

JUDCon

JBoss Users & Developers Conference

2012: Boston



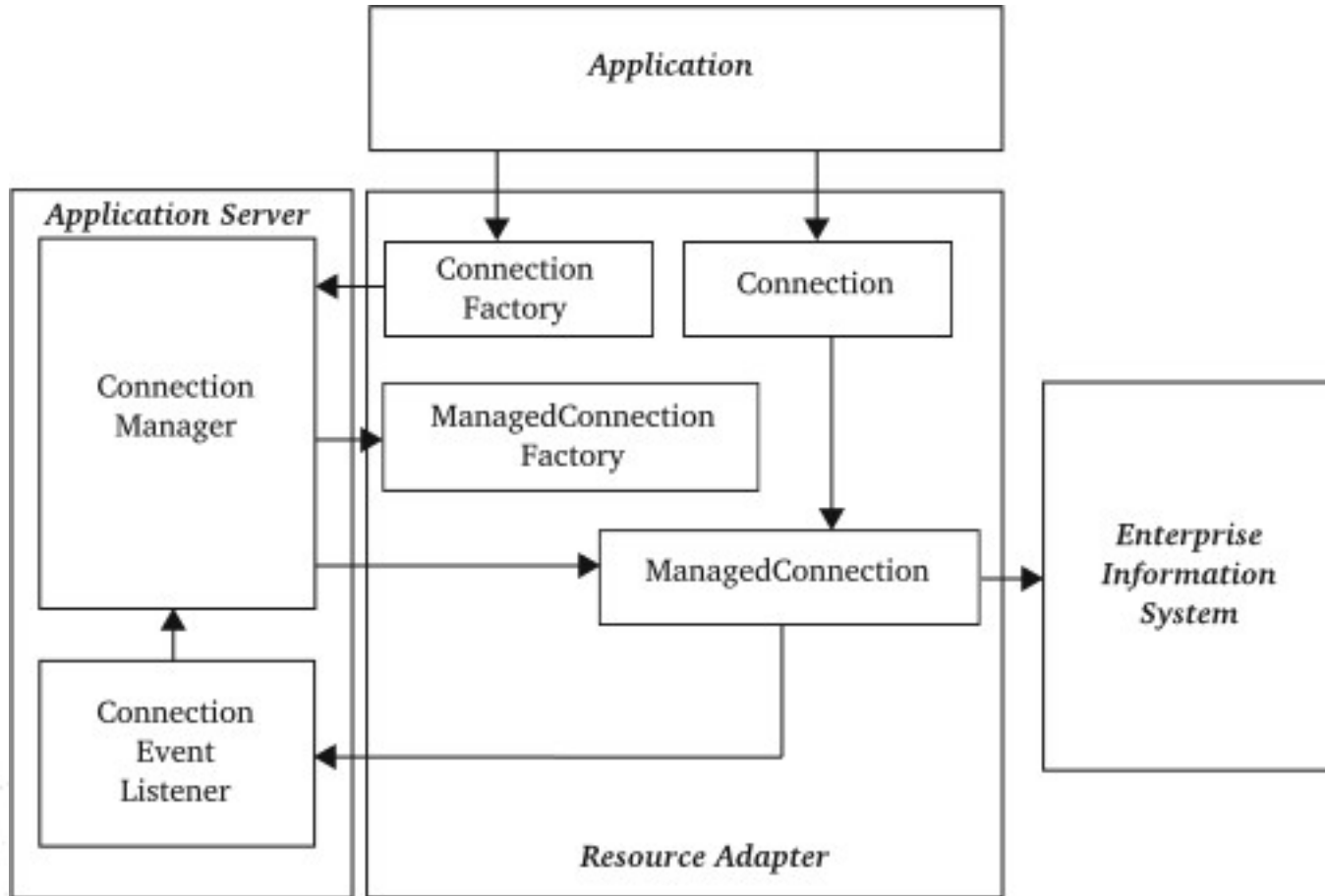
IronJacamar

- What is Java EE Connector Architecture ?
- IronJacamar in JBoss Application Server 7
- “Use the Force, Luke”
- IronJacamar 1.1

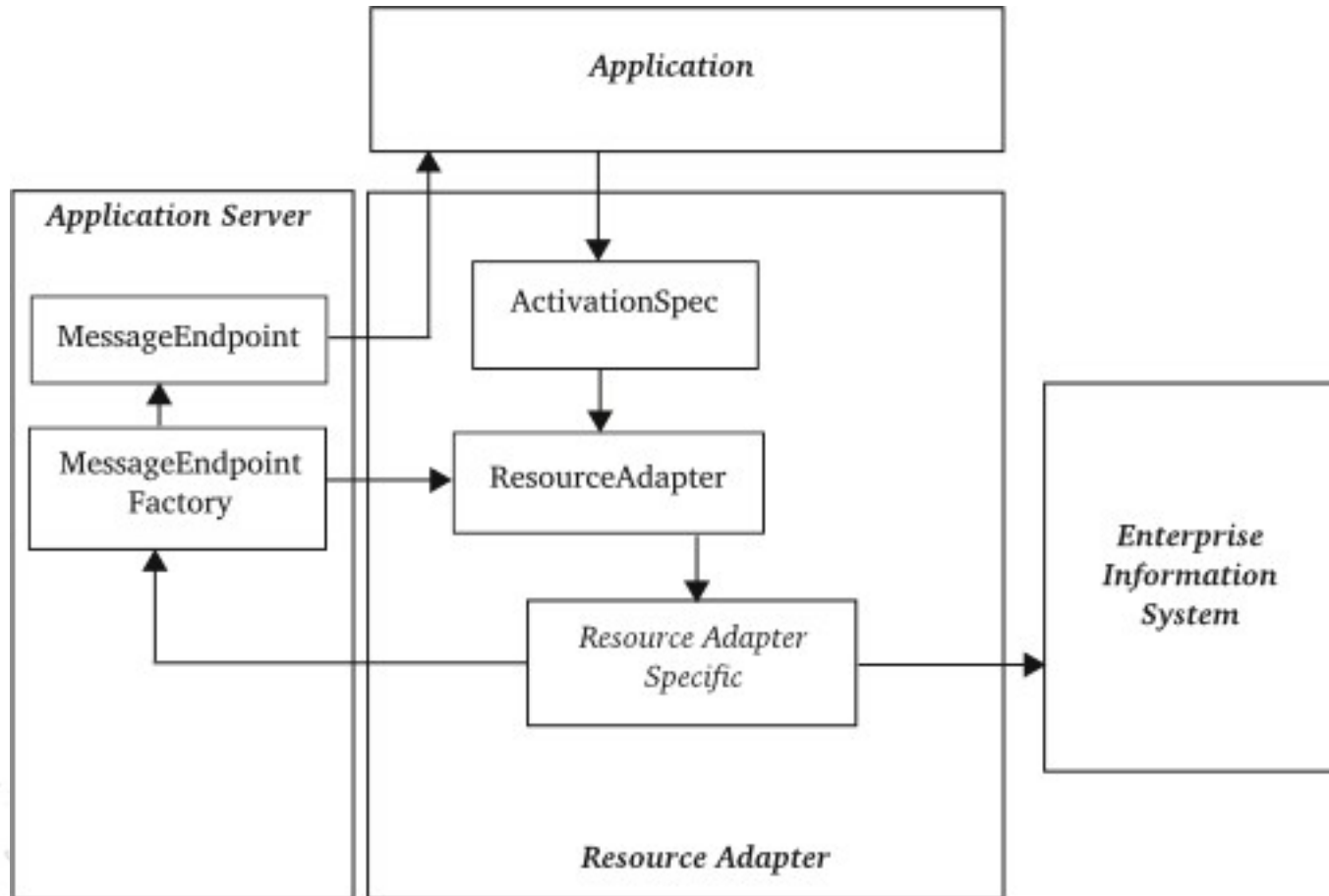
What is JCA ?

- Java Enterprise technology to integrate Enterprise Information Systems (EIS)
- Java EE Connector Architecture 1.6
 - JSR-322
 - Java Enterprise Edition 6
 - JBoss Application Server 7
- Resource adapter (.rar)

Outbound communication



Inbound communication



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IronJacamar in AS7

- :jca: subsystem
 - Global settings for resource adapter deployments
- :datasources: subsystem
 - Deployment of datasources
- :resource-adapters: subsystem
 - Configuration of resource adapter deployments

JCA subsystem

- Archive validation
 - Make sure that your resource adapter implement the specification correctly
- Bean validation
- Work managers
 - Default and custom
- Bootstrap contexts

Default JCA subsystem

```
<subsystem xmlns="urn:jboss:domain:jca:1.1">
  <archive-validation enabled="true" fail-on-error="true" fail-on-warn="false"/>
  <bean-validation enabled="true"/>
  <default-workmanager>
    <short-running-threads>
      <core-threads count="50"/>
      <queue-length count="50"/>
      <max-threads count="50"/>
      <keepalive-time time="10" unit="seconds"/>
    </short-running-threads>
    <long-running-threads>
      <core-threads count="50"/>
      <queue-length count="50"/>
      <max-threads count="50"/>
      <keepalive-time time="10" unit="seconds"/>
    </long-running-threads>
  </default-workmanager>
  <cached-connection-manager/>
</subsystem>
```

Datasources subsystem

- Deployment of datasources – do'h
 - <data-source>
 - <xa-data-source>
- Configuration of JDBC drivers
 - <drivers>
- -ds.xml deployment possible
 - But not best practice, and there are caveats
 - Same goes for JDBC drivers

ExampleDS

```
<subsystem xmlns="urn:jboss:domain:datasources:1.1">
  <datasources>
    <datasource jndi-name="java:jboss/datasources/ExampleDS"
                pool-name="ExampleDS">
      <connection-url>jdbc:h2:mem:test;DB_CLOSE_DELAY=-1</connection-url>
      <driver>h2</driver>
      <security>
        <user-name>sa</user-name>
        <password>sa</password>
      </security>
    </datasource>
  <drivers>
    <driver name="h2" module="com.h2database.h2">
      <xa-datasource-class>org.h2.jdbcx.JdbcDataSource</xa-datasource-class>
    </driver>
  </drivers>
</datasources>
</subsystem>
```

module.xml

```
<module xmlns="urn:jboss:module:1.1" name="com.h2database.h2">
  <resources>
    <resource-root path="h2-1.3.161.jar"/>
  </resources>
  <dependencies>
    <module name="javax.api"/>
    <module name="javax.transaction.api"/>
    <module name="javax.servlet.api" optional="true"/>
  </dependencies>
</module>
```

Resource adapters subsystem

- Resource adapters are special
 - A JCA container created for each activation and injected into the adapter instance
 - Deployment metadata
 - Activation metadata
- Hence we need to configure
 - `<resource-adapter>`
- Automatic activation
 - `ironjacamar.xml`

Sample configuration

```
<subsystem xmlns="urn:jboss:domain:resource-adapters:1.0">
  <resource-adapters>
    <resource-adapter>
      <archive>eis.rar</archive>
      <config-property name="Server">localhost</config-property>
      <transaction-support>XATransaction</transaction-support>
      <connection-definitions>
        <connection-definition class-
name="com.acme.eis.ra.EISManagedConnectionFactory"
                                jndi-name="java:/eis/AcmeConnectionFactory"
                                pool-name="AcmeConnectionFactory">
          <config-property name="Name">Acme Inc</config-property>
          <security>
            <application/>
          </security>
        </connection-definition>
      </connection-definitions>
    </resource-adapter>
  </resource-adapters>
</subsystem>
```

Configuration and deployment

- Manually
 - standalone.xml / domain.xml
- Use CLI
 - CLI/GUI
- Use web console

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Power to the people

- Important to configure the deployment
 - Type of usage
 - How many connections
 - ...
- Know how the different settings apply
 - Give as much information to the JCA container as possible

Pool

- Min pool size
 - Minimum number of connections
- Max pool size
 - Maximum number of connections
- Prefill
 - Prefill the pool with connections
- Flush strategy
 - What happens in case of an error

Timeout

- Blocking timeout
 - Wait time before giving up
- Allocation retry
 - Number of tries
- Idle timeout
 - Remove unneeded connections from the pool

Validation

- Background validation
 - Validate connections in the background
- Use fast fail
 - Fail on the first error when retrieving

Datasource options

- New connection SQL
- Prepared statement cache
 - Size
 - Shared
- Track statements
- Valid connection checker
- Exception sorter

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- Lazy connection manager
 - Association
 - Enlistment
- Distributed Work Manager
 - “Clustering” for JCA
- Advanced security inflow
 - Per deployment
- Advanced reauthentication

IronJacamar 1.1

- Developer friendly taken to the next level
 - Arquillian / ShrinkWrap
 - ShrinkWrap/Descriptors
 - IronJacamar/Descriptors
- Eclipse development plugin
 - Code generator
 - Validator
- And more !

Links

- IronJacamar 1.1.0.Beta1 is out
 - Try the latest features today !
- Homepage
 - <http://www.jboss.org/ironjacamar>
- Documentation
 - <http://www.jboss.org/ironjacamar/docs>
- Get involved through our forums

Join our hack fest !

- Geek'ing out !
 - 8.30 PM -> 2.00 AM
 - Meet core JBoss developers and fellow hackers
 - Get a quick introduction to several projects
 - Start hacking on your issue of interest :)
 - Don't worry; I have enough tasks for you all !