Java EE 7 Soup to Nuts

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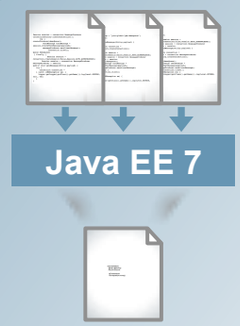
Java™

ENTERPRISE EDITION

DEVELOPER PRODUCTIVITY

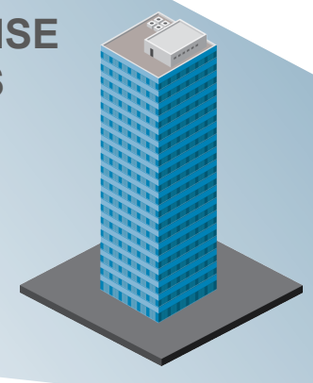


- More annotated POJOs
- Less boilerplate code
- Cohesive integrated platform

HTML

- WebSockets
- JSON
- Servlet 3.1 NIO
- REST

MEETING ENTERPRISE DEMANDS



- 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

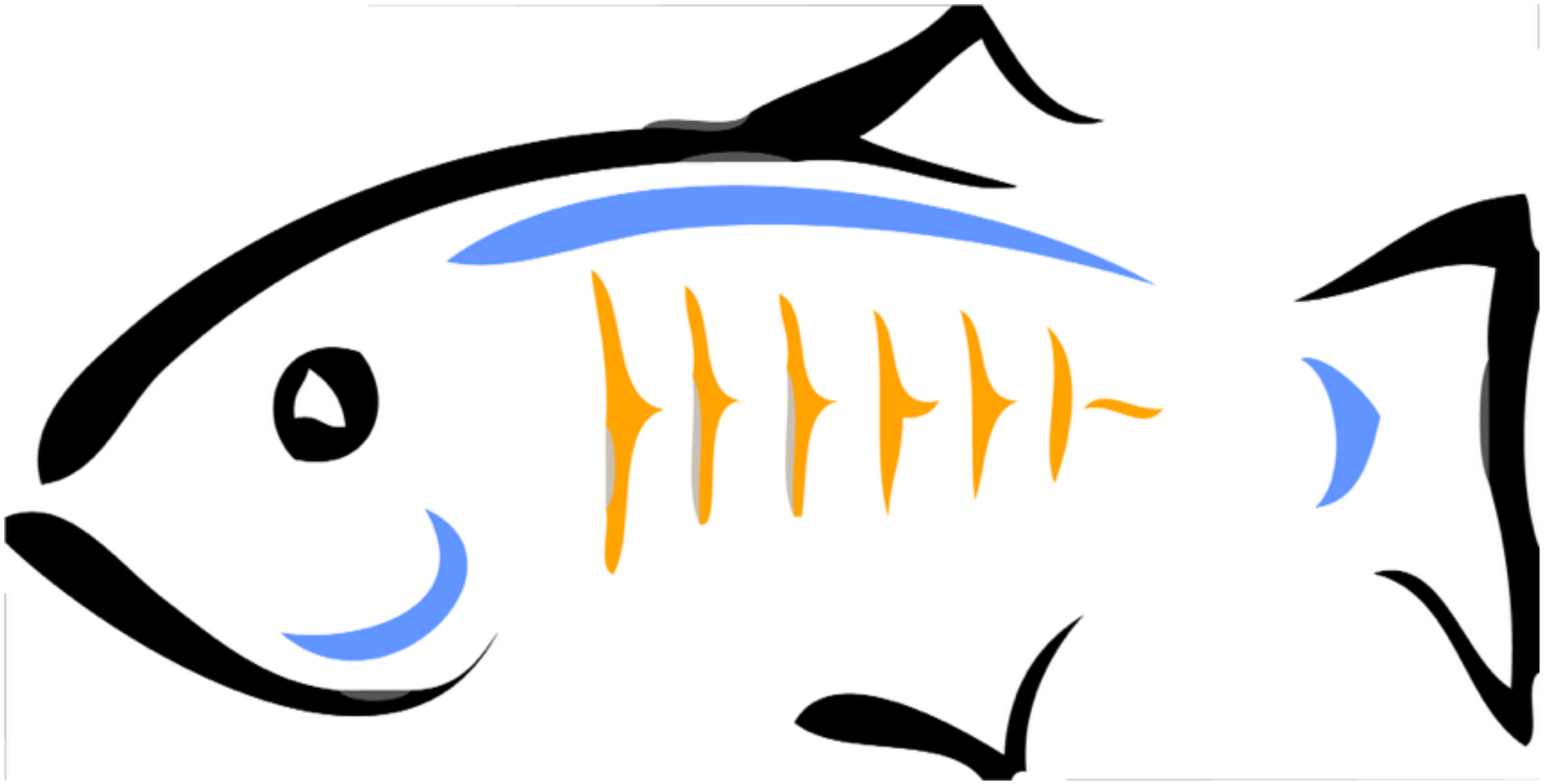
Compliant Application Servers

- GlassFish 4.0
- WildFly 8.x
- JEUS 8

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
  - http://zeroturnaround.com/rebellabs/abandon-fish-migrating-from-glassfish-to-jboss-or-tomee/
- 4.1 this year
- Roadmap ?



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

W

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

O

- Oracle not willing to monetize?
- Lodgon and C2B2 offering commercial support

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

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
- Roadmap ?

WildFly

- 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

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- Need to migrate to JBoss EAP

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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

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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
- No response for request sent on 8/13/2014

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- TBD

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- WildFly and JBoss EAP
- GlassFish
- 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	??

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

NetBeans

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

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- Concerns around commitment from Oracle

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- JDeveloper is bloatware

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- IntelliJ

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JBoss Tools

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

JBoss Tools

- Wide Eclipse base
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- Issues within base Eclipse
- Require explicit configuration

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- TBD

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- NetBeans

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IntelliJ

- TBD

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- TBD

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- TBD

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- TBD

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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

JBoss
Forge

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

S

- Documentation for adding extensions

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- NetBeans and IntelliJ plugin
- NetBeans wizards based upon Forge

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- TBD

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PaaS

CloudBees

CloudBees

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

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- 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

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- TBD

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- OpenShift

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OpenShift

OPENSHIFT

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

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- Ecosystem

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- xPaaS

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- Lack of PaaS leadership
- CloudBees
- CloudFoundry

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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