Monitoring Multiple Projects with Cloud Monitoring

qwiklabs.com/focuses/621

GSP090

Overview

Cloud Monitoring provides dashboards and alerts so you can review performance metrics for cloud services, virtual machines, and common open source servers such as MongoDB, Apache, Nginx, Elasticsearch, and more. You configure Cloud Monitoring in the Console.

In this hands-on lab you will have 2 projects to monitor in Cloud Monitoring. You'll add them both to a Cloud Monitoring account and monitor the metrics the virtual machines in the projects provide.

Objectives

- Create a Cloud Monitoring account that has two Google Cloud projects.
- Monitor across both projects from the single Cloud Monitoring account.

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.

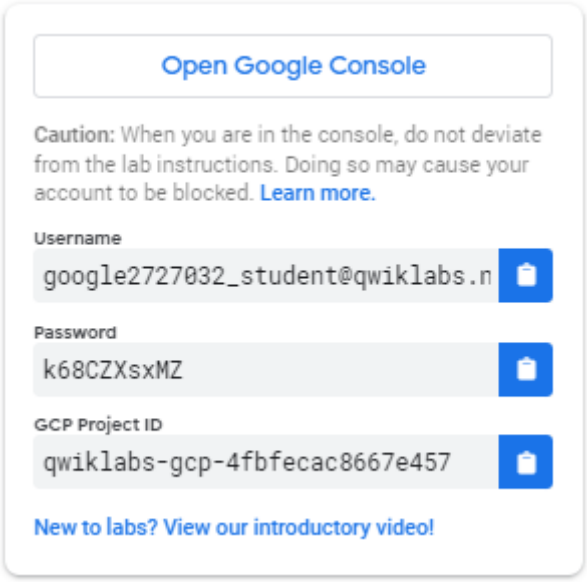
Note: If you already have your own personal Google Cloud account or project, do not use it for this lab.

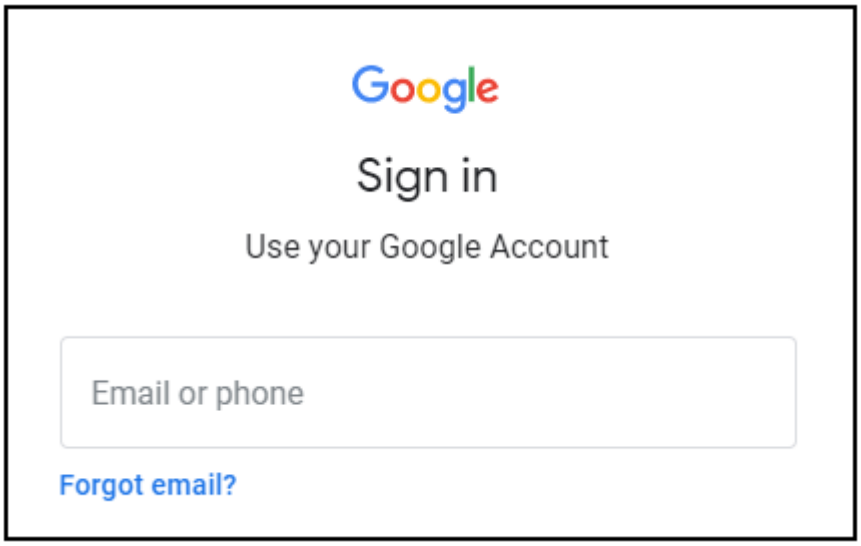
Note: If you are using a Pixelbook, open an Incognito window to run this lab.

How to start your lab and sign in to the Google Cloud Console

1. Click the **Start Lab** button. If you need to pay for the lab, a pop-up opens for you to select your payment method. On the left is a panel populated with the temporary credentials that you must use for this lab.

2. Copy the username, and then click **Open Google Console**. The lab spins up resources, and then opens another tab that shows the **Sign in** page.





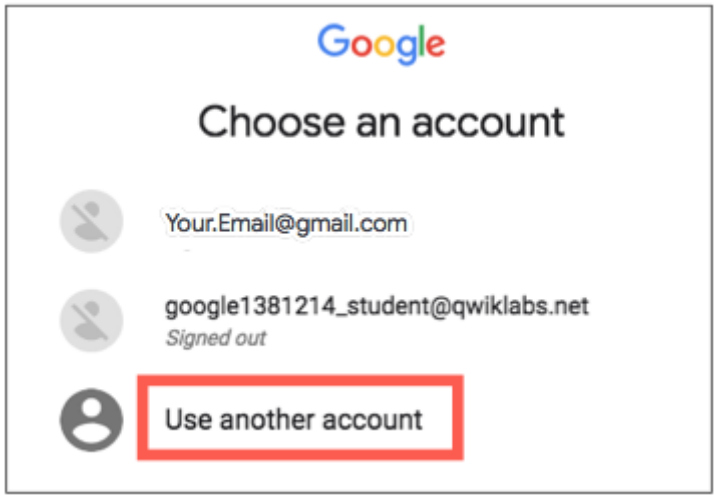
Tip: Open the tabs in separate windows, side-by-side.

If you see the **Choose an account** page, click **Use Another Account**.

3. In the **Sign in** page, paste the username that you copied from the Connection Details panel. Then copy and paste the password.

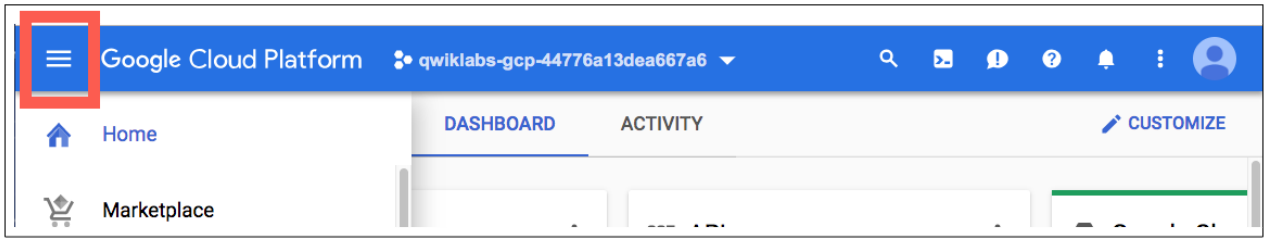
Important: You must use the credentials from the Connection Details panel. Do not use your Qwiklabs credentials. If you have your own Google Cloud account, do not use it for this lab (avoids incurring charges).

4. Click through the subsequent pages:
    - Accept the terms and conditions.
    - Do not add recovery options or two-factor authentication (because this is a temporary account).
    - Do not sign up for free trials.



After a few moments, the Cloud Console opens in this tab.

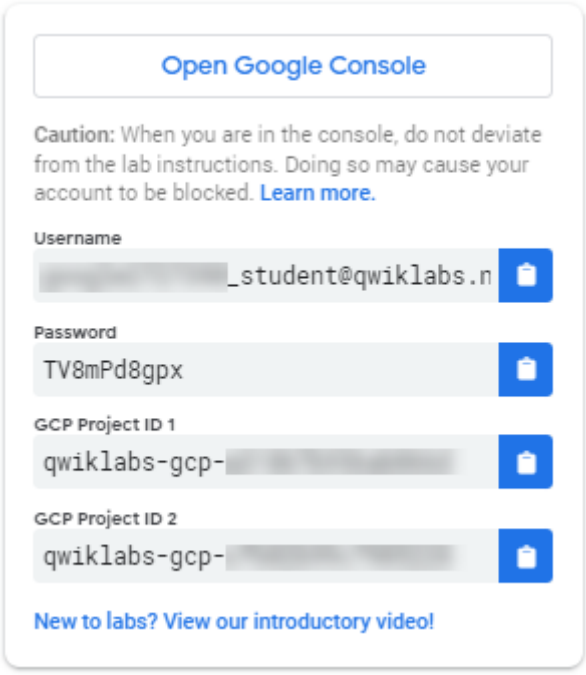
Note: You can view the menu with a list of Google Cloud Products and Services by clicking the **Navigation menu** at the top-left.



Setup for two projects

For this lab you are given two Project IDs. When you logged in, by default you logged in to Project 1. You'll need to keep track of your projects, and you can return to this page to remind yourself which is which. The projects will change order, so knowing the last few digits of the name will help you identify them.

Project 1 already has a virtual machine (and you can look at it by going to **Compute Engine > VM instances**). You will create a virtual machine in Project 2, and then monitor both projects in Cloud Monitoring.



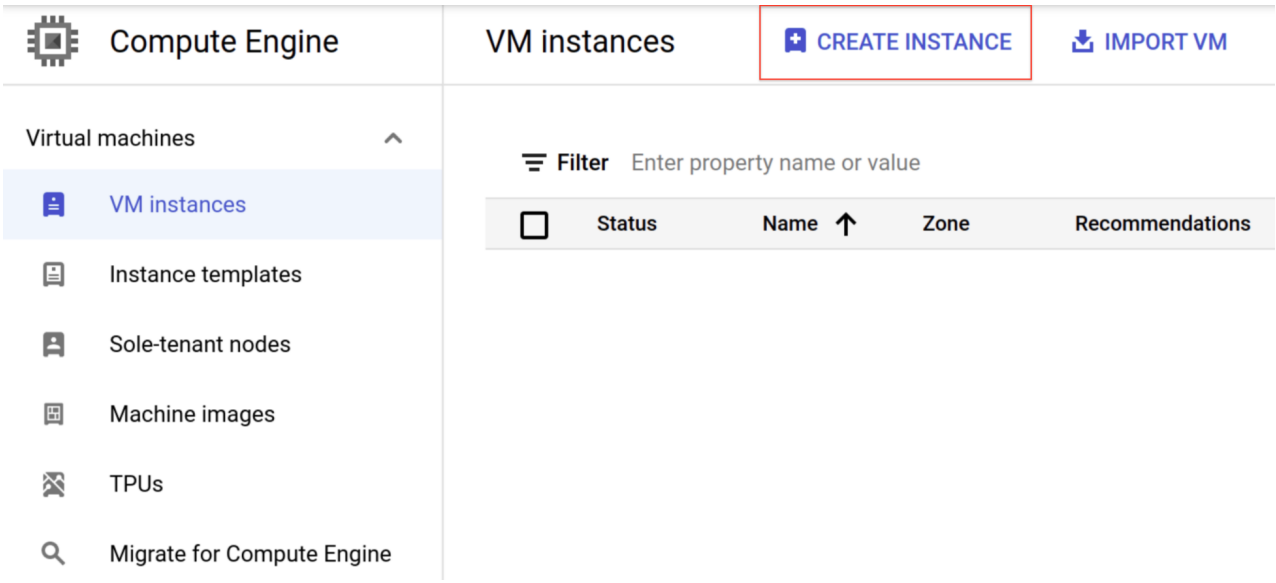
Create Project 2's virtual machine

At the top of the screen, click on the dropdown arrow next to Project 1's name.

Make sure that you're on the **All** tab, then click on the name of Project 2 to go into it.

Select **Navigation menu** > **Compute Engine** to open the VM instances window.

Click **CREATE INSTANCE** to create a new instance.



Name this instance **instance2**.

Leave all of the options at the default settings.

Click **Create**.

Now you have resources to monitor in both of your projects.

Test Completed Task

Click **Check my progress** to verify your performed task. If you have completed the task successfully you will granted with an assessment score.

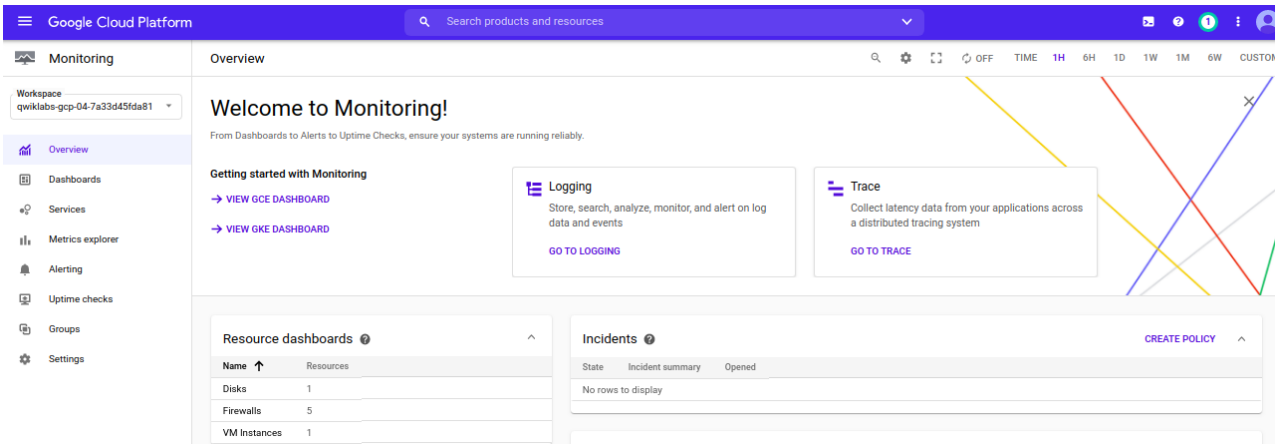
Create Project 2's virtual machine Make sure that you are in Project 2 to proceed further in the lab

Create a Monitoring workspace

Now set up a Monitoring workspace that's tied to your Google Cloud Project. The following steps create a new account that has a free trial of Monitoring.

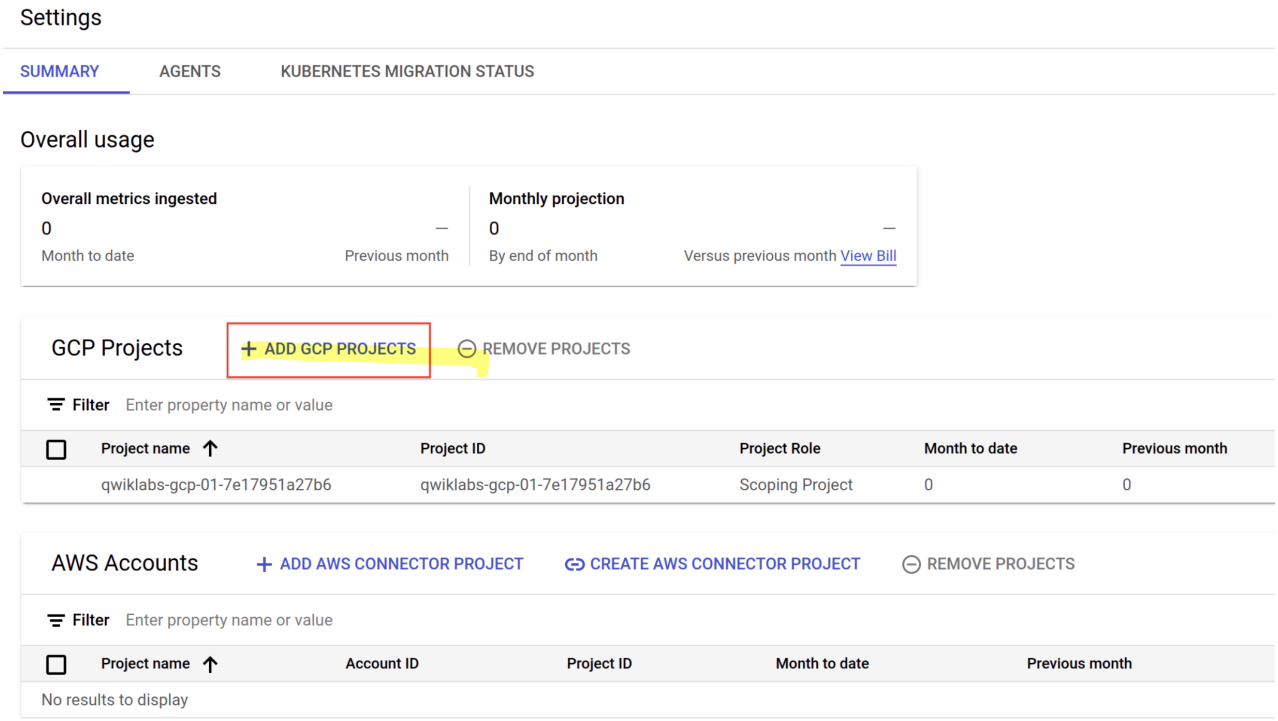
1. In the Cloud Console, click **Navigation menu** > **Monitoring**.
2. Wait for your workspace to be provisioned.

When the Monitoring dashboard opens, your workspace is ready.

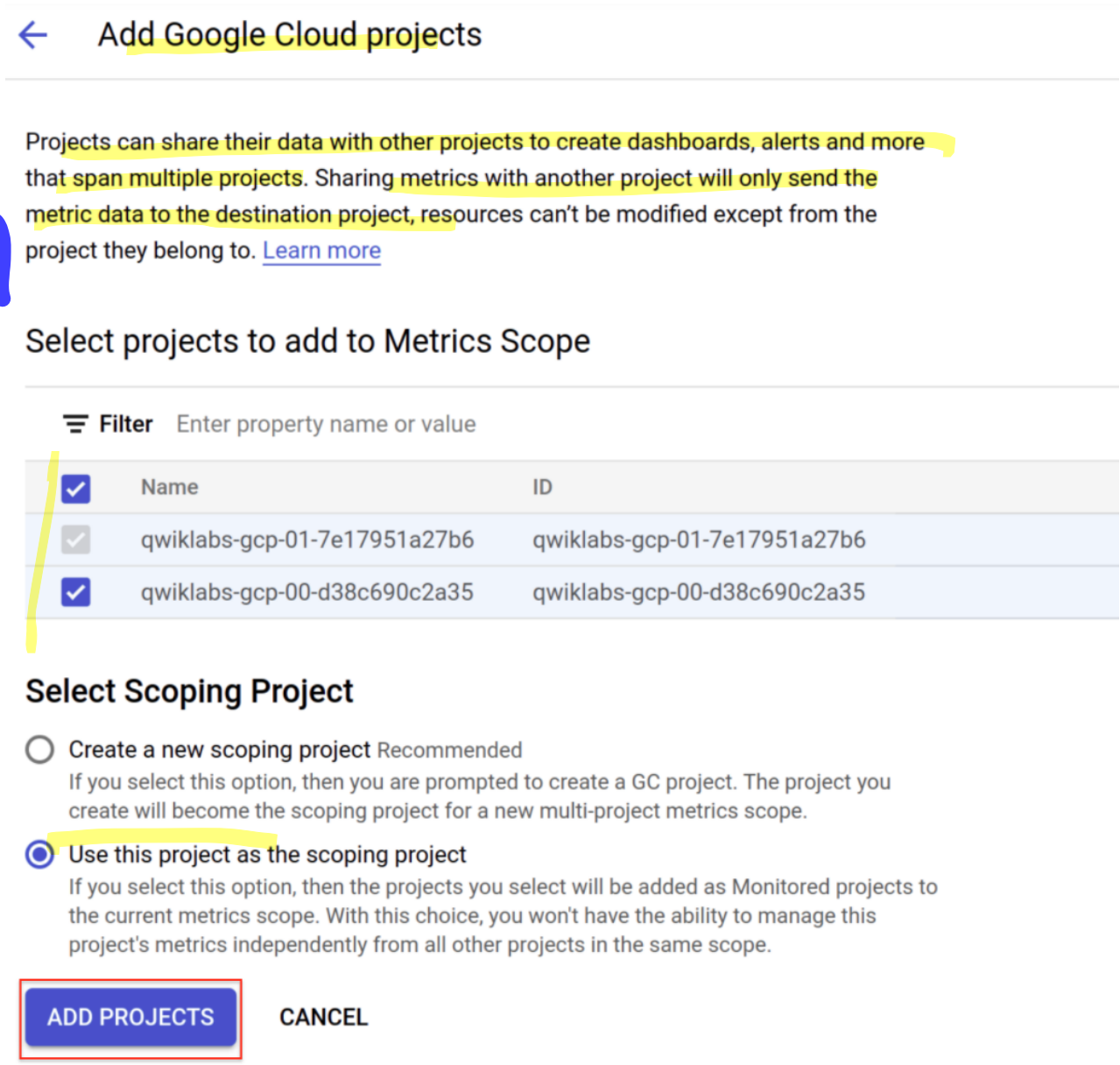


Now add both projects to your Cloud Monitoring workspace.

In the left menu, click **Settings** and then click **ADD GCP PROJECTS** in the GCP Projects section.



Select your GCP Project ID 1. Under Select Scoping Project, select **Use this project as scoping project**. Click **ADD PROJECTS**.



Monitoring Overview

Click on **Overview** in the left menu. You'll be adding a lot of good information here as the lab goes along. First, you'll create a Cloud Monitoring Group for visibility across both projects.

About Cloud Monitoring Groups

Cloud Monitoring lets you define and monitor groups of resources, such as VM instances, databases, and load balancers. Groups can be based on names, tags, regions, applications, and other criteria. You can also create subgroups, up to six levels deep, within groups.

Create a Cloud Monitoring Group

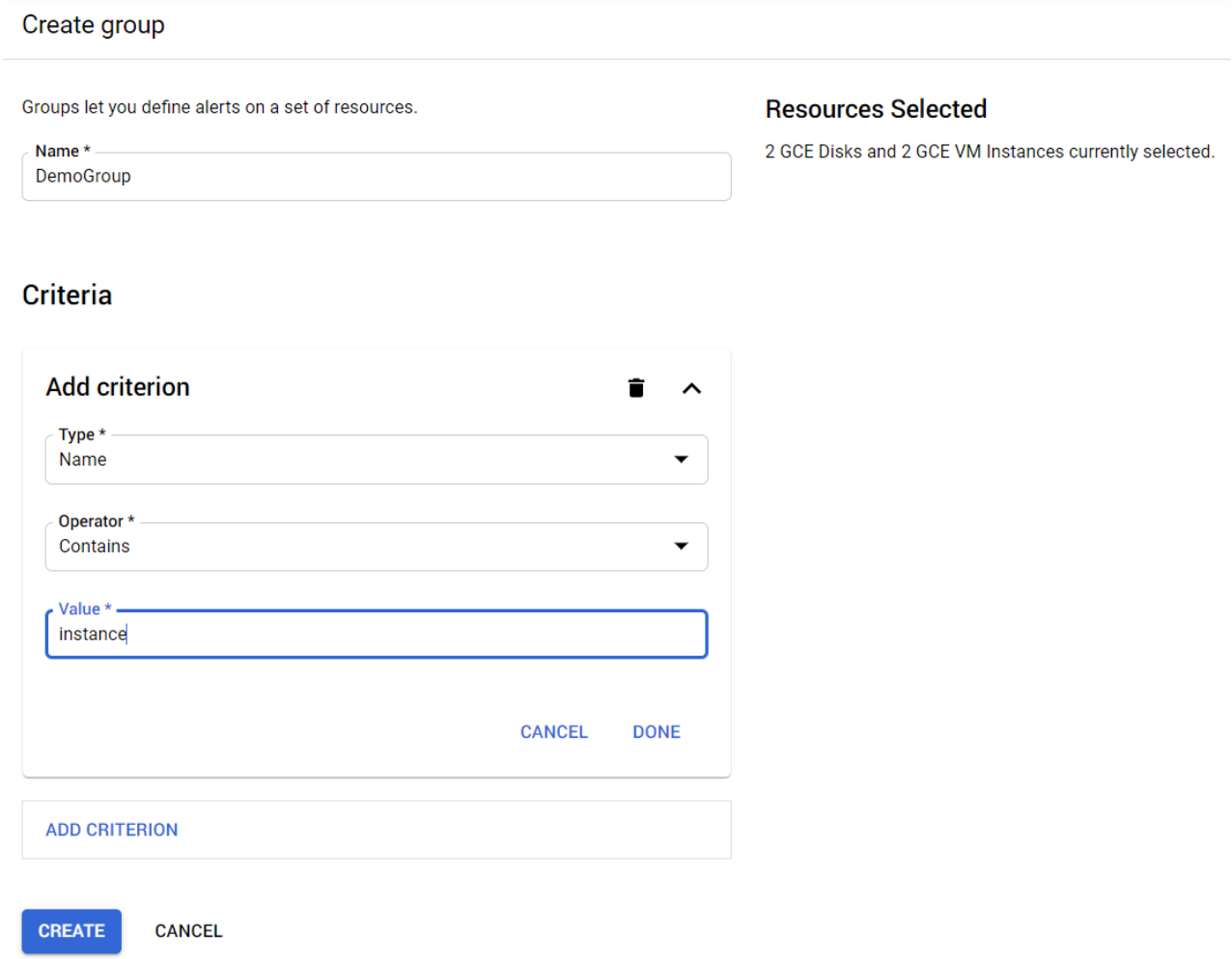
In the left menu, click **Groups**, and then click **CREATE GROUP**.

Name your group **DemoGroup**.

The **Criteria** is a set of rules that will dynamically evaluate which resources should be part of this group.

Cloud Monitoring dynamically determines which resources belong to your group based on the filter criteria that you set up.

- In the first dropdown field (Type), **Name** is selected by default.
- In the second dropdown (Contains), **Contains** is selected by default.
- In the third field (Value), type in "instance" since both of the instance names in both of your projects start with the word `instance`.



Click **DONE**, then click **CREATE**.

Test Completed Task

Click **Check my progress** to verify your performed task. If you have completed the task successfully you will granted with an assessment score.

Create a Cloud Monitoring Group

Uptime Check for your group

Uptime checks let you quickly verify the health of any web page, instance, or group of resources. Each configured check is regularly contacted from a variety of locations around the world. Uptime checks can be used as conditions in alerting policy definitions.

In the left menu, click **Uptime Checks**, and then click **CREATE UPTIME CHECK**.

Create your uptime check with the following information:

Title: DemoGroup uptime check, then click **Next**.

Protocol: TCP

Resource Type: Instance

Applies To: Group, and then select **DemoGroup**.

Port: 22

Check frequency: 1 minute, then click **Next**.

Click **Next** again.

Put the slider in **off** state for **Create an alert** option in **Alert & Notification** section.

Create Uptime Check

Title

Enter a name for the uptime check.

Title	DemoGroup uptime check

Target

Select the resource to be monitored.

Protocol	TCP
Port	22
Instance Group	DemoGroup
Check Frequency	1 minute
Regions	All Regions

Response Validation

Specify data and how that data is to be compared to the actual response data.

Response Timeout	10s
Log Check Failures	true

4 Alert & Notification

Define Uptime Check Alert Condition.

Do not create an alert

Name

DemoGroup uptime check uptime failure

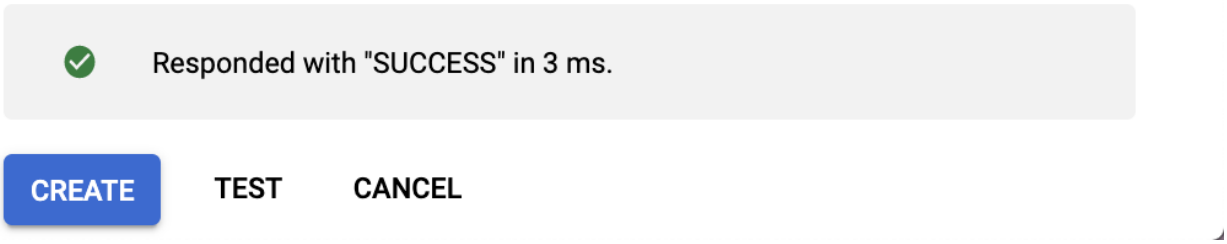
Duration

1 minute

Notifications

When the uptime check fails for the selected duration, you will be notified via these channels. Learn more

Notification Channels



Click **TEST** to verify that your uptime check can connect to the resource.

When you see a green check mark everything can connect, click **CREATE**.

Test Completed Task

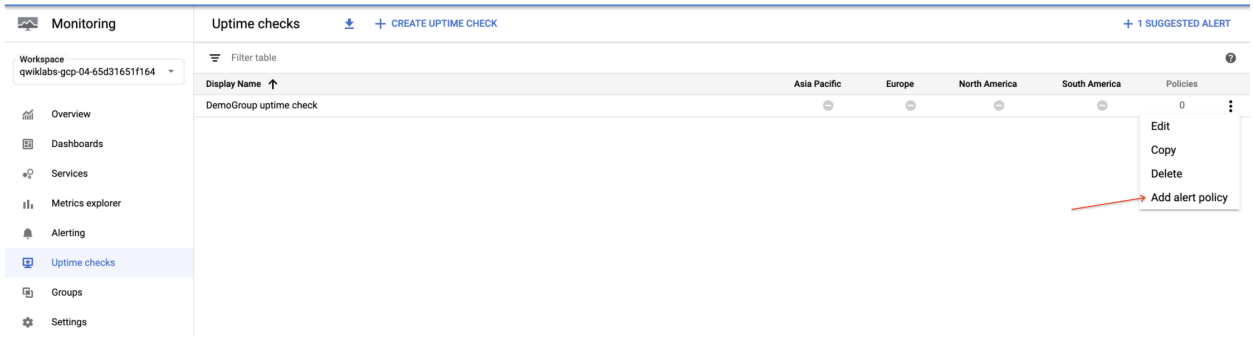
Click **Check my progress** to verify your performed task. If you have completed the task successfully you will granted with an assessment score.

Uptime Check for your group

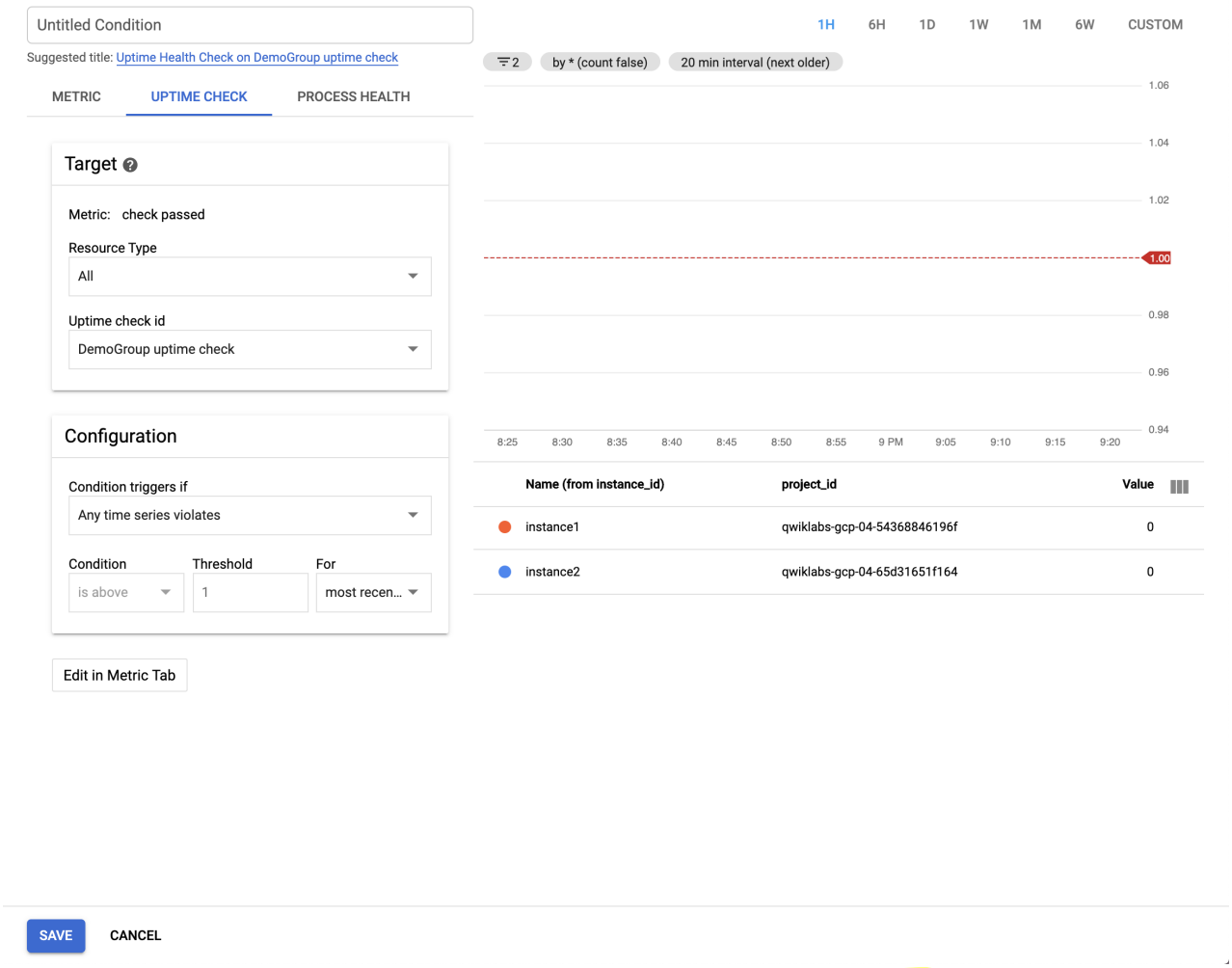
Alerting Policy for the group

Use Cloud Monitoring to create one or more alerting policies.

In the left menu, click **Uptime Check**. Click the three dots at the far right of your Display Name and click **Add alert policy**.



The **Condition** is already set. Metadata has been pulled in from the uptime check to create it.



Name this uptime check: You can use the "Suggested title" or type in your own.

Click **SAVE**.

Click **NEXT**.

Skip the **Notification channels** option and click **NEXT**.

In the **Alert name** field, enter the **Name** as **Uptime Check Policy**.

Click **SAVE**.

Test Completed Task

Click **Check my progress** to verify your performed task. If you have completed the task successfully you will granted with an assessment score.

Alerting Policy for the group

Custom dashboard for your group

Create a custom dashboard so you can monitor your group easily.

In the left menu, click **Dashboards**, and then click **CREATE DASHBOARD**.

Name your dashboard.

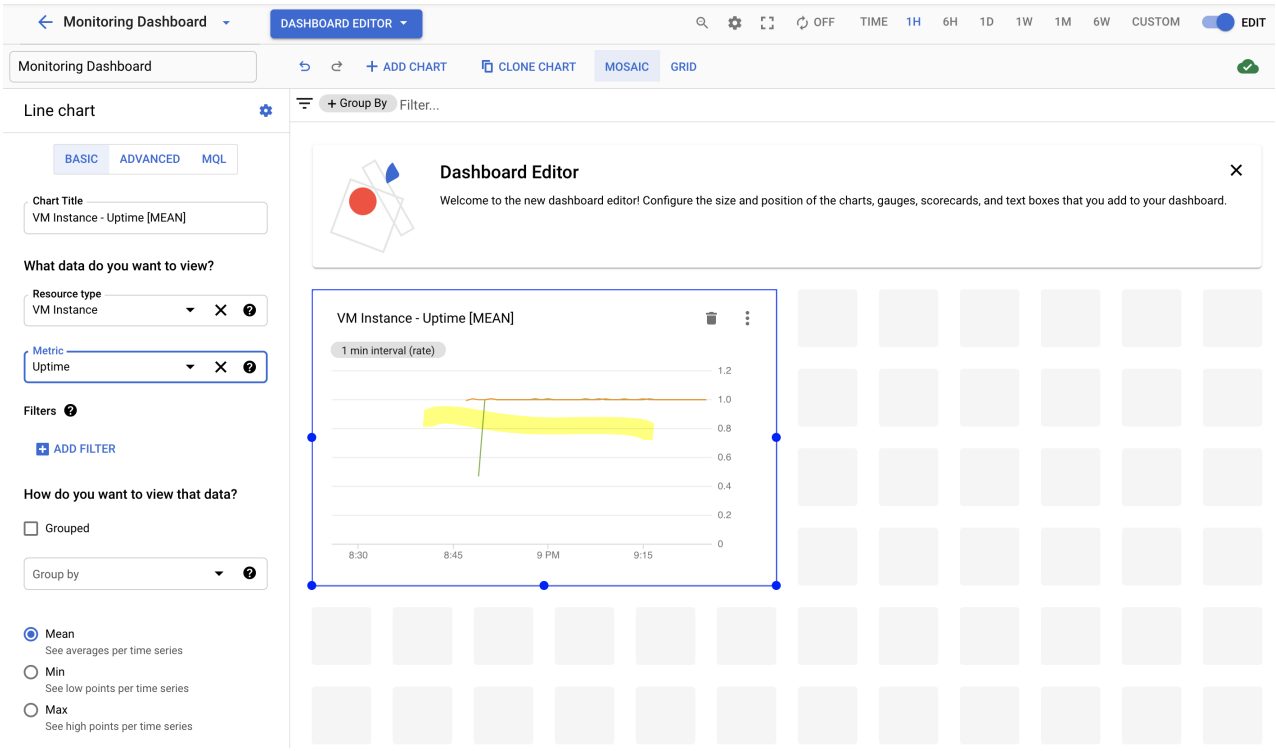
Click **Line** option in `Chart library` to add the first chart.

Leave the **Chart Title** as default.

Select **VM Instance** in `Resource type` field.

Start typing `Uptime` into the `Metric` field, then select **compute.googleapis.com/instance/uptime** from the offered metrics.

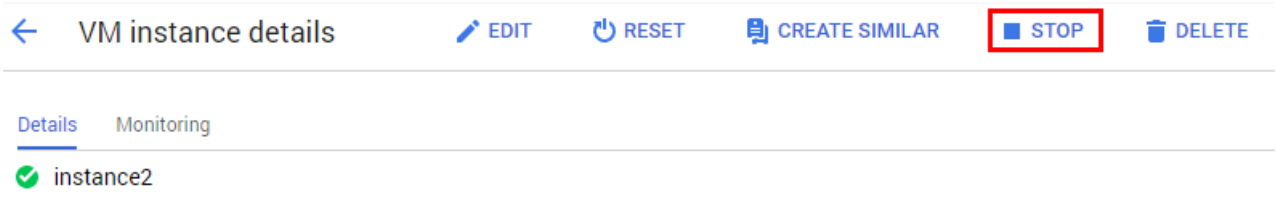
The dashboard should look like:



Remove one instance to cause a problem

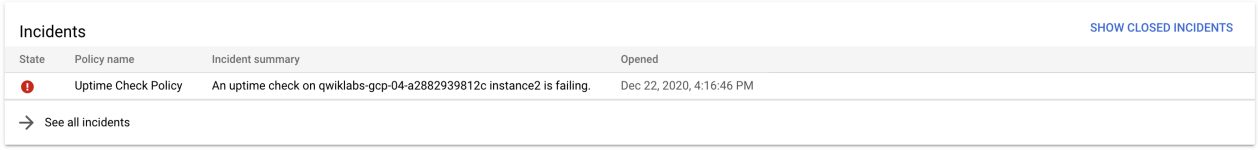
In the console, select **Navigation menu** > **Compute Engine**.

Check the box next to **instance2**, then click **STOP** at the top of the page, then **STOP** again to turn off the machine.



Wait a minute or 2 for the instance to stop and violate the uptime check you just set up. After a couple of minutes, turn your machine back on by clicking **START/RESUME**, then **START**.

Click **Navigation menu** > **Monitoring** > **Alerting** and refresh your browser. It may take a few more minutes to show that you have issues in the Summary section. Refresh until your screen looks similar to this:



Optional: Using the left menu, look at **Dashboards** to view your custom dashboard. That provides details on both VMs. If you mouse over your chart, you can see which of your instances was stopped and restarted.

Incidents

When the alerting policy conditions are violated, an "incident" is created and displayed in the Incident section.

Responders can acknowledge receipt of the notification and can close the incident when it has been taken care of.

In the Incidents section, click on the name of the alerting policy that was violated to go into it.

You've already **fixed** your problem by turning the VM back on, so the incident was cleared and you no longer see an incident in the Incidents section.

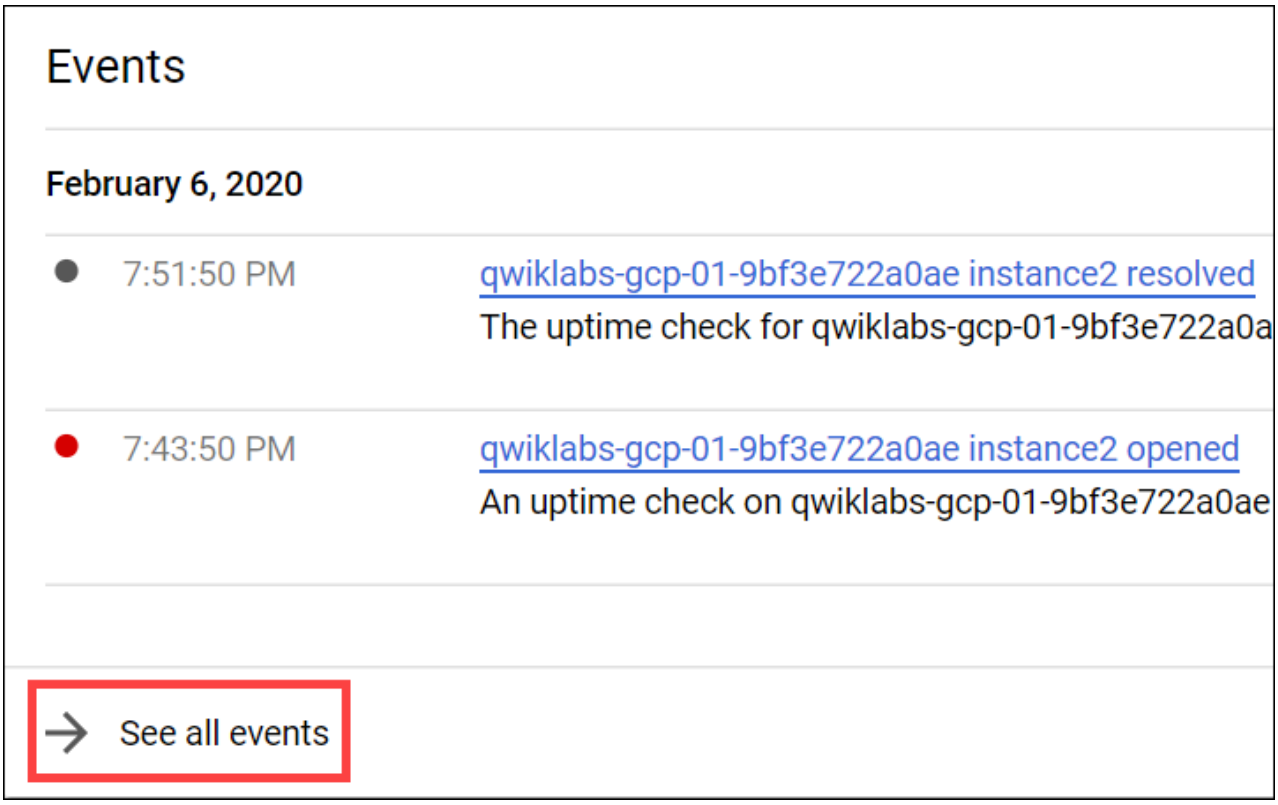
To see the cleared incident, scroll down to Events and click on the **"resolved"** link.

Your incident should have a **Closed** status. You can read through the incident details.

You can also click on the **Uptime Check Policy** link to explore the metrics it gives you.

In several more minutes the Monitoring Overview page will all go back to green when the instance in Project 2 passes the Uptime Check.

Return to the Alerting page (click **Alerting** in the left menu). In the **Events** section you'll be able to see what incident happened and its resolution. In a production environment you can use the Filter to display only the Events you need to see. Click **See all events** at the bottom to see all the events.



In the Events window, click **Show Filters** to manually add information that might not be captured otherwise.

Test your Understanding

Below are multiple-choice questions to reinforce your understanding of this lab's concepts. Answer them to the best of your abilities.

Congratulations!

You have monitored 2 Google Cloud projects in 1 Cloud Monitoring account, and responded to an incident with one of the instances in the Group.

Finish Your Quest

This self-paced lab is part of the Qwiklabs Quest, Google Cloud's Operations Suite. A Quest is a series of related labs that form a learning path. Completing this Quest earns you the badge above, to recognize your achievement. You can make your badge (or badges)

public and link to them in your online resume or social media account. Enroll in this Quest and get immediate completion credit if you've taken this lab. See other available Qwiklabs Quests.

Take Your Next Lab

Continue your Quest with Monitoring and Logging for Cloud Functions, or check out these suggestions:

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Manual Last Updated May 19, 2021

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