Cost Management Service 1-latest

Integrating Google Cloud data into cost management

Learn how to add and configure your Google Cloud integration
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Learn how to add and configure your Google Cloud integration
Abstract

This guide describes how to add a Google Cloud integration to cost management. 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.
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CHAPTER 1. INTEGRATING GOOGLE CLOUD DATA INTO COST MANAGEMENT

To add a Google Cloud account to cost management, you must configure your Google Cloud to provide metrics, then add your Google Cloud account as a integration from the Red Hat Hybrid Cloud Console user interface.

**NOTE**
You must have a Red Hat account user with Integrations Administrator entitlements before you can add integrations to cost management.

Before you can add your Google Cloud account to cost management as a data integration, you must configure the following services on your Google Cloud account to allow cost management access to metrics:

- Cost management Google Cloud project.
- Billing service account member with the correct role to export your data to Red Hat Hybrid Cloud Console.
- BigQuery dataset to contain the cost data.
- Billing export that sends the cost data to your BigQuery dataset.

As you will complete some of the following steps in the Google Cloud console, and some steps in the cost management user interface, keep both applications open in a web browser.

Add your Google Cloud integration to cost management from the Integrations page.

**NOTE**
As non-Red Hat products and documentation can change without notice, instructions for configuring the third-party integrations provided in this guide are general and correct at the time of publishing. See the Google Cloud Platform documentation for the most up-to-date and accurate information.

### 1.1. CREATING A GOOGLE CLOUD PROJECT

Create a Google Cloud project to gather and send your cost reports to cost management.

**Prerequisites**

- Access to Google Cloud Console with `resourcemanager.projects.create` permission

**Procedure**

1. In the Google Cloud Console click IAM & Admin→ Create a Project
2. Enter a Project name in the new page that appears and select your billing account.
3. Select the Organization.
4. Enter the parent organization in the Location box.
5. Click **Create**.

**Verification steps**

1. Navigate to the Google Cloud Console Dashboard
2. Verify the project is in the menu bar.

**Additional resources**

- For additional information about creating projects, see the Google Cloud documentation *Creating and managing projects*.

### 1.2. CREATING A GOOGLE CLOUD IDENTITY AND ACCESS MANAGEMENT ROLE

A custom Identity and Access Management (IAM) role for cost management gives access to specific cost related resources required to enable a Google Cloud Platform integration and prohibits access to other resources.

**Prerequisites**

- Access to Google Cloud Console with these permissions:
  - `resourcemanager.projects.get`
  - `resourcemanager.projects.getIamPolicy`
  - `resourcemanager.projects.setIamPolicy`
- Google Cloud project

**Procedure**

1. In the **Google Cloud Console**, click `IAM & Admin → Roles`.
2. Select the cost management project from the dropdown in the menu bar.
3. Click `+ Create role`.
4. Enter a **Title**, **Description** and **ID** for the role. In this example, use **customer-data-role**.
5. Click `+ ADD PERMISSIONS`.
6. Use the **Enter property name or value** field to search and select these four permissions for your custom role:
   - `bigquery.jobs.create`
   - `bigquery.tables.getData`
   - `bigquery.tables.get`
   - `bigquery.tables.list`
7. Click **ADD**.
8. Click **CREATE**.

Additional resources

- For additional information about roles and their usage, see the Google Cloud documentation **Understanding roles** and **Creating and managing custom roles**.

### 1.3. ADDING A BILLING SERVICE ACCOUNT MEMBER TO YOUR GOOGLE CLOUD PROJECT

You must create a billing service account member that can export cost reports to Red Hat Hybrid Cloud Console in your project.

**Prerequisites**

- Access to Google Cloud Console with these permissions:
  - `resourcemanager.projects.get`
  - `resourcemanager.projects.getIamPolicy`
  - `resourcemanager.projects.setIamPolicy`
- Google Cloud project
- A cost management Identity and Access Management (IAM) role

**Procedure**

1. In the Google Cloud Console, click **IAM & Admin → Roles**.
2. Select the cost management project from the dropdown in the menu bar.
3. Click **ADD**.
4. Paste the IAM role you created into the **New principals** field:
   
   `billing-export@red-hat-cost-management.iam.gserviceaccount.com`

5. In the **Assign roles** section, assign the IAM role you created. In this example, use **customer-data-role**.
6. Click **SAVE**.

**Verification steps**

1. Navigate to **IAM & Admin → IAM**.
2. Verify the new member is present with the correct role.

**Additional resources**

- For additional information about roles and their usage, see the Google Cloud documentation **Understanding roles** and **Creating and managing custom roles**.
1.4. CREATING A GOOGLE CLOUD BIGQUERY DATASET

Create a BigQuery dataset to collect and store the billing data for cost management.

Prerequisites

- Access to Google Cloud Console with `bigquery.datasets.create` permission
- Google Cloud project

Procedure

1. In Google Cloud Console, click Big Data → BigQuery.
2. Select the hybrid committed spend project in the Explorer panel.
3. Click CREATE DATASET.
4. Enter a name for your dataset in the Dataset ID field. In this example, use CustomerData.
5. Click CREATE DATASET.

1.5. EXPORTING GOOGLE CLOUD BILLING DATA TO BIGQUERY

Enabling a billing export to BigQuery sends your Google Cloud billing data (such as usage, cost estimates, and pricing data) automatically to the cost management BigQuery dataset.

Prerequisites

- Access to Google Cloud Console with the Billing Account Administrator role
- Google Cloud project
- Billing service member with the cost management Identity and Access Management (IAM) role
- BigQuery dataset

Procedure

1. In the Google Cloud Console, click Billing → Billing export.
2. Click the Billing export tab.
3. Click EDIT SETTINGS in the Detailed usage cost section.
4. Select the cost management Project and Billing export dataset you created in the dropdown menus.
5. Click SAVE.

Verification steps

1. Verify a green checkmark with Enabled in the Detailed usage cost section, with correct Project name and Dataset name.
1.5.1. Viewing billing tables in BigQuery

You may want to review the metrics collected and sent to cost management. This can also assist with troubleshooting incorrect or missing data in cost management.

NOTE

Google may take several hours to export billing data to your BigQuery dataset.

Prerequisites

- Access to Google Cloud console with `bigquery.dataViewer` role

Procedure

1. Navigate to Big Data → BigQuery in Google Cloud Console.
2. Select the cost management project in the Explorer panel.
3. Click `gcp_billing_export_v1_xxxxxx_xxxxxx_xxxxxx` table under the cost management dataset.
4. Click the Preview tab to view the metrics.

1.6. ADDING YOUR GOOGLE CLOUD ACCOUNT AS AN INTEGRATION

Using the information from the previous steps, you can now add your Google Cloud account as an integration. After adding a Google Cloud integration, the cost management application processes the cost and usage data from your Google Cloud account and makes it viewable.

Prerequisites

- Red Hat account user with Integrations Administrator entitlements
- Google Cloud project
- Billing service member with the cost management Identity and Access Management (IAM) role
- Billing export to BigQuery dataset

Procedure

1. From Red Hat Hybrid Cloud Console, click Settings.
2. Click Integrations.
3. Click Add source in the Cloud sources tab.
4. Enter a name for the integration and click Next.
5. In the dialog, select Google Cloud as the integration type and cost management as the application.
6. Click Next.
7. Enter your **Project ID** and click **Next**.

8. Click **Next** to verify you have created an **Identity and Access Management (IAM) role**

9. Click **Next** to verify you have created a new **billing service account user** and assigned the correct role.

10. Enter your **BigQuery Dataset ID** and click **Next**.

11. Click **Next** to verify you have created a new **billing service account user** and assigned the correct role.

12. Review the details and click **Add**.

**Verification steps**

- Verify your integration is listed with **Available** status in the **Integrations** page.

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**IMPORTANT**

Google may take several hours to gather and export billing data to cost management. In the meantime, you will receive a **configuration in progress** message, and your integration status will display as **Unknown** in the **Integrations** page.

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### Table 1.1. Troubleshooting

<table>
<thead>
<tr>
<th>Issue</th>
<th>Cause</th>
<th>Remediation steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrect IAM permissions for project yourprojectID.</td>
<td>The billing service account member does not have the correct role or permissions for cost management.</td>
<td>Verify the billing service account has the <strong>cost management role</strong> with the correct permissions.</td>
</tr>
<tr>
<td>Unable to find dataset: yourdatasetID in project: yourprojectID.</td>
<td>The BigQuery dataset ID was entered incorrectly or does not exist.</td>
<td>Verify the <strong>BigQuery dataset ID</strong> matches the one created for cost management.</td>
</tr>
<tr>
<td>Integration status &quot;Unknown&quot; longer than 24 hours.</td>
<td>Cost management cannot find cost data in the BigQuery dataset provided.</td>
<td>Verify your <strong>billing export</strong> is configured and <strong>billing tables</strong> exist in your BigQuery dataset.</td>
</tr>
</tbody>
</table>
CHAPTER 2. NEXT STEPS FOR MANAGING YOUR COSTS

After adding your OpenShift Container Platform and Google Cloud integration, on the cost management Overview page, your cost data is sorted into OpenShift and Infrastructure tabs. From here, you can use Perspective to select different views of your cost data.

You can also use the left navigation menu to view the additional details of your costs by service.

Additional Resources

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

2.1. 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.

2.2. 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

2.3. 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.

2.4. USE THE COST EXPLORER TO VISUALIZE YOUR COSTS

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

See Visualizing your costs using Cost Explorer to learn more about:

- 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.
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!