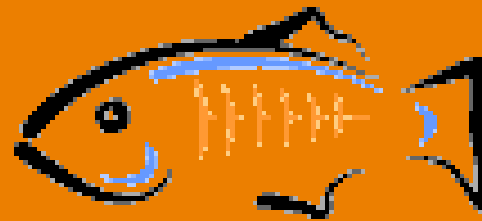




GlassFish

The Best Open Source Application Server



Murthy Narayanan
Sun Microsystems, Inc.



Agenda

- What is GlassFish ?
 - > Feature Set
- Community
- Success Stories
- Reference



"Positive on Sun and the GlassFish community's release of the second major update of their open source Java application server, GlassFish V2, and its accompanying enterprise rendition, Java System Application Server 9.1. Many technical advances ...

recommend this version **for enterprise use.**"

Current Analysis

Agenda

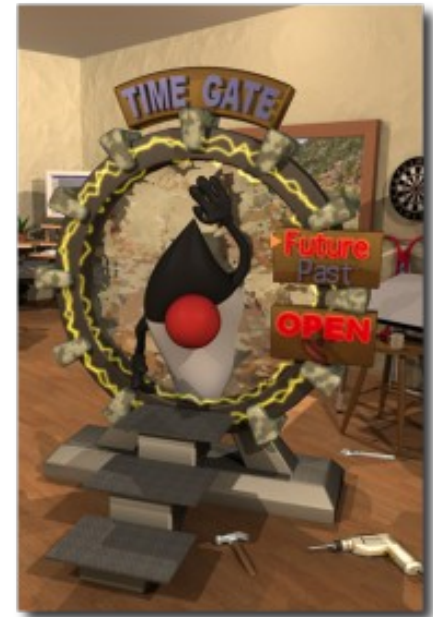
- **What is GlassFish ?**
 - > Feature Set
- Community
- Success Stories
- Reference



What is GlassFish ?

- **Open Source**
 - > CDDL & GPL v2 (w/ CPE)
- **Java EE 5 Reference Implementation**
 - > Included in Java EE 5 SDK
- **Enterprise Quality**
 - > High Availability, Clustering
 - > .NET 3.0 Web services interoperability
 - > World Record Performance
- **Community**
 - > Sources, bug DBs, discussions at glassfish.java.net
 - > Roadmaps, Architecture Documents

Timeline of Project GlassFish



Tomcat
Jasper
Catalina
JSTL
Struts

Crimson
XSLTC
Xalan
Xerces

*GlassFish
Launch*

v1

v1 UR1

v2

v2 UR1

v2.1

v3

JAXB
JAX-RPC
JSF

J1'05
June 2005

J1'06
May 2006

Sept.
2007

2008/2009
(you are here)

GlassFish v1

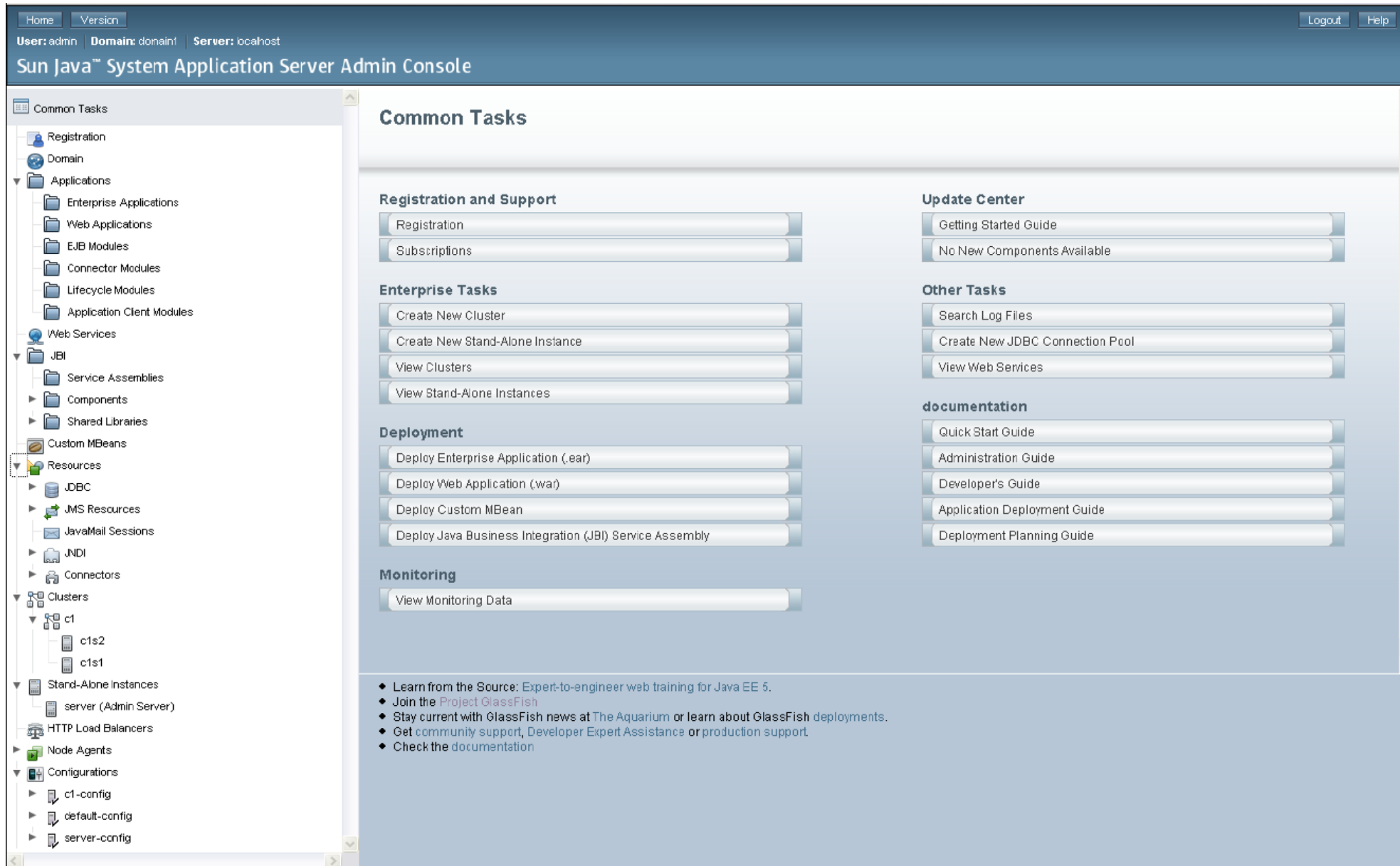
- Released JavaOne, 2006
- 1st Java EE 5 compliant implementation
- Based on mature SJS Application Server 8.x code
- Established Java EE market momentum
- Productized as the Sun Application Server 9.0 PE

GlassFish v2

- Released Sep 2007
- Java EE 5 compliant with advanced features
- Enterprise-centric release
 - > Clustering, Load-Balancing, HA
 - > .NET 3.0 Web services interoperability
 - > World Record Performance
 - > Seamless IDE integration
 - > NetBeans, Eclipse, IntelliJ
 - > Developer, Enterprise, Cluster, Custom profiles
- Productized as Sun Java System Application Server 9.1



Ease of use - Administration



Home Version Logout Help

User: admin Domain: domain1 Server: localhost

Sun Java™ System Application Server Admin Console

Common Tasks

- Registration
- Domain
- Applications
 - Enterprise Applications
 - Web Applications
 - EJB Modules
 - Connector Modules
 - Lifecycle Modules
 - Application Client Modules
- Web Services
 - JBI
 - Service Assemblies
 - Components
 - Shared Libraries
- Custom MBeans
- Resources
 - JDBC
 - JMS Resources
 - JavaMail Sessions
 - JNDI
 - Connectors
- Clusters
 - c1
 - c1s2
 - c1s1
- Stand-Alone Instances
 - server (Admin Server)
- HTTP Load Balancers
- Node Agents
- Configurations
 - c1-config
 - default-config
 - server-config

Common Tasks

Registration and Support

- Registration
- Subscriptions

Enterprise Tasks

- Create New Cluster
- Create New Stand-Alone Instance
- View Clusters
- View Stand-Alone Instances

Deployment

- Deploy Enterprise Application (.ear)
- Deploy Web Application (.war)
- Deploy Custom MBean
- Deploy Java Business Integration (JBI) Service Assembly

Monitoring

- View Monitoring Data

Update Center

- Getting Started Guide
- No New Components Available

Other Tasks

- Search Log Files
- Create New JDBC Connection Pool
- View Web Services

documentation

- Quick Start Guide
- Administration Guide
- Developer's Guide
- Application Deployment Guide
- Deployment Planning Guide

◆ [Learn from the Source: Expert-to-engineer web training for Java EE 5.](#)
◆ [Join the Project GlassFish](#)
◆ [Stay current with GlassFish news at The Aquarium](#) or [learn about GlassFish deployments.](#)
◆ [Get community support, Developer Expert Assistance](#) or [production support.](#)
◆ [Check the documentation](#)

Ease-of-use – Update Center


Select the software component desired to update the installation.

!	*		Name	Date Published	Version	Size
	☀	<input type="checkbox"/>	Web Technologies			
	☀	<input type="checkbox"/>	jMaki	Oct 2, 2007	1.0	3MB
	☀	<input type="checkbox"/>	Jersey (RESTful Web Services)	Sep 18, 2007	0.2.1	4MB
	☀	<input type="checkbox"/>	Phobos	Sep 18, 2007	0.5.11	3MB
	☀	<input type="checkbox"/>	JRuby on GlassFish	Sep 18, 2007	1.0	13MB
	☀	<input type="checkbox"/>	Social Software			
	☀	<input type="checkbox"/>	Weblog Server for GlassFish	Sep 18, 2007	1.0	11MB
	☀	<input type="checkbox"/>	Composite Applications			
	☀	<input type="checkbox"/>	Open ESB Blueprints	Aug 30, 2007	1.0	685KB
	☀	<input type="checkbox"/>	Open ESB V2 Preview 3	Aug 30, 2007	2.0	14MB
	☀	<input type="checkbox"/>	Identity			
	☀	<input type="checkbox"/>	Access Manager 7.1 Patch 1 EA	Aug 30, 2007	7.1	14MB
	☀	<input type="checkbox"/>	Access Manager Blueprints	Aug 30, 2007	1.0	10MB
	☀	<input type="checkbox"/>	Java EE 5 API Documentation	Aug 30, 2007	9.1	4MB
	☀	<input type="checkbox"/>	Java EE 5 Samples	Aug 30, 2007	1.0	1MB
	☀	<input type="checkbox"/>	Java EE Blueprints	Aug 30, 2007	1.0	10MB
	☀	<input type="checkbox"/>	Portal			
	☀	<input type="checkbox"/>	Portlet Container	Aug 30, 2007	2.0	725KB
	☀	<input type="checkbox"/>	Portlet Container Blueprints	Aug 30, 2007	1.0	55KB
	☀	<input type="checkbox"/>	Web Services for Remote Portlets	Aug 30, 2007	1.0	3MB
	☀	<input type="checkbox"/>	Java EE 5 Tutorial	Jan 18, 2007	1.0	758KB

New

Details

jMaki



Version: 1.0
Source: Sun Microsystems Inc.
Homepage: <https://ajax.dev.java.net>

Overview

jMaki is an Ajax framework that provides a lightweight model for creating JavaScript-centric Ajax-enabled web applications using...

Call Flow Monitoring

Home | Version
Logout | Help

User: admin | Domain: domain1 | Server: localhost

Sun Java™ System Application Server Admin Console

Common Tasks

- Application Server
 - Applications
 - Enterprise Applications
 - Web Applications
 - EJB Modules
 - Connector Modules
 - Lifecycle Modules
 - Application Client Modules
 - Web Services
 - JBI
 - Service Assemblies
 - Components
 - Shared Libraries
 - Custom MBeans
 - Resources
 - Configuration

Call Flow Details Back to Call Flow

View call flow details of the request. Click on the view tree button to look at call flow in tree view.

[Hide Chart](#)

Request Information

Back to config Jan 7, 2008 5:00:43 PM
User: anonymous
Application: servlet-stateless-ear
Start Container: REMOTE_WEB
Response: Success
Response Time(ms): 10.709

Request Time Distribution

Web Container:	32.566%	3.452 ms
Web Application:	7.116%	0.754 ms
EJB Container:	59.532%	6.311 ms
EJB Application:	0.785%	0.083 ms

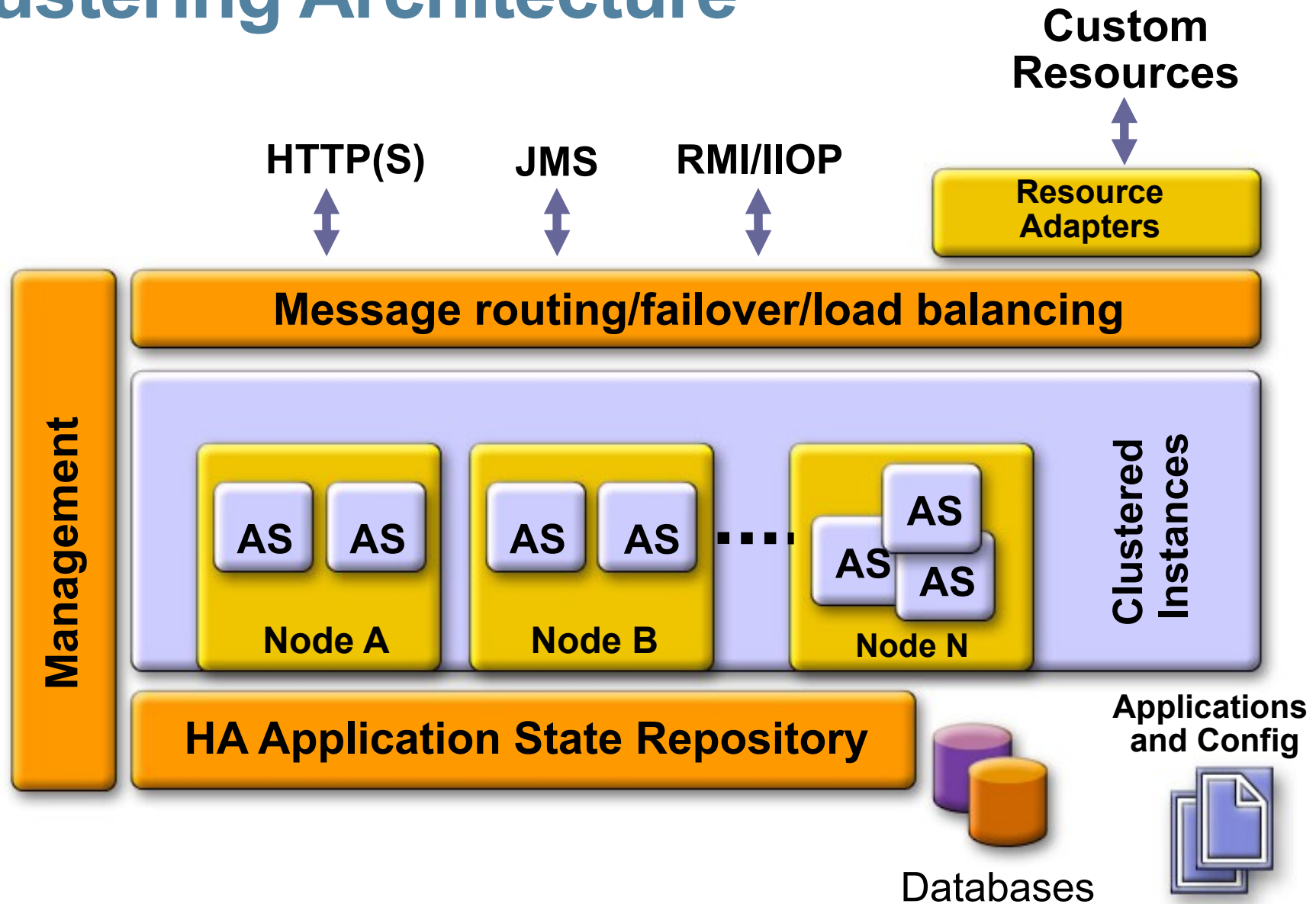
Component	% Time Spent
EJB Cont.	60
Web Cont.	35
Web App.	10
EJB App.	2

Excellent Tools Integration

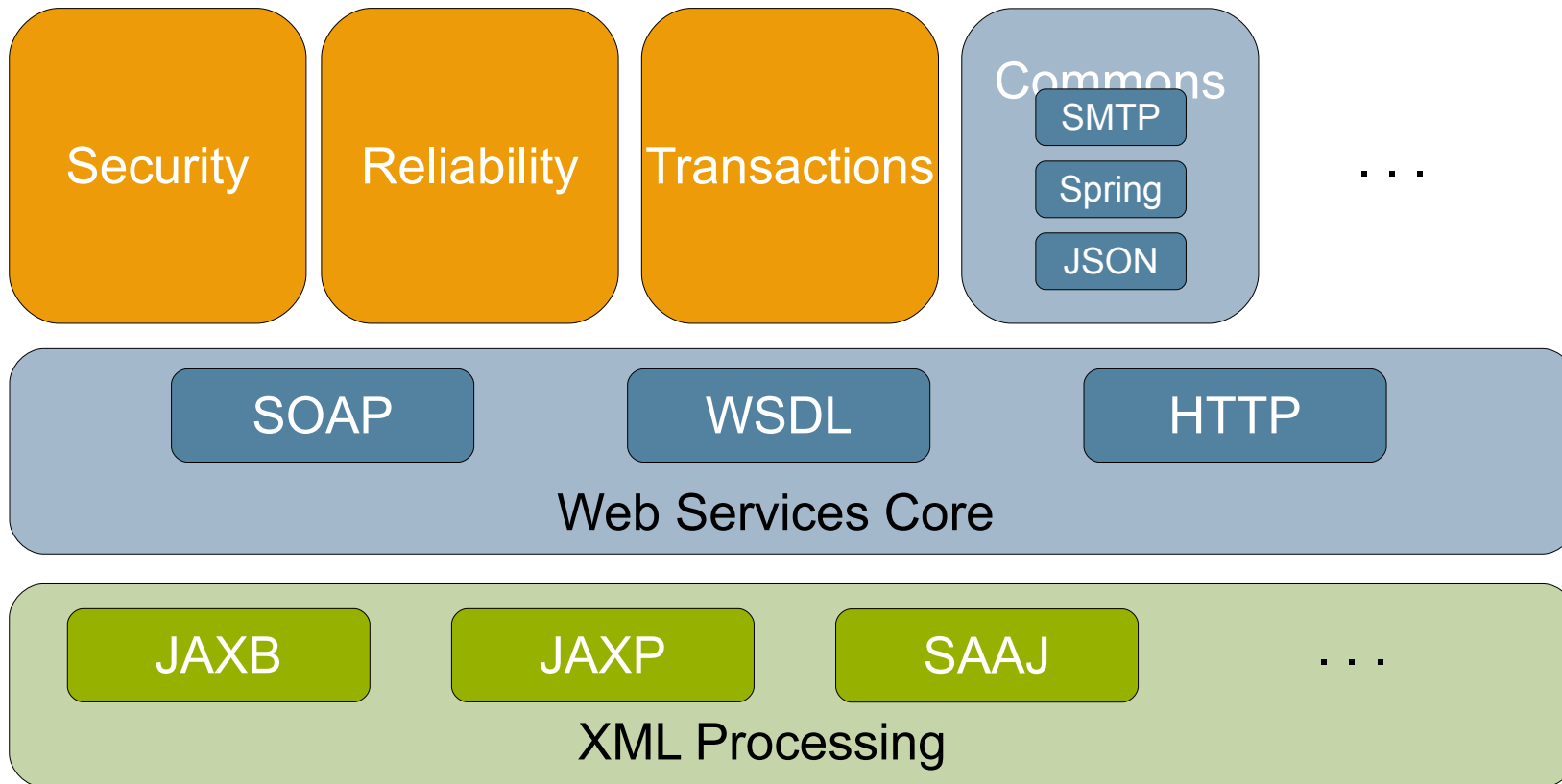
- NetBeans 5.5.1, 6.0
- Best integration with :
 - > full Java EE 5 support
 - > resource creation
 - > remote debug
 - > incremental deployment
 - > profiling
 - > wizards, etc...
- Additional features (SOA, UML, jRubyOnRails, ...)
- GlassFish (v1, v2, v3) plugin for Eclipse 3.3 (Europa)
- Genuitec's MyEclipse offers greater integration between IDE and GlassFish
- CodeGear JBuilder 2007
- IDEA IntelliJ 6.0, 7.0



Clustering Architecture

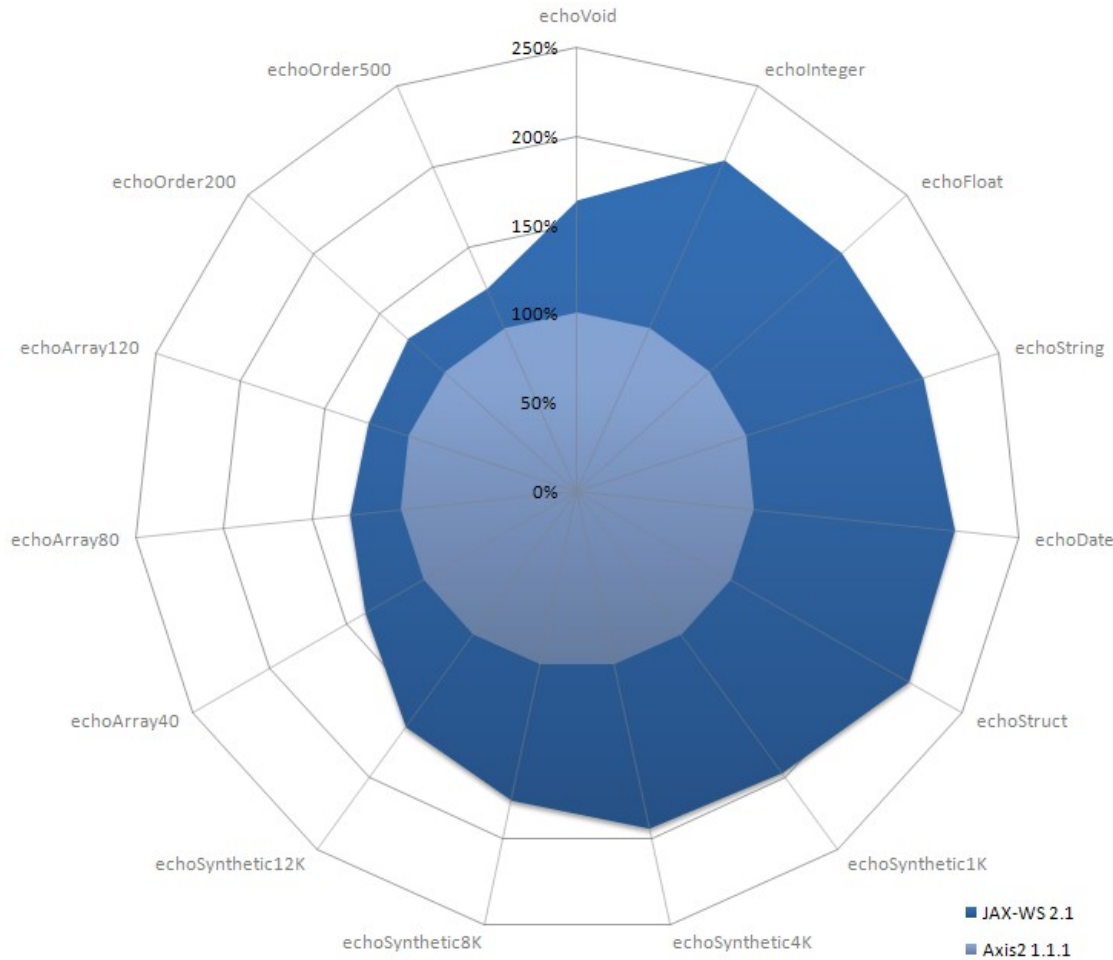


Metro Overview



Metro – GlassFish Web Services Stack
metro.dev.java.net

Metro vs Axis2



JBI – Java Business Integration

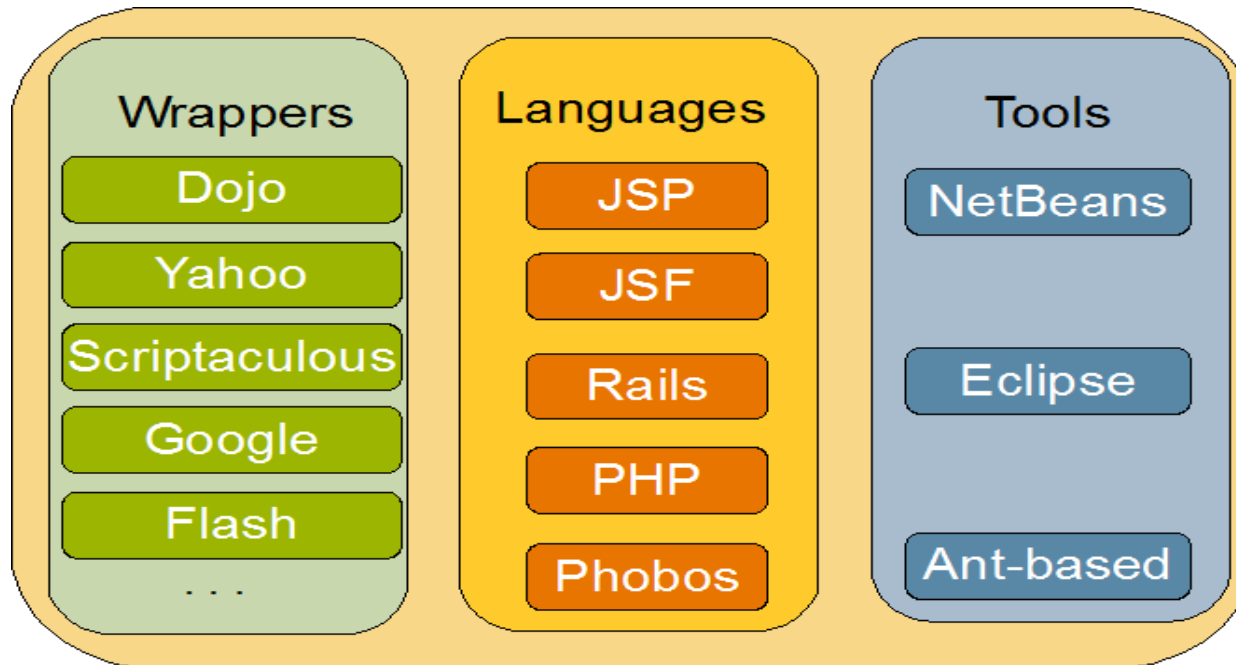
- OpenESB 2.0 implementation
 - > Included in GlassFish v2
 - > Integrated as a life-cycle module
 - > Integrated admin tools (Web and CLI)
- Many components available from openesb.org
 - > Binding Components: HTTP, File, FTP, JMS, TCP, CICS, HL7, ...
 - > Service Engines: BPEL, XSLT, ETL, SQL, Scripting,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


Ajax and Scripting Activities

- jMaki - <http://ajax.dev.java.net>
 - > Encapsulates very easily Ajax widgets
- Phobos - <http://phobos.dev.java.net>
 - > Scripting on the Server
- DynaFaces - <http://jsf-extensions.dev.java.net>
 - > Ajax and JavaServer Faces
- JRuby -
 - > <http://wiki.glassfish.java.net/Wiki.jsp?page=JRuby>

jMaki

- 'j' stands for JavaScript. Maki means to wrap in Japanese



 **jMaki – Web 2.0 Apps Your Way**
(ajax.dev.java.net)

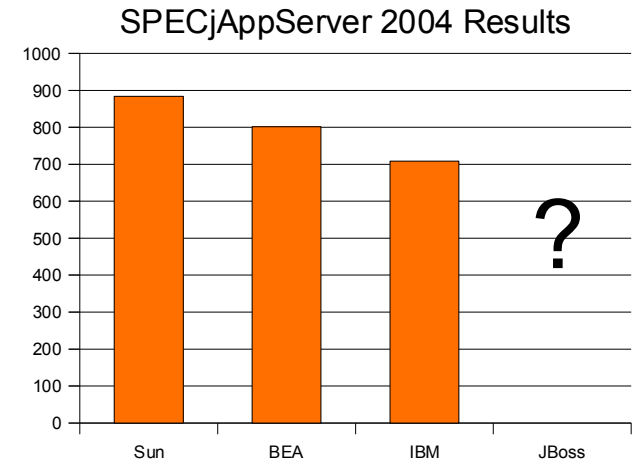
Web Tier

- JSP Container
 - > 10x perf. improvement in JSP compilation (JSR-199)
- Grizzly
 - > Easy-to-use, highly scalable and customizable HTTP Framework
 - > High performant buffers & parsing classes (java.nio)
 - > Non-blocking SSL, Quality of Service constraints
 - > Integrates with current Apache Tomcat HTTP Connector
 - > Supports *Comet* (long-term HTTP connections)
- Hosting features
 - > Alternate docroots
 - > Webcontainer dynamically reconfigurable

World Record Performance

SpecjAppServer 2004

- > July 2007: #1 score on T2000
 - > 883.66 JOPS@Standard for GlassFish v2
 - > Improved in areas not covered by benchmark
 - > 10% faster than BEA WebLogic
 - > 30% faster than IBM WebSphere 6.1



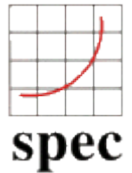
System Title	JOPS
IBM WebSphere Application Server 6.1 with DB2 8.2 on Sun Fire T2000 using Solaris 10	616.22
Oracle Application Server 10g Release 10.1.3.2 - Java Edition on Sun Fire T2000	733.22
BEA WebLogic Server 9.2 on Sun SPARC Enterprise T2000	801.70
GlassFish V2 (Sun Java Application Server 9.1) on Sun Fire T2000	883.66

Disclaimers: SPEC and the benchmark name SPECjAppServer 2004 are registered trademarks of the Standard Performance Evaluation Corporation. Competitive benchmark results stated above reflect results published on www.spec.org as of 11/21/07. The comparison presented is based on GlassFish v2 UR1 run on 6 Sun SPARC Enterprise T5120 (1 chip, 8 cores/chip, 8 threads/core) 1.4GHz 8,439.36 SPECjAppServer2004 JOPS@Standard. For the latest SPECjAppServer 2004 benchmark results, visit <http://www.spec.org/>.

World Record Performance

SpecjAppServer 2004

- > July 2007: Best \$/perf. on full Open Source
 - > 813.73 JOPS@Standard
 - > GlassFish v2, OpenSolaris, Java 6, PostgreSQL
 - > 3x the price/perf vs. Oracle on HP score
- > November 2007: Massive Scalability Result
 - > 8,439.36 JOPS@Standard (6 nodes, 18 instances)
 - > Sun T5120 & E6900



You no longer need to chose between Open Source and Performance

Disclaimers: SPEC and the benchmark name SPECjAppServer 2004 are registered trademarks of the Standard Performance Evaluation Corporation. Competitive benchmark results stated above reflect results published on www.spec.org as of 11/21/07. The comparison presented is based on GlassFish v2 UR1 run on 6 Sun SPARC Enterprise T5120 (1 chip, 8 cores/chip, 8 threads/core) 1.4GHz 8,439.36 SPECjAppServer2004 JOPS@Standard. For the latest SPECjAppServer 2004 benchmark results, visit <http://www.spec.org/>.

GlassFish v3

- Small (Kernel < 100k)
- Fast (Startup in < 1 second)
- Modular (Java, Ruby, PHP, JavaScript, ...)
- Don't think of it as Java EE container
 - > ... rather a container that can do Java EE
 - > ... an ideal container for next gen web apps
- Support for upcoming Java EE 6 profiles
- Code and documentation available today
 - > Technology Preview

GlassFish and Sun product

- Sun adds installer, brands, indemnifies and supports

GlassFish Version	Sun Supported Version
GlassFish V1	Sun Application Server PE 9.0
GlassFish V2	Sun Application Server 9.1
GlassFish V3	Sun Application Server.NEXT ⁽¹⁾

⁽¹⁾ Product Name TBD

GlassFish Support Pricing

- Yes! GlassFish is totally free to use
- The business model for Sun is that of services
 - > Support subscription starting from \$ 4500 for 4 sockets
 - > Premium support and volume pricing available
 - > Support from the source to secure your projects
- Also Consulting & Training
- All from Sun & Partners
- We want our partners, our customers to be successful (and Sun too in the process)

Global Specials

Sun Java System Application Server 9.1 Subscriptions

Select Currency ▾

The Sun Java System Application Server is a world class Java Enterprise Edition (Java EE) 5 compatible platform for developing and delivering server side Java applications and web services. Based on Project GlassFish, the application server is the result of an active community that is delivering an enterprise quality deployment platform with advanced clustering, centralized administration and record-breaking performance. NetBeans integration enables rapid development of web applications leveraging multiple languages including Java, JRuby and JavaScript.

With Sun Java System Application Server 9.1 subscriptions, you get one stop shop for product and service with immediate web access to software support with full indemnification, updates and upgrades, production and code support, training, and much more.

Our 3 levels of support give you the flexibility to choose the subscription that best fits the needs of your production system:

- Standard Support provides extended local business hours coverage 12 hours a day, 5 days a week.
- Premium Support provides support coverage around the clock, seven days a week with SunVIP Interoperability Support.
- Premium Plus Support enhance Premium support with Customer Advocate and Customer Focused Support Team.

Subscriptions	Standard	Premium	Premium Plus
1 Year - 4 socket Units	\$4,500	\$6,750	Contact Sun
1 Year - 4 socket Units HADB (1)	\$2,250	\$3,375	Contact Sun

Note:

(1) In order to purchase the HADB module, customer will need to purchase the 1 year subscription with a valid support contract.

- Standard HADB Subscription sold per 4 socket units - 1 year - Requires purchase of Standard subscription: **\$2,250.00**
- Premium HADB Subscription sold per 4 socket units - 1 year - Requires purchase of Premium subscription: **\$3,375.00**
- Standard Subscription sold per 4 socket units - 1 year: **\$4,500.00**
- Premium Subscription sold per 4 socket units - 1 year: **\$6,750.00**

I agree to the Sun Java System Application Server 9.1 Subscriptions Terms and Conditions.

Quantity



“ ... 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**”.

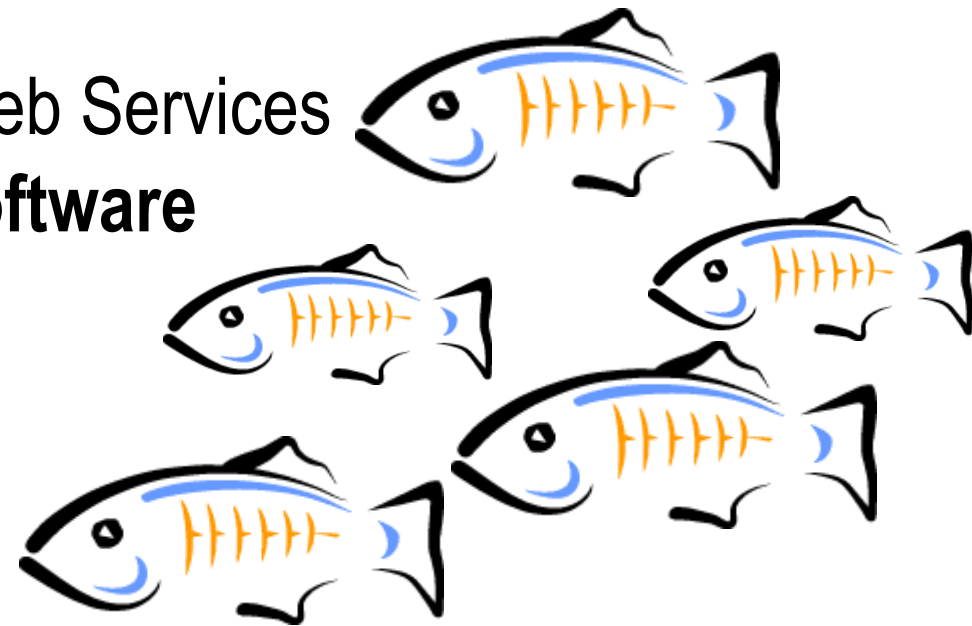
Marc Fleury 

Agenda

- What is GlassFish ?
 - > Feature Set
- **Community**
- Success Stories
- Reference

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

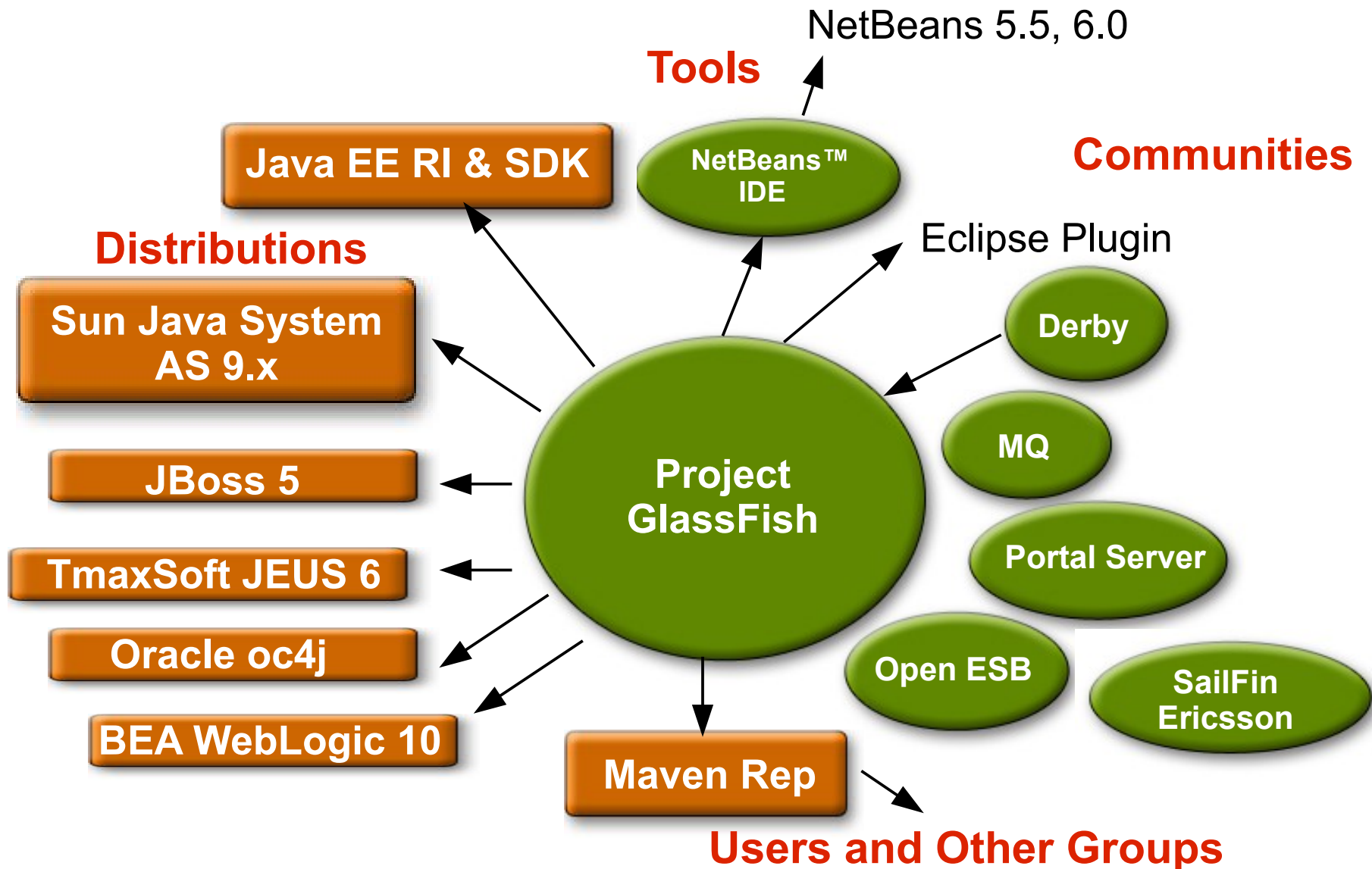
- Ericsson SIP Servlet Contribution is available at:
 - > <http://sailfin.dev.java.net>
- Visit, Download, Try, Join
 - > Milestone 3 available
- Not just for telco operators!
 - > Bridging the HTTP and SIP protocols
- Built on GlassFish v2 and expected first half of 2008



ERICSSON 
TAKING YOU FORWARD

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

(Some) Distributions & Contributors



Frameworks and Applications



OSWorkFlow



AppFuse

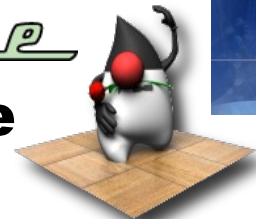


OSCache



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



MC4J

Tapestry

Hudson



StringBeans Portal



AJAX



Java WSDP

BlogTrader



Wicket

Equinox

Dalma

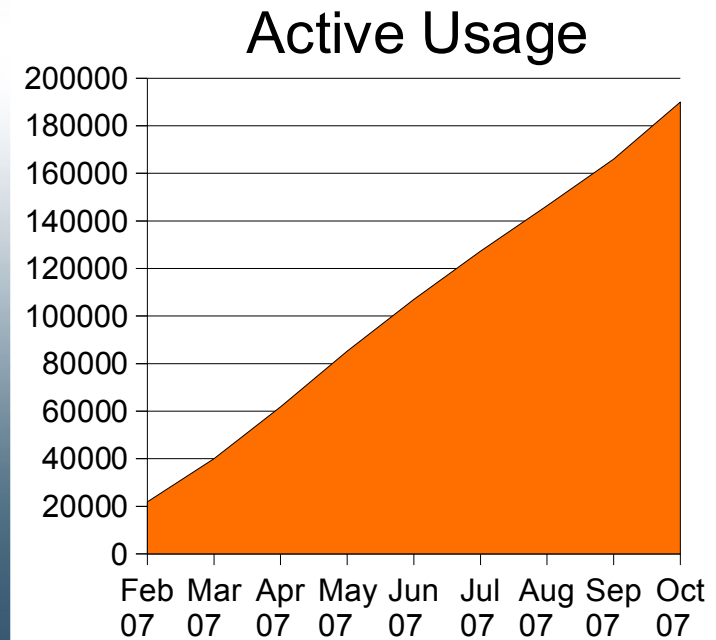
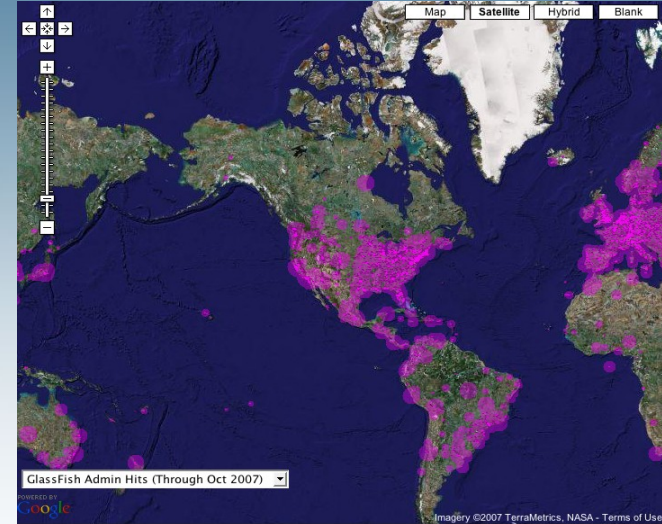


WebSphere MQ

EHCache

GlassFish Adoption

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





“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

Agenda

- What is GlassFish ?
 - > Feature Set
- Community
- **Success Stories**
- Reference

GlassFish Adoption Stories

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

- OK Air

- > GlassFish v2
- > MySQL



- Wotif.com

- > Large # hits, 10,000 concurrent sessions, 1 million users/110,000 bookings monthly
- > Hibernate, Struts, Spring, and ehCache / Horizontal Scaling



- Harvard University

- > On-line archive for sharing data within and across universities
- > NetBeans, the Lucene search engine, PostgreSQL database, Shale standalone tiles



- More (small and large)

- > Help us collect these



PeerFlix



- What they do ?
 - > Trade DVDs
- Environment
 - > GlassFish v1 UR1 on Solaris 10
 - > Servlet, JSP, JSF, EJB, JDBC Pooling
 - > Kodo JDO, Apache Shale
- Why GlassFish ?
 - > Open source
 - > Ahead of JBoss in Java EE 5 compliance and architecture
 - > Ease-of-use with CLI tools, NetBeans integration
- 360% increase in traffic – no downtime

Wotif



- What they do ?
 - > Sells accommodation online in 40 countries
- Environment
 - > GlassFish v1 on RedHat AS 3
 - > Pretty much everything from GlassFish
 - > Hibernate, Struts, Spring, ...
- Why GlassFish ?
 - > Get on a supported and current platform with a future
 - > Like dealing with Sun
 - > Open source, High quality, Latest specs
- 10,000 concurrent sessions, 1 million users, 110,000 bookings

OK Air



- What they do ?
 - > Airport Information System @ Czech International Airport
- Environment
 - > GlassFish v2 on SuSE Linux
 - > EJB3, JPA, Web services, ...
- Why GlassFish ?
 - > Ease of use
 - > Performance
 - > Admin GUI
 - > Integration with NetBeans
- Just try it!

So Why GlassFish?



- **Java EE 5** (vs. tomcat, jboss, Websphere)
- **Performance!** (vs. jboss)
- **Administration** (vs. jboss, tomcat)
- **Enterprise-ready** (vs. jboss, tomcat)
- **Enterprise support** (vs. tomcat)
- **Bigger picture:** OpenSSO, OpenESB, etc...
- **Community** (vs. weblogic, websphere)

“ BEA's features at JBoss' price! “



Forrester Wave Vendor Summary, Q3 2007

“Sun Microsystems Is A **Strong Performer** In Application Server Platforms”

“... **doubts are outdated** ... Sun has assembled a **competitive** application server platform suite that has **attractive cost economics** and an open source component

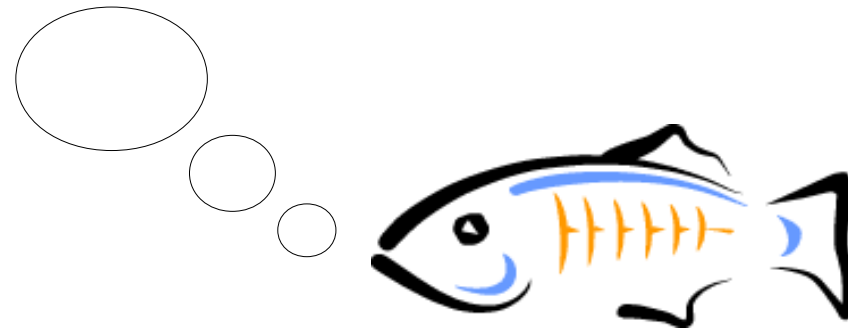
FORRESTER

Agenda

- What is GlassFish ?
 - > Feature Set
- Community
- Success Stories
- **Reference**

Reference

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



Java EE 6 – JSR 316

- Extensibility
 - > Embrace and support popular frameworks and technologies developed in external communities
 - > Layer these technologies cleanly on top of Java EE platform
- Profiles
 - > Rules for referencing Java EE platform technologies in Java EE Profiles
 - > A profile may include a subset of Java EE platform technologies, additional JCP technologies, or both
- Pruning
 - > Define process of removing technologies from platform

Java EE 6 – Proposed New JSRs*

- JSF 2.0 (JSR 314)
- JAX-RS (JSR 311)
 - > RESTful web services
- WebBeans 1.0 (JSR 299) – led by JBoss
- Servlets 3.0 (JSR 315)
- Enterprise Java Beans 3.1
 - > Singletons, Asynchrony, Concurrency options, ...
 - > JavaBeans Validation framework (JSR 303)?
- Java Persistence API 2.0
 - > Criteria API, hierarchies in embeddables
- Java EE Connector 1.6

*The exact set of technologies to be included will be determined by the expert group