

# **Red Hat JBoss BRMS**

# **&**

# **Red Hat JBoss Fuse**

## **Fuse Integration Demo**

**(Use case: rules integration with ESB)**

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## Introduction

This project was setup to demonstrate an actual integration between the Red Hat JBoss Business Rules Management System (BRMS) and Red Hat JBoss Fuse products. It will provide you with an architectural blueprint for calling out to a JBoss BRMS engine from within your JBoss Fuse service bus messaging (Camel) routes. The project provided here will get you started quickly on the road to integration in practice.

## Setup and Configuration

### Installation

You first need to get the project by cloning it from the central location:

```
git clone git://github.com/eschabell/brms-fuse-integration-demo.git
```

Once downloaded, you will have the following folder structure:

- \brms-fuse-integration-demo
  - \installs – Initially empty, but will contain the product downloads.
  - \projects – The project that comprise the demo.
  - \support – Additional supporting files used by the demo.
  - \target – Will be created by running init.sh. Contains the fully configured product runtime server.
  - \docs – Contains quickstart guide you are reading.
  - init.sh – Script to install and configure the run time server environment.

Next, download JBoss Fuse & JBoss BRMS from the Red Hat Customer Portal (<https://access.redhat.com>).

Download JBoss Fuse:

1. Under *Integrated Platforms*, select the *Fuse* product.
2. Select version *6.0.0* in the *Version* field.
3. Download *Red Hat JBoss Fuse 6.0.0 Full Install*

Now copy `boss-fuse-full-6.0.0.redhat-024.zip`, to the projects *installs* folder. Ensure that this file is executable by running:

```
$ chmod +x <path-to-project>/installs/boss-fuse-full-6.0.0.redhat-024.zip
```

Download JBoss BRMS Platform:

4. Under *JBoss Enterprise Platforms*, select the *BRMS Platform* product.
5. Select version *5.3.1* in the *Version* field.
6. Download *JBoss BRMS 5.3.1 Deployable for EAP 6*.

Now copy `brms-p-5.3.1.GA-deployable-ee6.zip`, to the projects *installs* folder. Ensure that this file is executable by running:

```
$ chmod +x <path-to-project>/installs/brms-p-5.3.1.GA-deployable-ee6.zip
```

Download EAP 6 Platform:

7. Under *JBoss Enterprise Platforms*, select the *Application Platform* product.
8. Select version *6.1.0* in the *Version* field.
9. Download *JBoss Application Platform 6.1.0*.

Now copy `jboss-eap-6.1.0.zip`, to the projects *installs* folder. Ensure that this file is executable by running:

```
$ chmod +x <path-to-project>/installs/jboss-eap-6.1.0.zip
```

Lastly, from the project folder, run the *init.sh* script:

```
$ ./init.sh
```

When the script completes you will have a new folder named *jboss-eap-6.1*, in the projects *target* folder. The folder is a ready to run EAP 6 server with BPM Suite with the following modifications made:

- The *admin*, *krisv*, *mary*, *john*, *erics* accounts enabled (passwords are same as users name) in the *brms-roles.properties* and *brms-users.properties* file in *target/jboss-eap-6.1/jboss-as/standalone/configuration*
- The security settings modified by copying *components.xml* to *target/jboss-eap-6.1/standalone/deployments*
- Adjusted server security domain to include *brms*, copied new *standalone.xml* to *target/jboss-eap-6.1/jboss-as/standalone/configuration*
- The custom work items are activated by adding *CustomWorkItemHandlers.conf* and *drools.session.conf* to the *jbpm-gwt-console-server* at *target/jboss-eap-6.1/standalone/deployments/business-central-server.war/WEB-INF/classes/META-INF*
- Enable users in human task server by copying new *jbpm-human-task-war-web.xml* file to *target/jboss-eap-6.1/jboss-as/standalone/deployments/jbpm-human-task.war/WEB-INF/web.xml*
- Both *business-central-server* and *jbpm-human-task* server needs a *netty* dependency, added

a MANIFEST.MF to their respective WEB-INF/classes/META-INF directories

## JBoss Developer Studio Configuration

In this section, you will configure JBoss Developer Studio. Specifically you will add the BRMS 5.3.1 platform server runtime environment and then import the project that makes up the BRMS Demo.

Important: It is assumed that you already have JBoss Developer Studio installed. This demo has been tested with JBoss Developer Studio 7

Launch JBoss Developer Studio

1. Either select or switch to a new workspace by pointing to the *brms-fuse-integration-demo/projects* folder.
2. If the Welcome to JBoss Developer Studio screen appears, dismiss it by click the Workbench arrow in the upper right.

Install SOA tools for BRMS

1. Select *Help* → *Install New Software...* and add SOA Tools update site:  
*<http://download.jboss.org/jbosstools/updates/integration/kepler/integration-stack/aggregate/>*
2. Select *Business Process and Rules Development & SOA Development* (all sub-menu items will be selected) and proceed thru installation and restart JBoss Developer Studio to complete the installation. You will be told to restart JBoss Developer Studio for the changes to take effect, do this now.

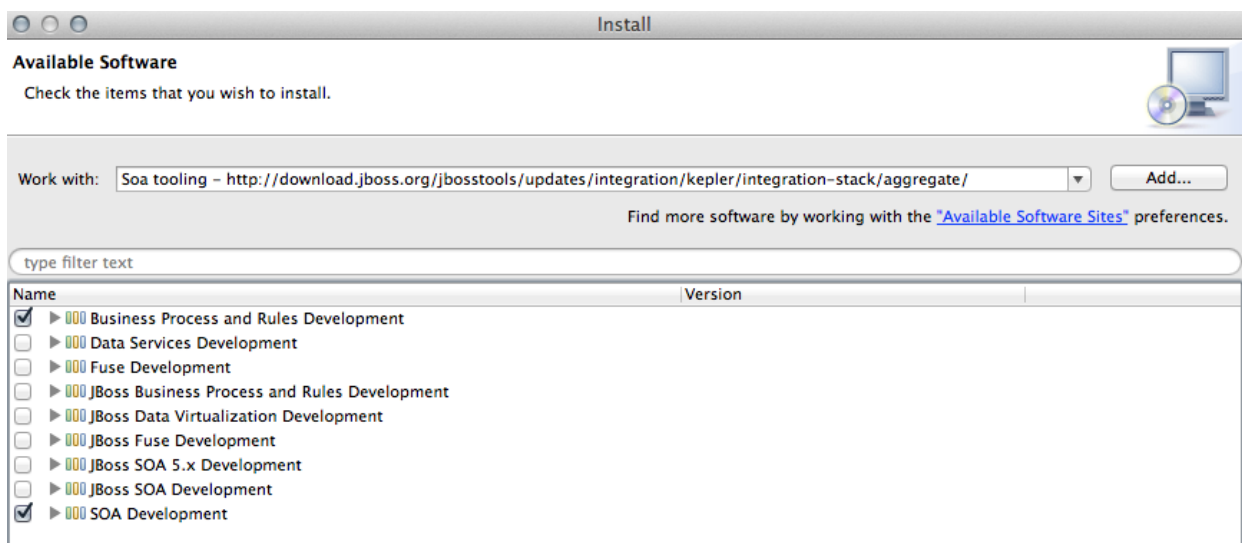


Illustration 1: TODO Kenny Peeples: redo with Fuse tools too.

Detect and add a BRMS 5.3.1 runtime environment

1. Select *Preferences* from the *Window* menu.
2. In the left hand side, expand *JBoss Tools* and then select *JBoss Tool Runtime Detection*
3. Select the *Add* button and navigate to the *brms-fuse-integration-demo/target* folder, then select *OK*.
4. The *jboss-eap-6.1* runtime created earlier should have been found and selected. If so, select *OK*.

5. Select *OK* again to close the Preferences dialog window.

### Import Projects

1. Select *Import...* from the *File* menu.
2. Expand the *Maven* folder, and then select *Existing Maven Projects*.
3. Select the *Browse* button to *Select root directory*, you should be in the *brms-fuse-integration-demo* folder (if not, then navigate there) and then select *OK*.
4. Make sure the project (*brms-fuse-integration-demo*) is selected and then select *Finish*.
5. The projects are now imported.

## Start the JBoss Enterprise BRMS Platform

In this section, you will start the server from within JBoss Developer Studio.

1. Select the *Servers* view  
If it is currently not open, select *Show View --> Other...* from the *Window* menu and search for the *Servers* view.
2. You should see the *jboss-eap-6.1* server you created earlier.
3. Right click on *jboss-eap-6.1* and select *Start* from the pop-up menu. In a few moments your JBoss Enterprise BRMS Platform will be running.

## Importing Project Repository into BRM

In this section, you will import all of the JBoss Enterprise BRMS artifacts into the Business Rules Manager.

1. Open up your Web browser of choice and navigate to <http://localhost:8080/jboss-brms/>
2. Use the default credentials of *admin/admin*
3. Upon logging in, you will see the following prompt:

**This looks like a brand new repository.  
Would you like to install a sample repository?**

Important: Please be sure to select *No thanks*.

4. Select the *Administration* section on the left hand side
5. From the *Administration* list select *Import Export*. This will open the *Import Export* window.
6. Now select *Browse...* and *navigate to support* directory and select the *repository\_export.zip* file.
7. Lastly, select the *Import* button. Select *OK* to confirm that you want to import the artifacts.

## Running the Demo

### JBDS IDE demo

You can demo the project in the JBoss Developer Studio by making use of the editors, running the provided unit tests and watching the console for logged (verbose) output. The following will run the demo process with four unit tests:

1. *TODO Kenny Peeples: add more details on fuse executions, testing, running, etc.*

## BRMS BRM demo

The package was already imported so now we can look closer at web designers viewing, rules asset viewing, package building and deploying, web business central admin console viewing.

## Web Designer

The BRM is available on <http://localhost:8080/jboss-brms> once the BRMS server has been fully started.

1. Login with a user (admin, krisv, mary, john, erics available). To start fresh you can at any time import the original repository as follows: *Administration* → *Import Export* → *Choose File* → *support/repository-export.zip* → *Import (Ok to pop-ups)*
2. View process: *Knowledge Bases* → *Packages* → *(TODO Kenny Peeples: fix this package name)org.jbpm.evaluation.customer* → *Asset tab* → *view Processes* and *Open (TODO Kenny Peeples:open-what?)* and wait for web designer to appear.

## Rule asset viewing

To view some of the assets in your project:

1. *Knowledge Bases* → *Packages* → *(TODO Kenny Peeples: fix this package name)org.jbpm.evaluation.customer* → *Asset tab* → *view Technical Rule Assets, Model, Processes, Other assets or WorkItemDefinition.*

## Build package for deployment

To build your package for deployment:

1. Build package: *Knowledge Bases* → *Packages* → *(TODO Kenny Peeples: fix this package name)org.jbpm.evaluation.customer* → *Edit tab* → *Build Package button*. Now the process has been deployed in the Business Central administration component.

## Business Central

The Business Central administration console is available on <http://localhost:8080/business-central> once the BRMS server has been fully started and after deploying your process by building the package in BRMS BRM.

1. Login as user (admin, erics, krisv have same rights).
2. On left open *Processes* tab → *Process Overview* and you should see *(TODO Kenny Peeples: what do you see?)* appear. If not, hit Refresh. If not, ensure the demo package has been built without errors in BRM as described previously.
3. Click on *(TODO Kenny Peeples: what do you see?) Demo* to select this process, then *Start* button and *OK* for pop-up.
4. As this process has no pausing nodes, no human tasks for example, it will complete and show you nothing except the following in the Server log (note, this is one of the unit test outputs for an empty submission to the process):
5. Output on the BRMS server:

```
22:53:36,013 INFO [RepositoryServlet] admin authenticated for rest api
22:53:36,013 INFO [RepositoryServlet] PackageName: Kennys
22:53:36,013 INFO [RepositoryServlet] PackageVersion: LATEST
22:53:36,013 INFO [RepositoryServlet] PackageIsLatest: true
22:53:36,013 INFO [RepositoryServlet] PackageIsSource: true
22:53:36,267 INFO [STDOUT] Hello World-Kenny Test
```

```
22:53:36,275 INFO [STDOUT] 6
22:53:36,275 INFO [STDOUT] starting new transaction
```

The process id is displayed in the log message.