is In-Memory replication with JXTA
    - > Can still use HADB for 99.999% uptime (higher perf degradation)



# Memory Replication

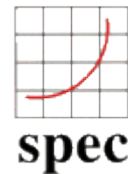
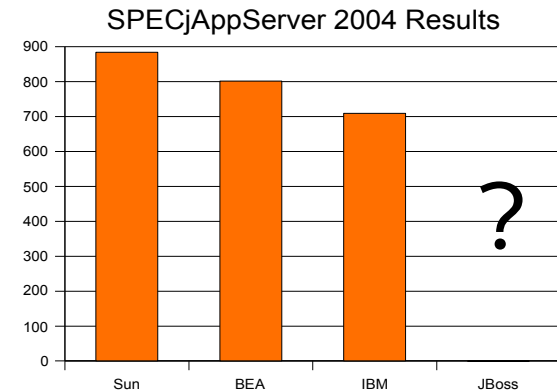
Typical cluster topology

**Example: Maximize  
Availability on 4 node  
cluster on 2 machines**



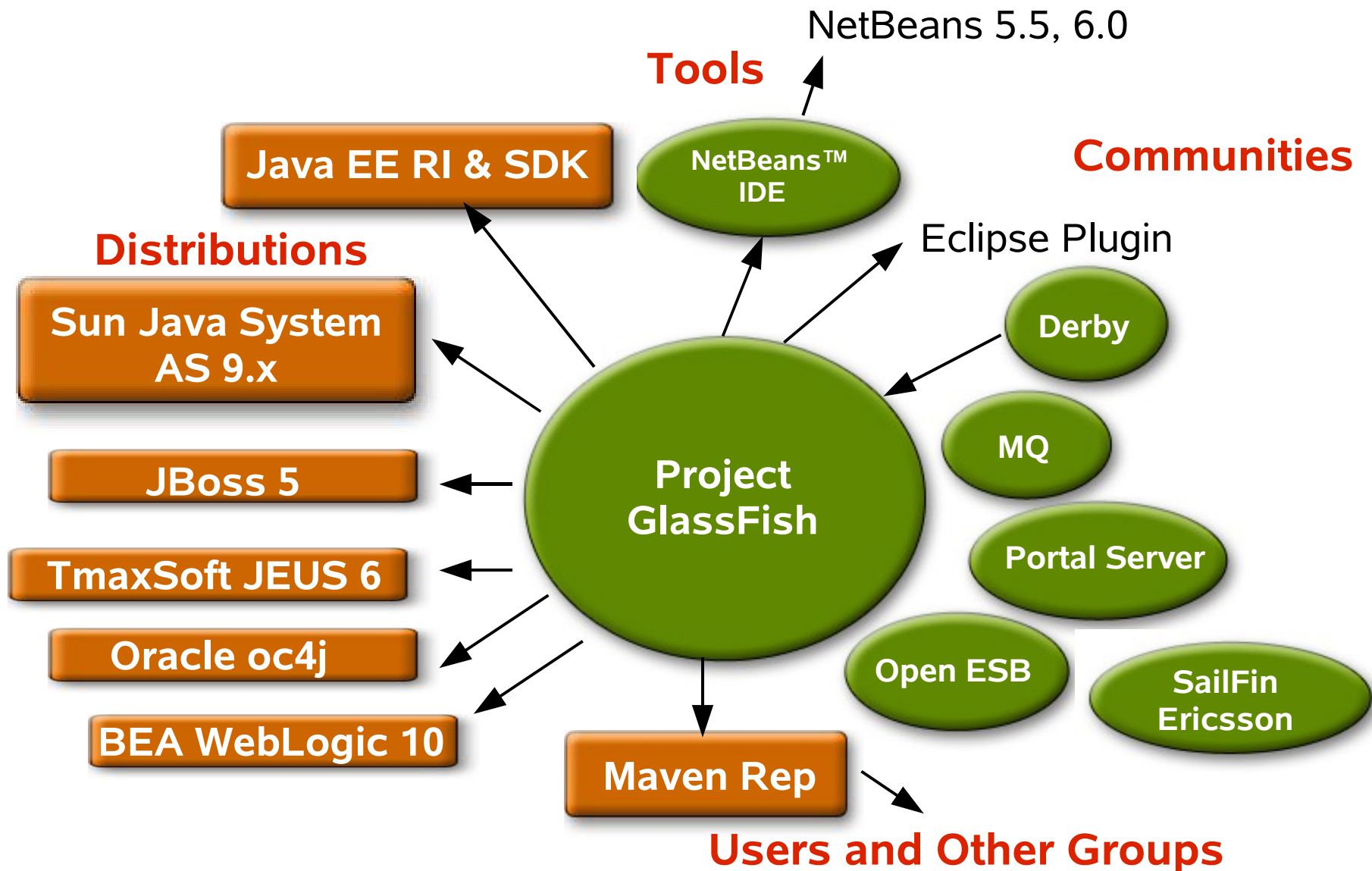
# Performance

- SPECjAppServer Benchmark
  - > July 2007: #1 score on T2000
    - > 883.66 JOPS@Standard for GlassFish v2
    - > 10% faster than BEA WebLogic
    - > 30% faster than IBM WebSphere 6.1
  - > July 2007: Best \$/perf. on full Open Source stack
    - > 813.73 JOPS@Standard
    - > GlassFish v2, OpenSolaris, Java 6, PostgreSQL
    - > 3x the price/perf vs. Oracle on HP score
  
- Performance: Startup Speed
  - > Start as little as possible in v2 (see also v3)



*You no longer need to chose between Open Source and performance*

# (Some) Distributions & Contributors



# Tools Support

- NetBeans 5.5.1, 6.0
- Best integration with :
  - > full Java EE 5 support
  - > resource creation
  - > remote debug
  - > incremental deployment
  - > profiling
  - > wizards, etc...
- Additional features (SOA, UML, jRubyOnRails, ...)



- GlassFish (v1, v2, v3) plugin for Eclipse 3.3 (Europa)



- Genuitec's MyEclipse offers greater integration between IDE and GlassFish



- CodeGear JBuilder 2007
- IDEA IntelliJ 6.0, 7.0



# Recent GlassFish Partners

Open for Business!



# Noemax

# Frameworks and Applications



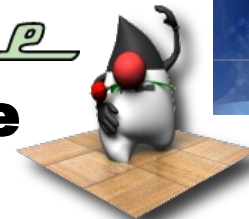
**OSWorkFlow**



AppFuse



**OSCache**



**Integration ORB**

**iBatis**

Project Tango

**Apache Httpd**



**CJUG-Classifieds**

**Struts**



**BIRT**

**JBPM**

**DOJO**  
**Facelets**



MyFaces

**OpenSSO**  
Open Access . Open Federation



**Shale** **Derby**

ADF

**SiteMesh**

**WebDAV**



JSPwiki



**Tapestry**



MC4J



**AJAX**

**Hudson**

**StringBeans Portal**



**BlogTrader**



Wicket

**Equinox**

Java WSDP  
**Dalma**



**WebSphere MQ**

**EHCache**



# GlassFish Adoption Stories

<http://blogs.sun.com/stories>



- PeerFlix
  - > GlassFish v1 on Solaris 10 / x2100
  - > MySQL, Kodo JDO
- Wotif.com
  - > Large # hits, ehCache / Horizontal Scaling
  - > Spring and Hibernate
  - > 3<sup>rd</sup> largest commercial site in Australia
- Harvard University
  - > On-line archive for sharing data within and across universities
  - > Lucene, PostgreSQL, Apache Shale
- More (small and large)
  - > Help us collect these
  - > [stories@sun.com](mailto:stories@sun.com)





# GlassFish v3

- Small & Fast
  - > Less than 1.0 sec startup
- Totally Modular, kernel is <100K
  - > Based on a module sub-system: HK2
  - > Can run in a phone or a desktop application
  - > Can be embedded in-process
- An ideal Container for Web 2.0
  - > Java and Scripting applications
  - > Support for upcoming Java EE 6 profiles
- A container that can do Java EE and more
  - > A good fit for SOA/ESB solutions
- Code and documentation available today



# GlassFish v3 – Work in Progress

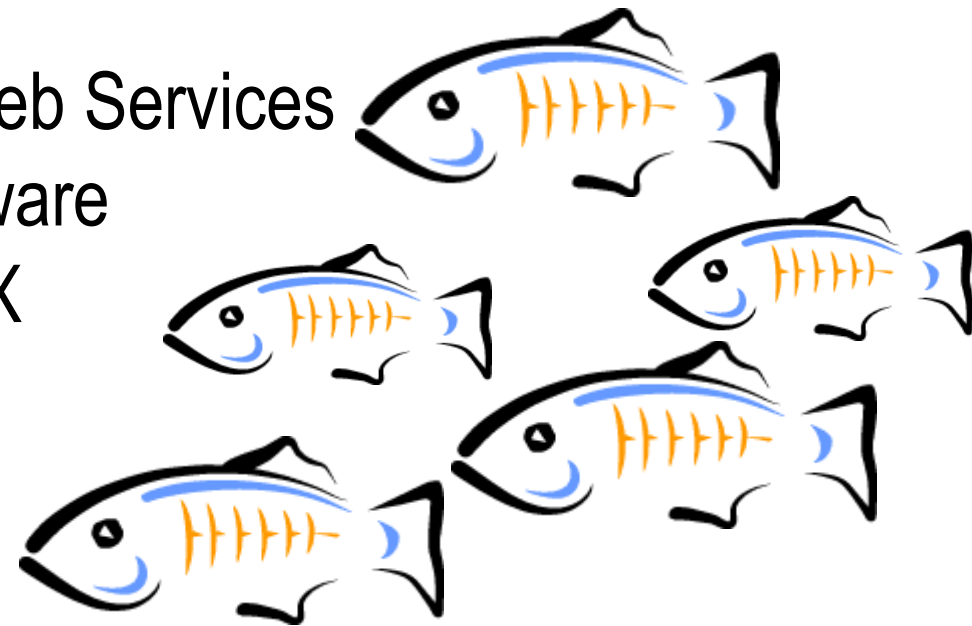
- Sample Containers
  - > Java Web Container
  - > JRuby (no GoldSpike required)
  - > PHP (via Quercus)
  - > JavaScript (via Phobos)
  - > Whatever you decide!
- Plans/Roadmap
  - > Java Web profile likely in 1H2008
  - > *More tbd*

# AJAX and Scripting Activities

- AJAX
  - > jMaki - <http://ajax.dev.java.net>
  - > DynaFaces - <http://jsf-extensions.dev.java.net>
    - > AJAX and full-featured JSF components
  - > WoodStock - <http://woodstock.dev.java.net>
    - > Repository of AJAXyfied JSF components
  - > JSF Templating <http://jsftemplating.dev.java.net/>
    - > Templating for pages and components
- Phobos - <http://phobos.dev.java.net>
  - > Scripting on the Server
- Comet and Grizzly - <http://grizzly.dev.java.net>
  - > Long-term HTTP connections for push content

# FOSS Middleware Components

- GlassFish – AppServer, JavaPersistence, Web Tier
- OpenPortal – Container, WSRP, Portlet, Portlet Rep
- OpenESB, OpenJBI – JBI, BPEL
- OpenSSO – Access & Federation Manager
- OpenDS – Directory Server
- Jersey – JAX-RS for RESTful Web Services
- Hudson – Continuous build software
- Phobos, jMaki... – Web 2.0/AJAX
- Open MQ – MessageQueue
- WoodStock – JSF Components
- Apache Derby – JavaDB
- Social Software – Apache Roller, Slynkr



# The SailFin Project

- Ericsson SIP Servlet Contribution is available at:
  - > <http://sailfin.dev.java.net>
- Visit, Download, Try, Join
  - > Milestone 1 available
- Not just for telco operators!
  - > Bridging the HTTP and SIP protocols
- Built on GlassFish v2 and expected first half of 2008



**ERICSSON**   
TAKING YOU FORWARD

<http://sailfin.dev.java.net>

# OpenDS

[opends.dev.java.net](http://opends.dev.java.net)

- Next generation Directory Services
  - > Designed to meet the needs of the Telco market
  - > High-Performance, highly extensible and VERY large deployments
- Brand-new Code Base
  - > Java-based, Very High Performance Goals
  - > Not Based on DSEE (2B-entry deployments, market leader)
- Full Fledged
  - > Full LDAPv3, replicas
  - > Virtual Directory, Proxies, Caching, etc...
- Schedule
  - > v1.0 before year's end



Open ESB  
The *Open* Enterprise Service Bus

# OpenESB

[open-esb.dev.java.net](http://open-esb.dev.java.net)

- Based on JBI (Java Business Integration) Standard
- Already Released
  - > JBI Implementation
  - > BPEL
  - > Many binding components
- More Components to be Released
- Integrated within GlassFish V2
- *Distributed in*
  - > NetBeans 6.0 SOA/BPEL features
  - > Future of Sun Composite Application Platform Suite (CAPS)

# OpenSSO

[opensso.dev.java.net](http://opensso.dev.java.net)

- Access Manager, Single Sign-On, Federation
  - > SAML, XACML, Liberty Standards
- Already Released
  - > Access Manager
  - > Many Policy Agents
  - > Federation Manager
- To be Released
  - > More Policy Agents
- *Distributed in*
  - > Sun Java System Access Manager & Federation Manager



# OpenPortal

portal.dev.java.net



## OpenPortal

Open Source. Open Standards. Open Portal Server.

- Enterprise-class Portal Server
  - > Basis for the commercial product from Sun
  - > Next release is Sun Java System Portal Server 7.2
- Sub-projects
  - > portlet-container.dev.java.net (JSR168 / JSR 286)
  - > portlet-repository.dev.java.net
  - > wsrp.dev.java.net (WSRP 1.0, 2.0)
  - > portalpack.netbeans.org / eclipse-portalpack.dev.java.net
  - > saw.dev.java.net (Workflow/SOA)
  - > mirage.dev.java.net (CMS)
  - > jsfportletbridge.dev.java.net
- Get more information from <http://blogs.sun.com/portal>

# JAX-RS & Jersey

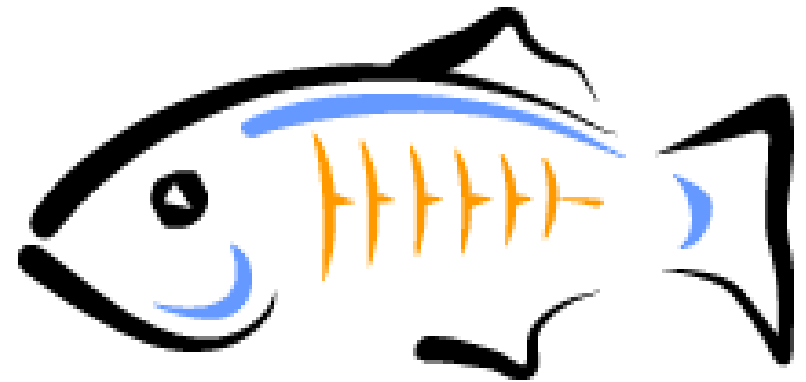
<http://jsr311.dev.java.net>



- POJO-based RESTful Web Services
  - > JSR 311, and also part of Java EE 6 (JSR 316)
  - > High-level declarative programming model
  - > Flexible typing, runtime takes care of common conversions
  - > Pluggable support for types, containers, and resolvers
- Reference Implementation
  - > <http://jersey.dev.java.net>
  - > Available to GlassFish via update center
  - > Deployment options: JAX-WS endpoint (per JSR), *Grizzly*, *Java 6 lightweight HTTPd*
- Roadmap
  - > JSR and Reference Implementation final by 2H2008

# Resources

- <http://glassfish.java.net>
- <http://wiki.glassfish.java.net>
- <http://blogs.sun.com/theaquarium>





# Questions ?

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<http://blogs.sun.com/alexismp>



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