

... EasyBeans ... OSGi-Assembly

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Purpose

The purpose of the EasyBeans OSGi integration is to add modularity and dynamicity to EasyBeans. EasyBeans main components are exposed as OSGi Services that can be used by other Components. Configuration

EasyBeans/OSGi has been tested with [Felix](#) and [Equinox](#) which are 2 Open-Source implementation of the [OSGi R4 Specification](#).

Apache Felix

Apache Felix can only be downloaded from the [Apache Felix Downloads Page](#).

A configuration file for Apache Felix is located in the 'conf/config.properties' file provided in the OSGi assembly. This file should replace the Felix default's one.

Summary of the changes :

- Automatically create/start an 'ezb' profile containing all necessary bundles
- Uncomment the 'org.osgi.framework.bootdelegation' OSGi property exposing System classes
- Add some system packages

Equinox

By having an existing Eclipse 3.3 install, Equinox is already provided in the system. Else, it can be downloaded from [Eclipse Equinox Download Page](#)

In a directory where Equinox needs to be launched, a 'configuration' directory needs to be created.

The 'configuration/config.ini' configuration file provided by the OSGi assembly must be placed in this newly created directory. Deploying

The assembly can be unpacked

The assembly is structured like :

```
bundles/ *.jar <-- EasyBeans bundles lib/ ow_easybeans_osgi_client_rt.jar <-- Extra classes for
entity clients configuration/ config.ini <-- Equinox configuration file conf/ config.properties
<-- Felix configuration file repository.xml <-- OBR2 Repository descriptor build.xml <-- Client
```

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On Felix (OBR)

Configure felix

Copy <EZB-HOME>/conf/config.properties into <FELIX-HOME>/conf/config.properties.

Warning this config file is written for felix 1.0.0. If you own a later version of felix, you may have to change bundle version of shell, shell.tui and bundlerepository. Add the repository URL

First, try to remove the default URL if you're behind a proxy

```
obr remove-url http://oscar-osgi.sf.net/obr2/repository.xml
```

Felix comes pre-installed with the BundleRepository bundle, which greatly simplify bundle deployment :

```
obr add-url file://<path/to/unpacked/assembly>/repository.xml
```

List available bundles :

```
obr list EasyBeans
```

Produces the following output :

```
-> obr list EasyBeans EasyBeans/OSGi :: Agent (1.0.0.RC1) EasyBeans/OSGi :: Components :: Carol (1.0.0.RC1) EasyBeans/OSGi :: Components :: HSQLDB (1.0.0.RC1) EasyBeans/OSGi :: Components :: JDBC Pool (1.0.0.RC1) EasyBeans/OSGi :: Components :: JORAM (1.0.0.RC1) EasyBeans/OSGi :: Components :: JOTM (1.0.0.RC1) EasyBeans/OSGi :: Components :: Quartz (1.0.0.RC1) EasyBeans/OSGi :: Core (1.0.0.RC1) EasyBeans/OSGi :: Examples :: Entity Bean (1.0.0.RC1) EasyBeans/OSGi :: Examples :: Message Driven Bean (1.0.0.RC1) EasyBeans/OSGi :: Examples :: Migration EJB 2.1 -> 3.0 (1.0.0.RC1) EasyBeans/OSGi :: Examples :: Security (1.0.0.RC1) EasyBeans/OSGi :: Examples :: Stateful Session Bean (1.0.0.RC1) EasyBeans/OSGi :: Examples :: Stateless Session Bean (1.0.0.RC1) EasyBeans/OSGi :: Examples :: Timer (1.0.0.RC1)
```

Deploy the bundles

The 3 required bundles of EasyBeans have to be deployed.

```
obr deploy org.apache.felix.scr obr deploy org.apache.felix.configadmin obr deploy org.apache.felix.log
```

You have to deploy each bundles (future version may automate that step) :

```
obr deploy org.ow2.easybeans.core obr deploy org.ow2.easybeans.agent obr deploy org.ow2.easybeans.component.carol obr deploy org.ow2.easybeans.component.jotm obr deploy org.ow2.easybeans.component.joram obr deploy org.ow2.easybeans.component.quartz obr deploy org.ow2.easybeans.component.hsqldb obr deploy org.ow2.easybeans.component.jdbcpool
```

Optionnaly, you may deploy EJB 3.0 Samples too :

```
obr deploy org.ow2.easybeans.examples.entitybean obr deploy org.ow2.easybeans.examples.stateless obr deploy org.ow2.easybeans.examples.stateful obr deploy org.ow2.easybeans.examples.messagedrivenbean obr deploy org.ow2.easybeans.examples.migrationejb21 obr deploy org.ow2.easybeans.examples.timer obr deploy org.ow2.easybeans.examples.security
```

Check

Using the 'ps' Felix Shell Command, you can verify that all your bundles have been installed :

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```
-> ps START LEVEL 1 ID State Level Name [ 0] [Active ] [ 0] System Bundle (1.0.0) [ 1] [Active ]
[ 1] Apache Felix Shell Service (1.0.0) [ 2] [Active ] [ 1] Apache Felix Shell TUI (1.0.0) [ 3]
[Active ] [ 1] Apache Felix Bundle Repository (1.0.0) ... [ 4] [Installed ] [ 1] Apache Felix
Declarative Services (0.9.0.SNAPSHOT) [ 5] [Installed ] [ 1] Apache Felix Configuration Admin
Service (0.9.0.SNAPSHOT) [ 6] [Installed ] [ 1] Apache Felix Log Service
(0.9.0.incubator-SNAPSHOT) [ 7] [Installed ] [ 1] EasyBeans/OSGi :: Core (1.0.0.RC1) [ 8]
[Installed ] [ 1] EasyBeans/OSGi :: Agent (1.0.0.RC1) [ 9] [Installed ] [ 1] EasyBeans/OSGi ::
Components :: Carol (1.0.0.RC1) [ 10] [Installed ] [ 1] EasyBeans/OSGi :: Components :: JOTM
(1.0.0.RC1) [ 11] [Installed ] [ 1] EasyBeans/OSGi :: Components :: JORAM (1.0.0.RC1) [ 12]
[Installed ] [ 1] EasyBeans/OSGi :: Components :: Quartz (1.0.0.RC1) [ 13] [Installed ] [ 1]
EasyBeans/OSGi :: Components :: HSQldb (1.0.0.RC1) [ 14] [Installed ] [ 1] EasyBeans/OSGi ::
Components :: JDBC Pool (1.0.0.RC1) [ 15] [Installed ] [ 1] EasyBeans/OSGi :: Examples :: Entity
Bean (1.0.0.RC1) [ 16] [Installed ] [ 1] EasyBeans/OSGi :: Examples :: Stateless Session Bean
(1.0.0.RC1) [ 17] [Installed ] [ 1] EasyBeans/OSGi :: Examples :: Stateful Session Bean
(1.0.0.RC1) [ 18] [Installed ] [ 1] EasyBeans/OSGi :: Examples :: Migration EJB 2.1 -> 3.0
(1.0.0.RC1) [ 19] [Installed ] [ 1] EasyBeans/OSGi :: Examples :: Security (1.0.0.RC1) [ 20]
[Installed ] [ 1] EasyBeans/OSGi :: Examples :: Timer (1.0.0.RC1) ...
```

Starting

Felix and Equinox provides the same shell command used to start bundles.

EasyBeans provides an "EasyBeans Agent" bundle which has the responsibility to start needed bundles in the right order.

Start the required services

```
[ 4] [Installed ] [ 1] Apache Felix Declarative Services (0.9.0.SNAPSHOT) [ 5] [Installed ] [ 1]
Apache Felix Configuration Admin Service (0.9.0.SNAPSHOT) [ 6] [Installed ] [ 1] Apache Felix
Log Service (0.9.0.incubator-SNAPSHOT)
```

```
start 4 5 6
```

So simply start this agent to start EasyBeans :

```
start <EasyBeans Agent - Bundle ID> 10/17/07 2:40:16 PM (W) Activator.start : Cannot find User
configuration (easybeans.xml) for Easybeans. Using default configuration INFO - 2:40:16 PM [B:
org.ow2.easybeans.component.quartz] - BundleEvent RESOLVED. INFO - 2:40:16 PM [B:
org.ow2.easybeans.component.carol] - BundleEvent RESOLVED. INFO - 2:40:16 PM [B:
org.ow2.easybeans.component.jotm] - BundleEvent RESOLVED. INFO - 2:40:16 PM [B:
org.ow2.easybeans.component.joram] - BundleEvent RESOLVED. INFO - 2:40:16 PM [B:
org.ow2.easybeans.component.hsqldb] - BundleEvent RESOLVED. INFO - 2:40:16 PM [B:
org.ow2.easybeans.component.jdbcpool] - BundleEvent RESOLVED. 10/17/07 2:40:17 PM (I)
Activator.start : Starting Bundle org.ow2.easybeans.component.carol [9] INFO - 2:40:17 PM [S:
carol-component-factory] - ServiceEvent REGISTERED. INFO - 2:40:17 PM [B:
org.ow2.easybeans.component.carol] - BundleEvent STARTED. 10/17/07 2:40:17 PM (I)
Activator.start : Starting Bundle org.ow2.easybeans.component.jotm [10] INFO - 2:40:17 PM [S:
jotm-component-factory] - ServiceEvent REGISTERED. INFO - 2:40:17 PM [B:
org.ow2.easybeans.component.jotm] - BundleEvent STARTED. 10/17/07 2:40:17 PM (I) Activator.start
: Starting Bundle org.ow2.easybeans.component.quartz [12] INFO - 2:40:17 PM [S:
quartz-component-factory] - ServiceEvent REGISTERED. INFO - 2:40:17 PM [B:
org.ow2.easybeans.component.quartz] - BundleEvent STARTED. 10/17/07 2:40:17 PM (I)
Activator.start : Starting Bundle org.ow2.easybeans.component.hsqldb [13] INFO - 2:40:17 PM [S:
hsqldb-component-factory] - ServiceEvent REGISTERED. INFO - 2:40:17 PM [B:
org.ow2.easybeans.component.hsqldb] - BundleEvent STARTED. 10/17/07 2:40:17 PM (I)
Activator.start : Starting Bundle org.ow2.easybeans.core [7] INFO - 2:40:17 PM [S:
core-component] - ServiceEvent REGISTERED. INFO - 2:40:17 PM [B: org.ow2.easybeans.core] -
BundleEvent STARTED. 10/17/07 2:40:17 PM (I) Activator.start : Starting Bundle
org.ow2.easybeans.component.joram [11] INFO - 2:40:17 PM [S: joram-component-factory] -
ServiceEvent REGISTERED. INFO - 2:40:17 PM [B: org.ow2.easybeans.component.joram] - BundleEvent
STARTED. INFO - 2:40:17 PM [S: org.ow2.easybeans.component.carol.carolcomponent] - ServiceEvent
REGISTERED. 10/17/07 2:40:17 PM (I) Activator.start : Starting Bundle
org.ow2.easybeans.component.jdbcpool [14] INFO - 2:40:17 PM [S:
org.ow2.easybeans.component.hsqldb.hsqldbcomponent] - ServiceEvent REGISTERED. INFO - 2:40:17 PM
[S: jdbcpool-component-factory] - ServiceEvent REGISTERED. INFO - 2:40:17 PM [B:
org.ow2.easybeans.component.jdbcpool] - BundleEvent STARTED. INFO - 2:40:17 PM [B:
org.ow2.easybeans.agent] - BundleEvent STARTED. -> 10/17/07 2:40:17 PM (I) HSQldbComponent.start
: Starting 'HSQldb server' '1.8.0' on port '9001' 10/17/07 2:40:18 PM (I) HSQldbComponent.start
: HSQldb server started with URL jdbc:hsqldb:hsq://localhost:9001/jdbc_1 INFO - 2:40:18 PM [S:
org.ow2.easybeans.component.hsqldb.hsqldbcomponent.13cd7594-68e7-48ea-8adf-48485390cfc6] -
ServiceEvent REGISTERED. 10/17/07 2:40:18 PM (I) EZBComponentServiceFactory.updated : Component
with pid org.ow2.easybeans.component.hsqldb.hsqldbcomponent.13cd7594-68e7-48ea-8adf-48485390cfc6
created 10/17/07 2:40:18 PM (I) HSQldbComponent.start : Starting 'HSQldb server' '1.8.0' on port
'9002' 10/17/07 2:40:18 PM (I) HSQldbComponent.start : HSQldb server started with URL
```

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```
jdbc:hsqldb:hsq://localhost:9002/jdbc_2 10/17/07 2:40:18 PM (I)
EZBComponentServiceFactory.updated : Component with pid
org.ow2.easybeans.component.hsqldb.hsqldbcomponent.1326a5fa-e8b7-48f7-973b-alf1841681ac created
INFO - 2:40:18 PM [S: org.ow2.easybeans.component.carol.carolcomponent] - ServiceEvent
REGISTERED. INFO - 2:40:18 PM [S: org.ow2.easybeans.component.hsqldb.hsqldbcomponent] -
ServiceEvent UNREGISTERING. INFO - 2:40:18 PM [S:
org.ow2.easybeans.component.carol.carolcomponent] - ServiceEvent UNREGISTERING. INFO - 2:40:18
PM [S: org.ow2.easybeans.component.hsqldb.hsqldbcomponent.1326a5fa-e8b7-48f7-973b-alf1841681ac]
- ServiceEvent REGISTERED. 10/17/07 2:40:18 PM (I) EZBComponentServiceFactory.deleted :
Component with pid
org.ow2.easybeans.component.hsqldb.hsqldbcomponent.1326a5fa-e8b7-48f7-973b-alf1841681ac deleted
INFO - 2:40:18 PM [S:
org.ow2.easybeans.component.hsqldb.hsqldbcomponent.1326a5fa-e8b7-48f7-973b-alf1841681ac] -
ServiceEvent UNREGISTERING. 10/17/07 2:40:18 PM (I) EZBComponentServiceFactory.deleted :
Component with pid
org.ow2.easybeans.component.hsqldb.hsqldbcomponent.13cd7594-68e7-48ea-8adf-48485390cfc6 deleted
INFO - 2:40:18 PM [S:
org.ow2.easybeans.component.hsqldb.hsqldbcomponent.13cd7594-68e7-48ea-8adf-48485390cfc6] -
ServiceEvent UNREGISTERING. INFO - 2:40:18 PM [S:
org.ow2.easybeans.component.hsqldb.hsqldbcomponent] - ServiceEvent REGISTERED. 10/17/07 2:40:18
PM (I) TraceCarol.infoCarol : Name service for jrmc is started on port 1099 10/17/07 2:40:19 PM
(I) EZBCoreService.activate : Activating EasyBeans/OSGi/Core INFO - 2:40:19 PM [S:
org.ow2.easybeans.component.carol.carolcomponent.703c04e3-da84-4d27-8161-bbd395aaa393] -
ServiceEvent REGISTERED. 10/17/07 2:40:19 PM (I) EZBComponentServiceFactory.updated : Component
with pid org.ow2.easybeans.component.carol.carolcomponent.703c04e3-da84-4d27-8161-bbd395aaa393
created 10/17/07 2:40:20 PM (I) HSQLDBComponent.start : Starting 'HSQLDB server' '1.8.0' on port
'9002' 10/17/07 2:40:20 PM (I) PolicyProvider.init : Using EasyBeans policy provider
'org.ow2.easybeans.security.jacc.provider.JPolicy'. 10/17/07 2:40:20 PM (I) PolicyProvider.init
: Using EasyBeans PolicyConfigurationFactory provider and EasyBeans Policy provider 10/17/07
2:40:20 PM (I) HSQLDBComponent.start : HSQLDB server started with URL
jdbc:hsqldb:hsq://localhost:9002/jdbc_2 10/17/07 2:40:20 PM (I)
EZBComponentServiceFactory.updated : Component with pid
org.ow2.easybeans.component.hsqldb.hsqldbcomponent.1326a5fa-e8b7-48f7-973b-alf1841681ac created
INFO - 2:40:20 PM [S:
org.ow2.easybeans.component.hsqldb.hsqldbcomponent.1326a5fa-e8b7-48f7-973b-alf1841681ac] -
ServiceEvent REGISTERED. 10/17/07 2:40:20 PM (I) HSQLDBComponent.start : Starting 'HSQLDB
server' '1.8.0' on port '9001' 10/17/07 2:40:20 PM (I) JMXRemoteHelper.init : Creating JMXRemote
connector with URL 'service:jmx:rmi:///jndi:rmi://localhost:1099/EasyBeansConnector' 10/17/07
2:40:20 PM (I) HSQLDBComponent.start : HSQLDB server started with URL
jdbc:hsqldb:hsq://localhost:9001/jdbc_1 INFO - 2:40:20 PM [S:
org.ow2.easybeans.component.hsqldb.hsqldbcomponent.13cd7594-68e7-48ea-8adf-48485390cfc6] -
ServiceEvent REGISTERED. 10/17/07 2:40:20 PM (I) EZBComponentServiceFactory.updated : Component
with pid org.ow2.easybeans.component.hsqldb.hsqldbcomponent.13cd7594-68e7-48ea-8adf-48485390cfc6
created 10/17/07 2:40:21 PM (I) Embedded.start : Startup of EasyBeans ' ' was done in '959' ms.
INFO - 2:40:21 PM [S: null] - ServiceEvent REGISTERED. INFO - 2:40:21 PM [S:
org.ow2.easybeans.core] - ServiceEvent REGISTERED. INFO - 2:40:21 PM [S:
org.ow2.easybeans.component.quartz.quartzcomponent] - ServiceEvent REGISTERED. 10/17/07 2:40:21
PM (I) QuartzScheduler.<init> : Quartz Scheduler v.1.6.0 created. 10/17/07 2:40:21 PM (I)
RAMJobStore.initialize : RAMJobStore initialized. 10/17/07 2:40:21 PM (I)
StdSchedulerFactory.instantiate : Quartz scheduler 'EasyBeans' initialized from an externally
provided properties instance. 10/17/07 2:40:21 PM (I) StdSchedulerFactory.instantiate : Quartz
scheduler version: 1.6.0 10/17/07 2:40:21 PM (I) QuartzScheduler.start : Scheduler
EasyBeans_$_NON_CLUSTERED started. INFO - 2:40:21 PM [S:
org.ow2.easybeans.component.quartz.quartzcomponent.d970f5e5-72c7-40b1-b271-649f2010de03] -
ServiceEvent REGISTERED. 10/17/07 2:40:21 PM (I) EZBComponentServiceFactory.updated : Component
with pid org.ow2.easybeans.component.quartz.quartzcomponent.d970f5e5-72c7-40b1-b271-649f2010de03
created INFO - 2:40:21 PM [S: org.ow2.easybeans.component.jotm.jotmcomponent] - ServiceEvent
REGISTERED. 10/17/07 2:40:21 PM (I) Current.<init> : JOTM 2.0.10 10/17/07 2:40:21 PM (I)
JOTMComponent.start : Register javax.transaction.UserTransaction as transaction manager object
INFO - 2:40:21 PM [S:
org.ow2.easybeans.component.jotm.jotmcomponent.611f659c-6edc-4461-b1c5-8bce9dab15bc] -
ServiceEvent REGISTERED. 10/17/07 2:40:21 PM (I) EZBComponentServiceFactory.updated : Component
with pid org.ow2.easybeans.component.jotm.jotmcomponent.611f659c-6edc-4461-b1c5-8bce9dab15bc
created INFO - 2:40:21 PM [S: org.ow2.easybeans.component.jdbcpool.jdbcpoolcomponent] -
ServiceEvent REGISTERED. 10/17/07 2:40:21 PM (I) JDBCPoolComponent.start : DS 'jdbc_2', URL
'jdbc:hsqldb:hsq://localhost:9002/jdbc_2', Driver = 'org.hsqldb.jdbcDriver'. INFO - 2:40:21 PM
[S: org.ow2.easybeans.component.jdbcpool.jdbcpoolcomponent.e778269f-fce4-40a1-87fa-33119f5d3bde]
- ServiceEvent REGISTERED. 10/17/07 2:40:21 PM (I) EZBComponentServiceFactory.updated :
Component with pid
org.ow2.easybeans.component.jdbcpool.jdbcpoolcomponent.e778269f-fce4-40a1-87fa-33119f5d3bde
created 10/17/07 2:40:21 PM (I) JDBCPoolComponent.start : DS 'jdbc_1', URL
'jdbc:hsqldb:hsq://localhost:9001/jdbc_1', Driver = 'org.hsqldb.jdbcDriver'. 10/17/07 2:40:21
PM (I) EZBComponentServiceFactory.updated : Component with pid
org.ow2.easybeans.component.jdbcpool.jdbcpoolcomponent.80097f80-eed9-4b99-a4e3-5ff1b05c52a0
created INFO - 2:40:21 PM [S:
org.ow2.easybeans.component.jdbcpool.jdbcpoolcomponent.80097f80-eed9-4b99-a4e3-5ff1b05c52a0] -
ServiceEvent REGISTERED. INFO - 2:40:21 PM [S: org.ow2.easybeans.component.joram.joramcomponent]
- ServiceEvent REGISTERED. 10/17/07 2:40:22 PM (I) JoramComponent.start : Joram version '5.0.6'
started on localhost:16030. INFO - 2:40:22 PM [S:
org.ow2.easybeans.component.joram.joramcomponent.afdee04d-ef2b-4051-b706-a8901c4879f1] -
ServiceEvent REGISTERED. 10/17/07 2:40:22 PM (I) EZBComponentServiceFactory.updated : Component
with pid org.ow2.easybeans.component.joram.joramcomponent.afdee04d-ef2b-4051-b706-a8901c4879f1
created
```

Samples

Deployment

See Section III if EJB 3.0 Samples bundles are not deployed on the gateway.

Start

EJB 3.0 Sample bundles can be started like all other bundles :

```
start <EasyBeans Sample - Bundle ID>
```

0

- Stateless Bean

```
INFO - 2:41:14 PM [B: org.ow2.easybeans.examples.stateless] - BundleEvent RESOLVED. 10/17/07
2:41:15 PM (I) JContainer3.start : Container started in : 864 ms INFO - 2:41:15 PM [S: null] -
ServiceEvent REGISTERED. INFO - 2:41:15 PM [B: org.ow2.easybeans.examples.stateless] -
BundleEvent STARTED.
```

- Message Driven Bean

```
10/17/07 2:41:32 PM (I) JContainer3.start : Container started in : 174 ms -> INFO - 2:41:32 PM
[B: org.ow2.easybeans.examples.migrationejb21] - BundleEvent STARTED. INFO - 2:41:32 PM [S:
null] - ServiceEvent REGISTERED. INFO - 2:41:32 PM [B:
org.ow2.easybeans.examples.migrationejb21] - BundleEvent RESOLVED.
```

- Entity Bean (deployed by Hibernate's EntityManager)

```
INFO - 2:41:48 PM [B: org.ow2.easybeans.examples.entitybean] - BundleEvent RESOLVED. 10/17/07
2:41:49 PM (I) JPersistenceUnitInfoHelper.loadDefaultValues : Default persistence provider set
to value org.hibernate.ejb.HibernatePersistence. 10/17/07 2:41:49 PM (I)
JPersistenceUnitInfoHelper.getPersistenceUnitInfo : No persistence provider was set, set to
value org.hibernate.ejb.HibernatePersistence. 10/17/07 2:41:49 PM (I) Environment.<clinit> :
Hibernate Annotations 3.3.0.GA 10/17/07 2:41:49 PM (I) Environment.<clinit> : Hibernate 3.2.5
10/17/07 2:41:49 PM (I) Environment.<clinit> : hibernate.properties not found 10/17/07 2:41:49
PM (I) Environment.buildBytecodeProvider : Bytecode provider name : cglib 10/17/07 2:41:49 PM
(I) Environment.<clinit> : using JDK 1.4 java.sql.Timestamp handling 10/17/07 2:41:49 PM (I)
Version.<clinit> : Hibernate EntityManager 3.3.1.GA 10/17/07 2:41:49 PM (I)
Ejb3Configuration.configure : Processing PersistenceUnitInfo [ name: entity ...] 10/17/07
2:41:49 PM (I) Ejb3Configuration.scanForClasses : found EJB3 Entity bean:
org.ow2.easybeans.examples.entitybean.Employee 10/17/07 2:41:49 PM (I)
Ejb3Configuration.scanForClasses : found EJB3 Entity bean:
org.ow2.easybeans.examples.entitybean.Employee 10/17/07 2:41:49 PM (I)
AnnotationBinder.bindClass : Binding entity from annotated class:
org.ow2.easybeans.examples.entitybean.Employee 10/17/07 2:41:49 PM (I) EntityBinder.bindTable :
Bind entity org.ow2.easybeans.examples.entitybean.Employee on table EMPLOYEES 10/17/07 2:41:49
PM (I) Version.<clinit> : Hibernate Validator 3.0.0.GA 10/17/07 2:41:50 PM (I)
ConnectionProviderFactory.newConnectionProvider : Initializing connection provider:
org.hibernate.ejb.connection.InjectedDataSourceConnectionProvider 10/17/07 2:41:50 PM (I)
InjectedDataSourceConnectionProvider.configure : Using provided datasource 10/17/07 2:41:50 PM
(I) SettingsFactory.buildSettings : RDBMS: HSQL Database Engine, version: 1.8.0 10/17/07 2:41:50
PM (I) SettingsFactory.buildSettings : JDBC driver: HSQL Database Engine Driver, version: 1.8.0
10/17/07 2:41:50 PM (I) Dialect.<init> : Using dialect: org.hibernate.dialect.HSQLDialect
10/17/07 2:41:50 PM (I) TransactionFactoryFactory.buildTransactionFactory : Transaction
strategy: org.hibernate.ejb.transaction.JoinableCMTTransactionFactory 10/17/07 2:41:50 PM (I)
TransactionManagerLookupFactory.getTransactionManagerLookup : instantiating
TransactionManagerLookup: org.hibernate.transaction.JOTMTransactionManagerLookup 10/17/07
2:41:50 PM (I) TransactionManagerLookupFactory.getTransactionManagerLookup : instantiated
TransactionManagerLookup 10/17/07 2:41:50 PM (I) SettingsFactory.buildSettings : Automatic flush
during beforeCompletion(): disabled 10/17/07 2:41:50 PM (I) SettingsFactory.buildSettings :
Automatic session close at end of transaction: disabled 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : JDBC batch size: 15 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : JDBC batch updates for versioned data: disabled 10/17/07 2:41:50
PM (I) SettingsFactory.buildSettings : Scrollable result sets: enabled 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : JDBC3 getGeneratedKeys(): disabled 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : Connection release mode: auto 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : Default batch fetch size: 1 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : Generate SQL with comments: disabled 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : Order SQL updates by primary key: disabled 10/17/07 2:41:50 PM
(I) SettingsFactory.buildSettings : Order SQL inserts for batching: disabled 10/17/07 2:41:50 PM
(I) SettingsFactory.createQueryTranslatorFactory : Query translator:
org.hibernate.hql.ast.ASTQueryTranslatorFactory 10/17/07 2:41:50 PM (I)
ASTQueryTranslatorFactory.<init> : Using ASTQueryTranslatorFactory 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : Query language substitutions: {} 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : JPA-QL strict compliance: enabled 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : Second-level cache: enabled 10/17/07 2:41:50 PM (I)
SettingsFactory.buildSettings : Query cache: disabled 10/17/07 2:41:50 PM (I)
```

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```
SettingsFactory.createCacheProvider : Cache provider: org.hibernate.cache.HashtableCacheProvider
10/17/07 2:41:50 PM (I) SettingsFactory.buildSettings : Optimize cache for minimal puts:
disabled 10/17/07 2:41:50 PM (I) SettingsFactory.buildSettings : Structured second-level cache
entries: disabled 10/17/07 2:41:50 PM (I) SettingsFactory.buildSettings : Statistics: disabled
10/17/07 2:41:50 PM (I) SettingsFactory.buildSettings : Deleted entity synthetic identifier
rollback: disabled 10/17/07 2:41:50 PM (I) SettingsFactory.buildSettings : Default entity-mode:
pojo 10/17/07 2:41:50 PM (I) SettingsFactory.buildSettings : Named query checking : enabled
10/17/07 2:41:50 PM (I) SessionFactoryImpl.<init> : building session factory 10/17/07 2:41:51 PM
(I) SessionFactoryObjectFactory.addInstance : Not binding factory to JNDI, no JNDI name
configured 10/17/07 2:41:51 PM (I) SchemaExport.execute : Running hbm2ddl schema export 10/17/07
2:41:51 PM (I) SchemaExport.execute : exporting generated schema to database 10/17/07 2:41:51 PM
(I) SchemaExport.execute : schema export complete 10/17/07 2:41:51 PM (I) JContainer3.start :
Container started in : 2713 ms -> INFO - 2:41:51 PM [S: null] - ServiceEvent REGISTERED. INFO -
2:41:51 PM [B: org.ow2.easybeans.examples.entitybean] - BundleEvent STARTED.
```

Run the clients (Stateless, Stateful, Entity and MessageDriven)

In the unpacked assembly directory, there is a 'build.xml' Ant file that must be used to launch Clients :
Conclusion

The EasyBeans/OSGi integration have been succesfully tested with Apache Felix and Eclipse Equinox.

You own EjbJars can be easily packaged as bundles : it's as simple as adding a META-INF/MANIFEST.MF file in your EjbJar.

[EasyBeans/OSGi](#) (en)

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