

Google Cloud

1. Creating a Free Account: Visit <https://cloud.google.com/free>

The screenshot shows the Google Cloud homepage. At the top, there's a navigation bar with links for Overview, Solutions, Products, Pricing, and Resources. Below the navigation is a yellow banner announcing "Google Cloud Next is coming to Las Vegas, April 9-11. Register now to get over 50% off your ticket." To the left, there's a "Free to sign up. Free to test. Free monthly usage." section with a "Get started for free" button and a "Contact sales" button. In the center, there's a photo of a man wearing a t-shirt with a molecular structure diagram. To the right, there's a code editor window titled "GEMINI CODE ASSIST CHAT" showing Python code related to generating text. A callout box points to the "See how it works" link in the code editor.

Three ways to get started for free

Click on Get started for free

The screenshot shows the Google Cloud sign-in page. It features a "Sign in" button and a "to continue to Google Cloud Platform" link. There's a text input field for "Email or phone" and a "Forgot email?" link. Below the input field, there's a note about using Guest mode. At the bottom, there are "Create account" and "Next" buttons, along with links for "Help", "Privacy", and "Terms". The footer includes a language selection dropdown set to "English (United States)" and a "▼" icon.

Sign in with Gmail Id
Select Country as India-> Agree and Continue

Try Google Cloud for free

Step 1 of 2 Account Information

prince bhargav
princebhargav07@gmail.com

[Switch account](#)

Country

India

By using this application, you agree to the [Google Cloud Platform](#), [Supplemental Free Trial](#), and [any applicable services and APIs](#) Terms of Service.

[Agree & continue](#)

Access to all Google Cloud products

Get everything you need to build and run your apps, websites and services, including Firebase and the Google Maps API.

\$300 in free credit

Try Google Cloud with \$300 in credit to spend over the next 90 days.

No automatic charges

You only start paying if you decide to activate a full, pay-as-you-go account or choose to prepay. You'll keep any remaining free credit.

Click on create new payment profile and fill the details

Try Google Cloud for free

Step 2 of 2 Verify Your Identity

We use payment information to verify your identity, our services by spammers and bots. You won't be able to activate your full, pay-as-you-go account or choose to prepay.

Payments profile—
[Create new payments profile](#)

Your payment information is saved in a payments profile in your Google Account and shared across Google services. [payments profile](#)

Payment method—
[Add payment method](#)

Please complete the previous sections before continuing.

[Start free](#)

Create a payments profile

Business, craft, or profession. In some countries, this selection affects your tax options. Your profile type can't be changed after signing up.

[Learn more about payments profile](#)

Profile type

Legal name

Street address

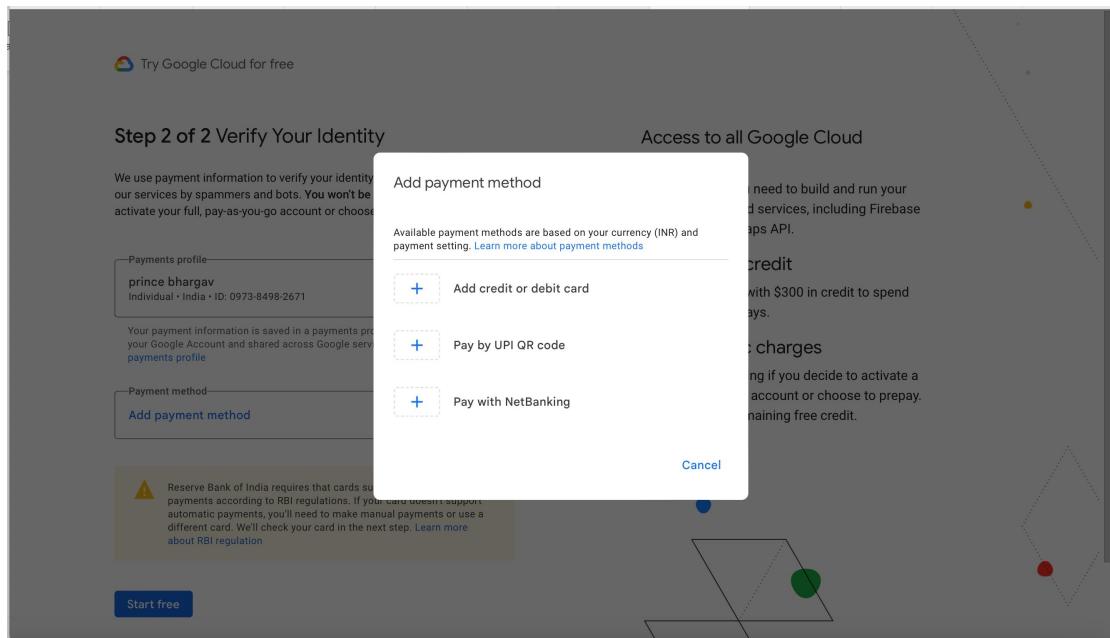
Apt, suite, etc. (optional)

City

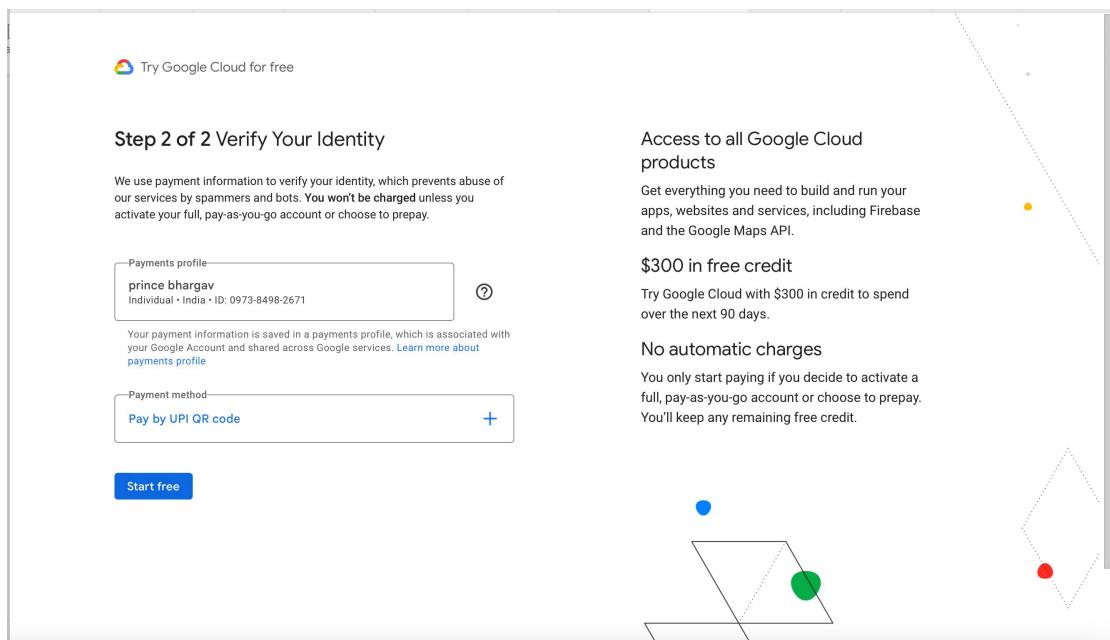
Pin code

[Cancel](#) [Create](#)

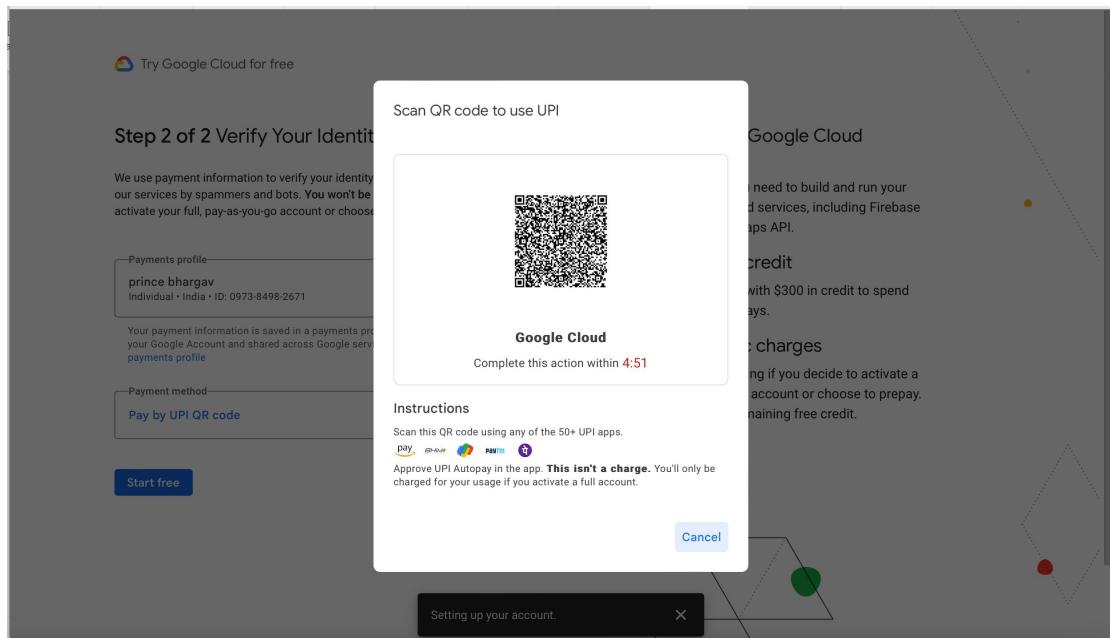
After Filling the above details, Click on Payment Method:



Click on pay by UPI or QR code and Click on start free



Scan the QR code thorough any of the GPay, PhonePay , Pay-TM etc



Account gets will be created and will be landing at Google Cloud Console

Google Cloud

Overview Solutions Products Pricing Resources

Docs Support Console Contact Us

Google Cloud Next is coming to Las Vegas, April 9-11. Register now to get over 50% off your ticket.

Build what's next in generative AI

Try Gemini 2.0 models, the latest and most advanced multimodal models in Vertex AI. See what you can build with up to a 2M token context window, starting as low as \$0.0001.

[Try it in console](#) [Contact sales](#)

More ways you can build and scale with Google Cloud

Try Gemini Code Assist to accelerate developer productivity	Get a \$1,000 credit for Vertex AI Agent Builder	Start your next project with 20+ free products
Auto-complete code : automate inner loop	New Vertex AI Agent Builder customers get	Get free usage of Compute Engine , Cloud

Click on Try it on console

Free trial status: ₹25,638.60 credit and 76 days remaining. Activate your full account to get unlimited access to all of Google Cloud—use any remaining credits, then pay only for what you use.

Google Cloud My First Project Search (/) for resources, docs, products, and ... **Search**

Vertex AI Dashboard **LEARN**

Tools

- Dashboard**
- Model Garden
- Pipelines
- Notebooks
- Colab Enterprise
- Workbench
- Vertex AI Studio
- Overview
- Freeform
- Chat
- Vision
- Translation
- Speech
- Marketplace

Get started with Vertex AI

Vertex AI empowers machine learning developers, data scientists, and data engineers to take their projects from ideation to deployment, quickly and cost-effectively. [Learn more about Vertex AI](#)

Tutorials

Learn how to use generative AI, Gemini, and more on Vertex AI. [VIEW TUTORIALS](#)

ENABLE ALL RECOMMENDED APIs

SHOW API LIST

Recommended for you

- Generative AI**
- Generative AI overview**
- Help document
- Get started with generative AI on Vertex AI
- Try the Gemini API**
- Help document
- Start sending requests to the Vertex AI Gemini API
- Google foundation models**
- Help document
- Learn more about Google foundation models
- Tutorials**
- Interactive tutorials**
- Tutorial
- Learn how to write prompts, tune and evaluate LLM models and more
- SDK/API reference**
- Client libraries**
- Help document
- Client libraries provide an optimized developer experience for calling the Vertex AI API.
- REST reference**

Account created and ready to use the free account for 90 days and 25668 INR is given for free by google to explore the resources.

Experiment-1:

Creating a Virtual Machine: Configure and deploy a virtual machine with specific CPU and memory requirements in Google Cloud.

Click in search bar and type Compute Engine or select Compute Engine

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Google Cloud My First Project Search (/) for resources, docs, products, and ... **Search**

Vertex AI Dashboard **LEARN**

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- Model Garden
- Pipelines
- Notebooks
- Colab Enterprise
- Workbench
- Vertex AI Studio
- Overview
- Freeform
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- REST reference**

Gemini

Ask Gemini Chat with an AI companion to get comprehensive answers to any topic related to Google Cloud

Popular searches

Compute Engine VMs, GPUs, TPUs, disks

BigQuery Data warehouse/analytics

IAM & Admin Resource access control

Cloud Storage Enterprise-ready object storage

Click on create Instance

The screenshot shows the Google Cloud Compute Engine Overview page. The left sidebar includes sections for Virtual machines (VM instances, Instance templates, Sole-tenant nodes, Machine images, TPUs, Committed use discounts, Reservations, Migrate to Virtual Machines), Storage (Disks, Storage Pools, Marketplace), and Release Notes. The main content area displays 'System health' with a 'Service Health' section containing a 'Get started with Service Health' message and a 'ENABLE SERVICE HEALTH API' button, along with a link to 'Go to Service Health'. Below this is the 'Usage' section, which includes a 'Resource footprint' table showing 0 Total VMs, 0 Instance Groups, 0 Disks, and 0 Snapshots. To the right is a chart titled 'CPU Utilization (Top 5 VMs)' showing no data available for the selected time frame (UTC+5:30 to 7:50 PM) over a 1-hour period.

Give the name for VM instance-> specified as vm1(can be any name typed in lower case letters)

Select the region->US Central(low) is selected, any region can be selected and any zone can be selected from that region. Depending on the cost and locality selection can be made for deploying virtual machine.

Configure the virtual machine based on vCPUs and Memory needed-> E2 series is selected currently which is low cost and used for day to day computing.

Any virtual machines configuration can be selected based on the requirement.

The screenshot shows the 'Create an instance' form. On the left, a sidebar lists options: Machine configuration (selected), OS and storage (Debian GNU/Linux 12 (bookworm)), Networking (1 network interface), Observability, Security, and Advanced. The main form shows 'Machine configuration' settings: Name (vm1), Region (us-central1 (Iowa)), Zone (us-central1-a), and a 'General purpose' series selected. Below this is a table of machine types:

Series	Description	vCPUs	Memory	CPU Platform
C4	Consistently high performance	2 - 192	4 - 1,488 GB	Intel Emerald Rapi
C4A	Arm-based consistently high performance	1 - 72	2 - 576 GB	Google Axion
N4	Flexible & cost-optimized	2 - 80	4 - 640 GB	Intel Emerald Rapi
C3	Consistently high performance	4 - 192	8 - 1,536 GB	Intel Sapphire Rapi
C3D	Consistently high performance	4 - 360	8 - 2,880 GB	AMD Genoa
E2	Low cost, day-to-day computing	0.25 - 32	1 - 128 GB	Intel Broadwell
N2	Balanced price & performance	2 - 128	2 - 864 GB	Intel Cascade Lake
N2D	Balanced price & performance	2 - 224	2 - 896 GB	AMD Milan
T2A	Scale-out workloads	1 - 48	4 - 192 GB	Ampere Altra

To the right, a 'Monthly estimate' table shows costs for the selected configuration:

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

Links for 'Compute Engine pricing' and 'LESS' are also present.

Click on machine Type-> Select the required machine type Shared-core e2-micro is selected since it costs less.

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Google Cloud My First Project Search (/) for resources, docs, products, and more

Create an instance

Machine configuration: e2-micro, us-central1-a

OS and storage: Debian GNU/Linux 12 (bookworm)

Networking: 1 network interface

Observability

Security

Advanced

CREATE VM FROM...

Instance sizes

Shared-core

- e2-micro**: 0.25-2 vCPU (1 shared core), 1 GB memory
- e2-small**: 0.5-2 vCPU (1 shared core), 2 GB memory
- e2-medium**: 1-2 vCPU (1 shared core), 4 GB memory

vCPU: 0.25-2 vCPU (1 shared core) **Memory**: 1 GB

ADVANCED CONFIGURATIONS

CREATE **CANCEL** **EQUIVALENT CODE**

EQUIVALENT CODE

Monthly estimate: \$7.11

That's about \$0.01 hourly

Pay for what you use: no upfront costs and per second billing

Item	Monthly estimate
2 vCPU + 1 GB memory	\$6.11
10 GB balanced persistent disk	\$1.00
Snapshot schedule	Cost varies
Total	\$7.11

[Compute Engine pricing](#) [LESS](#)

Keep advanced configurations default.
Check the cost estimate on right side of the panel which will indicate the monthly cost for running the Virtual Machine of defined configuration.

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Google Cloud My First Project Search (/) for resources, docs, products, and more

Create an instance

Machine type

Choose a machine type with preset amounts of vCPUs and memory that suit most workloads. Or, you can create a custom machine for your workload's particular needs. [Learn more](#)

PRESET **CUSTOM**

e2-micro (2 vCPU, 1 core, 1 GB memory)

vCPU: 0.25-2 vCPU (1 shared core) **Memory**: 1 GB

CPU platform: Automatic

vCPUs to core ratio

Visible core count

Limit the VM's frequency to all-core turbo (3.1 GHz). More consistent performance

ADVANCED CONFIGURATIONS

CREATE **CANCEL** **EQUIVALENT CODE**

EQUIVALENT CODE

Monthly estimate: \$7.11

That's about \$0.01 hourly

Pay for what you use: no upfront costs and per second billing

Item	Monthly estimate
2 vCPU + 1 GB memory	\$6.11
10 GB balanced persistent disk	\$1.00
Snapshot schedule	Cost varies
Total	\$7.11

[Compute Engine pricing](#) [LESS](#)

Click on create and wait for the vm to be created

The screenshot shows the Google Cloud Compute Engine interface. On the left, there's a sidebar with navigation links like Overview, Virtual machines, Storage, and Marketplace. The main area is titled 'VM instances' and shows a table with one row for 'vm1'. The table columns include Status (Running), Name (vm1), Zone (us-central1-a), Recommendations, In use by (None), Internal IP (10.128.0.15 (nic0)), External IP (35.226.21.88 (nic0)), and Connect (SSH). Below the table, there's a section titled 'Related actions' with links to 'Explore Backup and DR', 'View billing report', 'Monitor VMs', 'Explore VM logs', 'Set up firewall rules', and 'Load balance between VMs'.

Connecting to Virtual Machine:

Click on vm1(virtual machine created) as shown above

This screenshot shows the detailed view for the 'vm1' instance. The left sidebar remains the same. The main area has tabs for DETAILS, OBSERVABILITY, OS INFO, and SCREENSHOT. Under DETAILS, there are tabs for SSH (selected) and CONNECT TO SERIAL CONSOLE. A note says 'Connecting to serial ports is disabled.' Below these tabs, there's a 'Logs' section with a link to 'Serial port 1 (console)' and a 'SHOW MORE' button. The 'Basic information' section lists details such as Name (vm1), Instance Id (3606365710911340977), Description (None), Type (Instance), Status (Running), Creation time (Feb 9, 2025, 8:14:46 PM UTC+05:30), Location (us-central1-a), Instance template (None), In use by (None), and Physical host (None).

Click on SSH and select open in browser window

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Google Cloud My First Project Search (/) for resources, docs, products, and more

Compute Engine vm1 EDIT RESET CREATE MACHINE IMAGE CREATE SIMILAR EQUIVALENT CODE LEARN

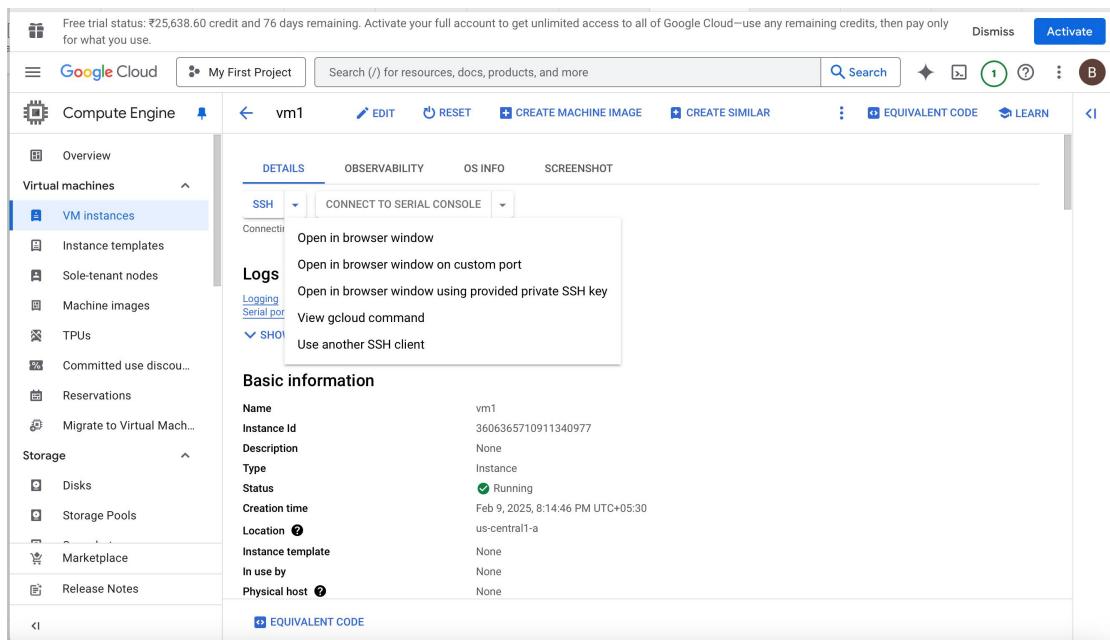
Virtual machines VM instances Overview Instance templates Sole-tenant nodes Machine images TPUs Committed use discounts Reservations Migrate to Virtual Machines Storage Disks Storage Pools Marketplace Release Notes

SSH DETAILS OBSERVABILITY OS INFO SCREENSHOT CONNECT TO SERIAL CONSOLE Logs SSH Open in browser window Open in browser window on custom port Open in browser window using provided private SSH key View gcloud command Use another SSH client

Basic information

Name	vm1
Instance Id	3606365710911340977
Description	None
Type	Instance
Status	Running
Creation time	Feb 9, 2025, 8:14:46 PM UTC+05:30
Location	us-central1-a
Instance template	None
In use by	None
Physical host	None

EQUIVALENT CODE



Click on Authorize

Establishing connection to SSH server...

remaining credits, then pay only Dismiss Activate

Search EQUIVALENT CODE LEARN

Authorize

Allow SSH-in-browser to connect to VMs.

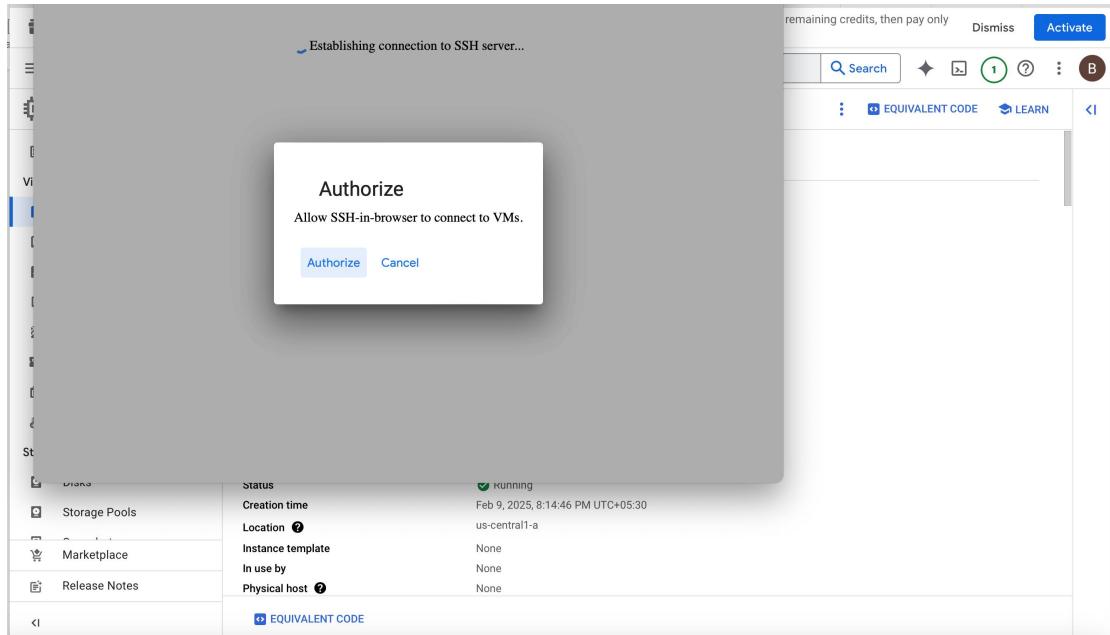
Authorize Cancel

Virtual machines VM instances Overview Instance templates Sole-tenant nodes Machine images TPUs Committed use discounts Reservations Migrate to Virtual Machines Storage Disks Storage Pools Marketplace Release Notes

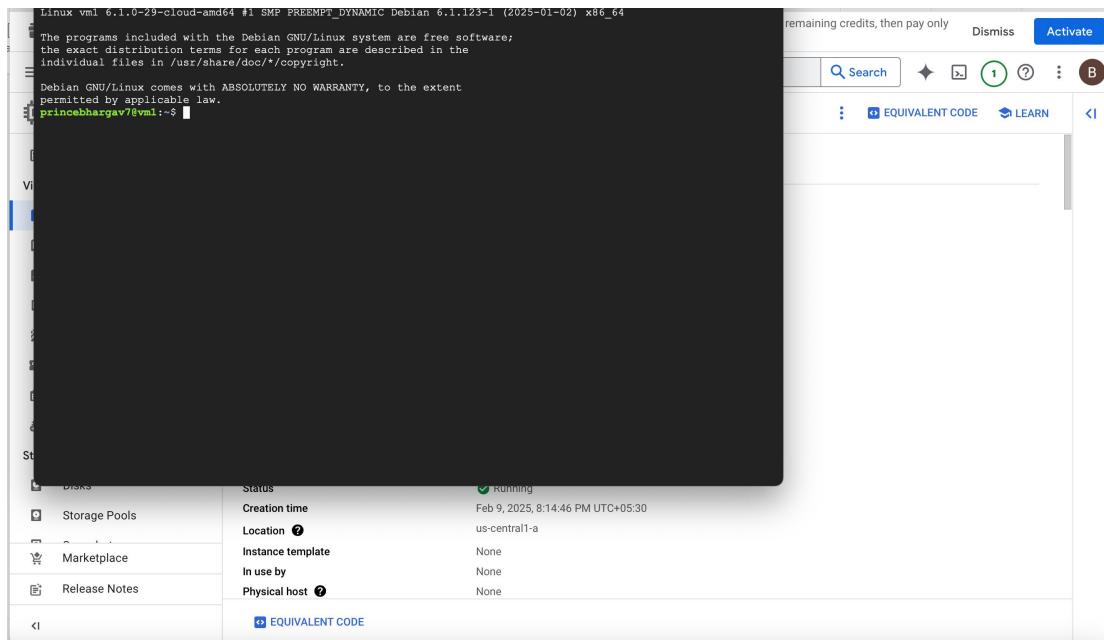
Status running

Creation time	Feb 9, 2025, 8:14:46 PM UTC+05:30
Location	us-central1-a
Instance template	None
In use by	None
Physical host	None

EQUIVALENT CODE



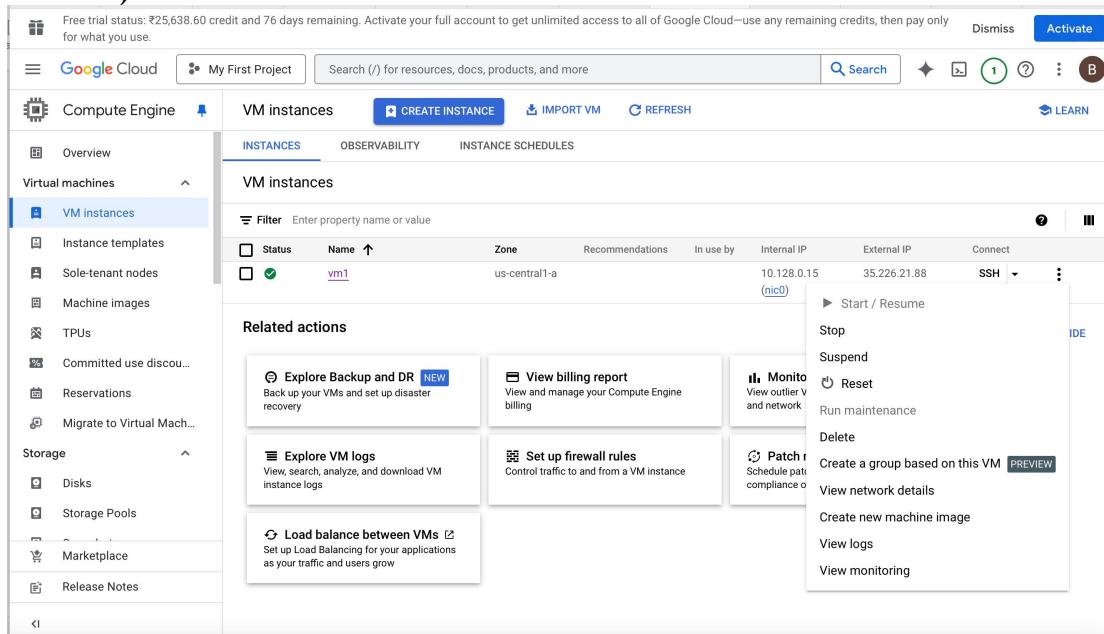
Virtual Machine named vm1 with linux operating system is available for access.



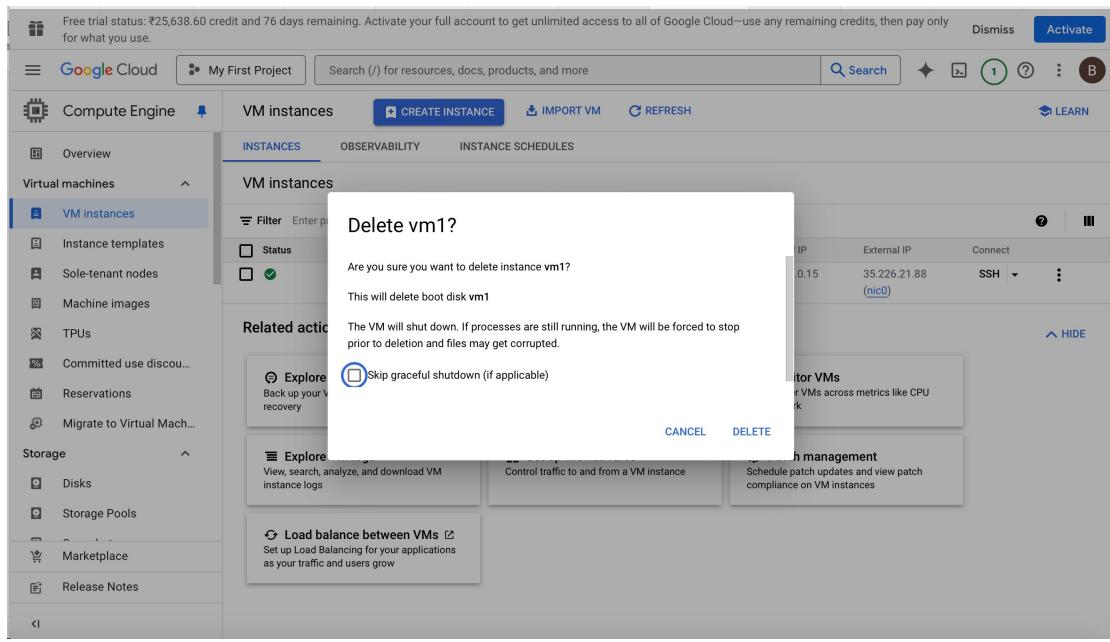
Task- Execute some basic linux commands.

Close the window and back to virtual machine instance.

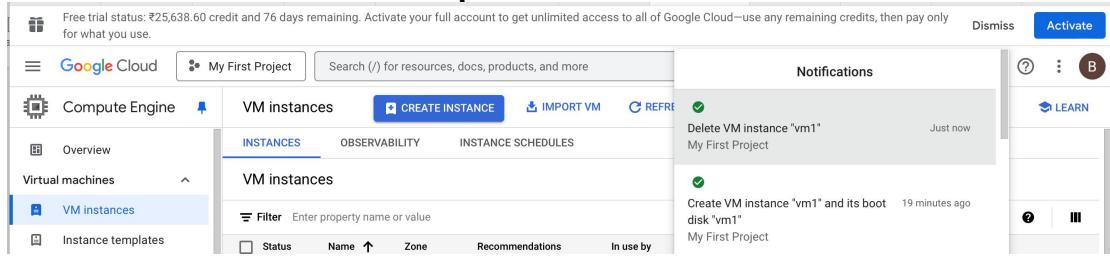
click on more option specified with three dots click on delete(to delete the instance).



Click on delete

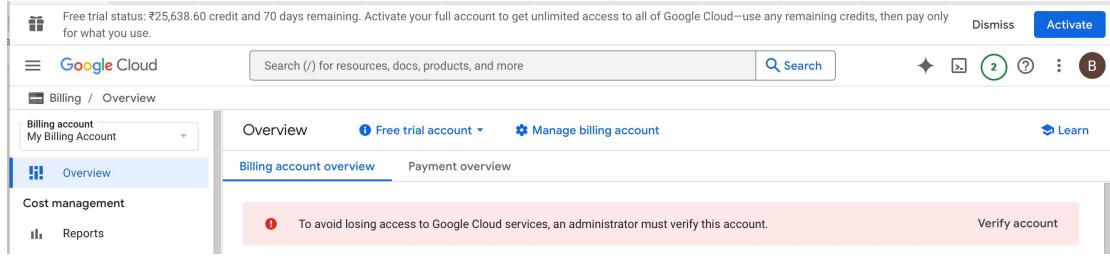


Check in the notification for complete deletion.

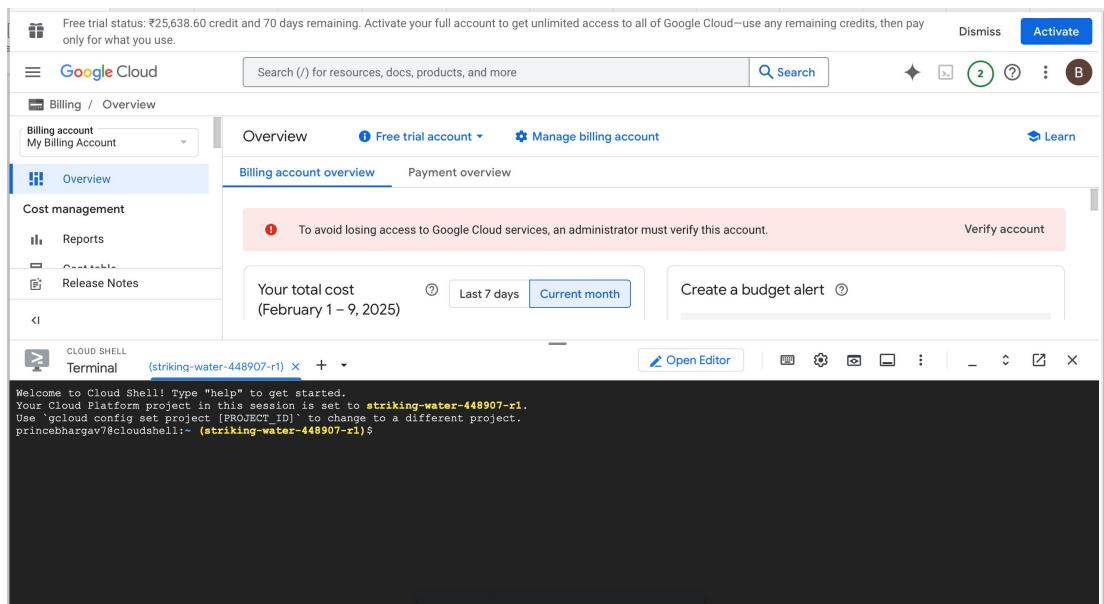


2. Getting Started with Cloud Shell and gcloud: Discover the use of gcloud commands to manage Google Cloud resources from Cloud Shell.

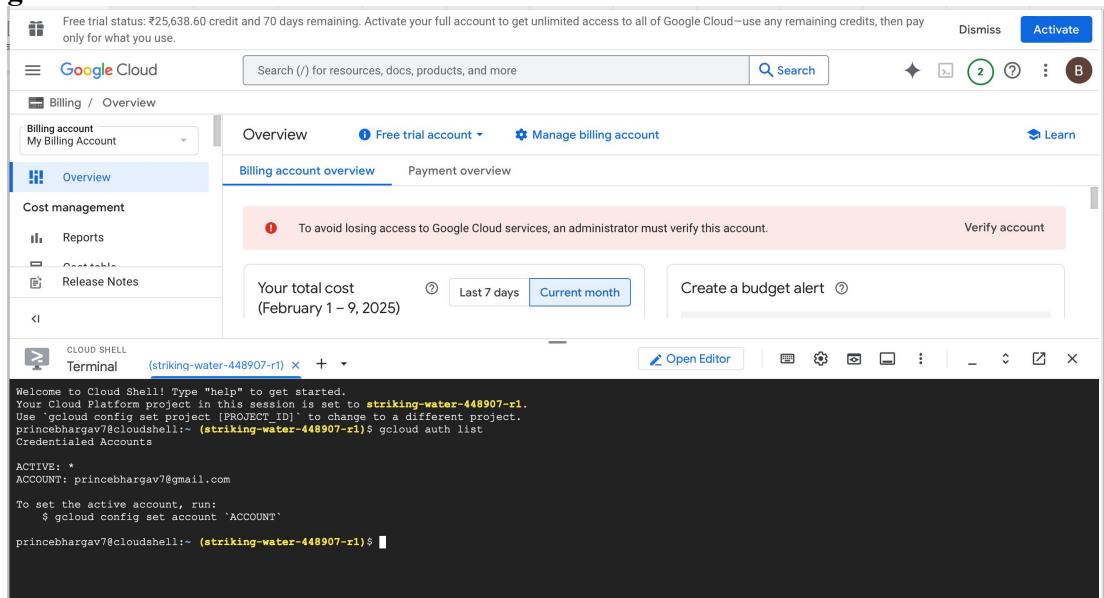
Click on Cloud Shell:



Cloud Shell will be enabled:



gcloud auth list:



gcloud config list project:

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Google Cloud

Billing / Overview

Overview Free trial account Manage billing account

Billing account overview Payment overview

To avoid losing access to Google Cloud services, an administrator must verify this account. Verify account

CLOUD SHELL Terminal (striking-water-448907-r1) +

```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to striking-water-448907-r1.
Use 'gcloud config set project [PROJECT_ID]' to change to a different project.
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ gcloud auth list
Credentialed Accounts

ACTIVE: *
ACCOUNT: princebhargav7@gmail.com

To set the active account, run:
  $ gcloud config set account 'ACCOUNT'

princebhargav7@cloudshell:~ (striking-water-448907-r1)$ gcloud config list project
[core]
project = striking-water-448907-r1

Your active configuration is: (cloudshell-32405)
princebhargav7@cloudshell:~ (striking-water-448907-r1)$
```

**Run the following command to set the project region for this lab:
gcloud config set compute/region REGION**

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Credentialed Accounts

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To set the active account, run:
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princebhargav7@cloudshell:~ (striking-water-448907-r1)$ gcloud config list project
[core]
project = striking-water-448907-r1

Your active configuration is: (cloudshell-32405)
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ gcloud config set compute/region REGION
WARNING: Property validation for compute/region was skipped.
Updated property [compute/region].
princebhargav7@cloudshell:~ (striking-water-448907-r1)$
```

**To create a variable for region, run the following command:
export REGION=REGION**

**Run the following command to create a variable for the zone:
export ZONE=Zone**

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Use `gcloud config set project [PROJECT_ID]` to change to a different project.
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ gcloud auth list
Credentialed Accounts
ACTIVE: *
ACCOUNT: princebhargav7@gmail.com

To set the active account, run:
$ gcloud config set account 'ACCOUNT'

princebhargav7@cloudshell:~ (striking-water-448907-r1)$ gcloud config list project
[core]
project = striking-water-448907-r1

Your active configuration is: [cloudshell-32405]
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ gcloud config set compute/region REGION
WARNING: Property validation for compute/region was skipped.
Updated property [compute/region].
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ export REGION=REGION
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ export ZONE=Zone
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ 
```

Create VM Instance by using following commands:

gcloud compute instances create gcelab2 --machine-type e2-medium --zone=us-central1-a

```
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ gcloud compute instances create gcelab2 --machine-type e2-medium --zone=us-central1-a
Created [https://www.googleapis.com/compute/v1/projects/striking-water-448907-r1/zones/us-central1-a/instances/gcelab2].
NAME: gcelab2
ZONE: us-central1-a
MACHINE_TYPE: e2-medium
PREEMPTIBLE: False
INTERNAL_IP: 10.128.0.16
EXTERNAL_IP: 34.41.95.60
STATUS: RUNNING
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ 
```

Check GCloud Console for newly created VM instance named gcelab2

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Google Cloud

Compute Engine My First Project

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
<input checked="" type="checkbox"/>	gcelab2	us-central1-a			10.128.0.16 (nic0)	34.41.95.60 (nic0)	SSH

Related actions

- Explore Backup and DR NEW
- View billing report
- Monitor VMs
- Explore VM logs
- Set up firewall rules
- Patch management

CLOUD SHELL Terminal (striking-water-448907-r1) +

```
MACHINE_TYPE: e2-medium
PREEMPTIBLE:
INTERNAL_IP: 10.128.0.16
EXTERNAL_IP: 34.41.95.60
STATUS: RUNNING
princebhargav7@cloudshell:~ (striking-water-448907-r1)$ 
```

Delete the instance:

by using following command **gcloud compute instances delete gcelab2 **

```
--keep-disks=all \
--zone=us-central1-a
```

or directly by cloud console:

The screenshot shows the Google Cloud Compute Engine interface. On the left, there's a sidebar with 'Compute Engine' selected. Under 'Virtual machines', 'VM instances' is also selected. The main area shows a table of VM instances with one row highlighted: 'gcelab2' (Status: green checkmark, Zone: us-central1-a, Internal IP: 10.128.0.16, External IP: 34.41.95.60, Connect: SSH). To the right of the table is a vertical sidebar with various actions: Start / Resume, Stop, Suspend, Reset, Delete, View network details, Create new machine image, View logs, and View monitoring. Below the table, there's a section titled 'Related actions' with links like 'Explore Backup and DR', 'View billing report', 'Monitor V and network', 'Explore VM logs', 'Set up firewall rules', 'Patch VM', and 'Load balance between VMs'.

This screenshot is similar to the previous one, but a delete confirmation dialog is overlaid on the page. The dialog title is 'Delete gcelab2?' and it asks 'Are you sure you want to delete instance gcelab2?'. It also states 'This will delete boot disk gcelab2'. At the bottom of the dialog are 'CANCEL' and 'DELETE' buttons. The rest of the interface is visible in the background.

Click on delete:

3. Cloud Functions: Create and deploy a Cloud Function to automate a specific task based on Cloud Storage event.

Search for Cloud Storage:

Click Create Bucket:
provide unique name and click on continue

Free trial status: ₹25,638.60 credit and 69 days remaining. Activate your full account to get unlimited access to all of Google Cloud—use any remaining credits, then pay only for what you use. [Dismiss](#) [Activate](#)

Google Cloud My First Project cloud stora [Search](#) [1](#) [?](#) [B](#)

Cloud Storage [Create a bucket](#)

Overview Buckets Monitoring Settings Marketplace Release Notes

Get Started
Pick a globally unique, permanent name. [Naming guidelines](#)
 Tip: Don't include any sensitive information
 Enable Hierarchical namespace on this bucket Optimize for AI/ML and analytics with a filesystem-like hierarchical structure. This persistent option enables atomic folder renames, faster folder listing, and other enhancements not available in Cloud Storage's standard buckets that uses flat namespace.
Labels (optional)
Labels are key:value pairs that allow you to group related buckets together or with other Cloud Platform resources. [Learn more](#)
[+ ADD LABEL](#)
[CONTINUE](#)

Good to know
 Location pricing Storage rates vary depending on the storage class of your data and location of your bucket. [Pricing details](#)
Current configuration: Multi-region / Standard

Item	Cost
us (multiple regions in United States)	\$0.026 per GB-month
With default replication	\$0.020 per GB written

ESTIMATE YOUR MONTHLY COST

Select Location type and region:

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Google Cloud My First Project cloud stora [Search](#) [1](#) [?](#) [B](#)

Cloud Storage [Create a bucket](#)

Overview Buckets Monitoring Settings Marketplace Release Notes

This choice defines the geographic placement of your data and affects cost, performance, and availability. Cannot be changed later. [Learn more](#)
 Multi-region Highest availability across largest area
 Dual-region High availability and low latency across 2 regions
 Region Lowest latency within a single region
[us-central1 \(Iowa\)](#) [CONTINUE](#)

Location type
 Multi-region Highest availability across largest area
 Dual-region High availability and low latency across 2 regions
 Region Lowest latency within a single region

Add cross-bucket replication via Storage Transfer Service As data is added or changed, replicate it to another bucket, enabling you to store a copy that follows different bucket settings - e.g., region, storage class, etc. [Learn more](#)

Choose a storage class for your data
Default storage class: Standard

Choose how to control access to objects
Public access prevention: On
Access control: Uniform

Choose the storage class and continue:

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Cloud Storage Create a bucket

Location type: Region

Choose a storage class for your data

A storage class sets costs for storage, retrieval, and operations, with minimal differences in uptime. Choose if you want objects to be managed automatically or specify a default storage class based on how long you plan to store your data and your workload or use case. [Learn more](#)

Item	Cost
us-central1 (Iowa)	\$0.020 per GB-month

ESTIMATE YOUR MONTHLY COST

Autoclass Automatically transitions each object to Standard or Nearline class based on object-level activity, to optimize for cost and latency. Recommended if usage frequency may be unpredictable. Can be changed to a default class at any time. [Pricing details](#)

Set a default class Applies to all objects in your bucket unless you manually modify the class per object or set object lifecycle rules. Best when your usage is highly predictable.

Standard Best for short-term storage and frequently accessed data

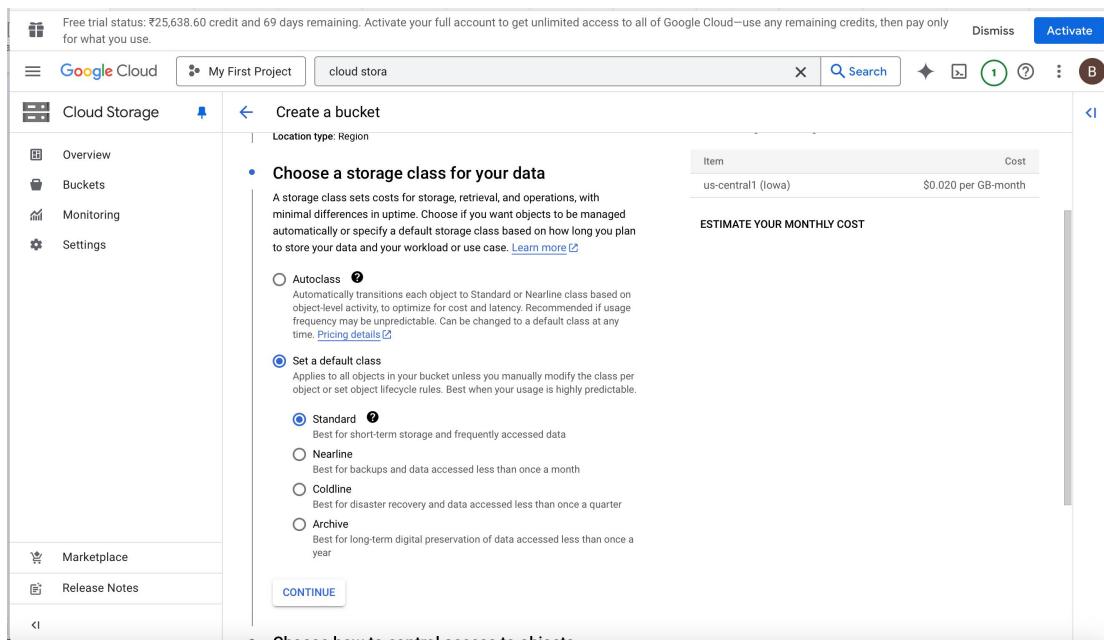
Nearline Best for backups and data accessed less than once a month

Coldline Best for disaster recovery and data accessed less than once a quarter

Archive Best for long-term digital preservation of data accessed less than once a year

CONTINUE

Cloud Storage Overview Buckets Monitoring Settings Marketplace Release Notes



Choose the access control and continue:

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Google Cloud My First Project cloud stor

Cloud Storage Create a bucket

Default storage class: Standard

Choose how to control access to objects

Prevent public access

Restrict data from being publicly accessible via the internet. Will prevent this bucket from being used for web hosting. [Learn more](#)

Enforce public access prevention on this bucket

Access control

Uniform Ensure uniform access to all objects in the bucket by using only bucket-level permissions (IAM). This option becomes permanent after 90 days. [Learn more](#)

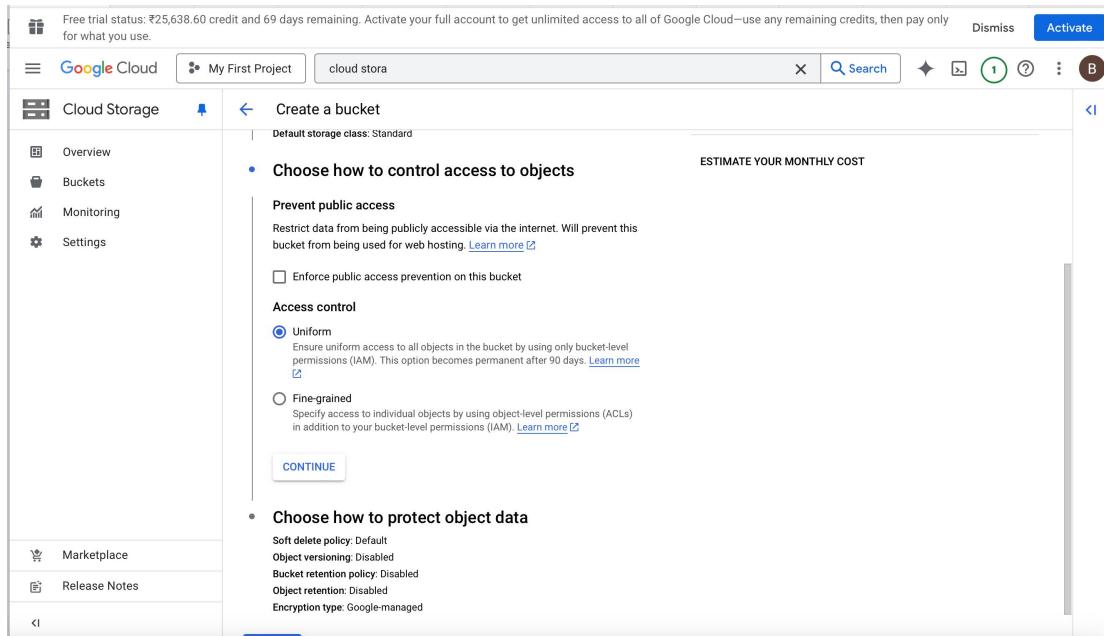
Fine-grained Specify access to individual objects by using object-level permissions (ACLS) in addition to your bucket-level permissions (IAM). [Learn more](#)

CONTINUE

Choose how to protect object data

Soft delete policy: Default
Object versioning: Disabled
Bucket retention policy: Disabled
Object retention: Disabled
Encryption type: Google-managed

Cloud Storage Overview Buckets Monitoring Settings Marketplace Release Notes



Choose the data protect and create:

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Google Cloud My First Project cloud stora [X](#) [Search](#) [B](#)

Cloud Storage [Create a bucket](#)

Overview Buckets Monitoring Settings

Choose how to protect object data

Your data is always protected with Cloud Storage but you can also choose from these additional data protection options to add extra layers of security.

Data protection

Soft delete policy (For data recovery) When enabled, this bucket and its objects will be kept for a specified period after they're deleted and can be restored during this time. [Learn more](#)

Use default retention duration All buckets have a 7 day soft delete duration by default, unless this default has been customized by your organization administrator.

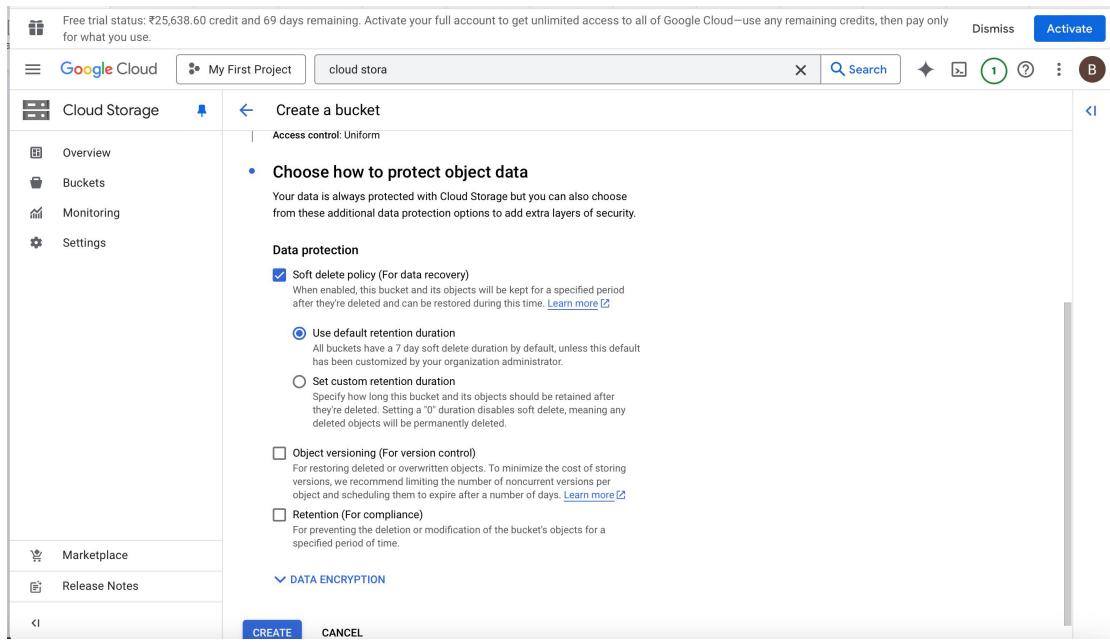
Set custom retention duration Specify how long this bucket and its objects should be retained after they're deleted. Setting a "0" duration disables soft delete, meaning any deleted objects will be permanently deleted.

Object versioning (For version control) For restoring deleted or overwritten objects. To minimize the cost of storing versions, we recommend limiting the number of concurrent versions per object and scheduling them to expire after a number of days. [Learn more](#)

Retention (For compliance) For preventing the deletion or modification of the bucket's objects for a specified period of time.

[DATA ENCRYPTION](#)

[CREATE](#) [CANCEL](#)



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Cloud Storage [Bucket details](#)

Overview Buckets Monitoring Settings

myexampledemobucket-1

Location	Storage class	Public access	Protection
us-central1 (Iowa)	Standard	Not public	Soft Delete

OBJECTS CONFIGURATION PERMISSIONS PROTECTION LIFECYCLE OBSERVABILITY INVENTORY REPORTS

Folder browser

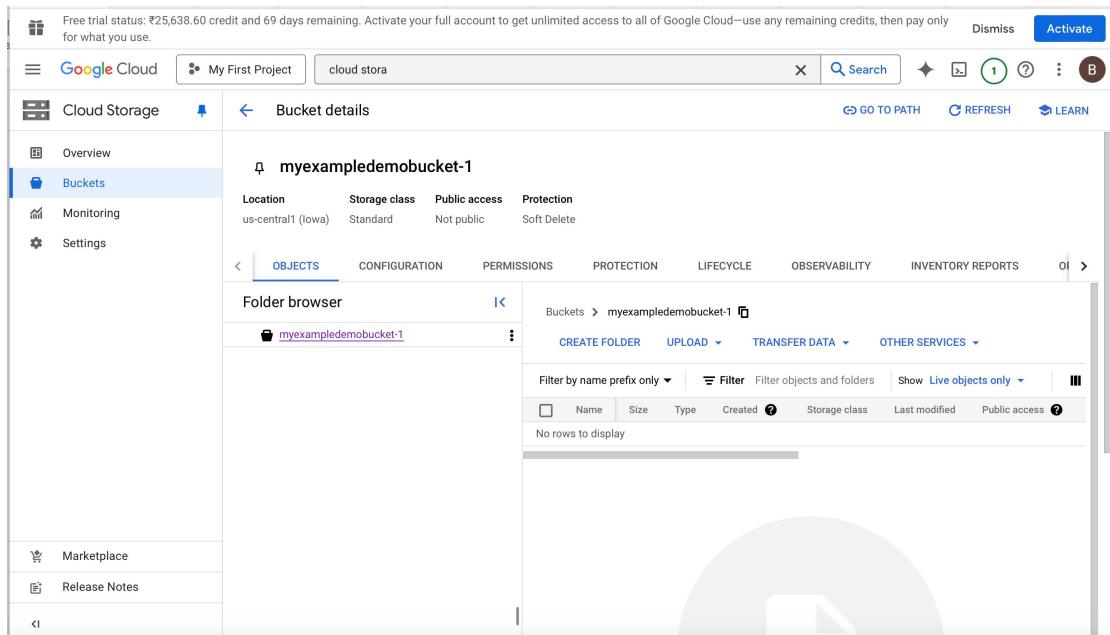
Buckets > myexampledemobucket-1

CREATE FOLDER UPLOAD TRANSFER DATA OTHER SERVICES

Filter by name prefix only Filter objects and folders Show Live objects only

Name Size Type Created Storage class Last modified Public access

No rows to display



Creating a Cloud function:

Search for cloud run functions(server less and event driven):

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Google Cloud My First Project

Cloud Storage Buckets

Search Results

- Cloud Run functions Event-driven serverless functions
- Cloud Run Fully managed application platform
- Cloud Run functions Google
- Cloud Run functions Cloud Run functions allows you to trigger your code from Google...
- Security Command Center Google
- Create and deploy a function with Cloud Code in the Cloud Shell Editor Interactive Tutorial
- Get started with Cloud Run functions Cloud Run functions, formerly known as Cloud Functions (2nd...)
- Call Cloud Run functions directly To support quick iteration and debugging for functions that wer...
- GitLab GitLab
- DiscrimiNAT Firewall Chaser Systems

Showing resource results for **My First Project** only

Create function:

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Google Cloud My First Project cloud run functions Search

Cloud Run functions Functions + CREATE FUNCTION ⌂ REFRESH LEARN RELEASE NOTES

We will be integrating Cloud Functions into Cloud Run UI in the upcoming months.

LEARN MORE GO TO CLOUD RUN

Filter Filter functions

Environment	Name	Last deployed	Region	Recommendation	Trigger	Runtime	Memory allocated
No rows to display							

Welcome to Cloud Run functions!

Cloud Run functions is a lightweight, event-based, asynchronous compute solution that allows you to create small, single-purpose functions that respond to cloud events - without the need to manage a server or a runtime environment.

Get started with Cloud Run functions

- Cloud Run functions overview Help document Write simple, single-purpose functions that are triggered by events and run in a fully managed environment.
- Quickstart Tutorial 5 min Create a function that is triggered by an HTTP request.
- Use cases for Cloud Run functions Help document Explore use cases, best practices, and industry solutions.
- Configuring Cloud Run functions Help document Use configuration options to control the behavior of your Cloud Run functions.
- Local Development Help document Develop your Cloud Run functions locally.
- Deploying Cloud Run functions Help document Learn how to deploy your Cloud Run functions.

Provide the function name and region details:

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Google Cloud My First Project Search (/) for resources, docs, products, and ... Search

Cloud Run functions / Functions / Create LEARN

Create function

Configuration Code

Basics

Environment	Cloud Run function
Function name *	function-1
Region *	us-central1 (Iowa)

Recommended for you

- Cloud Run functions overview Help document Get an overview of Cloud Run functions features.
- Quickstart Tutorial 5 min Create a simple HTTP function.
- Use cases for Cloud Run functions Help document Explore use cases, best practices, and industry solutions.
- Writing Cloud Run functions Help document Learn how to write Cloud Run functions.

Provide the trigger details:

The screenshot shows the 'Create function' wizard in the Google Cloud Platform. The 'Trigger' section is active, with the 'Trigger type' set to 'Cloud Storage'. The 'Event Type' dropdown is open, showing several options related to storage object events. The 'Bucket' input field is highlighted with a red border, indicating it is a required field. The sidebar on the right contains a 'Recommended for you' section with links to 'Cloud Run functions overview', 'Quickstart', 'Use cases for Cloud Run functions', 'Writing Cloud Run functions', and 'Deploying Cloud Run functions'.

**Keep rest of the options default and select next:
Select recent python version and deploy:**

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Google Cloud My First Project Search (/) for resources, docs, products, and ... **Search** Dismiss Activate LEARN Tutorial Recommended for you

Cloud Run functions / Functions / Create Create function Configuration — 2 Code

Runtime Python 3.9 Entry point * hello_gcs TEST FUNCTION

Source code Inline Editor main.py requirements.txt

```

Press Option+F1 for Accessibility Options.

3 # Triggered by a change in a storage bucket
4 @functions_framework.cloud_event
5 def hello_gcs(cloud_event):
6     data = cloud_event.data
7
8     event_id = cloud_event["id"]
9     event_type = cloud_event["type"]
10
11     bucket = data["bucket"]
12     name = data["name"]
13     metageneration = data["metageneration"]
14     timeCreated = data["timeCreated"]
15     updated = data["updated"]
16
17     print(f"Event ID: {event_id}")
18     print(f"Event type: {event_type}")
19     print(f"Bucket: {bucket}")
20     print(f"File: {name}")
21     print(f"Metageneration: {metageneration}")
22     print(f"Created: {timeCreated}")
23     print(f"Updated: {updated}")

```

PREVIOUS DEPLOY CANCEL

Cloud Run functions overview Help document Get an overview of Cloud Run functions features.

Quickstart Tutorial 5 min Create a simple HTTP function.

Use cases for Cloud Run functions Help document Explore use cases, best practices, and industry solutions.

Writing Cloud Run functions Help document Set up your development environment, structure your source code, and specify dependencies for different runtimes.

Deploying Cloud Run functions Help document Deploy your Cloud Run functions.

Calling Cloud Run functions Help document

Cloud Run function created and deployed:

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Cloud Run functions / Functions / Details: function-1 Function details EDIT DELETE COPY

function-1 Cloud Run function (Deployed at Feb 16, 2025, 7:03:23 AM) URL: https://us-central1-striking-water-448907-r1.cloudfunctions.net/function-1 View in Cloud Run function-1

METRICS DETAILS SOURCE VARIABLES TRIGGER PERMISSIONS LOGS TESTING

Predefined 1 hour 6 hours 12 hours 1 day 2 days 4 days 7 days 14 days 30 days Annotations (1)

Invocations/Second No data is available for the selected time frame. UTC+6:30 6:10 AM 6:20 AM 6:30 AM 6:40 AM 6:50 AM 7:00 AM O time series

Execution time No data is available for the selected time frame. UTC+6:30 6:10 AM 6:20 AM 6:30 AM 6:40 AM 6:50 AM 7:00 AM O time series

Memory utilization Instance count

Go to the cloud storage bucket and upload a file:

The screenshot shows the Google Cloud Storage 'Bucket details' page for 'myexampledemobucket-1'. The left sidebar includes 'Overview', 'Buckets' (selected), 'Monitoring', and 'Settings'. The main area displays bucket metadata: Location (us-central1 (Iowa)), Storage class (Standard), Public access (Not public), and Protection (Soft Delete). A 'Folder browser' section shows a single item: 'myexampledemobucket-1'. Below it are tabs for 'OBJECTS', 'CONFIGURATION', 'PERMISSIONS', 'PROTECTION', 'LIFECYCLE', 'OBSERVABILITY', and 'INVENTORY REPORTS'. A search bar at the top right contains 'Search (/) for resources, docs, products, and more'.

This screenshot is identical to the one above, but it includes a success message at the bottom: '1 file successfully uploaded'. The file listed is 'google-cloud-platform-official-icon' (1.3 MB, application/vnd.openxmlformats-officedc).

Select the previously created cloud run function and check the log details, File creation and updation will be recorded in the log details:

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Google Cloud My First Project Search (/) for resources, docs, products, and more Search Dismiss Activate

Cloud Run functions / Functions / Details: function-1

Function details EDIT DELETE COPY LEARN

function-1 Cloud Run function (Deployed at Feb 16, 2025, 7:03:23 AM) URL: https://us-central1-striking-water-448907-r1.cloudfunctions.net/function-1 View in Cloud Run function-1

METRICS DETAILS SOURCE VARIABLES TRIGGER PERMISSIONS LOGS TESTING

Logs Severity Default Filter Search all fields and values

SEVERITY	TIMESTAMP	SUMMARY
> i	2025-02-16 07:02:14.189 IST	Cloud Functions CreateFunction us-central1:function-1 princebhargav7@gmail.com {@type: type.googleapis.com/google.cloud.audit.AuditLog, authenticationInfo: {principal: "princebhargav7@gmail.com"}, logName: "projects/us-central1/logs/cloudaudit.googleapis.com%2Fcloud-functions", method: "POST", methodName: "google.cloud.functions.v1.CreateFunction", resource: "projects/us-central1/functions/function-1", sourceService: "cloud-functions.googleapis.com", timestamp: "2025-02-16T07:02:14.189Z"} (HTTP request: POST https://us-central1-striking-water-448907-r1.cloudfunctions.net/function-1)
> i	2025-02-16 07:02:47.951 IST	Cloud Run CreateInternalService function-1 service-691688364445#gcf-admin-robot... {@type: type.googleapis.com/google.cloud.audit.AuditLog, authenticationInfo: {principal: "691688364445@gcf-admin-robot"}, logName: "projects/us-central1/logs/cloudaudit.googleapis.com%2Finternal-service", method: "POST", methodName: "google.cloud.internalservice.v1.CreateInternalService", resource: "projects/us-central1/internalServices/function-1", sourceService: "internal-service.googleapis.com", timestamp: "2025-02-16T07:02:47.951Z"} (HTTP request: POST https://us-central1-striking-water-448907-r1.cloudfunctions.net/function-1)
> i	2025-02-16 07:03:11.718 IST	Default STARTUP TCP probe succeeded after 1 attempt for container 'worker' on port 8080.
> i	2025-02-16 07:03:11.808 IST	Cloud Run CreateInternalService function-1-00001-tad {@type: type.googleapis.com/google.cloud.audit.AuditLog, methodName: /InternalServices.CreateInternalService}
> i	2025-02-16 07:03:13.131 IST	Cloud Run CreateInternalService function-1 {@type: type.googleapis.com/google.cloud.audit.AuditLog, methodName: /InternalServices.CreateInternalService}
> i	2025-02-16 07:03:23.335 IST	Cloud Functions CreateFunction us-central1:function-1 princebhargav7@gmail.com {@type: type.googleapis.com/google.cloud.audit.AuditLog, authenticationInfo: {principal: "princebhargav7@gmail.com"}, logName: "projects/us-central1/logs/cloudaudit.googleapis.com%2Fcloud-functions", method: "POST", methodName: "google.cloud.functions.v1.CreateFunction", resource: "projects/us-central1/functions/function-1", sourceService: "cloud-functions.googleapis.com", timestamp: "2025-02-16T07:03:23.335Z"} (HTTP request: POST https://us-central1-striking-water-448907-r1.cloudfunctions.net/function-1)
> i	2025-02-16 07:06:24.922 IST	POST 200 130 B 168 ms APIs-Google; (<https://developers.google.com/functions/>_GCP_CloudEventsMode=GCS_NOTIFICATION)
> *	2025-02-16 07:06:25.007 IST	Event ID: 1395227825929473
> *	2025-02-16 07:06:25.008 IST	Event type: google.cloud.storage.object.v1.finalized
> *	2025-02-16 07:06:25.008 IST	Bucket: myexampledembucket-1
> *	2025-02-16 07:06:25.008 IST	File: google-cloud-platform-official-icons-and-sample-diagrams.pptx
> *	2025-02-16 07:06:25.008 IST	Metageneration: 1
> *	2025-02-16 07:06:25.008 IST	Created: 2025-02-16T01:36:24.288Z
> *	2025-02-16 07:06:25.008 IST	Updated: 2025-02-16T01:36:24.288Z

Delete all the cloud Run Functions and Buckets created: