



# Welcome to Java™ Enterprise Edition 6 The Foundation of Your Enterprise

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# About Us

- Tom Kincaid – Executive Director Application Platforms Sun Microsystems
- Anil Gaur – Director GlassFish and Java EE
- Kevin Schmidt – Director Application Platform Product Management
- Bill Shannon – Distinguished Engineer
- Eduardo Pelegri-Llopart – Distinguished Engineer

# Agenda



- **The dominant standard for Enterprise Computing**
- **Why it is now even better and will be even more dominant with Java EE 6**
- **How we built it**
- **The community we built it in**

# What is Java™ Enterprise Edition?

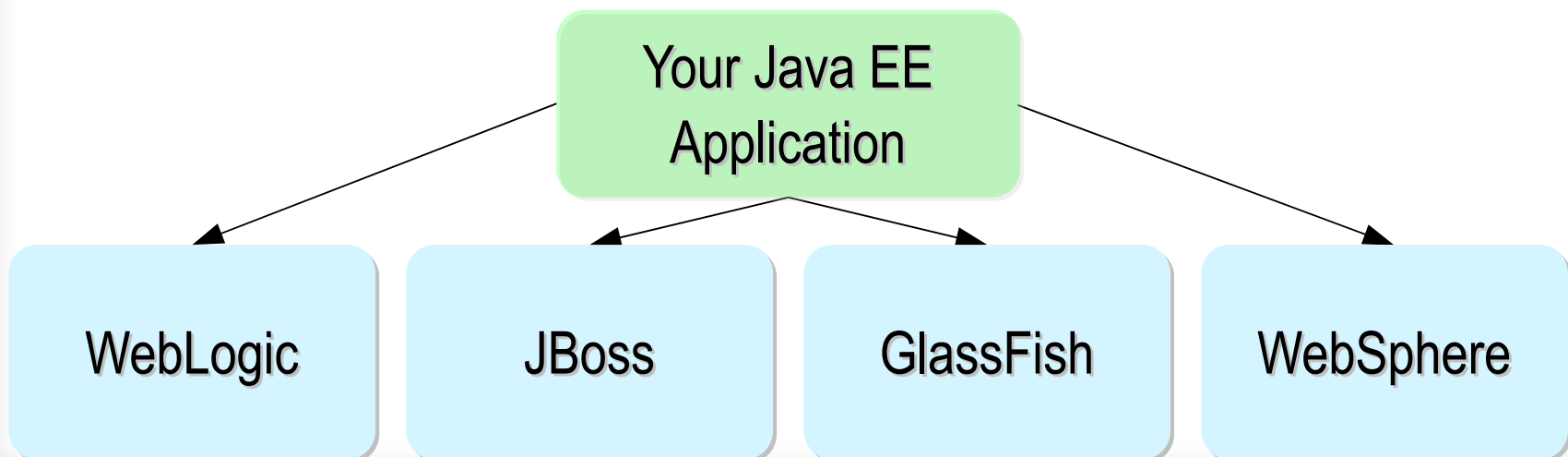
A standard platform for creating and deploying enterprise grade:

- Web Applications
- Transactional Applications
- Web Services
- Service Oriented Architectures



# Why a Java EE standard is important

- Standards are about choice
- If not satisfied with vendor, switch to another one
- New vendors can always arise
- Other middleware solutions available, only one standard
- Open source has great value but is not a standard



# Java EE

## The Java Community Process

- All major industry players participate
- Over 1000 members
- Ability to execute fast when needed
- Requires
  - > Specification
  - > Technology Compatibility Kit
  - > Reference Implementation
- All to protect your ability to choose!



# JCP Executive Committee

- Apache Software Foundation
- Eclipse Foundation
- Ericsson AB
- Fujitsu Limited
- Google Inc.
- Hewlett-Packard
- IBM
- Intel
- Werner Keil
- Doug Lea
- Oracle
- Tim Peierls
- RedHat
- SAP AG
- SpringSource / VMware
- Sun Microsystems



# JAVA EE ADOPTION



# Java EE Adoption Metrics

- Over 10 million downloads of Java EE annually
- Amazon search for J2EE yields 4,383 books
- Amazon search for Java EE 1,646 books
- Java the world's most used programming language
- Monster lists over 2,300 Java EE / J2EE jobs
- In the past four years:
  - > JBoss purchased by Red Hat for \$300+ million
  - > BEA purchased by Oracle for \$7 Billion

# Demand the Brand



# GlassFish ISV Partners

Added in past 12 months



# Java EE Market Metrics

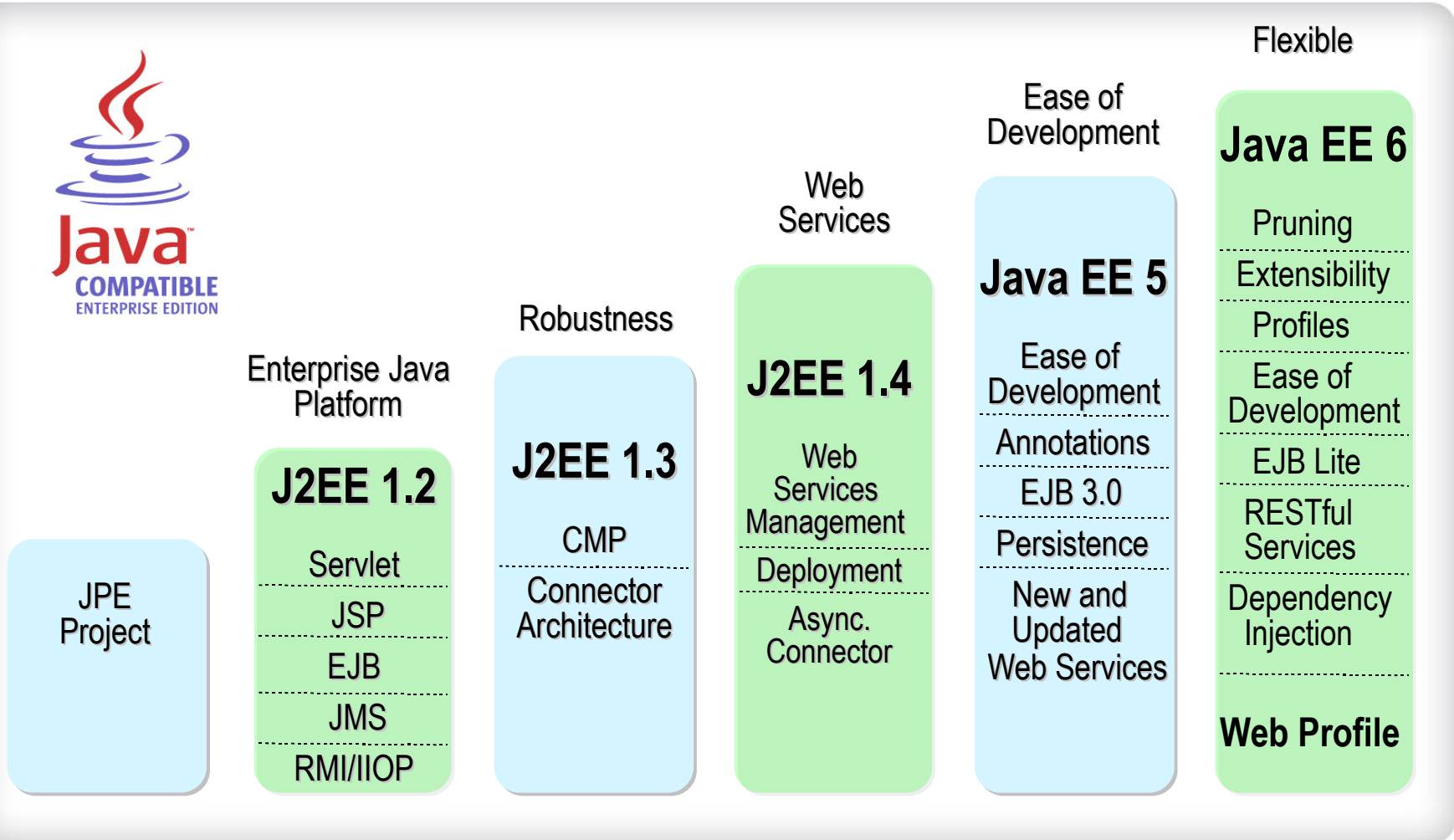
- Total application server market at \$2.5B+ (Gartner)
- Major business applications built on Java EE
  - > e.g. Oracle, SAP
- Servlet containers a de-facto standard for Web apps
  - > e.g. Tomcat, Jetty, JRun
- JMS is an industry standard for messaging
  - > e.g. TIBCO, ActiveMQ, SonicMQ, OpenJMS
- Leading integration/SOA platforms built on Java EE
  - > e.g. Sun, Oracle, SAP, IBM, BEA\*, SeeBeyond\*

A photograph of a large school of small, silver fish swimming in clear blue water, viewed from above. The fish are densely packed and moving in a similar direction.

# INTRODUCING: JAVA EE 6

# Java Platform™ Enterprise Edition

## Past & Present



# Java Platform™ Enterprise Edition 6

Launched Dec 10, 2009



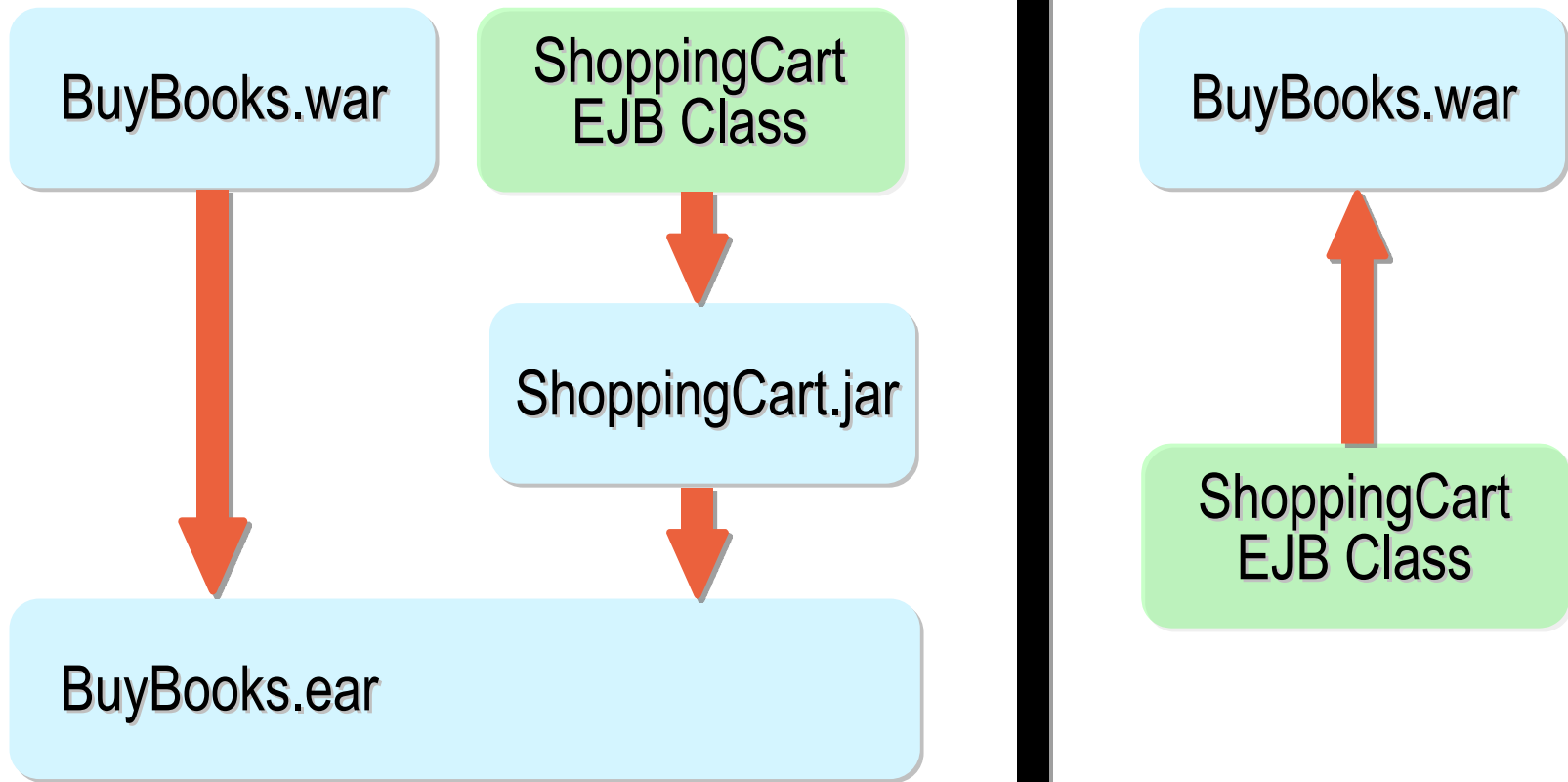
- The Enterprise Java Standard
- Themes
  - > Productivity
  - > Extensibility
  - > Flexibility

**Spec Approved and Final  
December 1st!**

- Java EE 6 - JSR 316
- Servlet 3.0 - JSR 315
- EJB 3.1 - JSR 318
- Java Persistence - JSR 317
- JSF 2.0 - JSR 314
- JAX RS 1.1 - JSR 311
- Connector 1.6 - JSR 322
- CDI (WebBeans) 1.0 - JSR 299
- Bean Validation 1.0 - JSR 303
- Dependency Injection for Java 1.0 - JSR 330

# Productivity: Ease of Development

## Adding an EJB to a Web Application





# Productivity: Less Typing

## Servlet in Java EE 5: Create two source files

```

/* Code in Java Class */

package com.foo;
public class MyServlet
extends HttpServlet {
public void
doGet (HttpServletRequest
req, HttpServletResponse res)
{
...
}
...
}

```

```

<!--Deployment descriptor
web.xml -->

<web-app>
    <servlet>
        <servlet-name>MyServlet
        </servlet-name>
        <servlet-class>
            com.foo.MyServlet
        </servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>MyServlet
        </servlet-name>
        <url-pattern>/myApp/*
        </url-pattern>
    </servlet-mapping>
    ...
</web-app>

```

# Productivity: Annotations

Servlet in Java EE 6: In many cases a single source file

```
package com.foo;
@WebServlet(name="MyServlet", url-pattern="/myApp/*")
public class MyServlet {
    public void doGet(HttpServletRequest req,
                      HttpServletResponse res)
    {
        ...
    }
}
```

# Extensibility

## Frameworks

- Open source frameworks are a critical part of Enterprise Java development
- Java EE 6 Expert Group defined way for framework technologies to be integrated with the platform
  - > Examples: Spring, Struts, GUICE

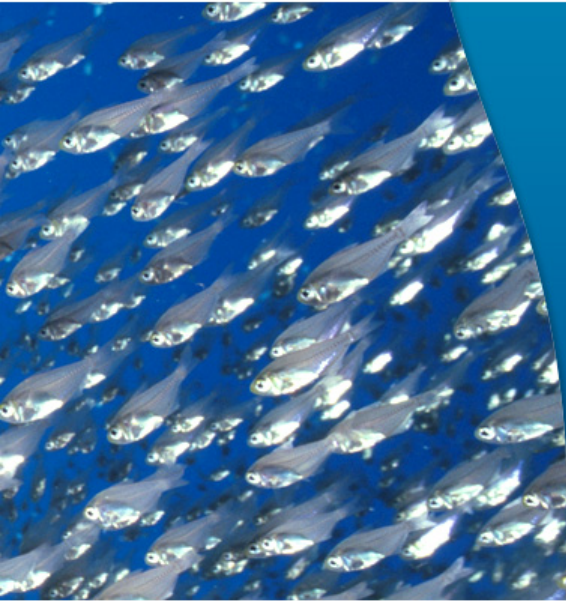


# Flexibility

## Web Profile

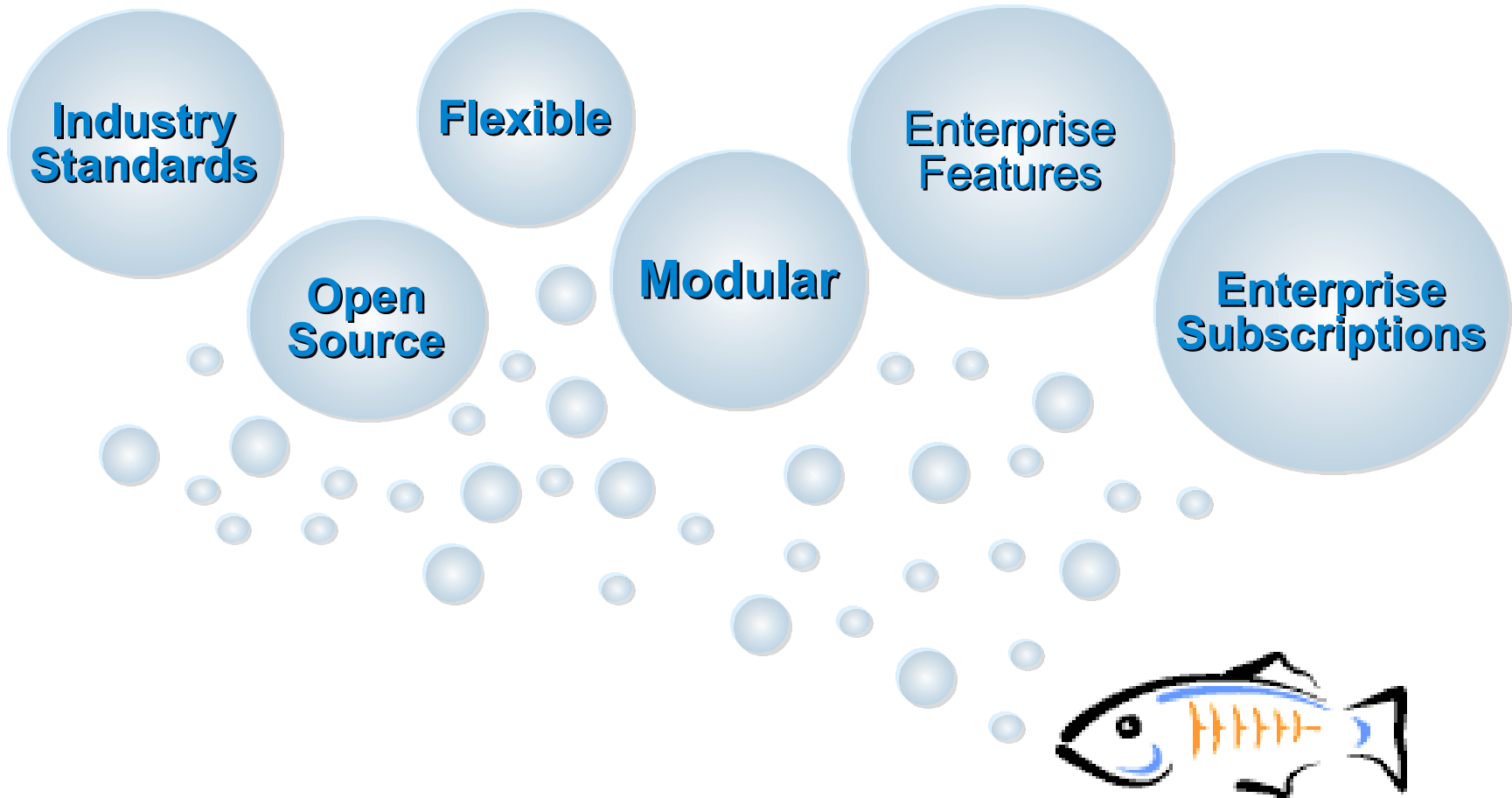
- Subset of full Java EE Platform
- Optimized for web applications
- Smaller footprint
- Fast startup and deployment
- Technologies
  - > Servlet 3.0, EJB Lite 3.1, JPA 2.0, JSP 2.2, EL 1.2, JSTL 1.2, JSF 2.0, JTA 1.1, JSR 45, Common Annotations





# INTRODUCING: GLASSFISH V3

# GlassFish Enterprise Server v3



# GlassFish Enterprise Server v3

Released December 10<sup>th</sup>



- First Commercial Java EE 6 implementation
- Modular architecture (OSGi)
  - > Use only what you need
- Improves developer productivity
- Fine-grained monitoring
- Dynamic language containers



# GlassFish Enterprise Server v3

## Project GlassFish



- Java EE 6 Reference Implementation derived from GlassFish codebase
- Enterprise Quality
- Open Source
- Community
- Adoption – Most downloaded



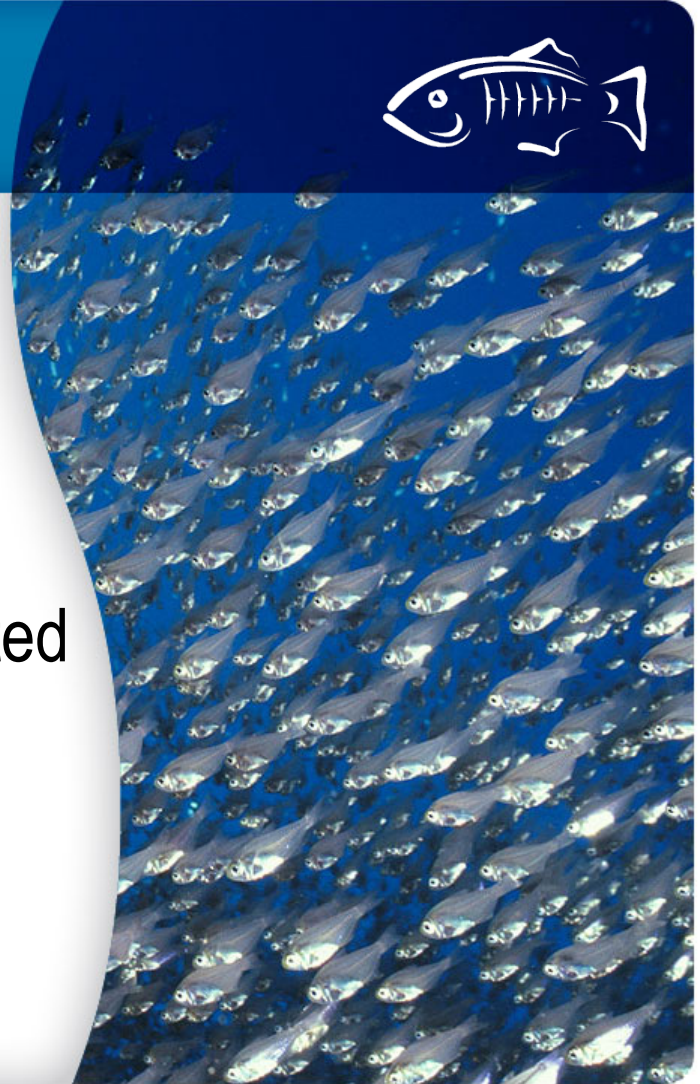


# GlassFish Enterprise Server v3

## Reduces Complexity



- Modular, flexible, extensible
  - > Web Profile: web applications
  - > Full platform: enterprise applications
  - > Only required modules are started
  - > Based on OSGi
- Consolidate applications
- Easy to use and manage

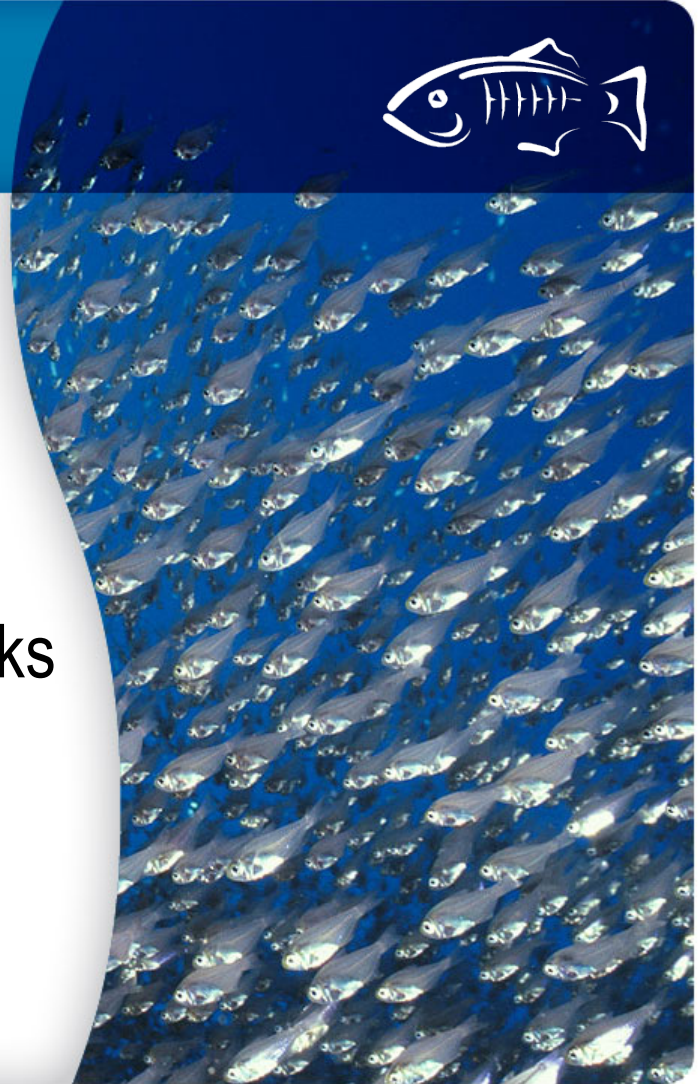


# GlassFish Enterprise Server v3

## Java EE 6 Productivity



- More annotations
- More POJOs
- Fewer artifacts to manage
- Drag-and-drop installation, configuration of 3<sup>rd</sup> party frameworks
- Result
  - > Lower development costs
  - > Quickly deliver applications

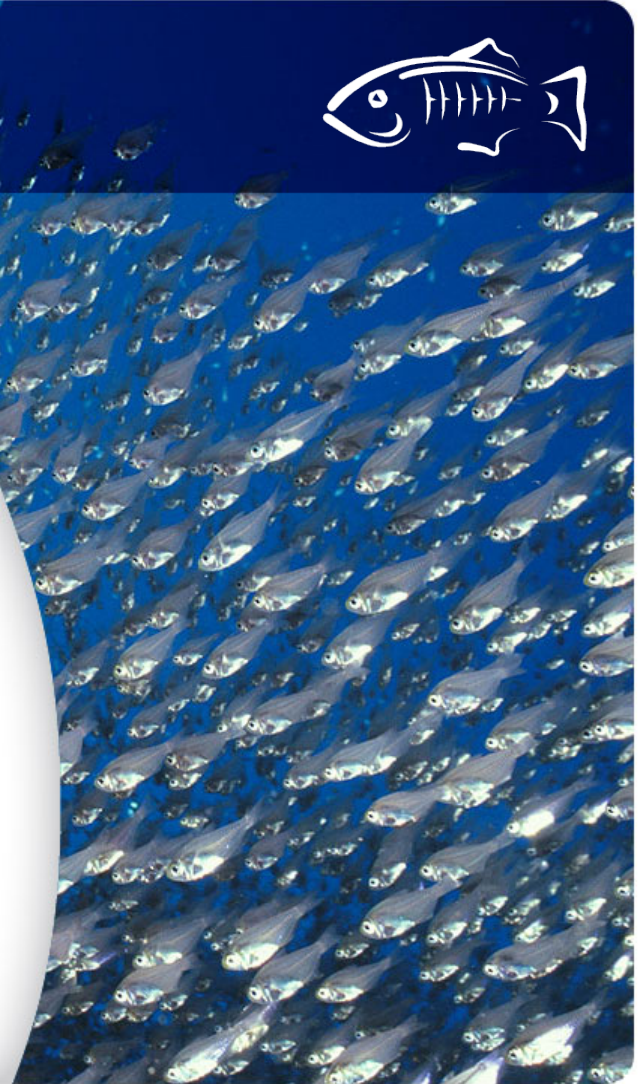


# GlassFish Enterprise Server v3

## GlassFish v3 Productivity



- Quick download, unzip, run
- Modular
  - > Fast startup, Less resource utilization
  - > Extend features at runtime
  - > Dynamic Language Modules
    - JRuby, Jython, Groovy
- Edit – Save – Refresh Browser
  - > Saves session state on app redeploy
- Maven, Ant Integration



# Update Center

Simplifying the administration and support of open source



Mac OS

opensolaris™

## Rich Client

The Rich Client interface displays a table of available components:

Component	Category	Published	Version	Install Size	Source
GlassFish JDBC Localization	Application Servers	11/19/2009	3.0-31.1	91.3 KB	dev.glassfish.org
GlassFish JMS Localization	Application Servers	11/19/2009	3.0-31.1	113.9 KB	dev.glassfish.org
GlassFish XA Transaction Support L...	Application Servers	11/19/2009	3.0-31.1	56.6 KB	dev.glassfish.org
GlassFish Nucleus Localization	Application Servers	11/19/2009	3.0-31.1	371.6 KB	dev.glassfish.org
GlassFish OSGI HTTP Service	Application Servers	11/25/2009	3.0-74	57.8 KB	dev.glassfish.org
GlassFish Scripting Localization	Application Servers	11/19/2009	3.0-31.1	58.5 KB	dev.glassfish.org
GlassFish Upgrade Tool Localization	Application Servers	11/19/2009	3.0-31.1	230.3 KB	dev.glassfish.org
GlassFish Verifier Tool	Application Servers	11/25/2009	3.0-74	1.4 MB	dev.glassfish.org
GlassFish Web Container Localization	Application Servers	11/19/2009	3.0-31.1	133.9 KB	dev.glassfish.org
GlassFish support for Grails framew...	Scripting	06/15/2009	1.0.5-1.3	50.0 MB	contrib.glassfis...
Hibernate JPA	Frameworks	11/23/2009	3.5.0-0.2	5.3 MB	contrib.glassfis...

The details view for GlassFish OSGI HTTP Service shows:

```

Package Name: glassfish-osgi-http
Version: 3.0-74
  
```

Overview text: GlassFish OSGI HTTP Service bundle is an implementation of org.osgi.service.http package version 1.2.0. The HTTP Service allows other bundles in the OSGi environment to dynamically register resources and servlets into the URI namespace of HTTP Service. To learn more about this service, please refer to the javadocs for this package available at <http://www.osgi.org/Javadoc/r4v42/org/osgi/service/http/package-summary.html>. GlassFish v3 is the reference implementation of Java EE 6 Platform as defined by JCP (Java Community Process, www.jcp.org). In addition to the latest Java EE standards, GlassFish v3 includes scripting support built on top of the new modular GlassFish kernel running on OSGi platform.

## Command Line

```

$ ./pkg install jruby:istration
DOWNLOAD PKGS mg-FILES XFER (MB)
jruby:4gpe_ug: 0/2 1199/14810 0.9/37.0
  
```

## Web Browser

The Web Browser interface shows the GlassFish v3 Administration Console. The main content area displays 'Available Add-Ons' with an installation path of `/Users/johnclingan/apps/glassfishv3`. A table lists 31 available add-ons:

Component	Category
<input type="checkbox"/> glassfish-osgi-http	Application S
<input type="checkbox"/> glassfish-generic-ra	Application S
<input type="checkbox"/> glassfish-web-l10n	Application S
<input type="checkbox"/> pkg-extra-tools	System Tool
<input type="checkbox"/> jruby-gems	Scripting
<input type="checkbox"/> glassfish-jdbc-l10n	Application S
<input type="checkbox"/> javadb-demo	Databases a
<input type="checkbox"/> jython-runtime	Scripting
<input type="checkbox"/> mq-docs	Message-Oriented Middleware
<input type="checkbox"/> jython-container	Scripting
<input type="checkbox"/> hibernate	Frameworks
<input type="checkbox"/> glassfish-upgrade-l10n	Application Servers
<input type="checkbox"/> glassfish-scripting-l10n	Application Servers
<input type="checkbox"/> glassfish-ica-l10n	Application Servers

# GlassFish Enterprise Server v3

## Java EE 6 Themes

Flexibility

Extensibility

Productivity

## GlassFish Enterprise Server v3

Flexible

Extensible

Productive

... + ...

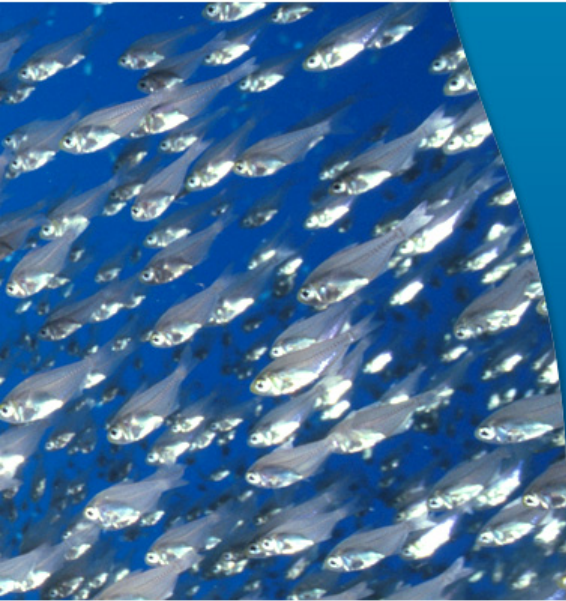
Non-Java Applications

Enterprise Support

Enterprise Features

*GlassFish Enterprise Server v3  
extends the value of Java EE 6*

First to  
support  
Java EE 6 !

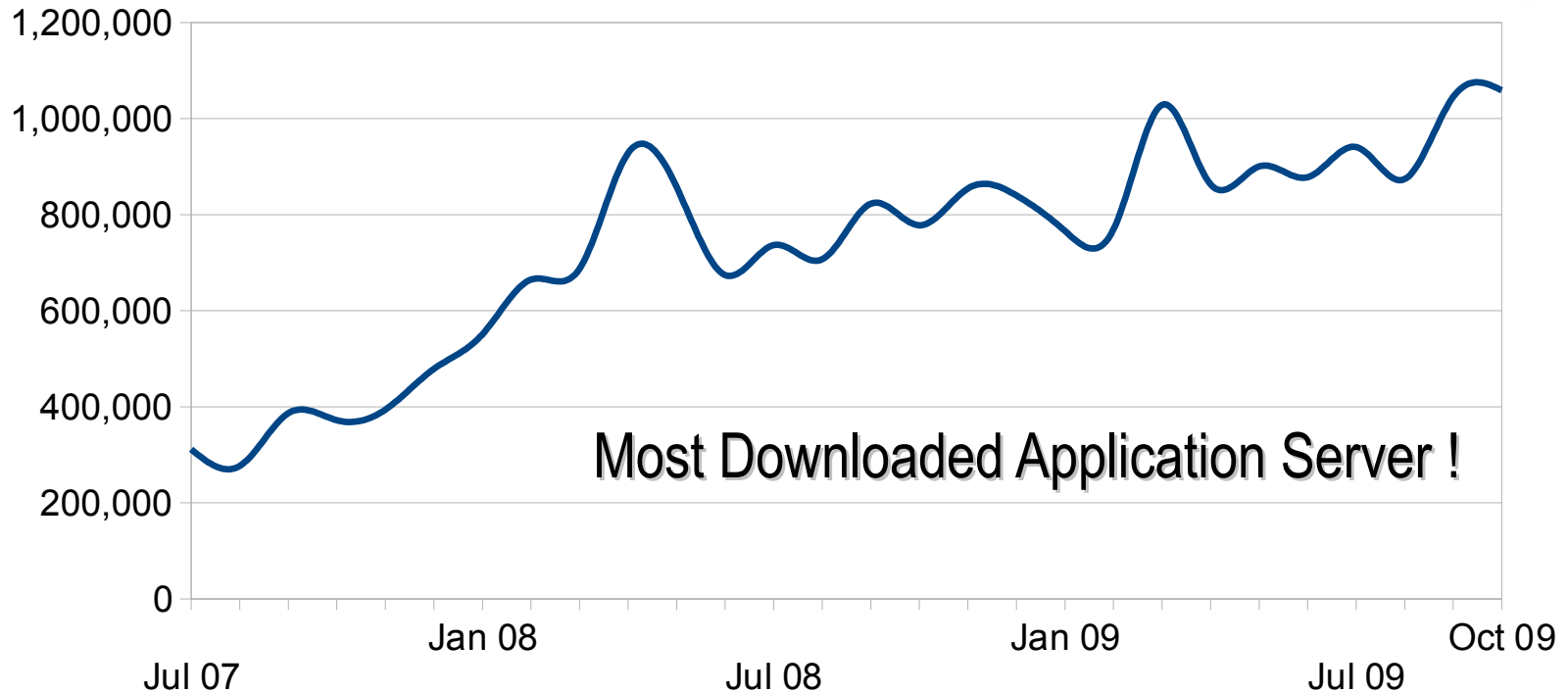


# COMMUNITY: GLASSFISH

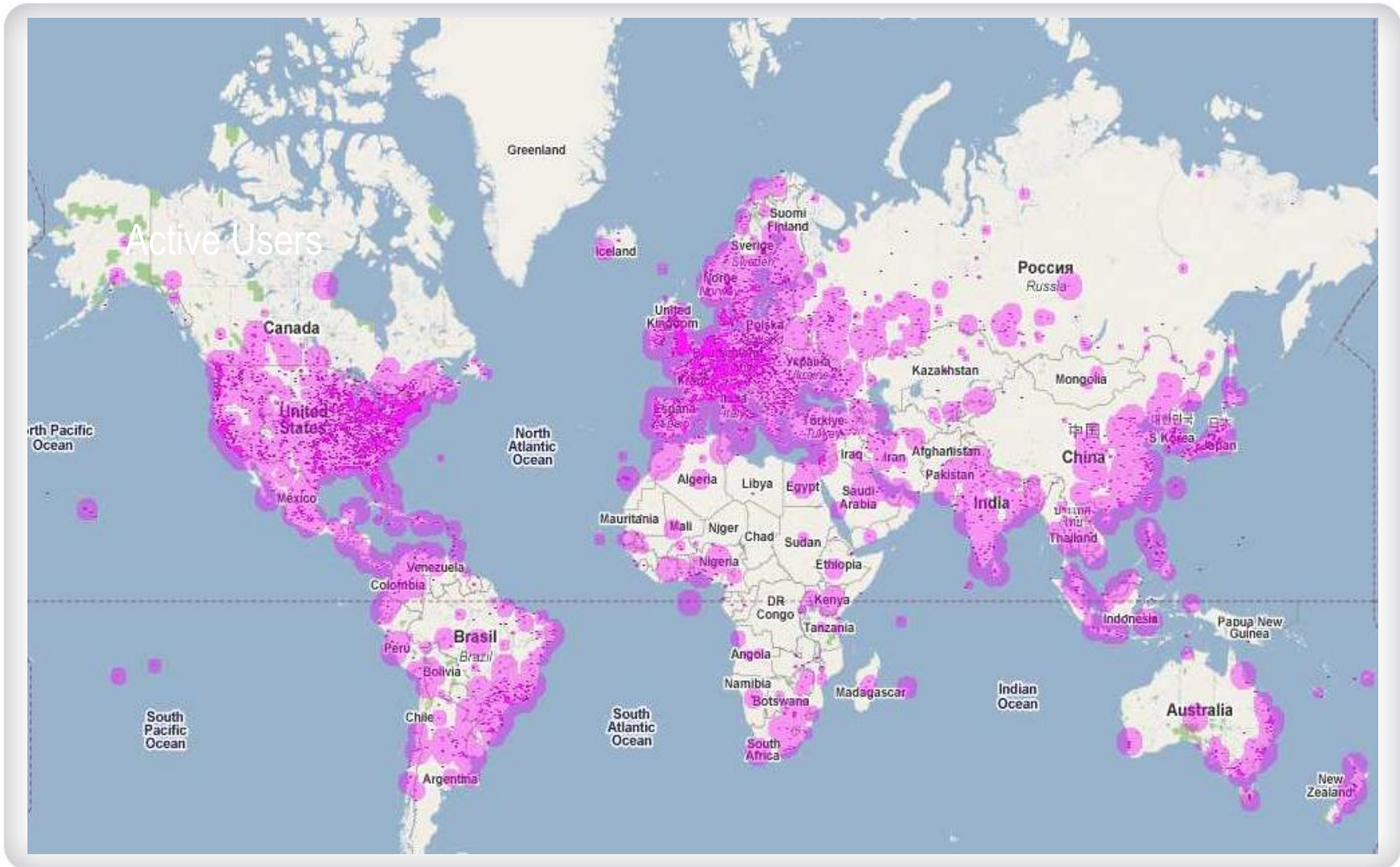
# GlassFish - Growing Adoption

Monthly Downloads July 2007 - Oct. 2009

24 Million Downloads Since 2006



# THANK YOU!!





# Community

## Community Centered Development



- Transparent Development
  - > Sources, Documentation, Architecture, Roadmaps, Bugs
- Milestone-Based Development
  - > Weeklies, Promoted, Release Candidates
- Very Active and Responsive USER, DEV aliases
- 2700+ Bug submitters
- FishCATs – 70 people from 20 countries

# Community

## Project Modularity



- Many Modular, Reusable Projects
  - > Grizzly, Jersey/*JAX-RS*, Metro/*JAX-WS*, Mojarra/*JSF*, JSP, JSTL, OpenMQ, Corba, Shoal, Atmosphere, UC...
- External Components
  - > Apache Felix, EclipseLink, JBoss Weld & Bean Validator, Codehaus Woodstox...
- Components Used in Other Projects
  - > JBoss, Geronimo, WebSphere, WebLogic, Sun JDK, IBM JDK, Jetty, ...

# Resources

## Java EE 6 and GlassFish v3

- **Java EE 6 Home**  
[java.sun.com/javaee](http://java.sun.com/javaee)
- **Java EE 6 Downloads**  
[java.sun.com/javaee/downloads](http://java.sun.com/javaee/downloads)
- **Upcoming Training**  
[java.sun.com/javaee/support/training](http://java.sun.com/javaee/support/training)

Java EE 6

- **Sun GlassFish Enterprise Server v3 Home**  
[www.sun.com/glassfishv3](http://www.sun.com/glassfishv3)
- **Community Page**  
[glassfish.org](http://glassfish.org)
- **The Aquarium Blog**  
[blogs.sun.com/theaquarium](http://blogs.sun.com/theaquarium)
- **White Papers/Webinars**  
[blogs.sun.com/theaquarium](http://blogs.sun.com/theaquarium)
- **Follow on Twitter**  
[@glassfish](https://twitter.com/glassfish)

GlassFish



# Thank You!

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