Welcome to GlassFish Day !

Sydney, Australia
March 6th 2008

G'Day Sydney!

Thank you!

Welcome!

Some house-keeping

- Let's try to make this interactive but on time

- Hand in your survey to get your GlassFish t-shirt

- Presentations will be made available from http://wiki.glassfish.java.net/Wiki.jsp?page=GlassFishDay2008Sydney in real time (if al goes well)

- Use the breaks & lunch to discuss

Agenda

- *08:30 - 08:55 – Registration*
- 09:00 - 09:10 – Welcome
- 09:10 - 10:00 – Update on GlassFish v2, v3, and Community (Alexis MP)
- 10:10 - 11:00 – Wotif.com case-study (Greg Luck)
- *11:10 - 11:25 – (Break)*
- 11:25 - 12:15 – Monitoring GlassFish using JConsole (with JMX) and Glassbox (Chris Fleischmann)
- 12:25 - 01:15 – OpenMQ (Dave Whitla)
- *01:25 - 02:00 – (Lunch)*
- 02:00 - 02:50 – OpenESB (Michael Czapski)
- 03:00 - 03:50 – Practical GlassFish (Alexis MP)

What Is GlassFish?

- A Java EE 5 compliant Application Server
    - > Can run J2EE applications too

- Open Source
    - > CDDL (like OpenSolaris, NetBeans)
    - > GPLv2 (like Java and NetBeans)

- Enterprise Quality
    - > Sun Java System Application Server 9.x
    - > Adds support and indemnification

What Is GlassFish? (Cont.)

- Community at http://glassfish.org
  - > Sources, bug DBs, discussions
  - > Roadmaps
  - > Architecture Documents

- Interim Governance Board
  - > 2 Sun members: Simon Phipps, Eduardo Pelegri-Llopart
  - > 3 Non-Sun individual members from Google, Wotif.Com, Amex

- GlassFish Awards Program (http://glassfish.org/GAP)
  - > Sun giving away $1M to reward contributions to OSS projects
  - > GlassFish one of 6 communities to award $175k

GlassFish Adoption

- 3.5 million downloads since July '06
- Dozens of external committers
- Over 8,000 members
- Excellent analyst reviews
  - > Gartner, Forrester, etc...

Monthly IPs

Monthly Hits

Timeline of Project GlassFish

Tomcat
Jasper
Catalina
JSTL
Struts

Crimson
XSLTC
Xalan
Xerces

JAXB
JAX-RPC
JSF

GlassFish Launch

v1

v1 UR1

v2

v2 UR1

v2.1

v3

J1'05
June 2005

J1'06
May 2006

Sept.
2007

2008/2009

(you are here)

GlassFish v2 for Enterprises

- ## Metro Web Services Stack
  - > Performance, Advanced WS & Microsoft interoperability
- ## Clustering, Load-Balancing, HA
  - > Unified Management
- ## Web Tier
  - > Grizzly, Dynamic Web Container, Ultra-fast JSP compilation
- ## JBI support (OpenESB 2.0)
- ## Management & Monitoring
  - > Graphical, command-line, tools, ANT ...
  - > JMX and Centralized
  - > Call Flow, Self-management, etc....
 - > Multi-tier provisioning with N1 SPS

GlassFish v2 for Developers

- ## Single, smaller, download
  - > Around 60 MB total
- ## Multiple User Profiles
  - > Developer, Cluster, Enterprise
  - > Upgrade from one to another
- ## Better startup time
  - > Almost matches Tomcat (see also GlassFish v3)
- ## Cool Technologies
  - > Grizzly's Comet, jRuby on Rails, jMaki, ...
- ## Update Center
  - > Provision and install new features, new frameworks, ...
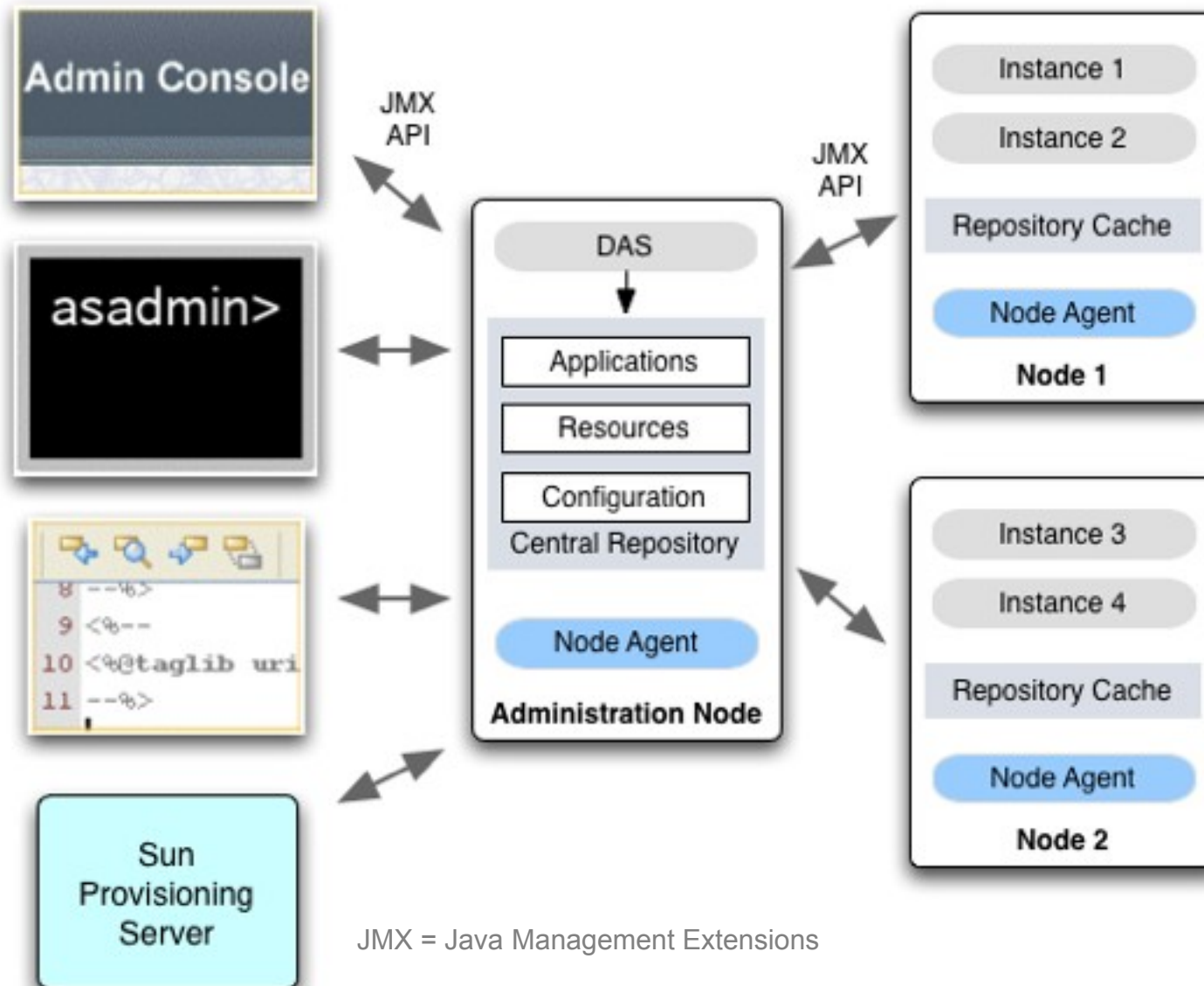- ## New admin console
  - > JSF, AJAX, Charts

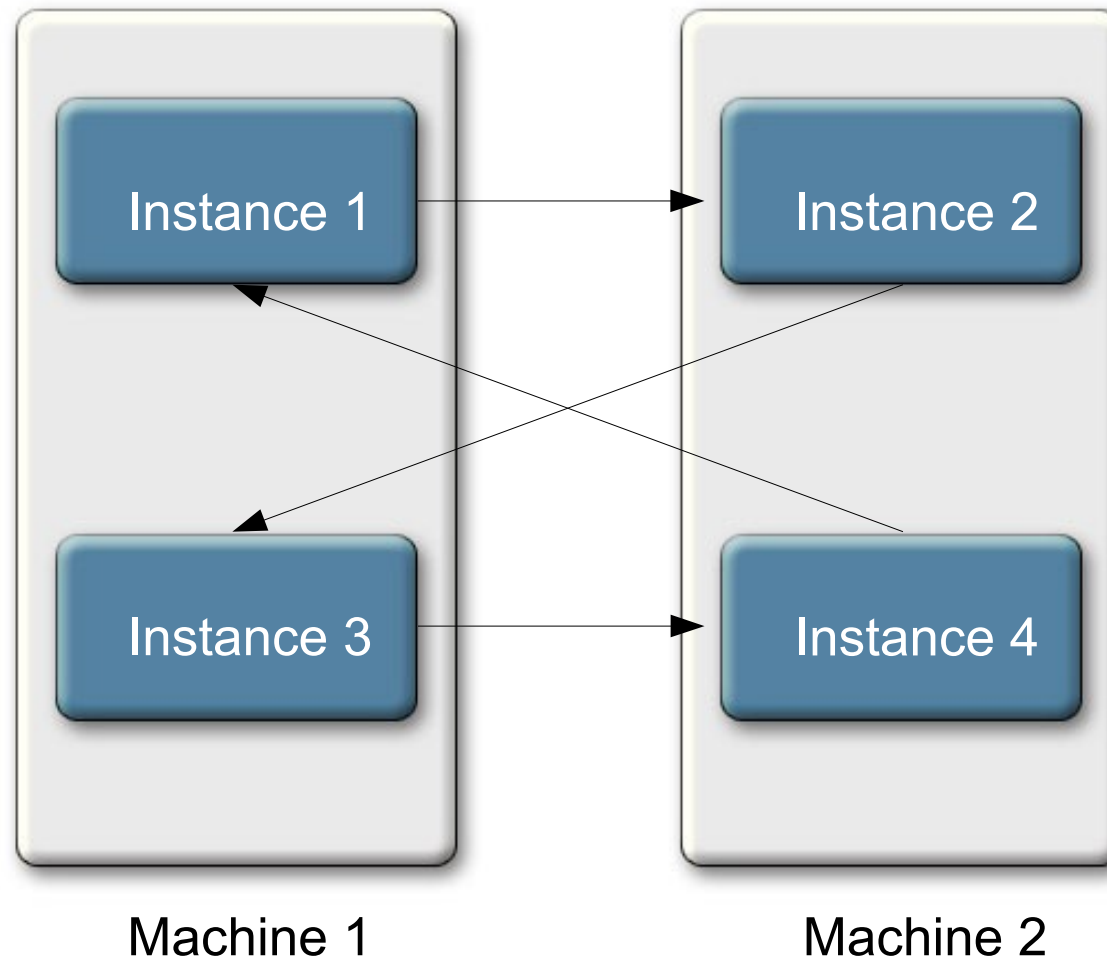# Web Admin Console
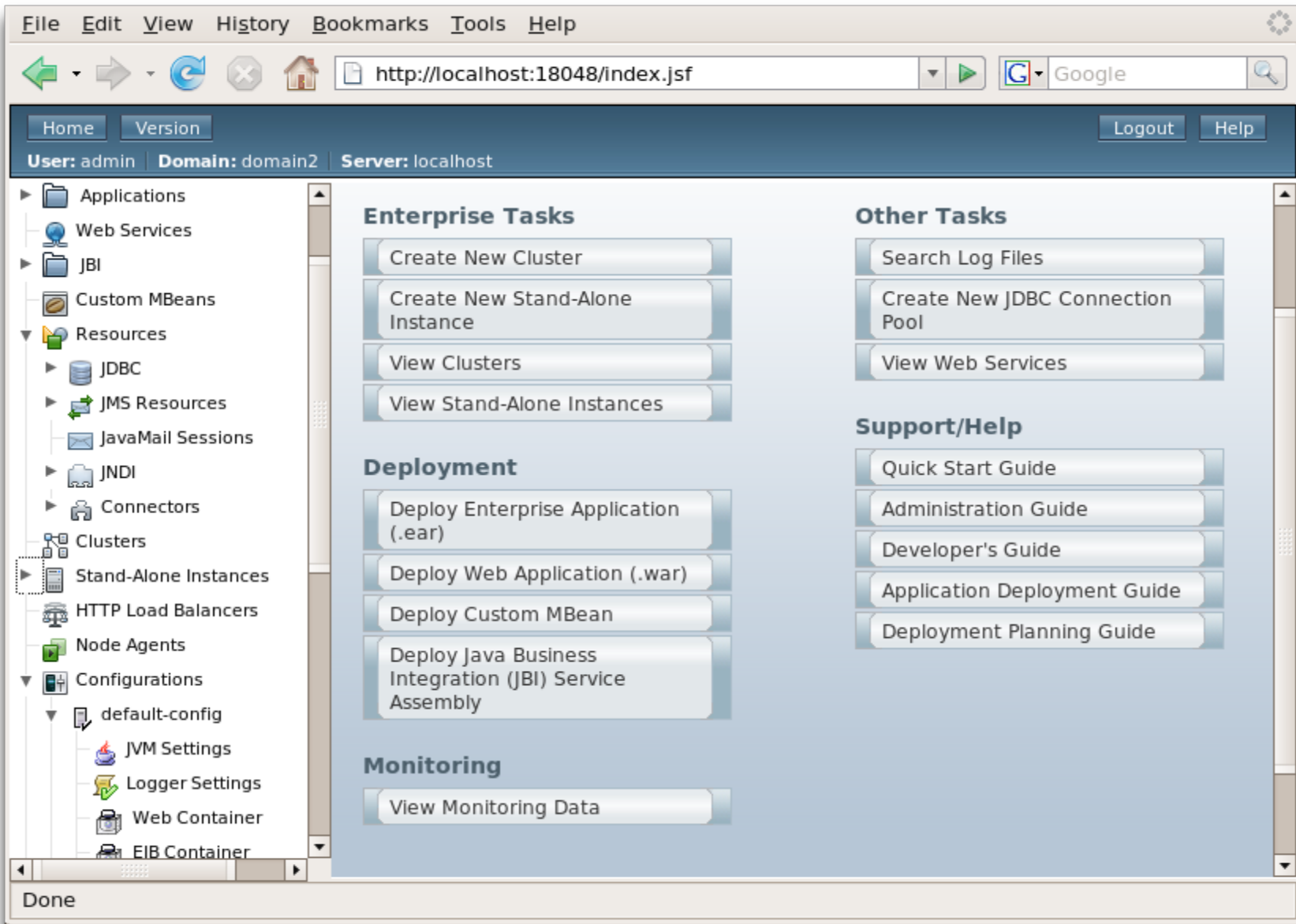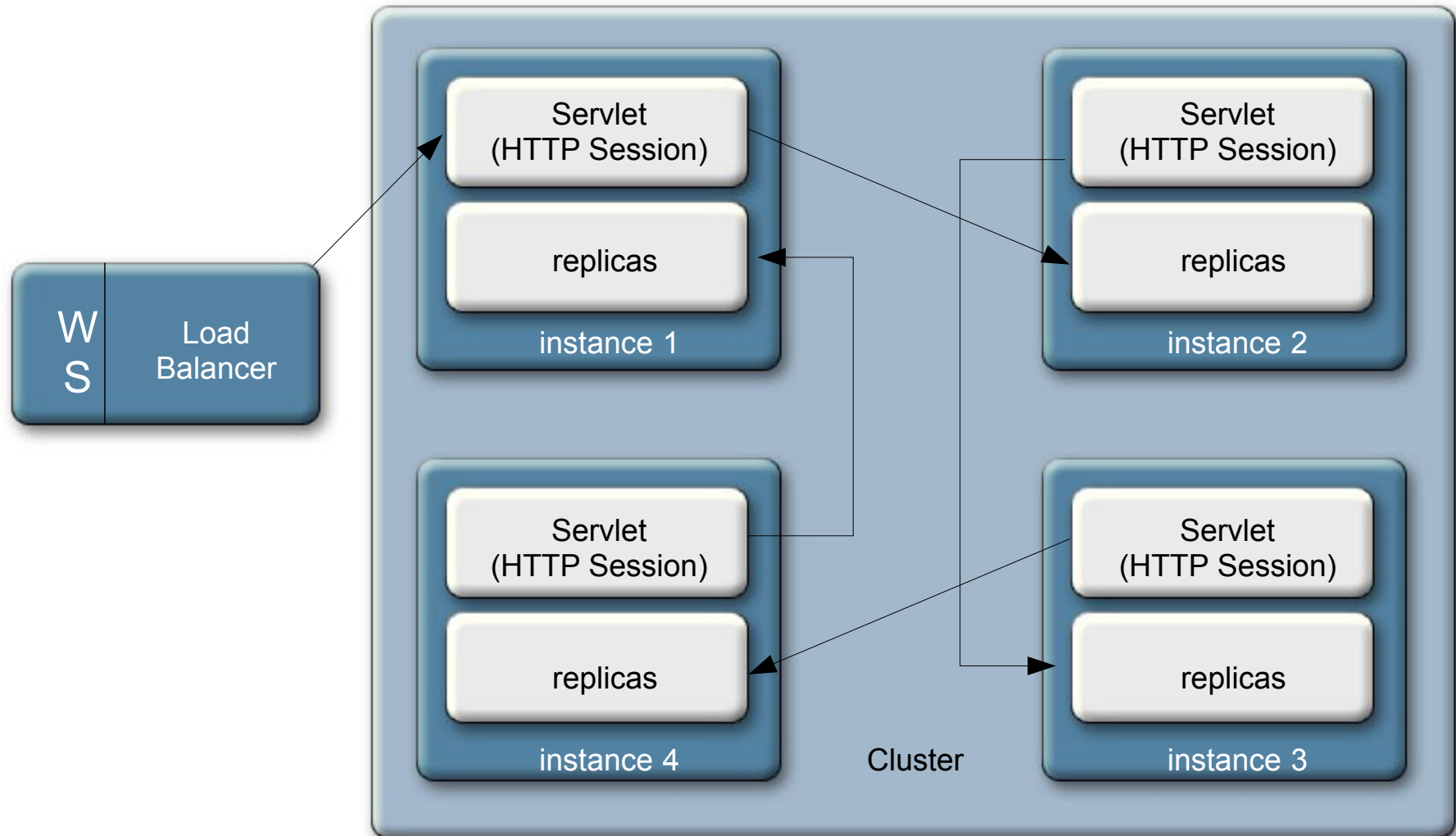
Clustering Architecture
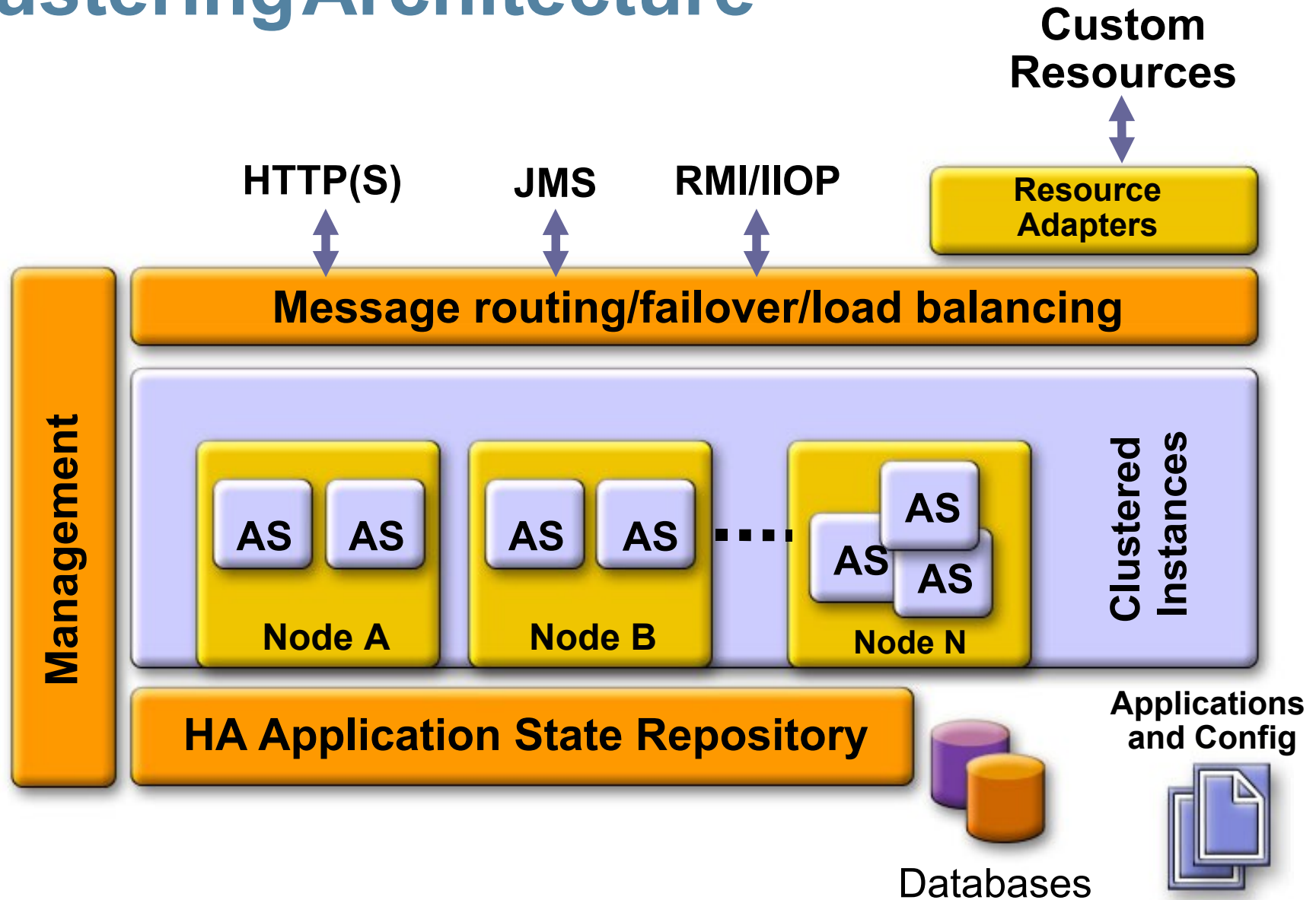
Clustering in GlassFish v2

JMX = Java Management Extensions

Memory Replication

Typical cluster topology

Example: Maximize Availability on 4 node cluster on 2 machines

Machine 1   Machine 2
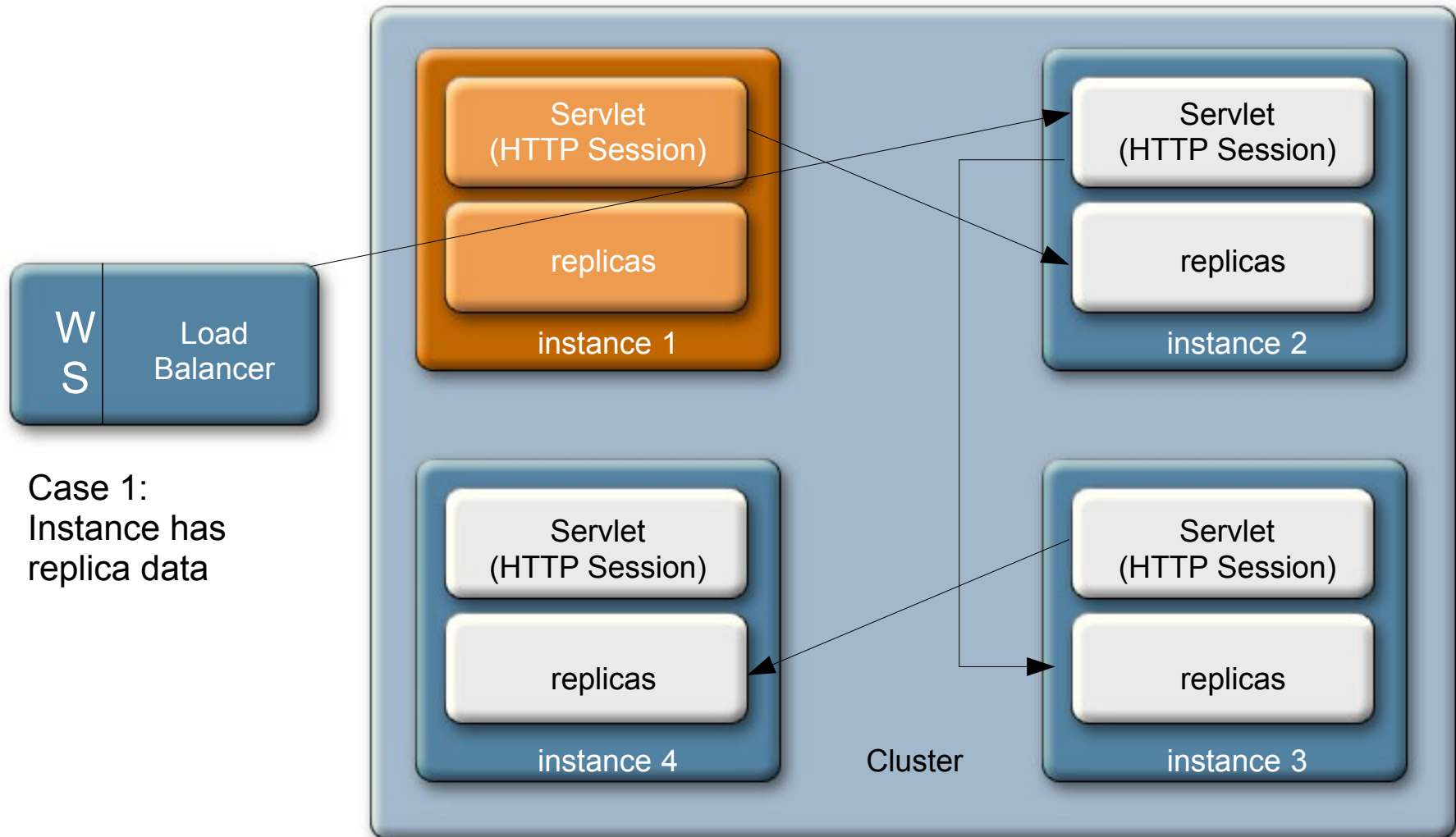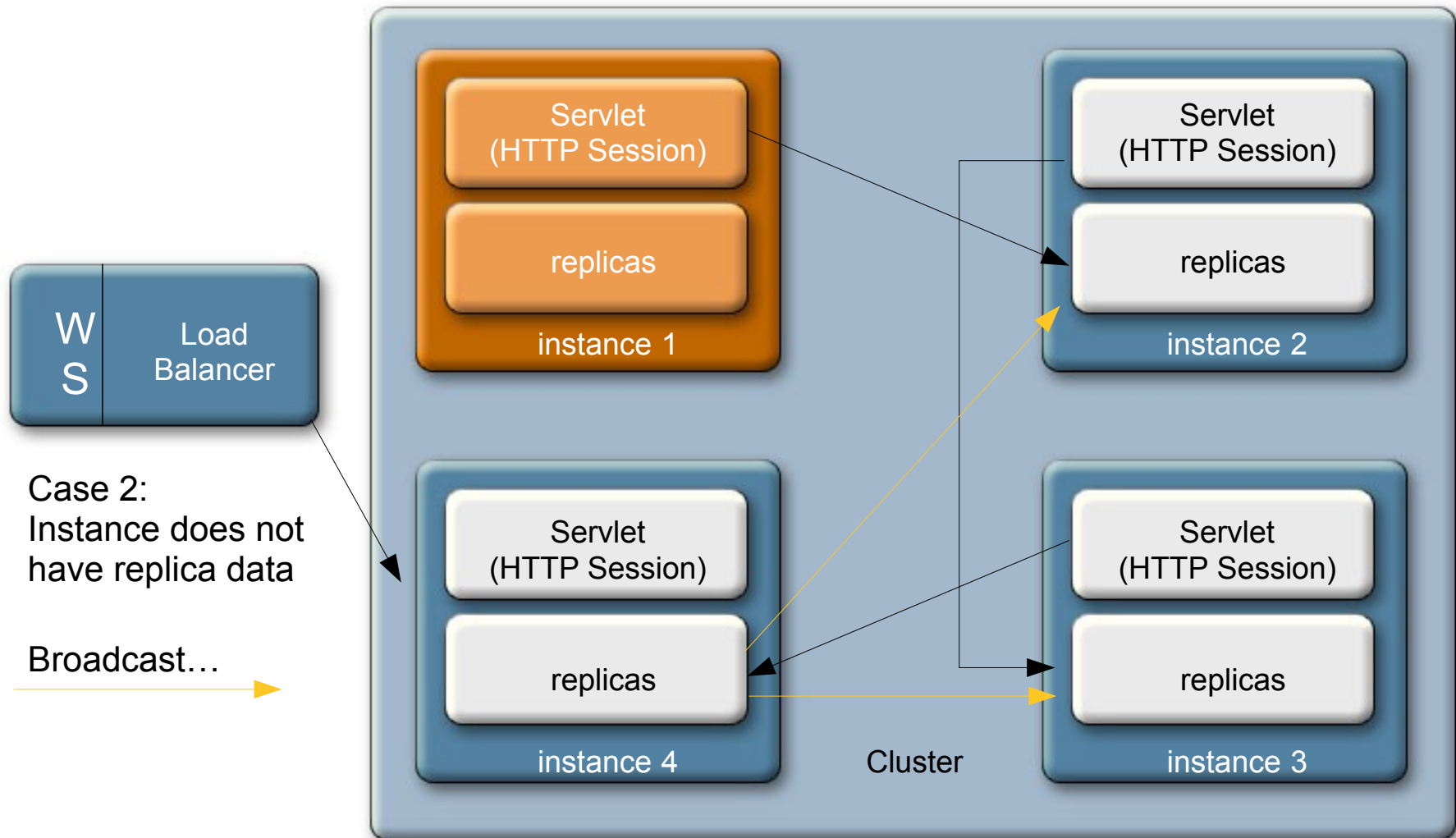
HTTP Session State Failover

HTTP Session State Failover

Case 1:
Instance has
replica data
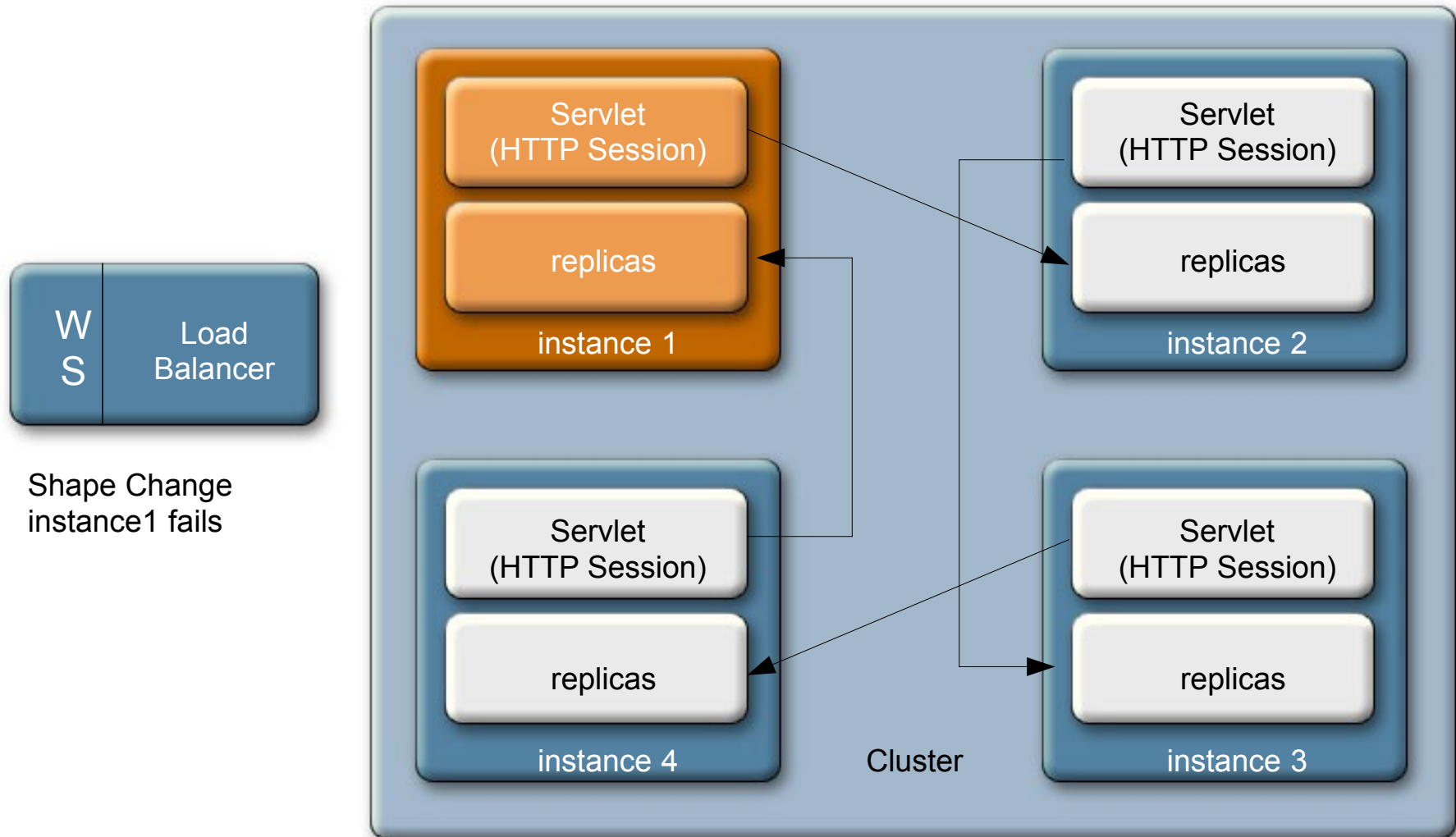
HTTP Session State Failover

Cluster Dynamic Shape Change

Cluster Dynamic Shape Change

Cluster Dynamic Shape Change

W S	Load Balancer
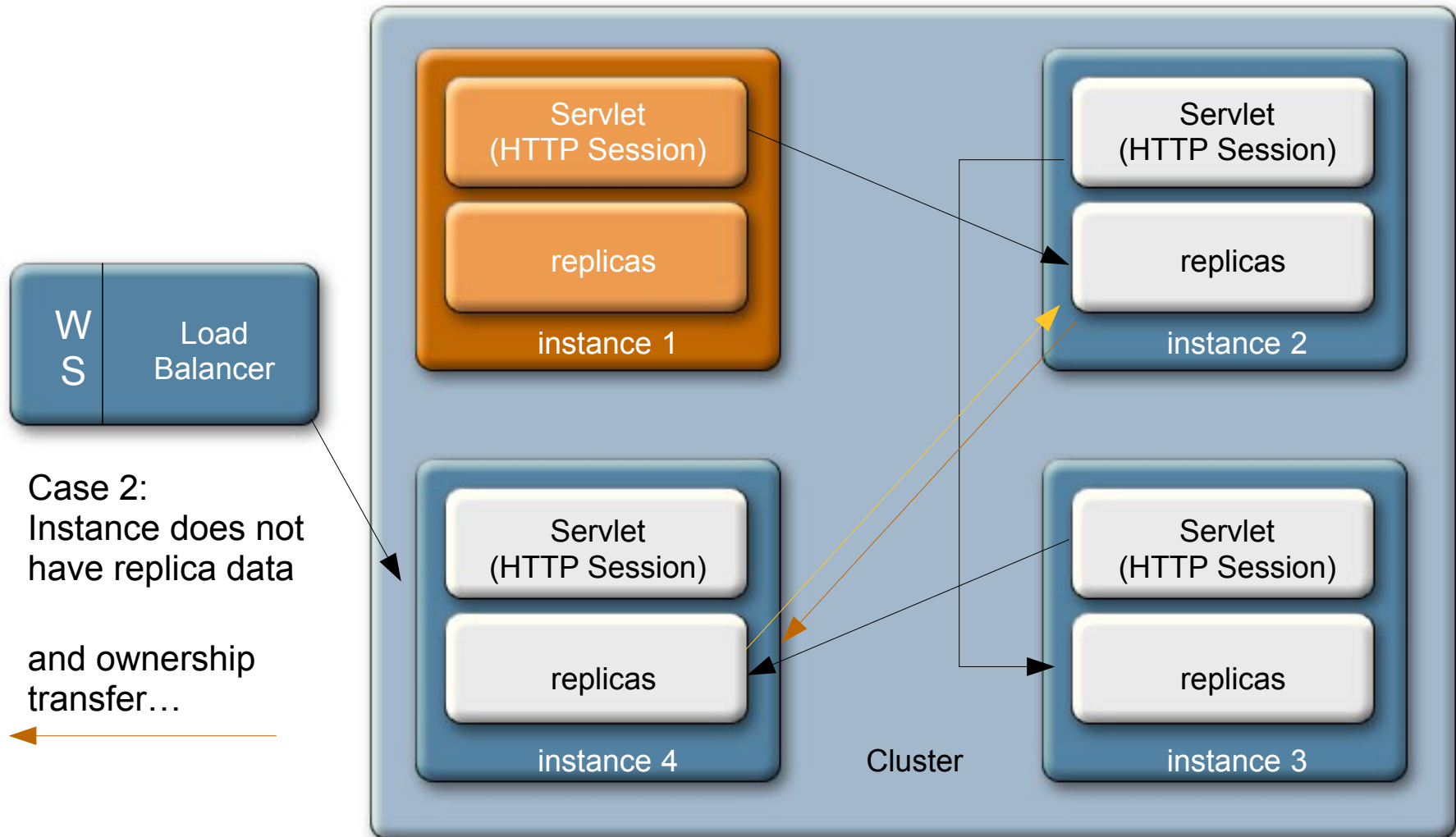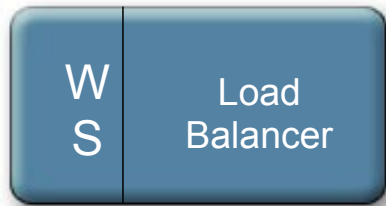
Shape Change instance1 fails

Instance2 and 4 see the failure

Instance4 selects Instance2 as new partner—new connections established

Cluster

Servlet (HTTP Session)

replicas

instance 1

Servlet (HTTP Session)

replicas

instance 2

Servlet (HTTP Session)

replicas

instance 4

Servlet (HTTP Session)
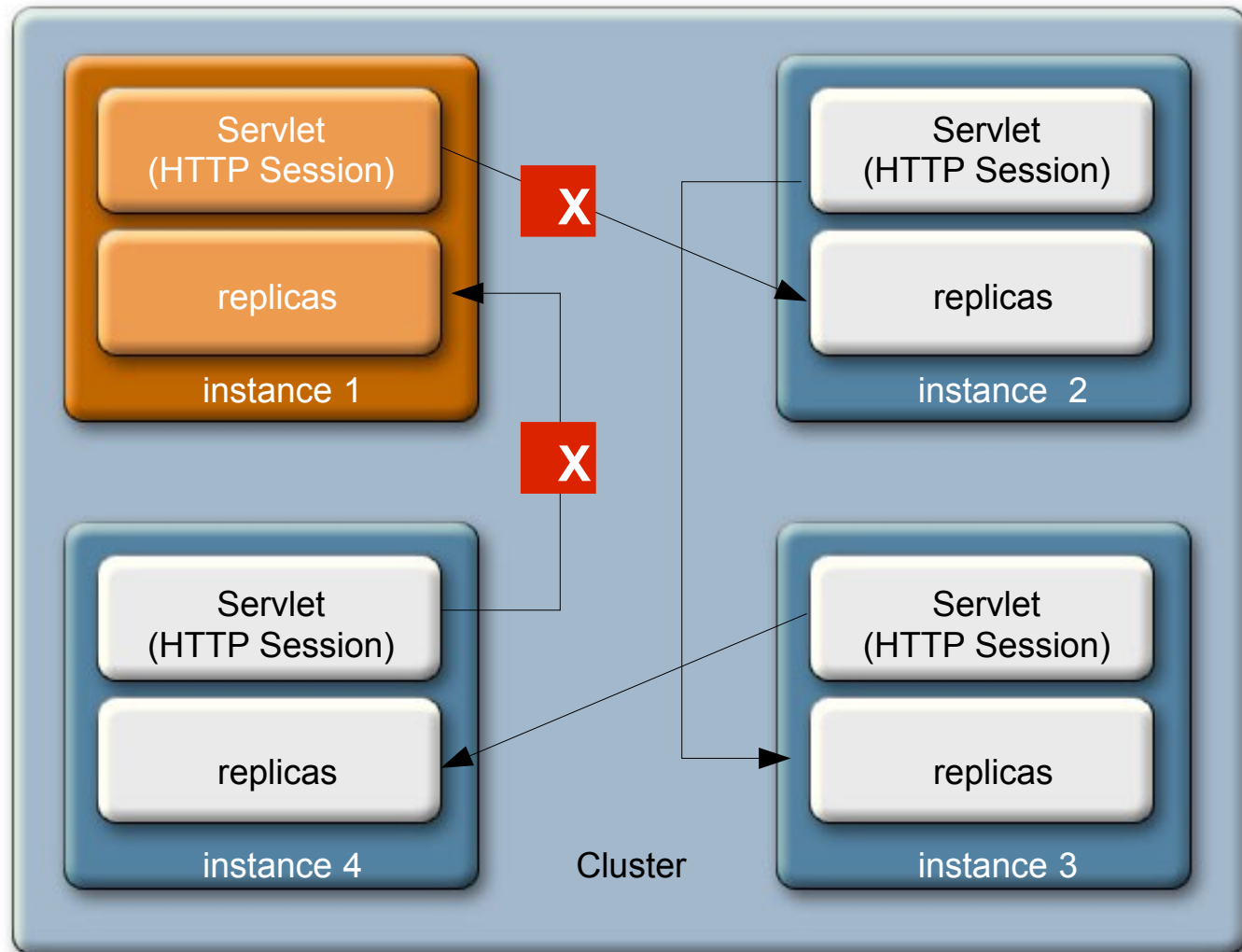
replicas
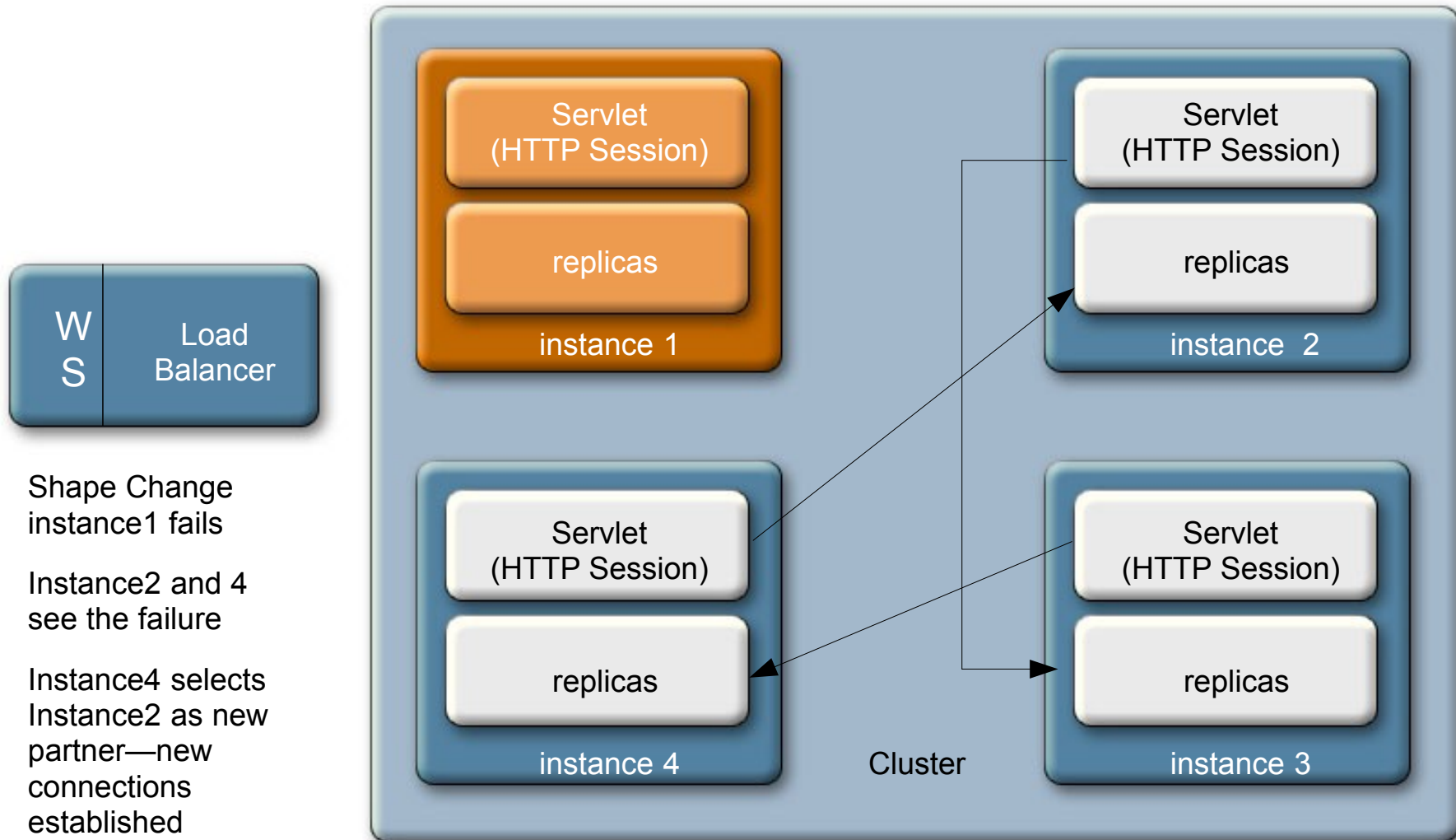
instance 3

the reverse happens when an instance joins or re-joins the cluster

Memory Replication Configuration

Out of the box…

- Create a domain
  - \> Use the 'cluster' profile – defaults for replication are handled
    - \> Enables GMS—heartbeat enabled
    - \> `persistence-type = "replicated"`
- Create a cluster and instances
- Deploy your application with `availability-enabled=true`
- That's it

Memory Replication Configuration

Making your app distributable

- **`<distributable/>`** element
  - > Required in **`web.xml`**
    - > Indicates you believe your application is ready to run in a cluster
- Serializable objects required
  - > HTTP Session state
  - > EJB technology Stateful Session Bean state

Performance
SPECjAppServer

SPECjAppServer 2004 Results

> July 2007: #1 score on T2000
  >> 883.66 JOPS@Standard for GlassFish v2
  >> + 10% vs. WebLogic, +30% vs. WebSphere 6.1

> July 2007: Best $/perf. on full Open Source
  >> 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
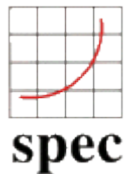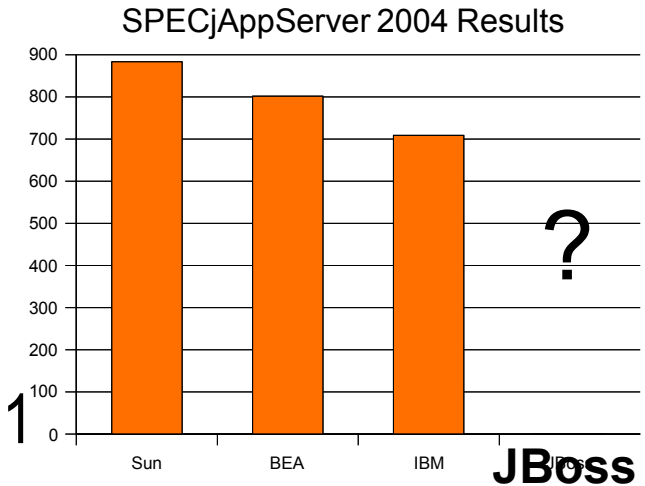
You no longer need to chose between Open Source and Performance

GlassFish Support

- 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
  - > Support from the source to secure your projects
  - > Also indemnification and access to **sustaining branch** (patches)
- Also Consulting & Training
- All from Sun & Partners
- We want our partners, our customers to be successful (and Sun too in the process)
- Register GlassFish !
  - > Recently fixed bugs, contests, etc...

Commercial Support Now Worldwide!

GlassFish v3

- Small, Fast, and modular
 - > Fast startup (few seconds)
  - > Based on a module sub-system: HK2
- An ideal Container for Web 2.0
  - > Faster, lighter Java server engine
  - > Java and Scripting applications
  - > Support for upcoming Java EE 6 profiles
  - > A good fit for SOA/ESB solutions
- Available starting... now!
  - > Technology Preview #2 available (web container only)
  - > Beta by the end of 2008

FOSS Middleware Components

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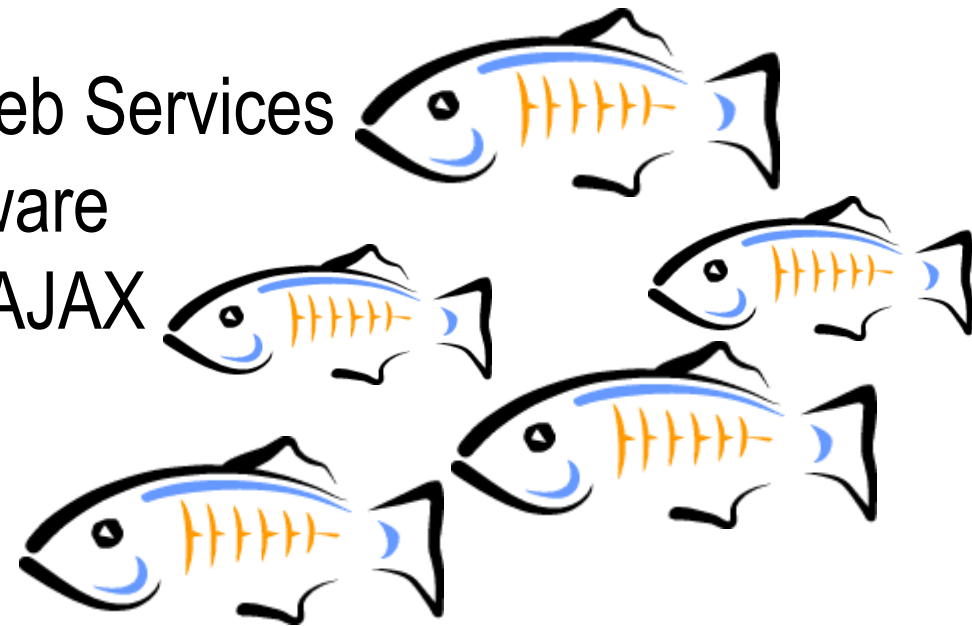
Metro Web Services
JAX-WS, WSIT, and JAXB implementations

- Onestop shop for Web Services

- JAXB 2.0 fully support XML Schema

- GlassFish JAX-WS 2.x
  - > Clean Separation of Transport and Encoding
    - > HTTP, JMS, SMTP, TCP/IP
    - > MTOM, Fast Infoset (binary), Textual, Others

- WSIT (Project Tango)
  - > Microsoft Interoperability
  - > Quality of Service: Reliability, Transactions, Security, ...
  - > Same (old) JAX-WS programing model

- Overall **Great** Performance

The SailFin Project

- Based on Ericsson's SIP Servlet and GlassFish V2
  - > http://sailfin.dev.java.net
- Visit, Download, Try, Join
  - > Milestone 2 available
- Not just for telco operators!
  - > Bridging the HTTP and SIP protocols
  - > Great use-cases
- Built on GlassFish v2 and expected first mid-2008

ERICSSON
TAKING YOU FORWARD

http://sailfin.dev.java.net

Grizzly

- TCP framework built on Java NIO primitives for high-performance socket communications
    - > Used for HTTP, IIOP, SIP communications in GlassFish
    - > Scalable and high-performing HTTP listener (100% Java too)
- Also used in jRuby on Rails (GFv3), OpenESB (HTTP BC), Metro/WSIT (SOAP/TCP), Jersey, and more...
- Built-in ARP (Async. Req. Processing)
- Enabler for Ajax Push (aka Comet)
    - > Server-to-client notifications using long-lasting HTTP connections
    - > Event-driven applications in the browser: doc sharing, chat, etc...
    - > Fully integrated into GlassFish v2 (using Grizzly and ARP)

jMaki

- '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

- http://ajax.dev.java.net and http://widget.dev.java.net

AJAX and Scripting Activities

- 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

- More scripting currently explored: PHP, Python/Jython, Groovy/Grails, etc..
  - > Send us your requirements and feedback!
  - > Vivek Pandey is the Scripting lead for GlassFish

OpenDS
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 by May 2008

OpenSSO
opensso.dev.java.net

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

OpenPortal
portal.dev.java.net

- 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
  - > jsfportletbridge.dev.java.net
- Get more information from http://blogs.sun.com/portal
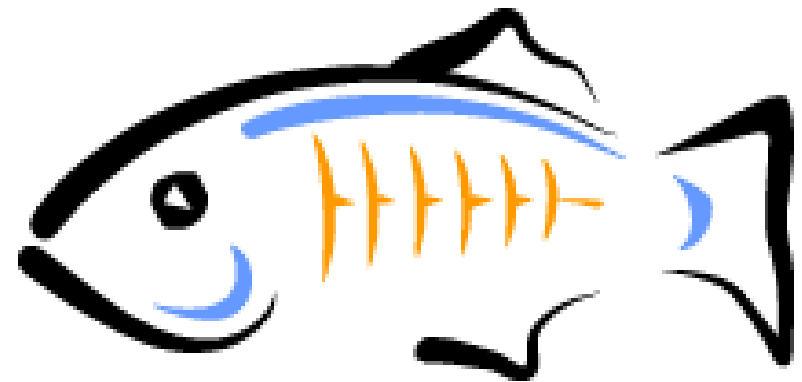
JAX-RS & Jersey
http://jsr311.dev.java.net

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

Questions ?

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http://blogs.sun.com/alexismp