



Creating Quick and Powerful Web Applications with MySQL, GlassFish, and NetBeans

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Innovation Everywhere

What is GlassFish ?



- **Open Source Community**
 - Users, Partners, Testers, Developers, ...
 - Started in 2005 on java.net
- **Application Server**
 - Java EE 5 and 6 Reference Implementation
 - Enterprise Quality and Open Source
 - Full Commercial Support from Sun



State of GlassFish



■ GlassFish v2

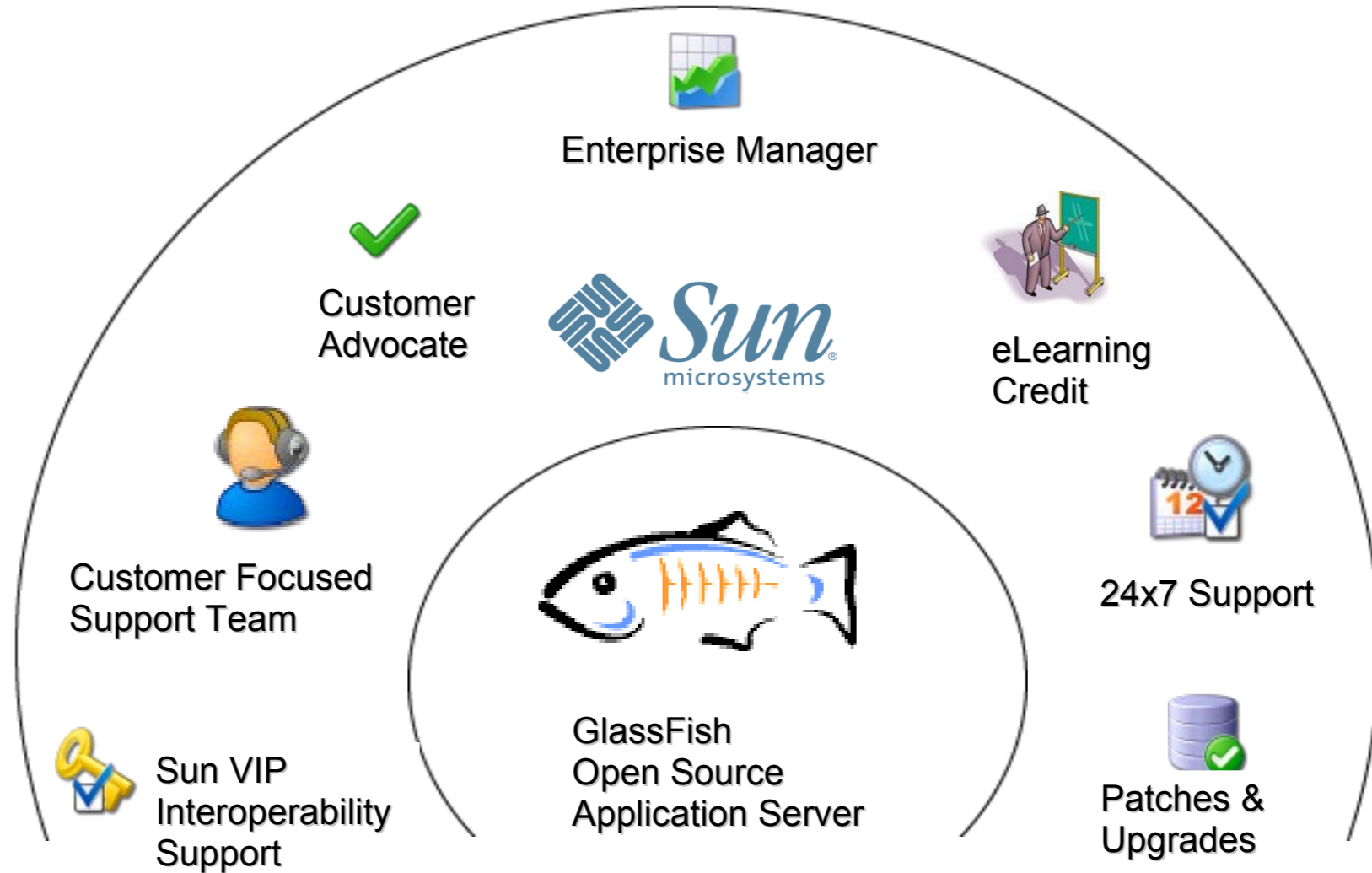
- Java EE 5 Reference Implementation
- Clustering, Load Balancing, High Availability
- Web-based/CLI Administration Console
- .NET 3.x/4.x Web services Interoperability
- Current Release: 2.1

■ GlassFish v3

- Java EE 6 Reference Implementation
- Modular (OSGi), Embeddable, Extensible
- Java EE, Rails, Grails, Django, ...
- Current Release: v3 Prelude



Sun GlassFish Enterprise Server





Demo: JDBC Connection Pool & Resource creation using Administration Console

Java Persistence API

- Java specification that defines Object to Relational Mapping in Java EE 5
- Annotations to persist POJOs
- JPQL to query objects from the database
 - MySQL-specific query statements (LIMIT)
- Requires a Persistence Provider and a Database
 - Common Persistence Providers: TopLinkEssentials, EclipseLink JPA, ...
 - Common Databases: MySQL, Oracle, ...



JPA Sample



```
@Entity class Employee {  
  
    @Id private int id;  
  
    private String firstName;  
    private String lastName;  
  
    public Employee (int id,  
                    String firstName,  
                    String lastName) {  
  
        ...  
    }  
  
    public String getFullName() {  
        return firstName + lastName;  
    }  
  
    ...  
}
```



Demo: CRUD operations using NetBeans, JPA, and GlassFish

RESTful Web Services



- JAX-RS: Java API for RESTful Web services
- Annotation-based server-side API
- HTTP Centric
- Jersey: Reference Implementation of JAX-RS
- Also provides client-side API



JAX-RS Sample



```
@Path("widgets/{id}")
@Produces("application/widgets+xml")
@Consumes("application/widgets+xml")
public class WidgetResource {

    private Widget w;

    public WidgetResource(@PathParam("id") String id) {
        this.w = locateRecord(id);
    }

    @GET
    Widget getWidget() {
        return w;
    }

    @PUT
    Widget updateWidget(Widget update) {
        w = processUpdate(update);
        return w;
    }
}
```



Demo: Publish your MySQL Table as a RESTful Web service

Dynamic Languages and Web Frameworks



<http://glassfish-scripting.dev.java.net>

Rails on GlassFish

- Native Deployment, no packaging required
 - GlassFish v3
 - Capistrano recipes available
 - Server runtime available as Gem
- WAR deployment using Warbler
 - GlassFish v2 and v3
- JRuby/Rails (& Groovy/Grails) modules at Update Center
- Commercially supported by Sun





Demo: Develop, Deploy, and Debug Rails application using NetBeans and GlassFish

GlassFish Web Stack

Complete Web Tier



memcached



MediaWiki, Drupal, Wordpress,
Joomla — deploy in minutes!

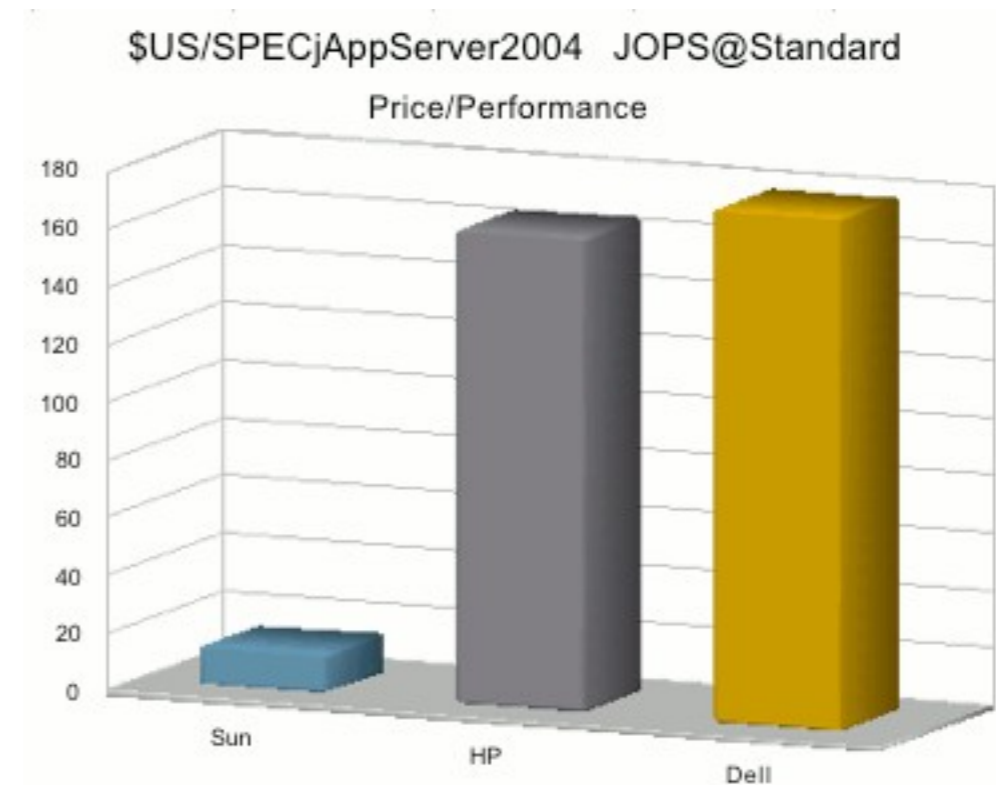
- Sun Web Server
- Apache HTTPd
- GlassFish
- Lighttpd
- Memcached
- Mod_jk,perl, ruby
- PHP, Ruby, Python
- Squid, Tomcat

- http://www.sun.com/software/products/glassfish_portfolio/
- BoF: TBD

Price Performance

SpecjAppServer2004 (Nov 2008)

- 2% cost of Dell, 5% cost of HP
- 13 times better price/performance



<http://www.sun.com/servers/x64/x4150/benchmarks.jsp#3>

Why GlassFish and MySQL ?



- Same pricing strategy – per server, unlimited
- Same support levels – Gold, Silver, ...
- Same support organization – No buck passing
- Combined reference architectures
 - MySQL cluster and Sailfin: http://www.sun.com/offers/details/mysql_cg_service_execution.html

References



■ GlassFish

- <http://glassfish.org>
- <http://blogs.sun.com/theaquarium>

■ NetBeans

- <http://netbeans.org>
 - <http://planetnetbeans.org/>
- <http://blogs.sun.com/arungupta>

