**Resource Monitoring**

experimentLabschedule1 houruniversal\_currency\_alt5 Creditsshow\_chartIntroductory

**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

Setup

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

1. Sign in to Qwiklabs using an **incognito window**.
2. Note the lab's access time (for example, 1:15:00), and make sure you can finish within that time.  
   There is no pause feature. You can restart if needed, but you have to start at the beginning.
3. When ready, click **Start lab**.
4. Note your lab credentials (**Username** and **Password**). You will use them to sign in to the Google Cloud Console.
5. Click **Open Google Console**.
6. Click **Use another account** and copy/paste credentials for **this** lab into the prompts.  
   If you use other credentials, you'll receive errors or **incur charges**.
7. Accept the terms and skip the recovery resource page.

**Note:** Do not click **End Lab** unless you have finished 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.

* In the Cloud Console, on the **Navigation menu** (Navigation menu icon), 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. On the Google Cloud console title bar, type **Monitoring** in the Search field, then click **Monitoring** in the Products & Page section.
2. Wait for your workspace to be provisioned.

When the Monitoring dashboard opens, your workspace is ready.

Why is monitoring important to Google?

checkIt 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. Click **Add Widget**,and then select **Line**.
2. For **Widget 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 Metric field dropdown, Click **VM Instance > Instance**. Select CPU utilization or CPU usage and click **Apply**.

**Note:** Disable Active if we are not able to find the CPU utilization

1. Click **+ Add Filter** and explore the various options.
2. Click **Apply** to create the chart.

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. Select a Metric from the dropdown.
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.

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

Assessment Completed!

Create custom dashboard

Check my progress

*Assessment Completed!*

**Task 3. Alerting policies**

What is not a recommended best practice for alerts?



Configure alerting on symptoms and not necessarily causes.

checkReport all noise to ensure all data points are presented.



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, select **Alerting**.
2. Click **+ Create Policy**.
3. Click on **Select a metric** dropdown. Disable the **Active**.
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.

1. Set **Rolling windows** to 1 min.
2. 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**, select **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**.

The **Notification channels** page will open in a 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 **Configure notifications and finalize alert** tab.
5. 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.
6. Now, select your **Display name** and click **OK**.
7. Enter a name of your choice in the **Alert policy name** field.
8. Click **Next**.
9. Review the alert and click **Create Policy**.

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

Assessment Completed!

Create alerting policies

Check my progress

*Assessment Completed!*

**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.

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

Assessment Completed!

Create resource groups

Check my progress

*Assessment Completed!*

**Task 5. Uptime monitoring**

Select all valid targets for Cloud Monitoring uptime alert notifications.



EC2 service

checkwebhook

check3rd party service

checkemail

checkSMS

checkPub/sub

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

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

Assessment Completed!

Create uptime check

Check my progress

*Assessment Completed!*

**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. Click view all **Alert policies**, on your **Policies** details page click on the **Enabled** toggle at the top of the page.
3. You will be asked to confirm that you want to turn off the alerting policy - click **Turn Off**.

**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

**End your lab**

When you have completed your lab, click **End Lab**. Google Cloud Skills Boost 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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