



## Red Hat Decision Manager 7.3

Installing and configuring Red Hat Decision  
Manager on Red Hat JBoss Web Server



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Red Hat Customer Content Services  
brms-docs@redhat.com

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## Abstract

This document describes how to install Red Hat Decision Manager 7.3 on Red Hat JBoss Web Server 5.0.1 or higher.

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## Table of Contents

<b>PREFACE</b> .....	<b>3</b>
<b>CHAPTER 1. ABOUT RED HAT DECISION MANAGER</b> .....	<b>4</b>
1.1. RED HAT DECISION MANAGER COMPONENTS	4
1.2. ROLES AND USERS	5
<b>CHAPTER 2. DOWNLOADING THE RED HAT DECISION MANAGER INSTALLATION FILES</b> .....	<b>6</b>
<b>CHAPTER 3. USING THE RED HAT DECISION MANAGER INSTALLER</b> .....	<b>7</b>
3.1. USING THE INSTALLER IN INTERACTIVE MODE	7
3.2. USING THE INSTALLER IN CLI MODE	9
<b>CHAPTER 4. DECISION SERVER ZIP FILE INSTALLATION AND CONFIGURATION</b> .....	<b>11</b>
4.1. INSTALLING DECISION SERVER FROM ZIP FILES	11
<b>CHAPTER 5. VERIFYING THE DECISION SERVER INSTALLATION</b> .....	<b>13</b>
<b>CHAPTER 6. DOWNLOADING AND INSTALLING THE HEADLESS DECISION MANAGER CONTROLLER</b> ..	<b>14</b>
<b>CHAPTER 7. RUNNING STANDALONE BUSINESS CENTRAL</b> .....	<b>17</b>
7.1. SUPPORTED PROPERTIES	18
<b>CHAPTER 8. MAVEN SETTINGS AND REPOSITORIES FOR RED HAT DECISION MANAGER</b> .....	<b>21</b>
8.1. CONFIGURING MAVEN USING THE PROJECT CONFIGURATION FILE (POM.XML)	21
8.2. MODIFYING THE MAVEN SETTINGS FILE	21
8.3. ADDING MAVEN DEPENDENCIES FOR RED HAT DECISION MANAGER	22
<b>CHAPTER 9. IMPORTING PROJECTS FROM GIT REPOSITORIES</b> .....	<b>25</b>
<b>CHAPTER 10. INTEGRATING LDAP AND SSL</b> .....	<b>26</b>
<b>APPENDIX A. VERSIONING INFORMATION</b> .....	<b>27</b>



# PREFACE

This document describes how to install Red Hat Decision Manager 7.3 on JBoss Web Server.

# CHAPTER 1. ABOUT RED HAT DECISION MANAGER

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 organized in projects and stored in the Business 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 JBoss Web Server is an enterprise ready web server designed for medium and large applications, based on Tomcat. Red Hat JBoss Web Server provides organizations with a single deployment platform for Java Server Pages (JSP) and Java Servlet technologies, PHP, and CGI.

On a Red Hat JBoss Web Server installation, you can install Decision Server and the headless Decision Manager controller. Alternatively, you can run the standalone Business Central JAR file.

The instructions in this document explain how to install Red Hat Decision Manager in a Red Hat JBoss Web Server instance. For instruction on how to install Red Hat Decision Manager in other environments, see the following documents:

- [Installing and configuring Red Hat Decision Manager on Red Hat JBoss EAP 7.2](#)
- [Installing and configuring Decision Server on IBM WebSphere Application Server](#)
- [Installing and configuring Decision Server on Oracle WebLogic Server](#)
- [Deploying a Red Hat Decision Manager immutable server environment on Red Hat OpenShift Container Platform](#)
- [Deploying a Red Hat Decision Manager managed server environment on Red Hat OpenShift Container Platform](#)

For information on supported components, see the following documents:

- [What is the mapping between Red Hat Decision Manager and the Maven library version?](#)
- [Red Hat Decision Manager 7 Supported Configurations](#)

## 1.1. RED HAT DECISION MANAGER COMPONENTS

Red Hat Decision Manager is made up of Business Central and Decision Server.

- Business Central is the graphical user interface where you create and manage business rules. You can install Business Central in a Red Hat JBoss EAP instance or on the Red Hat OpenShift Container Platform (OpenShift).  
Business Central is also available as a standalone JAR file. You can use the Business Central standalone JAR file to run Business Central without needing to deploy it to an application server.
- Decision Server is the server where rules and other artifacts are executed. It is used to instantiate and execute rules and solve planning problems. You can install Decision Server in a Red Hat JBoss EAP instance, on OpenShift, in an Oracle WebLogic server instance, in an IBM WebSphere Application Server instance, or as a part of Spring Boot application.  
You can configure Decision Server to run in managed or unmanaged mode. If Decision Server is



unmanaged, you must manually create and maintain KIE containers (deployment units). A KIE container is a specific version of a project. If Decision Server is managed, the Decision Manager controller manages the Decision Server configuration and you interact with the Decision Manager controller to create and maintain KIE containers.

On a Red Hat JBoss Web Server installation, you can install Decision Server and the headless Decision Manager controller. Alternatively, you can run the standalone Business Central JAR file.

## 1.2. ROLES AND USERS

To access Business Central or Decision Server, you must create users and assign them appropriate roles before the servers are started. This section describes available Red Hat Decision Manager user roles.



### NOTE

The **admin**, **analyst**, and **rest-all** roles are reserved for Business Central. The **kie-server** role is reserved for Decision Server. For this reason, the available roles can differ depending on whether Business Central, Decision Server, or both are installed.

- **admin**: Users with the **admin** role are the Business Central administrators. They can manage users and create, clone, and manage the repositories. They have full access to make required changes in the application. Users with the **admin** role have access to all areas within Red Hat Decision Manager.
- **analyst**: Users with the **analyst** role have access to all high-level features. They can model projects. However, these users cannot add contributors to spaces or delete spaces in the **Design → Projects** view. Access to the **Deploy → Execution Servers** view, which is intended for administrators, is not available to users with the **analyst** role. However, the **Deploy** button is available to these users when they access the Library perspective.
- **rest-all**: Users with the **rest-all** role can access Business Central REST capabilities.
- **kie-server**: Users with the **kie-server** role can access Decision Server (KIE Server) REST capabilities. This role is mandatory for users to have access to Manage and Track views in Business Central.

## CHAPTER 2. DOWNLOADING THE RED HAT DECISION MANAGER INSTALLATION FILES

Depending on your environment and installation requirements, download a Red Hat Decision Manager distribution.

### Procedure

1. Navigate to the [Software Downloads](#) page in the Red Hat Customer Portal (login required), and select the product and version from the drop-down options:
  - **Product:** Decision Manager
  - **Version:** 7.3
2. Download one of the following product distributions, depending on your preferred installation method:



### NOTE

You only need to download one of these distributions.

- If you want to use the installer to install Red Hat Decision Manager on Red Hat JBoss Web Server, download **Red Hat Decision Manager 7.3.0 Installer(rhdm-installer-7.3.0.jar)**. The installer graphical user interface guides you through the installation process.
- To install Decision Server on Red Hat JBoss Web Server using the deployableZIP files, download the following files:
  - **Red Hat Decision Manager 7.3.0 Add Ons(rhdm-7.3.0-add-ons.zip)**
  - **Red Hat Decision Manager 7.3.0 Maven Repository(rhdm-7.3.0-maven-repository.zip)**  
The ZIP files do not require a graphical user interface so you can install Red Hat Decision Manager using SSH.
- To run Business Central without needing to deploy it to an application server, download **Red Hat Decision Manager 7.3.0 Business Central Standalone (rhdm-7.3.0-decision-central-standalone.jar)**.

## CHAPTER 3. USING THE RED HAT DECISION MANAGER INSTALLER

This section describes how to install Decision Server and the headless Decision Manager controller using the installer JAR file. The JAR file is an executable file that installs Red Hat Decision Manager in an existing Red Hat JBoss Web Server 5.0.1 or higher server installation. You can run the installer in interactive or command line interface (CLI) mode.

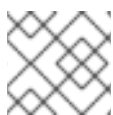
### Next steps:

Follow the instructions in one of the following sections:

- [Section 3.1, "Using the installer in interactive mode"](#)
- [Section 3.2, "Using the installer in CLI mode"](#)

### 3.1. USING THE INSTALLER IN INTERACTIVE MODE

The installer for Red Hat Decision Manager is an executable JAR file. You can use it to install Red Hat Decision Manager in an existing Red Hat JBoss Web Server 5.0.1 or higher server installation.



#### NOTE

For security reasons, you should run the installer as a non-root user.

#### Prerequisites

- A backed-up Red Hat JBoss Web Server 5.0.1 or higher server installation is available.
- Sufficient user permissions to complete the installation are granted.



#### NOTE

Ensure that you are logged in with a user that has write permission for Tomcat.

- The JAR binary is included in **\$PATH** environment variable. On Red Hat Enterprise Linux, it is included in the **java-\$JAVA\_VERSION-openjdk-devel** package.



#### NOTE

Red Hat Decision Manager is designed to work with UTF-8 encoding. If a different encoding system is used by the underlying JVM, unexpected errors might occur. To ensure UTF-8 is used by the JVM, use the "**-Dfile.encoding=UTF-8**" system property.

#### Procedure

1. In a terminal window, navigate to the directory where you downloaded the installer JAR file and enter the following command:

```
java -jar rhdm-installer-7.3.0.jar
```



## NOTE

When running the installer on Windows, you may be prompted to provide administrator credentials during the installation. To prevent this requirement, add the **izpack.mode=privileged** option to the installation command:

```
java -Dizpack.mode=privileged -jar
rhdm-installer-7.3.0.jar
```

Furthermore, when running the installer on a 32-bit Java virtual machine, you might encounter memory limitations. To prevent this issue, run this command:

```
java -XX:MaxHeapSize=4g -jar
rhdm-installer-7.3.0.jar
```

The graphical installer displays a splash screen and a license agreement page.

2. Click **I accept the terms of this license agreement** and click **Next**.
3. Specify the Red Hat JBoss Web Server 5.0.1 or higher server home where you want to install Red Hat Decision Manager and click **Next**.
4. Select the components that you want to install and click **Next**.  
You cannot install Business Central on Red Hat JBoss Web Server. You can only install it on Red Hat JBoss EAP. However, you can install Decision Server and the headless Decision Manager controller on Red Hat JBoss Web Server. The headless Decision Manager controller is used to manage Decision Server. Install the headless Decision Manager controller if you plan to manage multiple Decision Server instances.
5. Create a user and click **Next**. By default, the new user is given the **admin**, **kie-server**, and **rest-all** roles. The **kie-server** role is required to access Decision Server REST capabilities.



## NOTE

Make sure that the specified user name is not the same as an existing user, role, or group. For example, do not create a user with the user name **admin**.

The password must have at least eight characters and must contain at least one number and one non-alphanumeric character, but not & (ampersand).

Make a note of the user name and password. You will need them to access Business Central and Decision Server.

6. On the **Installation Overview** page, click **Next** to start the installation. The Installation Overview page lists the components that you will install.
7. When the installation has completed, click **Next**.
8. When **Processing finished** appears at the top of the screen, click **Next** to complete the installation.
9. If desired, click **Generate Installation Script and Properties File** to save the installation data in an XML file, and then click **Done**. You can use this file to automatically install Red Hat Decision Manager on the same type of server. Note that you must change the **installpath** parameter in

the XML file to specify the path of the new server that you want to install Red Hat Decision Manager on. Enter the following command to perform an installation with the XML file:

```
java -jar rhdm-installer-7.3.0.jar <path-to-file>
```

You have successfully installed Red Hat Decision Manager using the installer.

## 3.2. USING THE INSTALLER IN CLI MODE

You can run the Red Hat Decision Manager installer through the command-line interface (CLI).



### NOTE

For security reasons, you should run the installer as a non-root user.

### Prerequisites

- A backed-up Red Hat JBoss Web Server 5.0.1 or higher server installation is available.
- Sufficient user permissions to complete the installation are granted.



### NOTE

Ensure that you are logged in with a user that has write permission for Tomcat.

- The JAR binary is included in the **\$PATH** environment variable. On Red Hat Enterprise Linux, it is included in the **java-\$JAVA\_VERSION-openjdk-devel** package.



### NOTE

Red Hat Decision Manager is designed to work with UTF-8 encoding. If a different encoding system is used by the underlying JVM, unexpected errors might occur. To ensure UTF-8 is used by the JVM, use the "**-Dfile.encoding=UTF-8**" system property.

### Procedure

1. In a terminal window, navigate to the directory where you downloaded the installer file and enter the following command:

```
java -jar rhdm-installer-7.3.0.jar -console
```

The command-line interactive process will start and display the End-User License Agreement.

```
press 1 to continue, 2 to quit, 3 to redisplay.
```

2. Read the license agreement, enter **1**, and press Enter to continue:

```
Specify the home directory of one of the following servers: Red Hat JBoss EAP 7.2 or Red Hat JBoss Web Server 5.0.1
```

3. Enter the parent directory of an existing Red Hat JBoss Web Server 5.0.1 or higher installation.

The installer will verify the location of the installation at the location provided. Enter **1** to confirm and continue.

4. Follow the instructions in the installer to complete the installation.



#### NOTE

When you create the user name and password, make sure that the specified user name does not conflict with any known title of a role or a group. For example, if there is a role called **admin**, you should not create a user with the user name **admin**.

The password must have at least eight characters and must contain at least one number and one non-alphanumeric character (*not* including the character **&**).

Make a note of the user name and password. You will need them to access Business Central and Decision Server.

5. When the installation has completed, you will see this message:

Would you like to generate an automatic installation script and properties file?

6. Enter **y** to create an XML file that contains the installation data, or **n** to complete the installation. If you enter **y**, you are prompted to specify a path for the XML file.
7. Enter a path or press the Enter key to accept the suggested path.
8. If you installed only Decision Server, repeat these steps to install the headless Decision Manager controller on a separate server.

# CHAPTER 4. DECISION SERVER ZIP FILE INSTALLATION AND CONFIGURATION

You can install Decision Server using the **rhdm-7.3-kie-server-jws.zip** file .

## 4.1. INSTALLING DECISION SERVER FROM ZIP FILES

Decision Server provides the runtime environment for business assets and accesses the data stored in the assets repository (knowledge store). You can use ZIP files to install Decision Server on an existing Red Hat JBoss Web Server 5.0.1 or higher server instance.



### NOTE

To use the installer JAR file to install Decision Server, see [Chapter 3, Using the Red Hat Decision Manager installer](#).

### Prerequisites

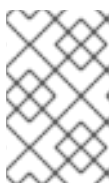
- The following files have been downloaded, as described in [Chapter 2, Downloading the Red Hat Decision Manager installation files](#):
  - Red Hat Decision Manager 7.3.0 Add Ons(**rhdm-7.3.0-add-ons.zip**)
  - Red Hat Decision Manager 7.3.0 Maven Repository(**rhdm-7.3.0-maven-repository.zip**)
- A backed-up Red Hat JBoss Web Server 5.0.1 or higher server installation is available. The base directory of the Red Hat JBoss Web Server installation is referred to as **JWS\_HOME**.
- Sufficient user permissions to complete the installation are granted.

### Procedure

1. Unzip the **rhdm-7.3.0-add-ons.zip** file.
2. From the unzipped **rhdm-7.3.0-add-ons.zip** file, extract the following files:
  - **rhdm-7.3-kie-server-jws.zip**
  - **rhdm-7.3-decision-engine.zip**

In the following instructions, the directory that contains the extracted **rhdm-7.3-kie-server-jws.zip** file is called **JWS\_TEMP\_DIR** and the directory that contains the extracted **rhdm-7.3-decision-engine.zip** file is called **ENGINE\_TEMP\_DIR**.

3. Copy the **JWS\_TEMP\_DIR/rhdm-7.3-kie-server-jws/kie-server.war** directory to the **JWS\_HOME/tomcat/webapps** directory.



### NOTE

Ensure the names of the Red Hat Decision Manager deployments you are copying do not conflict with your existing deployments in the Red Hat JBoss Web Server instance.

4. Remove the **.war** extensions from the **kie-server.war** folder.

5. Move the **kie-tomcat-integration-7.18.0.Final-redhat-00002.jar** file from the **ENGINE\_TEMP\_DIR** directory to the **JWS\_HOME/tomcat/lib** directory.
6. Move the **jboss-jacc-api-<VERSION>.jar**, **slf4j-api-<VERSION>.jar**, and **slf4j-jdk14-<VERSION>.jar** files from the **ENGINE\_TEMP\_DIR/lib** directory to the **JWS\_HOME/tomcat/lib** directory, where **<VERSION>** is the version artifact file name, in the **lib** directory.
7. Unzip the **rhdm-7.3.0-maven-repository.zip** file.
8. Copy the following libraries from the unzipped Maven repository to the **JWS\_HOME/tomcat/lib** folder:

```
org.jboss.spec.javaax.transaction:jboss-transaction-api_1.2_spec
org.jboss.integration:narayana-tomcat
org.jboss.narayana.jta:narayana-jta
org.jboss:jboss-transaction-spi
```

9. Add the following line to the **<host>** element in the **TOMCAT\_HOME/conf/server.xml** file after the last Valve definition:

```
<Valve className="org.kie.integration.tomcat.JACCValve" />
```

10. Open the **JWS\_HOME/tomcat/conf/tomcat-users.xml** file in a text editor.
11. Add users and roles to the **JWS\_HOME/tomcat/conf/tomcat-users.xml** file. In the following example, **<ROLE\_NAME>** is a role supported by Red Hat Decision Manager. **<USER\_NAME>** and **<USER\_PWD>** are the user name and password of your choice:

```
<role rolename="<ROLE_NAME>"/>
<user username="<USER_NAME>" password="<USER_PWD>" roles="<ROLE_NAME>"/>
```

If a user has more than one role, as shown in the following example, separate the roles with a comma:

```
<role rolename="admin"/>
<role rolename="kie-server"/>
<user username="rhdmUser" password="user1234" roles="admin,kie-server"/>
```

12. Complete one of the following steps in the **JWS\_HOME/tomcat/bin** directory:

- On Linux or UNIX, create the **setenv.sh** file with the following content:

```
CATALINA_OPTS="-Xmx1024m
-Dorg.jboss.logging.provider=jdk
-Dorg.jbpm.server.ext.disabled=true
-Dorg.jbpm.ui.server.ext.disabled=true
-Dorg.jbpm.case.server.ext.disabled=true"
```

- On Windows, add the following content to the **setenv.bat** file:

```
set CATALINA_OPTS="-Xmx1024m -Dorg.jboss.logging.provider=jdk -
Dorg.jbpm.server.ext.disabled=true -Dorg.jbpm.ui.server.ext.disabled=true -
Dorg.jbpm.case.server.ext.disabled=true"
```



## CHAPTER 5. VERIFYING THE DECISION SERVER INSTALLATION

Verify that Decision Server is installed correctly.

### Prerequisites

- Decision Server is installed and configured.
  1. To start Red Hat JBoss Web Server, enter one of the following commands in the ***JWS\_HOME/tomcat/bin*** directory:

- On Linux or UNIX-based systems:

```
┆ $ ./startup.sh
```

- On Windows:

```
┆ startup.bat
```

2. After a few minutes, review the files in the ***JWS\_HOME/tomcat/logs*** directory and correct any errors.
3. To verify that Decision Server is working on Red Hat JBoss Web Server, enter the following command:

```
┆ curl -X GET "http://localhost:8080/kie-server/services/rest/server" -H "accept:  
application/xml" -u '<USER_NAME>:<USER_PWD>'
```

In this command, replace **<USER\_NAME>** and **<USER\_PWD>** with the values in the ***tomcat-users.xml*** file.

The output of this command provides information about the Decision Server instance.

## CHAPTER 6. DOWNLOADING AND INSTALLING THE HEADLESS DECISION MANAGER CONTROLLER

You can configure Decision Server to run in managed or unmanaged mode. If Decision Server is unmanaged, you must manually create and maintain KIE containers (deployment units). If Decision Server is managed, the Decision Manager controller manages the Decision Server configuration and you interact with the Decision Manager controller to create and maintain KIE containers.

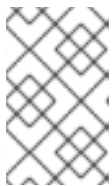
The Decision Manager controller is integrated with Business Central. If you install Business Central, use the **Execution Server** page to create and maintain KIE containers. However, if you do not install Business Central, you can install the headless Decision Manager controller and use the REST API or the Decision Server Java Client API to interact with it.

### Prerequisites

- The **Red Hat Decision Manager 7.3.0 Add Ons**(**rhdm-7.3.0-add-ons.zip**) file has been downloaded, as described in [Chapter 2, Downloading the Red Hat Decision Manager installation files](#).
- A Red Hat JBoss Web Server 5.0.1 or higher server installation is available. The base directory of the Red Hat JBoss Web Server installation is referred to as **JWS\_HOME**.
- Sufficient user permissions to complete the installation are granted.

### Procedure

1. Unzip the **rhdm-7.3.0-add-ons.zip** file. The **rhdm-7.3-controller-jws.zip** file is in the unzipped directory.
2. Extract the **rhdm-7.3-controller-jws.zip** archive to a temporary directory. In the following examples this directory is called **TEMP\_DIR**.
3. Copy the **TEMP\_DIR/rhdm-7.3-controller-jws.zip/controller.war** directory to the **JWS\_HOME/tomcat/webapps** directory.



#### NOTE

Ensure the names of the Red Hat Decision Manager deployments you are copying do not conflict with your existing deployments in the Red Hat JBoss Web Server instance.

4. Remove the **.war** extensions from the **controller.war** folder.
5. Copy the contents of the **TEMP\_DIR/rhdm-7.3-controller-jws/SecurityPolicy/** directory to **JWS\_HOME/bin**. When asked to overwrite files, select **Yes**.
6. Add the **kie-server** role and user to the **JWS\_HOME/tomcat/conf/tomcat-users.xml** file. In the following example, **<USERNAME>** and **<PASSWORD>** are the user name and password of your choice:

```
<role rolename="kie-server"/>
<user username="<USER_NAME>" password="<PASSWORD>" roles="kie-server"/>
```

7. Complete one of the following tasks in the **JWS\_HOME/tomcat/bin** directory of the instance running Decision Server:

- On Linux or UNIX, create the **setenv.sh** file with the following content:

```
CATALINA_OPTS="-Xmx1024m
-Dorg.jbpm.server.ext.disabled=true
-Dorg.jbpm.ui.server.ext.disabled=true
-Dorg.jbpm.case.server.ext.disabled=true
-Dorg.kie.server.controller.user=<CONTROLLER_USER>
-Dorg.kie.server.controller.pwd=<CONTROLLER_PWD>
-Dorg.kie.server.id=<KIE_SERVER_ID>
-Dorg.kie.server.location=http://<HOST>:<PORT>/kie-server/services/rest/server
-Dorg.kie.server.controller=http://<HOST>:<PORT>/controller/rest/controller"
```

- On Windows, add the following content to the **setenv.bat** file:

```
set CATALINA_OPTS= -Xmx1024m
-Dorg.jbpm.server.ext.disabled=true
-Dorg.jbpm.ui.server.ext.disabled=true
-Dorg.jbpm.case.server.ext.disabled=true
-Dorg.kie.server.controller.user=<CONTROLLER_USER>
-Dorg.kie.server.controller.pwd=<CONTROLLER_PWD>
-Dorg.kie.server.id=<KIE_SERVER_ID>
-Dorg.kie.server.location=http://<HOST>:<PORT>/kie-server/services/rest/server
-Dorg.kie.server.controller=http://<HOST>:<PORT>/controller/rest/controller
```

8. In the **JWS\_HOME/tomcat/bin** directory of the instance running the headless Decision Manager controller, create a readable **setenv.sh** file with the following content:

```
CATALINA_OPTS="-Dorg.kie.server.user=<USERNAME> -Dorg.kie.server.pwd=<USER_PWD>"
```

9. To start the headless Decision Manager controller, enter one of the following commands in the **JWS\_HOME/tomcat/bin** directory:

- On Linux or UNIX-based systems:

```
$ ./startup.sh
```

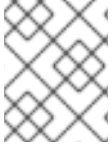
- On Windows:

```
startup.bat
```

10. After a few minutes, review the **JWS\_HOME/tomcat/logs** directory and correct any errors.

11. To verify that the headless Decision Manager controller is working on Red Hat JBoss Web Server, enter the following command. In this command, replace **<CONTROLLER>** and **<CONTROLLER\_PWD>** with the values in the **tomcat-users.xml** file. The output of this command provides information about the Decision Server instance.

```
curl -X GET "http://<HOST>:<PORT>/controller/rest/controller/management/servers" -H
"accept: application/xml" -u '<CONTROLLER>:<CONTROLLER_PWD>'
```



**NOTE**

Alternatively, you can use the Decision Server Java API Client to access the headless Decision Manager controller.

## CHAPTER 7. RUNNING STANDALONE BUSINESS CENTRAL

You can use the Business Central standalone JAR file to run Business Central without needing to deploy it to an application server such as Red Hat JBoss EAP.



### NOTE

Red Hat supports this installation type only when it is installed on Red Hat Enterprise Linux.

### Prerequisites

- The **Red Hat Decision Manager 7.3.0 Business Central Standalone**(**rhdm-7.3.0-decision-central-standalone.jar**) file has been downloaded, as described in [Chapter 2, Downloading the Red Hat Decision Manager installation files](#).

### Procedure

1. Create a directory and move the **rhdm-7.3.0-decision-central-standalone.jar** file to this directory.
2. In a terminal window, navigate to the directory that contains the standalone JAR file.
3. Create the **application-users.properties** file. Include an administrative user and if this Business Central instance will be a Decision Manager controller for Decision Server, include a Decision Manager controller user, for example:

```
rhdmAdmin=password1
controllerUser=controllerUser1234
```

4. Create the **application-roles.properties** file to assign roles to the users that you included in the **application-users.properties** file, for example:

```
rhdmAdmin=admin
controllerUser=kie-server
```

5. Create the **application-config.yaml** configuration file with the following contents, where **<APPLICATION\_USERS>** is the path to the **application-users.properties** file and **<APPLICATION\_ROLES>** is the path to the **application-roles.properties** file:

```
swarm:
  management:
    security-realms:
      ApplicationRealm:
        local-authentication:
          default-user: local
          allowed-users: local
          skip-group-loading: true
        properties-authentication:
          path: <APPLICATION_USERS>
          plain-text: true
        properties-authorization:
          path: <APPLICATION_ROLES>
    datasource:
```

```
management:
  wildfly:
    admin: admin
```

6. Enter the following command:

```
java -jar rhdm-7.3.0-decision-central-standalone.jar -s application-config.yaml
```

In addition, you can set any properties supported by Business Central by including the **-D<property>=<value>** parameter in this command, for example:

```
java -jar rhdm-7.3.0-decision-central-standalone.jar -s application-config.yaml -D<property>=<value> -D<property>=<value>
```

See [Section 7.1, “Supported properties”](#) for more information.

## 7.1. SUPPORTED PROPERTIES

The Business Central system properties listed in this section are passed to **standalone\*.xml** files or when you install standalone Business Central, you can use the properties listed in this section in the following command:

```
java -jar rhdm-7.3.0-decision-central-standalone.jar -s application-config.yaml -D<property>=<value> -D<property>=<value>
```

In this command, **<property>** is a property from the following list and **<value>** is a value that you assign to that property:

- **org.uberfire.nio.git.dir**: Location of the Decision Server Git directory.
- **org.uberfire.nio.git.dirname**: Name of the Decision Server Git directory. Default value: **.niogit**.
- **org.uberfire.nio.git.proxy.ssh.over.http**: Specifies whether SSH should use an HTTP proxy. Default: **false**
- **http.proxyHost**: Defines the host name of the HTTP proxy. Default: **null**
- **http.proxyPort**: Defines the host port (integer value) of the HTTP proxy. Default: **null**
- **org.uberfire.nio.git.proxy.ssh.over.https**: Specifies whether SSH should use an HTTPS proxy. Default: **false**
- **https.proxyHost**: Defines the host name of the HTTPS proxy. Default: **null**
- **https.proxyPort**: Defines the host port (integer value) of the HTTPS proxy. Default: **null**
- **org.uberfire.nio.git.daemon.enabled**: Enables or disables the Git daemon. Default value: **true**.
- **org.uberfire.nio.git.daemon.host**: If the Git daemon is enabled, it uses this property as the local host identifier. Default value: **localhost**.
- **org.uberfire.nio.git.daemon.port**: If the Git daemon is enabled, it uses this property as the port number. Default value: **9418**.

- **org.uberfire.nio.git.http.sslVerify:** Enables or disables SSL certificate checking for Git repositories. Default: **true**



#### NOTE

If the default or assigned port is already in use, a new port is automatically selected. Ensure that the ports are available and check the log for more information.

- **org.uberfire.nio.git.ssh.enabled:** Enables or disables the SSH daemon. Default value: **true**.
- **org.uberfire.nio.git.ssh.host:** If the SSH daemon enabled, it uses this property as the local host identifier. Default value: **localhost**.
- **org.uberfire.nio.git.ssh.port:** If the SSH daemon is enabled, it uses this property as the port number. Default value: **8001**.



#### NOTE

If the default or assigned port is already in use, a new port is automatically selected. Ensure that the ports are available and check the log for more information.

- **org.uberfire.nio.git.ssh.cert.dir:** Location of the **.security** directory where local certificates are stored. Default: the working directory.
- **org.uberfire.nio.git.ssh.passphrase:** Pass phrase used to access the public key store of your operating system when cloning git repositories with SCP style URLs. Example: **git@github.com:user/repository.git**.
- **org.uberfire.nio.git.ssh.algorithm:** Algorithm used by SSH. Default value: **RSA**.
- **org.uberfire.nio.git.ssh.ciphers:** A comma-separated string of ciphers. The available ciphers are **aes128-ctr**, **aes192-ctr**, **aes256-ctr**, **arcfour128**, **arcfour256**, **aes192-cbc**, **aes256-cbc**. If the property is not used, all available ciphers are loaded.
- **org.uberfire.nio.git.ssh.macs:** A comma-separated string of message authentication codes (MACs). The available MACs are **hmac-md5**, **hmac-md5-96**, **hmac-sha1**, **hmac-sha1-96**, **hmac-sha2-256**, **hmac-sha2-512**. If the property is not used, all available MACs are loaded.



#### NOTE

If you plan to use RSA or any algorithm other than DSA, make sure you set up your application server to use the Bouncy Castle JCE library.

- **org.uberfire.metadata.index.dir:** Place where the Lucene **.index** directory is stored. Default: the working directory
- **org.uberfire ldap.regex.role\_mapper:** Regex pattern used to map LDAP principal names to the application role name. Note that the variable **role** must be part of the pattern because it is substituted by the application role name when matching a principal value to a role name. Default: Not used.

- **org.uberfire.sys.repo.monitor.disabled**: Disables the configuration monitor. Do not disable unless you are sure. Default value: **false**
- **org.uberfire.secure.key**: Password used by password encryption. Default value: **org.uberfire.admin**
- **org.uberfire.secure.alg**: Crypto algorithm used by password encryption. Default value: **PBEWithMD5AndDES**
- **org.uberfire.domain**: Security-domain name used by uberfire. Default value: **ApplicationRealm**
- **org.guvnor.m2repo.dir**: Place where the Maven repository folder is stored. Default value: **<working-directory>/repositories/kie**
- **org.guvnor.project.gav.check.disabled**: Disables group ID, artifact ID, and version (GAV) checks. Default value: **false**
- **org.kie.build.disable-project-explorer**: Disables automatic build of a selected project in Project Explorer. Default value: **false**
- **org.kie.verification.disable-dtable-realtime-verification**: Disables the real-time validation and verification of decision tables. Default value: **false**
- **org.kie.server.controller**: URL for connecting with a Decision Manager controller, for example: **ws://localhost:8080/decision-central/websocket/controller**
- **org.kie.server.user**: User name used to connect with the Decision Server nodes from the Decision Manager controller. This property is only required when using this Business Central installation as a Decision Manager controller.
- **org.kie.server.pwd**: Password used to connect with the Decision Server nodes from the Decision Manager controller. This property is only required when using this Business Central installation as a Decision Manager controller.
- **kie.maven.offline.force**: Forces Maven to behave as offline. If true, disable online dependency resolution. Default: **false**.



#### NOTE

Use this property for Business Central only. If you share a runtime environment with any other component, isolate the configuration and apply it only to Business Central.

- **org.uberfire.gzip.enable**: Enables or disables Gzip compression on GzipFilter. Default: **true**
- **designerdataobjects**: Disables the data object functionality. Set the value of this parameter to **false**.



## CHAPTER 8. MAVEN SETTINGS AND REPOSITORIES FOR RED HAT DECISION MANAGER

You can use an external Maven repository to deploy a project. When you create a project, Business Central uses the Maven repositories that are configured for Business Central. You can use the Maven global or user settings to direct all Red Hat Decision Manager projects to retrieve dependencies from the public Red Hat Decision Manager repository by modifying the following files:

- The Maven **settings.xml** file.
- The Maven project object model (POM) file (**pom.xml**).

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

### 8.1. CONFIGURING MAVEN USING THE PROJECT CONFIGURATION FILE (POM.XML)

To use Maven for building and managing your Red Hat Decision Manager projects, you must create and configure the POM file (**pom.xml**). This file holds configuration information for your project. For more information, see [Apache Maven Project](#).

#### Procedure

1. Generate a Maven project. A **pom.xml** file is automatically generated when you create a Maven project.
2. Edit the **pom.xml** file to add more dependencies and new repositories.  
Maven downloads all of the JAR files and the dependent JAR files from the Maven repository when you compile and package your project.

Find the schema for the **pom.xml** file at [http://maven.apache.org/maven-v4\\_0\\_0.xsd](http://maven.apache.org/maven-v4_0_0.xsd). For more information about POM files, see [Apache Maven Project POM](#) .

### 8.2. MODIFYING THE MAVEN SETTINGS FILE

Red Hat Decision Manager uses Maven **settings.xml** file to configure its Maven execution. You must create and activate a profile in the **settings.xml** file and declare the Maven repositories used by your Red Hat Decision Manager projects.

#### Procedure

1. In the **settings.xml** file, declare the repositories that your Red Hat Decision Manager projects use. Usually, this is either the [online Red Hat Decision Manager Maven repository](#) or the Red Hat Decision Manager Maven repository that you download from the Red Hat Customer Portal and any repositories for custom artifacts that you want to use.
2. Ensure that Business Central or Decision Server is configured to use the **settings.xml** file, for example by specifying the **kie.maven.settings.custom=<path\_to\_settings.xml>** property.

For information about the Maven **settings.xml** file, see the Apache Maven Project [Setting Reference](#).

## 8.3. ADDING MAVEN DEPENDENCIES FOR RED HAT DECISION MANAGER

To use the correct Maven dependencies in your Red Hat Decision Manager project, add the Red Hat Business Automation bill of materials (BOM) files to the project's **pom.xml** file. The Red Hat Business Automation BOM applies to both Red Hat Decision Manager and Red Hat Process Automation Manager. When you add the BOM files, the correct versions of transitive dependencies from the provided Maven repositories are included in the project.

For more information about the Red Hat Business Automation BOM, see [What is the mapping between Red Hat Decision Manager and the Maven library version?](#)

### Procedure

1. Declare the Red Hat Business Automation BOM in the **pom.xml** file:

```
<dependencyManagement>
  <dependencies>
    <dependency>
      <groupId>com.redhat.ba</groupId>
      <artifactId>ba-platform-bom</artifactId>
      <version>7.3.0.GA-redhat-00002</version>
      <type>pom</type>
      <scope>import</scope>
    </dependency>
  </dependencies>
</dependencyManagement>
<dependencies>
  <!-- Your dependencies -->
</dependencies>
```

2. Declare dependencies required for your project in the **<dependencies>** tag. After you import the product BOM into your project, the versions of the user-facing product dependencies are defined so you do not need to specify the **<version>** sub-element of these **<dependency>** elements. However, you must use the **<dependency>** element to declare dependencies which you want to use in your project.
3. For standalone projects that are not authored in Business Central, specify all dependencies required for your projects. In projects that you author in Business Central, the basic decision engine dependencies are provided automatically by Business Central.
  - For a basic Red Hat Decision Manager project, declare the following dependencies, depending on the features that you want to use:
  - For a basic Red Hat Decision Manager project, declare the following dependencies:

### Embedded decision engine dependencies

```
<dependency>
  <groupId>org.drools</groupId>
  <artifactId>drools-compiler</artifactId>
</dependency>

<!-- Dependency for persistence support. -->
<dependency>
```

```

<groupId>org.drools</groupId>
<artifactId>drools-persistence-jpa</artifactId>
</dependency>

<!-- Dependencies for decision tables, templates, and scorecards.
For other assets, declare org.drools:business-central-models-* dependencies. -->
<dependency>
  <groupId>org.drools</groupId>
  <artifactId>drools-decisiontables</artifactId>
</dependency>
<dependency>
  <groupId>org.drools</groupId>
  <artifactId>drools-templates</artifactId>
</dependency>
<dependency>
  <groupId>org.drools</groupId>
  <artifactId>drools-scorecards</artifactId>
</dependency>

<!-- Dependency for loading KJARs from a Maven repository using KieScanner. -->
<dependency>
  <groupId>org.kie</groupId>
  <artifactId>kie-ci</artifactId>
</dependency>

```

- To use the Decision Server, declare the following dependencies:

### Client application Decision Server dependencies

```

<dependency>
  <groupId>org.kie.server</groupId>
  <artifactId>kie-server-client</artifactId>
</dependency>

```

- To create a remote client for Red Hat Decision Manager, declare the following dependency:

### Client dependency

```

<dependency>
  <groupId>org.uberfire</groupId>
</dependency>

```

- When creating a JAR file that includes assets, such as rules and process definitions, specify the packaging type for your Maven project as **kjar** and use **org.kie:kie-maven-plugin** to process the **kjar** packaging type located under the **<project>** element. In the following example, **#{kie.version}** is the Maven library version listed in [What is the mapping between Red Hat Decision Manager and the Maven library version?](#):

```

<packaging>kjar</packaging>
<build>
  <plugins>
    <plugin>
      <groupId>org.kie</groupId>
      <artifactId>kie-maven-plugin</artifactId>
      <version>#{kie.version}</version>
    </plugin>
  </plugins>
</build>

```

```
<extensions>>true</extensions>  
</plugin>  
</plugins>  
</build>
```

## CHAPTER 9. IMPORTING PROJECTS FROM GIT REPOSITORIES

Git is a distributed version control system. It implements revisions as commit objects. When you save your changes to a repository, a new commit object in the Git repository is created.

Business Central uses Git to store project data, including assets such as rules and processes. When you create a project in Business Central, it is added to a Git repository that is embedded in Business Central. If you have projects in other Git repositories, you can import those projects into the Business Central Git repository through Business Central spaces.

### Prerequisites

- Red Hat Decision Manager projects exist in an external Git repository.
- Credentials required for read access to that external Git repository are available.

### Procedure

1. In Business Central, click **Menu → Design → Projects**.
2. Select or create the space into which you want to import the projects. The default space is **mySpace**.
3. Click the three vertical dots on the right side of the screen and select **Import Project**.
4. In the **Import Project** window, enter the URL and credentials for the Git repository that contains the projects that you want to import and click **Import**. The projects are added to the Business Central Git repository and are available from the current space.

## CHAPTER 10. INTEGRATING LDAP AND SSL

With Red Hat Decision Manager you can integrate LDAP and SSL through RH-SSO. For more information, see the [Red Hat Single Sign-On Server Administration Guide](#) .

## APPENDIX A. VERSIONING INFORMATION

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