

Understanding and Analyzing Your Costs with Google Cloud Billing Reports

GSP614



Google Cloud Self-Paced Labs

Overview

Google Cloud cost management tools provide greater visibility, accountability, control, and intelligence so that you can scale your business in the cloud with confidence. Tailored to meet the needs of organizations of all sizes, these tools help reduce complexity and increase the predictability of your cloud costs.

Google Cloud Billing reports is a cost management tool that provides built-in reporting within the Cloud Console. In this lab, you familiarize yourself with Billing reports and understand how to answer fundamental cost management questions, such as:

- How much am I spending?
- What are my cost trends?
- What are my cost drivers?

What you'll do

- View Billing reports in the Cloud Console using a sample billing account.
- View your current and forecasted Google Cloud costs at project, product, and SKU-level.
- Analyze costs using report filters to identify cost drivers and trends. Examples of report filters include **Projects**, **Products**, **SKUs**, **Locations**, and **Credits**.

Prerequisite

To maximize your learning, you should have a basic knowledge of Google Cloud.

Setup and requirements

Qwiklabs Setup

Before you click the Start Lab button

Read these instructions. Labs are timed and you cannot pause them. The timer, which starts when you click **Start Lab**, shows how long Google Cloud resources will be made available to you.

This Qwiklabs hands-on lab lets you do the lab activities yourself in a real cloud environment, not in a simulation or demo environment. It does so by giving you new, temporary credentials that you use to sign in and access Google Cloud for the duration of the lab.

What you need

To complete this lab, you need:

- Access to a standard internet browser (Chrome browser recommended).
- Time to complete the lab.

Note: If you already have your own personal Google Cloud account or project, do not use it for this lab.

Note: If you are using a Pixelbook, open an Incognito window to run this lab.

Open the sample billing account

1. Click [this link](#) to open the Cloud Console and see a Billing report for a sample billing account.
 2. Sign into the Cloud Console
- Find your Username and Password in the left panel of the lab.



Open Google Console

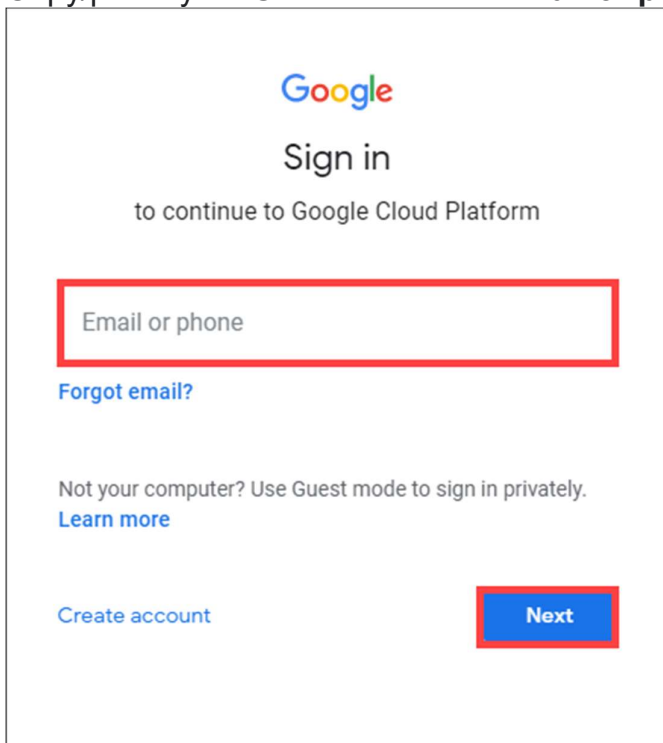
Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked. [Learn more.](#)

Username
student-01-d34d731dc0f6@qwiklabs

Password
QZtb9CbMR5m

GCP Project ID
qwiklabs-gcp-01-2fd71fbecb77

- Copy/paste your Username in the **Email or phone** field, and then click **Next**:



Google

Sign in

to continue to Google Cloud Platform

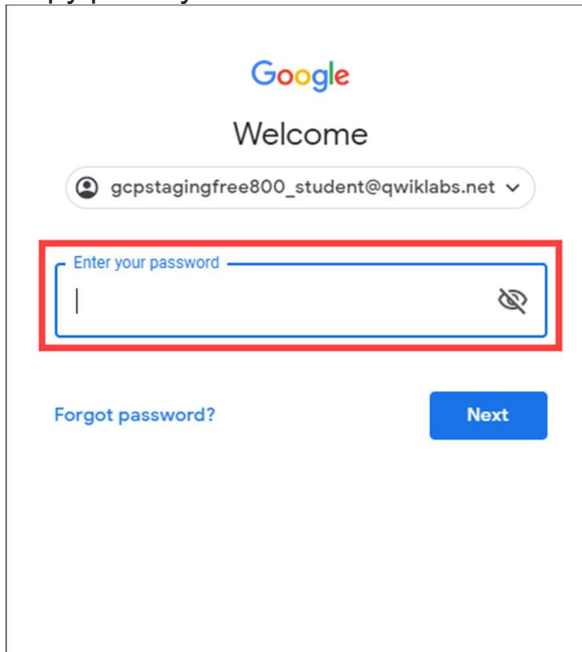
Email or phone

[Forgot email?](#)

Not your computer? Use Guest mode to sign in privately.
[Learn more](#)

[Create account](#) **Next**

- Copy/paste your Password in the **Enter your password** field, and then click **Next**.

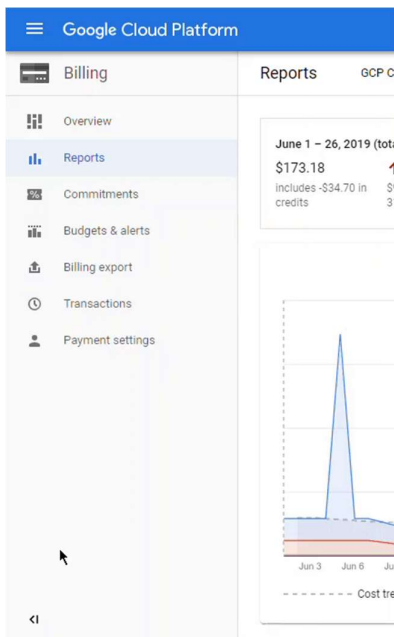


The image shows the Google Cloud 'Welcome' screen. At the top is the Google logo and the word 'Welcome'. Below this is a user selection dropdown showing 'gcpstagingfree800_student@qwiklabs.net'. A red rectangular box highlights the 'Enter your password' input field, which contains a single vertical line and a toggle icon for password visibility. Below the input field are two links: 'Forgot password?' and a blue 'Next' button.

- In the **Welcome to your new account** dialog, review then **Accept** the Google Terms of Service and the Google Privacy Policy.
 - In the **protect your account** dialog, click **Done**.
 - In the **Welcome** dialog, review then check that you agree to the Google Cloud Terms of Service and the terms of service of any applicable services and APIs, and then click **AGREE AND CONTINUE**.
- You are now on the Cloud Console in the Billing Reports Overview tab, looking at a Billing report.

To access Google Cloud Billing in your own environment, you'll need one of the Cloud Billing roles outlined [here](#).

Notice you use the left panel to navigate Billing views:



How much am I spending?

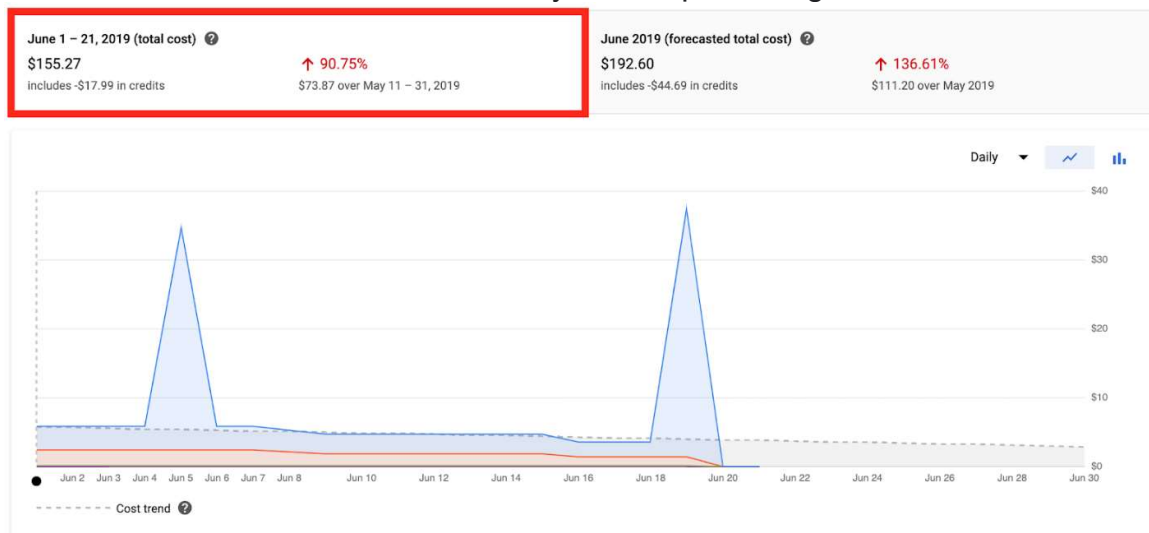
The chart

In Billing, if necessary, click **Reports** in the left panel to view Billing reports for your sample account. This page includes a chart that plots usage costs for all projects linked to a billing account.

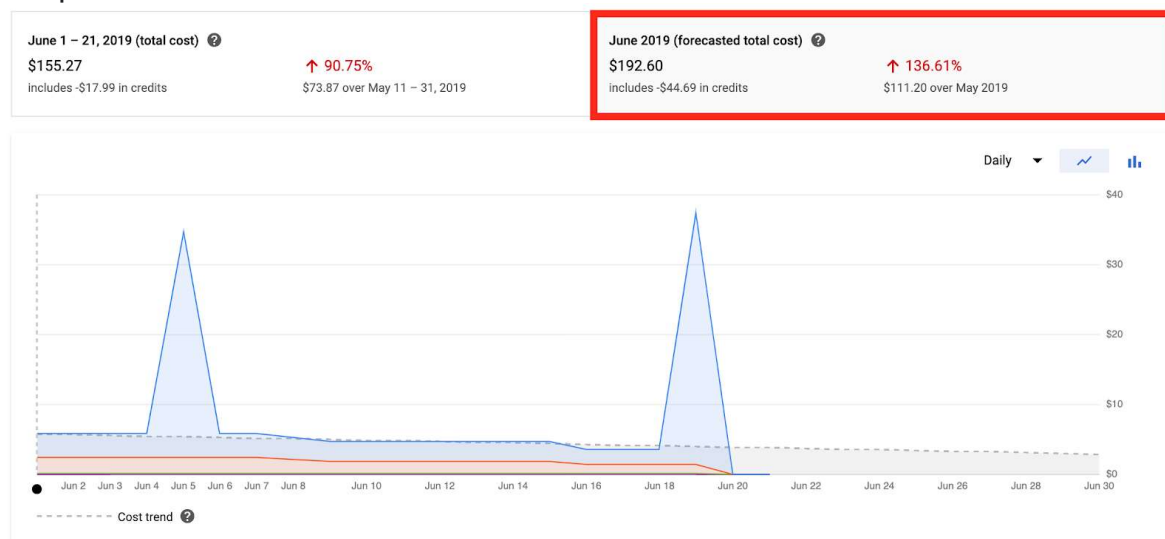
Because you're viewing a working project, the charts in this lab may differ from what you see in your Billing reports.

By default, the chart shows current and forecasted costs by project for the current calendar month.

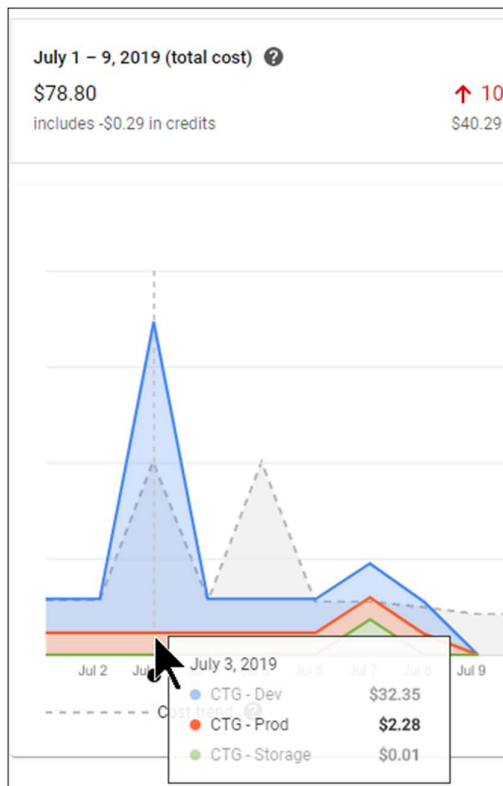
- In the top left, you see actual costs-to-date for the current month and how it compares to the costs over the same number of days in the preceding month.



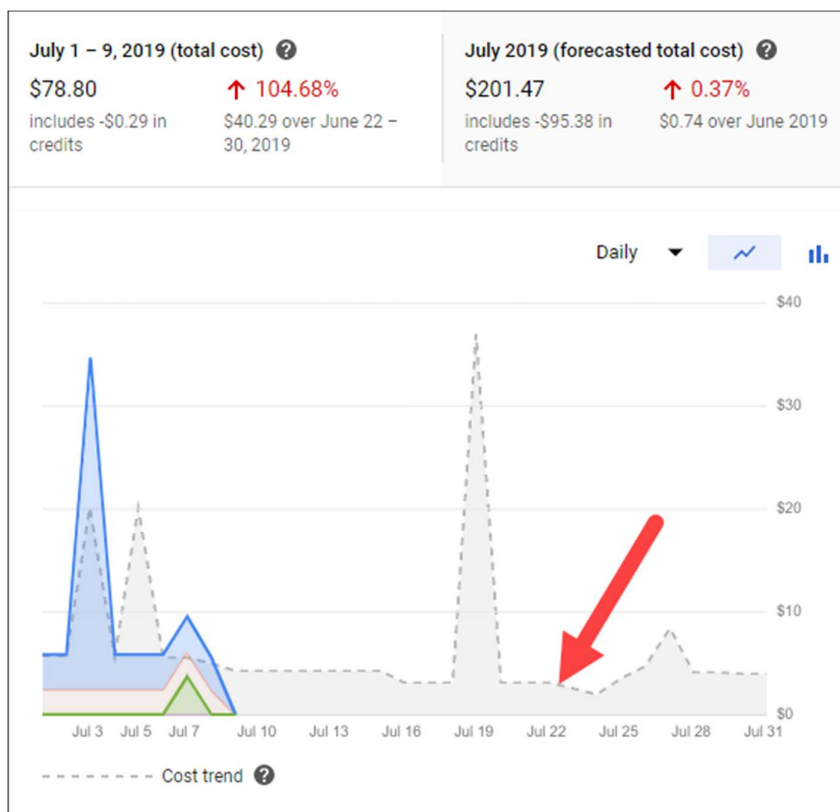
- In the top right, you see the total forecasted cost for the current month and a comparison to the previous month.



Each color in the chart corresponds to a different project. To visualize your daily costs grouped by project, hover over a specific day on one of the colors in the chart to compare the cost for that project to the total cost for the day.



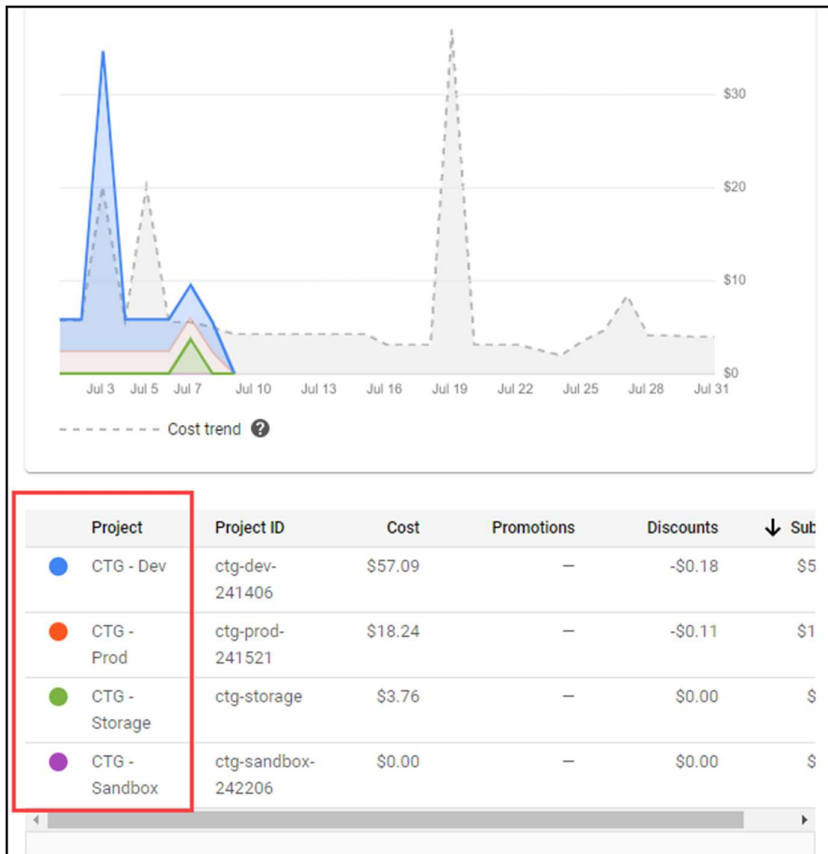
The cost trend line (the dotted line) is visible when your selected time period includes a date in the future.



The cost trend line indicates how much you're forecasted to spend in that time period.

It also reflects both the long term trend and any consistent monthly cycles. See [Viewing your forecasted costs](#) for more information.

Below the chart is a summary of the costs by project in the selected time period.

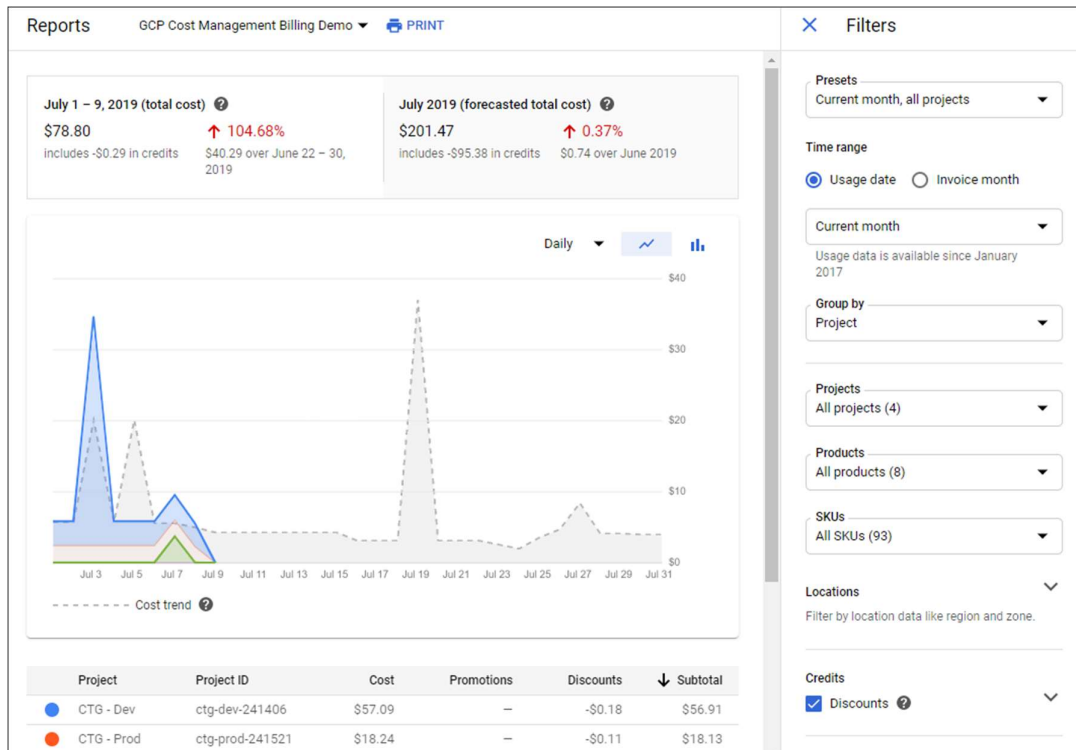


Filters and grouping

Customize your view using the drop-downs for filtering and grouping.

View your charges by invoice and without taxes or adjustments

1. Click **SHOW FILTERS** in the upper right.
If you don't see both the report and the **Filters** panel, widen your browser window.



2. In the **Time range** section, select **Invoice month** and set your **From** and **To** month range.

Time range

☐ Usage date ☒ Invoice month

From

To

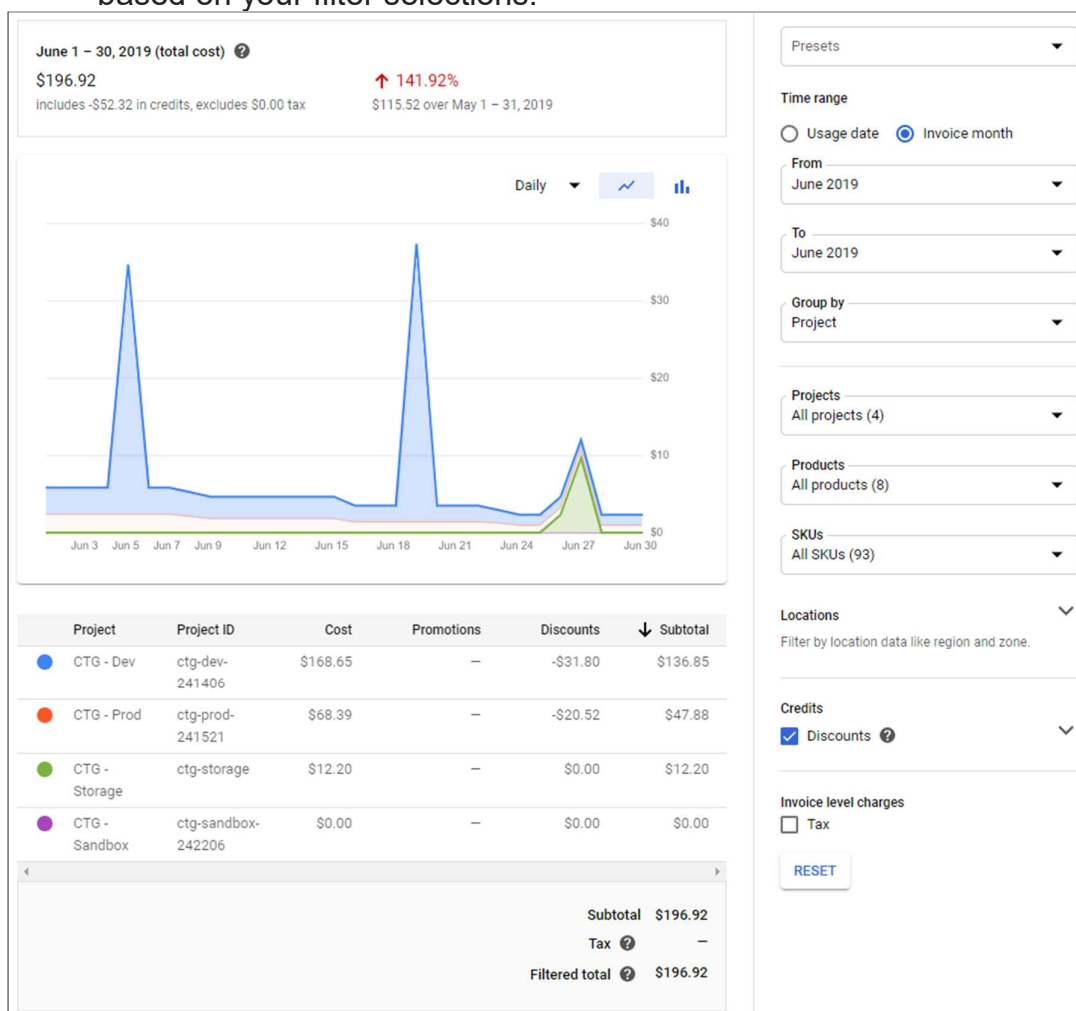
3. In the **Invoice level charges** section, uncheck **Tax**.

Invoice level charges

☐ Tax

RESET

- View the chart. Notice the **Reports** page updates to match the invoice month and tax option you selected. The table below the chart displays the cost breakdown based on your filter selections.



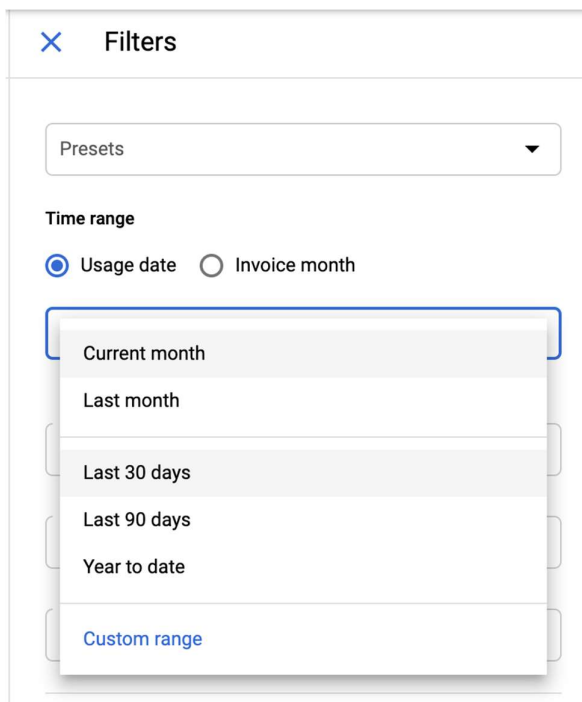
What are my cost trends?

To determine your cost trends, filter the view and see how your costs have changed. In this section you filter by:

- **Time range**
- **Location**
- **Credits**

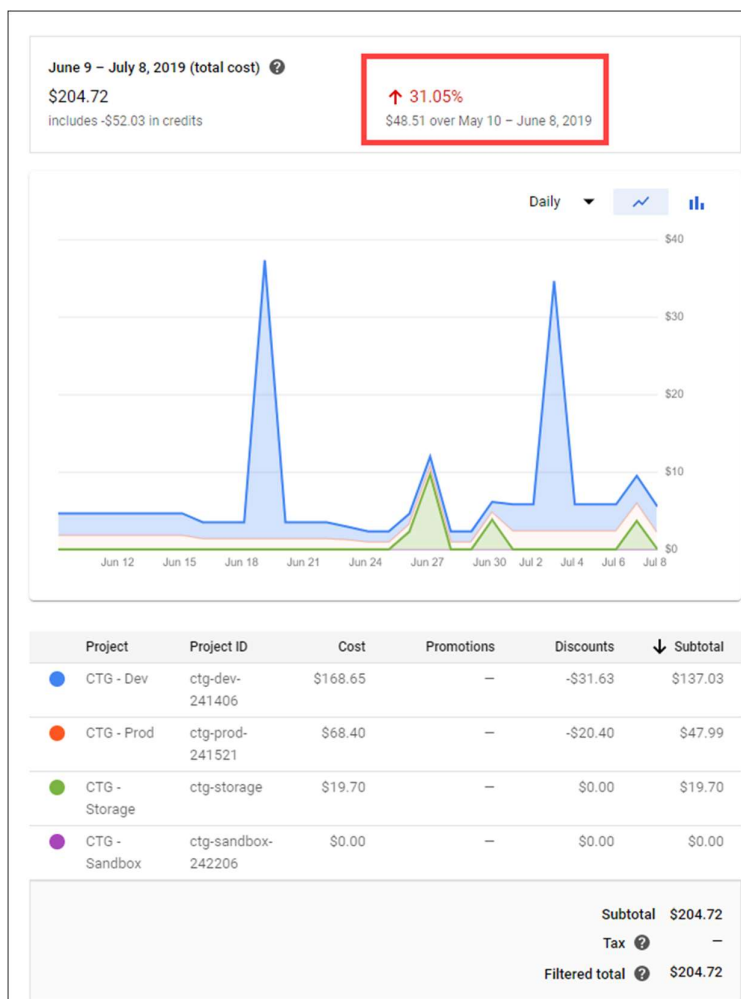
View your cost trend over a specified time period

Back in the **Filters** panel, in the **Time range** section, select **Usage date** and then change the time period to **Last 30 days**.



The screenshot shows a 'Filters' panel with a close button (X) and a 'Presets' dropdown menu. Below this is the 'Time range' section, which has two radio buttons: 'Usage date' (selected) and 'Invoice month'. A dropdown menu is open, showing several options: 'Current month', 'Last month', 'Last 30 days' (highlighted), 'Last 90 days', 'Year to date', and 'Custom range'.

The chart now shows the last 30 days of usage. As before, the top of the graph shows your costs compared to the previous time period so you can easily compare how your costs trend over time.



To see more information about your costs, use additional filters such as **Location** or **Credits**.

View your cost trend by location

1. Expand the **Locations** section to filter costs to a specific **Geography**, **Multi-region** or **Region**.
2. Click on an individual region or multi-region area to include data from only those locations in your current view.

Locations ^

Filter by location data like region and zone.

Geography

Americas Asia-Pacific Europe

Region & multi-region* ⓘ

asia* europe-west1 **us***

us-central1 **us-west1**

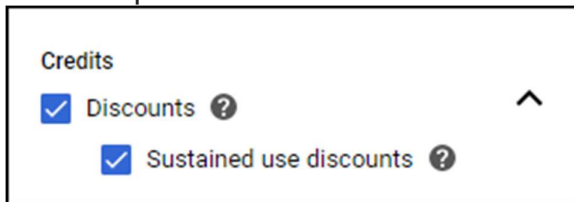
The **Geography** and **Region** options you clicked turn blue, and the chart shows only data from those filters.

3. **Optional:** Select different **Geography** or **Region & multi-region** options and view the result in the chart.
4. Deselect the **Geography** or **Region & multi-region** options previously selected and collapse the **Locations** group.

View your cost trend by credits

See your costs without discounts applied, such as [sustained use discounts](#).

1. Expand the Credits section.



2. Deselect **Sustained use discounts**.

Since in this lab, the **Sustained use discount** is the only available discount, the **Discounts** option automatically deselects when you deselect **Sustained use discount**.

Note how the chart is more flat when the automatically applied discounts are no longer reflected.

3. Optional: Toggle to select/deselect the **Sustained use discount** and view how the chart changes.
4. Reselect the **Sustained use discount** and collapse the Credits section.

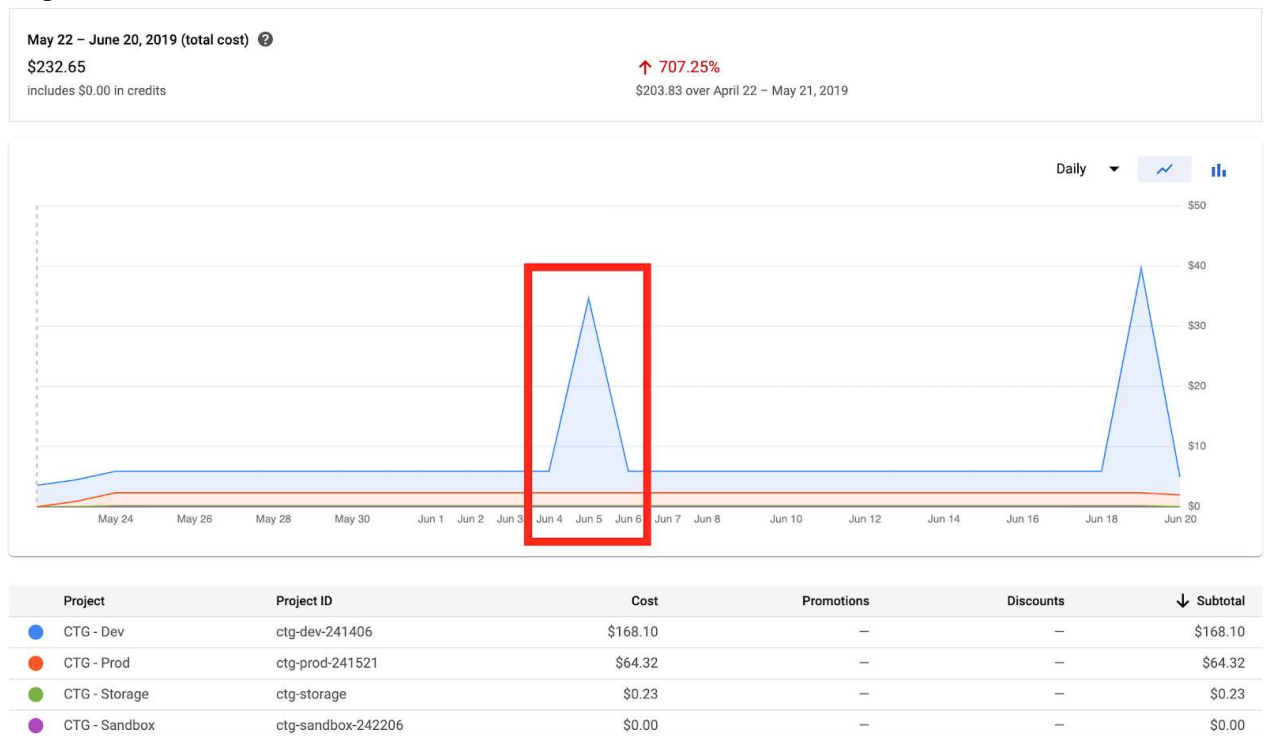
What are my cost drivers?

With Billing reports, you can visualize and investigate any unexpected changes in cost.

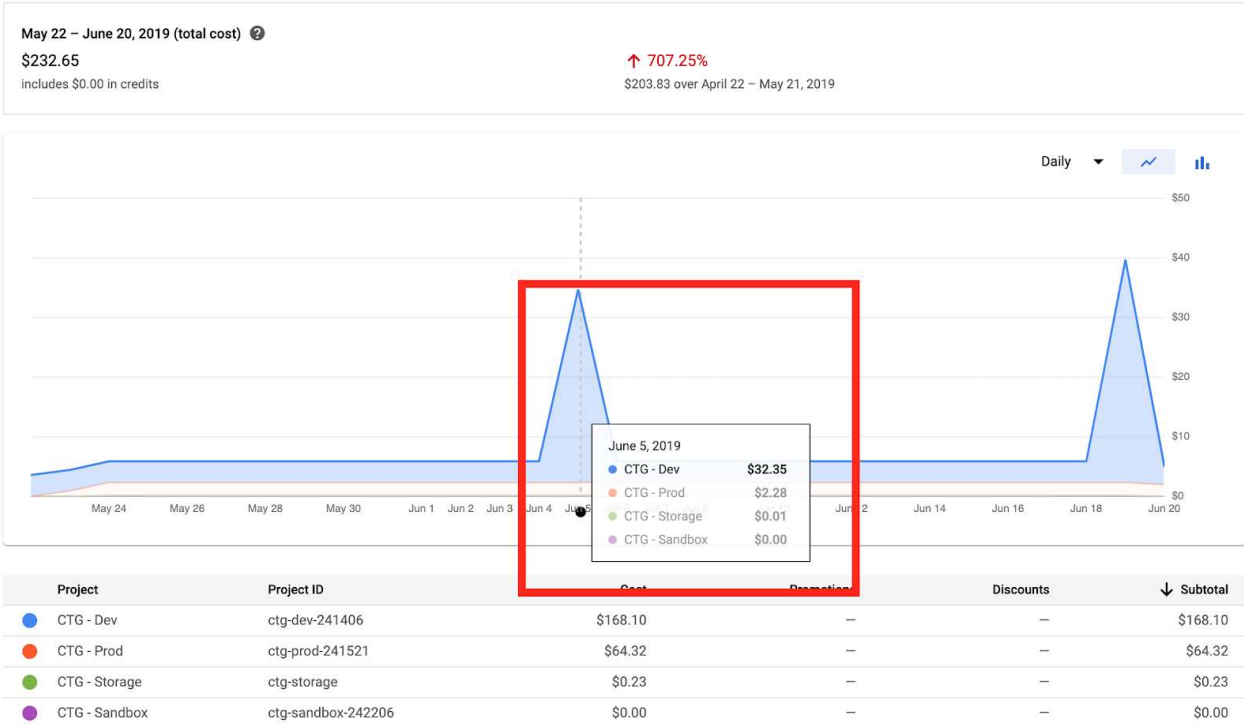
Find the unexpected cost increase

Because your **Report** view is a working project, your chart looks different than the chart in this section and has different spikes. Follow along to learn how to find the cause of an unexpected cost increase, and then use what you learned to determine the cause of an unexpected cost increase in your chart.

1. In the chart below, notice an unexpected cost increase of mysterious origins:



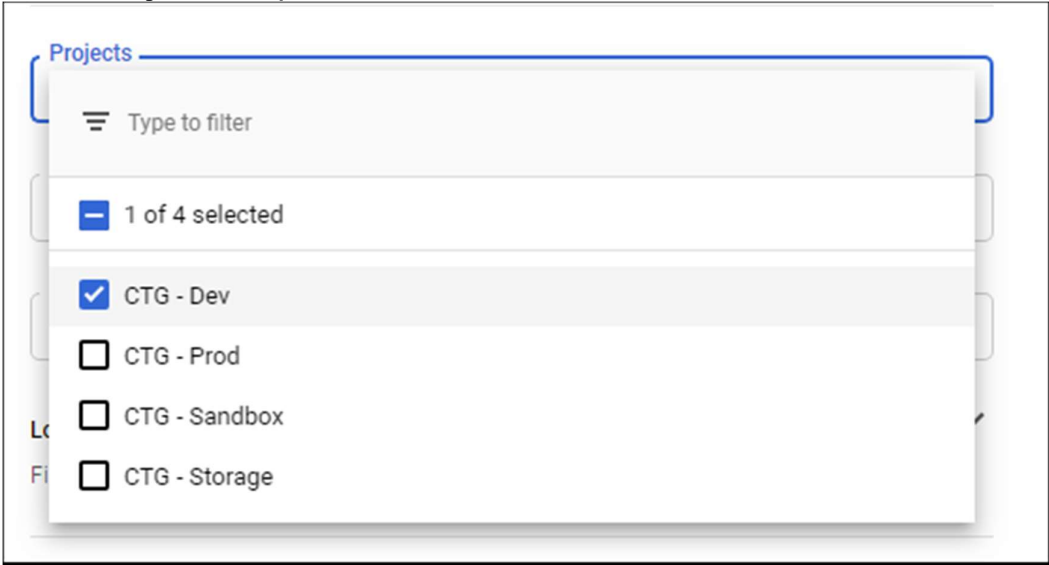
2. What's causing the large increase in cost on this date? Hover over the spike in the chart to identify the project.



In this case the project causing the large cost increase is CTG-Dev.

3. Filter to see costs from the CTG-Dev project and group these costs by Product:

- In the **Projects** dropdown, select **CTG - Dev**.



- In the **Group by** dropdown, select **Product**.

Group by

Project

Product

SKU

Location: Region or multi-region*

No grouping (show total cost only)

Label keys

goog-resource-type

Locations

- Now that the costs are grouped by product, hover over the spike in the chart to see which product has caused the increase in cost.

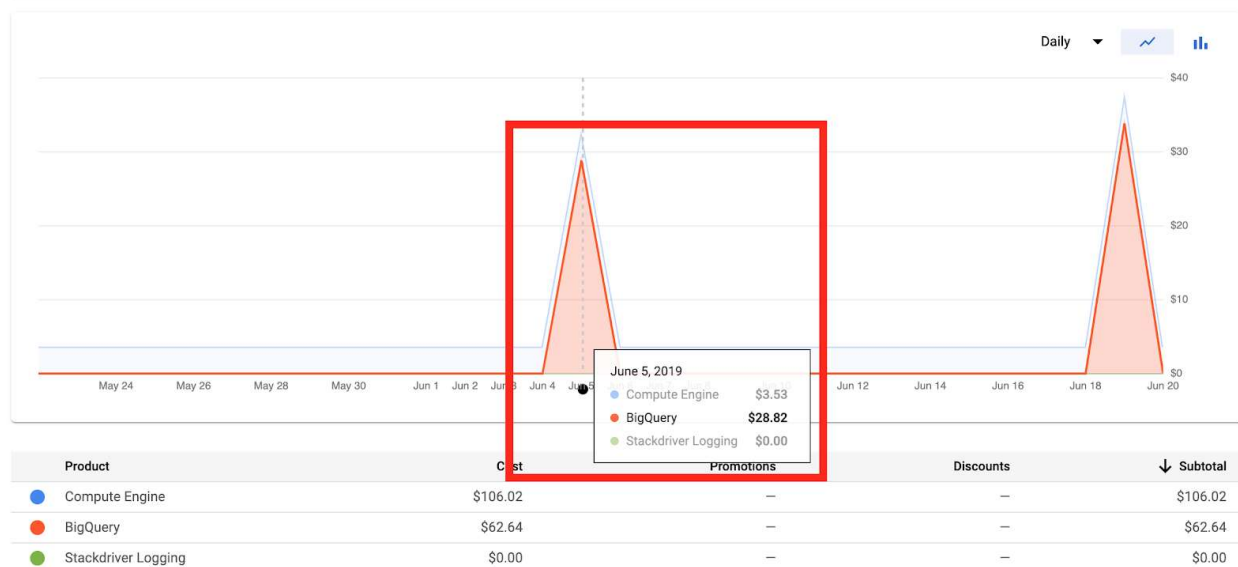
May 22 – June 20, 2019 (total cost) ⓘ

\$168.65

includes \$0.00 in credits

↑ 485.18%

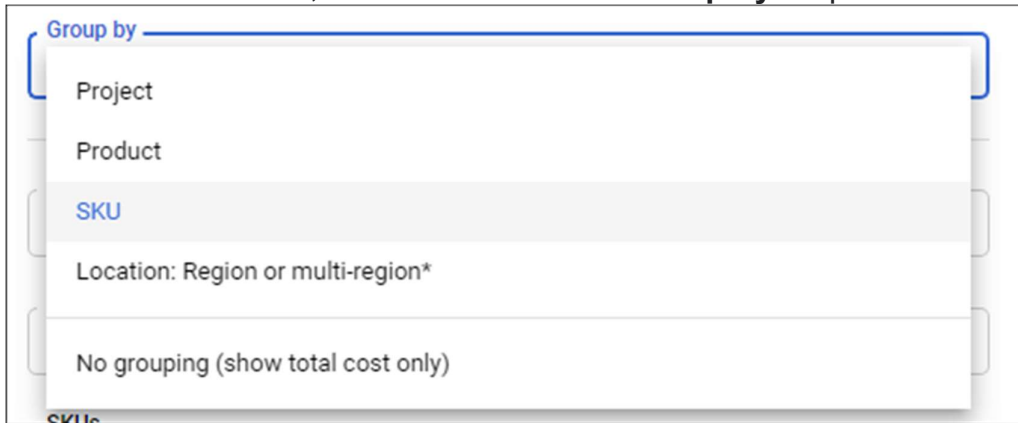
\$139.83 over April 22 – May 21, 2019



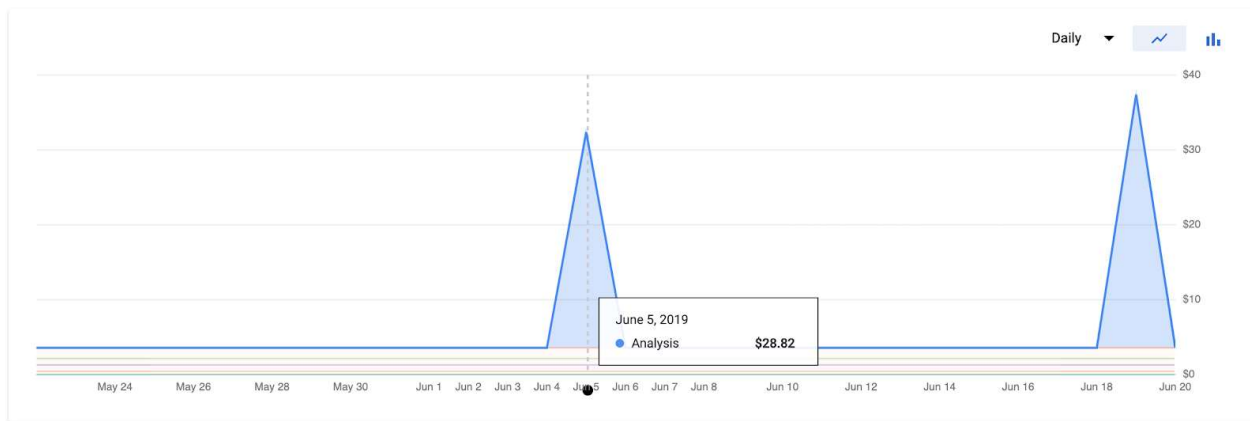
In this case, it looks like BigQuery caused the increase in cost.

As a next step, group by SKU to get more detailed information.

5. Back in **Filters**, select **SKU** from the **Group by** dropdown.



6. Close **Filters**, then hover over the spike in the chart to see which SKU has caused the increase in cost.



SKU	Product	SKU ID	Usage	Cost	Promotions	Discounts	Subtotal
Analysis	BigQuery	1DF5-1F98-1DD1	13.53 terabyte	\$62.64	—	—	\$62.64
N1 Predefined Instance Core running in Americas	Compute Engine	2E27-4F75-95CD	1,439.93 hour	\$45.52	—	—	\$45.52

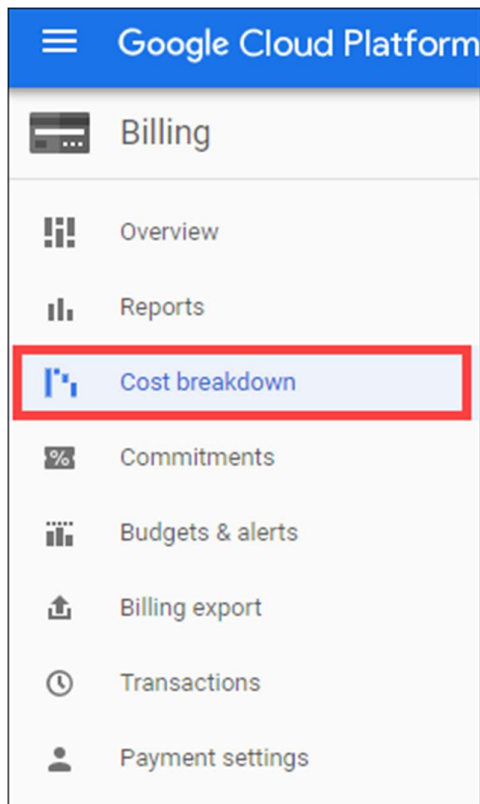
In this case, the BigQuery Analysis SKU was the highest cost on this day. This SKU is charged when executing queries using BigQuery.

7. Now that you know how, find a spike in your chart and determine what caused the unexpected cost increase.

How can I see a summary of my costs?

Billing reports shows current cost trends and forecasted costs. The cost breakdown report shows what you would have spent at the on-demand price for your Google Cloud usage, and how your final invoice amount was affected by any credits, adjustments, and taxes.

To view the cost breakdown report for your sample billing account, click **Cost breakdown** in the left panel.



View your total costs for a specific invoice month and see how credits and taxes affected the final amount invoiced for that month. For example, [sustained use discounts](#) automatically apply to Compute Engine resources that run a significant portion of the billing month, helping save you money. The chart below shows the total cost of usage minus the credits applied for sustained use discounts.

Invoice month

May 2019



Item	Cost breakdown	Effective rate	Amount
Usage cost	View report	100%	\$83.30
Sustained use discounts ?		-2.29%	-\$1.90
Total charges	View report		\$83.30
Total credits (discounts & promotions)		-2.29%	-\$1.90
		Subtotal	\$81.40
		Tax	\$0.00
		Total	\$81.40

Congratulations!

This concludes the self-paced lab, Google Cloud Billing Reports Overview. You learned how to use Google Cloud Billing reports and the cost breakdown report to gain visibility into your current and forecasted costs!

Next steps / learn more

- [Documentation: View Your Billing Reports and Cost Trends](#)
- [Documentation: Understand Your Savings with Cost Breakdown Reports](#)
- [Videos: Billing & Cost Management](#)
- [Webpage: Cost Management](#)

Google Cloud Training & Certification

...helps you make the most of Google Cloud technologies. [Our classes](#) include technical skills and best practices to help you get up to speed quickly and continue your learning journey. We offer fundamental to advanced level training, with on-demand, live, and virtual options to suit your busy schedule. [Certifications](#) help you validate and prove your skill and expertise in Google Cloud technologies.

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