SupportPac LA71: IBM WebSphere Operational Decision Management Integration for WebSphere Process Server

Getting started with
IBM Business Process Manager

Task 2 - Rule Designer creates a Managed Decision

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Overview

The role of the Rule Designer is to take decisions specified by the business and turn them into rule projects and rule applications that can be managed by the business and integrated into the business processes. These processes may already exist or are implemented by the BPM Integration Developers.

The decision information model is the single most important artifact that is passed from the Business Users to the IT Rule Developers and Integration Developers. This defines the decision vocabulary and the business objects. This is usually defined by IT as an XML Schema and represents a contract for many integration points. When importing rule projects from Process Designer the generated schemas are included providing a validated definition of the information model required by the business.

Readers who are familiar with Rule Authoring and import from Process Designer may import the workspace from
[SupportPac LA71 Path]\BPMTutorial\task2\task2_RuleWorkspace.zip and continue at Step 8 to prepare for future tasks.

Let's start by importing the decisions provided by the business in task 1 into Rule Designer.
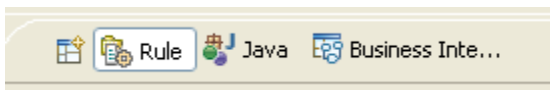
Step 1.   Opening the Rule Designer Workspace.

The Rule Developer tooling is provided by Rule Designer. Rule Designer plugins can usually be run from the BPM integrated development environment. This task is described using a separate Rule Designer application and separate Rule Workspace.

Open Rule Designer and open the empty RuleWorkspace at:
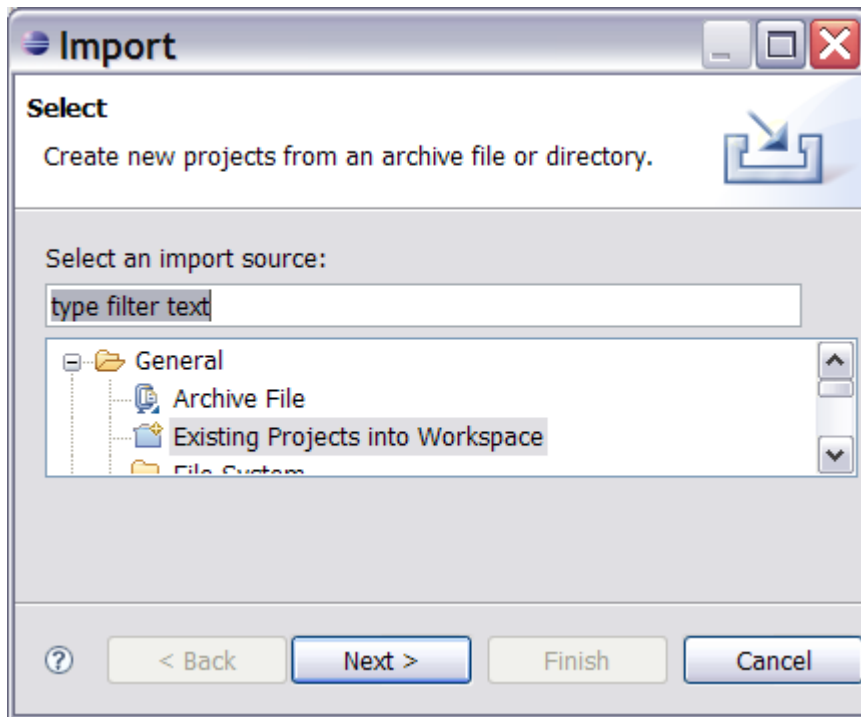
[SupportPac LA71 Path]\BPMTutorial\RuleWorkspace

Ensure that the Rule perspective is selected as shown below
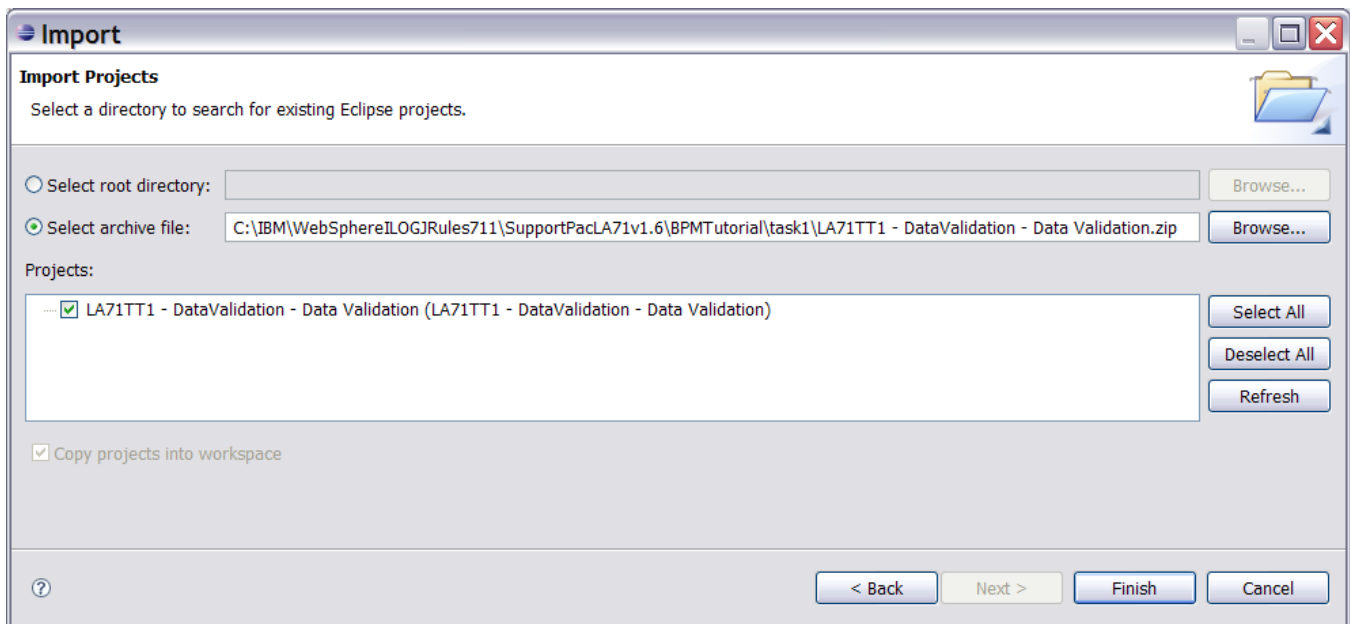

Step 2.   Importing the Decision Rule Projects

The rulesets exported from Process Designer can be imported directly into Rule Designer.

Select the **File > Import** option from the menu and select **General > Existing Projects into workspace.**
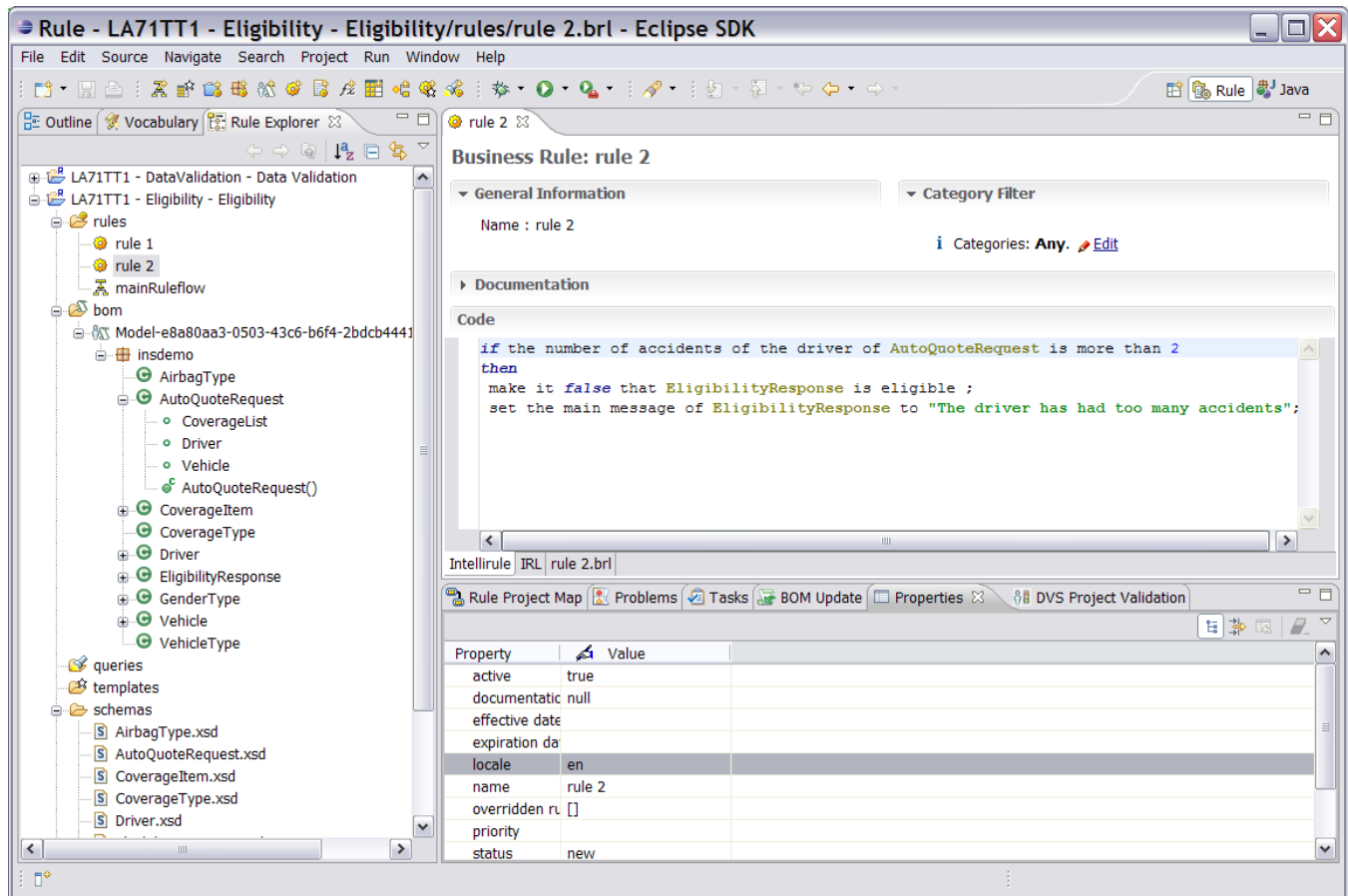
Select the projects exported from Process designer in the folder
[SupportPac LA71 Path]\BPMTutorial\task1

Press **Finish** and the project should be imported into the workspace.
Repeat this for the project **LA71TT1 – Eligibility – Eligibility**

The BOM, Vocabulary and rules are all imported and a ruleflow added that executes the rules in the defined sequence.

Step 3.   Refactoring the Rule Projects

The Rule Developer may need to rename the default rule projects and perform other refactoring including:
- Changing BOM verbalizations and operations to make the vocabulary more intuitive.
- Combining Rule Projects and sequencing the rules by customizing the rule flow.
- Renaming and modifying the initial rules to better reflect the rule intent
- Modifying the rule locale to match the locale for Rule Designer and / or the persistence locale of Decision Center.

Refer to the Rule Designer Documentation for more details on performing these tasks. The following steps describe some basic refactoring used in the tutorial.

Step 4.   Renaming the Rule Projects

To rename the projects:

Right Click **LA71TT1 – DataValidation – Data Validation**
Select **Refactor > Rename**
For the **Name** type **DataValidation**.
Click **OK**.

Right Click **LA71TT1 – Eligibility – Eligibility**
Select **Refactor > Rename**
For the **Name** type **Eligibility**.
Click **OK**.

When renaming a rule project the engine configuration file may not get automatically updated. This prevents the project being added to a Rule App. To change this, select the Project properties tab and rename the engine configuration file to correspond to the new project name as shown below.

Select project **DataValidation**
Right click and select **Properties**
Select **Ruleset Properties**. You may get an error and need to click other items before the **Ruleset Properties** panel opens. Change the **Engine configuration file** path to match the pattern below.
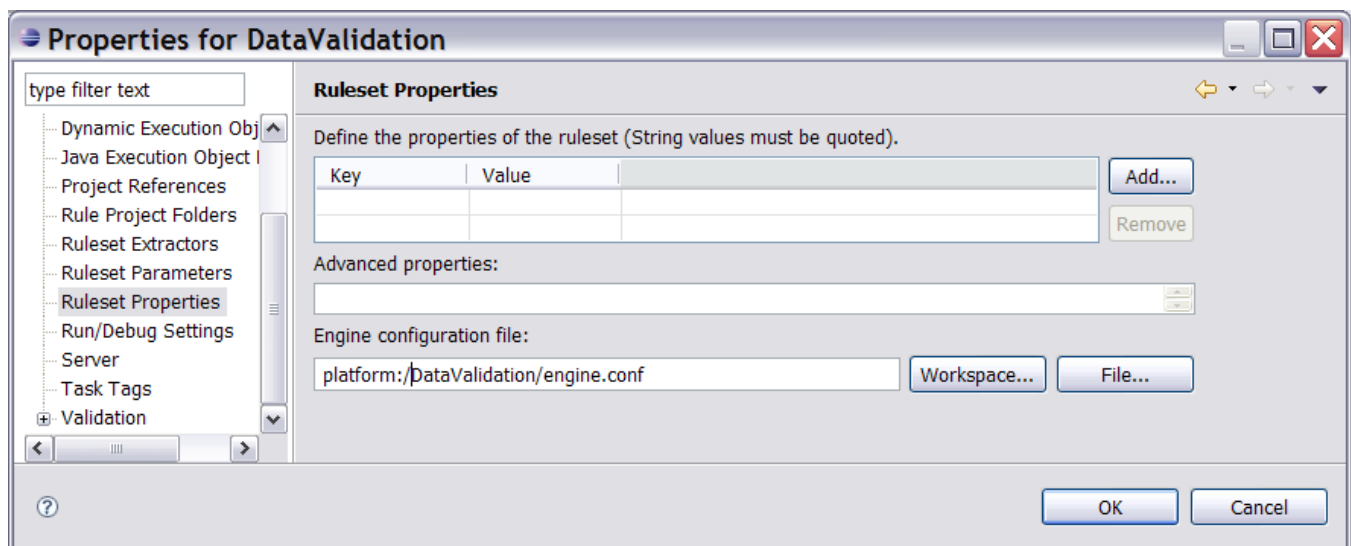
Repeat this for the **Eligibility** project.

Step 5.   Renaming the Rules

The rules that are provided from Process Designed are numbered in sequence rather than having meaningful names. You will now go through and rename each of the rules.

Select **DataValidation > rules > rule1** right click and select **Refactor > Rename...**
In the box enter the new name: **ValidDefault** and click **OK**
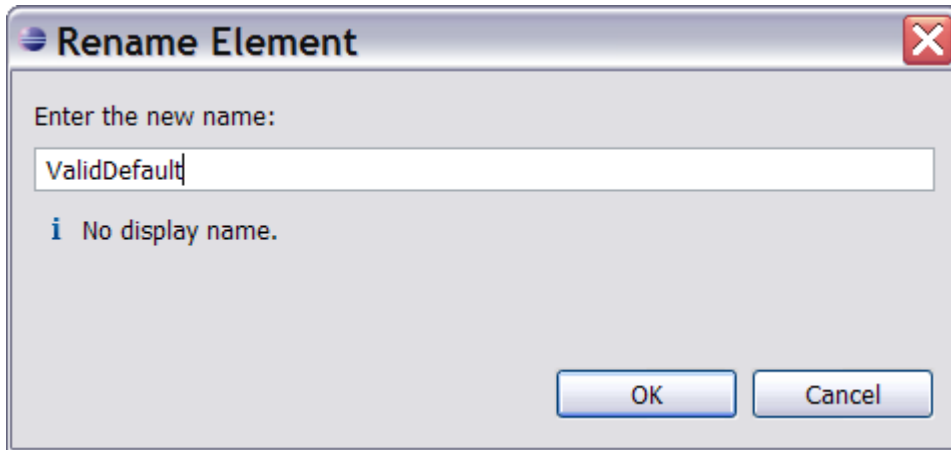
Repeat this to change the following rules

DataValidation > rules > rule1 => **ValidDefault**
DataValidation > rules > rule2 => **ValidNoAccidents**
Eligibility > rules > rule1 => **EligibleDefault**
Eligibility > rules > rule2 => **TooManyAccidents**

Once this re-factoring is undertaken the projects look as shown below.
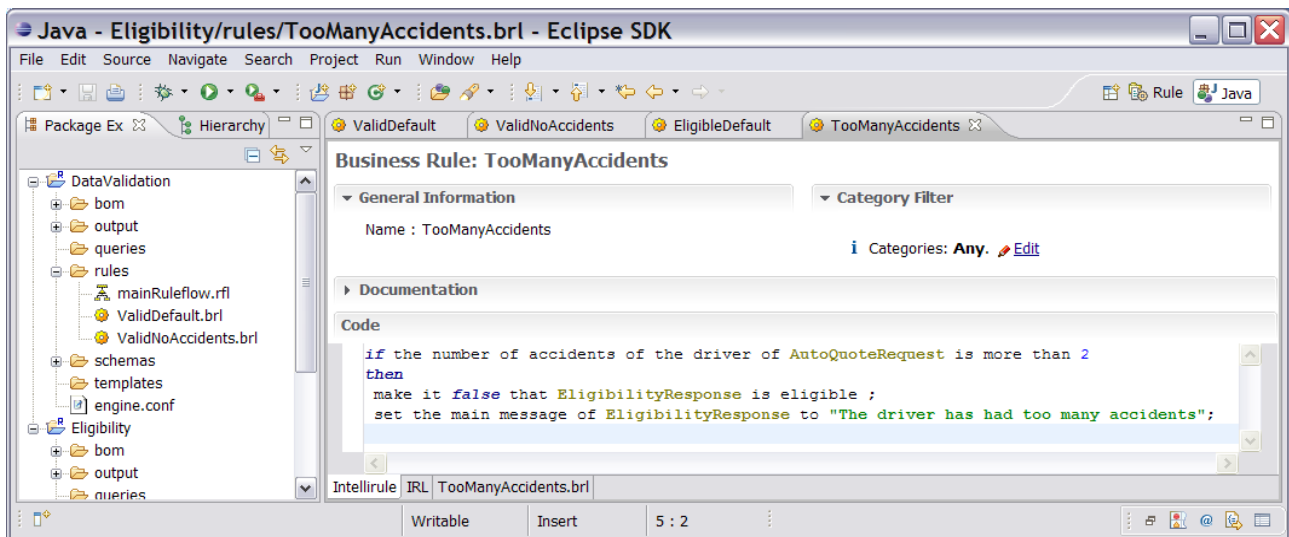
Step 6.   Refactoring the Rule locales

In some cases it is possible that the locale that the rules have been authored in in Process Designer does not correspond to that used in Rules Designer or for persistence in Decision Center. One frequent mismatch has been found to cause problems is if the locale from Process Designer is **en** and the persistence locale of Decision Center is **en_US**. While these rules can be edited in Rule Designer, they cannot be synchronized with Decision Center. The easiest way to resolve this is to

ensure that Decision Center has been configured to use the correct persistence locale as described in the BPM Tutorial Overview.

If this has not been undertaken, close Rule Designer and edit the rule.brl files manually as Rule Designer does not allow this change to be made. An example of the change is given below.

```
TooManyAccidents.brl - WordPad
File  Edit  View  Insert  Format  Help

<?xml version="1.0" encoding="UTF-8"?>
<ilog.rules.studio.model.brl:ActionRule xmi:version="2.0" xmlns:xmi="http://www.omg.org/XMI"
xmlns:ilog.rules.studio.model.brl="http://ilog.rules.studio/model/brl.ecore">
  <name>TooManyAccidents</name>
  <uuid>d3c059ff-f918-43e7-8824-6c825f2a538e</uuid>
  <documentation><![CDATA[null]]></documentation>
  <locale>en_US</locale>
  <definition><![CDATA[if the number of accidents of the driver of AutoQuoteRequest is more than 2
then
 make it false that EligibilityResponse is eligible ;
 set the main message of EligibilityResponse to "The driver has had too many accidents";
 ]]></definition>
</ilog.rules.studio.model.brl:ActionRule>

For Help, press F1
```

Repeat this for each rule.

Step 7.   Create a Rule Application containing the decisions

Once the decisions have been refactored they need to be deployed to a Rule Execution Server inside a Rule Application. To create a rule application in Rule Designer :
Click **File > New > Project…**.
Select **RuleApp Project** and press the **Next >** button.
Enter **InsuranceSampleRuleApp** for the RuleApp project name.
Click **Next >**

In the **Add Ruleset Archives** page, click **Add…**.
Select both **DataValidation** and **Eligibility** Rule Projects. Press **Ctrl** for multiple select.
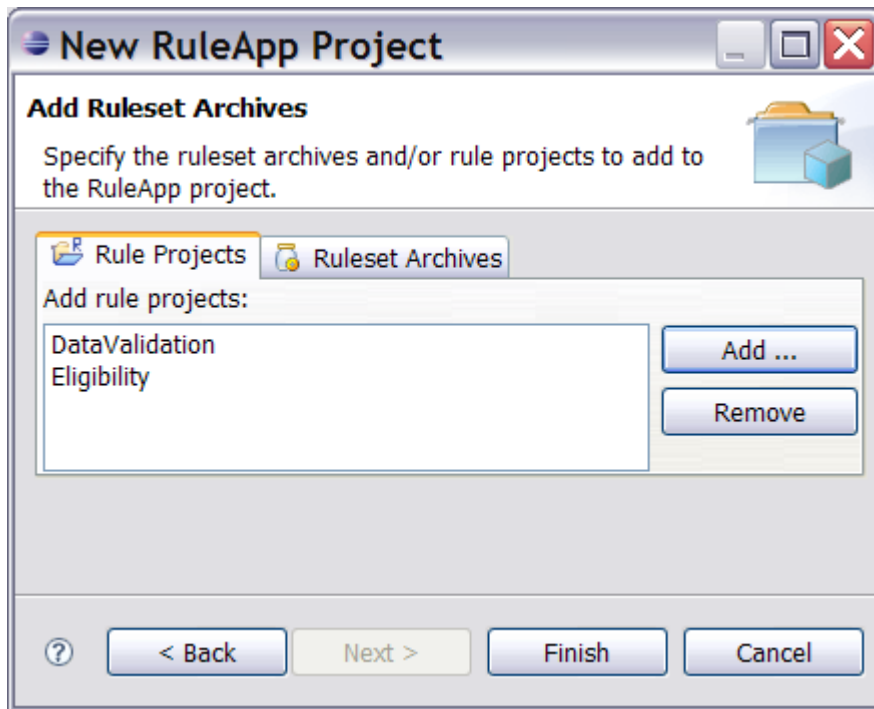
Click **Finish**.
The **InsuranceSampleRuleApp** RuleApp project is created.

Step 8.   Exporting a Rule App archive for integration

Once the RuleApp has been created a RuleApp archive should be created to be used in the LA71 integration.

Select the **InsuranceSampleRuleApp** RuleApp
Right click **RuleApp > Export…**

In the **Specify RuleApp Project** window select the **InsuranceSampleRuleApp** and the **Eligibilty** and **DataValidation** projects beneath them.
In the export location type
[SupportPac LA71 Path]\BPMTutorial\InsuranceSampleRuleApp.jar
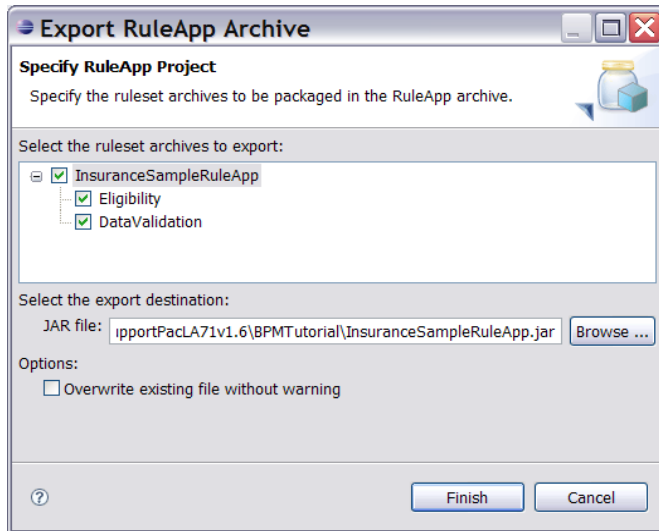
Press **Finish** and the Rule App archive should be saved. This will be used later to create the SCA Decision components in LA71.

Step 9.   Deploying the Rule App

Once the RuleApp has been created it should be deployed to the Rule Execution Server in the BPM environment.

Select the **InsuranceSampleRuleApp** RuleApp
Right click **RuleApp > Deploy...**
Select **Replace RuleApp version** for the deployment type and press **Next**.
In the window that appears
For **URL:** type **http://localhost:9080/res** – note that this is **not** the default.
For **Login:** type **resAdmin**
For **Password:** type **resAdmin**
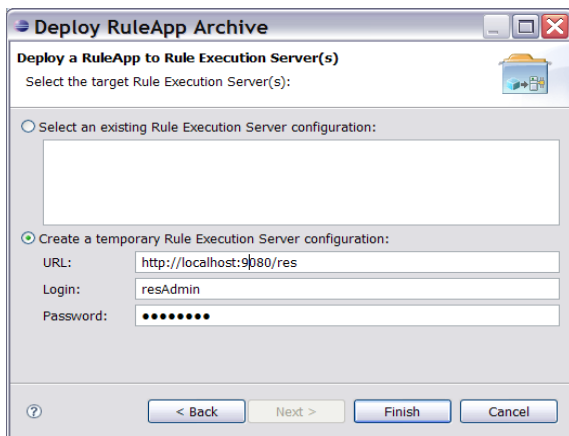
Click **Finish** and the Rule App should be deployed to the Rule Execution Server. The Rule Execution Server Console can be used to verify the deployment as shown in step 13.

Step 10. Export the projects to Decision Center
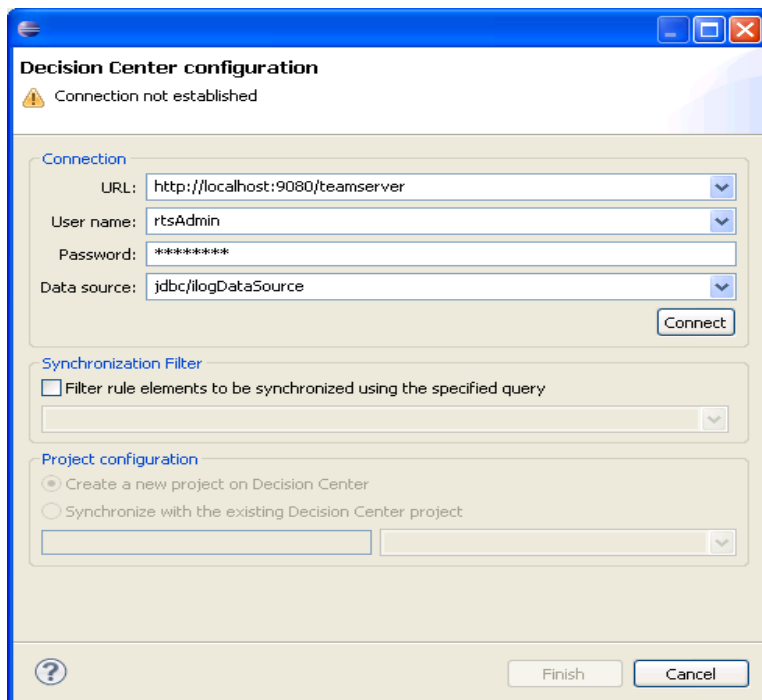
In order to allow Business users to manage the decisions, the rule projects are synchronized with Decision Center. Select each project, right click and select
Decision Center > Connect …

In the Connection dialog
For **User Name** type rtsAdmin
For **Password** type rtsAdmin
For **URL** type http://localhost:9080/teamserver

Click **Connect** to establish the connection.
Select the option to **Create a new project on Decision Center.**

On pressing **Finish** the project will be synchronized to Decision Center.

Repeat this for the **Eligibility** Rule Project.

In the future you can synchronize with Decision Center and decide which changes to Publish and which to update.

Once both projects are deployed they can be managed within Decision Center as shown below.

Login to Decision Center as rtsAdmin / rtsAdmin.

In the Home tab select the DataValidation Project from the **Project in use:** pull down.

Navigate to the **Explore** tab and you will see the rules that have been defined in Rule Designer.

Select the ValidNoAccidents rule to check the rules characteristics.

From here the rules can be managed as described in more detail in the Decision Center documentation.

Step 11.   Establishing the Rule Application in Decision Center

In order to allow the Business Users rule changes to be deployed, the RuleApp structure must be re-established in Decision Center.

Navigate to the **Configure** tab and select the **Manage RuleApps** link

Select **New** to create a new RuleApp.
For the **Name** type I**nsuranceSampleRuleApp**
For the **Display Name** enter **LA71 Insurance Sample**

New RuleApp

Save | Cancel

Properties

|	
Name*	InsuranceSampleRuleApp
Display Name	LA71 Insurance Sample
Major	1
Minor	0
Description	

Rulesets

No ruleset found

New   Edit   Delete

RuleApp Properties

No element of type 'RuleApp Property' found

New   Edit   Delete

In the **Rulesets** panel click **New.**
Select the **DataValidation** project and fill in the Name and display name making sure that the Name field matches the project name. Press **Save.**

DataValidation

Save | Cancel

Properties

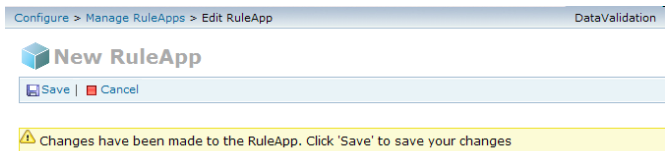|	
Name*	DataValidation
Display Name	DataValidation
Description	
Project*	DataValidation ▾
Baseline or Branch*	main ▾
Extractor	<none> ▾
Major	1
Minor	0
Enabled	☑
Debug	☐

Ruleset Properties

No element of type 'Ruleset Property' found

New   Edit   Delete

Repeat this for the Eligibility Ruleset.
Click **Save** to save the completed RuleApp.

Configure > Manage RuleApps > Edit RuleApp   DataValidation

New RuleApp

Save | Cancel

⚠ Changes have been made to the RuleApp. Click 'Save' to save your changes

Step 12.   Deploying the Rule Application from Decision Center

When Business Users have completed any changes, the RuleApp need to be redeployed to the Rule Execution Server.

Navigate to the **Manage RuleApps** page under the configuration tab,
Select the **InsuranceSampleRuleApp** and click **Deploy**.

You have the option to create a baseline but for now just uncheck the box and click **Next**.
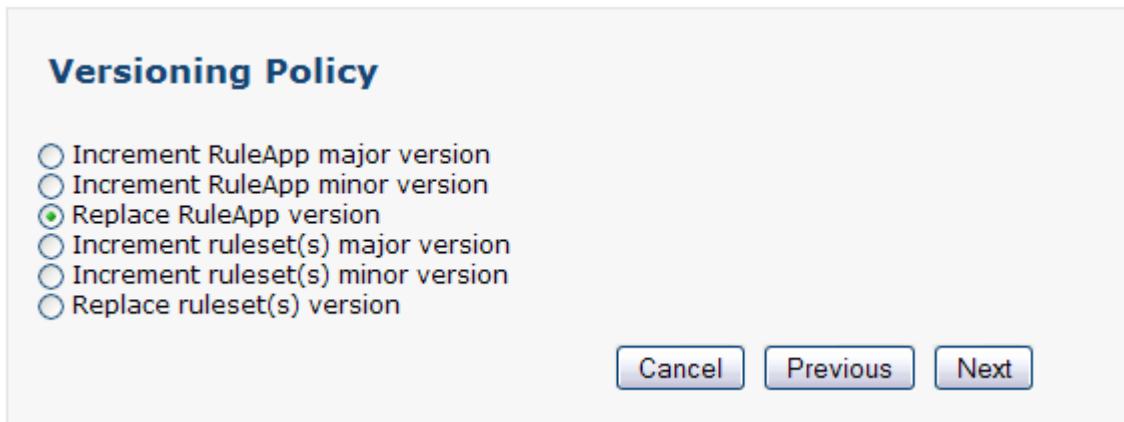
Leave **Deploy on a Rule Execution Server** selected and click **Next**.

In the **Versioning Policy** screen select **Replace RuleApp Version** (or other versioning policy as required) and click **Next**.

Versioning Policy

○ Increment RuleApp major version
○ Increment RuleApp minor version
◉ Replace RuleApp version
○ Increment ruleset(s) major version
○ Increment ruleset(s) minor version
○ Replace ruleset(s) version

[Cancel] [Previous] [Next]

Select the Rule Execution Server you wish to deploy to. This is best configured prior to deployment but can be undertaken at this point if no servers have been defined.

Click **Configure Servers**
In the **Create Server** page
For the **Name** type **BPMRES**
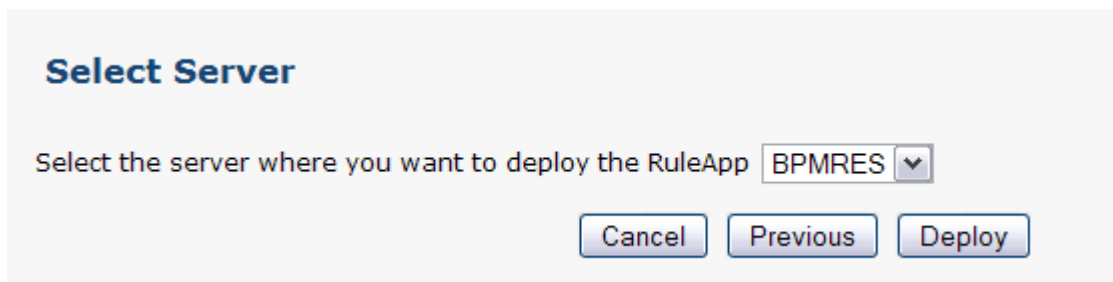For the **URL** type **http://localhost:9080/res**
For the **Username** type **resAdmin**
For the **Password** type **resAdmin**.
Click **OK**.
Refer to the Decision Center documentation for further details on this.

Select the **BPMRES** server.

Select Server

Select the server where you want to deploy the RuleApp [BPMRES ▾]

[Cancel] [Previous] [Deploy]

Click **Deploy**.

This should complete the deployment replacing any rule application that may have been deployed from Rule Designer.

You now have a Managed Decision Service where Business Users can use Decision Center to add, delete and modify the rules, decision tables and ruleflows that control the way the decisions are made.

Step 13.   Obtaining the HTDS Web Service Definitions

When the Rule App is deployed to the Rule Execution Server, it is possible to obtain the web service definition language (WSDL) files that describe the Hosted Transparent Decision Services (HTDS). To obtain the WSDL files open the RES console logging in as resAdmin/resAdmin and navigate to the Explorer tab.


Select the Insurance Sample RuleAPP and then select each of the Rule Projects in turn to generate the WSDL as shown below.

Right click on **Get HTDS WSDL for the latest ruleset version** and save the wsdl to the tutorial directory: **[SupportPac LA71 Path]\BPMTutorial.** Ensure that you do use the **latest ruleset version** option or applications that use this service will not pick up new versions of the decision.
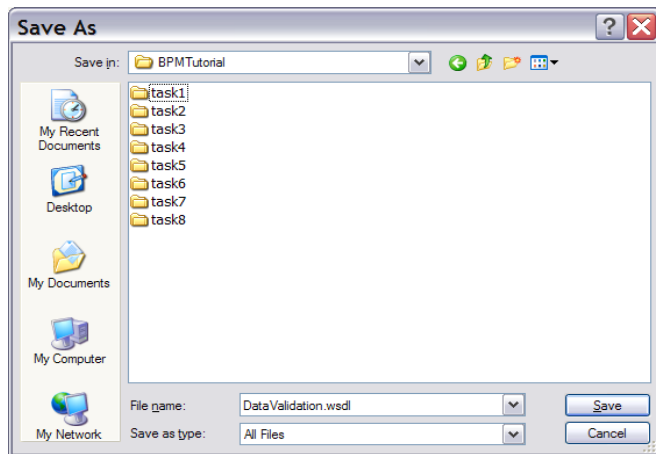
Repeat this for the Eligibility Rule Project and you now have WSDL descriptions for the Managed Decision services that were requested by the Business. You can also find copies of these files in **[SupportPac LA71 Path]\BPMTutorial\task_2**.

You have now provided two managed decision services whose rules can be edited in Decision Center by Business Process Authors and which can be integrated into the Business Processes in the rest of the tutorial.