Menu

Extend

The platform provides a comprehensive extension system that allows users to enhance the functionality of their Kubernetes clusters. This system is designed to be flexible and user-friendly, enabling users to easily add new features and capabilities to their clusters.

This system consists of two main extension types:

- Operators: Operators are built on the Operator Lifecycle Manager (OLM) v0 framework, providing specialized operational capabilities for the platform. These extensions enable automated management of complex applications and services within your cluster.
- Cluster Plugins: The platform features a proprietary cluster plugin system specifically designed for Chart-type plugins. This system delivers an improved installation and management experience compared to standard methods, with a user-friendly interface for handling Chart-based extensions.

With support for numerous Operators and cluster plugins, users can significantly expand the platform's capabilities to meet specific operational requirements and use cases.

Cluster Plugin

Operator

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Overview

Operators are a method for packaging, deploying, and managing Kubernetes applications, capable of managing the entire lifecycle of Kubernetes resources.

Introduction

An Operator is a method for packaging, deploying, and managing Kubernetes applications that can automate the entire application lifecycle (e.g., creation, updates, deletion). Platform administrators can deploy Operators from the OperatorHub on a per-cluster basis.

Key Concepts

- **OperatorHub**: Presented as a web console interface that displays a list of available Operators on the platform. Through OperatorHub, platform administrators can view Operator descriptions and detailed information, as well as install and manage Operators.
- **Resources**: CRD (CustomResourceDefinition ↗) resources owned by an Operator. In the Kubernetes API, a CRD resource is an endpoint for storing a collection of API objects (CR, Custom Resource) of a specific type.
- **Custom Resources (CR)**: Specific types of API objects created by CRDs that are owned by Operators deployed to the cluster. After successful Operator installation, users in all cluster-associated projects are allowed to add CRs to their namespaces.
- **Resource Instances**: Resource instances created in a namespace by calling the Kubernetes API based on a CR. Creating resource instances provides Operator capabilities to the namespace.

Installation Process

1.

In the platform management view, click on the left navigation menu: **Platform Management** > **Marketplace** > **OperatorHub** to view all Operators provided by the platform.

2.

Locate your desired Operator. If the Operator shows an "absent" status, you will need to:

- Visit the Custom Portal to download the corresponding Operator package. If you don't have access to the Custom Portal, contact technical support.
- Use the `violet` tool to publish the package to the cluster where you want to install the Operator. For detailed instructions on using this tool, refer to the CLI documentation.
- Navigate to **Platform Management** > **Marketplace** > **Upload Packages**, switch to the **Operator** tab, and locate the uploaded Operator name. The Operator details page will display the version(s) of the package uploaded to the platform.

3.

If the Operator shows a "ready" status, click **Install** to begin the installation process. For specific usage instructions after installation, please refer to the user documentation for that particular Operator.

Upgrading Operators

To upgrade an existing Operator to a newer version:

1.

Upload the new Operator version to the platform using the same process described in the installation section.

2.

Navigate to **Platform Management** > **Marketplace** > **Upload Packages**, switch to the **Operator** tab, and check the package details of the corresponding Operator to confirm the new version has been uploaded.

3.

The upgrade behavior depends on the Operator subscription's upgrade strategy:

- **Automatic Upgrade Strategy**: If the upgrade strategy is set to automatic, the Operator will upgrade automatically once the new version package is uploaded.
- **Manual Upgrade Strategy**: If the upgrade strategy is set to manual, you have two options:
  - **Batch Upgrade**: To upgrade multiple Operators under a cluster, navigate to **Platform Management** > **Clusters** > **Clusters**. Clusters with installed Operators that can be upgraded will display an upgrade icon. Enter the cluster details, switch to the **Features** tab, and click the activated upgrade button to perform a batch upgrade of multiple Operators.
  - **Individual Upgrade**: To upgrade only a specific Operator, check the OperatorHub details for that Operator. You will see a prompt waiting for approval. After you approve, the Operator will begin the upgrade process.

Note: Operators with a source labeled as "Alauda" cannot have their subscription upgrade strategy set to automatic. These must be upgraded manually.

Support

If you encounter any issues during the installation or upgrade process, please contact technical support for assistance.

Cluster Plugin

TOC

Overview

Cluster plugins allow you to extend the functionality of your platform by installing additional components. This document guides you through viewing, installing, and upgrading cluster plugins on your platform.

Viewing Available Plugins

To view all plugins provided by the platform:

1. Navigate to the platform management view
2. Click on the left navigation menu: **Platform Management** > **Marketplace** > **Cluster Plugin**

This page displays all available plugins and their current status.

Installing Plugins

If a plugin shows an "absent" status, follow these steps to install it:

1. Download the plugin package:
   - Visit the Custom Portal to download the corresponding plugin package
   - If you don't have access to the Custom Portal, contact technical support
2. Upload the package to the platform:
   - Use the `violet` tool to publish the package to the platform
   - For detailed instructions on using this tool, refer to the CLI
3. Verify the upload:
   - Navigate to **Platform Management** > **Marketplace** > **Upload Packages**
   - Switch to the **Cluster Plugin** tab
   - Locate the uploaded plugin name
   - The plugin details will display the version(s) of the package uploaded to the platform
4. Install the plugin:
   - If the plugin shows a "ready" status, click **Install**
   - Some plugins require installation parameters; refer to the specific plugin's user documentation for parameter details
   - Some plugins have no installation parameters and will begin installation immediately after clicking Install

Upgrading Plugins

To upgrade an existing plugin to a newer version:

1.

Upload the new version:

- Follow the same process to upload the new version of the plugin to the platform

2.

Verify the new version:

- Navigate to **Platform Management** > **Marketplace** > **Upload Packages**
- Switch to the **Cluster Plugin** tab
- In the package details of the corresponding plugin, you can see the new version has been uploaded

3.

Perform the upgrade:

- Navigate to **Platform Management** > **Clusters** > **Clusters**
- Clusters with installed plugins that can be upgraded will display an upgrade icon
- Enter the cluster details and switch to the **Features** tab
- The upgrade button under the features component will be activated
- Click **Upgrade** to complete the plugin upgrade process

Support

If you encounter any issues during the installation or upgrade process, please contact technical support for assistance.