

Google Cloud Platform project

Apache Web Server on Google Cloud

By Sarah Alwated

Guidelines:

- Create an account at GCP.
- Enable compute engine.
- Create your virtual machine.

VM setting :

Here you make your first VM

Google Cloud

My First Project

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Compute Engine

VM instances

CREATE INSTANCE

IMPORT VM

REFRESH

LEARN

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Sole-tenant nodes

Machine images

TPUs

Committed-use discounts

Reservations

Migrate to Virtual Machin...

Storage

Disks

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Release notes

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INSTANCES

OBSERVABILITY

INSTANCE SCHEDULES

Instance "instance-20240417-140259" is underutilised. You can save an estimated \$12 per month by switching to the machine type: e2-small. [Learn more](#)

DISMISS

VM instances

Filter Enter property name or value

Status	Name	Zone	Recommendations	In use by	Internal IP	External IP	Connect
<input type="checkbox"/>	<input checked="" type="checkbox"/>	instance-20240416-141924	us-west4-b	Save \$27/mo	10.182.0.2 (nic0)	34.125.15.245 (nic0)	SSH
<input type="checkbox"/>	<input checked="" type="checkbox"/>	instance-20240416-150337	us-west4-b		10.182.0.3 (nic0)	34.16.207.234 (nic0)	RDP
<input type="checkbox"/>	<input checked="" type="checkbox"/>	instance-20240417-140259	us-central1-a	Save \$12/mo Save \$24/mo	10.128.0.2 (nic0)	34.29.9.171 (nic0)	SSH

Related actions

Explore Backup and DR

Back up your VMs and set up disaster recovery

View billing report

View and manage your Compute Engine billing

Monitor VMs

View outlier VMs across metrics like CPU and network

Explore VM logs

View, search, analyse 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 grow

<https://console.cloud.google.com/compute/instances?authuser=2&project=named-enigma-42051>

The boot disk settings.

Boot disk ?

Name	instance-20240429-031430
Type	New balanced persistent disk
Size	10 GB
Licence type ?	Free
Image	Debian GNU/Linux 12 (bookworm)

CHANGE

Allow HTTP and HTTPS traffic.

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

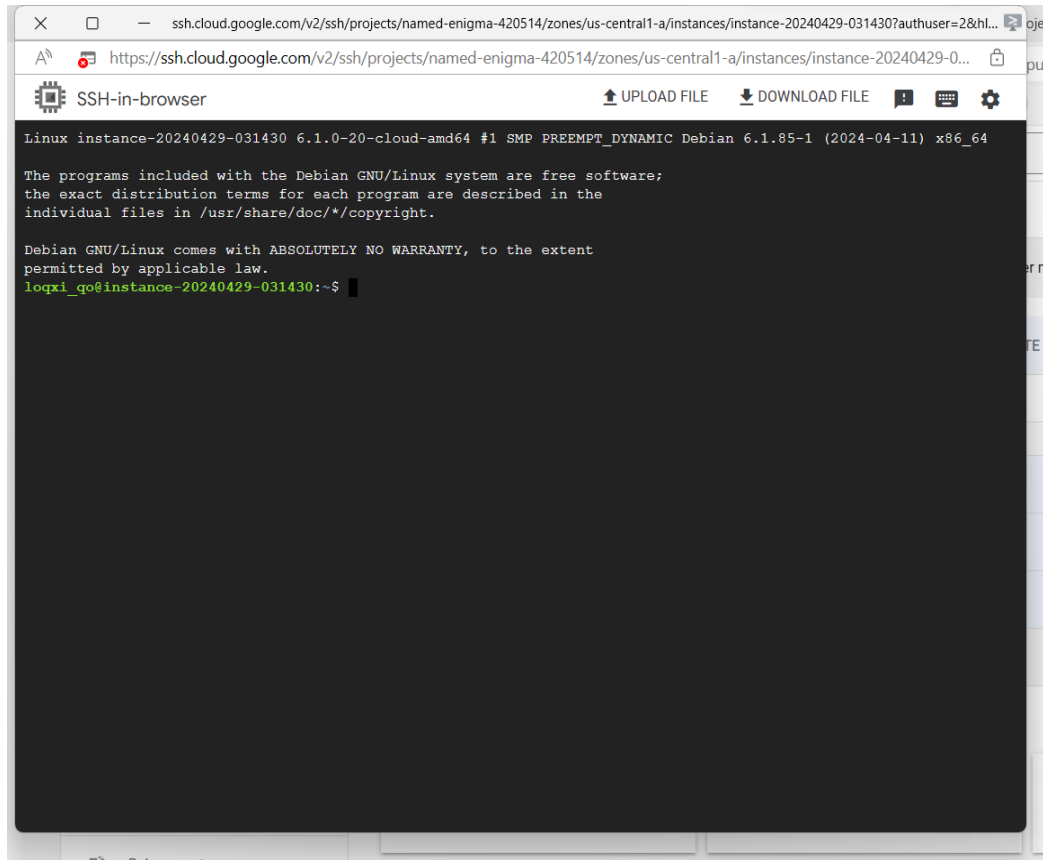
VM SSH:

After we create our first VM, we will run SSH from click the SSH button.

The screenshot shows the Google Cloud Console interface for VM instances. The left sidebar contains navigation links for Virtual machines, Instance templates, Sole-tenant nodes, Machine images, TPUs, Committed-use discounts, Reservations, Migrate to Virtual Machin..., Storage, Disks, Marketplace, and Release notes. The main content area is titled 'VM instances' and includes a 'CREATE INSTANCE' button, an 'IMPORT VM' button, and a 'REFRESH' button. Below this, there is a table of VM instances with columns for Status, Name, Zone, Recommendations, In use by, Internal IP, External IP, and Connect. The instance 'instance-20240429-031430' is highlighted, and its 'SSH' button is red. Below the table, there are 'Related actions' such as 'Explore Backup and DR', 'View billing report', 'Monitor VMs', 'Explore VM logs', 'Set up firewall rules', 'Patch management', and 'Load balance between VMs'.

Status	Name	Zone	Recommendations	In use by	Internal IP	External IP	Connect
<input type="checkbox"/>	instance-20240416-141924	us-west4-b			10.182.0.2 (nic0)		SSH
<input type="checkbox"/>	instance-20240416-150337	us-west4-b			10.182.0.3 (nic0)		RDP
<input type="checkbox"/>	instance-20240417-140259	us-central1-a			10.128.0.2 (nic0)		SSH
<input checked="" type="checkbox"/>	instance-20240429-031430	us-central1-a	Save \$11/mo Save \$21/mo		10.128.0.3 (nic0)	104.197.65.52 (nic0)	SSH

Now we open the SSH window.



First thing is to update packages by the cmd: **sudo apt-get update**

```
SSH-in-browser  UPLOAD FILE  DOWNLOAD FILE  !  ⌨  ⚙

Linux instance-20240429-031430 6.1.0-20-cloud-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.85-1 (2024-04-11) 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.
Last login: Wed May  1 12:45:33 2024 from 35.235.241.16
loqxi_qo@instance-20240429-031430:~$ sudo apt-get update
```

After that install server the cmd: **sudo apt-get install apache2 -y**

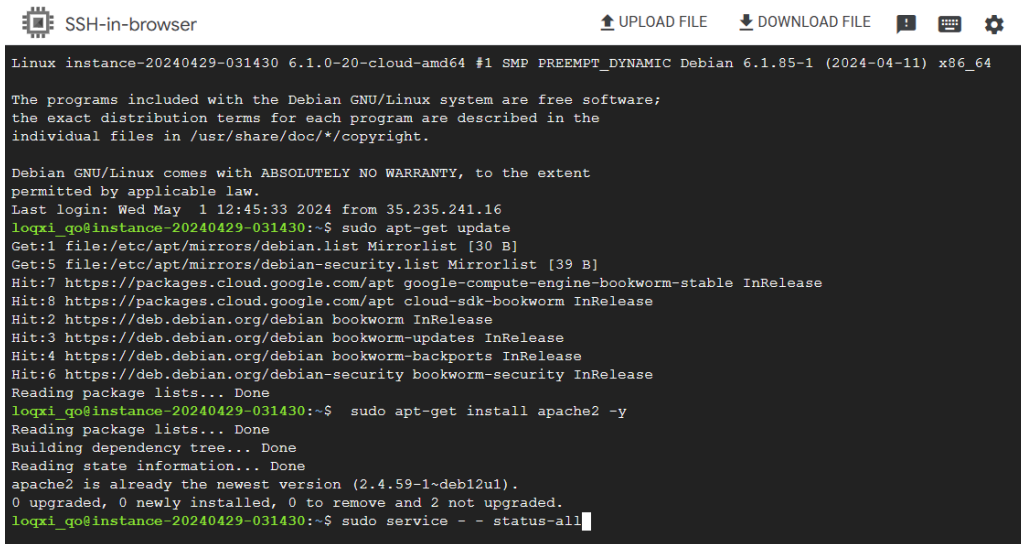
```
SSH-in-browser  UPLOAD FILE  DOWNLOAD FILE  !  ⌨  ⚙

Linux instance-20240429-031430 6.1.0-20-cloud-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.85-1 (2024-04-11) x86_64

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individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed May  1 12:45:33 2024 from 35.235.241.16
loqxi_qo@instance-20240429-031430:~$ sudo apt-get update
Get:1 file:/etc/apt/mirrors/debian.list Mirrorlist [30 B]
Get:5 file:/etc/apt/mirrors/debian-security.list Mirrorlist [39 B]
Hit:7 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable InRelease
Hit:8 https://packages.cloud.google.com/apt cloud-sdk-bookworm InRelease
Hit:2 https://deb.debian.org/debian bookworm InRelease
Hit:3 https://deb.debian.org/debian bookworm-updates InRelease
Hit:4 https://deb.debian.org/debian bookworm-backports InRelease
Hit:6 https://deb.debian.org/debian-security bookworm-security InRelease
Reading package lists... Done
loqxi_qo@instance-20240429-031430:~$ sudo apt-get install apache2 -y
```

We install apache2 server successfully but how to check if the server is working: **sudo service -- status-all**

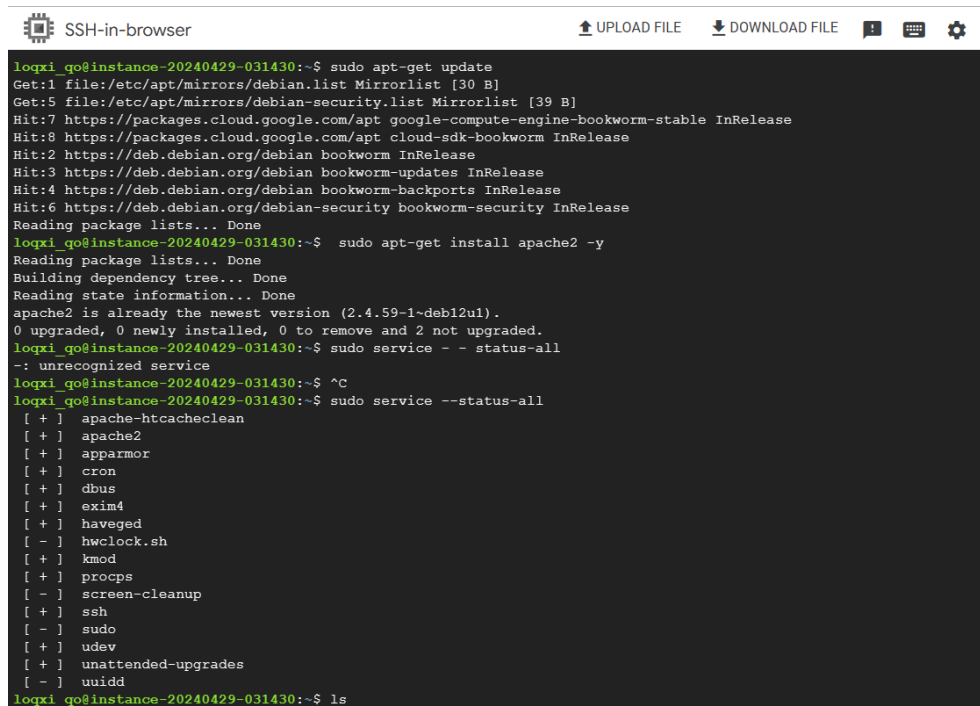


```
Linux instance-20240429-031430 6.1.0-20-cloud-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.85-1 (2024-04-11) x86_64

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.
Last login: Wed May 1 12:45:33 2024 from 35.235.241.16
loqxi_qo@instance-20240429-031430:~$ sudo apt-get update
Get:1 file:/etc/apt/mirrors/debian.list Mirrorlist [30 B]
Get:5 file:/etc/apt/mirrors/debian-security.list Mirrorlist [39 B]
Hit:7 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable InRelease
Hit:8 https://packages.cloud.google.com/apt cloud-sdk-bookworm InRelease
Hit:2 https://deb.debian.org/debian bookworm InRelease
Hit:3 https://deb.debian.org/debian bookworm-updates InRelease
Hit:4 https://deb.debian.org/debian bookworm-backports InRelease
Hit:6 https://deb.debian.org/debian-security bookworm-security InRelease
Reading package lists... Done
loqxi_qo@instance-20240429-031430:~$ sudo apt-get install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.59-1-deb12u1).
0 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
loqxi_qo@instance-20240429-031430:~$ sudo service -- status-all
```

The check is completed.



```
loqxi_qo@instance-20240429-031430:~$ sudo apt-get update
Get:1 file:/etc/apt/mirrors/debian.list Mirrorlist [30 B]
Get:5 file:/etc/apt/mirrors/debian-security.list Mirrorlist [39 B]
Hit:7 https://packages.cloud.google.com/apt google-compute-engine-bookworm-stable InRelease
Hit:8 https://packages.cloud.google.com/apt cloud-sdk-bookworm InRelease
Hit:2 https://deb.debian.org/debian bookworm InRelease
Hit:3 https://deb.debian.org/debian bookworm-updates InRelease
Hit:4 https://deb.debian.org/debian bookworm-backports InRelease
Hit:6 https://deb.debian.org/debian-security bookworm-security InRelease
Reading package lists... Done
loqxi_qo@instance-20240429-031430:~$ sudo apt-get install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.59-1-deb12u1).
0 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
loqxi_qo@instance-20240429-031430:~$ sudo service -- status-all
--: unrecognized service
loqxi_qo@instance-20240429-031430:~$ ^C
loqxi_qo@instance-20240429-031430:~$ sudo service --status-all
[ + ] apache-htcacheclean
[ + ] apache2
[ + ] apparmor
[ + ] cron
[ + ] dbus
[ + ] exim4
[ + ] haveged
[ - ] hwclock.sh
[ + ] kmod
[ + ] procs
[ - ] screen-cleanup
[ + ] ssh
[ - ] sudo
[ + ] udev
[ + ] unattended-upgrades
[ - ] uuidd
loqxi_qo@instance-20240429-031430:~$ ls
```

Note:

If you have index.html upload it and move it to

`/var/www/html`

☐ ✓ [instance-20240429-031430](#) us-central1-a ⚡ Save \$11/mo ⚡
Save \$21/mo 10.128.0.3 (nic0) [104.197.65.52](#) (nic0) SSH ▾ ⋮

You can access it by clicking on the External IP button at the VMInstances page.

Welcome to Google Cloud Platform



Google Cloud

What is Google Cloud Platform?

Google Cloud Platform (GCP) is a suite of cloud computing services offered by Google. It provides a range of on-demand services including:

- Compute: Create and manage virtual machines (VMs)
- Storage: Store your data securely and reliably
- Networking: Connect your applications and resources
- Big Data: Analyze large datasets
- Machine Learning: Build and train machine learning models
- And many more!

What are Virtual Machines (VMs)?

A virtual machine (VM) is a software computer that emulates a physical computer. It allows you to run an operating system and applications on a virtualized server. VMs offer several benefits including:

- Scalability: Easily scale your resources up or down as needed
- Cost-effectiveness: Pay only for the resources you use
- Flexibility: Deploy different types of VMs for different applications
- Isolation: Applications running on VMs are isolated from each other