IBM Operational Decision Manager
Version 8 Release 5

Tutorial: Getting started with the Decision Center Enterprise console

IBM

Contents

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.
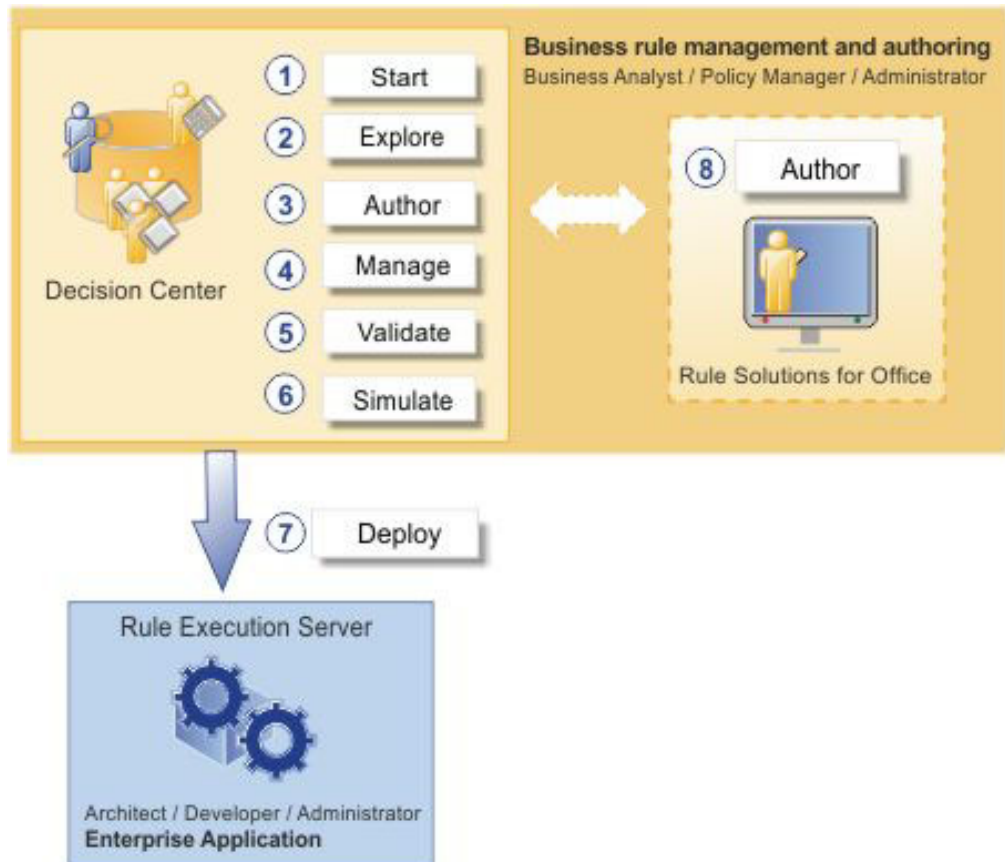
Important:

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 version of Microsoft Excel to perform "Task 5: Validating" on page 13, "Task 6: Creating a simulation" on page 15, and "Task 8: Authoring in Rule Solutions for Office" on page 20.
* 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.

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.

This task should take you about 10 minutes to complete.

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 ▾
   Branch in use: main ▾

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:

	debt to income		credit score		message	rejected
	min	max	min	max		
1	0 %	30 %	0	200	debt-to-income too high compared to credit score	-
2			200	800	⊘	⊘ -
3	30 %	45 %	0	400	debt-to-income too high compared to credit score	-
4			400	800	⊘	⊘ -
5	45 %	50 %	0	600	debt-to-income too high compared to credit score	-
6			600	800	⊘	⊘ -
7	≥ 50 %		0	800	debt-to-income too high compared to credit score	-

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 ⊘ **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.
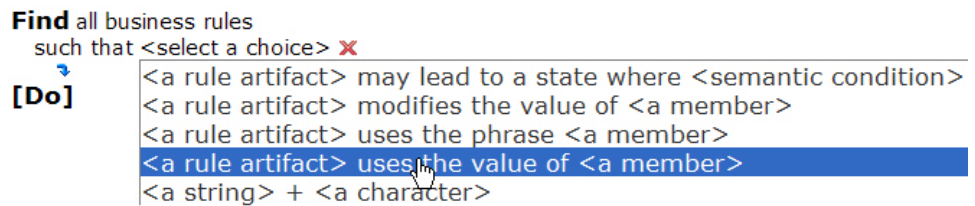5. Close the HTML report.

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`.

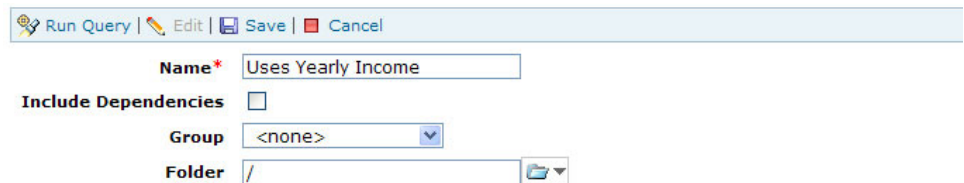3. In the editor, use the completion menu as follows:

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

   [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:

   ⚙ Run Query | ✎ Edit | 💾 Save | ■ Cancel

Name*	Uses Yearly Income
Include Dependencies	☐
Group	<none> ▾
Folder	/ 📁▾

   Find all business rules
   such that ▼ each business rule **uses the value of** the yearly income of a borrower ✖

   [Do]

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.

	Actions	Name	▲ Status
☐	🔍 ✎	◎ minimum income	New
☐	🔍 ✎	▦ repayment and score *(all rows)*	New

   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`:

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 **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:

```
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:

   ```
   if
     the amount of the loan is more than 1,000,000
   ```

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:

   ```
   then
       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:

   ```
   reject the loan
   ```

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

```
Content

[definitions]
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 ✖
    ↳
[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 **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:
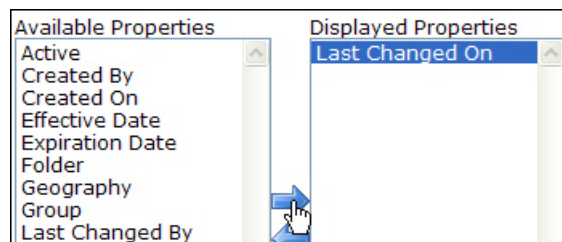
8. Click **Finish**.

   The new smart folder is displayed in the Explore tab, and displays the rules that you have modified today:
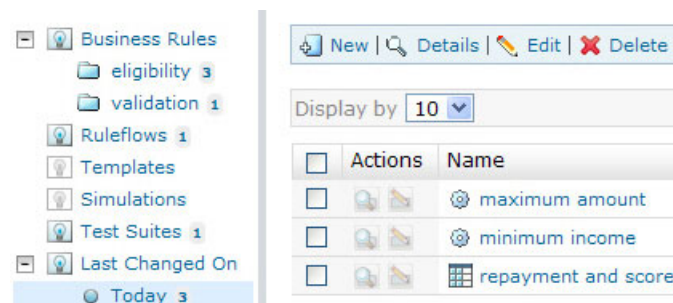
   You have modified the `minimum income` rule, the `repayment and score` decision table, and you have created the `maximum amount` rule. The `minimum credit score rule` is not displayed because you have not modified it today.

   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.

Scenarios

Format: Excel (2003)

Generate template: Generate a scenario file template for this test suite

File: miniloan-test.xls *(File uploaded)*

Browse…

Cancel   Previous   Next   Finish   Finish and Run

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:

Summary

Number of Scenarios	2
Scenarios with Failures	1 ❗
Success Rate	50%

Details

Name	Status
❗ Scenario 1	
✅ Scenario 2	
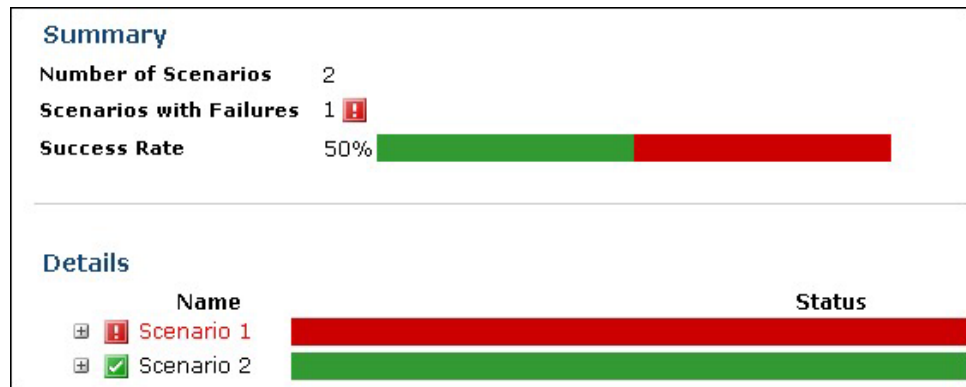
Scenario 1 fails because it expects the loan to be rejected. However, the loan is now approved because you have increased the allowable debt-to-income ratio in the `minimum income` rule.

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`:

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:

Borrower Information		Loan Information	
Name:	Joe	Amount:	500000
Yearly Income:	80000	Duration (months):	240
Credit Score:	600	Yearly Interest Rate :	0.05

Validate Loan

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| **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 **Save** to save the ruleset.

    A warning indicates that some changes have been made to the RuleApp.

11. Click 🖫Save **Save** again on the New RuleApp page to save the RuleApp.

    Your RuleApp is ready to be deployed.

Available RuleApps

	Name	Display Name	Major	Minor	Created On
☐	miniloanruleapp		1	0	5/18/13 3:07 PM

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.

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]

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:

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**.

debt to income		credit score		message
min	max	min	max	
0	30	0	200	debt-to-income too high compared to credit score
		200	800	
30	45	0	400	debt-to-income too high compared to credit score
		400	800	
45	50	0	500	debt-to-income too high compared to credit score
		600	800	
≥ 50		0	800	debt-to-income too high compared to credit score

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**.
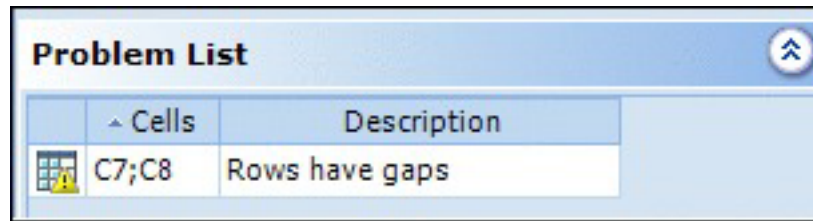
3. To solve this problem, click the cell in the **min** column under **credit score** containing 600, and replace 600 with 500, and then press **Enter**.

   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 ckecked 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."

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.

Tasks	Related information	Related tutorials
"Task 1: Starting Decision Center" on page 3	Introducing Decision Center	
"Task 2: Exploring" on page 5	Explore: Navigate your projects	Tutorial: Using smart folders and queries
"Task 3: Authoring" on page 8	Creating business rules Compose: Create project elements Decision Center basics	Tutorial: Editing action rules and decision tables
"Task 4: Managing" on page 11	Creating a test suite Creating a smart folder Decision Center basics	Tutorial: Using smart folders and queries
"Task 5: Validating" on page 13	Testing and simulation Creating a simulation Working with test suites and simulations	Tutorial: Testing a set of rules
"Task 6: Creating a simulation" on page 15	Testing and simulation Working with test suites and simulations	Tutorial: Testing a set of rules
"Task 7: Deploying" on page 17	Deploying RuleApps	
"Task 8: Authoring in Rule Solutions for Office" on page 20	Working with decision tables in Excel	Tutorial: Synchronizing Decision Center with Rule Solutions for Office Tutorial: Editing decision tables in Excel

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.

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM United Kingdom Laboratories,
Mail Point 151,
Hursley Park,
Winchester,
Hampshire,
England   SO21 2JN

For license inquiries regarding double-byte character set (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
19-21, Nihonbashi-Hakozakicho, Chuo-ku
Tokyo 103-8510, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:
INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those

websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM United Kingdom Laboratories,
Mail Point 151,
Hursley Park,
Winchester,
Hampshire,
England   SO21 2JN

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or

imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

© (your company name) (year). Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. _enter the year or years_.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft, Windows, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

IBM ®

Printed in USA