



Tim Ward | IBM

A crash course in OSGi application development

A whistlestop tour

- What do we mean by enterprise?
- Enterprise 4.2 specs
 - Web Applications
 - JPA Service
 - JNDI Service
 - JTA Service
- The blueprint component model
- Apache Aries packaging
- Live Demo!

What do we mean by “Enterprise”?

- My definition (marketing):
 - Mission critical
 - Large Scale
 - Return on investment

- My definition (technical)
 - Reliable
 - Accessible
 - Legacy

Web Applications (OSGi 4.2)

- Support for Web Application Bundles
 - OSGi bundles that are also WARs
 - Servlet 2.5 support
- Web-ContextPath header
- Obeys Bundle-Classpath

JPA Service (OSGi 4.2)

- Support for Java SE unmanaged JPA
 - Meta-Persistence header
- EntityManagerFactory services
- Apache Aries uses the same header and service model for managed JPA
 - Aries Blueprint extensions provide JPA resource injection

JNDI Service (OSGi 4.2)

- Allows standard JNDI providers and clients to work unchanged in OSGi
- The “osgi:” URL scheme allows JNDI access to the service registry
 - It even provides some dynamism

JTA Service (OSGi 4.2)

- Standardised access to
 - `UserTransaction`
 - `TransactionSynchronizationRegistry`
- Aries provides blueprint extensions for declarative transactions
 - Container managed
 - Method level granularity

OSGi Blueprint (OSGi 4.2)

- A fine-grained dependency injection container
 - Manages service dynamics
 - Supports complex internal wirings
- In Apache Aries blueprint is also the heart of the programming model

Application Packaging

- In OSGi the unit of deployment is the OSGi bundle
 - No overarching “Application”
- In Aries we define an Enterprise Bundle Archive (EBA)
 - It contains metadata describing the application

Application Packaging (2)

- An EBA lists the “core content”
 - More bundles may be provisioned to provide dependencies
- A bundle repository is used to locate bundles for provisioning
 - Bundles in the EBA can also be used
- Once provisioned an application has fixed content

Demo

- A simple stock trading application
 - It spans two databases, the “market” and the “brokerage”
- It uses:
 - A basic web front end
 - JPA
 - 2-phase container transactions
 - Blueprint
 - JNDI

Questions?

- Not much time now...
- Find me at the IBM stand outside if you think of anything later
 - More demos of Apache Aries in Open Source and in WebSphere