**Overview**

In this lab, you learn how to use Cloud Monitoring to gain insight into applications that run on Google Cloud.

**Objectives**

In this lab, you learn how to perform the following tasks:

* Explore Cloud Monitoring
* Add charts to dashboards
* Create alerts with multiple conditions
* Create resource groups
* Create uptime checks

Qwiklabs setup

For each lab, you get a new GCP project and set of resources for a fixed time at no cost.

1. Make sure you signed into Qwiklabs using an **incognito window**.
2. Note the lab's access time (for example,  and make sure you can finish in that time block.

There is no pause feature. You can restart if needed, but you have to start at the beginning.

1. When ready, click A green rectangle with white text

   Description automatically generated with medium confidence.
2. Note your lab credentials. You will use them to sign in to Cloud Platform Console. Graphical user interface, text, application

   Description automatically generated
3. Click **Open Google Console**.
4. Click **Use another account** and copy/paste credentials for **this** lab into the prompts.

If you use other credentials, you'll get errors or **incur charges**.

1. Accept the terms and skip the recovery resource page.

Do not click **End Lab** unless you are finished with the lab or want to restart it. This clears your work and removes the project.

**Task 1: Create a Cloud Monitoring workspace**

Verify resources to monitor

Three VM instances have been created for you that you will monitor.

1. In the Cloud Console, on the **Navigation menu** (Navigation menu), click **Compute Engine** > **VM instances**. Notice the **nginxstack-1**, **nginxstack-2** and **nginxstack-3** instances.

Create a Monitoring workspace

You will now setup a Monitoring workspace that's tied to your Qwiklabs GCP Project. The following steps create a new account that has a free trial of Monitoring.

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

When the Monitoring dashboard opens, your workspace is ready.

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Why is monitoring important to Google?



It is at the base of site reliability which incorporates aspects of software engineering and applies that to operations whose goals are to create ultra-scalable and highly reliable software systems.



Monitoring is important to ensure that Google complies with regulatory requirements defined by both government and industry security bodies.



Google uses monitoring to ensure they have all the important metrics for reporting purposes to customers and the other interested bodies. The number of reports requires the collection and reporting to be both broad and deep.

Submit

**Task 2: Custom dashboards**

Create a dashboard

1. In the left pane, click **Dashboards**.
2. Click **+Create Dashboard**.
3. For **New Dashboard Name**, type **My Dashboard**.

**Add a chart**

1. From **Chart library**, Select **Line**.
2. For **Title**, give your chart a name (you can revise this before you save based on the selections you make).
3. For **Resource type**, select **VM Instance**.
4. For **Metric**, select a metric to chart for the Instance resource, such as **CPU utilization** or **CPU usage**.
5. Click **+ Add Filter** and explore the various options.

Metrics Explorer

The **Metrics Explorer** allows you to examine resources and metrics without having to create a chart on a dashboard. Try to recreate the chart you just created using the **Metrics Explorer**.

1. In the left pane, click **Metrics Explorer**.
2. For **Find resource type and metric**, type a metric or resource name.
3. Explore the various options and try to recreate the chart you created earlier.

Not all metrics are currently available on the Metrics Explorer, so you might not be able to find the exact metric you used on the previous step.

**Task 3: Alerting policies**

What is not a recommended best practice for alerts?



Report all noise to ensure all data points are presented.



Configure alerting on symptoms and not necessarily causes.



Use multiple notification channels so you avoid a single point of failure.



Customize your alerts to the audience need.

Submit

Create an alert and add the first condition

1. In the left pane, click **Alerting**.
2. Click **+ Create Policy**.
3. Click **Add Condition**.
4. For **Find resource type and metric**, select **VM Instance**.

If you cannot locate the **VM Instance** resource type, you might have to refresh the page.

1. Select a metric you are interested in evaluating, such as **CPU usage** or **CPU Utilization**.
2. Under **Configuration**, for **Condition**, select **is above**.
3. Specify the threshold value and for how long the metric must cross this set value before the alert is triggered. For example, for **THRESHOLD**, type **20** and set **FOR** to **1 minute**.
4. Click **ADD**.

Add a second condition

1. Click **Add Condition**.
2. Repeat the steps above to specify the second condition for this policy. For example, repeat the condition for a different instance. Click **ADD**.
3. In **Policy Triggers**, for **Trigger when**, click **All conditions are met**.
4. Click **Next**.

Configure notifications and finish the alerting policy

1. Click on dropdown arrow next to **Notification Channels**, then click on **Manage Notification Channels**.

A **Notification channels** page will open in new tab.

1. Scroll down the page and click on **ADD NEW** for **Email**.
2. Enter your personal email in the **Email Address** field and a **Display name**.
3. Click **Save**.
4. Go back to the previous **Create alerting policy** tab.
5. Click on **Notification Channels** again, then click on the **Refresh icon** to get the display name you mentioned in the previous step.
6. Now, select your **Display name** and click **OK**.
7. Click **Next**.
8. Enter a name of your choice in **Alert name** field.
9. Click **Save**.

Click **Check my progress** to verify the objective.

Create alerting policies

Check my progress

**Task 4: Resource groups**

1. In the left pane, click **Groups**.
2. Click **+ Create Group**.
3. Enter a name for the group. For example: **VM instances**
4. In the **Criteria** section, type **nginx** in the value field below **Contains**.
5. Click **DONE**.
6. Click **CREATE**.
7. Review the dashboard Cloud Monitoring created for your group.

**Task 5: Uptime monitoring**

Select all valid targets for Cloud Monitoring uptime alert notifications.



webhook



Pub/sub



EC2 service



SMS



3rd party service



email

Submit

1. In the Monitoring tab, click on **Uptime Checks**.
2. Click **+ Create Uptime Check**.
3. Specify the following, and leave the remaining settings as their defaults:

|  |  |
| --- | --- |
| **Property** | **Value (type value or select option as specified)** |
| **Title** | *Enter a title* then click Next |
| **Protocol** | **HTTP** |
| **Resource Type** | **Instance** |
| **Applies To** | **Group** |
| **Group** | *Select your group* |
| **Check Frequency** | **1 minute** |

1. Click on **Next** to leave the other details to default. Under **Alert & Notification**, select your Notification Channels from the dropdown.
2. Click **Test** to verify that your uptime check can connect to the resource.
3. When you see a green check mark everything can connect. Click **Create**.

The uptime check you configured takes a while for it to become active.

Click **Check my progress** to verify the objective.

Create uptime monitoring

Check my progress

**Task 6: Review**

In this lab, you learned how to:

* Monitor your projects
* Create a Cloud Monitoring workspace
* Create alerts with multiple conditions
* Add charts to dashboards
* Create resource groups
* Create uptime checks for your services

**End your lab**

When you have completed your lab, click **End Lab**. Qwiklabs removes the resources you’ve used and cleans the account for you.

You will be given an opportunity to rate the lab experience. Select the applicable number of stars, type a comment, and then click **Submit**.

The number of stars indicates the following:

* 1 star = Very dissatisfied
* 2 stars = Dissatisfied
* 3 stars = Neutral
* 4 stars = Satisfied
* 5 stars = Very satisfied

You can close the dialog box if you don't want to provide feedback.

For feedback, suggestions, or corrections, please use the **Support** tab.

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