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1 Introduction

This is a BRMS demo application setup guid for the Customer Evaluation Demo. The setup will create a fully installed and configured BRMS environment so that you can demo the project in all the available jBPM components. It will provide you with a JBoss Developer Studio project with unit tests to demo the project in the IDE. It will provide a repository that you can import into BRMS BRM and demo the web tooling, web business central admin console and asset manager BRM tooling.

2 Setup and Configuration

2.1 Installation

You first need to extract the demo distribution zip (brms-customer-evaluation-demo-[version].zip) to a location of your choosing. Once extracted, you will have the following folder structure:

- \brms-customer-evaluation-demo

    ○ \installs – Initially empty, but will contain the BRMS platform 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 BRMS runtime server.

    ○ init.sh – Script to install and configure the run time server environment.

    ○ Quick Start Guide.odt – This document

Next, download JBoss Enterprise BRMS Platform from the Red Hat Customer Portal (https://access.redhat.com/jbossnetwork).

Download BRMS Platform:
1. Under *JBoss Enterprise Platforms*, select the *BRMS Platform* product.
2. Select version *5.3.1* in the *Version* field.
3. Download *JBoss BRMS 5.3.1 Deployable for EAP 6*

*(*Please note that this is the deployable distribution, not the standalone one.)

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

```
$ chmod +x <path-to-project>/installs/brms-p-5.3.0.GA-deployable-
ee6.zip
```

Download EAP 6 Platform:
4. Under *JBoss Enterprise Platforms*, select the Application *Platform* product.
5. Select version 6.0.*1* in the *Version* field.
6. Download *JBoss Aplication Platform 6.0.1*

Now copy `jboss-eap-6.0.1.zip`, to the brms-rewards-demo's *installs* folder. Ensure that this file is executable by running:

```
$ chmod +x <path-to-project>/installs/jboss-eap-6.0.1.GA.zip
```

Lastly, from the brms-rewards-demo folder, run the *init.sh* script:

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

When the script completes you will have a new folder named *jboss-eap-6.0*, in the brms-rewards-demo's *target* folder. The folder is a ready to run EAP 6 server with BRMS 5.3.1 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 *brms-customer-evaluation-demo/target/jboss-eap-6.0/jboss-as/standalone/configuration*
- The security settings modifed by copying *components.xml* to *brms-customer-evaluation-demo/target/jboss-eap-6.0/standalone/deployments*
- Adjusted server security domain to include *brms,* copied new *standalone.xml* to *brms-customer-evaluation-demo/target/jboss-eap-6.0/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 *brms-customer-evaluation-demo/target/jboss-eap-6.0/standalone/deployments/business-central-server.war/WEB-INF/classes/META-INF*
- The domain model jar *customereval-model.jar* added to the console at *brms-customer-evaluation-demo/target/jboss-eap-6.0/deployments/jbpm-gwt-console-server.war/WEB-INF/lib*
- Enable users in human task server by copying new *jbpm-human-task-war-web.xml* file to *brms-customer-evaluation-demo/target/jboss-eap-6.0/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 repective *WEB-INF/classes/META-INF* directories
- The various testing dependencies will be unzipped and copied into *brms-customer-evaluation-demo/support/lib/**

2.2 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 Customer Evaluation Demo.

Important: It is assumed that you already have JBoss Developer Studio installed. This demo has been tested with JBoss Developer Studio 5.

Launch JBoss Developer Studio

1. Either select or switch to a new workspace by pointing to the *brms-customer-evaluation-demo/projects* folder.

2. If the Welcome to JBoss Developer Studio screen appears, dismiss it by click the Workbench arrow in the upper right

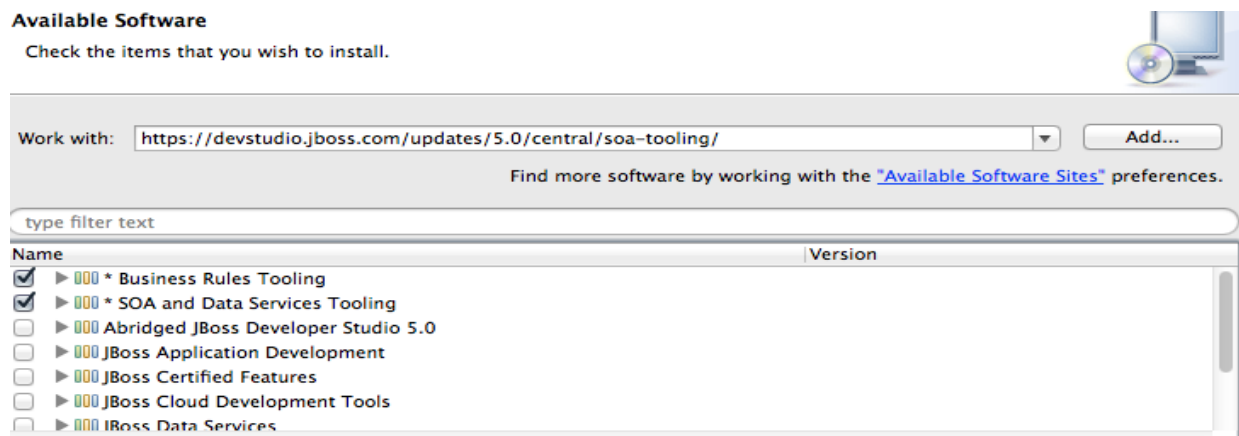Fix for missing GEF dependency in SOA Tools update site

1. Select *Help → Install New Software...* and add GEF update site http://download.eclipse.org/tools/gef/updates/releases/

2. **Do not select any components**, move on to next step to install SOA tools update site and the needed dependencies for GEF will be automatically resolved.

Install SOA tools for BRMS

1. Select *Help → Install New Software...* and add SOA Tools update site https://devstudio.jboss.com/updates/5.0/central/soa-tooling/

2. Select *Business Rules Tooling & SOA and Data Services Tooling (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.

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-customer-evaluation-demo/target* folder, then select *OK*.

4. The *jboss-eap-6.0* runtime created earlier should have been found and selected. If so, select *OK*.

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

Detect and add jBPM BRMS 5.3.1 runtime environment

1. Select *Preferences* from the *Window* menu.

2. In the left hand side, expand *JBM* and then select *Installed jBPM Runtimes*

3. If not automatically listed in the view: Select the *Add* button, then the *Create a new jBPM Runtime...* button and navigate to the *brms-customer-evaluation-demo/target/jboss-eap-6.0* folder, then name the runtime *jBPM BRMS 5.3.1 runtime and* select *OK*.

4. The *jBPM BRMS 5.3.1 runtime* should be selected. If so, select *OK* to close the Preferences dialog window.

5. You will be told to restart JBoss Developer Studio for the changes to take effect, do this now.

Detect and add Drools 5.3.3 runtime environment

6. Select *Preferences* from the *Window* menu.

7. In the left hand side, expand *Drools* and then select *Installed Drools Runtimes*

8. If not automatically listed in the view: Select the *Add* button, then the *Create a new Drools 5 Runtime...* button and navigate to the *brms-customer-evaluation-demo/target/jboss-eap-6.0* folder, then name the runtime *Drools 5.3.3.Final runtime* and select *OK*.

9. Select the *Drools 5.3.3.Final runtime.*

10. In *Drools* in the left hand side menu select *Drools Flow nodes*, make sure all boxes are checked (some are unchecked by default, don't ask me why...) and select *OK* to close the Preferences dialog window.

11. You will be told to restart JBoss Developer Studio for the changes to take effect, do this now.

Import Projects

1. Select *Import...* from the *File* menu.

2. Expand the *General* folder, and then select *Existing Projects into Workspace*

3. Select the *Browse* button to *Select root directory*, you should be in the *brms-customer-evaluation-demo* folder (if not, then navigate there) and then select *OK*.

4. Make sure the project (*brms-customer-evaluation-demo*) is selected and then select *Finish*.

5. Add the testing jar dependencies from JBoss BRMS as follows: on project *right-click → Properties → Java Build Path → Libraries (tab) → Add External Jars... →* select *brms-customer-evaluation-demo/support/lib/*.jar*

6. The projects are now imported.

2.3 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-6.0* server you created earlier.

3. Right click on *jboss-eap-6.0* and select Start from the pop-up menu. In a few moments your JBoss Enterprise BRMS Platform will be running.

2.4 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 brms-customer-evaluation-demo/support* folder and select the *repository_export.zip* file.
   1. Optional import of a declarative domain model (where your model is in the BRM package and not an uploaded jar of your Java objects) can be found by importing *repository_export_declarative_model.zip* file.
7. Lastly, select the *Import* button. Select *OK* to confirm that you want to import the artifacts.

3 Running the Demo

3.1 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. Select the file *brms-customer-evaluation-demo/src/test/java/CustomerEvaluationTest.java*, right click, *Run As..., JUnit Test.*

Your output should look something like illustration 1 and example output of the console logging:

Test 1

```
=======================================
= Starting Process Underaged Test Case. =
=======================================
Entering Initialize Node
Leaving Initialize Node
Gateway: Qualify Age
Gateway: Qualify Age
Entering Underaged Node
Detected and reporting invalid request.
Set validRequest to: false
```

```
Leaving Underaged Node
Process ended in End Minor Node.
```

Test 2

```
========================================
= Starting Process Poor Adult Test Case. =
========================================
Entering Initialize Node
Leaving Initialize Node
Gateway: Qualify Age
Gateway: Qualify Age
Entering Adult Customer Node
Detected and reporting valid request
Set validRequest to: true
Leaving Adult Customer Node
Entering Finance Rules Node
Under funded customer
Set Request invalid comment to: Poor customer.
Customer request= org.jbpm.evaluation.customer.Request@31
Leaving Finance Rules Node.
Gateway: Decide Financial Status
Determined request is NOT valid, heading to Poor Customer Node
Request validity reason is: Poor customer
Leaving Finance Rules Node.
Gateway: Decide Financial Status
Detected  request is invalid, heading to Poor Customer Node
Request not valid reason is: Poor customer
Entering Poor Customer Node
Customer has amount: 2 in the bank.
Leaving Poor Customer Node
Process ended in End Poor Customer Node.
```

Test 3

```
========================================
= Starting Process Rich Adult Test Case. =
========================================
Entering Initialize Node
Leaving Initialize Node
Gateway: Qualify Age
Gateway: Qualify Age
Entering Adult Customer Node
Detected and reporting valid request
Set validRequest to: true
Leaving Adult Customer Node
Entering Finance Rules Node
Leaving Finance Rules Node.
Gateway: Decide Financial Status
Determined request is valid, heading to Rich Customer Node
Entering Rich Customer Node
Detected and reporting valid request
Customer has amount: 2000 in the bank.
Leaving Rich Customer Node
Process ended in End Rich Customer Node.
```

Test 4

```
==========================================
= Starting Process Empty Request Test Case. =
==========================================
Entering Initialize Node
There as no evaluation objects defined, adding default ones for demo purposes.
Leaving Initialize Node
Gateway: Qualify Age
Gateway: Qualify Age
Entering Underaged Node
Detected and reporting invalid request.
Set validRequest to: false
Leaving Underaged Node
Process ended in End Minor Node.
```
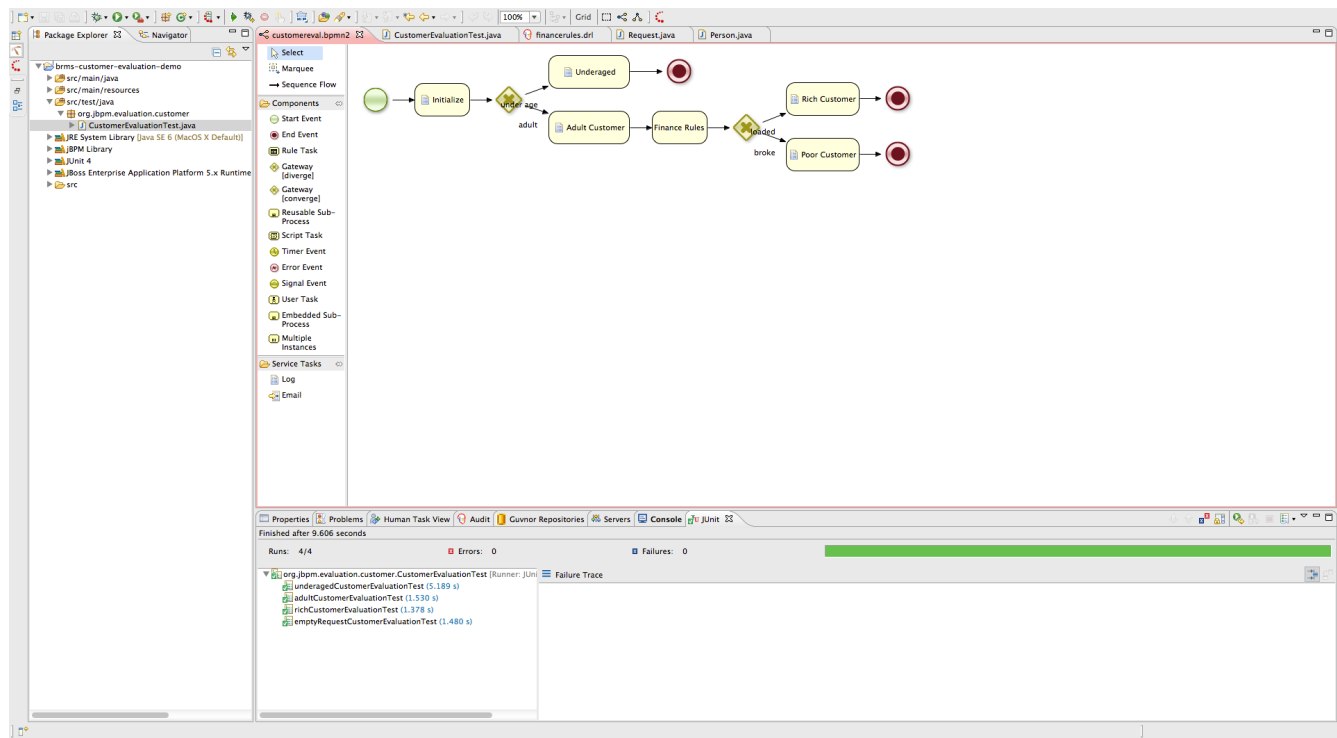

Illustration 1: Running demo unit tests

3.2 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 ->brms-customer-evaluation-demo/support/repository-export.zip → Import (Ok to pop-ups)*

2. View process: *Knowledge Bases → Packages → org.jbpm.evaluation.customer → Asset tab → view Processes* and *Open customereval* and wait for web designer to appear.

Rule asset viewing

To view some of the assets in your project:

1. *Knowledge Bases → Packages → 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 → 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 *Customer Evaluation Demo* appear. If not, hit Refresh. If not, ensure the demo package has been built without errors in BRM as described previously.

3. Click on *Customer Evaluation 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):

```
12:53:26,937 INFO  [STDOUT] Entering Initialize Node
12:53:26,937 INFO  [STDOUT] There as no evaluation objects defined, adding default
ones for demo purposes.
12:53:26,941 INFO  [STDOUT] Leaving Initialize Node
12:53:26,944 INFO  [STDOUT] Gateway: Qualify Age
12:53:26,944 INFO  [STDOUT] Gateway: Qualify Age
12:53:26,947 INFO  [STDOUT] Entering Underaged Node
12:53:26,947 INFO  [STDOUT] Detected and reporting invalid request.
12:53:26,949 INFO  [STDOUT] Set validRequest to: false
12:53:26,949 INFO  [STDOUT] Leaving Underaged Node
12:53:26,949 INFO  [STDOUT] Process ended in End Minor Node.
```