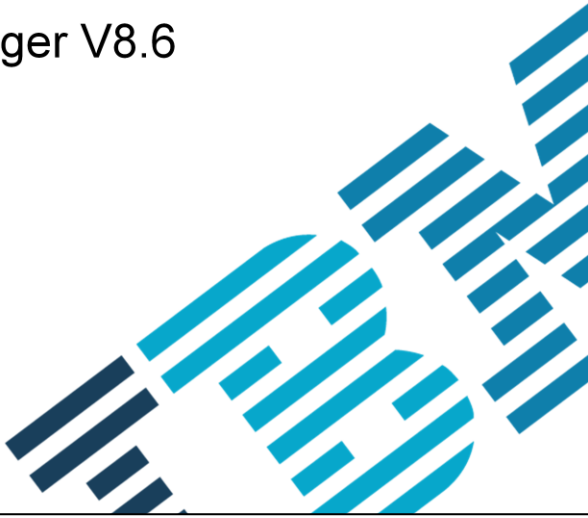


IBM Operational Decision Manager V8.6

Testing in the business console

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This presentation introduces the new testing capability that is added to the Decision Center business console in IBM Operational Decision Manager V8.6.

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Your learning starts with an overview of the new testing feature and its capabilities. Then, you see how it works in the business console in detail.

Overview

- **Accessible**
 - Test suites for decision services are defined and ran in the business console
 - Business users work with their test scenarios in Microsoft Excel spreadsheets
- **Integrated**
 - Works with regular branches
 - Works with decision governance framework
 - Tight integration with validation activities as part of the validation process
- **Compatible**
 - Business console test suites can integrate IBM ODM V8.5.1 scenario files

In previous versions of IBM Operational Decision Manager, testing of rule changes can be performed only in the rule designer and in the Decision Center enterprise console.

Now thanks to the introduction of decision services, the new testing feature is seamlessly added to the Decision Center business console in V8.6. It greatly helps business users to efficiently validate and achieve the expected results without extra help from technical developers or administrators. Business users can use Excel spreadsheets to define the test scenarios, and run the test suites in the business console.

The testing feature works with a decision service with both regular branch management and the decision governance framework. In the latter framework, the testing feature is tightly integrated with the validation activities, as part of the rule validation process.

The test suites that are defined in the business console are also compatible with DVS testing. The test scenario files can be shared with V8.5.1 scenario files and reused.

Test suite

- Defines the decision operation (a set of rules) to be tested
- Contains fictitious or real data scenarios and expected results
- Provides rule change verification and performance feedback
- Available on Tests page in a decision service

The screenshot shows the 'Tests' page in the IBM Business Console. At the top, there are tabs for 'Rules', 'Tests' (which is selected), 'Deployments', and 'Snapshots'. Below the tabs, there are sub-tabs for 'Test Suites' and 'Reports'. A text box explains: 'Running a test suite compares the results with what you expected. Scenario data and expected results are stored in a scen'. There is a 'Filter' button and a dropdown menu for 'Decision operation filter' with options: 'all operations', 'all operations', 'validation operation', 'loanvalidation-rulesDecision', and 'all rules operation'. Below this is a table of test suites:

| Name | Operation | Recent Report | Last changed on |
|-----------------------|----------------------|------------------|-------------------|
| Test Suite | all rules operation | Report - 2014... | 6/9/14, 4:58 PM |
| Validation Test Suite | validation operation | | 6/10/14, 11:46 AM |

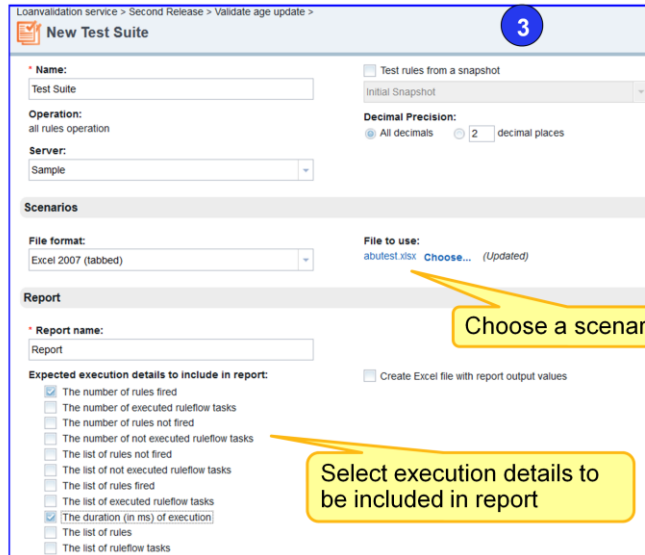
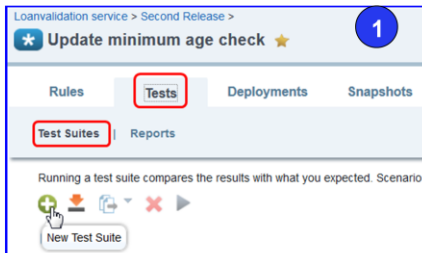
Annotations in yellow callouts point to specific features: 'Decision operation filter' points to the dropdown menu; 'Test report available after execution' points to the 'Report - 2014...' link; and 'Test suite in place operation toolbar' points to the toolbar icons for the 'Validation Test Suite' row.

A test suite is based on a set of business rules, which are in the decision operation scope. The test suite contains the scenario data file to test with. The data can be fictitious or real. The test suite also contains the expected results. The testing capability provides efficient rule change verification and performance feedback.

In the business console, you access test suites on the Tests page in a decision service. The screen capture shows a list of test suites. You can filter the list by selecting a particular decision operation. You can run the test suite. A test report is generated after execution. By clicking the report link, you can view the execution details.

Create a test suite

- Test suite creation is available in an activity or a branch



Choose a scenario file

Select execution details to be included in report

If you work in a branch, you can directly create a test suite at the branch level. While under the decision governance framework, the test suite creation is only available in an activity. At the release level, you can view and copy the test suite only.

To create a test suite, go to the Tests page in an activity. Then, click the green plus sign on the subtoolbar. After you select a decision operation, the New Test Suite editor page is opened.

You can specify the test suite name, choose the target server, define the decimal precision, and upload an existing scenario file. You can also set a test report name and choose the expected execution details to include in the report.

Generate a scenario template

The image illustrates the process of generating a scenario template in three steps:

- Step 1:** In the 'Tests' tab, click the 'Generate Scenario File' icon (represented by a document with a plus sign).
- Step 2:** A 'Select an operation' dialog box appears. Select an operation from the dropdown menu (e.g., 'validation operation').
- Step 3:** The 'Generate Scenario File' dialog is shown. It includes fields for 'Filename' (All rules scenarios), 'Scenario file format' (Excel 2007 (tabbed)), and 'Locale' (English (US)). Under the 'Tests' section, a list of fields is shown with checkboxes and operators. A yellow callout box points to the 'Download' icon in the top right corner, with the text 'Download the template'.

A yellow callout box at the bottom left of the dialog says: 'Select execution details to be included in report'.

The test suite runs against test scenarios. A scenario template generation function is provided. With the template, you can populate scenario data quickly without building the spreadsheet structure from scratch.

On the activity or branch Tests page, click the “Generate Scenario File” icon. After you choose a decision service operation, the generate scenario file page is opened. You can specify the file name, the format, and your preferred locale. Under the Tests section, you can select the expected result fields that you want to test with. You can also optionally select expected execution details to include in the scenario file. Once all set, you click the Download icon on upper right corner to save the template in Excel format.

Scenario data

Scenarios page – input scenario data

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | |
|----|---|---|------------------------------------|--------------|-----------|------------|-------------|--------------|---------------|----------|------------|----------------------------|--------|---------------|--|
| 1 | | | | | | | | | | | | | | | |
| 2 | | Create your scenarios... | | | | | | | | | | | | | |
| 3 | | Click here to access the help sheet | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |
| 6 | | | | the borrower | | | | | the loan | | | | | | |
| 7 | | Scenario ID | description | first name | last name | birth date | SSN | credit score | yearly income | zip code | start date | number of monthly payments | amount | Loan to Value | |
| 9 | | Very low risk | Very low risk loan accepted | Sam | Adams | 23/09/1940 | 424-56-7942 | 600 | 50000 | 95372 | 01/08/2009 | 360 | 1E+05 | 0.9 | |
| 10 | | Low risk | Low risk loan accepted | Bob | Schwartz | 23/09/1984 | 434-56-7572 | 710 | 150000 | 94258 | 07/08/2010 | 360 | 5E+05 | 0.75 | |
| 11 | | Average risk | Average risk loan accepted | John | Johnson | 30/10/1955 | 434-56-7582 | 650 | 300000 | 85241 | 01/09/2010 | 360 | 9E+05 | 0.75 | |
| 12 | | Amount too high | Loan rejected when amount too high | Mary | Doe | 04/09/1964 | 434-56-7592 | 700 | 600000 | 32522 | 15/08/2010 | 360 | 1E+06 | 0.9 | |
| 13 | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | |
| 15 | | Scenarios / Expected Results / HELP | | | | | | | | | | | | | |

Expected Results page

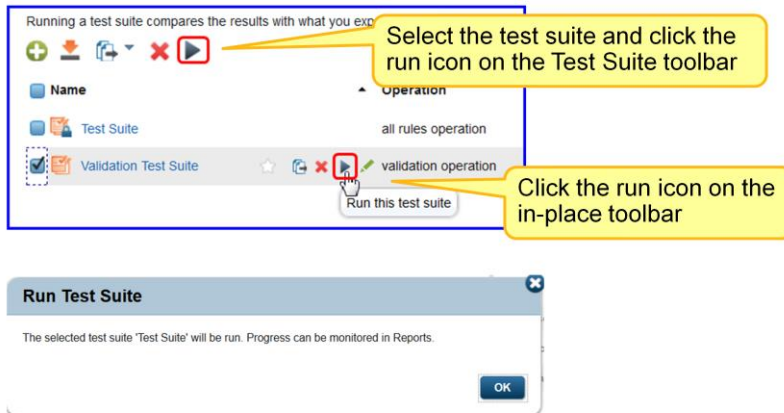
| | A | B | C | D | E | F |
|----|---|---|------------------------------------|--|---|---|
| 1 | | | | | | |
| 2 | | Fill only the cells for the results you want to test... | | | | |
| 3 | | Click here to access the help sheet | | | | |
| 4 | | | | | | |
| 5 | | Scenario ID | the loan report is approved equals | the messages of the loan report contains | | |
| 9 | | Very low risk | TRUE | Very low risk loan | | |
| 10 | | Low risk | TRUE | Low risk loan | | |
| 11 | | Average risk | TRUE | Average risk loan | | |
| 12 | | Amount too high | FALSE | The loan cannot exceed 1000000 | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | Scenarios / Expected Results / HELP | | | | |

Open the template Excel file. Three tabbed pages are available. On the Scenarios page, you add the input scenario data. On the expected results page, you add expected result values. The Help page provides you instructions on how to work on the previous two pages.

You can add the complete scenario file during the test suite creation. You can also add or replace it in an existing test suite.

Run test suite

- Hover over the test suite row and click the run icon on the in-place toolbar
- Select one or more test suites and click the run icon on the test suite toolbar menu



To run a particular test suite, select the test suite and click the run icon on the Test Suite list toolbar. You can also hover the mouse over the test suite row and click the little run icon in the in-place toolbar.

Furthermore, you can select multiple test suites, and launch the execution in one click. The execution process is always in background.

Test reports

The screenshot shows the 'Reports' tab in the IBM testing console. A callout box titled 'Status: in progress bar' lists the following indicators: a green checkmark for '100% pass', an orange exclamation mark for 'Scenario failure', and a red X for 'Error execution'. Another callout box titled 'Decision operation filter for the reports' points to a dropdown menu currently set to 'all operations'. A third callout box titled 'Click to view the report details' points to a small icon in the 'Name' column of the report table.

| Name | Operation | Status | Date Run | Test Suite |
|----------------------------|---------------------|------------------|------------------|------------------------------|
| Report - 2014-06-10_01-... | all rules operation | 0% | 6/10/14, 1:34 PM | Test Suite (<i>latest</i>) |
| Report - 2014-06-10_01-... | all rules operation | 100% pass | 6/10/14, 1:19 PM | Test Suite (<i>latest</i>) |
| Report - 2014-06-09_05-... | all rules operation | Scenario failure | 6/9/14, 5:08 PM | Test Suite (<i>latest</i>) |
| Report - 2014-06-09_04-... | all rules operation | Error execution | 6/9/14, 4:58 PM | Test Suite (<i>latest</i>) |

The test reports are available on the Reports page. The page lists all the reports by default. You can filter the reports that are based on the decision operation that is defined in the test suites. You can also filter the list by name.

The status column shows the execution status of each report. If the execution is in progress, it shows a percentage bar. The green check mark indicates 100% scenario pass. An orange exclamation icon indicates that there are failures. A red X marker means that there are errors during the execution. The error can be execution engine failure or other backend issues.

View report details

Report - 2014-06-09_05-08-54

Summary

Test suite: Test Suite (latest)

Operation: all rules operation

Scenario success rate: 50% (1/2)

Scenarios: 2 scenarios (beafest.xlsx)

Decimal precision: All decimals

Output values: None

Run

Date: 6/9/14, 5:08 PM

Run by: Paul

Rules from: Rules from the change activity "Update minimum age check" using the extractor "all rules operation_extractor"

Started in ruleflow task: loanvalidation

Server: Sample

Details:

| Name | Description | Status | Unexpected Results |
|---------------|--------------------------------|--------|--------------------|
| Approved Loan | Very low risk loan accepted | ✓ | 0 |
| Rejected Loan | Loan rejected for borrower age | ⓘ | 1 |

Details:

| Name | Description | Status | Unexpected Results |
|---------------|--------------------------------|--------|--------------------|
| Approved Loan | Very low risk loan accepted | ✓ | 0 |
| Rejected Loan | Loan rejected for borrower age | ⓘ | 1 |

Status Test

| Status Test | Result |
|------------------------------------|---|
| the loan report is approved equals | The observed value "true" does not equal the expected value "false" |

Execution details

Number of rules fired: 12

Callouts:

- Compare with another report (points to Compare button)
- View success rate (points to 50% success rate)
- Expand the scenario to view result and execution details (points to Rejected Loan in details panel)

Inside the report, you can view the test summary and execution details, including errors. From the success rate, you know how many test cases passed. Expanding the details section, you can see the expected or unexpected result of each scenario with detailed messages. If you select some expected execution details in the test suite, you can see them at the bottom of the report. To compare this report with another report, you can click the compare button on the upper right toolbar of the report page.

Compare reports side by side

You are comparing Report - 2014-06-09_05-08-54 with Report - 2014-06-10_01-19-34. Close this message to return to the previous view

Loanvalidation service > Second Release > Update minimum age check >
 Report - 2014-06-09_05-08-54

Summary

Test suite: Test Suite (latest) ▶

Scenario success rate: 50% (1/2)

Decimal precision: All decimals

Run

Date: 6/9/14, 5:08 PM

Run by: Paul

Rules from: Rules from the change activity 'Update minimum age check' using loanvalidation the extractor 'all rules operation_extractor'

Server: Sample

Details:

| Name | Description | Status | Unexpected Results |
|---------------|--------------------------------|--------|--------------------|
| Approved Loan | Very low risk loan accepted | ✓ | 0 |
| Rejected Loan | Loan rejected for borrower age | ⚠ | 1 |

Summary

Test suite: Test Suite (latest)

Scenario success rate: 100%

Decimal precision: All decimals

Run

Date: 6/10/14, 1:19 PM

Run by: Paul

Rules from: Rules from the change activity 'Update minimum age check' using loanvalidation the extractor 'all rules operation_extractor'

Server: Sample

Details:

| Name | Description | Status | Unexpected Results |
|---------------|--------------------------------|--------|--------------------|
| Approved Loan | Very low risk loan accepted | ✓ | 0 |
| Rejected Loan | Loan rejected for borrower age | ✓ | 0 |

The screen capture on this slide shows you the comparison view of two reports. They are displayed side by side to give you the clear visual measurement of the decision rule updates progress and result.

Test in validation activity

Test Suites | Test Plans all rules operation ▾

Create and run test suites to validate the release.

Filter

| Name | Operation | Status | Recent Report | Last changed by | Last changed on |
|----------------|---------------------|---------------------------------------|------------------------------|-----------------|------------------|
| Abu Test Suite | all rules operation | ⚠ | Report - 2014-06-10_03-16-54 | Abu | 6/10/14, 3:09 PM |

Success rate: 50% (1/2). Report may not be accurate because some change activities are still open.

Approve Activity

Some test suites did not complete successfully. Are you sure you want to approve this activity?

Approve

The test in the validation activity is tightly integrated with decision governance framework. In addition to the test plans, the tester now has the actual tool to create and run the test suites right inside the business console.

When there are any in-progress change activities in the release, the tester can see a yellow warning sign on the status icon. It indicates that the result might not be accurate because some change activities are still open in the release.

If there are any test suites where the last status is not green, when the approver tries to close a validation activity, a warning is displayed. This message alerts the approver to decide whether to reject the changes and have the tester redo the testing to control the quality.

Summary

- Test decision rule updates from the business console, either with regular branches or decision governance framework
- Generate scenario templates directly from the business console
- Define scenario data by using Excel spreadsheets
- Share test suites by copying to other releases and activities
- Run test suite and view reports
- Run multiple test suites in one click
- Compare test suite reports

Here is a list of highlighted testing operations that the business users can perform in the business console.

You can test the decision rule updates in the regular branch and through decision governance framework. For you to quickly start test suite creation, a customized test scenario template can be downloaded from Business Console directly. Then, you can add scenario data to the template by using Excel spreadsheets.

Business users can also share the test suites to other releases, activities, or branches. Once you finish the test suite definition, you can run it. A test report is generated right after the testing is completed. You can select multiple test suites and run them together in one click. You can also compare test reports in a side by side view.

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