Connect OSGi and Spring
Carsten Ziegeler, Adobe
Carsten Ziegeler

- Principal Scientist @ Adobe
- Member of the Apache Software Foundation
- PMC Member of Apache Felix and Sling
- OSGi Expert Groups and Board member
Modularity
Todays Software

- Complex Software Systems
- Cloud
- Microservices
- (Desktop)
Software-ICs

Modules

API

Requirements / Capabilities
Modularity Is Key

- Complex software systems
- Sustainable Software
- Extensibility
- Interchangeability
- Reuse / Consistency
Modularity in Java
Modularity with Java === OSGi

- Modules
  - Requirements
  - Capabilities
  - Semantic Versioning
- Service Registry
- Extensions (Compendium)
  - IoC Container (Declarative Services)
Spring
Spring

- Core: Popular IoC container
- Dozens of extensions
- Tooling
- Spring Boot
## Core Concepts

<table>
<thead>
<tr>
<th></th>
<th>Spring</th>
<th>OSGi</th>
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<tbody>
<tr>
<td><strong>Modules</strong></td>
<td>Jar based ===&gt; classpath hell</td>
<td>Bundles incl class loading</td>
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<tr>
<td></td>
<td>Static</td>
<td>Dynamic</td>
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<tr>
<td><strong>Services</strong></td>
<td>IoC Container</td>
<td>Service Registry</td>
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<tr>
<td></td>
<td>Hierarchy</td>
<td>Flat</td>
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<tr>
<td></td>
<td>„Static“</td>
<td>Dynamic</td>
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<td></td>
<td>Name based</td>
<td>Interface + property based</td>
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<td>(Auto) Wiring</td>
<td>Separate IoC Container(s) with (auto) wiring</td>
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Use Case
Reuse / Consistency

- Web Framework (OSGi)
  - Apache Sling
- Set of libraries (Spring)
  - Authentication
  - Monitoring
  - Storage connectors
  - ...
Architecture

OSGi Connect

Spring Boot
- Jetty
- Libraries + Beans

OSGi Framework
- Http Service
- Apache Sling
- Application Code

Feature Model
- Bundles + Config
- Config (jars)
Connect
Reboot OSGi Connect (RFP 196 / RFC 243)

- Connect OSGi to the „outside“
- Popular Application Frameworks
- JPMS
- JARs on the classpath
- Native compilation
Modularity is Key

- Modularity in Java === OSGi Metadata
  - Buildtime vs Runtime
- New possibilities with OSGi Connect
  - Pick and choose
  - Dynamic vs static
  - Watch https://github.com/osgi/design/tree/master/rfcs/rfc0243
Q & A
EVALUATE THE SESSIONS

Sign in and vote using the conference app or eclipsecon.org

-1 0 +1