Abstract

This document contains release notes for Red Hat Decision Manager 7.7.
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PREFACE

These release notes list new features, features in technology preview, known issues, and issues fixed in Red Hat Decision Manager 7.7.
CHAPTER 1. PRODUCT OVERVIEW

Red Hat Decision Manager is an open-source decision management platform that combines business rules management, complex event processing, Decision Model & Notation (DMN) execution, and Business Optimizer for solving planning problems. It automates business decisions and makes that logic available to the entire business.

Business assets such as rules, decision tables, and DMN models are stored in a central repository. This ensures consistency, transparency, and the ability to audit across the business. Business users can modify business logic without requiring assistance from IT personnel.

Red Hat Decision Manager 7.7 provides increased stability, several fixed issues, and new features.

Red Hat Decision Manager is fully supported on Red Hat OpenShift Container Platform and can be installed on various platforms.

**NOTE**

Red Hat Decision Manager requires Java 8 or later.

For information about the support policy for Red Hat Decision Manager, see the *Release maintenance plan for Red Hat Decision Manager 7.x and Red Hat Process Automation Manager 7.x*. 
CHAPTER 2. NEW FEATURES

This section highlights new features in Red Hat Decision Manager 7.7.

2.1. REFERENCE IMPLEMENTATIONS

The high available event-driven decisioning reference implementations are improved.

**No root access in the container required for HA CEP services**

When implementing high available event-driven decisioning in Red Hat Decision Manager, the HA CEP (high-availability complex event processing) services do not require root access within the container.

**On-the-fly KJAR updating of HA CEP services**

When implementing high available event-driven decisioning in Red Hat Decision Manager, you can update KJAR HA CEP services without removing and redeploying the HA CEP solution. The content of working memory is preserved.

2.2. BUSINESS CENTRAL

2.2.1. Maven archetype support in Business Central

Maven archetype support is now available in Business Central. To access this functionality, select the Admin icon in the top-right corner of the screen and select the Archetypes option on the Business Central Settings page. The following list provides a summary of Maven archetypes enhancements:

- You can list, add, validate, set a default, and delete the archetypes.
- You can use them as a template when creating a new project in Business Central.
- To manage all available archetypes in spaces, go to Design → <your_space> → Settings in Business Central.

2.2.2. Test Scenarios

The test scenarios designer in Business Central is now available with the new features supported in Red Hat Decision Manager 7.7.

- In DMN-based as well as rule-based test scenarios, it is now possible to define the value of a collection like a list or a map by using an expression in both GIVEN and EXPECT columns. To add an expression, you can now choose Define list from the collection editor.
- You can now use the KIE Server REST API to execute the test scenarios externally. It executes the test scenarios against the deployed project. This functionality is disabled by default, use org.kie.scenariosimulation.server.ext.disabled system property to enable it.

2.2.3. Ability to create a project from empty repositories

You can now create a new project in Business Central by importing an empty GitHub or GitLab external repository.

2.2.4. Squash commit on change requests
You can now squash multiple commits into a single commit and add the commit to a target branch for a change request.

### 2.2.5. Code completion for FEEL expressions in Decision Model and Notation (DMN) designer

When typing a FEEL expression in the boxed literal expression editor, you can now see FEEL functions appear as suggestions that you can apply to complete the expression if required.

### 2.2.6. Decision Model and Notation (DMN) designer improvements

The Decision Model and Notation (DMN) designer in Business Central includes the following notable enhancements:

- New visual indication for the data type nesting levels in a project allowing users to quickly reference nesting details without leaving the editor.
- Zero values are hidden in the Data Type constraints wizard to eliminate wasted screen space.
- Improved visual and functional support for the search component placeholder.
- Support for drag and drop to reorder data types.

### 2.2.7. Support for branch management and performing Maven actions on branches using the REST API

Users can now manage branches and perform Maven action on branches using the REST API:

1. Return all branches in a specific project and space:
   
   ```
   [GET] /spaces/{spaceName}/projects/{projectName}/branches::
   ```

2. Add a specific branch to a specific project and space:
   
   ```
   [POST] /spaces/{spaceName}/projects/{projectName}/branches::
   ```

3. Delete a specific branch from a specific project and space:
   
   ```
   [DELETE] /spaces/{spaceName}/projects/{projectName}/branches/{branchName}::
   ```

4. Compile a specific branch in a specific project and space. If `branchName` is not specified, then the request defaults to using the master branch.
   
   ```
   [POST] /spaces/{spaceName}/projects/{projectName}/branches/{branchName}/maven/compile::
   ```

5. Install a specific branch in a specific project and space. If `branchName` is not specified, then the request defaults to using the master branch.
   
   ```
   [POST] /spaces/{spaceName}/projects/{projectName}/branches/{branchName}/maven/install::
   ```

6. Test a specific branch in a specific project and space. If `branchName` is not specified, then the request defaults to using the master branch.
   
   ```
   [POST] /spaces/{spaceName}/projects/{projectName}/branches/{branchName}/maven/test::
   ```
Deploy a specific branch in a specific project and space. If `branchName` is not specified, then the request defaults to using the master branch.

2.2.8. Support for DMN 1.3

Red Hat Decision Manager 7.7 is now DMN 1.3 ready.

2.2.9. Supported languages

Starting with the 7.7 release, the Red Hat Decision Manager user interface is now localized in Spanish and French in addition to English and Japanese.

2.3. DECISION ENGINE

2.3.1. Default support for executable rule models in the kie-maven-plugin plugin

Rule assets in Red Hat Decision Manager are built from executable rule models by default with the standard **kie-maven-plugin** plugin. Executable rule models are embedded models that provide a Java-based representation of a rule set for execution at build time. The executable model is a more efficient alternative to the standard asset packaging in previous versions of Red Hat Decision Manager and enables KIE containers and KIE bases to be created more quickly, especially when you have large lists of DRL (Drools Rule Language) files and other Red Hat Decision Manager assets.

If you are upgrading to Red Hat Decision Manager 7.7 from a previous version of the product and you have not already enabled executable rule models, you must add the required dependency to your existing Red Hat Decision Manager projects so that your rule assets are built from executable models in Red Hat Decision Manager 7.7.

For instructions on enabling executable rule models when upgrading to Red Hat Decision Manager 7.7, see [Patching and upgrading Red Hat Decision Manager 7.7](#).

For more information about executable rule models, see [Packaging and deploying a Red Hat Decision Manager project](#).

2.4. INTEGRATION

2.5. RED HAT BUSINESS OPTIMIZER

2.5.1. Added Spring Boot starter

Red Hat Business Optimizer now includes a Spring Boot starter. You can use the Spring Boot starter to avoid common issues with class loading and use `application.properties` to overwrite the solver configuration. The `solverConfig.xml` file is no longer required because the starter automatically detects `@PlanningSolution` and `@PlanningEntity` annotations. The constraint streams API is improved. You can now modify your streams using the `groupBy()` building block.

2.5.2. SolverManager
You can use SolverManager as wrapper for one or more Solver instances to simplify planning REST API and other enterprise services. The `solve(...)` methods differ from the normal `Solver.solve(...)` method:

- `SolverManager.solve(...)` schedules a problem for asynchronous solving without blocking the calling thread. This avoids timeout issues of HTTP and other technologies. It returns immediately.

- `SolverManager.solve(...)` solves multiple planning problems of the same domain, in parallel.

SolverManager supports batch solving and solving that displays the progress to the end-user:

```java
class TimeTableService {
    private SolverManager<TimeTable, Long> solverManager;

    // Returns immediately, ok to expose as a REST service
    public void solve(Long timeTableId) {
        solverManager.solveAndListen(timeTableId,
            this::findById,
            this::save);
    }
    public TimeTable findById(Long timeTableId) {...}
    public void save(TimeTable timeTable) {...}
    public void stopSolving(Long timeTableId) {
        solverManager.terminateEarly(timeTableId);
    }
}
```

## 2.6. RED HAT OPENShift CONTAINER PLATFORM

### 2.6.1. Support for Git hooks in operator deployment on Red Hat OpenShift Container Platform

When deploying Red Hat Decision Manager on Red Hat OpenShift Container Platform using the operator, you can configure Git hooks to enable interaction between the built in Git repository of Business Central and other repositories.

### 2.6.2. Support for role mapping in operator deployment on Red Hat OpenShift Container Platform

When deploying Red Hat Decision Manager on Red Hat OpenShift Container Platform using the operator and using RH-SSO or LDAP authentication, you can configure role mapping to link roles defined in Red Hat Decision Manager to different roles defined in RH-SSO or LDAP.

### 2.6.3. Support for JVM configuration in operator deployment on Red Hat OpenShift Container Platform

When deploying Red Hat Decision Manager on Red Hat OpenShift Container Platform using the operator, you can set custom JVM configuration for Business Central and KIE Server pods.

### 2.6.4. Deploying an authoring environment on Red Hat OpenShift Container Platform without ReadWriteMany support
When deploying Red Hat Decision Manager on Red Hat OpenShift Container Platform, you can deploy an authoring environment if your Red Hat OpenShift Container Platform infrastructure does not provision persistent modules that support the ReadWriteMany mode.

2.6.5. A single built-in user account for communication between Business Central and KIE Server

Red Hat Decision Manager now uses a single built-in administrative user account for communication between Business Central and KIE Server. You no longer need to configure multiple built-in user accounts.

2.6.6. Support for concurrent service deployment on a KIE Server in a Red Hat Decision Manager authoring environment on Red Hat OpenShift Container Platform

If you deploy a Red Hat Decision Manager authoring environment on Red Hat OpenShift Container Platform 3.x using templates, you can deploy several services on the same KIE Server concurrently, without needing to wait for a deployment to complete before you can start the next deployment. This functionality is provided by the ControllerBasedStartupStrategy setting that applies to communication between Business Central and KIE Server. You can also enable this strategy when deploying on Red Hat OpenShift Container Platform 4.x using the operator.

2.6.7. Support for deploying Red Hat Decision Manager on Red Hat OpenShift Container Platform 4.3

Deploying Red Hat Decision Manager using the operator on Red Hat OpenShift Container Platform 4.3 is now supported.

2.6.8. Red Hat JBoss EAP version updated to 7.2.6

In Red Hat Decision Manager images for Red Hat OpenShift Container Platform, the Red Hat JBoss EAP version is updated to 7.2.6.
CHAPTER 3. DEPRECATED AND REMOVED COMPONENTS

3.1. DEPRECATED COMPONENTS

The components listed in this section have been deprecated.

3.1.1. Legacy Test Scenarios tool

The legacy Test Scenarios tool was deprecated with Red Hat Decision Manager 7.3.0. It will be removed in a future Red Hat Decision Manager release. Use the new Test Scenarios designer instead.

3.1.2. Support for Red Hat OpenShift Container Platform 3.x

Starting with the 7.5 release of Red Hat Decision Manager, support for Red Hat OpenShift Container Platform 3.x, including using all templates to install Red Hat Decision Manager, is deprecated. Support for Red Hat OpenShift Container Platform 3.x will be removed in a future Red Hat Decision Manager release. Consider deploying Red Hat Decision Manager using the operator on Red Hat OpenShift Container Platform 4.x.

3.1.3. Legacy process designer

The legacy process designer in Business Central is deprecated in Red Hat Decision Manager 7.6.0. The legacy process designer will not receive any new enhancements or features. If you intend to use the new process designer, start migrating your processes to the new designer. Create all new processes in the new process designer. For information about migrating projects to the new designer, see Managing projects in Business Central.

3.2. REMOVED COMPONENTS

The component listed in this section are removed.

3.2.1. Legacy Business process asset

The legacy Business process asset is removed in Red Hat Decision Manager 7.7. Use the new Business process asset instead.

3.2.2. Removed supported languages

In the Red Hat Decision Manager user interface, support for the Chinese, German, and Portuguese languages is now removed.
CHAPTER 4. TECHNOLOGY PREVIEW

This section lists features that are in Technology Preview in Red Hat Decision Manager 7.7. Business Central includes an experimental features administration page that is disabled by default. To enable this page, set the value of the `appformer.experimental.features` property to `true`.

**IMPORTANT**

These features are for Technology Preview only. Technology Preview features are not supported with Red Hat production service level agreements (SLAs), might not be functionally complete, and Red Hat does not recommend to use them for production. These features provide early access to upcoming product features, enabling customers to test functionality and provide feedback during the development process.

For more information on Red Hat Technology Preview features, see Technology Preview Features Scope.

4.1. RED HAT OPENShift CONTAINER PLATFORM 4.X DEPLOYMENT ON RESTRICTED NETWORKS

You can use Operator Lifecycle Management to deploy Red Hat Decision Manager on Red Hat OpenShift Container Platform 4.x on restricted networks that do not have a connection to the public Internet.

4.2. DEPLOYING A HIGH-AVAILABILITY AUTHORING ENVIRONMENT ON RED HAT OPENSshift CONTAINER PLATFORM 4.X

You can deploy a high-availability Red Hat Decision Manager authoring environment on Red Hat OpenShift Container Platform 4.x using the operator.

4.3. CONSTRAINT STREAMS API

You can use the Constraint Streams API as an alternative to the Drools Rules Language (DRL) to program incremental score calculations in plain Java. The Constraint Streams API is fast, scalable, and debuggable. You can use any IDE to develop and debug solvers using the Constraint Streams API. It uses deltas that enable the engine to redo only necessary calculations. It also supports justifications, so you can review the reason a solution was reached in order to debug the solver. Note that the Constraint Streams API fully supports the NQueens, Task assigning, and Flight Crew Scheduling use cases.

4.4. OPENSshift OPERATOR INSTALLER WIZARD

An installer wizard is provided in the OpenShift operator for Red Hat Decision Manager. You can use the wizard to deploy a Red Hat Decision Manager environment on Red Hat OpenShift Container Platform with the operator.
CHAPTER 5. KNOWN ISSUES

This section lists known issues with Red Hat Decision Manager 7.7.

5.1. BUSINESS CENTRAL

When you log out and log back in to Business Central, the language switches to English instead of the selected language [RHPAM-2779]

Issue: In Business Central, when you select a language from the Languages drop-down menu and log out and log back in to Business Central, the language switches to English instead of the selected language.

Steps to reproduce:

1. In Business Central, select the Admin icon in the top-right corner of the screen and select Languages.
2. Select French from the Languages drop-down menu.
3. Click Ok.
4. Log out of Business Central.
5. Log in to Business Central.
6. In Business Central, select the Admin icon in the top-right corner of the screen and select Languages.

Expected result: A dialog box with a list of languages appears.

Actual result: Business Central is reloaded and the language switches to English instead of French.

Workaround: Select the Admin icon in the top-right corner of the screen, select Languages and select the desired language.

An error occurs during a WAR file deployment with invalid jandex index files in Business Central [RHDM-1267]

Issue: When you deploy Business Central or KIE Server WAR files to Red Hat JBoss EAP or Thorntail, an invalid jandex index file error occurs with the following message:

```
WFLYSRV0002: Could not read provided index: /content/kie-server.war/WEB-INF/lib/kubernetes-client-4.6.0.jar/META-INF/jandex.idx
```

The alerts panel mixes the messages from multiple projects instead of showing messages related just to the opened project [RHDM-1243]

Issue: In the Alerts panel, you can see alert messages from multiple projects instead of only messages related to the opened project.

Steps to reproduce:

2. Open MySpace.
3. Add a project named `a-project`.

4. Add a DMN asset named `a-model`.

5. Add a decision node named `A-Decision` but do not specify its expression.

6. Click `Save` to save the `a-model`.

7. Return to `MySpace`.

8. Add a project named `b-project`.

9. Add a DMN asset named `b-model`.

10. Add a decision node named `B-Decision` but do not specify its expression.

11. Click `Save` to save the `b-model`.

Expected result: The `Alerts` panel does not mix messages from multiple projects.

Actual result: The `Alerts` mixes messages from multiple projects.

Workaround: None.

**Dashbuilder data transfer feature does not work on Windows [RHPAM-2751]**

Issue: The Dashbuilder data transfer feature does not work on Windows. You cannot export and import the Dashbuilder related data out of or into Business Central.

Steps to reproduce:

1. Start Business Central on Windows.

2. Select the `Admin` icon in the top-right corner of the screen and select `Dashbuilder Data Transfer`.

3. Try to export or import some data.

Expected result: You can export or import dashboard data on Windows.

Actual result: You cannot export or import dashboard data on Windows.

Workaround: None.

**5.2. INSTALLER**

In the Red Hat Decision Manager installer, Red Hat JBoss Web Server 5.1 is referenced in the installation path step [RHPAM-2745]

Issue: When you run the Red Hat Decision Manager installer the installation path step references Red Hat JBoss Web Server 5.1 instead of Red Hat JBoss Web Server 5.2.

**5.3. DMN DESIGNER**

The node data type is lost after you drag and drop in the data type editor [RHDM-1269]
Issue: In a DMN diagram, nodes are referenced to a custom DMN data type, and when this custom data type is edited, the reference in the node diagram is lost and the node refers to the `<Undefined>` data type.

Steps to reproduce:
1. Create a new DMN diagram.
2. Add two custom data types.
3. Add one node to the DMN diagram.
4. Set the node output type to one of created custom data types.
5. Drag and drop to reorder the custom defined data types.
6. Return to node definition.

Expected result: The type is one of the custom data types.

Actual result: The node refers to `<Undefined>` data type.

Workaround: Set the data type of the node after reordering custom data types.

In the DMN Designer, you cannot convert a Java class with that contains an invalid DMN identifier [RHDM-1231]

Issue: When you try to convert a Java class to a DMN data type and the Java class contains a field name, you will receive an error.

Workaround: None.
CHAPTER 6. FIXED ISSUES IN RED HAT DECISION MANAGER 7.7.0

Red Hat Decision Manager 7.7.0 provides increased stability and fixed issues listed in this section.

6.1. BUSINESS CENTRAL

- When you add a deployment unit and manually enter GAV values, the runtime strategy is not set to the configured default value [RHPAM-2623]
- In the guided rule editor, you cannot use a combination of complex values [RHPAM-2457]
- The state of a KIE Server is not updated in the server template after the server disconnects and reconnects to Business Central
- The guided rule editor removes matches operator from the rule [RHPAM-2631]

6.2. DECISION ENGINE

- In an accumulate statement, the min function with BigDecimal does not work when you set drools.propertySpecific=ALLOWED [RHDM-1195]
- In the executable model, a NullPointerException error occurs if you use the accumulate statement with the max parameter when the Date field is null [RHDM-1215]
- The executable model fails with double value in an evaluators [RHDM-1194]
- The rule is not executed when you modify a nested declared type after an incremental update [RHDM-1190]
- The rule is not executed after ksession.reset(), when it has not in the middle of LHS patterns [RHDM-1161]
- In decision engine, negation ! operator does not work with in operator [RHDM-1217]
- * A compilation error occurs in the executable model when you cast an interim variable to a short variable [RHPAM-2667]

6.3. RED HAT OPENSFHIPT CONTAINER PLATFORM

- Optaweb Vehicle Routing tests fail due to different versions of dependencies [RHDM-1129]

6.4. OFFLINE MAVEN REPOSITORY

- The offliner tool reports errors when it downloads artifacts for an offline Maven repository [RHPAM-2234]

6.5. DMN DESIGNER

- When you change a decision table header in the Properties panel, the change is not saved [RHDM-1181]
• When you import a data object from a Java class, fields that have the Java `Date` type are not converted to the DMN `date` type [RHDM-1145]

• When you import a data object from a Java class, a field of the Java `List` type is not converted to the DMN `collection` type [RHDM-1144]
APPENDIX A. VERSIONING INFORMATION

Documentation last updated on Wednesday, March 18, 2020.