



The Core Engine for Your Open Source Enterprise - GlassFish

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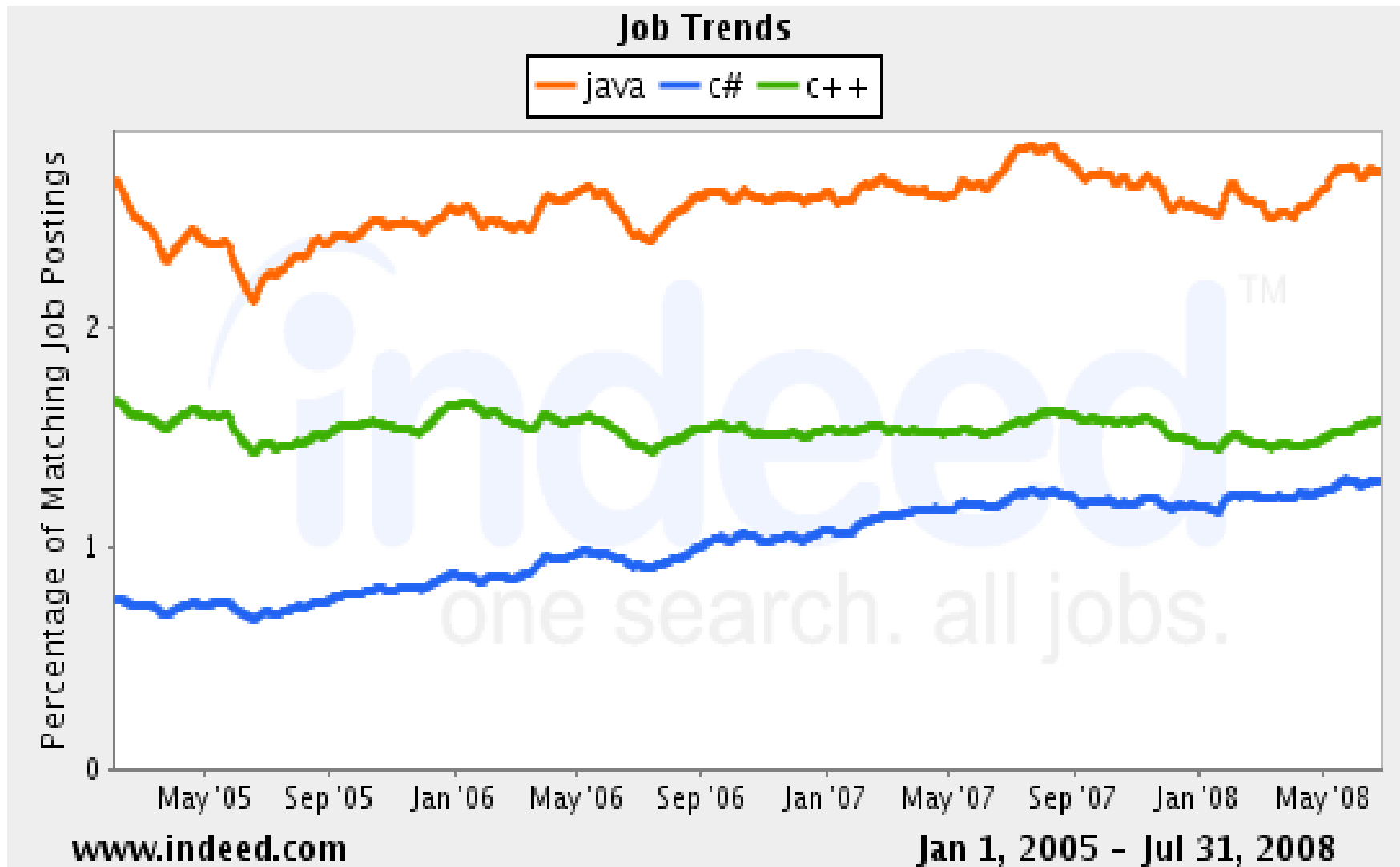


Top Questions for your App Server

- Is it free in DEV, UAT and even PRD?
- Is it up-to-date and widely adopted/supported?
- Does it support universal language/scripting/framework?
- Can it communicate to the rest of the world?
- Can it scale up robustly and trim down on demand?
- Is it fit my company open source strategy?



Java Jobs is still Hot



What Is Project GlassFish?

- Java EE 5 Reference Implementation
 - > Included in Java EE 5 SDK
- Enterprise Quality
 - > High availability / clustering
 - > Advanced administration
 - > World record performance
- Open Source
 - > CDDL & GPL v2 (w/ClassPath Exception)
- Community
 - > Sources, bug DBs, discussions at Java.Net
 - > Roadmaps, Architecture Documents



Not your Father's J2EE

- Java EE 5.0 = (J2EE 1.4).next
- Java EE 5 Theme: Ease of Development
- POJO-based programming
- Extensive use of annotations
- Resource Injection
- New APIs and frameworks

Using JAX-RPC 1.1

```
package endpoint;
import java.rmi.*;
```

```
public class HelloServiceImpl
    implements HelloServiceSEI {

    public String sayHello(String param)
        throws java.rmi.RemoteException {
        return "Hello " + param;
    }
}
```

```
package endpoint;
import java.rmi.*;
```

```
public interface HelloServiceSEI
    extends java.rmi.Remote {
    public String sayHello(String param)
        throws java.rmi.RemoteException;
}
```

```
<?xml version='1.0' encoding='UTF-8' ?>
<webservices xmlns='http://java.sun.com/xml/ns/j2ee' version='1.1'>
  <webservice-description>
    <webservice-description-name>
      HelloService</webservice-description-name>
    <wsdl-file>
      WEB-INF/wsdl/HelloService.wsdl</wsdl-file>
    <jaxrpc-mapping-file>
      WEB-INF/HelloService-mapping.xml
    </jaxrpc-mapping-file>
    <port-component xmlns:wsdl-port_ns='urn:HelloService/wsdl'>
      <port-component-name>HelloService</port-component-name>
      <wsdl-port>wsdl-port_ns:HelloServiceSEIPort</wsdl-port>
      <service-endpoint-interface>
        endpoint.HelloServiceSEI</service-endpoint-interface>
      <service-impl-bean>
        <servlet-link>WSServlet_HelloService</servlet-link>
      </service-impl-bean>
    </port-component>
  </webservice-description>
</webservices>
<?xml version='1.0' encoding='UTF-8' ?>
<configuration
  xmlns='http://java.sun.com/xml/ns/jax-rpc/ri/config'>
  <service name='HelloService'
    targetNamespace='urn:HelloService/wsdl'
    typeNamespace='urn:HelloService/types'
    packageName='endpoint'>
    <interface name='endpoint.HelloServiceSEI'
      servantName='endpoint.HelloServiceImpl'>
      </interface>
    </service>
  </configuration>
```

OLD! J2EE 1.4

Using JAX-WS 2.0

```
import javax.jws.WebService;
```

```
@WebService
```

```
public class MySimpleWS {  
    public String sayHello(String s) {  
        return "Hello " + s;  
    }  
}
```

NEW! Java EE 5

Using JAX-WS 2.0

```
import javax.jws.WebService;  
import javax.jws.WebService;  
@WebService  
@Stateless  
  
public class MySimpleWS {  
    public String sayHello(String s) {  
        return "Hello " + s;  
    }  
}
```

NEW! Java EE 5

Using JAX-WS 2.0

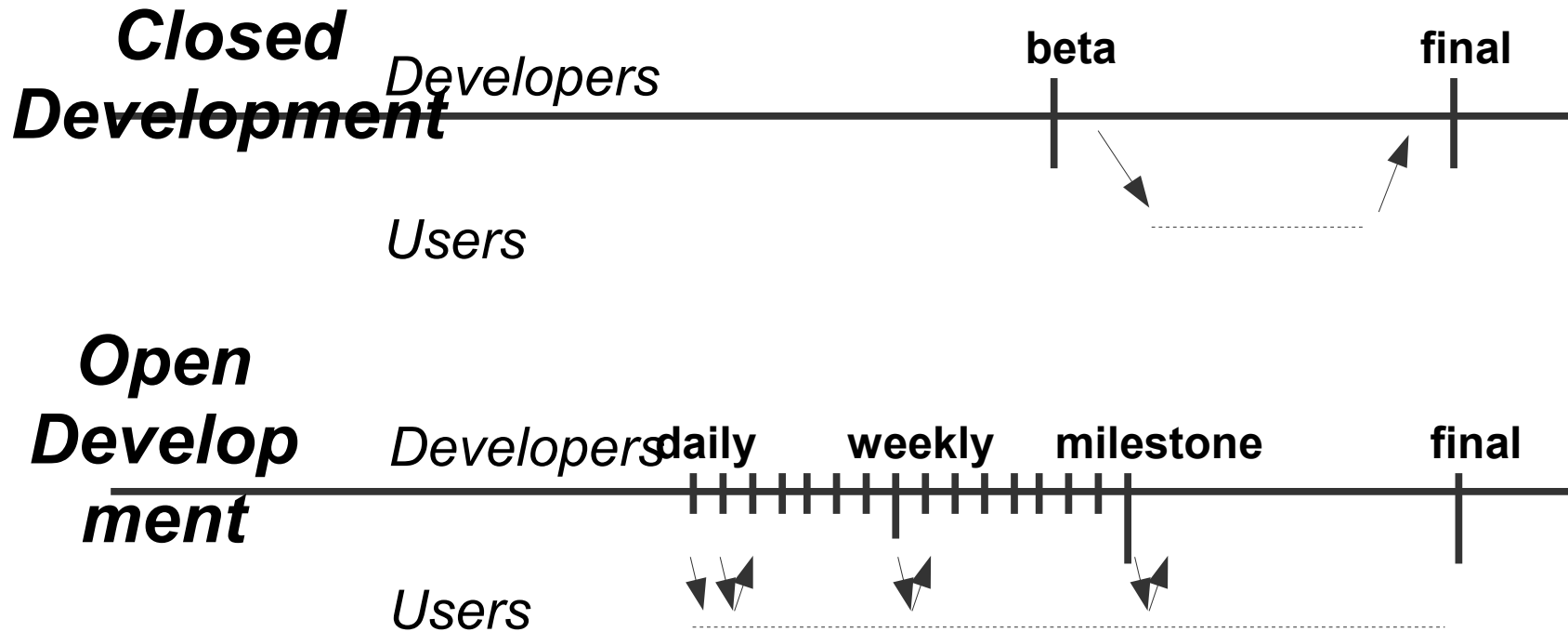
```
import javax.jws.WebService;  
import javax.jws.WebService;  
@WebService  
@Stateless  
  
public class MySimpleWS {  
    public String sayHello(String s) {  
        return "Hello " + s;  
    }  
}
```

NEW! Java EE 5

Adoption of Java EE 5

- Very Fast Adoption
 - > GlassFish & Sun Java System AppServer
 - > TmaxSoft JEUS 6
 - > SAP Netweaver 7.1
 - > Kingdee Apsuic AppServer 5.0
 - > BEA's WebLogic Server 10
 - > Oracle OC4J 11 (EA)
 - > ASF's Geronimo 2.0 (very close to final)
- All of the above use components from GlassFish
 - > GlassFish benefits from Java EE 5
 - > Java EE 5 benefits from GlassFish

A Better Product – via Open Development



Groovy JSR-241

Groovy is an agile, dynamic programming language for the Java Virtual Machine. Groovy includes features found in Python, Ruby, and Smalltalk, but uses syntax similar to the Java programming language.

Specification Lead

Guillaume Laforge Laforge, Guillaume

Expert Group

Alleon, Gullaume
Boeing
Combs, Clinton L
Lane, Derek
Poirier, Chris
Strachan, James
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Sun Microsystems, Inc.
Tyagi, Rahul

Apache Software Foundation
Capgemini
Laforge, Guillaume
Oracle
Rocher, Graeme
Theodorou, Jochen
Wilson, John

Groovy

- is an agile and dynamic language for the Java Virtual Machine
- builds upon the strengths of Java but has additional power features inspired by languages like Python, Ruby and Smalltalk
- makes modern programming features available to Java developers with almost-zero learning curve
- supports Domain-Specific Languages and other compact syntax so your code becomes easy to read and maintain
- makes writing shell and build scripts easy with its powerful processing primitives, OO abilities and an Ant DSL
- increases developer productivity by reducing scaffolding code when developing web, GUI, database or console applications
- simplifies testing by supporting unit testing and mocking out-of-the-box
- seamlessly integrates with all existing Java objects and libraries
- compiles straight to Java bytecode so you can use it anywhere you can use Java

Groovy

- **Groovy**

```
def name='World'; println "Hello $name!"
```

- **Java**

```
class Greet {  
    def name  
    Greet(who) { name = who[0].toUpperCase() +  
                    who[1..-1] }  
    def salute() { println "Hello $name!" }  
}  
g = new Greet('world')    // create object  
g.salute()                // Output "Hello World!"
```

Code as Data

- One of the things that makes Groovy different than most compiled languages is that you can create functions that are first class objects

Example -


```
Square = { it * it }
```

```
Square (9)
```


```
[ 1, 2, 3, 4 ].collect(square)
```

```
[ 1, 4, 9, 16 ]
```

Method name as variable


dynamicfunction.groovy * - GroovyConsole

File Edit View History Script Help



```

def a = "valueOf"
def b = 1
b."$a"('3')

```

```

groovy>    def a = "valueOf"
groovy>    def b = 1
groovy>    b."$a"('3')

Result: 3

```

Execution complete.
4:1

Ruby vs Groovy

Ruby

```
open('beans.txt', "w") do |file|  
  file.puts('lima beans')  
  file.puts('pinto beans')  
  file.puts('human beans')  
end
```

Groovy

```
println ( new File ( 'blah' ).text )
```

GDK & GRails

- GDK
 - > Groovy Compiler
 - > Graphicspad
 - > GroovyConsole
 - > API
 - > Document
- Grails
 - > Based on MVC
 - > Web Development Framework
 - > Support by IDE – Netbeans, Eclipse,

Grails & GlassFish

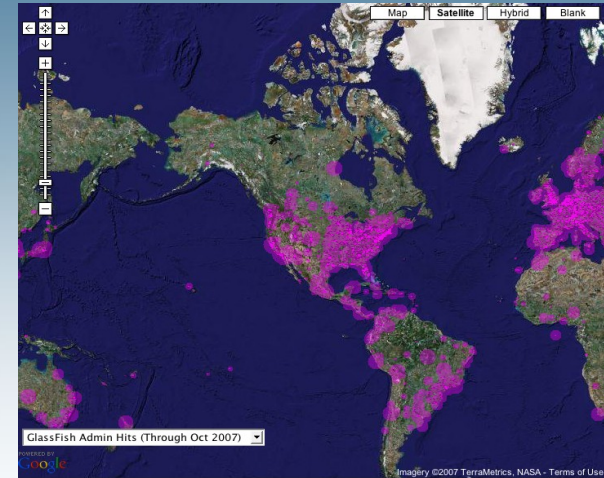
- GlassFish v2 – Compiling to War file using Netbeans 6.5 and deploy
- GlassFish V3 Support

Jython and Groovy

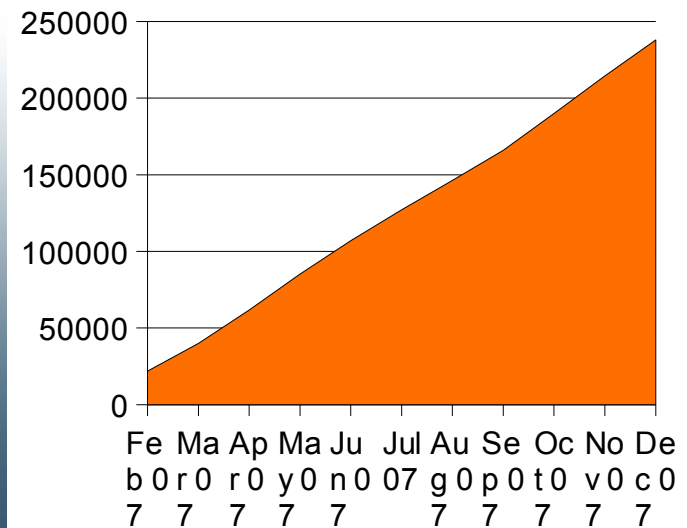
- Jython has been around a long time and is based on a mature language, Python. However, its development seems to have stalled in recent years. Groovy is a relatively new language and is still in its initial stages.
- Jython has two main advantages. First, the language is Python and has all of its strengths, including clean and consistent syntax, introspection, dynamic creation of classes, properties and attributes. Second, it runs at the speed of the JVM.

GlassFish Adoption

- 4 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






























Active Usage

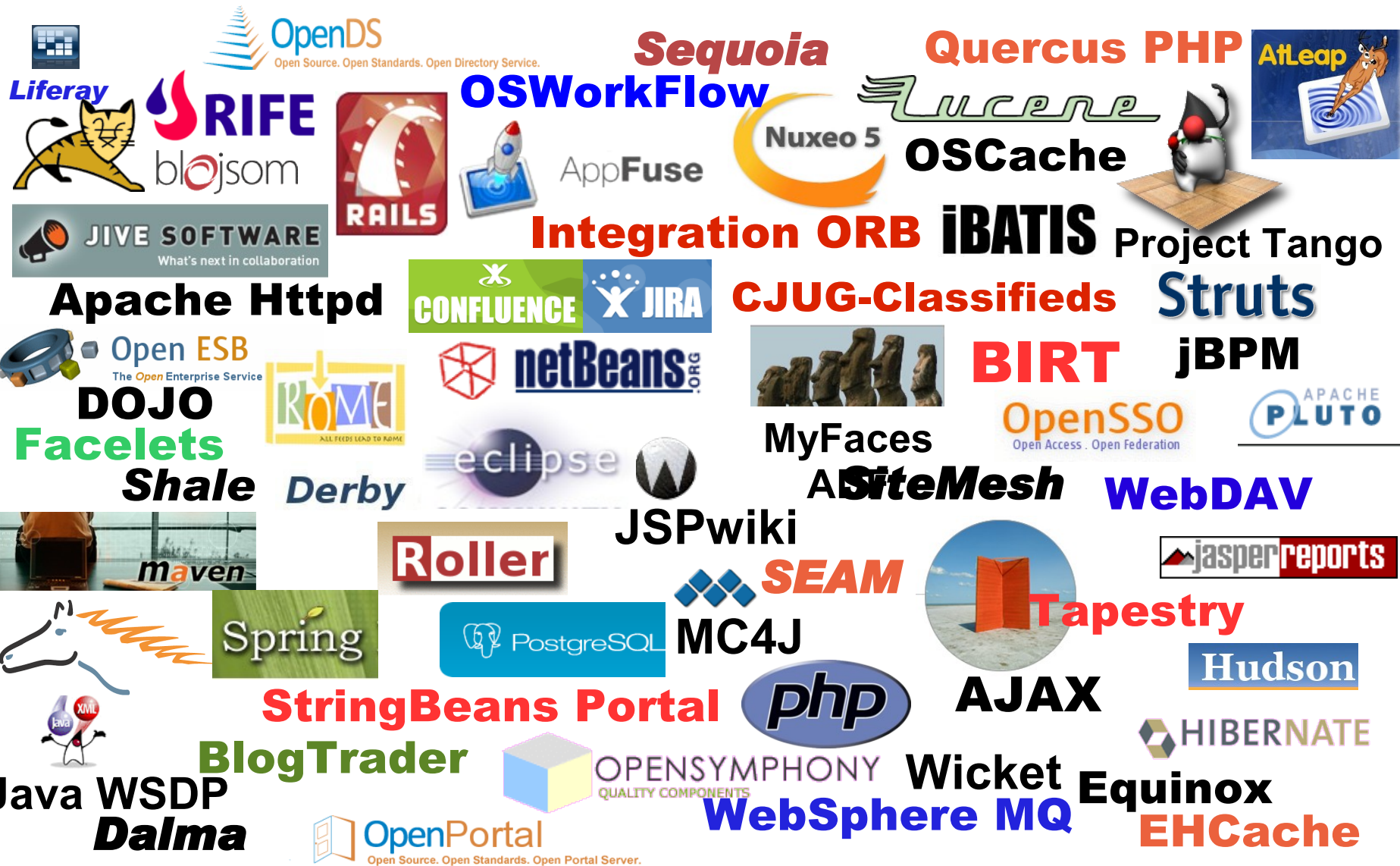


Sun's Open Stack

Flexible and Heterogeneous with Zero Barrier to Exit

Database Platform	    
Application Infrastructure	     
Virtualization	  
Operating System	    
Partners	    
Architecture	  

Frameworks and Applications



GlassFish Community

Open Source, Enterprise Ready & Extendable



- **GlassFish V3 Tech Preview 2 Available now!**

- Modular OSGi architecture – easy to deploy, Develop and Extend

- **GlassFish V2 – Production Ready**

- Fastest open source app server with Clustering, High Availability, Load Balancing
- Support for jMaki, Comet, Ajax, Ruby and Groovy

- **GlassFish ESB**

- Core SOA functions now embedded in GlassFish

- **GlassFish Communications App Server**

- SIP servlet technology for converged services

Always free to download, deploy and distribute

- **Enterprise and Mission Critical Support**

- sun.com/software/products/appsrvr

- **Tools Integration**

- NetBeans and Eclipse

glassfish.org

GlassFish V1

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

Glassfish V2 Enterprise Features

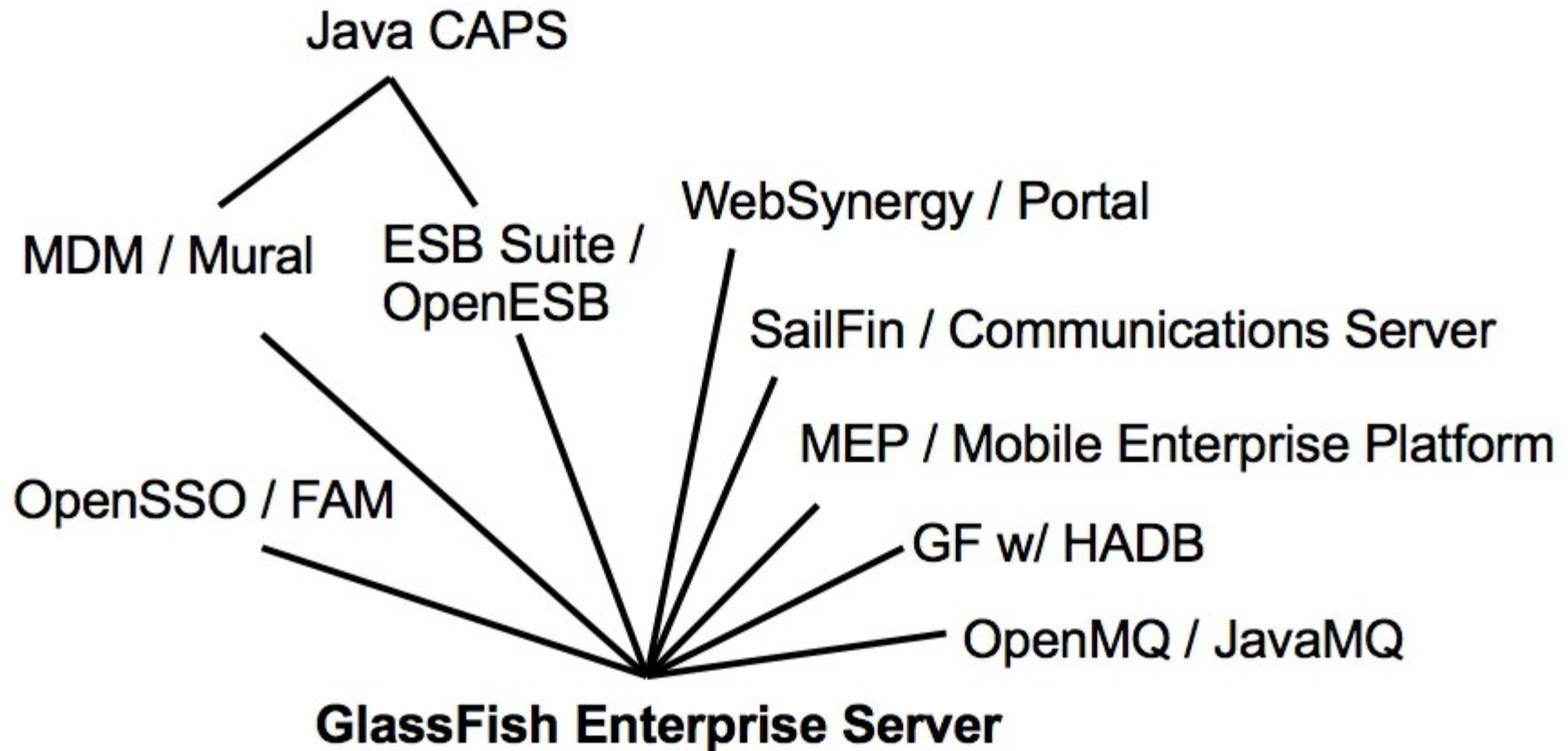
- Clustering
 - > In-memory session replication
 - > HADB - High Availability Database
 - > Load Balancing agent
- Advanced Management
 - > Centralized cluster management
 - > Cluster & instance monitoring
 - > Improved diagnostics
- Interoperability with Microsoft .NET 3.0

Additional GlassFish V2 Features

- Server Side Scripting
- Java Business Integration (JBI) support
- Toplink Essentials
- Profiles



The GlassFish-Based Middleware Stack from Sun



Ease of Use - Administration

[Home](#)
[Version](#)
Logout
Help

User: admin | Domain: domain1 | Server: localhost

Sun Java™ System Application Server Admin Console

Common Tasks

- Domain
- Applications
 - Enterprise Applications
 - Web Applications
 - EJB Modules
 - Connector Modules
 - Lifecycle Modules
 - Application Client Modules
- Web Services
- JB1
 - Service Assemblies
 - Components
 - Shared Libraries
- Custom MBeans
- Resources
- Clusters
- Stand-Alone Instances
- HTTP Load Balancers
- Node Agents
- Configurations

Common Tasks

To access information about a task, select the "i" info button

Enterprise Tasks

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

Other Tasks

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

Support/Help

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

Deployment

- Deploy Enterprise Application (.ear)
- Deploy Web Application (.war)
- Deploy Custom MBean
- Deploy Java Business Integration (JB1) Service Assembly

Monitoring

- View Monitoring Data

- Learn from the Source: [Expert-to-engineer web training for Java EE 5](#).
- Join the [Project GlassFish](#) watch the latest news in [The Aquarium](#).
- Need help? Learn how to get [free help](#) from Sun.
- Get [Production Support](#)

Ease-of-use – Update Center

Check for Updates
Help

Available Updates
Installed Software
Available Software
Preferences

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

Restart will be required.
New

Select All
Install

Details

Overview
Tech Specs
Support

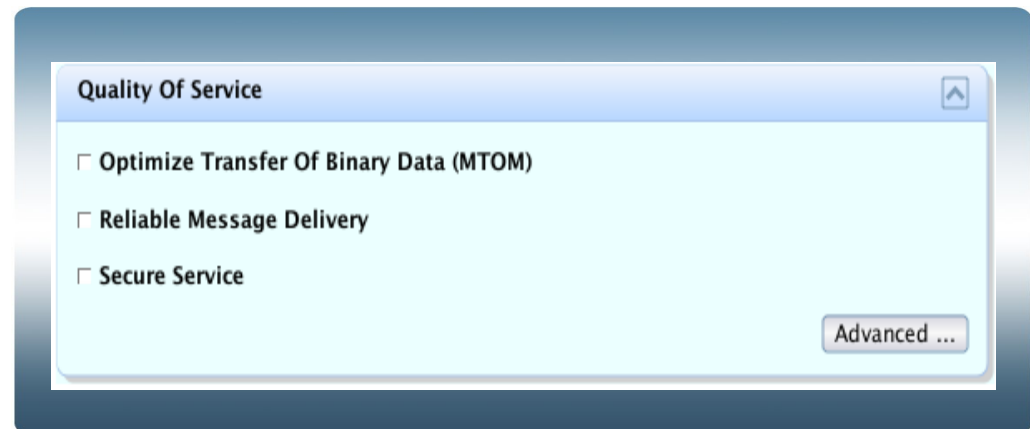


Version: 1.0
Source: Sun Microsystems Inc.
Homepage: <https://ajax.dev.java.net>

Overview

Project Metro – Web Services Stack

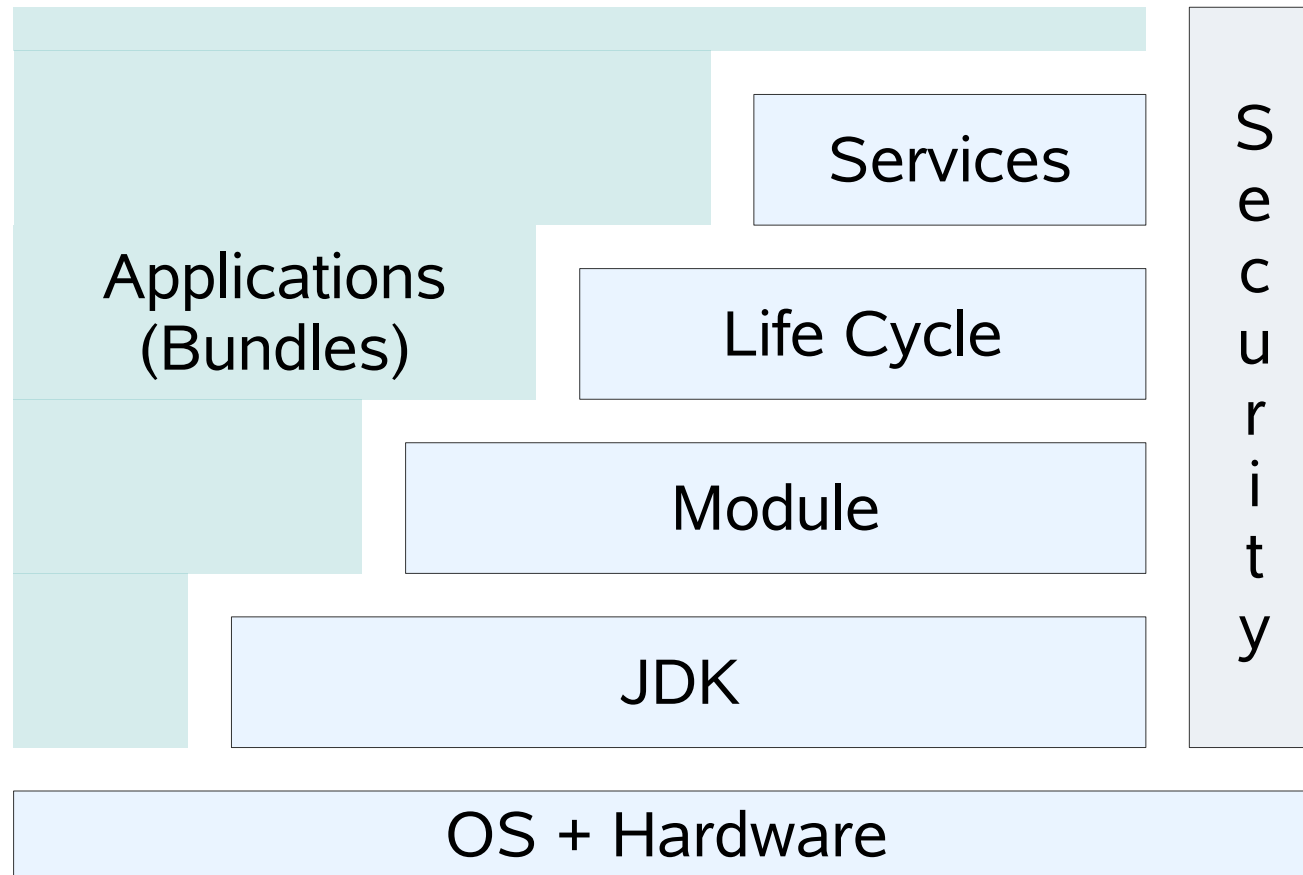
- Secure, Reliable and Transactional
- High performance
- Inter-operable with Microsoft .NET 3.0
- NetBeans integration
- Industry-adopted
 - > Jboss, BEA, IBM, TMaxSoft



GlassFish v3

- Small, Modular, Fast
 - > Technology Preview available today (<1.0 sec startup)
 - > Totally Modular, kernel is <100K
- An ideal Container for Web 2.0
 - > Java Web Applications, Phobos, jRuby/RoR, ...
 - > Support for upcoming Java EE 6 profiles
- Don't think of it as a Java EE container
 - > ... rather a container that can do Java EE
- Still early stages... working on schedule

OSGi R4 Runtime & GlassFish V3



GlassFish and Sun product

- GlassFish is an open source application server
- Sun adds installer, brands, indemnifies and supports

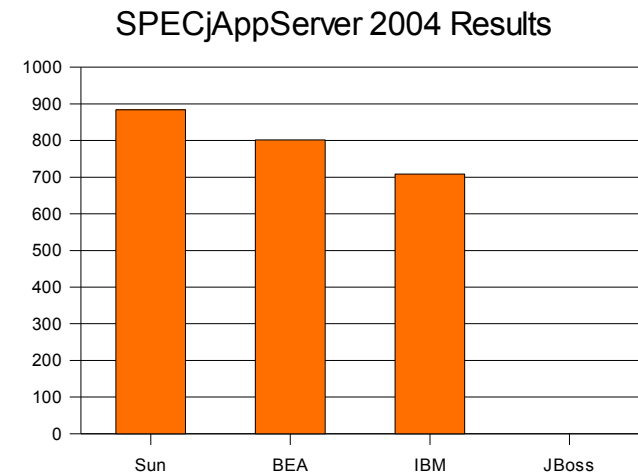
GlassFish Version	Sun Supported Version
GlassFish V1	Sun Application Server PE 9.0
GlassFish V2	Sun Application Server 9.1
GlassFish V3	Sun Application Server.NEXT ⁽¹⁾

⁽¹⁾ Product Name TBD

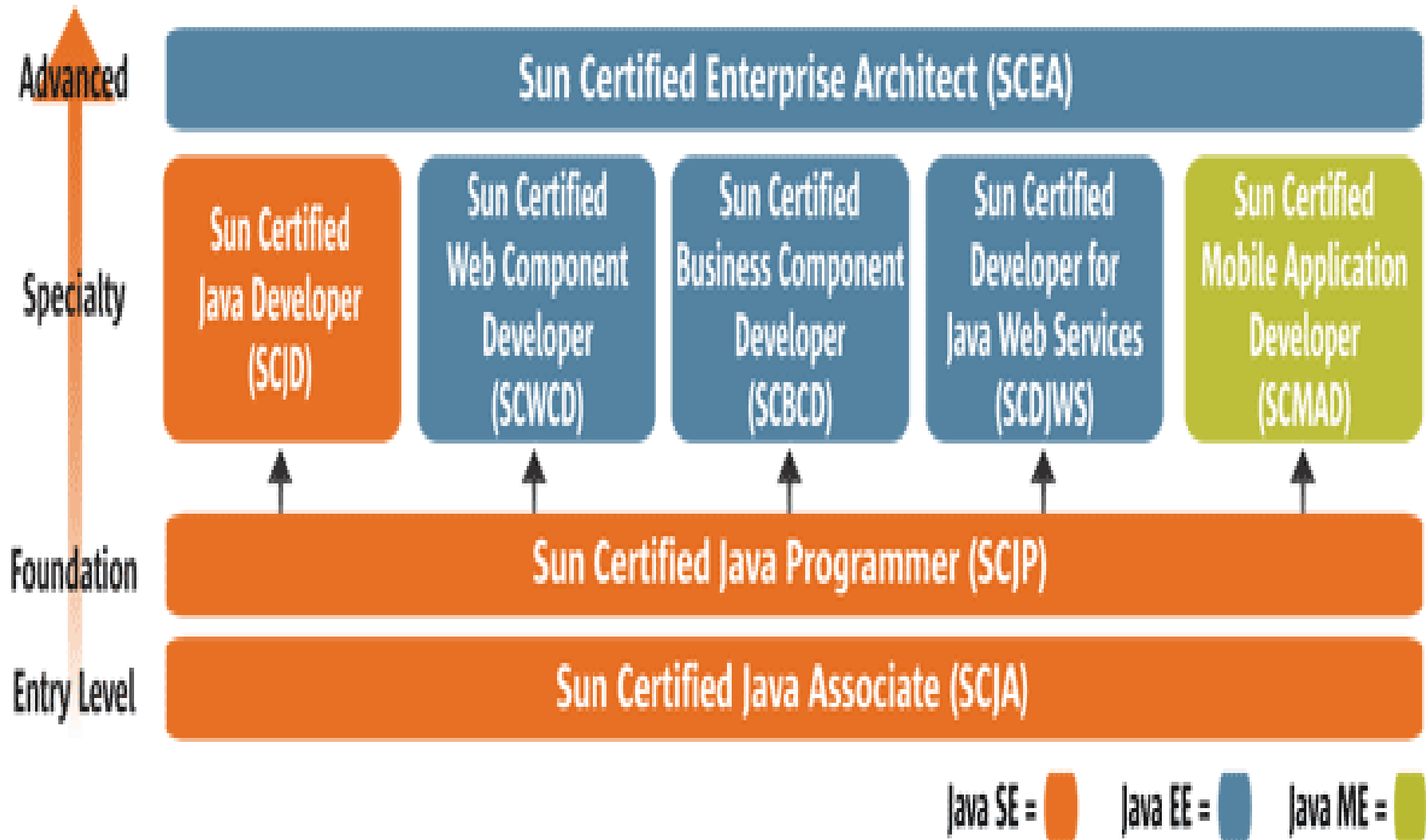
Best-In-Class Performance

SPECjAppServer 2004

- SJS Application Server 9.1: 883.66 JOPS
- Best-in-class performance
 - > 10% faster than BEA WebLogic 9.2
 - > 30% faster than IBM WebSphere 6.1
- Fastest open source result
 - > 813.73 with GlassFish V2!
 - > Replaces DB2 with PostgreSQL
- 2nd fastest multi-node SPECjAppServer 2004 appserver
 - > 80% the performance of #1
 - > With significantly less hardware



Java Certification





The Core Engine for Your Open Source Enterprise - GlassFish

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Demo

- Netbeans – Java Persistence API
- Groovy – Graphics Pad and Console
- GRails – Project Creation & Netbeans War Creation
- Web Services – Netbeans Web Services