Glassfish Enterprise Server v3 - Java EE 6 and beyond

Anil Gaur - Director, Java EE Platform and GlassFish

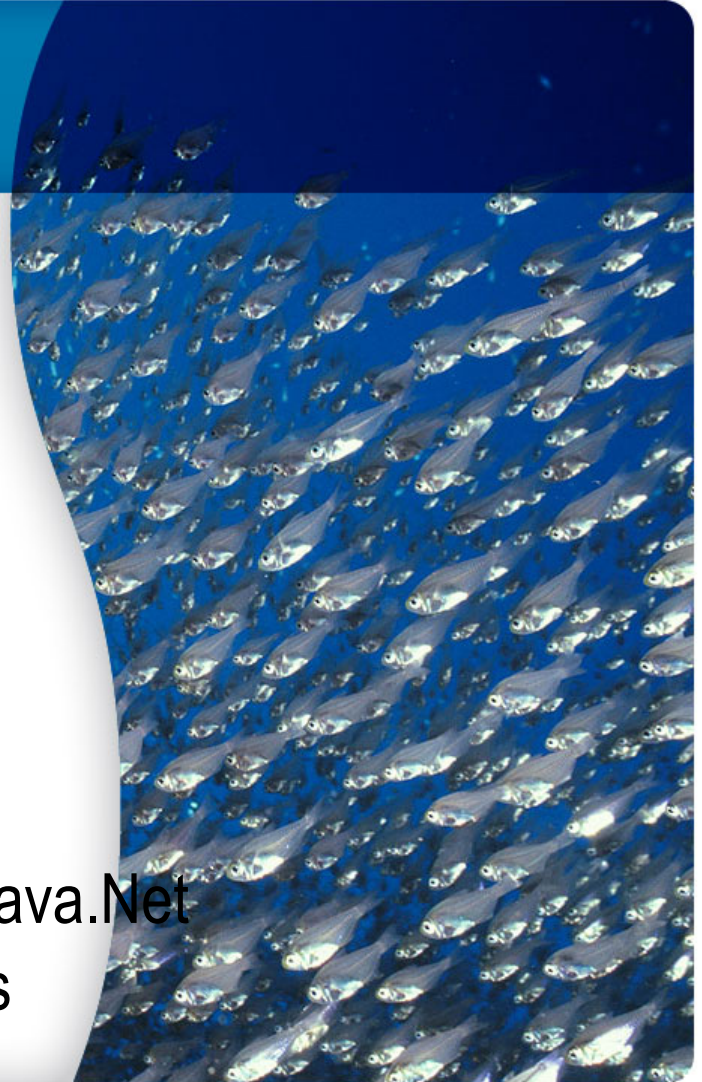**Abhijit Kumar -** Sr. Manager, Glassfish v3

Jerome Dochez - Architect and Lead, Glassfish v3

Glassfish

Overview

- Java EE RI
  - > Included in Java EE SDK

- Strong Developer Adoption

- Production Quality

- Open Source

- Strong Community
  - > Sources, bug DBs, discussions at Java.Net
  - > Roadmaps, Architecture Documents
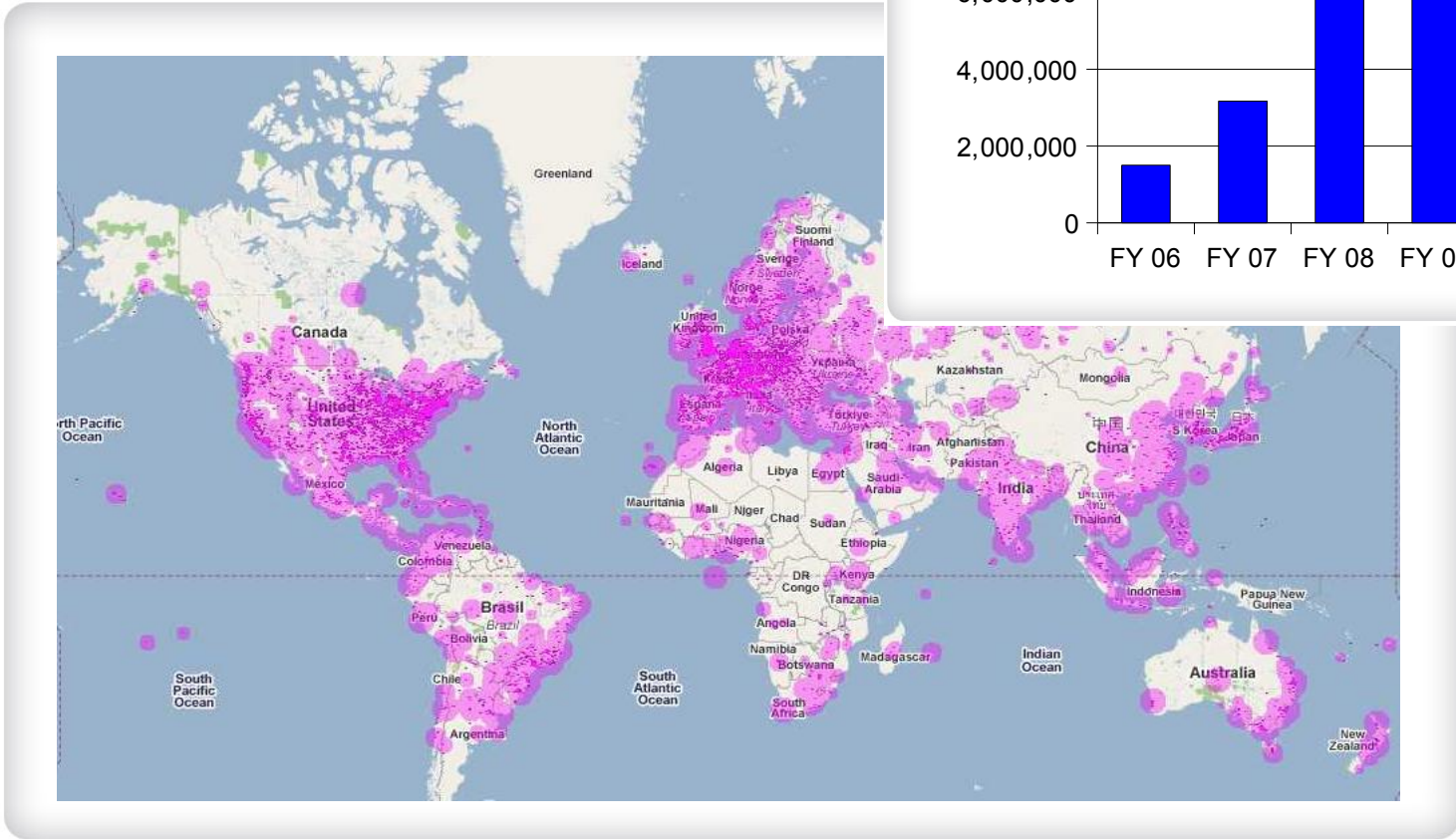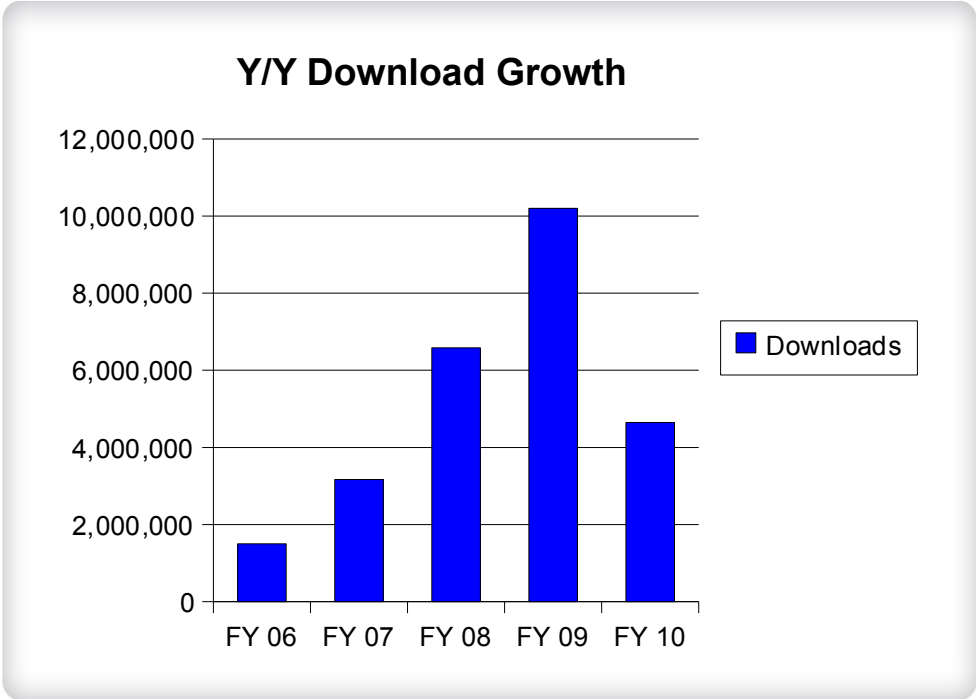
GlassFish v3

Top Features

- Java EE 6 support
- Developer Productivity
- Modular
- Extensible
- Embeddable

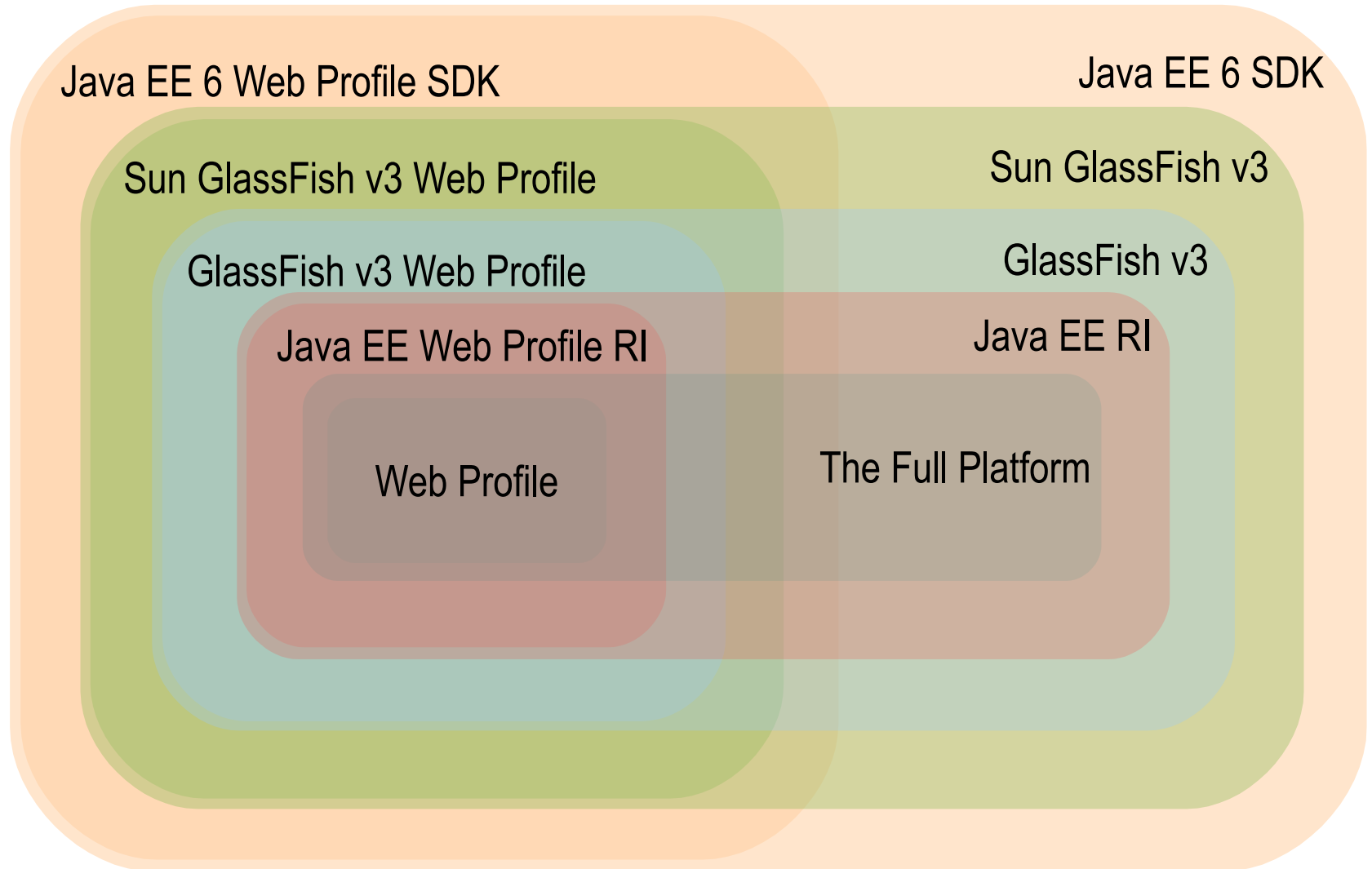# Glassfish Adoption

Over 24M Downloads
since FY'06

Y/Y Download Growth

GlassFish Community Metrics

- Community members - 6833

- Committers - 756

- Licenses used
  - > CDDL + GPL with Classpath Exception

GlassFish ISV Partners

GlassFish v3 Distributions

Java EE 6 Web Profile SDK

Java EE 6 SDK

Sun GlassFish v3 Web Profile

Sun GlassFish v3

GlassFish v3 Web Profile

GlassFish v3

Java EE Web Profile RI

Java EE RI

Web Profile

The Full Platform
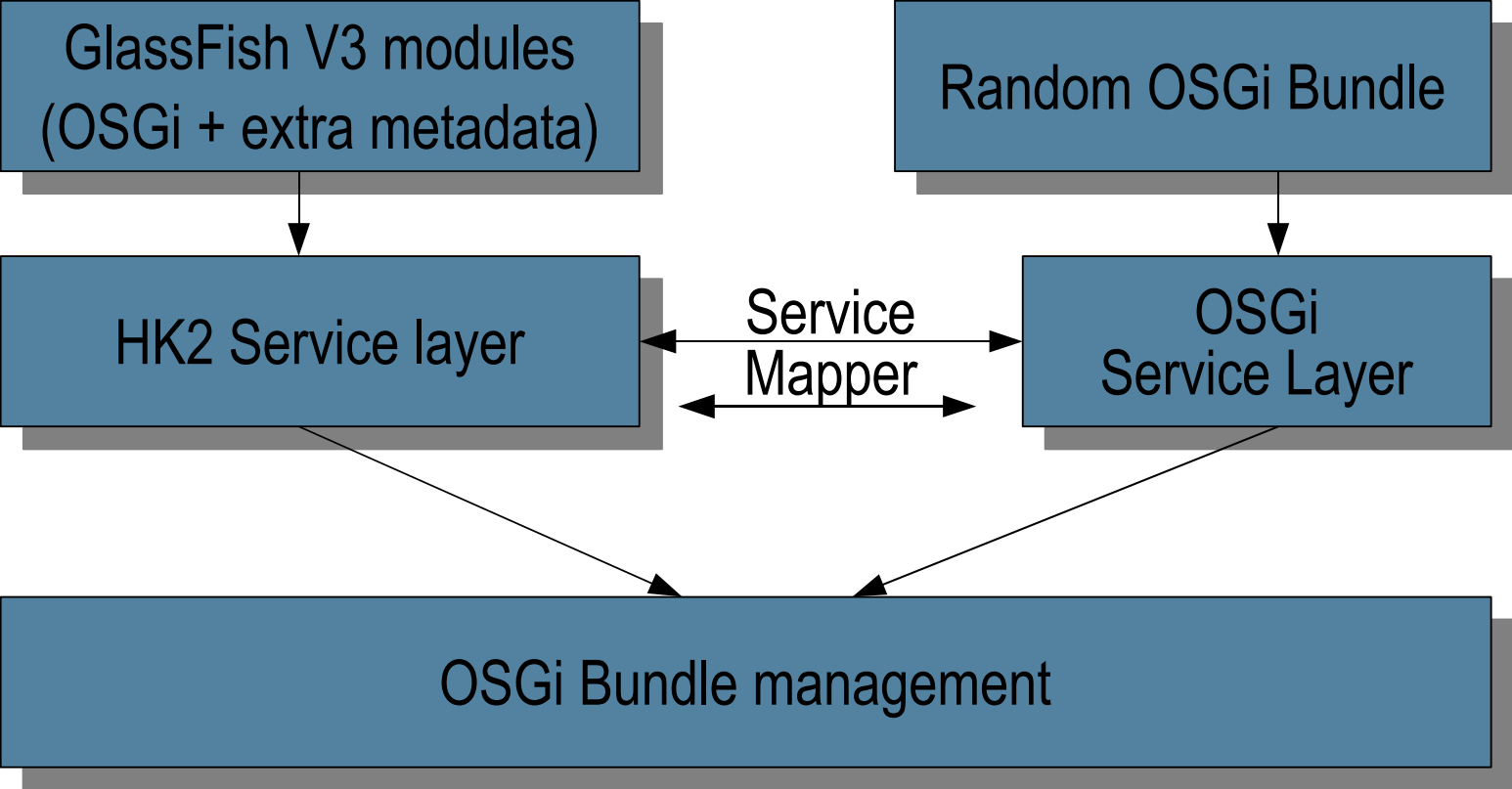
GlassFish v3 Distributions (Contd.)

- Other distributions
  - > Embedded and the maven plugin
  - > Maven artifacts for Java EE API
  - > GlassFish v3 Ruby gem
- Download Options
  - > Platform independent zip
  - > Installer for Windows
  - > Installer for *nix
- java.sun.com/javaee/downloads

GlassFish v3 Modularization

- Based on OSGi

- Extensible
  - > Extensive APIs to replace or extend features
  - > OSGi also provides extensions capabilities

- Service based architecture
  - > Services are defined by contracts and can be easily substituted
  - > Lazy loading based on usage patterns

- Open for all JVM based technologies
  - > Jruby/Grails : Native deployment (no war repackaging)

- Successfully maintained quick startup

GlassFish v3 Runtime with OSGi

GlassFish V3 modules
(OSGi + extra metadata)

Random OSGi Bundle

HK2 Service layer

Service
Mapper

OSGi
Service Layer

OSGi Bundle management

OSGi integration

- Module management
  - > Add, remove, update installed modules
- OSGi as a container !
  - > Treat OSGi just like any container, bundles are deployed to it.
  - > Can leverage OSGi to extend GlassFish
- Converged Applications
  - > Started investigating Java EE 6 + OSGi converged applications :
    - Dependencies in OSGi
    - Lifecycle still governed by Java EE.

Update Center

- Start small and Grow
  - > Web Profile to Java EE Platform
- Get convenient access to additional content
  - > jRuby runtime
  - > Apache ant
  - > Hibernate
  - > Java EE 6 Tutorial/Samples/API documentation
- Update Notifications and Downloads
- Content for registered users
- Content for supported customers

GlassFish – Developer Performance
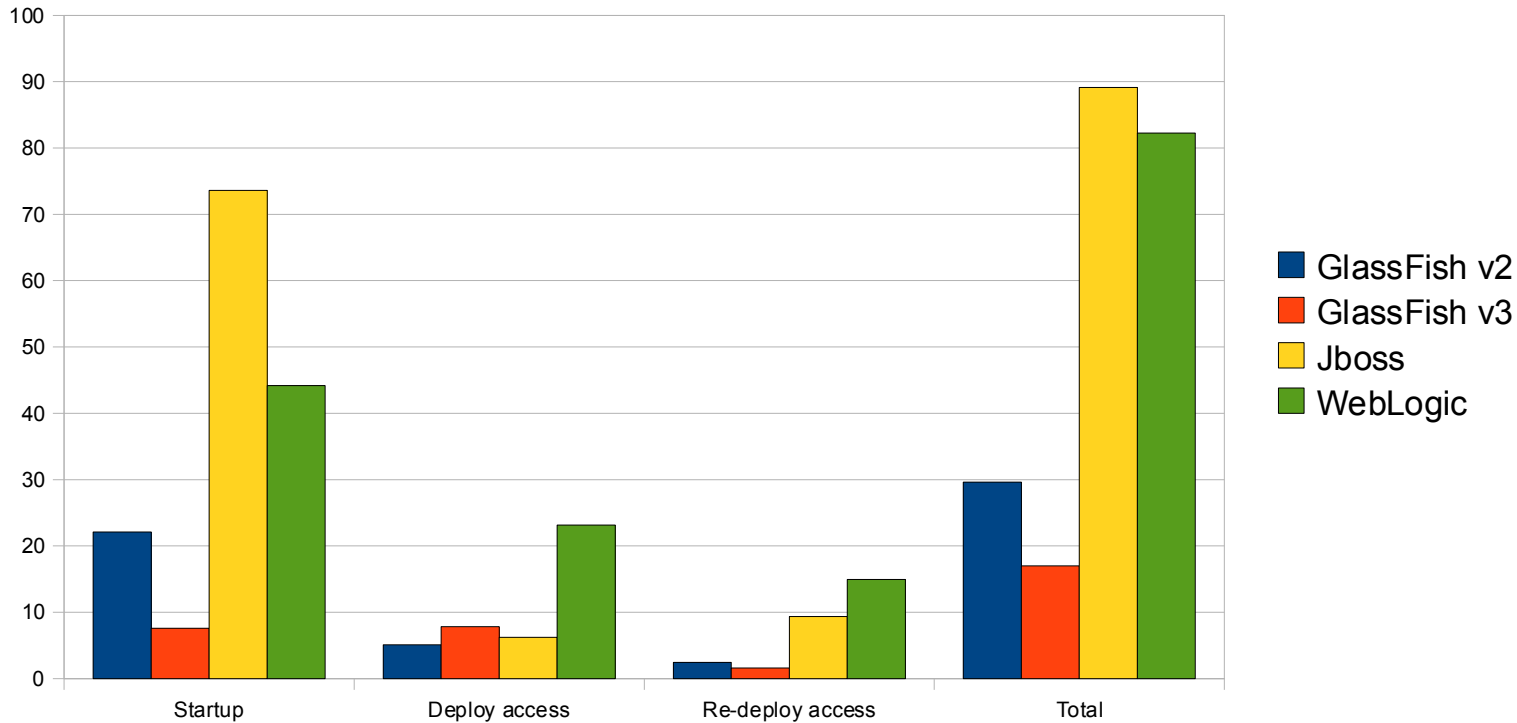
	GlassFish v2	GlassFish v3	Jboss	WebLogic
Startup (sec)	22.1	7.56	73.6	44.17
Deploy Access (sec)	5.08	7.84	6.21	23.14
Re-Deploy Access (sec)	2.45	1.6	9.33	14.95
Total (sec)	29.63	17	89.14	82.26

Developer Performance (2)

- Distributions tailored to developer need
    - > Based on Java EE profiles (web, full)
    - > Specific to a technology (ruby gem)
    - > Your own !
- Modular
    - > No complicated xml edits necessary to enable features
    - > No classpath setting :

        java -jar glassfish.jar

Demo – Admin Console

Painless Java EE development !

- Incremental compile of all Java EE artifacts
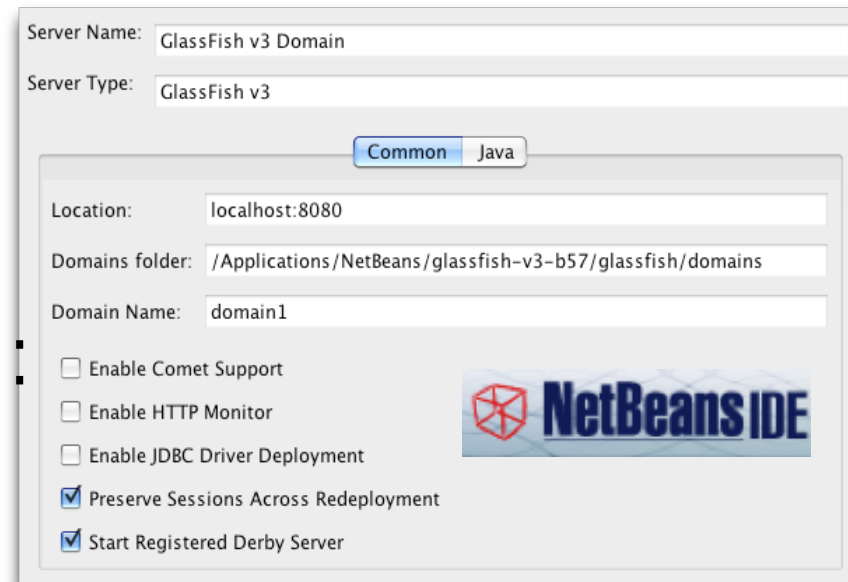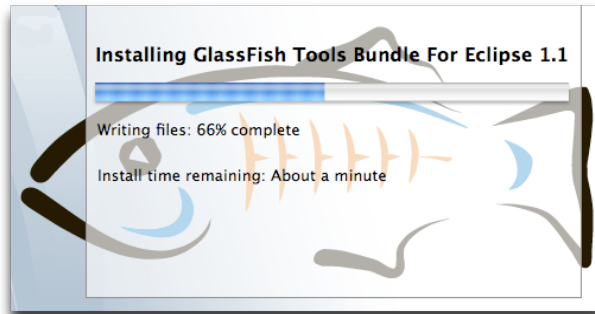- Auto-deploy of all Java EE and static artifacts
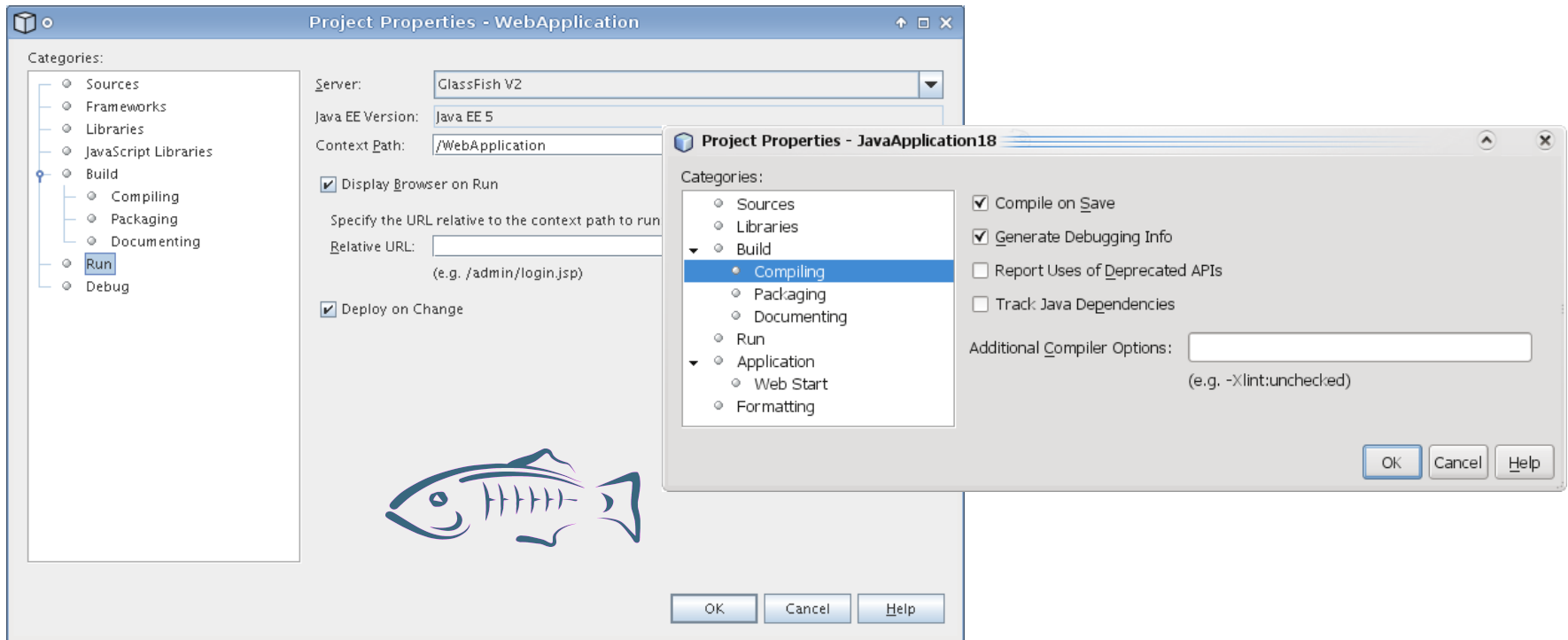
Session Retention

- 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.x :

Yes, Eclipse too !

GlassFish + Eclipse 3.4 Tools Bundle: http://download.java.net/glassfish/eclipse/

Now version 1.1 (refreshed in August 2009), based on Eclipse 3.4.2

REST Administration interface

- GlassFish Management using REST
  - > Configuration and Monitoring
  - > Thin veneer over the rich command line interface

- Implementation based on Jersey (JAX-RS)

- Supports JSON, XML and HTML representations
  - > Additional representations can be plugged-in

- Advantages
  - > No client install
  - > Familiar data model
  - > Scriptable using your favorite language/toolset

OSGi integration

- Module management
  - > Add, remove, update installed modules

- OSGi as a container !
  - > Treat OSGi just like any container, bundles are deployed to it.
  - > Can leverage OSGi to extend GlassFish

- Converged Applications
  - > Started investigating Java EE 6 + OSGi converged applications :
    - Dependencies in OSGi
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OSGi Integration (2)

- OSGi services
  - > Available to any Java EE application

    @Resource(mappedName="osgiName")
    SomeOSGiService injectedService;

  - > JNDI lookup
  - > Portable, no OSGi dependencies in your Java EE application code

- No bundle management access

- Bundles exported APIs visible to Java EE apps

Extending GlassFish v3
SpringDM – another example, demo and picture
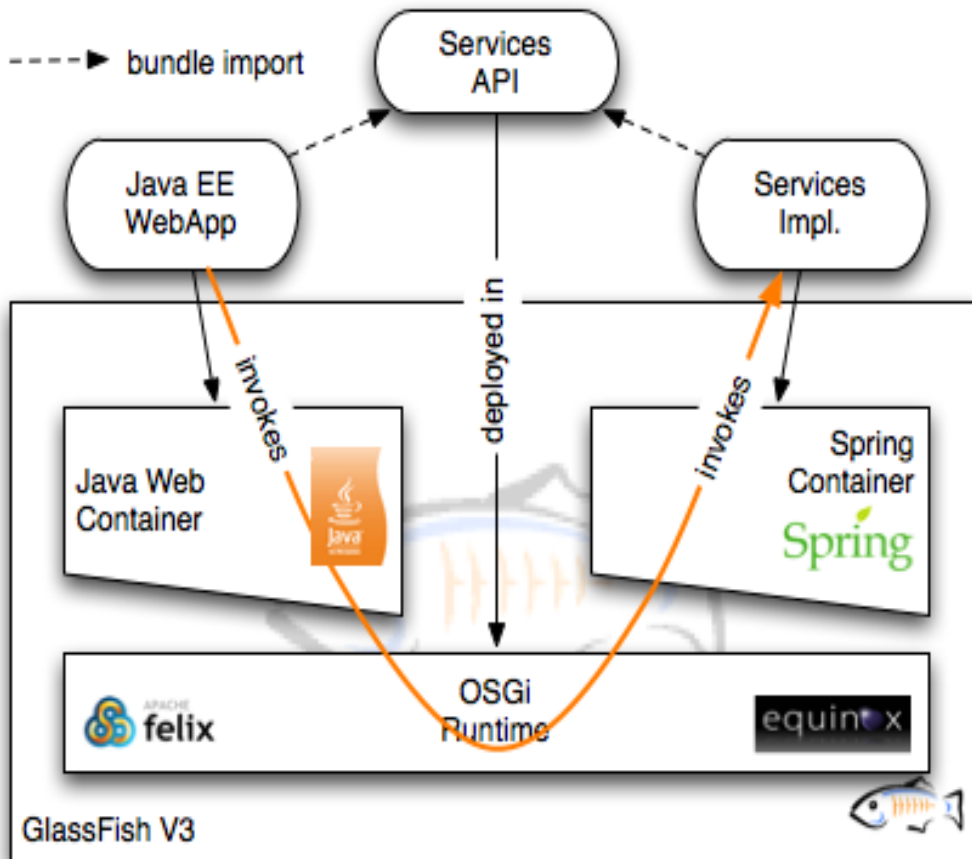
- Extend GlassFish with an unmodified Spring dm container
- Simple Spring bean implementing the service
- Invoke the service from a servlet using standard `@Resource` injection
- Still no use of a GlassFish API
- Single runtime for both Spring and full Java EE

Step by step: http://blogs.sun.com/dochez/entry/glassfish_v3_extensions_part_4

Monitoring – What is new in v3?

- Light weight Probes
  - > Events emitted at key points
  - > Dynamic, only when there are listeners
- Extensible
  - > Annotations
  - > XML configuration file
  - > Yes, your OSGi application too!
- Dtrace integration
- JavaScript client

Embeddable GlassFish

- Make GlassFish usable as a library
  - > Not as the master of JVM that you have to run in
- This is not about running GlassFish in embedded devices
- Ant tasks and Maven plugins to drive them
- Same container from development to production
  - > Without loss of productivity
- Improved unit testing opportunities
- App server built to order
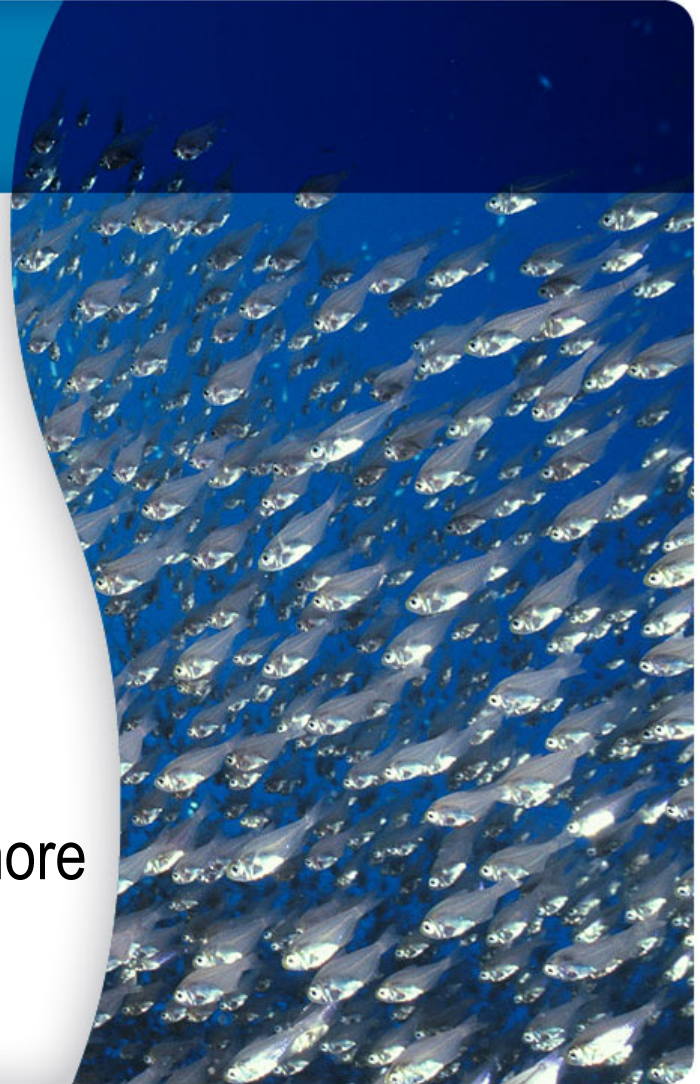 - > Pick up just the modules you need

Embeddable GlassFish V3

Embedded API jar + Modules of your choice = Your Embeddable GFv3

Sun GlassFish Enterprise Server

Enterprise Subscriptions

- 24x7x365 Support, Patches
- Enterprise Manager
- Supported releases
  - > GlassFish Enterprise Server v2.x
  - > GlassFish Enterprise Server v3
- Contact glassfish@sun.com to learn more

Summary

Java EE 6	GlassFish v3
• Right-Sizing • Extensible • Ease of use/development	• Java EE 6 • Modular • Extensible • Developer productivity

Resources
Java EE 6 and GlassFish v3

- Java EE 6 Home

  java.sun.com/javaee

- Java EE 6 Downloads

  java.sun.com/javaee/downloads

- Upcoming Training

  java.sun.com/javaee/support/training

Java EE 6

- Sun GlassFish Enterprise Server v3 Home

  www.sun.com/glassfishv3

- Community Page

  glassfish.org

- The Aquarium Blog

  blogs.sun.com/theaquarium

- White Papers/Webinars

  http://www.sun.com/glassfish/resources

GlassFish