



Cost Management Service 1-latest

Analyzing your cost data

Use cost management to track the cost of your clouds and containers.

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Abstract

To get you started, the following sections provide information about currency exchange and calculating effective usage.

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PREFACE

To begin using cost management, you must have set up set up cost management by connecting your cost data. For more information, see [How to set up cost management](#).

CHAPTER 1. USING COST MANAGEMENT CURRENCY EXCHANGE

Cost management uses the United States Dollar (USD) by default. However, you can use the cost management currency exchange feature to estimate your costs in your local currency. This feature updates costs both in [Red Hat Hybrid Cloud Console](#) and in your exported cost report files.

Cost management updates currency exchange information daily with the most recent data from [ExchangeRate-API](#). The values in cost management do not reflect any foreign currency contract agreements.

Procedure

1. From [Red Hat Hybrid Cloud Console](#) go to [cost management](#).
2. From the **currency** dropdown, select your local currency.

After you change your currency, cost management automatically updates all values with the most recent exchange rates.

CHAPTER 2. CALCULATING EFFECTIVE USAGE WITH COST MODELS

Cloud providers charge for the infrastructure costs of running a cluster, regardless of your overall usage. By calculating the effective usage in cost management, you can more accurately correlate cloud costs with a pod or namespace by considering their direct utilization.

A pod typically requests resources, such as CPU or memory, from a cluster. The cluster then reserves these requested resources as a minimum, but the pod might use more or less than it initially requested. The effective usage metric in cost management uses whichever kind of usage, CPU or memory, is greater per hour.

You can create a cost model in cost management to estimate your effective usage. Ultimately, you can use this data to understand how infrastructure cost is distributed to your OpenShift project.

Prerequisites

- You must be a user with Cost Administrator or Cost Price List Administrator permissions. To learn how to configure user roles, see [Limiting access to cost management resources](#) in *Getting started with cost management*
- You must add your OpenShift cluster as a cost management data integration. For more details, see [Integrating OpenShift Container Platform data into cost management](#) in *Getting started with cost management*.

Procedure

1. Log in to [Red Hat Hybrid Cloud Console](#).
2. From the **Services** menu, click **Spend Management** → **Cost Management**.
3. In the Global Navigation, click **Cost Management** → **Settings**.
4. In the **Cost Models** tab, click **Create cost model** to open the cost model wizard.
5. Enter a name and description for the cost model and select **OpenShift Container Platform** as the integration type. Click **Next**.
6. Create a price list so that you can assign rates to usage or requests. The cost management service collects these metrics from OpenShift but there is no cost attached to them in cost management until you apply a cost model.
 - a. To create a price list to calculate effective CPU usage, click **Create rate**.
 - i. Add a description. In this example, enter **effective cpu usage**.
 - ii. In the **Metric** field, select **CPU**.
 - iii. In the **Measurement** field, select **Effective-usage (core-hours)**.
 - iv. In the **Rate** field, enter the rate you pay for CPU usage. In this example, enter **2**. Click **Create rate**.
 - b. To create a price list to calculate effective memory usage, click **Create rate**.
 - i. Add a description. In this example, enter **effective memory usage**.

- ii. In the **Metric** field, select **Memory**.
 - iii. In the **Measurement** field, select **Effective-usage (GB-hours)**.
 - iv. In the **Rate** field, enter the rate you pay for memory usage. In this example, enter **1**. Click **Create rate**.
7. Click **Next**.
8. (Optional) On the **Cost calculations** page, apply a markup or discount to change how raw costs are calculated for your integrations. Adding a markup to your *raw costs* can allow you to account for your overhead costs, such as the cost of administering your AWS account, Azure subscription, or other support costs. A markup is an estimation to cover your costs not shown by metrics or usage.
9. On the **Cost distribution** page, select the **CPU** or **Memory** distribution type. The distribution type distributes costs based on CPU or memory metrics in project cost breakdowns. If your cluster has high memory usage, select **Memory**. If your cluster has high CPU usage, select **CPU**. Click **Next**.
10. Assign an integration to your cost model and then click **Next**.
11. Review the details and then click **Create**.
12. To review the results of your cost model on a integration, in the Global Navigation, click **Cost Management** → **OpenShift**.
13. Select a project and view the results.

CHAPTER 3. GETTING INFORMATION ABOUT YOUR CLUSTERS AND DATA

In the **Cluster information** page of cost management, you can view information like the status of your integration, the time of data retrieval, and links to each integration. You can also pause and resume integrations.

3.1. GETTING INFORMATION ABOUT YOUR CLUSTER

1. Navigate to **cost management > OpenShift**.
2. In the **Group by** drop-down, select **Cluster**.
3. Select the cluster that you want to view. An **OpenShift cluster details** page opens.
4. At the top of the page, click the hyperlink **Cluster information**.

The **Cluster information** page provides the following details:

- **Cluster ID**
- The **cost management operator version** and if any updates are available
- The **Red Hat integration** (the integration for your cluster)
- Your **Cloud integration**

If you are running a cluster on-premise or if you did not add a cloud integration for your cluster, you won't see a value in **Cloud integration**.

3.2. GETTING INFORMATION ABOUT YOUR DATA

1. Navigate to **cost management > OpenShift**.
2. In the **Group by** drop-down, select **Cluster**.
3. Select the cluster that you want to view. An **OpenShift cluster details** page opens.
4. At the top of the page, click the hyperlink **Data details**.

There are three sections that give you details about your cloud data, cluster data, and about cost management data:

- **Cloud integration status** or **Red Hat integration status**
 - Provides a link to your integrations.
- **Data availability**
 - For **Cloud data**, a timestamp refers to the last time that cost management checked for an available report.
- **Data retrieval**
 - For **Cloud data**, a timestamp refers to when cost management retrieved your data from the cloud provider.

- For **Cluster data**, a timestamp refers to when cost management retrieved your data from the ingress service that the operator uploads it to.
- **Data processing**
 - This timestamp refers to when cost management unpacked the reports, put them in the database, and made them available with the API.
- **Data integration and finalization**
 - For **cost management data**, a timestamp refers to when cost management correlated the raw billing data from your cloud with your cluster metrics, and then applied any cost model rates against your metrics.

3.3. PAUSING OR RESUMING AN INTEGRATION

1. In the **Integrations** section of console.redhat.com **Settings**, choose an integration that you want to pause or resume.
2. On the row of the integration that you want to pause or resume, click the options button at the end of the row which looks like three vertical dots.
3. Click **OpenShift** in the side bar menu.
4. At the top of the page next to **Cloud integration status**, verify that there is either a pause icon or a green checkmark.
5. Click **Data details** and verify that **Cloud integration status** has either a pause icon or a green checkmark.

CHAPTER 4. CONFIGURING COST MANAGEMENT NOTIFICATIONS

The [Red Hat Hybrid Cloud Console](#) notifications service can automatically alert you to potential issues with cost management. Notification administrators can configure notifications for your organization from the **Notifications** menu on the [Red Hat Hybrid Cloud Console Settings](#) page.

To set up a notification integration, go to [Configuring notifications and integrations on the Red Hat Hybrid Cloud Console](#). After you set up the notification type, select the type of event you want [Red Hat Hybrid Cloud Console](#) to notify you about. For cost management, you can create the following types of notification events.

Availability status

Your cloud integration stopped sending data. Check that your integration is set up correctly. Refer to the cost management integration documentation for your cloud provider.

Missing OpenShift Container Platform Cost Model

You did not configure a cost model for an OpenShift Container Platform integration. You must configure a cost model for your OpenShift Container Platform integrations to accurately calculate your organization's costs.

CM Operator Stale Data

The data received from the Cost Management Metrics Operator is stale. Cost management uses this data to calculate costs for your integrations. When this data is stale, the cost management service does not calculate your organization's most recent costs.

PROVIDING FEEDBACK ON RED HAT DOCUMENTATION

If you found an error or have a suggestion on how to improve these guidelines, open an issue in the [cost management Jira board](#) and add the **Documentation** label.

We appreciate your feedback!