Resource Monitoring

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

Task 1. Create a Cloud Monitoring workspace

Verify resources to monitor

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

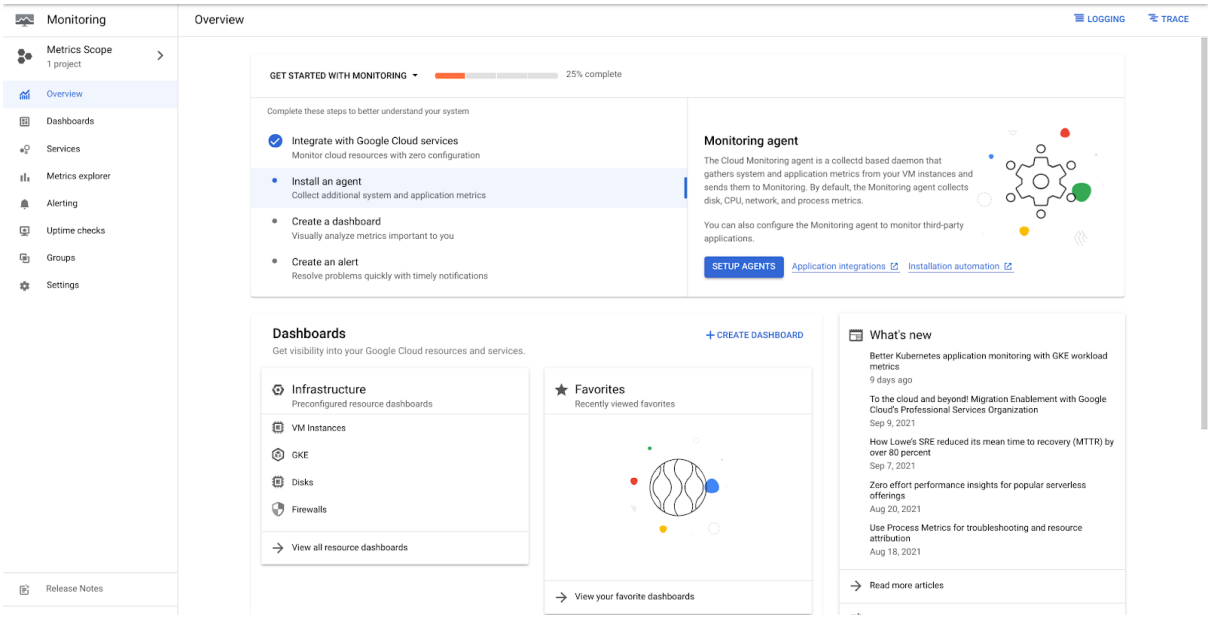
- In the Cloud Console, on the **Navigation menu** (☰), click **Compute Engine** > **VM instances**. Notice the **nginxstack-1**, **nginxstack-2** and **nginxstack-3** instances.

Create a Monitoring workspace

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

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

When the Monitoring dashboard opens, your workspace is ready.



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 **Chart Title**, give your chart a name (you can revise this before you save based on the selections you make).
3. Type **CPU utilization** or **CPU usage** in Resource & Metric field, Click **VM Instance > Instance**. Select `CPU utilization` or `CPU usage` and click **Apply**.
4. 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 **Resource & Metric**, Select a Metric.
3. Explore the various options and try to recreate the chart you created earlier.

Note: 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

Create an alert and add the first condition

1. In the Cloud Console, from the **Navigation menu**, select **Monitoring > Alerting**.
2. Click **+ Create Policy**.
3. Click on **Select a metric** dropdown. Disable the **Show only active resources & metrics**.
4. Type **VM Instance** in filter by resource and metric name and click on **VM Instance > Instance**. Select **CPU usage or CPU Utilization** and click **Apply**.

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

5. Set **Rolling windows** to 1 min.
6. Click **Next**. Set Threshold position to **Above Threshold** and set **20** as your **Threshold value**.

Add a second condition

1. Click **+ADD ALERT CONDITION**.
2. Repeat the steps above to specify the second condition for this policy. For example, repeat the condition for a different instance. Click **Next**.
3. In **Multi-condition trigger**, for **Trigger when**, click **All conditions are met**.
4. Click **Next**.

Configure notifications and finish the alerting policy

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

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

2. Scroll down the page and click on **ADD NEW** for **Email**.

3. Enter your personal email in the **Email Address** field and a **Display name**.
4. Click **Save**.
5. Go back to the previous **Configure notifications and finalize alert** tab.
6. Click on **Notification Channels** again, then click on the **Refresh icon** to get the display name you mentioned in the previous step. Click **Notification Channels** again if needed.
7. Now, select your **Display name** and click **OK**.
8. Enter a name of your choice in the **Alert policy name** field.
9. Click **Next**.
10. Review the alert and click **Create Policy**.

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

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)
Protocol	**HTTP**
Resource Type	**Instance**
Applies To	**Group**
Group	*Select your group*
Check Frequency	**1 minute**

4. Click on **Continue** to leave the other details to default. In **Alert & Notification** tab, select your Notification Channels from the dropdown.
5. Click **Continue**.
6. For **Title**, enter a name of your choice for the uptime check.
7. Click **Test** to verify that your uptime check can connect to the resource.
8. 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.

Task 6. Disable the alert

Disable the alert Alerting policies stay active for a while after a project is deleted, just in case it needs to be reinstalled. Since this is a lab, and you will not have access to this project again, remove the alerting policy you created.

1. Navigate to the **Alerting** section.
2. From your **Alert's Policy** details page, click the **Enabled** link at the top of the page.
3. You will be asked to confirm that you want to disable the alerting policy - click **Disable**.

The link will now say Disabled.

Task 7. 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