

Cloud Monitoring: Qwik Start

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8. Conclusion

Task 1: Create a Compute Engine Instance

1. Open the **Cloud Console** and navigate to **Compute Engine > VM Instances**.
2. Click **Create instance** and enter the following details:
 - a. **Name:** lamp-1-vm
 - b. **Region:** <REGION>
 - c. **Zone:** <ZONE>
 - d. **Series:** E2
 - e. **Machine Type:** e2-medium
3. Click **OS and storage**, select **Debian GNU/Linux 12 (bookworm)**.
4. Under **Networking**, check **Allow HTTP traffic**.
5. Click **Create** and wait for the instance to launch.

←

Create an instance

✦ Create VM from...

Machine configuration

e2-medium, us-east1-d

OS and storage

Debian GNU/Linux 12 (bookworm)

Data protection

Snapshot schedules

Networking

1 network interface

Observability

Install Ops Agent

Security

Machine configuration

Name *

lamp-1-vm

?

Region *

us-east1 (South Carolina)

?

Zone *

us-east1-d

?

Region is permanent

Zone is permanent

NEW: General-purpose C4D machine series in Preview

×

Try the new C4D machine series with leading price-performance and advanced

Try now

General purpose

Compute optimized

Memory optimized

Storage optimized

GPUs

Machine types for common workloads, optimized for cost and flexibility

Series	Description	vCPUs	Memory	CPU Platform
C4	Consistently high performance	2 - 102	4 - 1,488 GB	Intel Emerald

Create

Cancel

↔ Equivalent code

←

Create an instance

✦ Create VM from...

Machine configuration

e2-medium, us-east1-d

OS and storage

Debian GNU/Linux 12 (bookworm)

Data protection

Snapshot schedules

Networking

1 firewall rule, 1 network interface

Observability

Install Ops Agent

Security

Networking

Firewall

?

Add tags and firewall rules to allow specific network traffic from the Internet

Allow HTTP traffic

Allow HTTPS traffic

Allow Load Balancer Health Checks

Network tags

?

Hostname

?

Set a custom hostname for this instance or leave it default. Choice is permanent

IP forwarding

?

Enable

Create

Cancel

↔ Equivalent code

Compute Engine

Overview

Security risk overview

Virtual machines

VM instances

Instance templates

Sole-tenant nodes

Machine images

TPUs

Committed use discou...

Reservations

Marketplace

Release Notes

<|

VM instances

Create instance

Import VM

Refresh

Instances

Observability

Instance schedules

VM instances

Filter

Enter property name or value

Status

Name

Zone

Recommendations

In use by

Internal IP

External IP

Connect

lamp-1-vm

us-east1-d

10.142.0.2

34.148.146.14

SSH

(nic0)

(nic0)

Related actions

Explore protection summary

Identify gaps in data protection at no cost and configure VM backups

Monitor VMs

View outlier VMs across metrics like CPU and network

Explore VM logs

View, search, analyze, and download VM instance logs

Set up firewall rules

Control traffic to and from a VM instance

Patch management

Schedule patch updates and view patch compliance on VM instances

Load balance between VMs

Set up Load Balancing for your applications as your traffic and users

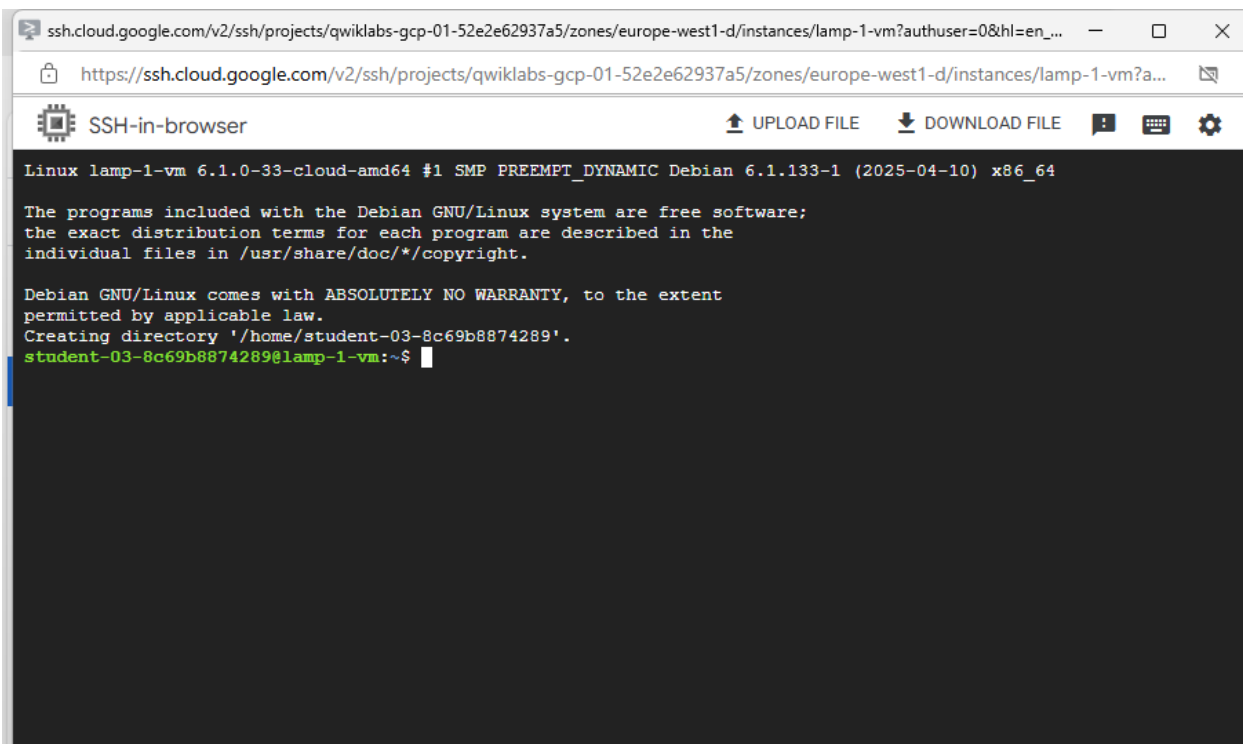
Task 2: Install Apache2 HTTP Server

- Click **SSH** next to **lamp-1-vm** to open a terminal.
- Run the following commands:

```
bash
```

```
sudo apt-get update
sudo apt-get install apache2 php7.0
sudo service apache2 restart
```

- Click on the **External IP** of the VM to verify Apache2 is running.



ssh.cloud.google.com/v2/ssh/projects/qwiklabs-gcp-01-52e2e62937a5/zones/europe-west1-d/instances/lamp-1-vm?authuser=0&hl=en_... — □ ×

https://ssh.cloud.google.com/v2/ssh/projects/qwiklabs-gcp-01-52e2e62937a5/zones/europe-west1-d/instances/lamp-1-vm?a...

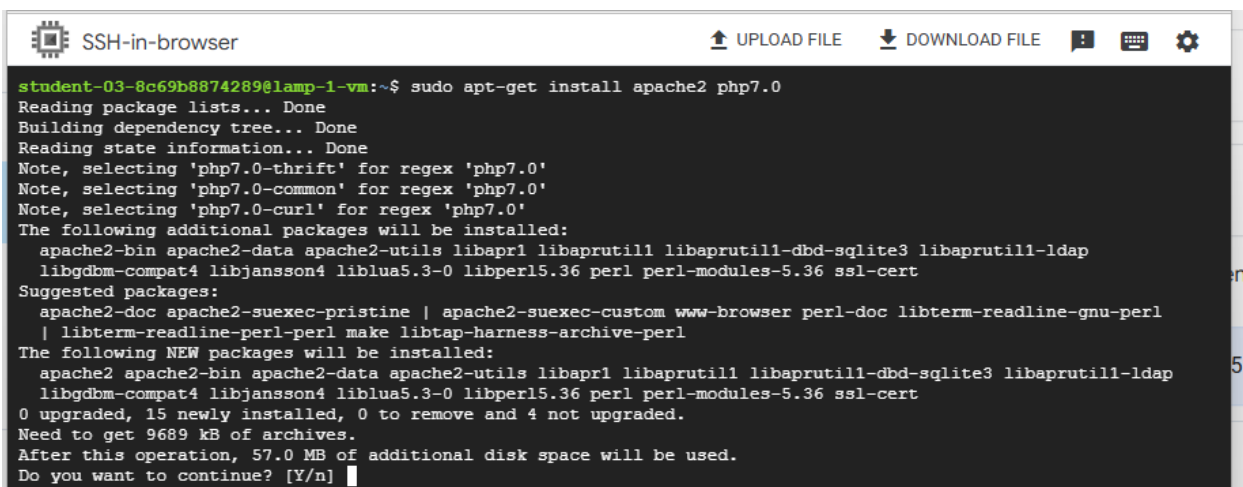
SSH-in-browser UPLOAD FILE DOWNLOAD FILE

```
Linux lamp-1-vm 6.1.0-33-cloud-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.133-1 (2025-04-10) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Creating directory '/home/student-03-8c69b8874289'.
student-03-8c69b8874289@lamp-1-vm:~$
```

```
student-03-8c69b8874289@lamp-1-vm:~$ sudo apt-get update
Get:1 file:/etc/apt/mirrors/debian.list Mirrorlist [30 B]
Get:2 file:/etc/apt/mirrors/debian-security.list Mirrorlist [39 B]
Hit:3 https://deb.debian.org/debian bookworm InRelease
Hit:7 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable InRelease
Hit:4 https://deb.debian.org/debian bookworm-updates InRelease
Hit:5 https://deb.debian.org/debian bookworm-backports InRelease
Hit:6 https://deb.debian.org/debian-security bookworm-security InRelease
Hit:8 https://packages.cloud.google.com/apt cloud-sdk-bookworm InRelease
Hit:9 https://packages.cloud.google.com/apt google-cloud-ops-agent-bookworm-2 InRelease
Reading package lists... Done
```



SSH-in-browser UPLOAD FILE DOWNLOAD FILE

```
student-03-8c69b8874289@lamp-1-vm:~$ sudo apt-get install apache2 php7.0
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'php7.0-thrift' for regex 'php7.0'
Note, selecting 'php7.0-common' for regex 'php7.0'
Note, selecting 'php7.0-curl' for regex 'php7.0'
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libgdbm-compat4 libjansson4 liblua5.3-0 libperl5.36 perl perl-modules-5.36 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser perl-doc libterm-readline-gnu-perl
  | libterm-readline-perl-perl make libtap-harness-archive-perl
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libgdbm-compat4 libjansson4 liblua5.3-0 libperl5.36 perl perl-modules-5.36 ssl-cert
0 upgraded, 15 newly installed, 0 to remove and 4 not upgraded.
Need to get 9689 kB of archives.
After this operation, 57.0 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

Task 3: Set Up Monitoring Metrics Scope

1. Open **Cloud Console > Observability > Monitoring**.

2. Ensure the **metrics scope project** is ready.

3. Install the monitoring and logging agents:

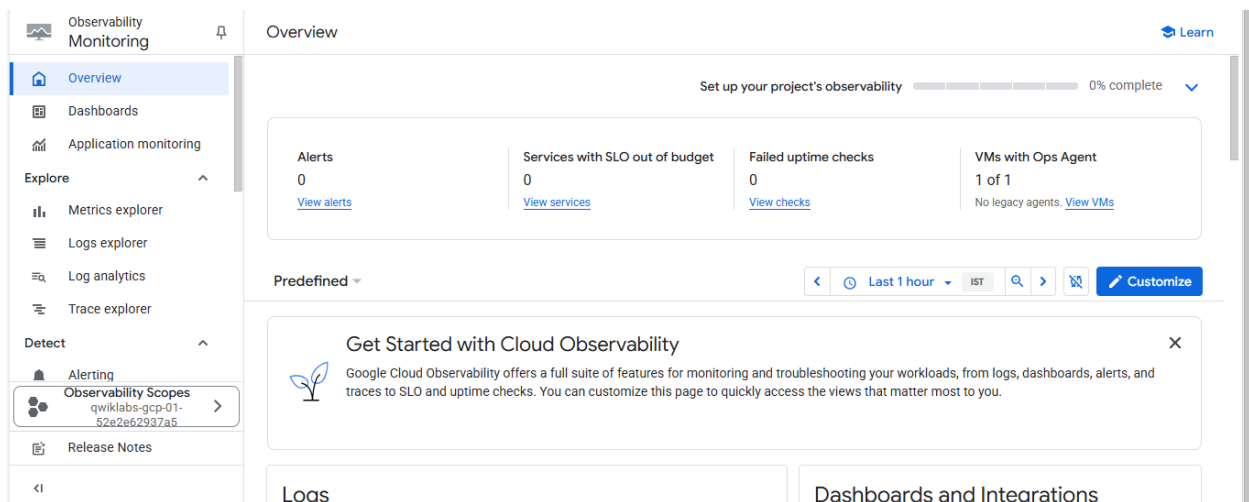
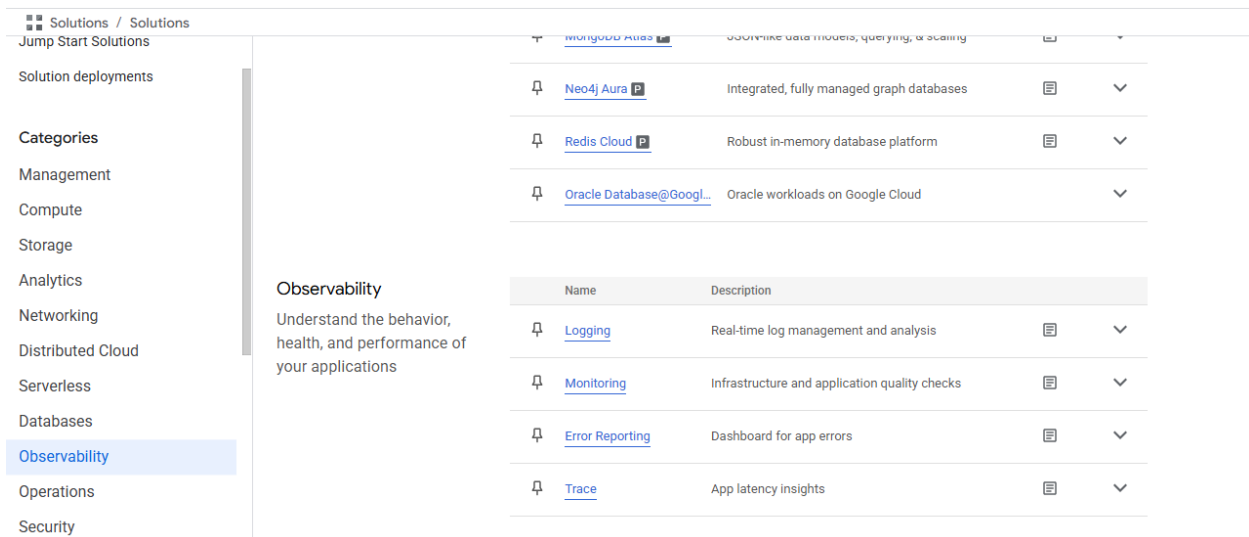
```
bash
```

```
curl -sSO https://dl.google.com/cloudagents/add-google-cloud-ops-agent-repo.sh
```

```
sudo bash add-google-cloud-ops-agent-repo.sh --also-install
```

```
sudo systemctl status google-cloud-ops-agent
```

```
sudo apt-get update
```



Task 4: Create an Uptime Check

1. Go to **Uptime checks** and click **Create Uptime Check**.

2. Configure as follows:

- a. **Protocol:** HTTP
 - b. **Resource Type:** Instance
 - c. **Instance:** lamp-1-vm
 - d. **Check Frequency:** 1 minute
3. Click **Test**, verify connectivity, then click **Create**.

Observability Monitoring

Uptime checks + Create uptime check + 1 recommended alert Learn

Try the new Synthetic monitoring capability! **New**

Proactively monitor your application's critical user journeys by simulating user behavior. Detect and alert on failures, and receive detailed reports for debugging. [Learn more](#)

Create Synthetic Monitor View Documentation

Filter Enter property name or value

Display Name	Asia Pacific	Europe	North America	South America	Policies
No rows to display					

Create Uptime Check

Target

Response Validation (optional)

Alert & Notification (optional)

Review

Create Cancel

Select the resource to be monitored.

Protocol HTTP

Resource Type Instance

Applies to

Single

Apply to one resource.

Group

Apply to a collection of resources that is defined as a Monitoring Group.

Instance* lamp-1-vm

Path

Check Frequency 1 minute

← Create Uptime Check

✓ Target

✓ Response Validation (optional)

✓ Alert & Notification (optional)

• Review

Create

Cancel

Enter a name for the uptime check.

Title *

Lamp Uptime Check

User Labels ?

Key

Value (optional)

+ Add user label

^ Hide user labels

Test uptime check (optional)

We recommend that you test your uptime check before creating.

✓ Responded with "200 (OK)" in 167 ms.

Test


View Details

Uptime checks

⬇ + Create uptime check

+ 1 recommended alert

Learn



Try the new Synthetic monitoring capability! New

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Create Synthetic Monitor

View Documentation

Filter Enter property name or value

Display Name ↑

Asia Pacific

Europe

North America

South America

Policies

Lamp Uptime Check

●

●

●

●

1

⋮

Task 5: Create an Alerting Policy

1. Navigate to **Alerting > Create Policy**.
2. Select **Network Traffic** metric.
3. Set Threshold:
 - a. **Position:** Above 500
 - b. **Retest window:** 1 min
4. Add a **Notification Channel** (email).
5. Save policy as **Inbound Traffic Alert**.

Observability Monitoring

Application monitoring

Explore

Metrics explorer

Logs explorer

Log analytics

Trace explorer

Detect

Alerting

Error reporting

Uptime checks

Observability Scopes

Release Notes

Alerting

Create policy

Edit notification channels

Monitoring now supports both user-scoped and device-scoped Cloud Console Mobile notification channels

Manage channels

Learn more

Dismiss

Summary

Incidents firing

0

Incidents acknowledged

0

Alert policies

1

View all

Incidents

Show closed incidents

State	Severity	Policy name	Incident summary	Opened
No rows to display				

Create alerting policy

Add alert condition

Delete alert condition

ALERT CONDITIONS

New condition

Configure trigger

ALERT DETAILS

Notifications and name

Review alert

Select a metric

Network traffic

Active

POPULAR RESOURCES

Amazon EC2 Instance

3 metrics

VM Instance

6 metrics

ACTIVE RESOURCES

GCP Location

1 metric

VM Instance

6 metrics

INACTIVE RESOURCES

Amazon EC2 Instance

3 metrics

ACTIVE METRIC CATEGORIES

Interface

1 metric

INACTIVE METRIC CATEGORIES

Popular metrics

Elasticsearch

1 metric

Instance

3 metrics

Memcached

1 metric

ACTIVE METRICS

Network traffic

agent.googleapis.com/interface/traffic

INACTIVE METRICS

configured

a

nnels configured

figured

configured

gured

Create Email Channel

Email addresses can be set to receive notifications from your alerting when a new incident is created.

Email Address *vinodvb00@gmail.com

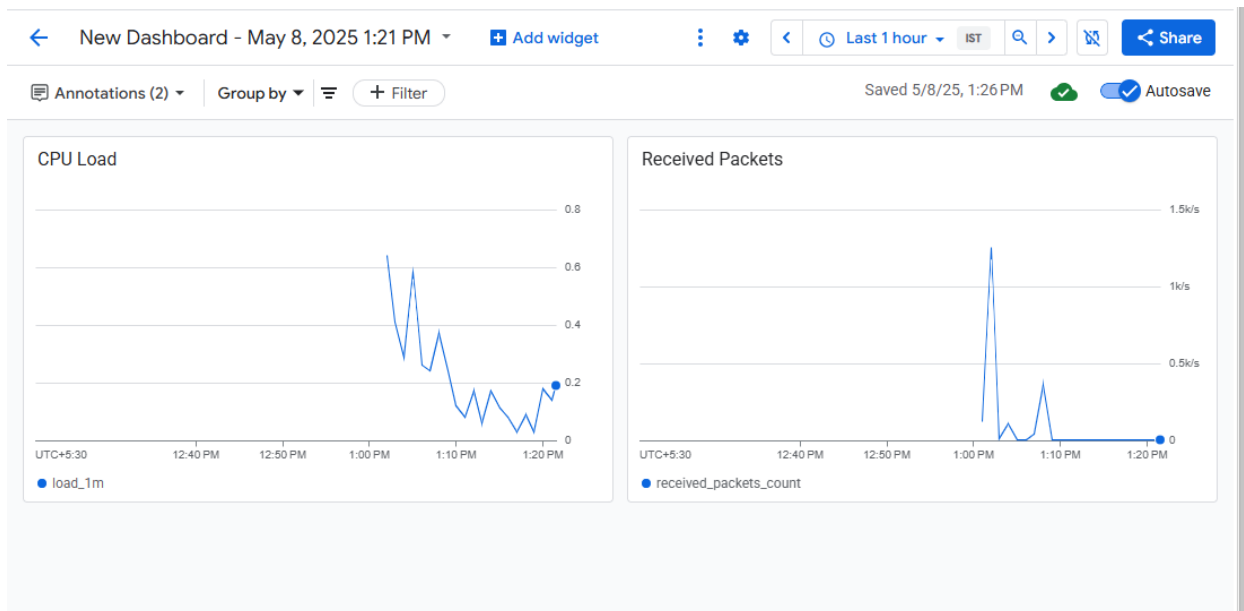
Display Name *Vinod

Cancel

Save

Task 6: Create a Dashboard

1. Navigate to **Dashboards > Create Custom Dashboard**.
2. Name it **Cloud Monitoring LAMP Qwik Start Dashboard**.
3. Add widgets:
 - a. **CPU Load:** Select **CPU load (1m)**.
 - b. **Received Packets:** Select **Received packets**



The screenshot shows the Google Cloud Logs Explorer interface. It includes a search bar, filters for 'Project logs', 'All resources', 'All log names', 'All severities', and 'Correlate by'. The 'Severity' filter is set to 'Warning', and the 'Time' filter is set to 'May 8, 12:26 PM'. The log entries show a warning message from 'osLogin.googleapis.com'.

SEVERITY	TIME	SUMMARY
Warning	2025-05-08 13:24:57.202	osLogin.googleapis.com _nDataPlaneService.ListLoginProfiles _zones/europe-west1-d/instances/lamp-1-vm
Warning	2025-05-08 13:25:33.889	lamp-1-vm 2025-05-08T07:55:33.888530+00:00 lamp-1-vm otelopscol[1661]: 2025-05-08T07:55:33.8872#011-
Warning	2025-05-08 13:25:33.889	lamp-1-vm 2025-05-08T07:55:33.888923+00:00 lamp-1-vm otelopscol[1661]: 2025-05-08T07:55:33.8872#011-
Warning	2025-05-08 13:25:34.926	osLogin.googleapis.com _nDataPlaneService.ListLoginProfiles _zones/europe-west1-d/instances/lamp-1-vm

Logs Explorer

Query library Share link Preferences Last 1 hour IST

Project logs Search all fields

Select resource

Search resource filters

Search by prefix...

Search by prefix...

Audited Resource

Disk

Firewall Rule

Google Project

Project

Resource Policy

Service Account

VM Instance

All Instance_Id

INSTANCE_ID

lamp-1-vm

1970885092753662798

All zone

ZONE

europa-west1-d

Cancel Apply

Google Cloud qwiklabs-gcp-01-52e2e62937a5 logging Search

Logs Explorer

Query library Share link Preferences Last 1 hour IST

Project logs Search all fields

VM Instance +1 All log names All severities Correlate by

1 resource.type="gce_instance"

2 resource.labels.instance_id="1970885092753662798"

Example queries Query language guide

Language: LQL

Fields

Search fields and values

System Metadata

Severity 1,159

Showing top 5 of 5 values

Default 1,040

Info 106

Notice 7

Warning 4

Timeline

May 8, 12:27 PM

1:00 PM

May 8, 1:28 PM

1,159 results

SEVERITY	TIME	SUMMARY
>	2025-05-08 13:24:33.889	lamp-1-vm 2025-05-08T07:54:33.888628+00:00 lamp-1-vm otelopscol[1661]: 2025-05-08T07:54:33.8872#011-
>	2025-05-08 13:25:33.889	lamp-1-vm 2025-05-08T07:55:33.888530+00:00 lamp-1-vm otelopscol[1661]: 2025-05-08T07:55:33.8872#011-
>	2025-05-08 13:25:33.889	lamp-1-vm 2025-05-08T07:55:33.888923+00:00 lamp-1-vm otelopscol[1661]: 2025-05-08T07:55:33.8872#011-
>	2025-05-08 13:26:33.889	lamp-1-vm 2025-05-08T07:56:33.888518+00:00 lamp-1-vm otelopscol[1661]: 2025-05-08T07:56:33.8872#011-

CLOUD SHELL Terminal (qwiklabs-gcp-01-52e2e62937a5) Open Editor

Task 8: Check Uptime & Alerts

1. Go to **Monitoring > Uptime checks** and verify status.
2. Check email notifications for alert triggers.



Try the new Synthetic monitoring capability! New

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[Create Synthetic Monitor](#) [View Documentation](#)

[Filter](#) Enter property name or value

Display Name ↑	Asia Pacific	Europe	North America	South America	Policies
Lamp Uptime Check	✓	✓	✓	✓	1