

How to Create Instances in Cloud?(AWS/GCP)

Q: What is Instance in Cloud ?

A: An **instance** refers to a **virtual machine (VM)** or a running copy of a virtualized server that is created and managed in a cloud environment. Instances are used to run applications, host websites, or perform computations on the cloud platform.

Creating an Instance on AWS EC2 (Elastic Compute Cloud):

1. Create / Login to AWS cloud console. (Here I am using my Free tier account for learning)
2. In search bar of AWS console, search for EC2
3. Click on instances and click on Launch instances.

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with links for Dashboard, EC2 Global View, Events, Instances (with sub-links like Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs), and Help. The main area has three main sections: 'Resources' (listing Instances (running) 1, Auto Scaling Groups 0, Capacity Reservations 0, Dedicated Hosts 0, Elastic IPs 1, Instances 1, Key pairs 1, Load balancers 0, Placement groups 0, Security groups 0, Snapshots 0, and Volumes 0), 'Account attributes' (with links for Settings, Data protection and security, Zones, EC2 Serial Console, Default credit specification, and EC2 console preferences), and 'Additional information' (with links for Getting started guide, Documentation, All EC2 resources, and Examples). At the bottom, there are 'Launch instance' and 'Service health' buttons.

4. Name the instance if you want give tag .

The screenshot shows the 'Launch an instance' wizard. The top navigation bar includes the AWS logo, a search bar, and account information. Below it, the breadcrumb trail shows EC2 > Instances > Launch an instance. The main content area is titled 'Launch an instance' with a sub-link 'Info'. It says 'Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.' A 'Name and tags' section contains a 'Name' input field with 'test' typed in and a 'Add additional tags' link. To the right, a 'Summary' box shows a 'Launch instance' button and a 'Preview code' link.

5. Select the OS (For Beginners select **Ubuntu**).

Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below.

Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux macOS Ubuntu Windows Red Hat SUSE Linux ...

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Cancel [Launch instance](#) [Preview code](#)

6. AMI section: for Learning purpose always use **free tier eligible**.

Amazon Machine Image (AMI)

Ubuntu Server 24.04 LTS (HVM), SSD Volume Type
ami-0866a3c8686eae (64-bit (x86)) / ami-0325498274077fac5 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Ubuntu Server 24.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Canonical, Ubuntu, 24.04, amd64 noble image

Architecture: 64-bit (x86) AMI ID: ami-0866a3c8686eae Username: ubuntu Verified provider: eba

Cancel [Launch instance](#) [Preview code](#)

7. Instance type : for Learning purpose always use **free tier eligible**

Instances > Launch an instance

0866a3c8686eae
eba

Instance type

t2.micro Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand Ubuntu Pro base pricing: 0.0134 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand RHEL base pricing: 0.026 USD per Hour
On-Demand Linux base pricing: 0.0116 USD per Hour

All generations [Compare instance types](#)

Additional costs apply for AMIs with pre-installed software

Cancel [Launch instance](#) [Preview code](#)

8. Key pair: Click on Create new key pair

The screenshot shows the AWS EC2 'Launch an instance' wizard. In the 'Key pair (login)' step, there is a dropdown menu labeled 'Select' and a button labeled 'Create new key pair'. To the right, a summary panel shows a yellow 'Launch instance' button.

After creating a password/key pair file is downloaded. keep it for next login purpose.

9. Keep remaining things are default.

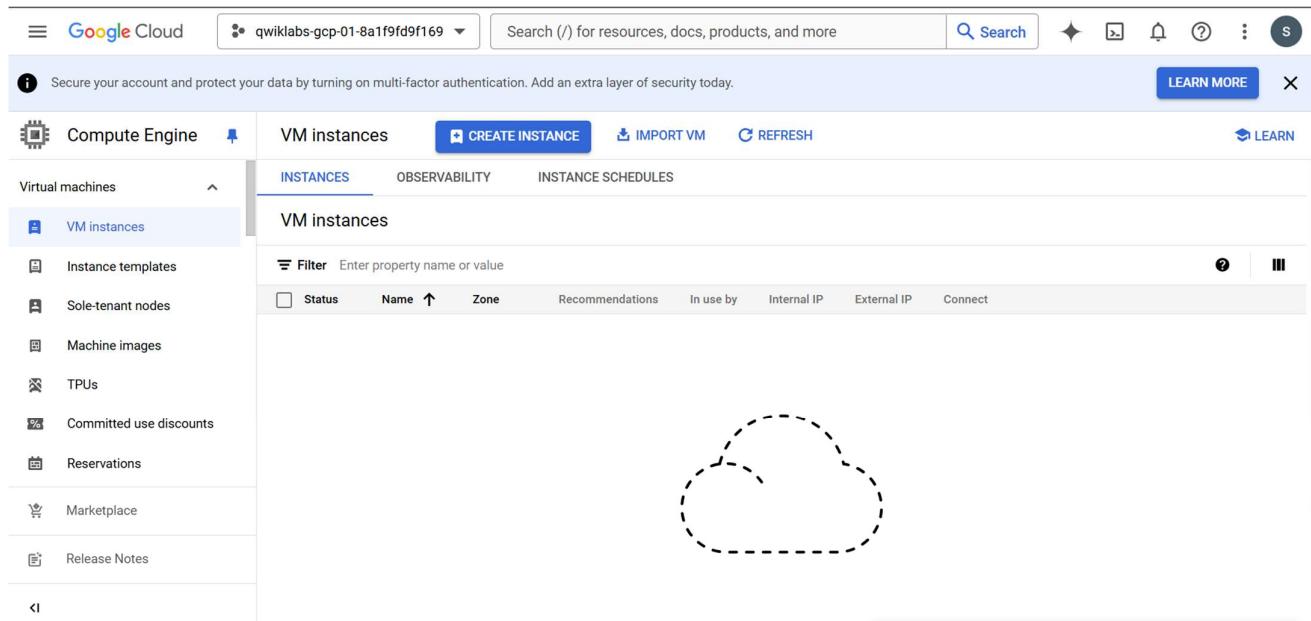
The screenshot shows the 'Configure storage' step of the EC2 wizard. It displays a configuration for a root volume: 1x 8 GiB gp3. A note indicates that free-tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Below this, a message states that the selected AMI contains more instance store volumes than the instance allows, and only the first 0 instance store volumes from the AMI will be accessible from the instance. There is also a note about backup information and tags. To the right, a summary panel shows a yellow 'Launch instance' button.

10. Click on Launch instance and wait for some time. Instance is created.

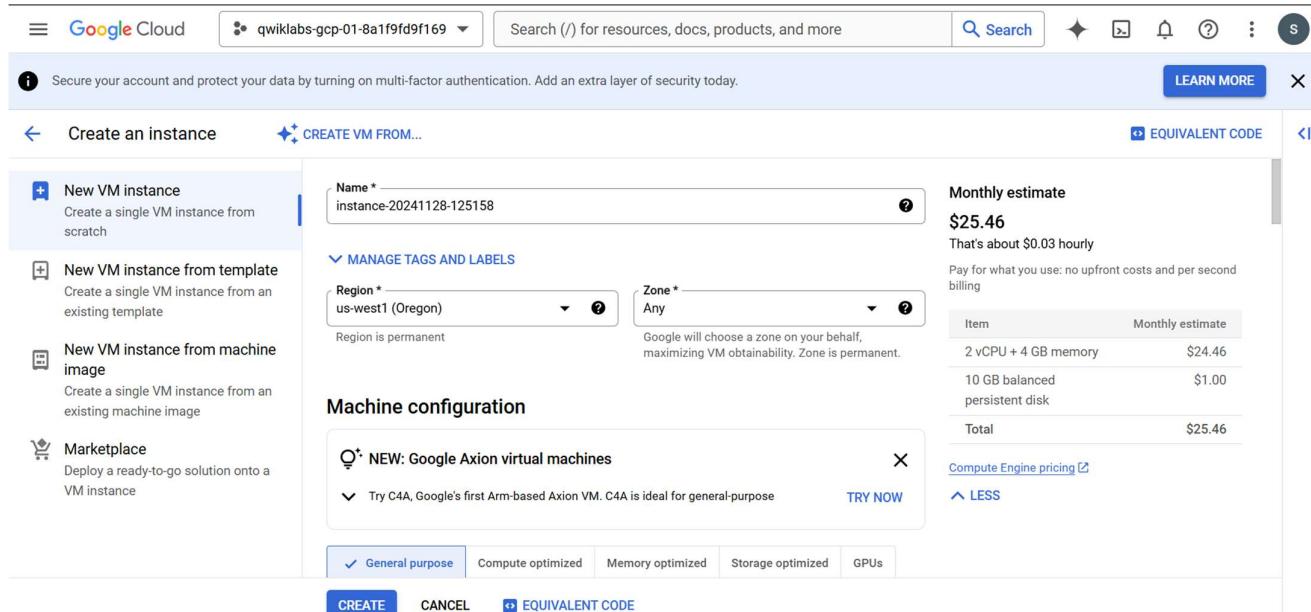
The screenshot shows the AWS EC2 'Instances' page. It lists one instance named 'test' with the ID 'i-0accd7a3f1e59a4ee'. The instance is shown as 'Running' with a status of 'Initializing'. The 'Actions' dropdown and a 'Launch instances' button are visible at the top right of the table header.

Creating an Instance on Google Cloud Compute Engine(GCE):

1. Create / Login to Google cloud console. (Here I am using my Free tier account for learning)
2. In search bar of GCP console, search for VM instances
3. Click on VM instances and click on create instances.



4. Name the instance and choose the region you want.



Item	Monthly estimate
2 vCPU + 4 GB memory	\$24.46
10 GB balanced persistent disk	\$1.00
Total	\$25.46

5. Choose Machine Type & Region:(Pick a machine type (e.g., e2-micro for small workloads) and choose the region where you want the instance to run.)

The screenshot shows the Google Cloud VM creation interface. On the left, there's a sidebar with options like 'New VM instance', 'New VM instance from template', 'New VM instance from machine image', and 'Marketplace'. The main area is titled 'CREATE VM FROM...' and shows a table of 'General purpose' machine types. The table includes columns for Series, Description, vCPUs, and Memory. The 'E2' series is selected, showing details like 'Low cost, day-to-day computing' and '0.25 - 32 vCPUs, 1 - 128 GB memory'. To the right, a 'Monthly estimate' section shows a total of \$25.46. At the bottom are 'CREATE', 'CANCEL', and 'EQUIVALENT CODE' buttons.

This screenshot shows the same interface but with a 'CUSTOM' machine type selected. A dropdown menu shows 'e2-medium (2 vCPU, 1 core, 4 GB memory)'. Below it, the 'vCPU' and 'Memory' settings are displayed as '1-2 vCPU (1 shared core)' and '4 GB' respectively. Under 'ADVANCED CONFIGURATIONS', there's a section for 'Availability policies' with 'VM provisioning model' set to 'Standard'. At the bottom, there are 'CREATE', 'CANCEL', and 'EQUIVALENT CODE' buttons.

6. Choose Boot Disk & Image: Select an OS image (e.g., Ubuntu, CentOS, Windows). Here I am going with default.

The screenshot shows the 'Create an instance' wizard in Google Cloud. On the left sidebar, there are options like 'New VM instance', 'New VM instance from template', 'New VM instance from machine image', and 'Marketplace'. The main area is titled 'Boot disk' and shows the following details:

- Name:** instance-20241128-125158
- Type:** New balanced persistent disk
- Size:** 10 GB
- Snapshot schedule:** No schedule selected
- License type:** Free
- Image:** Debian GNU/Linux 12 (bookworm)

Below these details is a 'CHANGE' button and a note about backup plans. To the right, there's a 'Monthly estimate' section showing a total of \$25.46, which is noted as being about \$0.03 hourly. It also lists the components contributing to the cost: 2 vCPU + 4 GB memory (\$24.46), 10 GB balanced persistent disk (\$1.00), and a total of \$25.46. There are links to 'Compute Engine pricing' and a 'LESS' button.

7. Configure Firewall Settings: Enable **Allow HTTP/HTTPS traffic** for web servers, if needed.

The screenshot shows the 'Create an instance' wizard in Google Cloud. The left sidebar remains the same as the previous screenshot. The main area is split into two sections: 'Identity and API access' and 'Firewall'.

Identity and API access:

- Service accounts:** A dropdown menu is open, showing 'Compute Engine default service account'.
- Access scopes:**
 - Allow default access
 - Allow full access to all Cloud APIs
 - Set access for each API

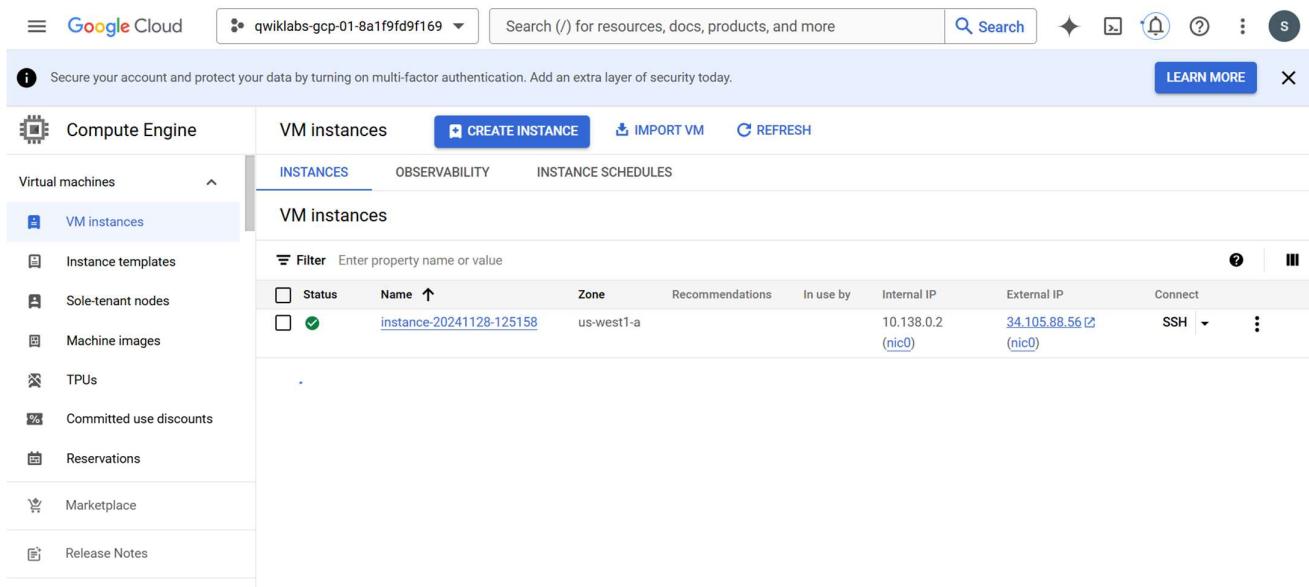
Firewall:

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

- Allow HTTP traffic
- Allow HTTPS traffic

On the right side, there's a 'Monthly estimate' section showing a total of \$25.46, which is noted as being about \$0.03 hourly. It also lists the components contributing to the cost: 2 vCPU + 4 GB memory (\$24.46), 10 GB balanced persistent disk (\$1.00), and a total of \$25.46. There are links to 'Compute Engine pricing' and a 'LESS' button.

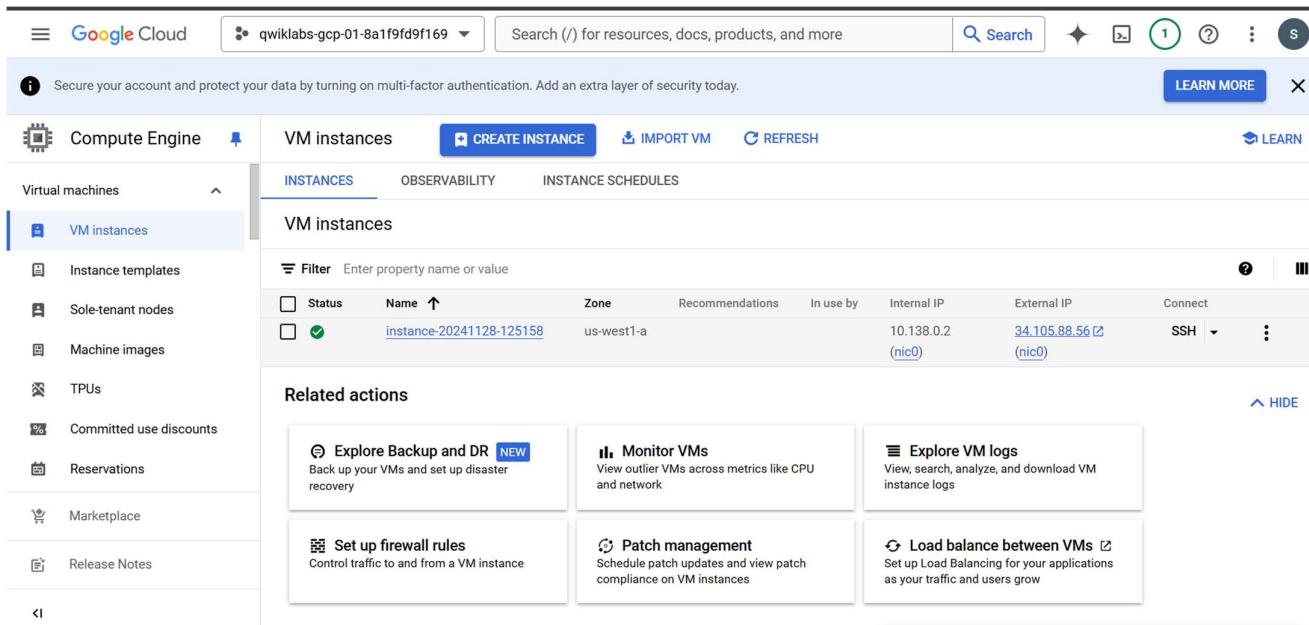
8. Create the Instance: Click **Create** to launch the VM



The screenshot shows the Google Cloud Compute Engine interface. On the left, a sidebar menu under 'Virtual machines' has 'VM instances' selected. The main area displays a table of VM instances. One instance is listed:

Status	Name	Zone	Recommendations	In use by	Internal IP	External IP	Connect
<input type="checkbox"/>	instance-20241128-125158	us-west1-a			10.138.0.2 (nic0)	34.105.88.56 (nic0)	SSH

9. Connect to Your Instance: Once the VM is running, you can SSH directly from the browser or use an external terminal.



This screenshot shows the same Google Cloud Compute Engine interface as the previous one, but it includes a 'Related actions' section at the bottom of the main content area. This section contains six cards:

- Explore Backup and DR** [NEW]
Back up your VMs and set up disaster recovery
- 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 grow