Java EE 7
Soup
to
Nuts

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Java™
ENTERPRISE EDITION

DEVELOPER PRODUCTIVITY

Java EE 7

HTML 5

MEETING ENTERPRISE DEMANDS

- 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
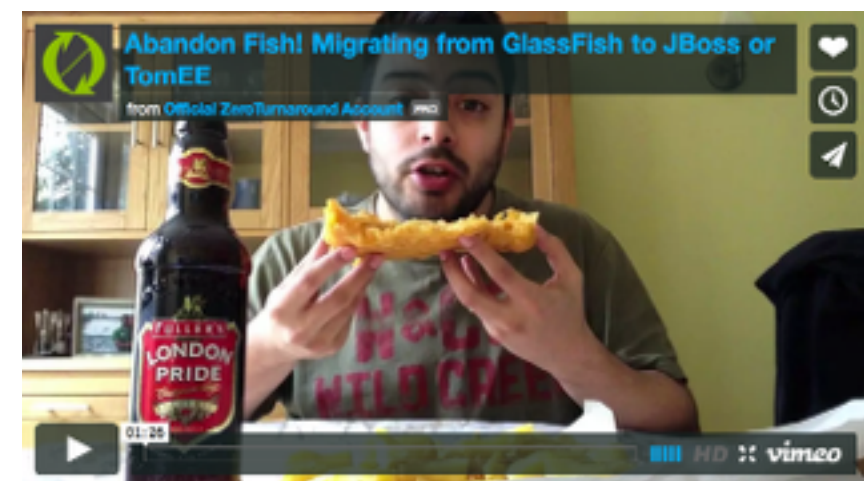
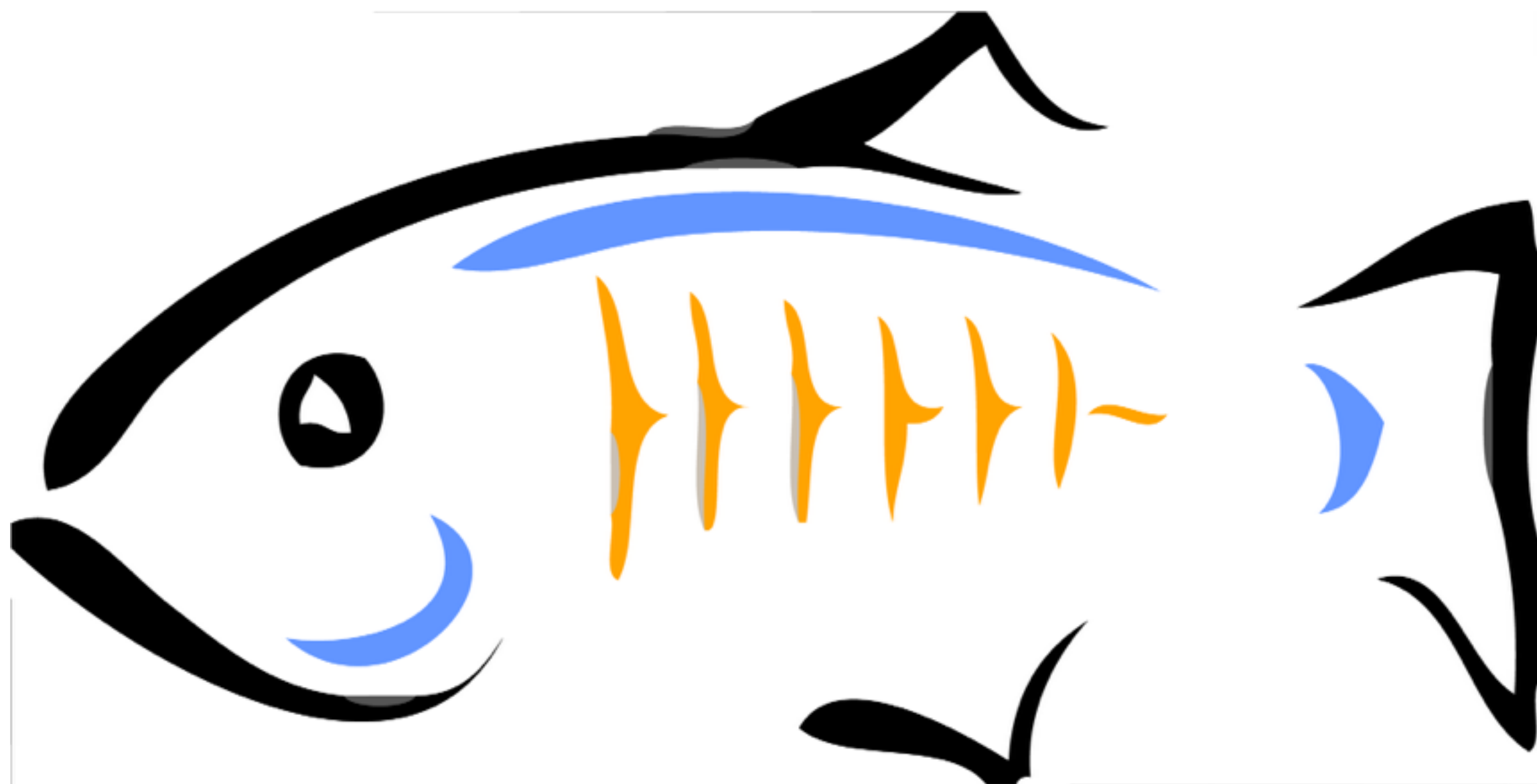- Faces Flow

Compliant Application Servers

- GlassFish 4.0

- WildFly 8.x

- JEUS 8

- On way …

  - JBoss EAP, WebLogic, Liberty Profile

http://www.oracle.com/technetwork/java/javaee/overview/compatibility-jsp-136984.html

GlassFish

- Reference Implementation (Jun 2013)

- No commercial support from Oracle, users encouraged to move to WebLogic

  - Commercial support from LodgON and C2B2

  - http://zeroturnaround.com/rebellabs/abandon-fish-migrating-from-glassfish-to-jboss-or-tomee/

- 4.1 released (Sep 2014)

- 5.0 aligned with Java EE 8

S

- Always on the bleeding edge
- Powerful CLI and REST
- Modular, lightweight, ~fast
- Module versioning
- Enterprise OSGi
- NetBeans co-bundle

W

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

O

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

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- No vision beyond RI
- WildFly and JBoss EAP
- TomEE
- Tomcat
- Liberty Profile

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

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- 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

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

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

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- WebSphere ND
- WebLogic Server
- Tomcat

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?**

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- **Could not install Developer Preview on Mac OSX**

- **Developer tooling**

- **Ant-based tools to create domain**

- **Poor docs**

W

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

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- **WildFly and JBoss EAP**

- **TomEE**

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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	??
		108 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

JBoss Tools

- Eclipse plugins for JBoss technology

  - Java EE

  - Mobile

  - HTML5

  - Arquillian

  - Forge

  - BPM

  - . . .

JBoss Tools

IntelliJ

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

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- **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**

W

- **Documentation for adding extensions**

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- **NetBeans plugin**
- **NetBeans wizards based upon Forge**

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- **TBD**

PaaS

OpenShift

OPENSHIFT

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- One throat to choke - community or commercial
- Pluggable cartridge
- Cool website
- Auto scaling in free plan
- Only Java EE 7 offering

W

- Ecosystem

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- xPaaS

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- Lack of PaaS leadership
- AWS Beanstalk
- CloudFoundry

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

Jenkins

JRebel

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