



Red Hat Integration 2021.Q4

Installing the Red Hat Integration Operator on OpenShift

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Abstract

This guide describes how to install Red Hat Integration Operator 1.1 on OpenShift Container Platform. With the Red Hat Integration Operator installed, you can select and install Operators for Red Hat Integration components.

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PREFACE

MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. Because of the enormity of this endeavor, these changes will be implemented gradually over several upcoming releases. For more details, see [our CTO Chris Wright's message](#).

CHAPTER 1. INSTALLING THE RED HAT INTEGRATION OPERATOR

Red Hat Integration is a comprehensive set of integration and event processing technologies for creating, extending, and deploying container-based integration services across hybrid and multicloud environments. Red Hat Integration provides an agile, distributed, and API-centric solution that organizations can use to connect and share data between applications and systems in a digital world.

Red Hat Integration Operator allows you to choose and install the Operators that manage your Red Hat Integration components.

1.1. INSTALLING THE RED HAT INTEGRATION OPERATOR USING THE OLM

Use the Operator Lifecycle Manager (OLM) to install the Red Hat Integration Operator on an OpenShift Container Platform (OCP) cluster through the OperatorHub in the OCP console.



NOTE

When using OCP on a restricted network or a disconnected cluster, OLM can no longer use the OperatorHub. Follow the instructions for setting up and using the OLM in [Using Operator Lifecycle Manager on restricted networks](#).

Prerequisites

- Access to an OpenShift Container Platform cluster (4.6 and later) using an account with **cluster-admin** permissions. Users with **cluster-admin** (or equivalent) *super user* permissions can perform any action in a project.

Procedure

1. In the OpenShift Container Platform console, log in using an account with administrator privileges.
2. Navigate to **Operators** → **OperatorHub**.
3. Select the **Red Hat Integration Operator**.
4. Check the Operator details and click **Install**. The provider type is **Red Hat**.
5. On the **Install Operator** page, accept all of the default selections and click **Install**.



NOTE

The default is to make the Operator available cluster-wide, but you can deploy to a specific namespace, if required.

The **integration-operator** details page is displayed, where you can see the **Subscription Overview**.

6. When the images have downloaded, and the install status is shown as ready to use, click **View Operator**.

7. Check that status of the ClusterServiceVersion (CSV) details is shown as **Succeeded** for the namespace or all namespaces.

The Red Hat Integration Operator is ready for installing Operators for Red Hat Integration components.

CHAPTER 2. INSTALLING OPERATORS FOR RED HAT INTEGRATION COMPONENTS

Operators for Red Hat Integration automate the deployment and management of Red Hat Integration components on an OpenShift Container Platform. Use the **Red Hat Integration Operator** to install and upgrade the Operators. Red Hat Integration Operator installs the current version of each Operator, and performs automatic updates when new versions are available.

2.1. INSTALLING INTEGRATION OPERATORS

When installed on an OpenShift Container Platform cluster, the Red Hat Integration Operator provides a CRD (Custom Resource Definition) called **Installation**. The CRD triggers the installation of the Operators for Red Hat Integration components.

Create an instance of the Installation CRD to install the Operators.

Operators available for installation:

- 3scale
- 3scale APIcast
- AMQ Broker
- AMQ Interconnect
- AMQ Streams
- API Designer
- Camel K
- Fuse Console
- Fuse Online
- Service Registry

Prerequisites

- Red Hat Integration Operator is [installed on the OpenShift Container Platform \(OCP\) cluster](#)

Procedure

1. Navigate to **Installed Operators** and click **Red Hat Integration** to display the **Operator Details** page.
2. From **Provided APIs**, click **Create Instance** for the **Installation** resource.
The full set of Red Hat Integration Operators available for installation is displayed on the **Create Installation** page.

All Operators are enabled for installation by default. The default installation mode and namespace where the Operator is installed depends on the Operator. The Operator creates the namespaces. If a namespace is not specified, the **openshift-operators** namespace is used for cluster-wide installation.

The configuration for each Operator is encapsulated in the **spec** property of the **Installation** custom resource.

Table 2.1. Default Operator installation modes for Red Hat Integration components

Operator name	CRD spec property	Default Installation mode	Default namespace
3scale	3scale-installation	namespace	rhi-3scale
3scale APIcast	3scale-apicast-installation	namespace	rhi-3scale-apicast
AMQ Broker	amq-broker-installation	namespace	rhi-amq-broker
AMQ Interconnect	amq-interconnect-installation	namespace	rhi-amq-interconnect
AMQ Streams	amq-streams-installation	cluster	openshift-operators
Camel K	camel-k-installation	cluster	openshift-operators
(Fuse) API Designer	api-designer-installation	namespace	rhi-api-designer
Fuse Console	fuse-console-installation	namespace	rhi-fuse-console
Fuse Online	fuse-online-installation	namespace	rhi-fuse-online
Service Registry	service-registry-installation	cluster	openshift-operators

- Optional: Configure the installation specification from the *form* or *YAML* views before you perform the installation.

You can:

- Include or exclude Operators from installation.
- Change the namespace names specified for the Operators.
- Switch the **camel-k-installation** and **amq-streams-installation** Operators to **namespace** mode, which then requires a namespace to be specified too.

Example configuration for the Installation CRD

```
# ...
kind: Installation
spec
  3scale-apicast-installation:
```

```
enabled: false 1  
mode: namespace  
namespace: rhi-3scale-apicast  
amq-streams-installation:  
enabled: true  
mode: namespace 2  
namespace: rhi-streams 3
```

- 1** Set the **enabled** property for the Operator to **false** to exclude the Operator from installation if you do not plan to use the component.
 - 2** Set the installation mode to **namespace** from **cluster** to specify installation to a specific namespace.
 - 3** Add or modify a namespace name to install to.
- Click **Create** to start the installation of the enabled Operators.
Wait until the status changes to **Succeeded**.
 - Click **rhi-installation** to check that all enabled Operators have been installed.
 - Navigate to **Installed Operators** to see the list of installed Operators and the namespaces they were deployed to, as well as their versions.

Additional resources

Further information on the Operators provided with Red Hat Integration components.

- [3scale Operator](#)
- [3scale APIcast Operator](#)
- [AMQ Broker Operator](#)
- [AMQ Interconnect Operator](#)
- [AMQ Streams Cluster Operator](#)
- [Camel K Operator](#)
- [Fuse on OpenShift - API Designer Operator](#)
- [Fuse on OpenShift - Fuse Console Operator](#)
- [Fuse Online Operator](#)
- [Service Registry Operator](#)

2.2. UPGRADING INTEGRATION OPERATORS

Upgrades to the Red Hat Integration Operator also upgrade the Operators for the Red Hat Integration components it has installed.

Upgrade approval strategy is set to *automatic* by default for the Operators installed by the Integration Operator. When a new version of the Red Hat Integration Operator is deployed for the current update

channel, the installed Operators are upgraded to use the latest version applicable to each Operator automatically. You can change the approval strategy to *manual* for the Red Hat Integration Operator, but the strategy for the Operators it installs is always automatic.

When the update channel changes, such as for a major release, use the Operator Lifecycle Manager (OLM) to change the channel name for the Red Hat Integration Operator. You can also change the default update channels for the installed Operators.

The update channels in a subscription can differ between Operators, but generally follow a standard naming convention:

- A (default) **stable** channel contains all the latest updates and releases, including major, minor, and micro releases, which are assumed to be well tested and stable.
- An **X.x** channel contains the minor and micro release updates for a major release, where *X* is the major release version number.
- An **X.Y.x** channel contains the micro release updates for a minor release, where *X* is the major release version number and *Y* is the minor release version number.



NOTE

Take care to choose an update channel for an Operator that corresponds to a supported version of the OpenShift Container Platform. For example, if you are using an unsupported version of the OpenShift Container Platform, installing an Operator from a stable channel is *unsafe*, especially when automatic updates are enabled, as the cluster will receive automatic updates with new components that are unsupported by the OpenShift Container Platform release.

Depending on your chosen upgrade strategy, following the channel update either:

- An automatic upgrade is initiated
- A manual upgrade then requires approval before the installation begins

Additional resources

- For more information on using the OperatorHub to upgrade Operators, see [Upgrading installed Operators](#).

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