



JakartaEE and the road ahead An ASF View

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About me

- **Mark Struberg**
- **25 years in the industry**
- **Apache Software Foundation member**
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- **RISE GmbH employee**
- **TU-Wien / INSO researcher**
- **Committer / PMC for Apache OpenWebBeans, MyFaces, TomEE, Maven, OpenJPA, BVal, Isis, DeltaSpike, JBoss Arquillian, ...**
- **Java JCP Expert Group member and spec lead**
- **MicroProfile Spec Author**
- **Twitter: @struberg**

Agenda

- **History of JavaEE**
- **JakartaEE HowTo?**
- **What about MicroProfile**
- **ASF involvement**
- **ASF projects**
- **Modern EE stacks @ASF**

JakartaEE

The History of JavaEE

- **1998 - First Specifications, e.g. EJB1**
- **2003 - Spring Framework**
- **2006 - JavaEE 5**
 - first really usable release
- **2009 - JavaEE 6**
 - really usable, CDI-1.0, JAX-RS, Interceptors, etc
- **2013 - JavaEE 7**
 - 'Cloud Release wannabe' (aka Rohrkrepierer)
- **2017 - JavaEE 8**
 - JSON-P-1.1, JSON-B-1.0
 - smallish updates, mainly community driven

JakartaEE

- **late 2017 Oracle decided moving JavaEE to OSS**
- **Hosted by the Eclipse Foundation**
- **'Jakarta' mark sponsored by the ASF**
- **Next planned release is Jakarta EE9**
 - EE8 plus minor fixes

Governance Model of JakartaEE

- **Eclipse EE4J project**
- **Charter not yet final afaik**
- **4 committees:**
 - Steering Committee
 - Specification Committee
 - Marketing Committee
 - Enterprise Requirements Committee
- **Plus the single projects (specs) -> real work done**
- **A seat on the Committees requires to be a 'Strategic Member' -> big \$\$ per year**

JakartaEE benefits

- **OSS governance (sort of...)**
- **Open TCKs, available under permissive license!**
 - some Eclipse people say it will *not* be free of charge to use the official 'licensed' sticker though!
 - They are not yet fully open sourced, work in progress afaik.
- **Free to contribute and join for individuals**
 - The ASF will not have a seat on the table though :(
 - Required to join EF as Committer Member
- **More open IP flow**
 - Under the JCP, IP did by default flow to Oracle

JakartaEE howto contribute

- <https://jakarta.ee>
- **Hosted on GitHub**
 - <https://github.com/eclipse-ee4j/>
 - Repos are mixture of RI and specs :(
- **Most discussions still on <http://javaee.groups.io>**
- **Some mailing lists already got moved to EF:**
 - <https://accounts.eclipse.org/mailling-list>
 - in practice there are tons of back-channel discussions :(

MicroProfile

MicroProfile History

- **Started as independent effort in 2016**
- **Goal: introduce modern concepts to JavaEE**
 - Oracle was blocking EE8 progress back then
 - 'cloud native done right'
- **Subset Java EE Profile for MicroServices**
 - CDI-1.2, JAX-RS-2.0, JSON-P-1.0
 - plus own specs added over time
- **Moved to the Eclipse Foundation in 2017**
 - but all parts are Apache License v2.0!
- **Main participants: JBoss, IBM, Payara, ASF individuals, some JUGs**

MicroProfile Howto get Involved

- **Community hangouts every 2 weeks plus weekly topic hangouts**
 - See Calendar at <https://projects.eclipse.org/projects/technology.microprofile>
- **Main communication via google groups:**
 - <https://groups.google.com/forum/#!forum/microprofile>

Relation btw MicroProfile and JakartaEE

- **it's complicated ...**
- **MP considers itself not as standards body**
- **MP is a place where innovation happens**
- **JavaEE is the place for standardisation**

MicroProfile Config

- **Main ideas taken from Apache DeltaSpike**
- **ASF even gets proper credits via NOTICE ;)**
- **Baseline for ConfigJSR (JSR-382)**
- **Spec:**
 - <https://github.com/eclipse/microprofile-config>
- **Impl: Apache geronimo-config:**
 - <https://svn.apache.org/repos/asf/geronimo/components/config/trunk/>
 - <mailto:dev@geronimo.apache.org>

Geronimo-config live example

- **hack hack...**

Other MicroProfile specs @ASF

- **mp-rest-client** in Apache CXF
- **geronimo-metrics**
 - <https://gitbox.apache.org/repos/asf/geronimo-metrics.git>
- **geronimo-opentracing**
 - <https://gitbox.apache.org/repos/asf/geronimo-opentracing.git>
- **microprofile-jwt-auth has even 2 impls @ASF**
 - geronimo-jwt as a common base
 - tomee-jwt with deep integration in Apache TomEE
- **microprofile-fault-tolerance**
 - geronimo-safeguard
- **microprofile-openapi**

Apache Java EE Parts

Servlets: Apache Tomcat

- **55% market share overall**
- **Alternatives: Undertow, Eclipse Jetty**
- **Non-HTTP:**
 - Socket Servers: Apache MINA, JBoss Netty
 - Messaging

Apache MyFaces: JSF

- <https://myfaces.apache.org>
- **Server Side Rendering**
 - Alternative: Java Script based rendering on the client. Angular, React, Vue.js
 - Alternative: Apache Wicket, Apache Struts2, Vaadin
- **Well suited for form driven apps**
 - rock solid data lifecycle
- **JSF Apps run since 10++ years**
 - and are still maintainable...

Apache CXF: JAX-RS and JAX-WS

- <https://cxf.apache.org>
- JAX-RS-2.1
- JAX-WS-2.0

Apache Johnzon: JSON-P

- <https://johnzon.apache.org>
- **JSON-P implementation (JSR-353, JSR-374)**
- **Spec available at**
 - <https://jcp.org/en/jsr/detail?id=353>
 - <https://jcp.org/en/jsr/detail?id=374>
- **Generate and Read JSON (JSON-P)**
 - Stream API
 - JsonValue based API
- **JsonPointer support**
- **JsonPatch, JsonMergePatch support**

Apache Johnzon: JSON-B

- **JSON-B (JSR-367) implementation**
 - <https://jcp.org/en/jsr/detail?id=353>
- **transfer Java Objects <-> JSON (JSON-B)**
 - Similar to JAX-B, but better ;)

Apache Johnzon: JSON-P & JSON-B

- **hack hack...**

Apache OpenWebBeans: CDI

- <https://openwebbeans.apache.org>
- **CDI: Contexts and Dependency Injection for Java.**
 - Core DI specification for Java
 - Typesafe Dependency Injection
 - Interceptors, Events, Decorators, ...
 - Extensible through CDI-Extensions
- **OWB is**
- **CDI is the core of every modern JavaEE server!**
 - a fast and small CDI-2.0 container
 - Modular built, core only 650kB

Apache OpenWebBeans: basics

- <https://openwebbeans.apache.org>
- A fast and small CDI-2.0 container
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- **The core of every modern JavaEE server!**

Apache Geronimo

- **Attention: NOT the Geronimo Server!**
 - that one is retired and EOL...
- **Many useful EE components**
 - geronimo-specs
 - xBean
 - geronimo-config
 - transaction manager
 - javamail
 - various MicroProfile specification implementations

Apache Meecrowave

- **Subproject of Apache OpenWebBeans**
- **<https://openwebbeans.apache.org/meecrowave/>**
- **MicroProfile-2.0 baseline server:**
 - Servlet-4.0 (Tomcat)
 - CDI-2.0 (OpenWebBeans)
 - JAX-RS-2.1 (CXF)
 - JSONP-1.1, JSONB-1.0 (Johnzon)
 - + log4j2
- **...all that in only 9 MB...**

Apache Meecrowave

- **hack hack ...**

Other Apache EE projects

- **Apache OpenJPA**
 - <https://openjpa.apache.org>
 - still alive ;) , very stable implementation
- **Apache BVAL**
 - <https://bval.apache.org>
 - Bean Validation 2.0 implementation almost finished
- **Apache BatchEE**
 - JSR-352 JBatch implementation

Apache TomEE

- <https://tomee.apache.org>
- **Web Profile Server**
- **Full Profile Server**
- **Small and Fast**
- **Based on Apache Tomcat**
 - lightweight like Tomcat
 - full featured like commercial servers

Questions?