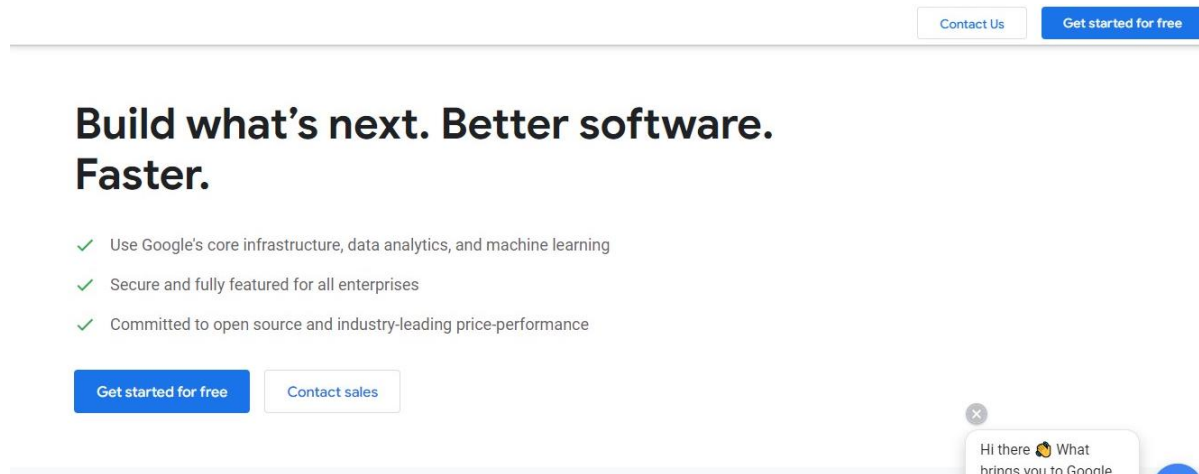


## Module 1 – Assignment

Go to [console.cloud.google.com](https://console.cloud.google.com) and sign up for free.

Click on get started for free.



Fill all the details and verify your account using credit card details.

Country

India

What best describes your organization or needs?

Please select

Terms of Service

☐ I have read and agree to the [Google Cloud Platform Free Trial Terms of Service](#).

Required to continue

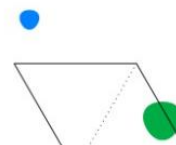
CONTINUE

### \$300 credit for free

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

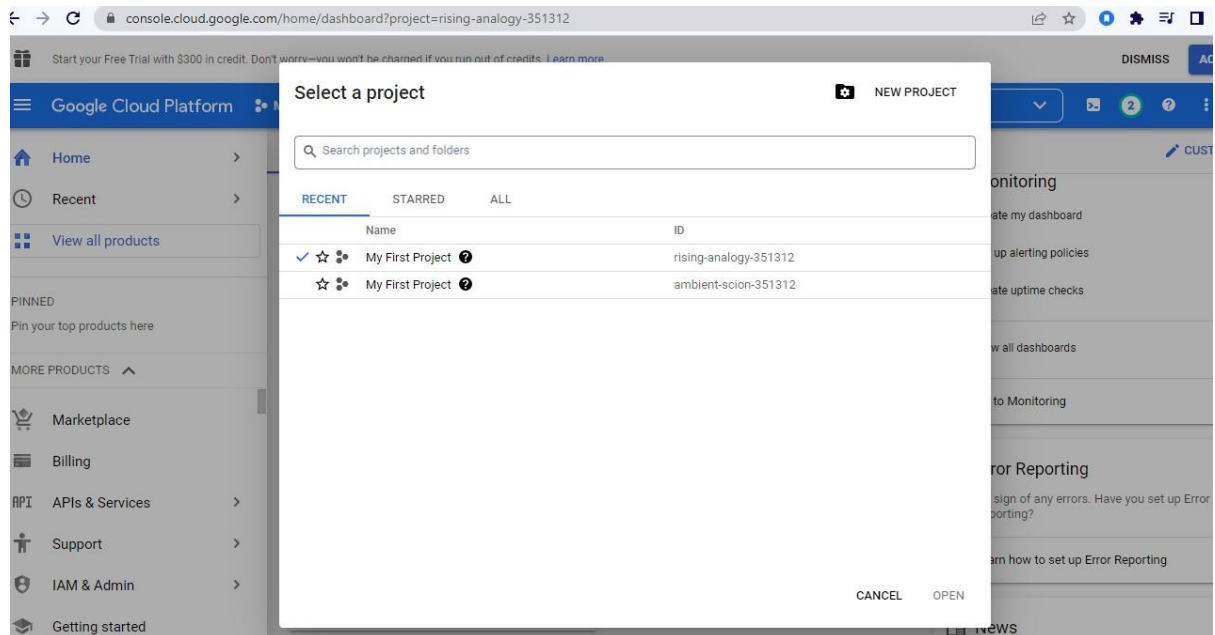
### No autocharge after free trial ends

We ask you for your credit card to make sure you are not a robot. You won't be charged unless you manually upgrade to a paid account.



After verifying the account. I display the console page of GCP.

Now, Go to My first project and create a new project.



Click on New Project. Provide project name.


The screenshot shows the 'New Project' page in the Google Cloud Platform console. At the top, there's a navigation bar with the Google Cloud Platform logo and a search bar. Below the navigation bar, the page title is 'New Project'. A warning message states: 'You have 10 projects remaining in your quota. Request an increase or delete projects. [Learn more](#)'. Below this, there's a 'Project name' field with the value 'Prac-Project' and a question mark icon. Underneath the name field, it says 'Project ID: prac-project-351313. It cannot be changed later. [EDIT](#)'. There's also a 'Location' field with the value 'No organization' and a 'BROWSE' button. At the bottom, there are 'CREATE' and 'CANCEL' buttons.

Project has been created.

The screenshot shows the Google Cloud Platform dashboard for the newly created project 'Prac-Project'. The dashboard has a top navigation bar with the project name 'My First Project' and a search bar. Below the navigation bar, there are tabs for 'DASHBOARD', 'ACTIVITY', and 'RECOMMENDATIONS'. The 'DASHBOARD' tab is selected. The dashboard content includes a 'Project info' section with the project name 'Prac-Project' and a 'Project ID' 'prac-project-351313'. There's also a 'API APIs' section. A notification banner at the top right says 'Create Project: Prac-Project' with a 'SELECT PROJECT' button.

The screenshot shows the Google Cloud Platform dashboard for the newly created project 'Prac-Project'. The dashboard has a top navigation bar with the project name 'Prac-Project' and a search bar. Below the navigation bar, there are tabs for 'DASHBOARD', 'ACTIVITY', and 'RECOMMENDATIONS'. The 'DASHBOARD' tab is selected. The dashboard content includes a 'Project info' section with the project name 'Prac-Project', project number '360386619929', and project ID 'prac-project-351313'. There's also a 'API APIs' section showing 'Requests (requests/sec)' and a 'Google Cloud Platform status' section. A notification banner at the top right says 'Create Project: Prac-Project' with a 'SELECT PROJECT' button.

Launching VM from gcloud local . For this we need o install cloud SDK.Go to browser and install it.

[Why Google](#)[Solutions](#)[Products](#)[Pricing](#)[Getting Started](#)

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Cloud SDK

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# Cloud SDK

Libraries and tools for interacting with Goo services.

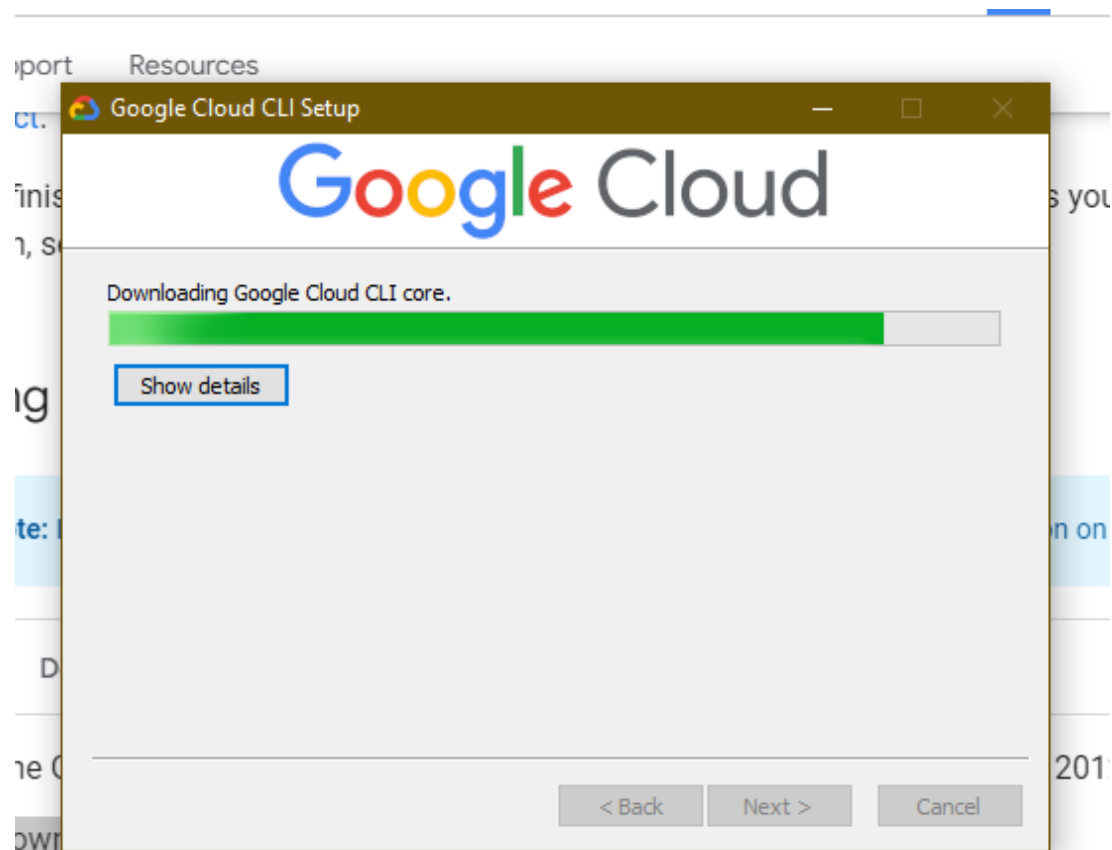
Cloud SDK: Libraries and Command Line Interface

Key features

All features

[Try it free](#) [Contact sales](#)

Cloud sdk installed.



Gcloud CLI is ready. We need to configure it.

```
C:\WINDOWS\SYSTEM32\cmd.exe - gcloud init
Welcome to the Google Cloud CLI! Run "gcloud -h" to get the list of available commands.
----
```

Gcloud configured.

```
C:\WINDOWS\SYSTEM32\cmd.exe
Your current project has been set to: [prac-project-351313].
Do you want to configure a default Compute Region and Zone? (Y/n)? n
Created a default .boto configuration file at [C:\Users\pragya\.boto]. See this file and
[https://cloud.google.com/storage/docs/gsutil/commands/config] for more
information about configuring Google Cloud Storage.
Your Google Cloud SDK is configured and ready to use!

* Commands that require authentication will use arpitacs0024@gmail.com by default
* Commands will reference project 'prac-project-351313' by default
Run 'gcloud help config' to learn how to change individual settings

This gcloud configuration is called [default]. You can create additional configurations if you work with multiple accounts and/or projects.
Run 'gcloud topic configurations' to learn more.

Some things to try next:

* Run 'gcloud --help' to see the Cloud Platform services you can interact with. And run 'gcloud help COMMAND' to get help on any gcloud command.
* Run 'gcloud topic --help' to learn about advanced features of the SDK like arg files and output formatting
* Run 'gcloud cheat-sheet' to see a roster of go-to 'gcloud' commands.

C:\Users\pragya\AppData\Local\Google\Cloud SDK>gcloud --version
Google Cloud SDK 387.0.0
bq 2.0.74
core 2022.05.20
gsutil 5.10

C:\Users\pragya\AppData\Local\Google\Cloud SDK>
```

Run the command “gcloud init” to initialize the things.

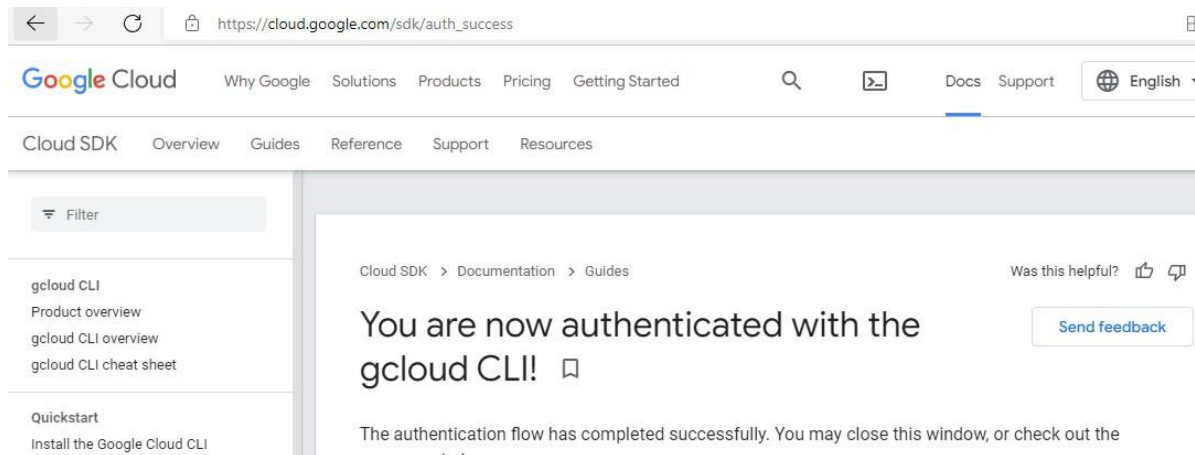
```
C:\WINDOWS\SYSTEM32\cmd.exe - gcloud init

C:\Users\pragya\AppData\Local\Google\Cloud SDK>gcloud init
Welcome! This command will take you through the configuration of gcloud.

Settings from your current configuration [default] are:
accessibility:
  screen_reader: 'False'
core:
  account: arpitacs0024@gmail.com
  disable_usage_reporting: 'False'
  project: prac-project-351313

Pick configuration to use:
[1] Re-initialize this configuration [default] with new settings
[2] Create a new configuration
Please enter your numeric choice:
```

Authenticate gcloud sdk and select our project.



```

Your browser has been opened to visit:
https://accounts.google.com/o/oauth2/auth?response_type=code&client_id=32555940559.apps.googleusercontent.com&redirect_uri=http%3A%2F%2Flocalhost%3A8085%2F&scope=openid+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fuserinfo.email+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcloud-platform+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fappengine.admin+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fsqlservice.login+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcompute+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Faccounts.reauth&state=cSQZy0aRTkczEn5PVKQ40dZQ0b1LqR&access_type=offline&code_challenge=3PC_j5IPK1uP2excvt-m88V1ey2Xjgsr88rtmHy1Uhw&code_challenge_method=S256

You are logged in as: [arpitacs0024@gmail.com].

Pick cloud project to use:
[1] ambient-scion-351312
[2] arctic-task-351314
[3] core-gearbox-351412
[4] mineral-parser-351314
[5] prac-project-351313
[6] rising-analogy-351312
[7] Enter a project ID
[8] Create a new project
Please enter numeric choice or text value (must exactly match list item): 5

Your current project has been set to: [prac-project-351313].

Do you want to configure a default Compute Region and Zone? (Y/n)?

```

To check account using.

```

C:\Users\pragya\AppData\Local\Google\Cloud SDK>gcloud auth list
Credentialed Accounts
ACTIVE ACCOUNT
* arpitacs0024@gmail.com

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

C:\Users\pragya\AppData\Local\Google\Cloud SDK>

```

Instance has been created from the gcloud local.

```

C:\Users\pragya\AppData\Local\Google\Cloud SDK>gcloud compute instances create my-instance2arpi --zone europe-west2-a
Created [https://www.googleapis.com/compute/v1/projects/prac-project-351313/zones/europe-west2-a/instances/my-instance2arpi].
NAME          ZONE          MACHINE_TYPE  PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP  STATUS
my-instance2arpi  europe-west2-a  n1-standard-1    10.154.0.3    34.105.222.244  RUNNING

C:\Users\pragya\AppData\Local\Google\Cloud SDK>

```

VM instances

CREATE INSTANCE IMPORT VM REFRESH OPERATIONS HELP ASSISTANT SHOW INFO

INSTANCES INSTANCE SCHEDULES

VM instances are highly configurable virtual machines for running workloads on Google infrastructure. [Learn more](#)

Filter Enter property name or value

Status	Name	Zone	Recommendations	In use by	Internal IP	External IP	Connect
✓	instance-arpi	asia-south1-c			10.160.0.2 (nic0)	34.93.126.57 (nic0)	SSH
✓	learning-gce-cloudshell	europa-west2-a			10.154.0.2 (nic0)	34.142.28.107 (nic0)	SSH
✓	my-instance2arpi	europa-west2-a			10.154.0.3 (nic0)	34.105.222.244 (nic0)	SSH

Related actions

Go to below icon to open cloud shell. Launching VM from gcloud browser.

console.cloud.google.com/home/dashboard?project=prac-project-351313&cloudshell=true

Google Cloud Platform Prac-Project Search Products, resources, docs (/)

DASHBOARD ACTIVITY RECOMMENDATIONS

Project info

Project name: Prac-Project

Project number: 360386619929

Project ID: prac-project-351313

ADD PEOPLE TO THIS PROJECT

APIs

Requests (requests/sec)

1.0

0.8

0.6

No data is available for the selected time frame.

0.4

0.2

Google Cloud Platform status

Google BigQuery

BigQuery degraded in us-multiregion, europe-west1, asia-northeast1, asia-southeast1, asia-southeast2, eu-canary, europe-west2, europe-west6, europe-west9, us-central1, us-west4. Customers will experience increased Query latency at possible job failures.

Began at 2022-05-24 (22:57:50)

All times are US/Pacific

Data provided by status.cloud.google.com

Cloud Shell

Manage your infrastructure and develop your applications from any browser with Cloud Shell.

Cloud Shell comes with Cloud SDK gcloud, Cloud Code, an online Code Editor and other utilities pre-installed, fully authenticated and up-to-date. [Learn more](#).

Cloud Shell is free for all users.

CONTINUE

WELCOME TO CLOUD SHELL! Type "help" to get started. Your Cloud Platform project in this session is set to **prac-project-351313**. Use "gcloud config set project [PROJECT\_ID]" to change to a different project.

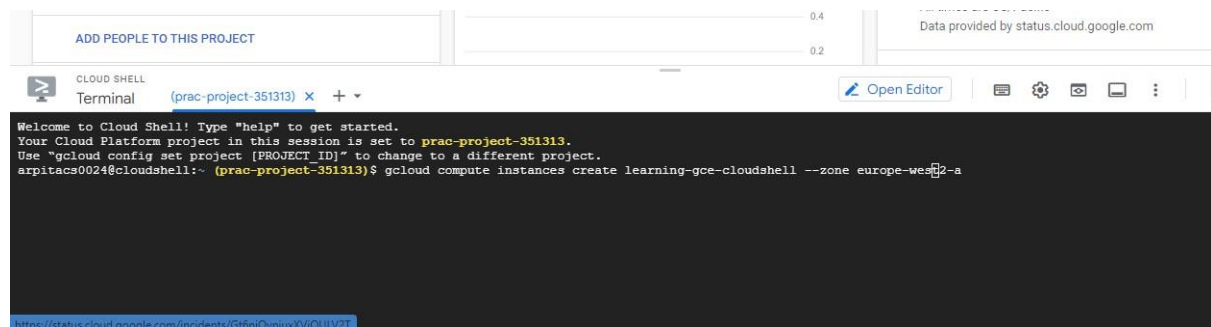
arpitacs0024@cloudshell:~ (prac-project-351313) \$

Click here to see details about your Cloud Shell session and usage quota

Got it!



Create an instance using cloudshell. Run the below command.

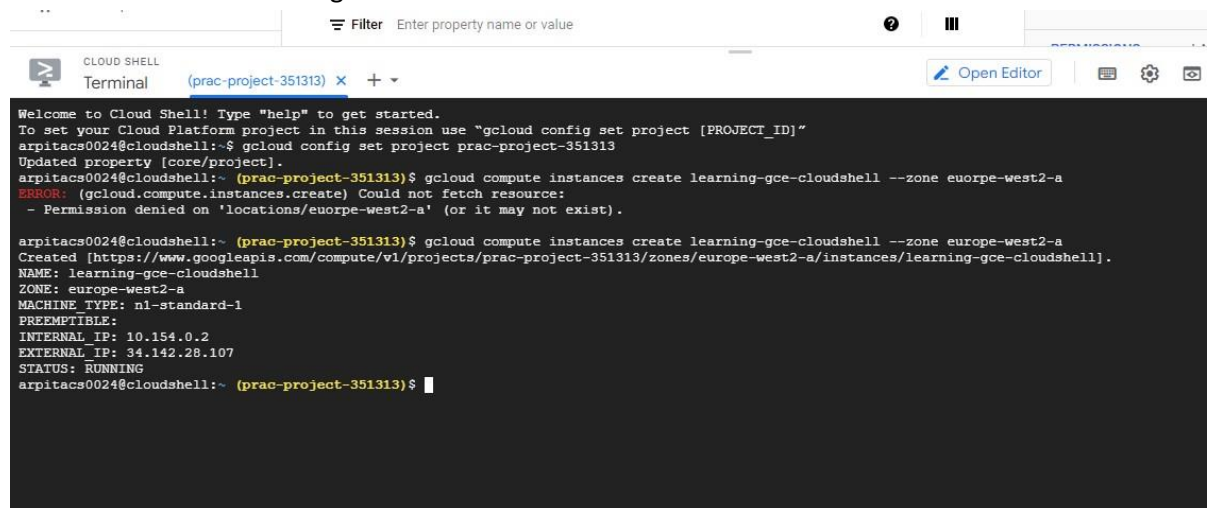


Cloud Shell interface showing a terminal window for project 'prac-project-351313'. The terminal displays the following text:

```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to prac-project-351313.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
arpitacs0024@cloudshell:~ (prac-project-351313) $ gcloud compute instances create learning-gce-cloudshell --zone europe-west2-a
```

A link to a status page is visible at the bottom: <https://status.cloud.google.com/incidents/Gt6njQyniuxXV/QUJIV2T>

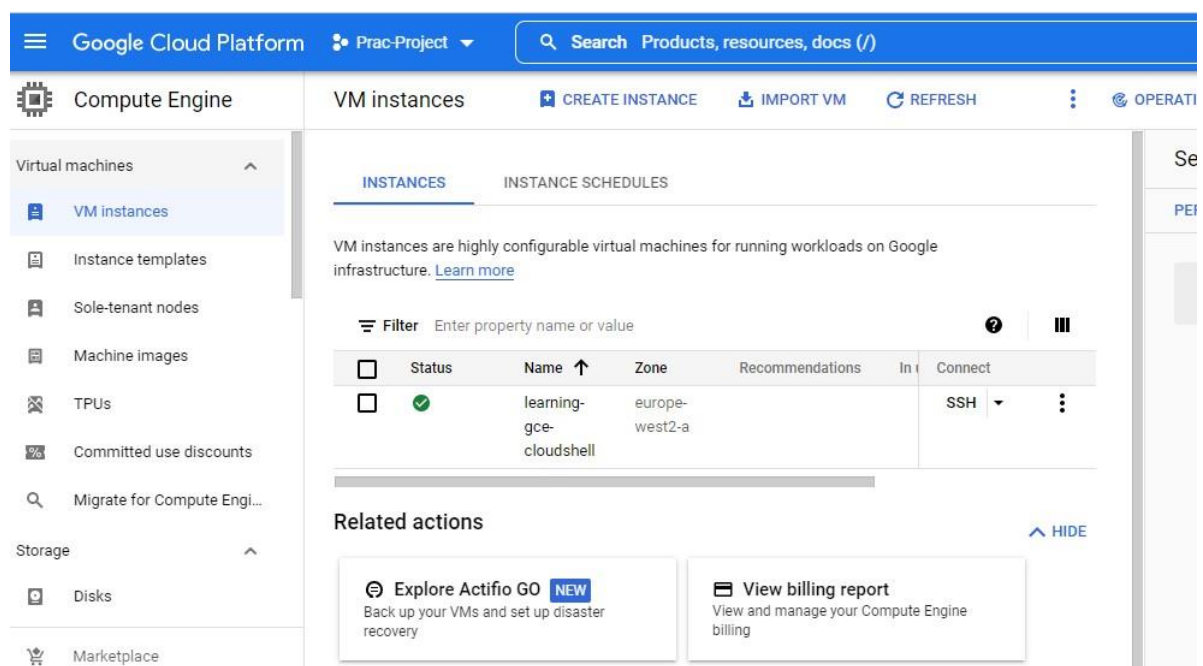
VM has been created from gcloud browser.



Cloud Shell interface showing a terminal window for project 'prac-project-351313'. The terminal displays the following text:

```
Welcome to Cloud Shell! Type "help" to get started.
To set your Cloud Platform project in this session use "gcloud config set project [PROJECT_ID]"
arpitacs0024@cloudshell:~ $ gcloud config set project prac-project-351313
Updated property [core/project].
arpitacs0024@cloudshell:~ (prac-project-351313) $ gcloud compute instances create learning-gce-cloudshell --zone europe-west2-a
ERROR: (gcloud.compute.instances.create) Could not fetch resource:
- Permission denied on 'locations/europe-west2-a' (or it may not exist).

arpitacs0024@cloudshell:~ (prac-project-351313) $ gcloud compute instances create learning-gce-cloudshell --zone europe-west2-a
Created [https://www.googleapis.com/compute/v1/projects/prac-project-351313/zones/europe-west2-a/instances/learning-gce-cloudshell].
NAME: learning-gce-cloudshell
ZONE: europe-west2-a
MACHINE TYPE: n1-standard-1
PREEMPTIBLE:
INTERNAL IP: 10.154.0.2
EXTERNAL IP: 34.142.28.107
STATUS: RUNNING
arpitacs0024@cloudshell:~ (prac-project-351313) $
```



Google Cloud Platform console interface showing the 'Compute Engine' section. The 'VM instances' tab is selected, displaying a table of instances.

Status	Name	Zone	Recommendations	Connect
<input checked="" type="checkbox"/>	learning-gce-cloudshell	europe-west2-a		SSH

Related actions:

- Explore Actifio GO: Back up your VMs and set up disaster recovery
- View billing report: View and manage your Compute Engine billing

Let's create VM from web console . Go to Compute engine select VM and Click on Create instances.

Google Cloud Platform | Prac-Project | Search | Products, resources, docs (/)

Compute Engine | VM instances | **CREATE INSTANCE** | IMPORT VM | REFRESH | OPERATIONS

Virtual machines

- VM instances
- Instance templates
- Sole-tenant nodes
- Machine images
- TPUs
- Committed use discounts
- Migrate for Compute Engi...

Storage

- Disks
- Marketplace
- Release Notes

INSTANCES | INSTANCE SCHEDULES

VM instances are highly configurable virtual machines for running workloads on Google infrastructure. [Learn more](#)

Filter Enter property name or value

Status	Name	Zone	Recommendations	In	Connect
<input checked="" type="checkbox"/>	learning-gce-cloudshell	europe-west2-a			SSH

Related actions

- Explore Actifio GO **NEW**  
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, analyze, and download VM instance logs

Provide name and regions and leave everything default.

Create an instance

To create a VM instance, select one of the options:

- New VM instance**  
Create a single VM instance from scratch
- New VM instance from template  
Create a single VM instance from an existing template
- New VM instance from machine image  
Create a single VM instance from an existing machine image
- Marketplace  
Deploy a ready-to-go solution onto a VM instance

Name \*  
instance-arpi

Labels ?  
[+ ADD LABELS](#)

Region \*  
asia-south1 (Mumbai)

Zone \*  
asia-south1-c

Region is permanent  
Zone is permanent

Machine configuration

Machine family  
**GENERAL-PURPOSE** | COMPUTE-OPTIMIZED | MEMORY-OPTIMIZED | GPU

Machine types for common workloads, optimized for cost and flexibility

Series  
E2

CPU platform selection based on availability

Machine type  
e2-micro (2 vCPU, 1 GB memory)

	vCPU	Memory
	1 shared core	1 GB

## Confidential VM service


☐ Enable the Confidential Computing service on this VM instance.

## Container

Deploy a container image to this VM instance

DEPLOY CONTAINER

## Boot disk

Name	instance-arpi
Type	New balanced persistent disk
Size	10 GB
Image	 Debian GNU/Linux 11 (bullseye)

CHANGE

## Identity and API access

### Service accounts

Service account

Compute Engine default service account

Requires the Service Account User role (roles/iam.serviceAccountUser) to be set for users who want to access VMs with this service account. [Learn more](#)

Mo

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Now, create the instance.

## Create an instance

create a VM instance, select one of the options:

- New VM instance**  
Create a single VM instance from scratch
- New VM instance from template  
Create a single VM instance from an existing template
- New VM instance from machine image  
Create a single VM instance from an existing machine image
- Marketplace  
Deploy a ready-to-go solution onto a VM instance

### Service accounts ?

Service account

Compute Engine default service account

Requires the Service Account User role (roles/iam.serviceAccountUser) to be set for users who want to access VMs with this service account. [Learn more](#)

### 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

✓ NETWORKING, DISKS, SECURITY, MANAGEMENT, SOLE-TENANCY

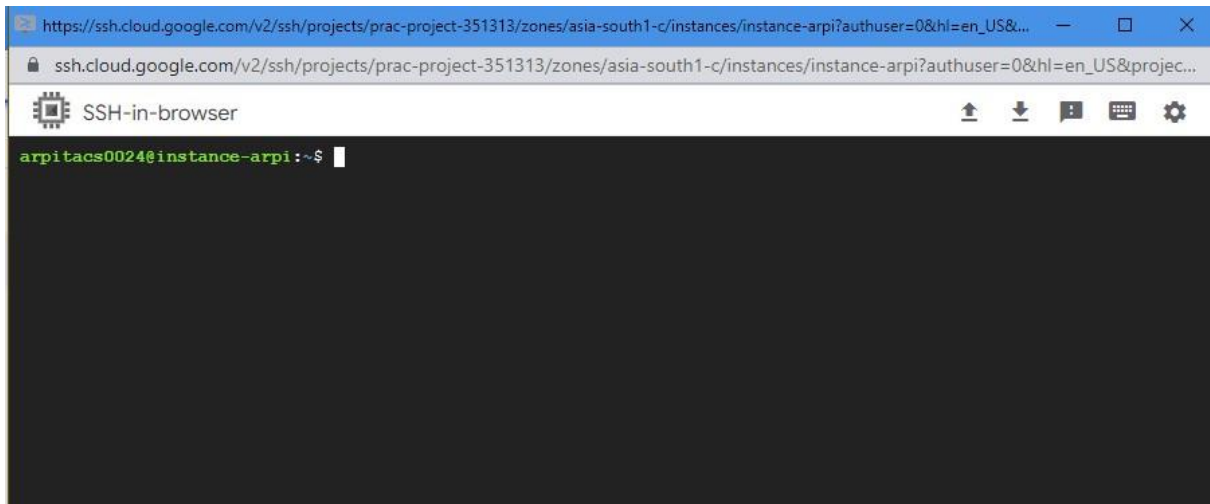
Your free trial credit will be used for this VM instance. [GCP Free Tier](#)

**CREATE** CANCEL EQUIVALENT COMMAND LINE ▾

Instance created successfully from web console.

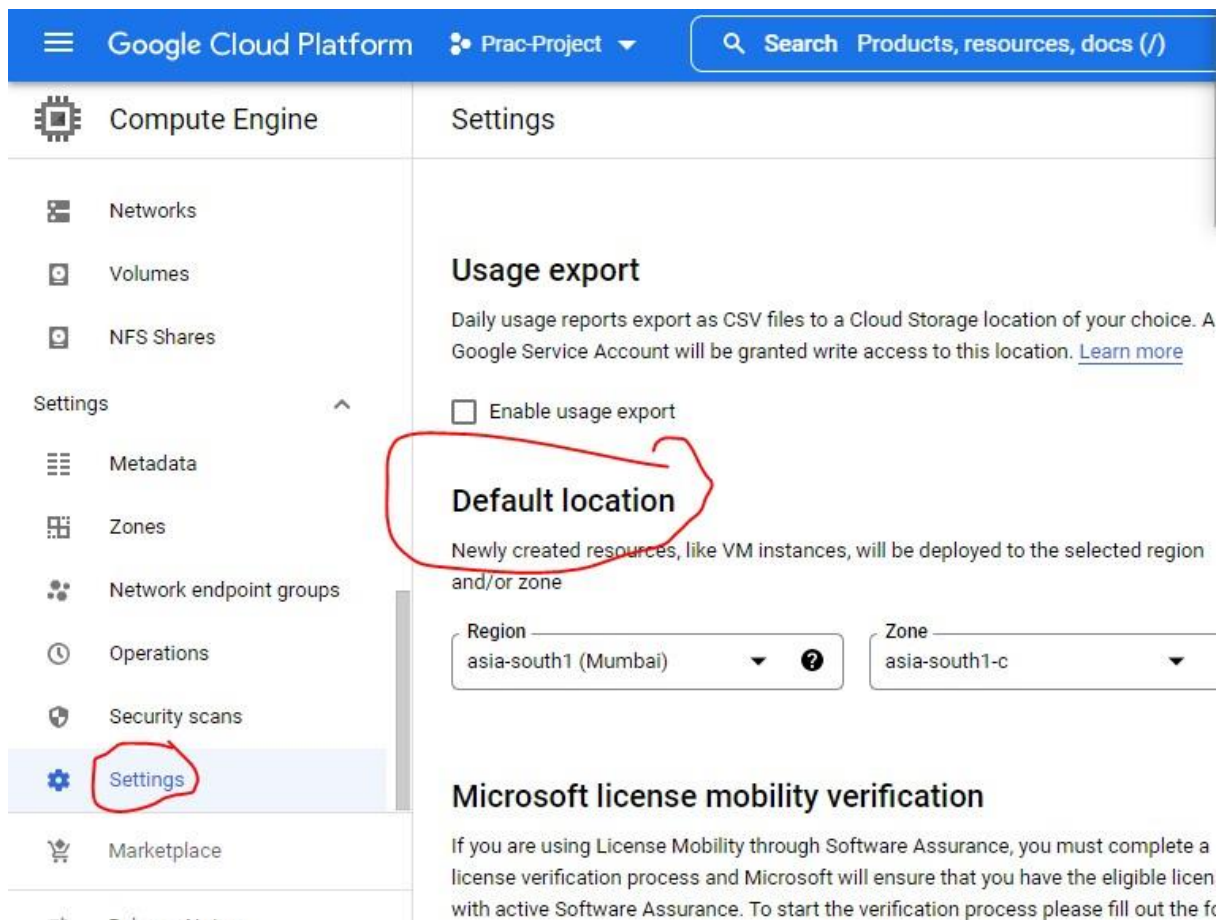
VM instances							
<div> <div>INSTANCES</div> <div>INSTANCE SCHEDULES</div> </div> <p>VM instances are highly configurable virtual machines for running workloads on Google infrastructure. <a href="#">Learn more</a></p> <p>Filter Enter property name or value</p>							
<input type="checkbox"/>	Status	Name ↑	Zone	Recommendations	In use by	Internal IP	Connect
<input type="checkbox"/>	✓	instance-arpi	asia-south1-c			10.16 (nic0)	SSH ▾
<input type="checkbox"/>	✓	learning-gce-cloudshell	eu-west2-a			10.15 (nic0)	SSH ▾

Logged into the VM from SSH option.



Change the default region of VM deployment to asia-south-1c.

Go to settings and change default location.



Next VM we create, it will create in this set location only.