Tutorial: Getting started with the Decision Center Enterprise console

This tutorial helps you to take your first steps with IBM® Decision Center V8.5. You learn how to create and manage business rules in the Decision Center Enterprise console and Rule Solutions for Office.

Learning objectives

In this tutorial, you learn how to:

- Start the sample server and sign in to Decision Center.
- Explore the artifacts already available in the miniloan-rules project.
- Modify existing rules and write a new rule in Decision Center.
- Create a smart folder, and compare two versions of a decision table.
- Create a test suite and a simulation that contains scenarios to run tests on the rules.
- Deploy the rules to the execution environment.
- (Optional) Update a decision table in Excel by using Rule Solutions for Office.

Time required

This tutorial takes approximately 3 hours to complete.

Introduction: Getting started with business rules

The scenario of the tutorial is based on the fictitious web-based application of an online lender. The application is called Miniloan. The Miniloan application aims at defining whether a customer is eligible for a loan according to several criteria such as the amount of the loan, the yearly income of the borrower, and the duration of the loan.

In Decision Center, you explore the rules in a project, and you check the execution flow. Then, you create action rules and decision tables. You manage changes by using queries, you compare different versions of your rules, and create custom views to display only the artifacts that you are interested in.

By using Rule Solutions for Office, you can edit rules in Microsoft Office documents. You use the editors that are integrated with Microsoft Word or Excel to edit business rules, ruleflows, and decision tables with a natural language syntax.

The following figure shows the workflow and the interaction between Decision Center, Rule Execution Server, and Rule Solutions for Office.
Important:

The project that is provided in this tutorial is only available in English (United States).

Prerequisites

To perform the tutorial, make sure that you have the following prerequisites:

- Decision Center. If you want to perform "Task 8: Authoring in Rule Solutions for Office" on page 20 which is optional, you must also install Rule Solutions for Office.
- Decision Server: to perform Tasks 5 to 7.
- A supported browser version.

To perform this tutorial, the sample server is also required. The sample server is installed in one of the following ways:

- By using the launchpad sample server installation. For more information, see Installing the product and the sample server.
- By using the default set of features that are installed with Installation Manager. For more information, see Installing using Installation Manager.
To check that the **required products**, getting started projects, and the sample server are installed, see [Checking your installation](#).

For more information about the required products and their modules, and how to install them, see [Installing Operational Decision Manager](#).

To perform this tutorial, you must first start the sample server and sign in to Decision Center.

**Note:**

In this tutorial, when a URL contains the `<PORT>` placeholder, you must replace `<PORT>` with the port number. The default port number for WebSphere® Application Server is **9080** but it can be different depending on your installation.

A `was.properties` file is created when you start the server for the first time. To know the port number to use, open `<WAS_InstallDir>/profiles/<ODMSample<version>/data/was.properties`, and check the value of the `server.port` property.

**Audience**

This tutorial is aimed at business users (rule authors, policy managers, business analysts).

**Learning objectives**

In this tutorial, you learn how to:

- Start the sample server and sign in to Decision Center.
- Explore the artifacts already available in the `miniloan-rules` project.
- Modify existing rules and write a new rule in Decision Center.
- Create a smart folder, and compare two versions of a decision table.
- Create a test suite and a simulation that contains scenarios to run tests on the rules.
- Deploy the rules to the execution environment.
- (Optional) Update a decision table in Excel by using Rule Solutions for Office.

**Time required**

This tutorial takes approximately 3 hours to complete.

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**Task 1: Starting Decision Center**

In this task, you start the sample server, and you login to Decision Center.

Operational Decision Manager provides a sample server to run the tutorials and samples and to demonstrate Decision Center. Before signing in to Decision Center, you must start the sample server.

This tutorial is based on the `miniloan-rules` rule project that is already deployed to Decision Center.
Step 1: Start the sample server

Before starting Decision Center, you must start the sample server.

To start the sample server:

1. Click **Start > All Programs > IBM > package_group > Sample Server > Start server.**
   
   `package_group` refers to the package group specified in IBM Installation Manager during installation. The default package group is Operational Decision Manager V8.5.

   **Note:** On Windows 7, if you have installed the product in the Program Files or Program Files (x86) directories, you must be an administrator to start the sample server. You can run the sample server as an administrator, or obtain the write permissions on the Operational Decision Manager installation directory.

2. Wait until the server has started.
   
   It can take a while for the server startup procedure to complete. The command window displays server trace messages as the server starts. A feedback message indicates when the server has started successfully:
   
   ```
   [samples.echo] GBRPS0029I: start.server is completed.
   BUILD SUCCESSFUL
   Total time: 20 minutes 3 seconds
   Press any key to continue . . .
   ```

Step 2: View the rule project in Decision Center

Now that you have started the sample server, you can open Decision Center to view the rule project.

To view the rule project in Decision Center:

1. Click **Start > All Programs > IBM > package_group > Sample Server > Decision Center Enterprise Console.**

   **Tip:** You can also enter the following URL with the correct port number in a browser: `http://localhost:<PORT>/teamserver/`. For more information on the port number to use, see [Prerequisites](#).

2. Sign in to Decision Center using the following details:
   
   **Username:** rtsUser1
   
   **Password:** rtsUser1

   Decision Center can handle different user profiles. Here you sign in as a regular business user.

3. On the Decision Center **Home** tab, in the **Project in use** field, select **miniloan-rules**.

   ![Project in use: miniloan-rules](image)

   ![Branch in use: main](image)

   In the next task, you navigate in Decision Center and explore the rules and the decision table of the `miniloan-rules` rule project.
Task 2: Exploring

In this task, you explore business rules of the miniloan rule project in Decision Center.

You use the Explore tab to navigate through your folders and select what you want to work on. The default smart folders display most of the project elements.

In this task, you discover the business rules that make up the business policy, for example an action rule and a decision table, and you generate a report on all the rule artifacts in the rule project. Then, you write a query that returns the rules that match your search criteria.

This task should take you about 10 minutes to complete.

Step 1: View a rule

An action rule is a business rule that you edit in a rule editor and that uses natural-language. An action rule is made of a condition part and of an action part. The first part of the rule defines the condition in which the rule applies. The second part of the rule defines the action to take if the condition of the rule is true.

To view the rules in your rule project:

1. Make sure you are signed in to Decision Center as rtsUser1 and that the Project in use is set to miniloan-rules, as described in Task 1: Starting Decision Center on page 3.
2. Click the Explore tab.
3. Under Business Rules, click the eligibility folder.
   The eligibility folder contains two action rules and a decision table. These rules compose the business policy that defines whether a borrower is eligible for a loan.
4. In the table, click the minimum income rule to open it.
   The following action rule is displayed in the Content section:
   
   if
   the yearly repayment of 'the loan' is more than the yearly income of
   'the borrower' * 0.3
   then
   add "Too big Debt-To-Income ratio" to the messages of 'the loan';
   reject 'the loan';
   In this rule, the loan is rejected if the yearly repayment of the loan is more than 30% of the yearly income of the borrower.

Step 2: View a decision table

Decision tables provide an alternative way of viewing and managing large sets of symmetric business rules. A decision table contains condition columns and action columns.

To view a decision table:

1. Click the Explore tab to go back to the list of project elements.
2. In the table displaying the business rules of the eligibility folder, click repayment and score.
   In this decision table, the debt to income and credit score columns define the conditions, and the message and rejected columns define the actions. The
condition and action columns are displayed in a different color, as shown in the following figure:

<table>
<thead>
<tr>
<th></th>
<th>debt to income</th>
<th>credit score</th>
<th>message</th>
<th>rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>min</td>
<td>max</td>
<td>min</td>
<td>max</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0 %</td>
<td>30 %</td>
<td>0</td>
<td>200</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>200</td>
<td>0</td>
<td>800</td>
</tr>
<tr>
<td>3</td>
<td>30 %</td>
<td>45 %</td>
<td>0</td>
<td>400</td>
</tr>
<tr>
<td>4</td>
<td>400</td>
<td></td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>45 %</td>
<td>50 %</td>
<td>0</td>
<td>600</td>
</tr>
<tr>
<td>6</td>
<td>50 %</td>
<td>600</td>
<td>600</td>
<td>800</td>
</tr>
<tr>
<td>7</td>
<td>&gt; 50 %</td>
<td>0</td>
<td>800</td>
<td></td>
</tr>
</tbody>
</table>

In this table, the conditions are based on the repayment capacity of the borrower: debt-to-income ratio and credit score. The actions define the message to display when the loan is rejected, and the reasons for the rejection of the loan. The image of the Disable action icon defines the action cells that do not require any action. For example, if the debt-to-income ratio and the credit score are sufficient, the loan is accepted and no action is required.

The **debt-to-income ratio** is the percentage of the borrower’s monthly gross income that is used to pay debts. It is used to compare the debt payments to the income.

The **credit score** is a number to determine the likelihood that the borrowers will pay their debts.

### Step 3: Generate a project report

Now, you generate a report to get a view of the business rules in the rule project.

To generate a project report:

1. Click the **Analyze** tab.
2. Under Project Report, click **Generate Project Report**.
   - On the Queries page, **<none>** is selected because there are no queries yet.
   - Therefore, the report returns all the rule artifacts in the project.
3. Click **Generate Report**.
4. On the Project Report page, click **miniloan-rules** to view the report.

   The Business Rule Report opens in a new window, and provides details on the project elements:

   **Parameters**

   The values of the parameters, here borrower and loan, are the base of the decision. Ruleset parameters define the data that is sent to the application and the type of information that can be retrieved.

   **Rule Artifacts**

   The Rule Artifacts section displays the packages, the action rules and the decision table, and lists the properties for each artifact.

   **Ruleflows**

   A ruleflow defines the flow of execution of the rules. The rules are organized into tasks and the ruleflow specifies how tasks are chained together: how, when, and under what conditions they are executed.

5. Close the HTML report.
Step 4: Create a query

In your business user role, you are asked to change the allowable debt-to-income ratio for people who earn less than 500,000 from 30% to 50%.

Your starting point in Decision Center is to find all the rules in your project that use the yearly income on which the debt-to-income ratio is based.

To write and run a query:
1. Click the Query tab.
2. In the Name field, type Uses Yearly Income.
3. In the editor, use the completion menu as follows:

   Find all business rules
   such that <select a choice> X

   [Do]
   <a rule artifact> may lead to a state where <semantic condition>
   <a rule artifact> modifies the value of <a member>
   <a rule artifact> uses the phrase <a member>
   <a rule artifact> uses the value of <a member>
   <a string> + <a character>

4. Continue using the completion menu to build the following query:
   Find all business rules
   such that each business rule uses the value of the yearly income of a borrower

   The query is displayed as follows in the query editor:

   [Do]
   <a string> + <a character>

5. Click Save to save the query.
6. Click Run Query.

   The query results show the minimum income rule, and the repayment and score decision table.
7. To help you evaluate which rules you must change to implement the new policy, click the link Generate Report on Query Results.
8. On the Project Report page, click miniloan-rules to view the report.

   An HTML report is displayed, showing details for all the rules that the query returned.

   Looking at the report, you see that repayment and score already calculates the debt-to-income ratio and the credit score, therefore only minimum income needs to be changed to implement the policy change.
9. Close the HTML report, and click the Back button in the Analyze tab, to return to the Query tab.

   In the next task, you modify the minimum income rule to implement the policy change, and you create a new rule to complete the business policy.
Task 3: Authoring

In this task, you learn how to modify a rule and a decision table, and how to write a rule in Decision Center.

Changes in the business policy occur regularly. As a business user you can be asked to edit business rules to reflect the changes in the business policy. In this task, you use the editors in Decision Center to modify and create business rules.

This task should take you about 20 to 30 minutes to complete.

Step 1: Modify an action rule

You have been asked to change the allowable debt-to-income ratio for people who earn less than 500,000 from 30% to 50%.

In the previous task, you ran a query on the rules that use the yearly income of the borrower. The query returned the minimum income rule, and the repayment and score decision table.

Now, you can change the allowable debt-to-income ratio in the minimum income rule, and add a condition on the yearly income of the borrower.

Note:

If you have closed the query results, you can run the query again by clicking the Query tab, and click Run Query.

To change the allowable debt-to-income ratio:

1. In the query results table, click Quick Edit next to the minimum income rule.

   The rule opens in editing mode at the bottom of the page:

   
   [definitions]
   if
      the yearly repayment of the loan [≠] is more than the yearly income of the borrower • 0.3 [≠] ×
   then
      add • Too big Debt-To-Income ratio [≠] to the messages of the loan ×
      reject the loan ×
   [else]

   Note:

   If you have difficulties using the Quick Edit, make sure that you have a supported browser version.

2. In the if part of the rule, click the value 0.3 to activate the field, and change the value to 0.5, then press Enter to incorporate the change.
3. Click the blue arrow just above the then keyword and add the following condition using the completion menu:

   and the yearly income of the borrower is less than 500000

Tip:

Click is to select is less than:

   and the yearly income of the borrower [±] is < a number > [±] does not equal
   equals
   is at least
   is at least < min >
   is at most
   is between < min >
   is less than

4. In the text box at the bottom, type the following comment to the new version of the rule:

   Reject loans for low to mid-range income with debt-to-income ratio above 50%
   Compliant with corporate policy v1.5

Tip:

You can also copy and paste the comment.

5. Click Save to save the policy change.

Step 2: Modify a decision table

In this step, you change the policy to make the lending criteria more restrictive. You modify the repayment and score decision table so that the application rejects a loan for someone whose debt-to-income ratio is between 0% and 30% if the applicant’s credit score is less than 300.

To modify the repayment and score decision table:

1. Click Quick Edit next to the repayment and score decision table.

   The decision table opens in editing mode.

Note:

If you have difficulties using the Quick Edit, make sure that you have a supported browser version.

2. Under credit score, click the first cell in the max column, replace 200 with 300, and then press Enter.

   The decision table displays a warning indicating an overlap with the second row:
3. To solve this problem, in the second row of the min column, replace 200 with 300, and press Enter. The warning is no longer displayed.

4. Click Save to save the policy changes.

**Step 3: Create a rule**

The maximum loan amount that a borrower can request is 1,000,000. You are asked to create a new rule that rejects the loan if the requested amount is greater than 1,000,000.

In this step, you create the maximum amount rule using the completion menu available in the editor:

```sql
if
  the amount of 'the loan' is more than 1,000,000
then
  add "The loan cannot exceed 1,000,000" to the messages of 'the loan';
  reject 'the loan';
```

To create the maximum amount rule:

1. Click the Compose tab.
2. Make sure that Action Rule is selected and click OK to create an action rule.
3. In the Name field, enter maximum amount.
4. In the Folder field, select the validation folder.
5. Click Next to start writing the content of the rule.
6. Click <select a condition>, and build the following statement using the completion menu:
   ```sql
   if
     the amount of the loan is more than 1,000,000
   then
     add The loan cannot exceed 1,000,000 to the messages of the loan;
     reject the loan;
   ```
7. Click <select an action>, select add a <string> to the messages of <a loan>, and then click the placeholder to enter the message to display, and select terms and phrases from the completion menu to build the following expression:
   ```sql
   add The loan cannot exceed 1,000,000 to the messages of the loan
   ```
8. Click the blue arrow to create a new action line.
9. Click <select an action>, select reject <a loan>, and click the placeholder to build the following action:
   ```sql
   reject the loan
   ```

The maximum amount rule appears as follows in the editor:
Content

[definitions]
if
  the amount of the loan \([\pm]\) is more than \(\nabla 1,000,000 \([\pm]\) \(\nabla\)
then
  add \(\nabla\) The loan cannot exceed 1,000,000 \([\pm]\) to the messages of the loan \(\nabla\)
  reject the loan \(\nabla\)
[else]

10. Click Finish to save the rule.

The maximum amount rule is now complete:
if
  the amount of 'the loan' is more than 1000000
then
  add "The loan cannot exceed 1,000,000" to the messages of 'the loan';
  reject 'the loan';

You have discovered how to modify and write rules in Decision Center. In the next task, you manage project elements by creating a smart folder, and comparing two versions of a decision table.

Task 4: Managing

In this task, you create a smart folder to display the rules that you have modified by day, and you compare two versions of a decision table.

Business users create and edit business rules in Decision Center. Their work is saved in a database that handles versioning, history, and multi-user access.

This task should take you about 15 minutes to complete.

Step 1: Compare versions of a decision table

Now, you check the history of the decision table that you modified in "Task 3: Authoring" on page 8, and compare the differences between the two versions.

To compare versions of a decision table:
1. Click the Explore tab.
2. Click the eligibility folder, and select the check box next to the repayment and score decision table.
3. Click History in the toolbar.
   On the History page, you can see the versions of the decision table since its creation.
4. Select versions 1.0 and 1.1, and click Compare 2 Versions to see the changes in the decision table between these two versions.
5. Click the Content link to display the differences between the old and new values of the decision table content.
   The values that you have modified in the previous task are displayed in red.

Note:
You can proceed the same way to view the changes in the minimum income rule. The action statement that you added to the minimum income rule in "Task 3: Authoring" on page 8 is displayed in green.

**Step 2: Create a smart folder**

You want to get a quick view of the rules that you have modified today, and you want the rules to be listed according to the day that you have modified them. To do so, you create a smart folder based on a query and on the modification date of the rules.

To create a smart folder:

1. Click the **Compose** tab.
2. Select **Smart Folder**, and click **OK**.
3. In the **Name** field, enter **Last Changed On**.
4. Click **Next**.
5. Use the completion menu to build the following query:
   
   Find all business rules such that the last modifier name of each business rule is me
6. Click **Next**.
7. In the Available Properties, select **Last Changed On**, and then click the arrow to move the property to the Displayed Properties window:

   ![Available Properties](image)

   ![Displayed Properties](image)

8. Click **Finish**.

   The new smart folder is displayed in the Explore tab, and displays the rules that you have modified today:

   ![Explore Tab](image)

   You have modified the minimum income rule, the repayment and score decision table, and you have created the maximum amount rule. The minimum credit score rule is not displayed because you have not modified it today.

   **Tip:**

   If the rules are not automatically displayed, click **Refresh**.
In the next task, you test your rules using scenarios to make sure that they behave as expected.

**Task 5: Validating**

In Decision Center, you can test a ruleset against typical execution scenarios to check that the rules operate as expected.

The scenarios are stored in an Excel file called “scenario file”. When you create a test suite, you must specify the set of rules to test and the file containing the scenarios. After running the test suite, a report compares the results that you expected to have with the actual results obtained when applying rules on your scenarios.

In this tutorial, you run test suites and simulations on a configured server called Sample. Rule Execution Server provides a runtime execution environment on which test suites and simulations are run.

Previously, you modified the debt-to-income ratio in the minimum income rule. In this task, create and run a test suite to check that the modified rule behaves as expected.

This task should take you about 15 to 20 minutes to complete.

**Step 1: Create and run a test suite**

To run a scenario in Decision Center, you must create a test suite. For the purpose of this tutorial, the scenario file for the test suite is already created for you. The miniloan-test.xls scenario file is located in `<InstallDir>/gettingstarted/EnterpriseConsole/`, where `<InstallDir>` refers to your installation directory. The scenario file is available in Excel 2003 format. You can open it and take a look at it to view the scenarios that you are about to execute.

The scenario file contains two scenarios with their corresponding expected results. The scenarios are listed in the **Scenarios** tab, and the anticipated results in the **Expected Results** tab.

To create and run a test suite:

1. Make sure that you are still signed in to Decision Center as rtsUser1 and that the **Project in use** is set to miniloan-rules.
2. Click the **Compose** tab.
3. In the Compose tab, select **Test Suite**, and then click **OK**.
4. In **Step 1: Properties**, enter Miniloan Test as name for the test suite, and click **Next**.
5. In **Step 2: Rules Tested**, click **Next** to test all the rules in the project.
6. In **Step 3: Scenarios**, select **Excel 2003** as the format for the scenario file.
7. Click **Browse**, and select `<InstallDir>/gettingstarted/EnterpriseConsole/miniloan-test.xls` to upload the scenario file.

The miniloan-test.xls file is now shown as uploaded.
8. Click Finish and Run.
9. On the Run page, make sure that the Sample server is selected, and click Run. Decision Center may take a few seconds to complete this action. The report opens and shows the results of the tests:

```
<table>
<thead>
<tr>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Scenarios</td>
</tr>
<tr>
<td>Scenarios with Failures</td>
</tr>
<tr>
<td>Success Rate</td>
</tr>
</tbody>
</table>
```

Scenario 1 fails because it expects the loan to be rejected. However, the loan is now approved because you have increased the allowable debt-to-income ratio in the minimum income rule.

**Step 2: Modify the Excel scenario file**

To correct the problem in Scenario 1, you edit miniloan-test.xls and modify the expected results for Scenario 1. You also add a new scenario to verify that the loan is rejected if the debt-to-income ratio is too high.

To edit the scenario file:

1. Open the miniloan-test.xls scenario file from `<InstallDir>/gettingstarted/EnterpriseConsole/`.

   **Tip:**

   Make a copy of this file to use as a back up.

2. Click the Expected Results tab, and change the expected result for Scenario 1 to TRUE.
3. Click the **Scenarios** tab, copy and paste the Scenario 1 row, to create a new line for Scenario 3.
4. Change the name to Scenario 3, and change the yearly income value to 60000:

<table>
<thead>
<tr>
<th>Scenario ID</th>
<th>description</th>
<th>the borrower</th>
<th>credit score</th>
<th>yearly income</th>
<th>the loan</th>
<th>duration</th>
<th>yearly interest rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1</td>
<td>Joe</td>
<td>800</td>
<td>60000</td>
<td>60000</td>
<td>240</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Scenario 2</td>
<td>Joe</td>
<td>800</td>
<td>60000</td>
<td>250000</td>
<td>240</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td><strong>Scenario 3</strong></td>
<td>Joe</td>
<td>800</td>
<td>60000</td>
<td>60000</td>
<td>240</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

5. Click the **Expected Results** tab, add a new row for **Scenario 3**, and enter **FALSE** as expected result.
6. Save the changes and close the file.

**Step 3: Edit and run the test suite**

To test the scenarios that you modified, you edit the test suite in Decision Center and run it again.

To edit and run the test suite:
1. In Decision Center, click the **Explore** tab, and click **Test Suites**.
2. Select the check box next to the Miniloan Test test suite, and click **Edit** in the toolbar.
3. Click **Step 3: Scenarios**, click **Browse** in the File section, and select `<InstallDir>/gettingstarted/EnterpriseConsole/miniloan-test.xls` to upload the scenario file that you modified.
4. Click **Finish and Run**.
5. On the Run page, make sure that the **Sample** server is selected, and click **Run**.

   The report opens and shows that the tests are successful: the expected results match the execution results.

   The minimum income rule is correct and behaves as expected.

You have tested your rules against possible scenarios, in the next task you create a simulation on a large set of scenarios to assess the performance of the rules.

**Task 6: Creating a simulation**

In this task, you run a simulation to assess the performance of the rules and the potential consequences of change.

Simulations indicate how rule changes impact the business. You usually run a simulation on a large set of scenarios, and you often derive simulations from
historical data. The results produce a report that you can use to assess the performance of a set of rules without impacting the rules or the applications on which they act.

In the previous task, you created a test suite to compare the actual results with the expected results. In this task, you generate an Excel file template in Decision Center, and create a simulation based on data stored in the Excel file.

This task should take you about 10 to 15 minutes to complete.

**Step 1: Generate the Excel file**

To create a simulation, you first generate an Excel file template based on the Miniloan project.

To generate the Excel file:
1. Make sure that you are still signed in to Decision Center as rtsUser1 and that the Project in use is set to miniloan-rules.
2. Click the Compose tab.
3. Select Simulation, and click OK.
4. In the Name field, enter Miniloan Simulation, and then click Next.
5. Keep the default option to test all the rules in the current project, and click Next.
6. In the Format list, select Excel 2003 as the format of Excel file.
7. Click the Generate template link.
8. On the Generate Scenario File Template page, select the English (United States) locale for the template, and click Generate.
   The generation of the Excel file might take a few seconds to complete.
9. Click the template.xls link, and save the Excel file to your local drive.

**Step 2: Run the simulation**

To complete the simulation, you must upload the Excel file containing the scenarios. For the purpose of this tutorial, the scenario file containing test data for the simulation is already created for you (miniloan-simu.xls).

**Note:**

You can also use the Excel file that you just generated, edit it offline and populate it with the scenarios contained in <InstallDir>/gettingstarted/EnterpriseConsole/miniloan-simu.csv.

You can now finish creating the simulation in Decision Center and run it. Then, you take a look at the report to view the results of the simulation.

To finish and run the simulation:
1. If you are still on the Template Download page, click Back to return to the simulation.
2. On the Scenarios page (Step 3: Scenarios), click the Browse button and select <InstallDir>/gettingstarted/EnterpriseConsole/miniloan-simu.xls.
   This scenario file is already populated with the scenarios.
3. Click Finish and Run to save the simulation and run it.
4. Make sure that the **Sample** server is selected, and then click **Run**.
   Wait until the simulation is complete.
   The report opens and shows that 100 scenarios were executed, and that the
   execution was successful.
5. Sign out of Decision Center.

After testing the ruleset in Decision Center, users with the appropriate role can
deploy the changes to Rule Execution Server.

---

**Task 7: Deploying**

Users with the correct access rights can deploy a set of rules directly from Decision
Center to Rule Execution Server, which is the runtime execution environment that
integrates the rule engine.

Typically, Rule Execution Server is deployed to a test platform. The IT department
is then responsible for the deployment to a production platform.

You can create the following deployment artifacts in Decision Center:
- A **ruleset** is a set of rules and rule artifacts that can be executed by the engine.
- A **RuleApp** is a deployable management unit that contains one or more rulesets.

In this task, you deploy a RuleApp from Decision Center to execute it in Rule
Execution Server. Then, you see how the new rules affect the Miniloan web
application.

This task should take you about 15 to 20 minutes to complete.

**Step 1: Start the miniloan web application**

**Note:** Before starting the Miniloan application, make sure that the sample server
is still running.

In this tutorial, the scenario is based on the web application of an online lender.
The application is called Miniloan.

At this point, the Miniloan application uses a ruleset that was deployed to Rule
Execution Server and that contains the initial state of the rules.

To start the Miniloan web application:

1. Enter the following URL with the correct port number in a browser:
   `http://localhost:<PORT>/miniloan-center`

   **Tip:** To find out the port number to use, see the information on port numbers
   in [Prerequisites](#).

   The Miniloan application is displayed:
2. Click **Validate Loan**.
   The results of the validation show that the loan is rejected because the borrower’s debt-to-income ratio is too big:
   The loan is rejected
   Messages:
   Too big Debt-To-Income ratio

**Step 2: Create the RuleApp**
You take the role of configuration manager in Decision Center to create and deploy a RuleApp containing the rules of the miniloan-rules project. Because the changes that you made to the rule were small, you keep the version of the RuleApp as 1.0 but increase its ruleset version to 1.1. Then you see how Rule Execution Server handles these changes.

To create the RuleApp:
1. Sign in to Decision Center as a user having configuration privileges:
   - **Username**: rtsConfig
   - **Password**: rtsConfig
2. In the Decision Center Home page, change the **Project in use** to miniloan-rules.
3. Click the **Configure** tab, and then click **Manage RuleApps**.
4. Under Available RuleApps, click **New**.
5. In the **Name** field, type miniloanruleapp.
6. Under **Rulesets**, click the **New** button.
   You will add a ruleset into the RuleApp, and specify that this ruleset comes from the miniloan-rules project.
7. In the **Name** field, type miniloanrules.
8. In the **Project** field, select miniloan-rules.
9. Keep **main** as the branch in use.
10. Click **Save** to save the ruleset.
    A warning indicates that some changes have been made to the RuleApp.
11. Click **Save** again on the New RuleApp page to save the RuleApp.
    Your RuleApp is ready to be deployed.
Step 3: Deploy the RuleApp

You can now deploy the RuleApp directly to Rule Execution Server.

To deploy the RuleApp:

1. Under Available RuleApps, select the check box next to `miniloanruleapp`.
2. Click `Deploy` in the toolbar.
3. On the Deployment Baseline page, type `V1.0`, and then click `Next`.
   This creates a deployment baseline called `V1.0`, that is, a snapshot of the version of each element about to be deployed. A baseline captures the changes that occur in a project over time. If required, you can revert back to a certain set of rules.
4. On the RuleApp target page, select `Deploy on a Rule Execution Server`, and then click `Next`.
5. On the Versioning Policy page, select `Increment ruleset(s) minor version`. This keeps the RuleApp version as 1.0 but increases the ruleset version to 1.1.
6. Click `Next`.
7. On the Select Server page, select the `Sample` server as the server where you want to deploy the RuleApp.
8. Click `Deploy`.

When processing is completed, you see that the deployment succeeded, and that the ruleset minor version was incremented.

Step 4: See the effects in the Miniloan application

Finally, you see how the business policy changes that you made are reflected back into the Miniloan application.

To see the effects in Miniloan:

1. Switch back to the Miniloan application.
Tip: If you have closed the Miniloan application, enter the following URL in a browser: http://localhost:<PORT>/miniloan-center. Remember to enter the correct port number.

2. Click Validate Loan with the default values.
   This time, the loan is approved because the policy change for borrowers with an income of 500,000 has been implemented.

3. Under Ruleset Information, change the ruleset version from Latest to 1.0, so that the 1.0 version is called by the Miniloan application:

   ![Ruleset Information]
   
   | Version | 1.0 |

4. Click Validate Loan again.
   This time the loan request is rejected as before, because it refers to the older version of the policy.

You have now deployed your ruleset to Rule Execution Server. You can stop the tutorial here or continue to the next task which is optional and requires the installation of Rule Solutions for Office.

**Task 8: Authoring in Rule Solutions for Office**

You can edit business rules directly in Decision Center, but you can also use Rule Solutions for Office to edit rules offline with the Microsoft Office tools that you are already familiar with.

This task is optional. To do this task, you must have Rule Solutions for Office installed. For installation instructions, see Installing Rule Solutions for Office.

In this task, you edit a decision table in Decision Center and make changes in Rule Solutions for Office, and then you update the changes in Decision Center.

This task should take you about 15 to 30 minutes to complete.

**Step 1: Enable direct edit in Rule Solutions for Office**

In this step, you set some parameters to enable direct edit in Rule Solutions for Office from the Decision Center Enterprise Console.

To enable the direct edit mode:

1. After signing out of Decision Center, login again as an administrator user:
   - Username: rtsAdmin
   - Password: rtsAdmin
2. Make sure that the project in use is miniloan-rules.
3. Click the Configure tab.
4. Under Administration, click Installation Settings Wizard.
5. Click Step 5: Set configuration parameters.
6. Check that the parameter teamserver.rsoediting.enable is set to true:
   a. Click New to add a new configuration parameter.
   b. In the Name list, select teamserver.rsoediting.enable.
c. In the Value field, enter true.
d. Click Apply.
   The teamserver.rsoediting.enable is added to the list of configuration parameters.
e. Click Apply again to save the changes.
   The following message is displayed Step execution successful.
f. Sign out of Decision Center.

Step 2: Edit directly from Decision Center
In this step, you open a decision table from Decision Center to edit it using Rule Solutions for Office. This generates a Microsoft Excel .xlsx file that contains the decision table.

To edit directly from Decision Center:
1. Sign in to Decision Center as a regular user (rtsUser1/rtsUser1), and make sure that miniloan-rules is the project in use.
2. Click the Explore tab, and navigate to Business Rules > eligibility.
3. Click the Edit in Rule Solutions for Office icon next to the repayment and score decision table. The decision table is now locked in Decision Center.
4. Click OK to open the decision table in Excel. A dialog opens to inform you that a local copy of the document has been saved to a drafts folder. This copy will be deleted after publishing the changes to Decision Center.
5. Click OK.

Step 3: Modify a decision table in Rule Solutions for Office
You are asked to make your lending criteria less restrictive, so that you reject a loan for someone whose debt-to-income ratio is between 45 and 50 only if the applicant’s credit score is less than 500. To do this, you modify the repayment and score decision table in the Excel file.

To modify a decision table and correct any resulting errors:
1. If the RuleDoc pane is not visible, on the Decision Table tab, in the View group, click RuleDoc Pane to display it.
2. Under credit score, click the cell in the max column that contains 600. Replace 600 with 500, and then press Enter.

Notice how some cells have a yellow background. This indicates that there is an error. In the Problem List in the RuleDoc pane, you can see exactly what the error is: Rows have gaps.
3. To solve this problem, click the cell in the min column under credit score containing 600, and replace 600 with 500, and then press Enter. The problem is no longer displayed in the Problem List in the RuleDoc pane.

4. Save your changes and close the file.

5. A dialog prompts you to check-in your changes, click Yes.

6. You are prompted to enter your password to connect to Decision Center, enter rtsUser1 for the password, and then click OK.

7. Add a comment for this version, for example Changed credit score to 500 for applicants whose debt-to-income ratio is between 45 and 50, and click OK. Your changes are checked in, and the local copy of your file will be deleted.

8. Click OK.

**Step 4: Check the changes in Decision Center**

In this step, you return to Decision Center to verify that the changes that you made in your Excel file have been taken into account in Decision Center.

To check the changes in Decision Center:

1. Make sure that you are still signed in to Decision Center as a regular user (rtsUser1/rtsUser1).

2. Click the Explore tab to refresh.

3. Navigate to Business Rules > eligibility, click the Preview icon next to the repayment and score decision table. The decision table in Decision Center is now up to date with the modifications you made in Rule Solutions for Office, and a new version of the decision table was created.

4. Sign out of Decision Center.

You have completed the getting started tutorial to discover business rules in Decision Center. To find out more information on the tasks that you have performed, see “Summary.”

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**Summary**

You have completed the Getting started tutorial for Decision Center. Find out more information on the different tasks that you have performed.

During this tutorial you became familiar with the following modules:

- Decision Center to author, edit, organize, and search for business rules in a collaborative environment.
- Rule Solutions for Office to author and edit rules in Word or Excel.
If you want to learn more about the tasks that you performed in this tutorial, you can find useful pointers in the following table. For each task in this tutorial, the following table provides links to related information in the rest of the documentation.

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Restarting the tutorial

To do this tutorial again, you can restore the sample server to its initial state. To restore the sample server, ask someone from the IT department to check the Decision Server documentation on the sample server and on the samples console.

Stopping the sample server

To stop the sample server, click All Programs > IBM > package_group > Sample Server > Stop server.
*package_group* is the package group specified in IBM Installation Manager during installation. The default package group is Operational Decision Manager.
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