



# **SupportPac LA71: IBM Operational Decision Manager 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.

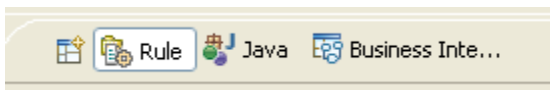
### Step 1. Opening the Rule Designer Workspace.

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**

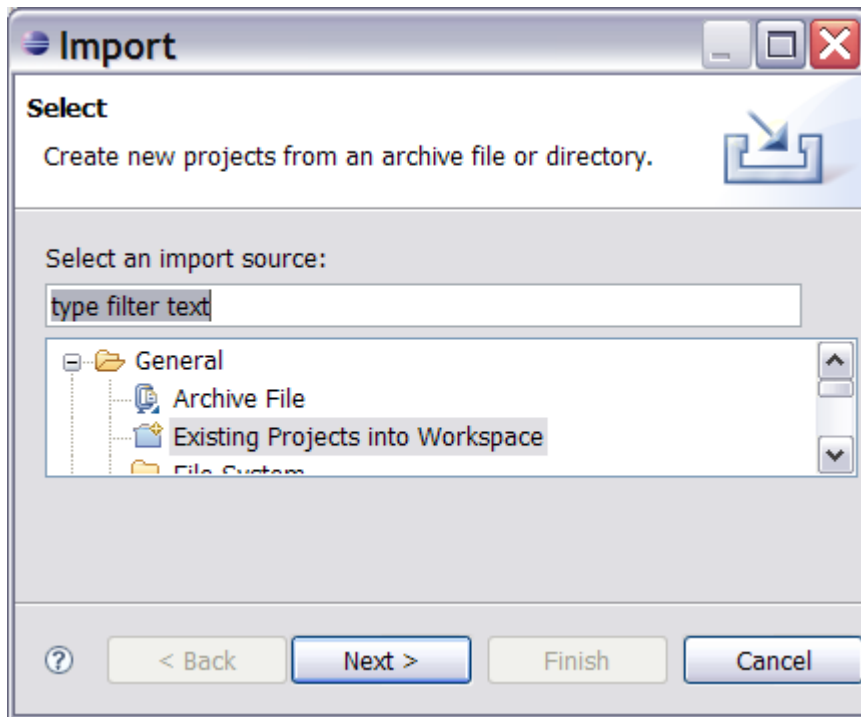
Ensure that the Rule perspective is selected as shown below



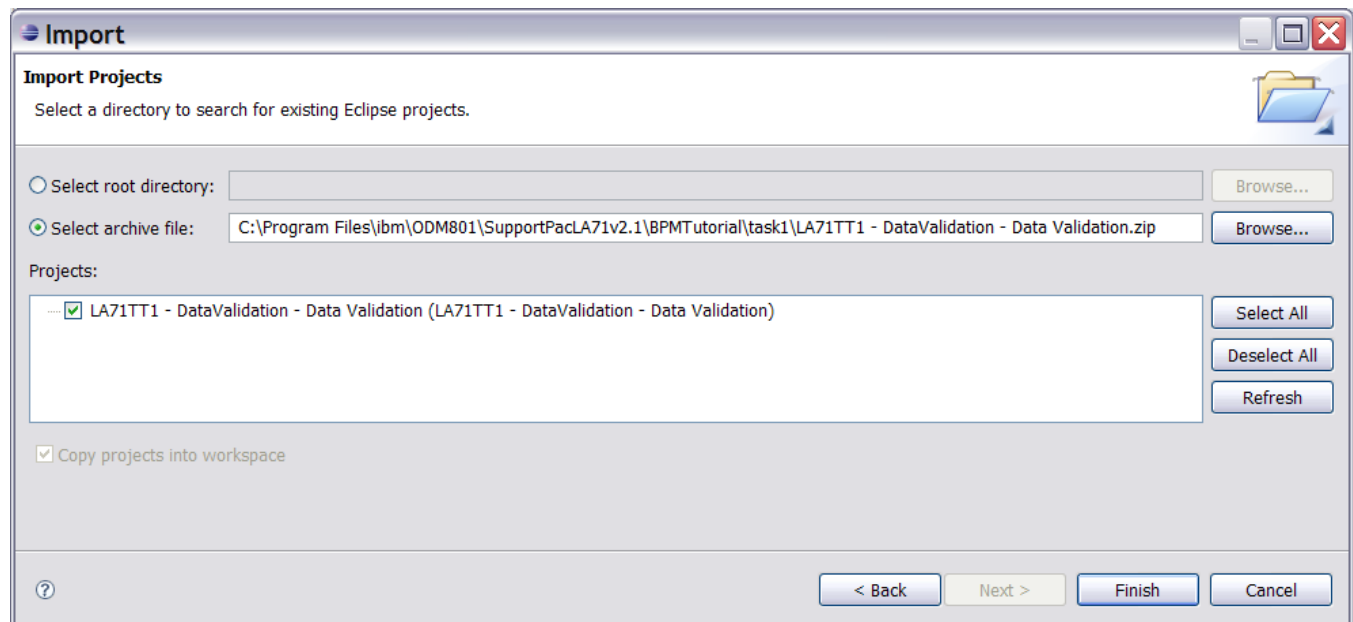
### Step 2. Importing the Decision Rule Projects

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**. Click **Next >**.

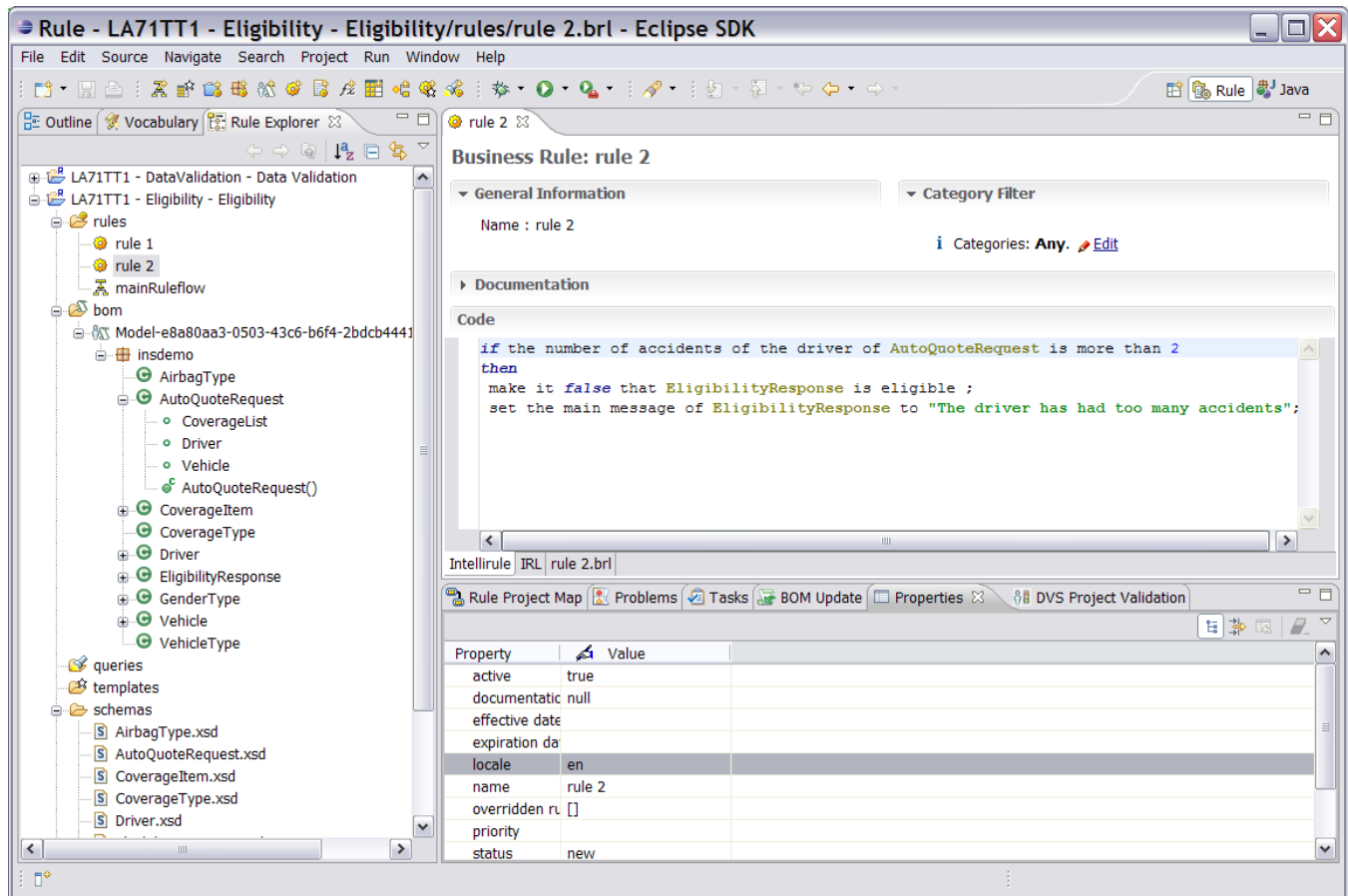


Select the projects exported from Process Designer in the folder  
**[SupportPac LA71 Path]\BPMTutorial\task1**



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:

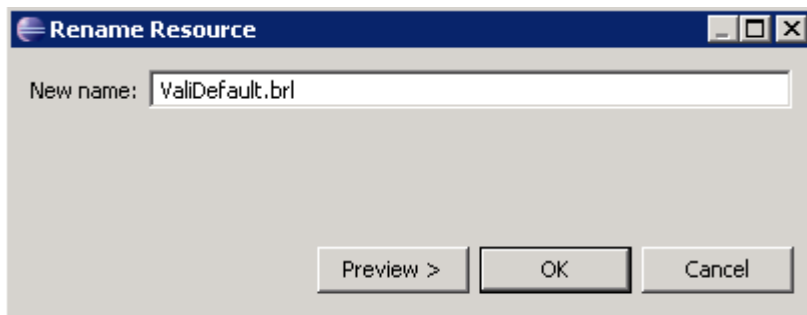
Right Click **LA71TT1 – DataValidation – Data Validation**  
Select **Refactor > Rename**  
For the **Name** type **DataValidation**.  
Click **OK**.

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

## 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.

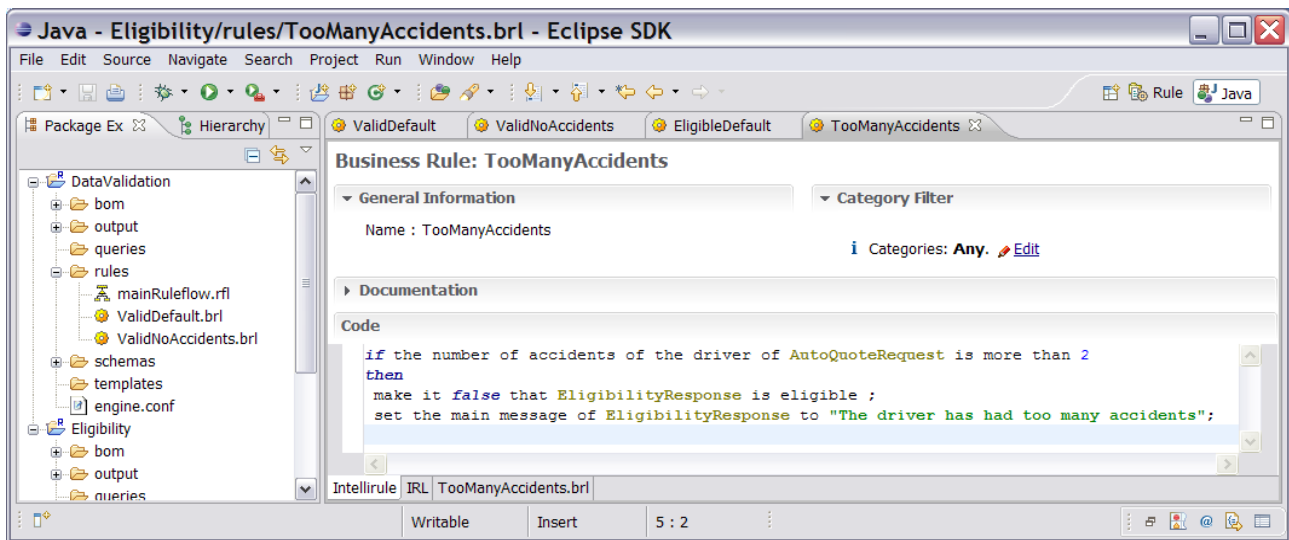
Select **DataValidation > rules > rule1** right click and select **Refactor > Rename...**  
In the box enter the new name: **ValidDefault.brl** and click **OK**



Repeat this to change the following rules

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

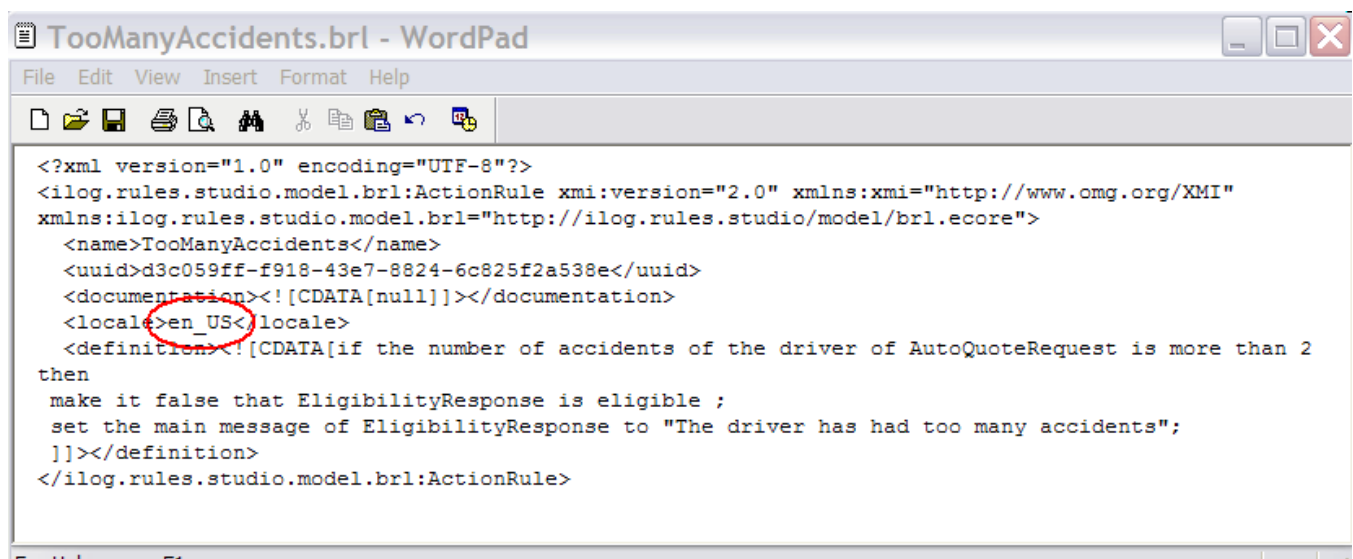
Once this re-factoring is undertaken the projects look as shown below.



## 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 .brl files inside the **rules** subdirectory of the **DataValidation** and **Eligibility** workspace projects to change the en locale to en\_US, as Rule Designer does not allow this change to be made. An example of the change is given below.



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...**

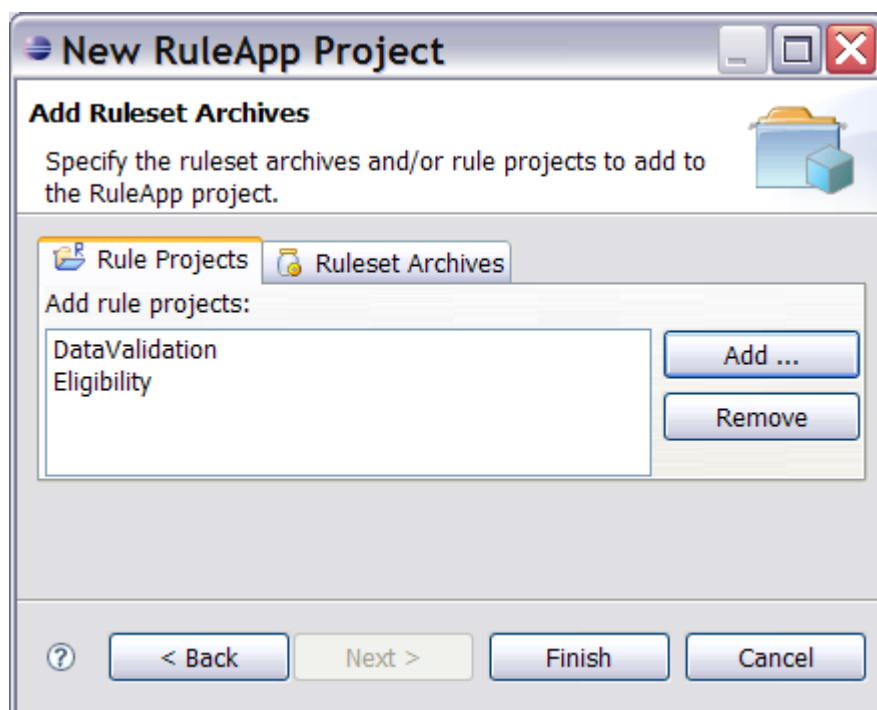
Select **RuleApp Project** and press the **Next >** button.

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

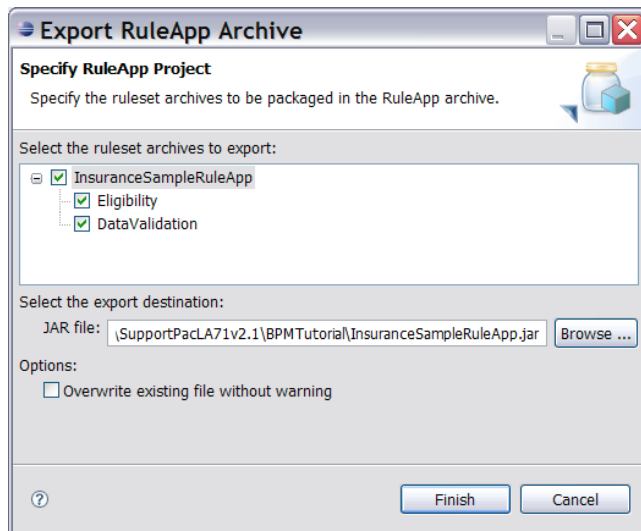
Right click **RuleApp > Export > RulesApp Archive**



In the **Specify RuleApp Project** window select the **InsuranceSampleRuleApp** and the **Eligibility** 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...**

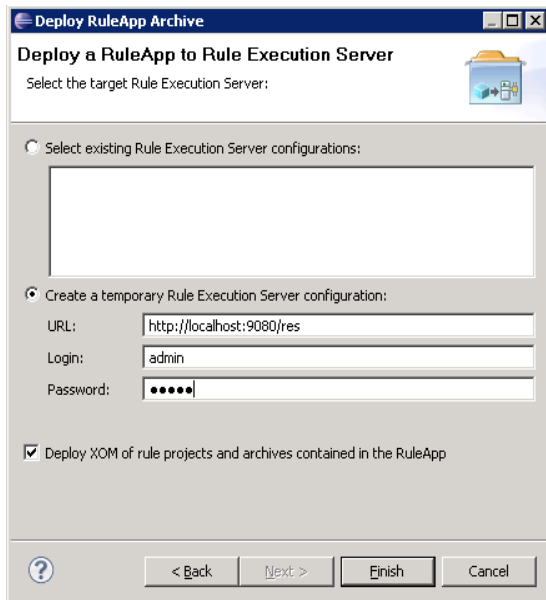
Select **Replace RuleApp version** for the deployment type and press **Next**.

In the window that appears

For **URL:** type **http://localhost:9080/res**

For **Login:** type **admin**

For **Password:** type **admin**



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

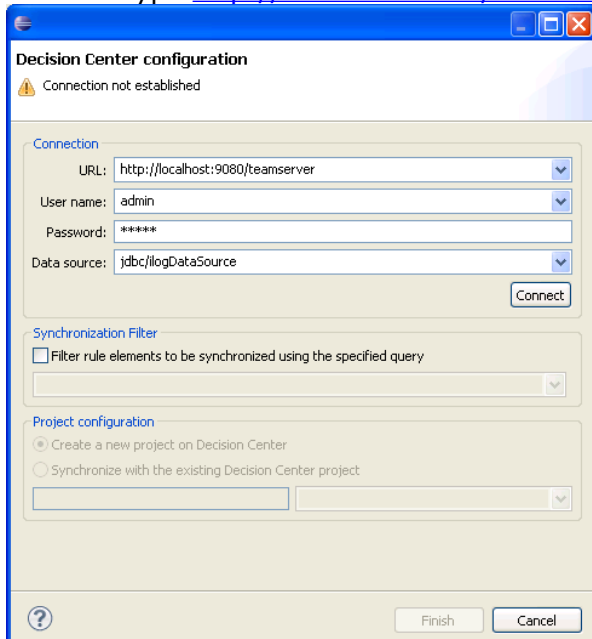
In order to allow Business users to manage the decisions, the rule projects are synchronized with Decision Center. Select each project, right click and select **Decision Center > Connect ...**

In the Connection dialog

For **User Name** type **admin**

For **Password** type **admin**

For **URL** type <http://localhost:9080/teamserver>



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

The screenshot shows a web form with two main sections. The first section, titled "Synchronization Filter", contains a checkbox labeled "Filter rule elements to be synchronized using the specified query" and a text input field with a dropdown arrow. The second section, titled "Project configuration", contains two radio buttons: "Create a new project on Decision Center" (which is selected) and "Synchronize with the existing Decision Center project". Below the radio buttons are two text input fields, the second of which also has a dropdown arrow.

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.

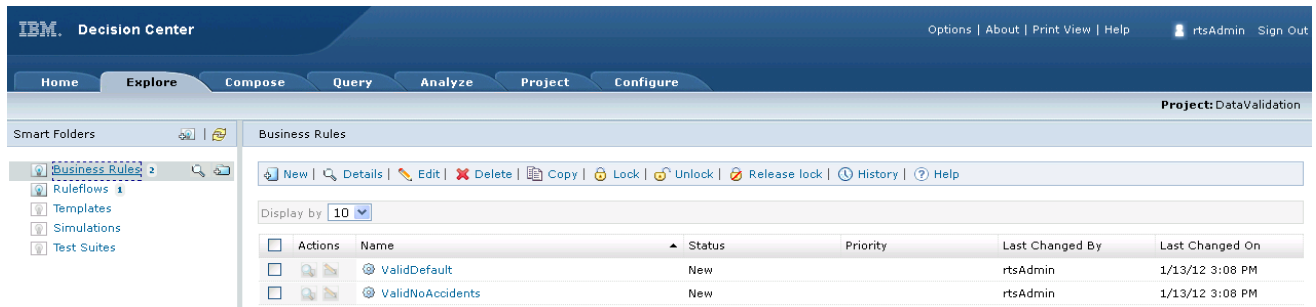
Once both projects are deployed they can be managed within Decision Center as shown below.

Login to Decision Center as rtsAdmin / rtsAdmin.

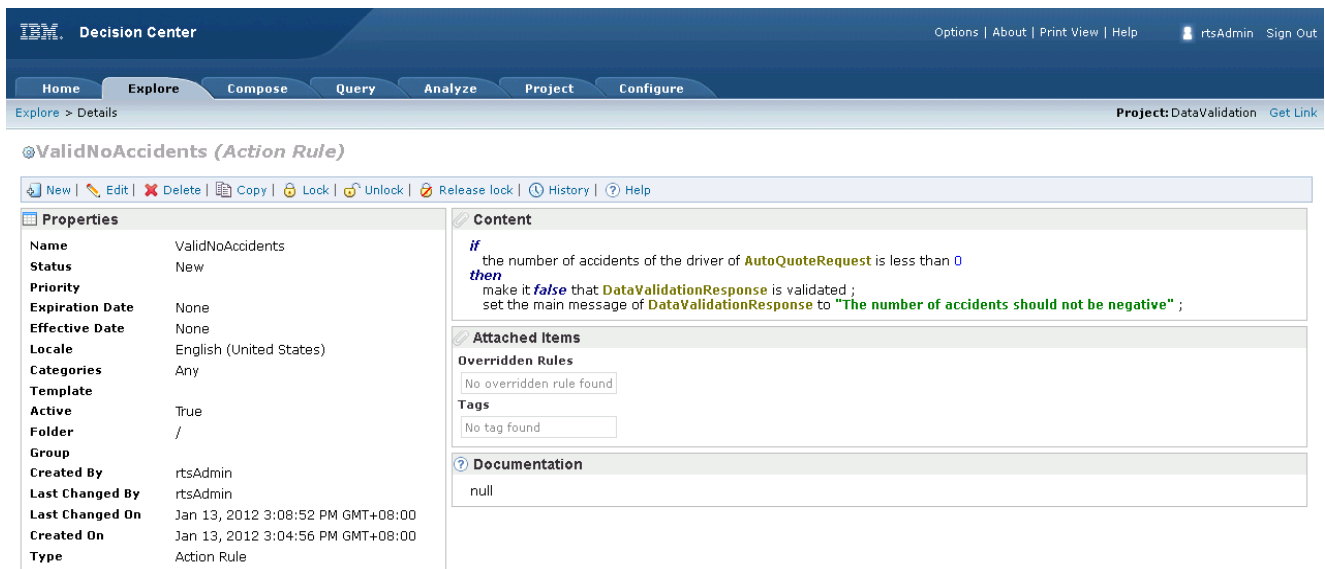
In the Home tab select the DataValidation Project from the **Project in use:** pull down.

The screenshot shows the IBM Decision Center Home page. The top navigation bar includes the IBM logo, "Decision Center", and links for "Options", "About", "Print View", "Help", "rtsAdmin", and "Sign Out". Below this is a secondary navigation bar with tabs: "Home", "Explore", "Compose", "Query", "Analyze", "Project", and "Configure". The "Home" tab is active. On the right side of the page, it says "Project: DataValidation" with a "Get Link" link. The main content area has a heading "Welcome to the Decision Center Home Page" and three dropdown menus: "Project in use:" (set to "DataValidation"), "Branch in use:" (set to "main"), and "Current action:" (set to "Work upon branch").

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.

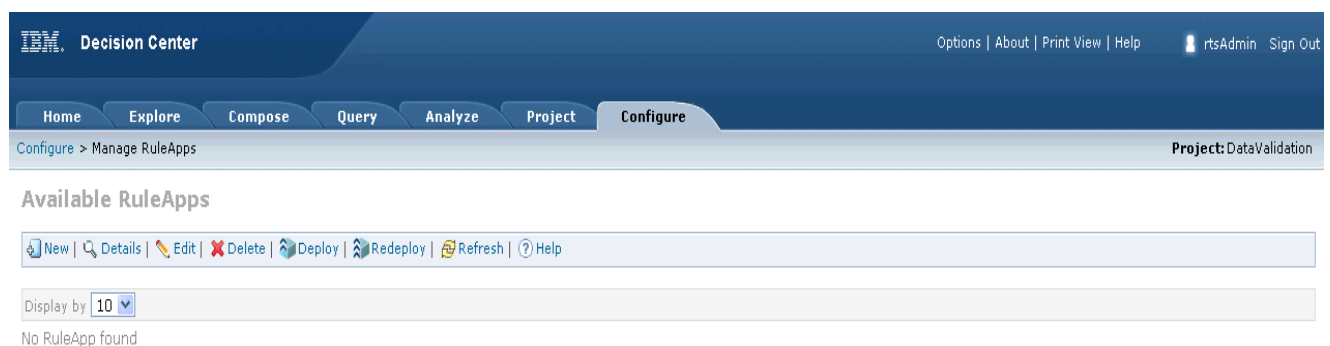


From here the rules can be managed as described in more detail in the Decision Center documentation.

## 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 **InsuranceSampleRuleApp**  
For the **Display Name** enter **LA71 Insurance Sample**

Configure > Manage RuleApps > Edit RuleApp

### New RuleApp




 Save |  Cancel

#### Properties

<b>Name*</b>	<input type="text" value="InsuranceSampleRuleApp"/>
<b>Display Name</b>	<input type="text" value="LA71 Insurance Sample"/>
<b>Major</b>	<input type="text" value="1"/>
<b>Minor</b>	<input type="text" value="0"/>
<b>Description</b>	<div></div>




#### Rulesets

No ruleset found



#### RuleApp Properties

No element of type 'RuleApp Property' found

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

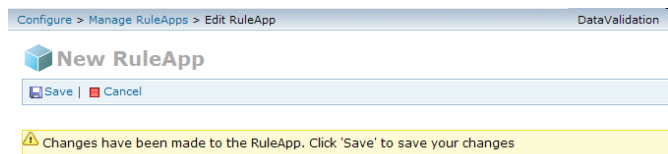
<b>Name*</b>	<input type="text" value="DataValidation"/>
<b>Display Name</b>	<input type="text" value="DataValidation"/>
<b>Description</b>	<div></div>
<b>Project*</b>	<input type="text" value="DataValidation"/>
<b>Baseline or Branch*</b>	<input type="text" value="main"/>
<b>Extractor</b>	<input type="text" value="&lt;none&gt;"/>
<b>Major</b>	<input type="text" value="1"/>
<b>Minor</b>	<input type="text" value="0"/>
<b>Enabled</b>	<input checked="" type="checkbox"/>
<b>Debug</b>	<input type="checkbox"/>

#### Ruleset Properties

No element of type 'Ruleset Property' found

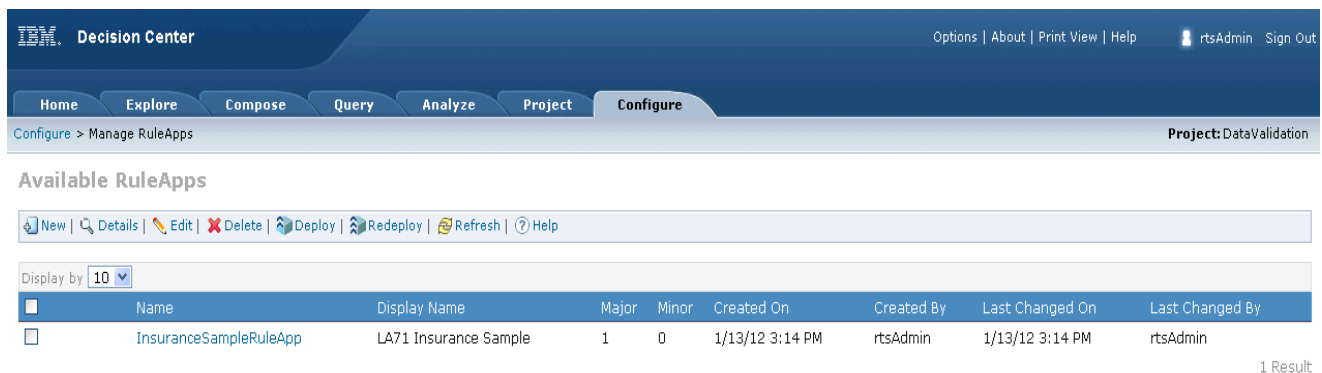
Repeat this for the Eligibility Ruleset.  
Click **Save** to save the completed RuleApp.



## Step 12. Deploying the Rule Application from Decision Center

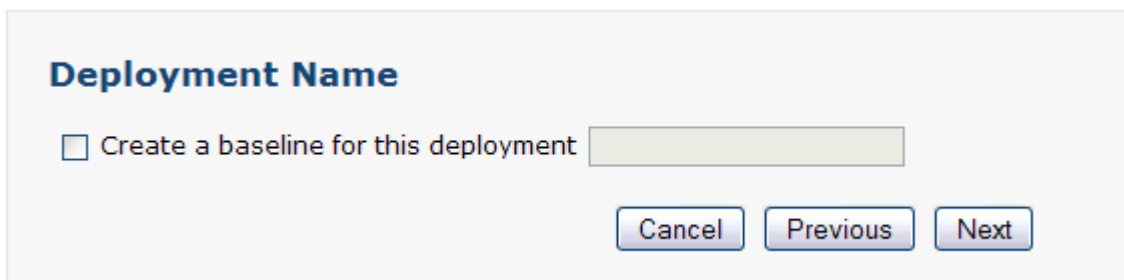
When Business Users have completed any changes, the RuleApp need to be redeployed to the Rule Execution Server.

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

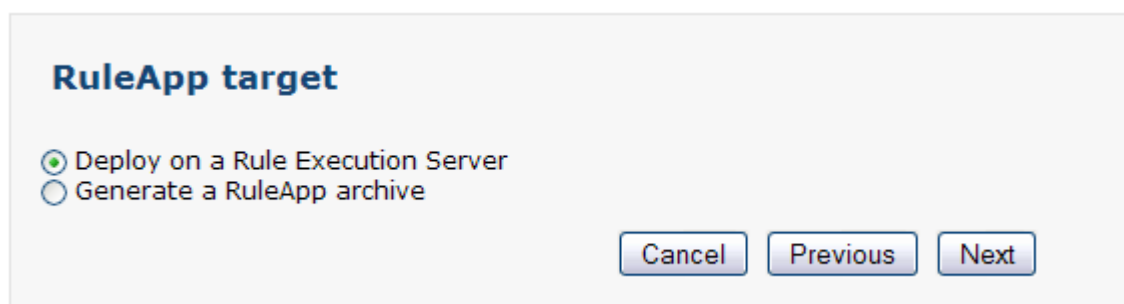


Name	Display Name	Major	Minor	Created On	Created By	Last Changed On	Last Changed By
InsuranceSampleRuleApp	LA71 Insurance Sample	1	0	1/13/12 3:14 PM	rtsAdmin	1/13/12 3:14 PM	rtsAdmin

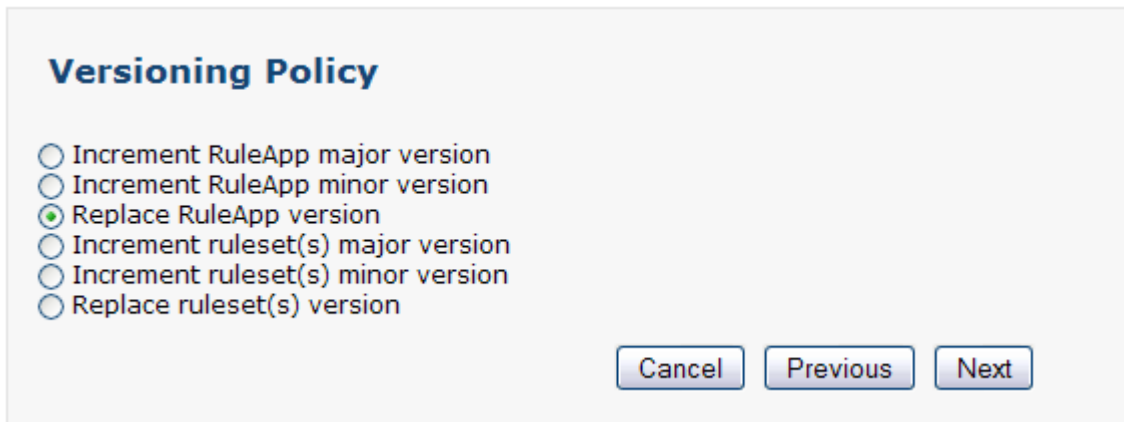
You have the option to create a baseline but for now just uncheck the box and click **Next**.



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**.

A dialog box titled "Versioning Policy" with a list of radio button options. The options are: "Increment RuleApp major version", "Increment RuleApp minor version", "Replace RuleApp version" (which is selected with a green dot), "Increment ruleset(s) major version", "Increment ruleset(s) minor version", and "Replace ruleset(s) version". At the bottom right are three buttons: "Cancel", "Previous", and "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>

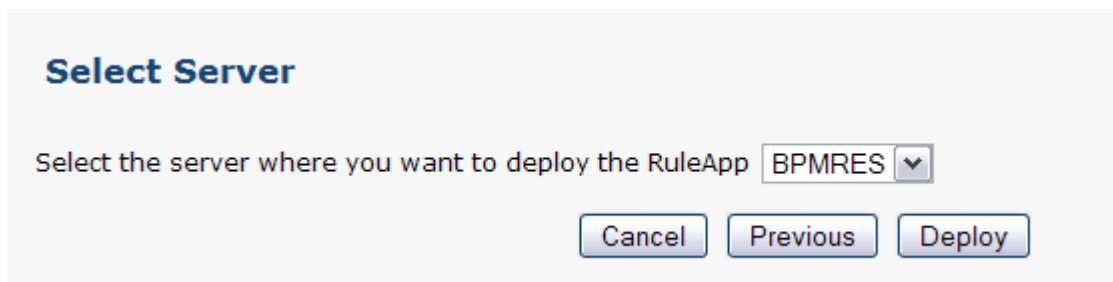
For the **Username** type **admin**

For the **Password** type **admin**.

Click **OK**.

Refer to the Decision Center documentation for further details on this.

Select the **BPMRES** server.

A dialog box titled "Select Server" with a text label "Select the server where you want to deploy the RuleApp" and a dropdown menu showing "BPMRES". At the bottom right are three buttons: "Cancel", "Previous", and "Deploy".

**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.

The screenshot shows the Rule Execution Server Console with the Explorer tab selected. The left sidebar shows the Navigator with the following structure:

- RuleApps (1)
- /InsuranceSampleRuleApp/1.0 (2)
- Decision Services (1)

The main content area displays the RuleApp View for /InsuranceSampleRuleApp/1.0. It includes a toolbar with 'Add Ruleset', 'Add Property', 'Download Archive', and 'Edit'. Below the toolbar, the RuleApp details are shown:

- Name: InsuranceSampleRuleApp
- Version: 1.0
- Creation Date: Jun 9, 2011 1:26:44 PM GMT+01:00
- Display Name: LA71 Insurance Sample
- Description:

Below the details, there is a 'Show Properties (1)' button. The main section displays '2 Ruleset(s)' with a 'Name Filter' and 'View only' options (Latest version, Enabled, Debug). A table lists the rulesets:

Select All	Name	Version	Ruleset Path	Creation Date
<input type="checkbox"/>	DataValidation	1.0	/InsuranceSampleRuleApp/1.0/DataValidation/1.0	Jun 9, 2011 1:26:49 PM GMT+01:00
<input type="checkbox"/>	Eligibility	1.0	/InsuranceSampleRuleApp/1.0/Eligibility/1.0	Jun 9, 2011 1:26:51 PM GMT+01:00

Below the table, it shows 'Ruleset 1 - 2 of 2' with 'prev 10 next 10' navigation and a 'Remove' button.

Select the **InsuranceSampleRuleApp** RuleApp and then for each of its Rulesets, generate the WSDL as detailed below.

The screenshot shows the Rule Execution Server Console with the Explorer tab selected. The left sidebar shows the Navigator with the following structure:

- RuleApps (1)
- /InsuranceSampleRuleApp/1.0 (2)
- Resources
- Libraries
- Decision Services (3)

The main content area displays the Ruleset View for /InsuranceSampleRuleApp/1.0/DataValidation/1.0. It includes a toolbar with 'Test Ruleset', 'View Statistics', 'View Execution Units', 'Upload Ruleset Archive', 'Add Managed URI', 'Add Property', 'Edit', and 'Retrieve HTDS WSDL File'. Below the toolbar, the Ruleset details are shown:

- Name: DataValidation
- Version: 1.0
- Creation Date: Jan 9, 2012 3:28:31 PM GMT+08:00
- Display Name: DataValidation
- Description:
- Status: enabled
- Debug: disabled

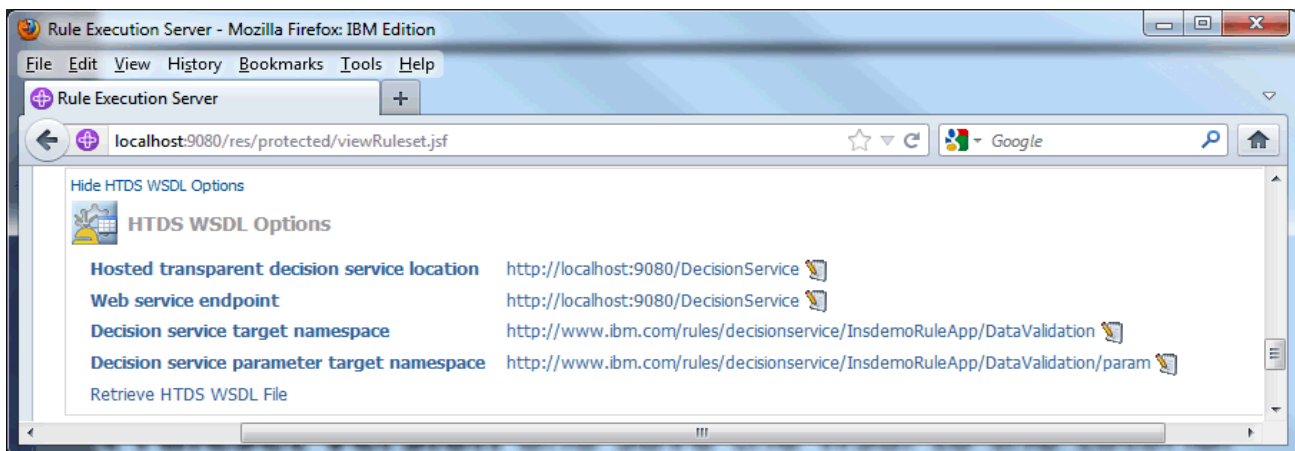
Below the details, there is a 'Permanent link'. The main section displays 'Ruleset Parameters' with a 'Display by' dropdown set to 10. A table lists the parameters:

Direction	Name	Kind	XOM Type
	AutoQuoteRequest	XOM	Insdemo.AutoQuoteRequest
	DataValidationResponse	XOM	Insdemo.ValidationResponse

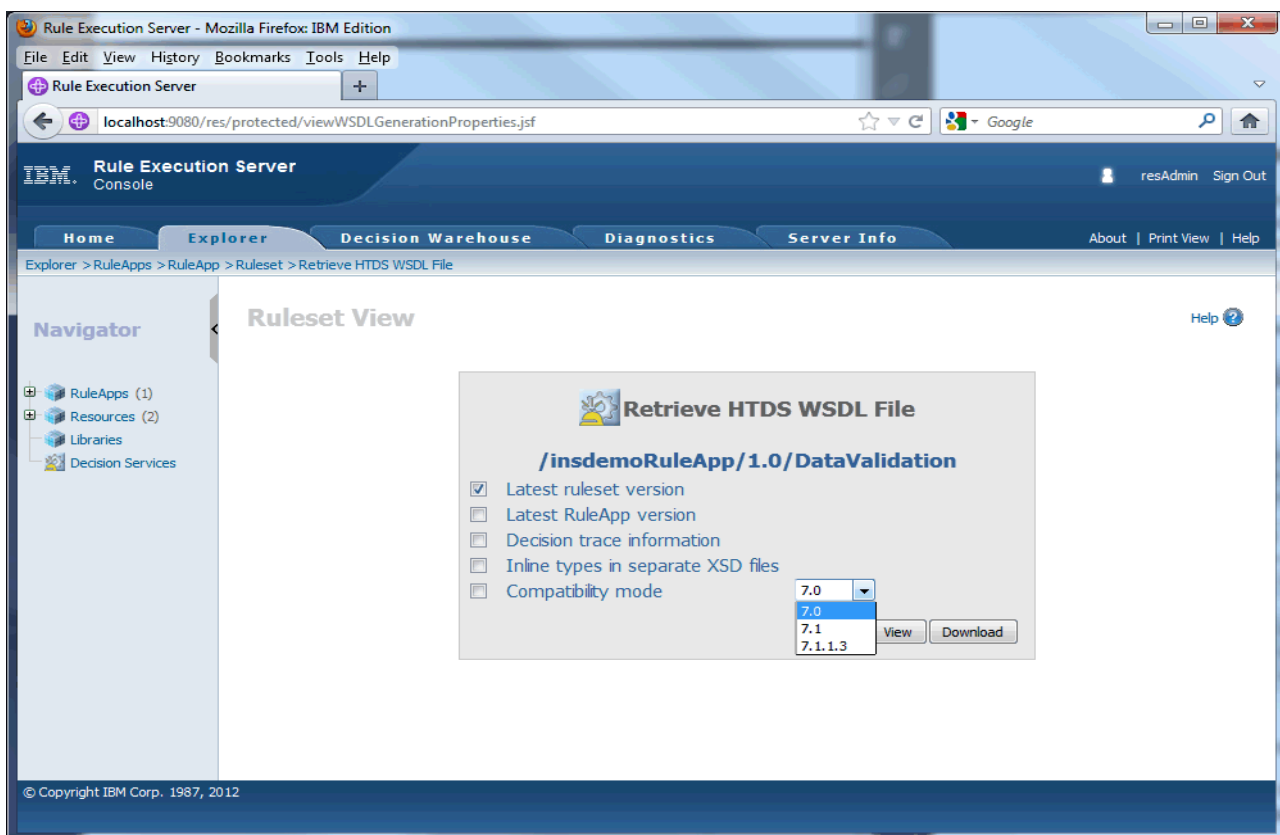
Below the table, it shows 'Ruleset Parameters 1 - 2 of 2' with 'prev 10 next 10' navigation. Below the table, there are buttons for 'Show Managed URIs (0)', 'Show Properties (0)', 'Show Monitoring Options (tracing currently disabled)', 'Show HTDS WSDL Options', and 'Show Archive Content'.



Click on **Show HTDS WSDL Options** to bring up a list of configuration criteria for the selected rule project WSDL.

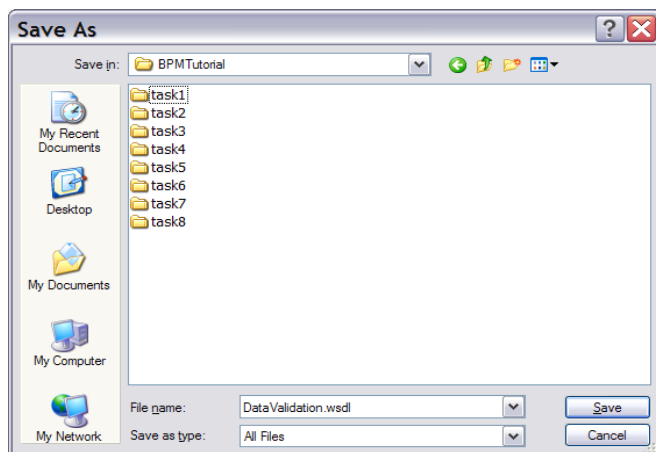


This allows the namespaces to be configured for the decision service for these projects. Leave these as the defaults and click **Retrieve HTDS WSDL File**.



Ensure that you select the **latest ruleset version** option or applications that use this service will not pick up new versions of the decision. If you require an HTDS WSDL to be backward compatible with a previous version of ODM, you can check the Compatibility Mode box and then select the appropriate version.

Click the Download button and save the wsdl to the tutorial directory: **[SupportPac LA71 Path]\BPMTutorial**.



Repeat this to obtain WSDL files for both the **DataValidation** and **Eligibility** Rulesets 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.