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