



Red Hat Process Automation Manager 7.1

Deploying a Red Hat Process Automation Manager trial environment on Red Hat OpenShift Container Platform

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Abstract

This document describes how to deploy a Red Hat Process Automation Manager 7.1 trial environment on Red Hat OpenShift Container Platform.

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PREFACE

As a system engineer, you can deploy a Red Hat Process Automation Manager trial environment on Red Hat OpenShift Container Platform to evaluate or demonstrate development and use of rules and other business assets.

Prerequisites

- At least three gigabytes of memory must be available in the OpenShift cluster/namespace.
- The OpenShift project for the deployment must be created.
- You must be logged in to the project using the **oc** command. For more information about the **oc** command-line tool, see the OpenShift [CLI Reference](#). If you want to use the OpenShift Web console to deploy templates, you must also be logged on using the Web console.

CHAPTER 1. OVERVIEW OF RED HAT PROCESS AUTOMATION MANAGER ON RED HAT OPENSIFT CONTAINER PLATFORM

You can deploy Red Hat Process Automation Manager into a Red Hat OpenShift Container Platform environment.

In this solution, components of Red Hat Process Automation Manager are deployed as separate OpenShift pods. You can scale each of the pods up and down individually, providing as few or as many containers as necessary for a particular component. You can use standard OpenShift methods to manage the pods and balance the load.

The following key components of Red Hat Process Automation Manager are available on OpenShift:

- Process Server, also known as *Execution Server* or *KIE Server*, is the infrastructure element that runs decision services, process applications, and other deployable assets (collectively referred to as *services*). All logic of the services runs on execution servers.

A database server is normally required for Process Server. You can provide a database server in another OpenShift pod or configure an execution server on OpenShift to use any other database server. Alternatively, Process Server can use an H2 database; in this case, the pod cannot be scaled.

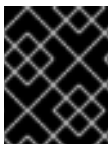
You can freely scale up a Process Server pod, providing as many copies as necessary, running on the same host or different hosts. As you scale a pod up or down, all its copies use the same database server and run the same services. OpenShift provides load balancing and a request can be handled by any of the pods.

You can deploy a separate Process Server pod to run a different group of services. That pod can also be scaled up or down. You can have as many separate replicated Process Server pods as necessary.

- Business Central is a web-based interactive environment for authoring services. It also provides a management and monitoring console. You can use Business Central to develop services and deploy them to Process Servers. You can also use Business Central to monitor the execution of processes.

Business Central is a centralized application. However, you can configure it for high availability, where multiple pods run and share the same data.

Business Central includes a Git repository that holds the source for the services that you develop on it. It also includes a built-in Maven repository. Depending on configuration, Business Central can place the compiled services (KJAR files) into the built-in Maven repository or (if configured) into an external Maven repository.



IMPORTANT

In the current version, high-availability Business Central functionality is a technology preview.

- Business Central Monitoring is a web-based management and monitoring console. It can manage deployment of services to Process Servers and provide monitoring information, but does not include authoring capabilities. You can use this component to manage staging and production environments.
- Smart Router is an optional layer between Process Servers and other components that interact

with them. It is required if you want Business Central or Business Central Monitoring to interact with several different Process Servers. Also, when your environment includes many services running on different Process Servers, Smart Router provides a single endpoint to all client applications. A client application can make a REST API call requiring any service. Smart Router automatically determines which Process Server must be called for any particular request.

You can arrange these and other components into various environment configurations within OpenShift.

The following environment types are typical:

- *Authoring*: An environment for creating and modifying services using Business Central. It consists of pods that provide Business Central for the authoring work and a Process Server for test execution of the services. For instructions about deploying this environment, see [Deploying a Red Hat Process Automation Manager authoring environment on Red Hat OpenShift Container Platform](#).
- *Managed deployment*: An environment for running existing services for staging and production purposes. This environment includes several groups of Process Server pods; you can deploy and undeploy services on every such group and also scale the group up or down as necessary. Use Business Central Monitoring to deploy, run, and stop the services and to monitor their execution. For instructions about deploying this environment, see [Deploying a Red Hat Process Automation Manager managed server environment on Red Hat OpenShift Container Platform](#).
- *Deployment with immutable servers*: An alternate environment for running existing services for staging and production purposes. In this environment, when you deploy a Process Server pod, it builds an image that loads and starts a service or group of services. You cannot stop any service on the pod or add any new service to the pod. If you want to use another version of a service or modify the configuration in any other way, you deploy a new server image and displace the old one. In this system, the Process Server runs like any other pod on the OpenShift environment; you can use any container-based integration workflows and do not need to use any other tools to manage the pods. Optionally, you can use Business Central Monitoring to monitor the performance of the environment and to stop and restart some of the service instances, but not to deploy additional services to any Process Server or undeploy any existing ones (you can not add or remove containers). For instructions about deploying this environment, see [Deploying a Red Hat Process Automation Manager immutable server environment on Red Hat OpenShift Container Platform](#).

You can also deploy a *trial* or evaluation environment. This environment includes Business Central and a Process Server. You can set it up quickly and use it to evaluate or demonstrate developing and running assets. However, the environment does not use any persistent storage, and any work you do in the environment is not saved. For instructions about deploying this environment, see [Deploying a Red Hat Process Automation Manager trial environment on Red Hat OpenShift Container Platform](#).

To deploy a Red Hat Process Automation Manager environment on OpenShift, you can use the templates that are provided with Red Hat Process Automation Manager. You can modify the templates to ensure that the configuration suits your environment.

CHAPTER 2. ENSURING THE AVAILABILITY OF IMAGE STREAMS

You must ensure that the image streams that are required for the deployment are available in your OpenShift environment. Some versions of the OpenShift environment include the necessary image streams. You must check if they are available. If they are not available, you must install the **rhcam71-image-streams.yaml** file.

Procedure

1. Run the following commands:

```
$ oc get imagestreamtag -n openshift | grep rhcam71-businesscentral  
$ oc get imagestreamtag -n openshift | grep rhcam71-kieserver
```

If the outputs of both commands are not empty, the required image streams are available and no further action is required.

2. If the output of one or both of the commands is empty, download the **rhcam-7.1.0-openshift-templates.zip** product deliverable file from the [Software Downloads](#) page. Extract the **rhcam71-image-streams.yaml** file from it. Complete one of the following actions:

- Run the following command:

```
$ oc create -f rhcam71-image-streams.yaml
```

- Using the OpenShift Web UI, select **Add to Project** → **Import YAML / JSON**, then choose the file or paste its contents.

CHAPTER 3. DEPLOYING A TRIAL ENVIRONMENT

You can deploy a trial (evaluation) Red Hat Process Automation Manager environment. It consists of Business Central for authoring or managing services and Process Server for test execution of services.

This environment does not include permanent storage. Assets that you create or modify in a trial environment are not saved.

The procedure is minimal. There are no required settings and all passwords are set to a single value (the default password is **RedHat**).

To deploy a single authoring environment, use the **rhcam71-trial-ephemeral.yaml** template file. You can extract this file from the **rhcam-7.1.0-openshift-templates.zip** product deliverable file. You can download the file from the [Software Downloads](#) page.

Procedure

1. Use one of the following methods to deploy the template:
 - In the OpenShift Web UI, select **Add to Project** → **Import YAML / JSON** and then select or paste the **rhcam71-trial-ephemeral.yaml** file. In the **Add Template** window, ensure **Process the template** is selected and click **Continue**.
 - To use the OpenShift command line console, prepare the following command line:

```
oc new-app -f <template-path>/rhcam71-trial-ephemeral.yaml
```

In this command line, replace **<template-path>** with the path to the downloaded template file.
2. Optionally, set any parameters as described in the template. However, a typical trial deployment does not require any parameters.
3. Complete the creation of the environment, depending on the method that you are using:
 - In the OpenShift Web UI, click **Create**.
 - Complete and run the command line.

APPENDIX A. VERSIONING INFORMATION

Documentation last updated on Friday, October 12, 2018.