Cost Management Service 1-latest

Getting started with cost management

Learn about and configure cost management
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Abstract

Cost management is part of the Red Hat Insights portfolio of services. The Red Hat Insights suite of advanced analytical tools helps you to identify and prioritize impacts on your operations, security, and business. This getting started guide will teach you everything you need to know to begin using cost management.
# Table of Contents

**CHAPTER 1. INTRODUCTION TO COST MANAGEMENT** ...................................................... 3
  1.1. WHY USE COST MANAGEMENT ................................................................. 3
  1.2. PLANNING FOR COST MANAGEMENT ...................................................... 3
    1.2.1. Scope ......................................................................................... 3
    1.2.2. Data ......................................................................................... 3
    1.2.3. User access ............................................................................ 4
  1.3. YOUR PRIVACY AND DATA IN COST MANAGEMENT .............................. 4

**CHAPTER 2. Configuring Cost Management** .............................................................. 5
  2.1. Determining if you need a cloud integration or cost model .................. 5
  2.2. Adding integrations to Cost Management .............................................. 5
  2.3. Limiting access to Cost Management resources .................................... 6
  2.4. Configuring tagging for your integrations ............................................ 6
  2.5. Configuring cost models to accurately report costs ............................. 6

**CHAPTER 3. Using Cost Management** .................................................................... 7
  3.1. Visualizing your costs with Cost Explorer ........................................... 7
  3.2. Using Cost Management currency exchange ....................................... 7
  3.3. Calculating effective usage with cost models ...................................... 7

**Providing Feedback on Red Hat Documentation** .................................................. 10
CHAPTER 1. INTRODUCTION TO COST MANAGEMENT

Cost management is an OpenShift Container Platform service that enables you to track costs for your clouds and containers. It is based on the upstream project Koku.

In this getting started guide, you’ll learn about the following topics:

- What you can do with cost management and why your organization might want to use it
- How to set up and configure cost management
- How to use cost management and how to adjust your settings after setup

You can use cost management to track cost and usage data for your Amazon Web Services (AWS), Microsoft Azure, Google Cloud, Oracle Cloud, and OpenShift Container Platform environments.

1.1. WHY USE COST MANAGEMENT

Cost management helps you simplify the management of your resources and costs across the following environments:

- Container platforms like OpenShift Container Platform
- Public clouds like Amazon Web Services (AWS), Google Cloud, and Microsoft Azure

Additionally, cost management enables you to perform the following tasks:

- Visualize, understand, and analyze how you are using your resources and costs
- Forecast your future consumption and compare it with your budgets
- Optimize your resources and usage
- Identify patterns of usage that you might want to investigate
- Integrate with third party tools that can use your cost and resourcing data

1.2. PLANNING FOR COST MANAGEMENT

When you configure cost management for your specific business needs, consider three main ideas: the scope of your environments that you want to manage costs for, how you will use your data, and which users will have access to that data:

1.2.1. Scope

Who is your target audience?

- Company-wide customers
- Customers in specific divisions or organizations
- Partner companies who manage multiple tenants

1.2.2. Data
How will your business use your data?

- Gather information about projects and users
- Plan your AWS tags based on your use cases
- Ensure that individuals use the correct tags and metadata in each item of the inventory

1.2.3. User access

What level of access do you want your users to have?

- Grant access to all cost data
- Only grant access to a part of the environment or specific sources

1.3. YOUR PRIVACY AND DATA IN COST MANAGEMENT

To run cost management, we gather your cost and usage data, but do not collect identifying information such as user names, passwords, or certificates.

For more information about your privacy and data, log in to the Customer Portal and see Red Hat’s Privacy Policy and our FAQ page.
CHAPTER 2. CONFIGURING COST MANAGEMENT

You can customize cost management to meet your unique needs. In this guide, you’ll learn how to limit access to your cloud and OpenShift costs, how you can organize your costs with tags, and how you’ll create cost models to accurately reflect what you’re paying.

To get started, read the following sections:

- Determining if you need a cloud integration or cost model
- Adding integrations to cost management
- Limiting access to cost management resources
- Configuring tagging for your integrations
- Configuring cost models to accurately report costs

2.1. DETERMINING IF YOU NEED A CLOUD INTEGRATION OR COST MODEL

You might need to create a cloud integration and a cost model to accurately analyze your costs. The following list can help you determine what you need:

- If you want your costs to come from your cloud integration, like AWS or Microsoft Azure, you must create a corresponding cloud integration. However, a cost model is not required.
- If your costs do not come from your cloud integration, you must create a cost model.

You’ll learn about cloud integrations and cost models more in the following sections.

2.2. ADDING INTEGRATIONS TO COST MANAGEMENT

An integration is a provider account that cost management connects to and monitors, for example, an OpenShift Container Platform deployment or a cloud infrastructure provider.

To use cost management to monitor your cloud costs, you must first connect a data integration to the cost management application. Cost management can track costs for Amazon Web Services (AWS), Microsoft Azure, Google Cloud, Oracle Cloud, and Red Hat OpenShift Container Platform integrations.

From the Integrations page, you can view, edit, and delete integrations that are connected to cost management.

To learn how to add your specific integration to cost management, see the following guides:

- Adding an OpenShift Container Platform integration to cost management
- Adding an Amazon Web Services (AWS) integration to cost management
- Adding a Google Cloud integration to cost management
- Adding a Microsoft Azure integration to cost management

If you are not sure if you need a cloud integration, see Determining if you need a cloud integration or cost model.
2.3. LIMITING ACCESS TO COST MANAGEMENT RESOURCES

After you add and configure integrations in cost management, you can limit access to cost data and resources.

You might not want users to have access to all of your cost data. Instead, you can grant users access only to data that is specific to their projects or organizations. With role-based access control, you can limit the visibility of resources in cost management reports. For example, you can restrict a user’s view to only AWS integrations, rather than the entire environment.

To learn how to limit access, see the more in-depth guide *Limiting access to cost management resources*.

2.4. CONFIGURING TAGGING FOR YOUR INTEGRATIONS

The cost management application tracks cloud and infrastructure costs with tags. Tags are also known as labels in OpenShift.

You can refine tags in cost management to filter and attribute resources, organize your resources by cost, and allocate costs to different parts of your cloud infrastructure.

**IMPORTANT**

You can only configure tags and labels directly on an integration. You can choose the tags that you activate in cost management, however, you cannot edit tags and labels in the cost management application.

To learn more about the following topics, see *Managing cost data using tagging*:

- Planning your tagging strategy to organize your view of cost data
- Understanding how cost management associates tags
- Configuring tags and labels on your integrations

2.5. CONFIGURING COST MODELS TO ACCURATELY REPORT COSTS

Now that you configured your integrations to collect cost and usage data in cost management, you can configure cost models to associate prices to metrics and usage.

A cost model is a framework that uses raw costs and metrics to define calculations for the costs in cost management. You can record, categorize, and distribute the costs that the cost model generates to specific customers, business units, or projects.

In *Cost Models*, you can complete the following tasks:

- Classifying your costs as infrastructure or supplementary costs
- Capturing monthly costs for OpenShift nodes and clusters
- Applying a markup to account for additional support costs

To learn how to configure a cost model, see *Using cost models*. 
CHAPTER 3. USING COST MANAGEMENT

Now that you configured cost management, you’re ready to start using it. To get you started, the following sections provide information about Cost Explorer, currency exchange, and calculating effective usage.

3.1. VISUALIZING YOUR COSTS WITH COST EXPLORER

Use cost management Cost Explorer to create custom graphs of time-scaled cost and usage information and ultimately better visualize and interpret your costs.

To learn more about the following topics, see Visualizing your costs using Cost Explorer:

- Using Cost Explorer to identify abnormal events
- Understanding how your cost data changes over time
- Creating custom bar charts of your cost and usage data
- Exporting custom cost data tables

3.2. 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.

3.3. 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 Adding an OpenShift Container Platform integration to 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.
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.
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!