Project: Resource Monitoring using Google Cloud Monitoring

This project demonstrates how to use **Google Cloud Monitoring** to gain insights into application and infrastructure performance. It involves setting up dashboards, creating alert policies, organizing resources, and performing uptime checks to ensure system reliability.

Objectives: The main goals of this project are:

1. Explore Cloud Monitoring and its observability tools.

2. Create a custom dashboard to visualize metrics like CPU utilization and build alerting policies to notify threshold breaches.

Project Steps:

Task 1: Create Resources

Create three VM instances: nginxstack-1, nginxstack-2, nginxstack-3 in the same zone (us-west1-c). These instances were later used for monitoring, alerting, and uptime checks.
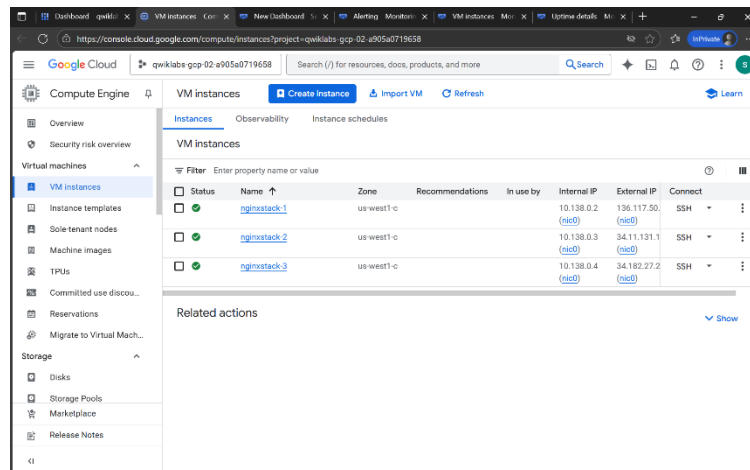

Task 2: Create Custom Dashboards

- Select Navigation menu then click Observability → Monitoring in GCP Console.

- Create a new dashboard and add a line chart widget to monitor CPU utilization for VM instances.
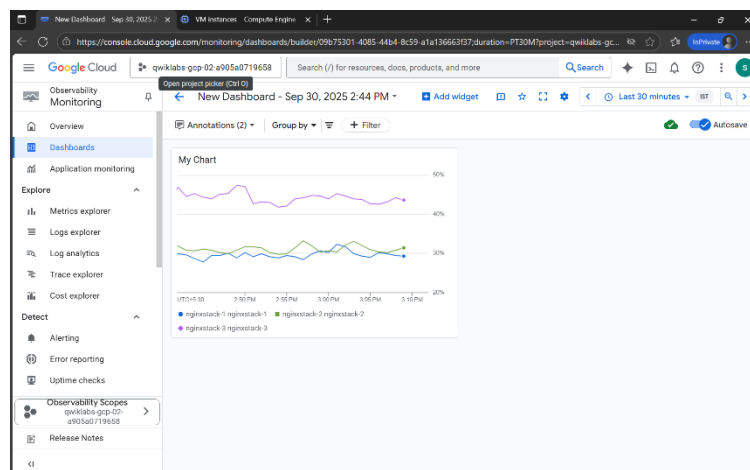
Task 3: Create Alerting Policies

- From the left panel select Alerting, and create a new alert policy to trigger when CPU usage exceeds a threshold (20%).

- Add a notification channel (Email) for instant alerts.
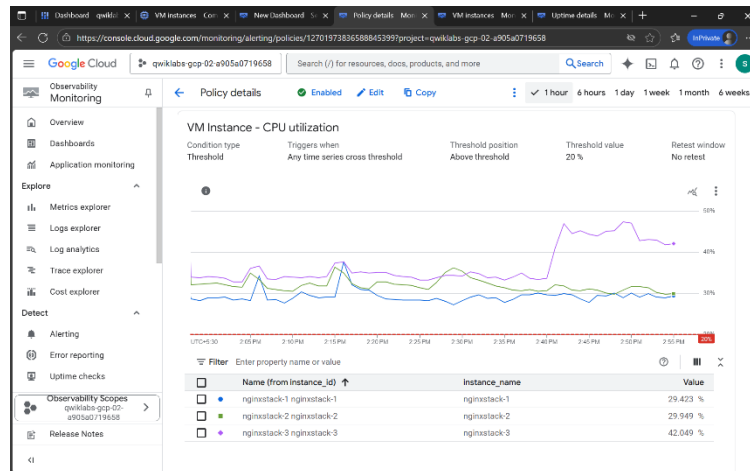
Task 4: Create Resource Groups

- In the left panel select Groups and Create Group button to group related VM instances under "**VM Instances**" named group.

- Use filter criteria (nginx) to include all relevant instances.
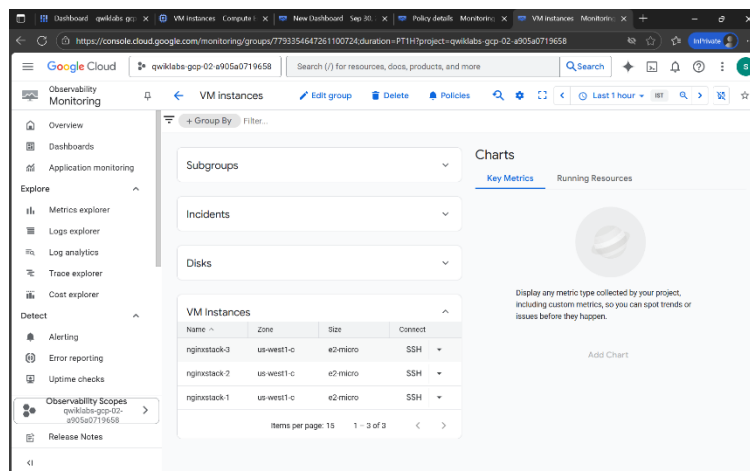
Task 5: Create Uptime Checks

- In the Monitoring tab, click on Uptime checks and configure HTTP-based uptime checks to monitor VM instance availability.

- Apply the check to the "VM Instances" group.

- Set frequency to 1 minute with alert notifications via email.
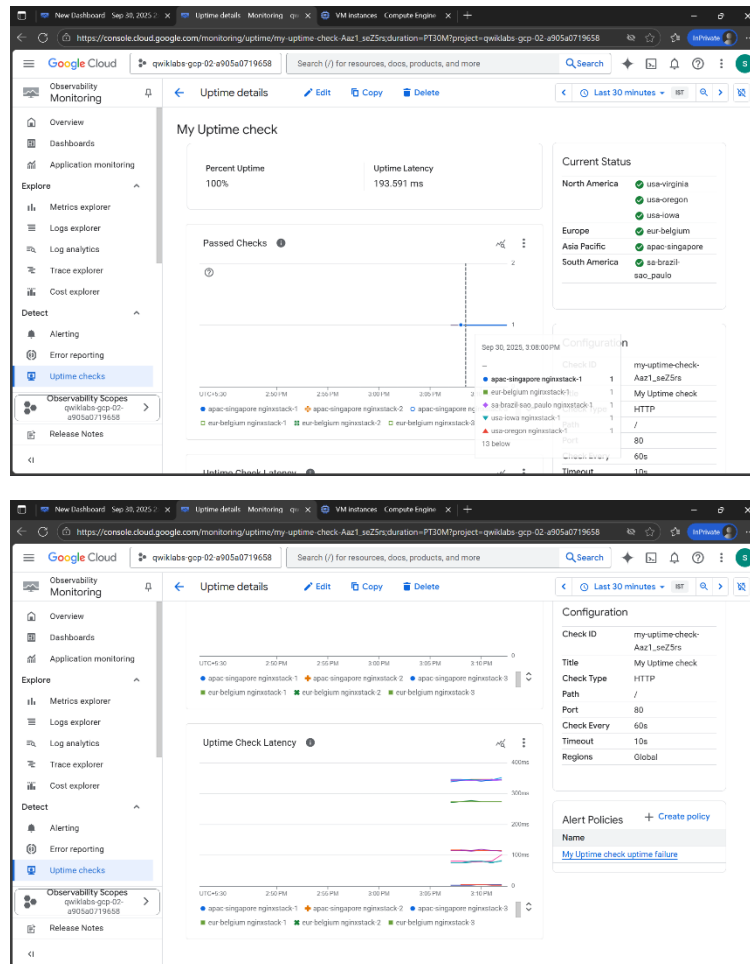
Task 6: Disable the Alert

- Navigate to Monitoring → Alerting Policies.

- Disable the created alert to prevent unnecessary triggers after project completion.

This project successfully demonstrates practical monitoring operations similar to **real-world site reliability engineering (SRE)** practices used at Google.