

Java EE 7 Soup to Nuts

Arun Gupta, Red Hat
@arungupta



- More annotated POJOs
- Less boilerplate code
- Cohesive integrated platform

- WebSockets
- JSON
- Servlet 3.1 NIO
- REST

- Batch
- Concurrency
- Simplified JMS

Top 10 features

- WebSocket client/server endpoints
- Batch Applications
- JSON Processing
- Concurrency Utilities
- Simplified JMS API
- Transactions in POJO
- JAX-RS Client API
- Default Resources
- More annotated POJOs
- Faces Flow

Compliant Application Servers

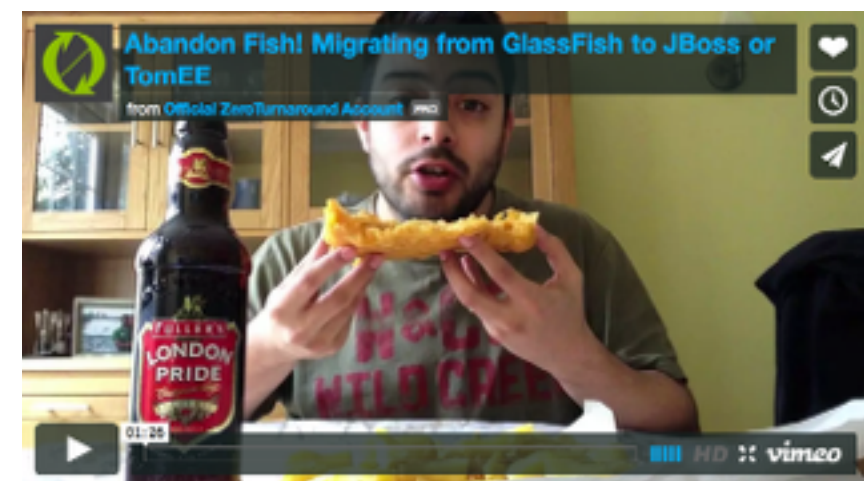


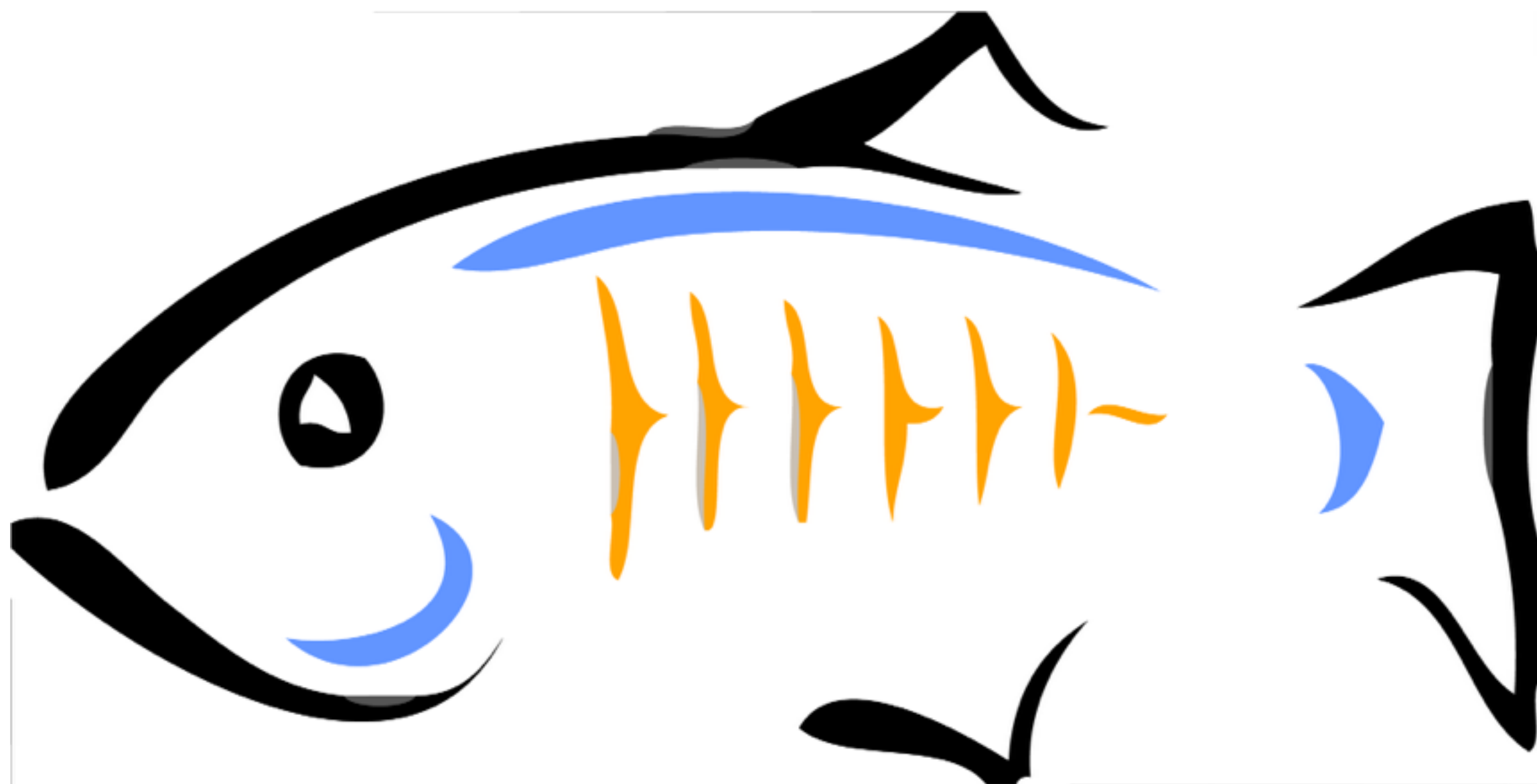
- GlassFish 4.0
- WildFly 8.x
- JEUS 8

GlassFish



- Reference Implementation (Jun 2013)
- No commercial support from Oracle, users encouraged to move to WebLogic
- <http://zeroturnaround.com/rebellabs/abandon-fish-migrating-from-glassfish-to-jboss-or-tomee/>
- 4.1 this year
- 5.0 aligned with Java EE 8





- Always on the bleeding edge
- Powerful CLI and REST
- Module versioning
- Enterprise OSGi
- NetBeans co-bundle

S

- No real OSS community, high hurdles to contribute
- Untested clustering
- No commercial support/adoption
- No upgrade path
- Slow releases
- No PaaS, Jelastic/v3

W

- Should be the showcase of EE development
- Oracle not willing to monetize?
- Lodgon and C2B2 offering commercial support

O

- No vision beyond RI
- No upgrade path
- WildFly and JBoss EAP, TomEE, Tomcat

T

WildFly



- Compliance achieved in 8.0 (Feb 2014)
- Commercial support coming in JBoss Enterprise Application Platform (EAP) 7
- 8.1 released, 9.0 later this year
- EAP 7 next year



- Commercially backed by Red Hat (JBoss EAP)
- Defined OSS process, contributions are easy (github)
- Modular, lightweight, fast
- Powerful CLI, REST, Java API
- Active community members
- Lot of docs, 3rd-party books, articles
- High performance web container
- Reduced port usage

S

- Need explicit migration to JBoss EAP
- Lots of projects run on top of the platform

W

- Admin console delinked from internal model
- Integrated NoSQL
- Co-bundle with NetBeans or Eclipse
- Intelligent Management

O

- WebSphere ND
- WebLogic Server
- Tomcat

T

JEUS



- Developer Preview available
- Final coming in 2014
- Roadmap ?

Preparing to install...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...

Launching installer...

Preparing CONSOLE Mode Installation...

```
=====
JEUS8.0                (created with InstallAnywhere by Macrovision)
=====
```

The installer cannot run on your configuration. It will now quit.



- **Java EE 7 compliance**
- **Strong in Korea?**

S

- **Could not install Developer Preview on Mac OSX**
- **Developer tooling**
- **Ant-based tools to create domain**
- **Poor docs**

W

Web Application Server

- **One of the first ones to achieve compliance**

O

- **WildFly and JBoss EAP**
- **GlassFish**
- **TomEE**

T

Liberty Profile

- Beta - can't process Servlet 3.1 XSD
- Roadmap ?
 - Version #
 - Timeline

WASdev

- On road to Java EE 7 compliance

S

- Like other WebsFear products, not easy to use
- Piecemeal compliance

W

- WebSphere ND is WebsFear

O

- WildFly and JBoss EAP
- TomEE
- WebLogic

T

Components

Component	JSR	GlassFish	WildFly	JEUS
Java API for WebSocket	356	RI/Tyrus	Undertow	Internal
Java API for JSON Processing	353	RI	RI*	??
Concurrency Utilities for Java EE	236	RI	RI*	Internal
Batch Application for Java Platform	352	RI	JBeret	RI*
Java API for RESTful Web Services	339	RI/Jersey	RESTEasy	RI*
Java Message Service	343	RI/OpenMQ	HornetQ	JORAM
Context and Dependency Injection	346	RI*	RI/Weld	RI*
Bean Validation	349	RI*	RI/Hibernate	RI*
Java Persistence API	338	RI/EclipseLink	Hibernate	RI*
Java Connector Architecture	322	RI/OpenMQ	HornetQ	Internal
Java Transaction API	907	Internal	Narayana	JOTM
JavaServer Faces	344	RI/Mojarra	RI*	RI* + MyFaces
Expression Language	341	RI	RI*	RI*
Servlet	340	RI/Internal	Undertow	Tomcat + Jetty
Enterprise JavaBeans	345	RI/Internal	Internal	EasyBeans
Java API for XML-based Web Services	224	RI/Metro	JBossWS	??
		97 MB	124 MB	153 MB

<http://arjan-tijms.blogspot.com/2014/05/implementation-components-used-by.html>

NetBeans

- Pleasant experience OOTB
- Wizards for WebSocket, JAX-RS, JAX-WS, JPA, CDI, EJB, Bean Validation, JSF, Servlet, JSP
- Support for GlassFish, WildFly (8.0.1)



NetBeans

- Pleasant experience OOTB
- No plugin hunting
- Maven
- Tight integration, ease-of-use working with GlassFish team

S

- Concerns around commitment from Oracle
- Lack of support for more application servers

W

- Better integration with Mozilla, IE, Safari as with Chrome

O

- IntelliJ
- Eclipse

T

JBoss Tools



- Eclipse plugins for JBoss technology
 - Java EE
 - Mobile
 - HTML5
 - Arquillian
 - Forge
 - BPM
 - . . .



JBoss Tools

- Wide Eclipse base
- Required plugins are packaged
- Mature JAX-RS 2.1 and CDI 1.1 support
- Wide range of application servers

S

- Issues within base Eclipse
- Require explicit configuration

W

- TBD

O

- NetBeans

T

IntelliJ



- **Good Java EE support**
- **Refactoring of JPQL**
- **Navigation through CDI beans (with alternatives, decorators, etc)**
- **Maven integration**
- **Supports most app servers**
- **Good community**

S

- **Java EE features are for paid users only**

W

- **Better integration with other app servers**

O

- **NetBeans and Eclipse for better app server integration**

T

Forge

- WORAI for Java EE (using Maven)
 - Aids in automation of repetitive tasks
 - Generation of boilerplate code
 - In-built support for Java EE 6 and 7
- Extensible by design
- Test-driven development
- Offers productivity to beginners and experts alike



- CLI-driven, IDE integration
- Support for Java EE 6 and 7
- Extensible
- Can be scripted, automate repetitive tasks
- Test-driven development
- Eclipse and IntelliJ plugin

S

- Documentation for adding extensions

W

- NetBeans plugin
- NetBeans wizards based upon Forge

O

- TBD

T

PaaS

CloudBees





CloudBees

- First Java EE 7 compliance - by 2 days ;)
- Eclipse toolkit, IntelliJ as well

S

- Developer “portal” is very crowded - 3 GlassFish and 5 WildFly ClickStarts
- Require database subscription in order to use WildFly
- Restricted free tier - 100 mins/month, 5 MB MySQL

W

- TBD

O

- OpenShift
- CloudFoundry

T

OpenShift





OPENSIFT

- **One throat to choke - community or commercial**
- **Pluggable cartridge**
- **Cool website**
- **Auto scaling in free plan**

S

- **Ecosystem**

W

- **xPaaS**

O

- **Lack of PaaS leadership**
- **CloudBees**
- **CloudFoundry**

T

Arquillian

- Highly extensible testing platform for the JVM that enables to easily create automated tests.
 - **Manage** the lifecycle of container
 - **Bundle** the test case into a ShrinkWrap archive
 - **Deploy** the archive to the container
 - **Enrich** the test case with DI and declarative services
 - **Execute** the test inside the container
 - **Capture** the results

- Tests at javaee7-samples are run using Arquillian, so all technologies are testable

Getting Started with Arquillian

- Vanilla Java EE 7 application

```
mvn
```

```
archetype-generate
```

```
--batch-mode
```

```
-DarchetypeGroupId=org.codehaus.mojo.archetypes
```

```
-DarchetypeArtifactId=webapp-javaee7
```

```
-DgroupId=org.javaee7.sample
```

```
-DartifactId=javaee7-sample
```

```
-Dpackage=org.javaee7.sample
```

Getting Started with Arquillian

- Testable Java EE 7 application

```
mvn
```

```
archetype:generate
```

```
-DarchetypeGroupId=org.javaee-samples
```

```
-DarchetypeArtifactId=javaee7-arquillian-archetype
```

```
-DgroupId=org.samples.javaee7.arquillian
```

```
-DartifactId=arquillian
```

Testable Java EE 7 App

- Generated profiles
 - wildfly-remote-arquillian
 - wildfly-managed-arquillian
 - glassfish-remote-arquillian
 - glassfish-embedded-arquillian

Test on WildFly

- Download WildFly 8.1 from wildfly.org
- Unzip and start as `bin/standalone.sh`
- Run the test as:
`mvn test -Pwildfly-remote-arquillian`

Test on GlassFish

- Download GlassFish 4.1 from glassfish.org
- Unzip and start as `bin/asadmin start-domain`
- Run the test as:
`mvn test -Pglassfish-remote-wildfly`

- How to add Arquillian dependencies to an existing project

Acknowledgments

- John Yearly (@jyearly)
- Antonio Goncalves (@agoncal)
- Roberto Cortez (@radcortez)
- Several folks from Red Hat