gcloud projects add-iam-policy-binding terraform-multicloud-lab\

--member="serviceAccount:terraform-sa@terraform-multicloud-lab.iam.gserviceaccount.com" \

--role="roles/editor"

gcloud iam service-accounts keys create key.json \

[--iam-account=terraform-sa@terraform-multicloud-lab.iam.gserviceaccount.com](mailto:--iam-account=terraform-sa@terraform-multicloud-lab.iam.gserviceaccount.com)

environment = devshell

Your active configuration is: [cloudshell-7290]

vaishnavitiwari501@cloudshell:~ (terraform-multicloud-lab)$ gcloud iam service-accounts create terraform-sa --display-name "Terraform Service Account"

Created service account [terraform-sa].

vaishnavitiwari501@cloudshell:~ (terraform-multicloud-lab)$ gcloud projects add-iam-policy-binding terraform-multicloud-lab\

--member="serviceAccount:terraform-sa@terraform-multicloud-lab.iam.gserviceaccount.com" \

--role="roles/editor"

Updated IAM policy for project [terraform-multicloud-lab].

bindings:

- members:

- serviceAccount:service-302766346268@compute-system.iam.gserviceaccount.com

role: roles/compute.serviceAgent

- members:

- serviceAccount:302766346268-compute@developer.gserviceaccount.com

- serviceAccount:302766346268@cloudservices.gserviceaccount.com

- serviceAccount:terraform-sa@terraform-multicloud-lab.iam.gserviceaccount.com

role: roles/editor

- members:

- user:vaishnavitiwari501@gmail.com

role: roles/owner

etag: BwY-2bHufCI=

version: 1

vaishnavitiwari501@cloudshell:~ (terraform-multicloud-lab)$ gcloud iam service-accounts keys create key.json \

--iam-account=terraform-sa@terraform-multicloud-lab.iam.gserviceaccount.com

created key [dab45d2dbbc9774dfd2457c6661c6884b01b9fee] of type [json] as [key.json] for [terraform-sa@terraform-multicloud-lab.iam.gserviceaccount.com]

vaishnavitiwari501@cloudshell:~ (terraform-multicloud-lab)$

Key=Owner,Value=vaish

cd terraform/aws

terraform init

terraform plan -var="aws\_access\_key=AKIATLEXAQFLURUSDF2J" -var="aws\_secret\_key=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"

terraform apply -var="aws\_access\_key=AKIATLEXAQFLURUSDF2J" -var="aws\_secret\_key=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" -auto-approve

**AWS Deployment Summary**

* **Instance ID:** i-02d35ecac90ad93d6
* **Instance Type:** t3.micro (Free Tier eligible)
* **AMI Used:** Amazon Linux 2 (ami-0023921b4fcd5382b)
* **NGINX Installed:** Automatically via user\_data script
* **Public IP:** 54.163.211.114 (accessible in browser to check NGINX)

sg-0f6b297c8962a0b7f

terraform destroy -target=aws\_instance.web -target= sg-0f6b297c8962a0b7f.web\_sg

<https://34.228.160.199>

gcp\_public\_ip = "34.44.2.206"

This tool needs to create the directory [/home/vaishnavitiwari501/.ssh] before being able to generate SSH keys.

Do you want to continue (Y/n)? y

Generating public/private rsa key pair.

Enter passphrase (empty for no passphrase):

Enter same passphrase again:

Your identification has been saved in /home/vaishnavitiwari501/.ssh/google\_compute\_engine

Your public key has been saved in /home/vaishnavitiwari501/.ssh/google\_compute\_engine.pub

The key fingerprint is:

SHA256:Tsw8MyhOjRmWFxBLFRMwdbRpAELhiR7wmSL4W039hcw vaishnavitiwari501@cs-1087951808255-default

The key's randomart image is:

+---[RSA 3072]----+

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+----[SHA256]-----+

Updating project ssh metadata...working..Updated [https://www.googleapis.com/compute/v1/projects/terraform-multicloud-lab].

Updating project ssh metadata...done.

Waiting for SSH key to propagate.

Warning: Permanently added 'compute.6876460785345095428' (ED25519) to the list of known hosts.

Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1036-gcp x86\_64)

\* Documentation: https://help.ubuntu.com

\* Management: https://landscape.canonical.com

\* Support: https://ubuntu.com/pro

System information as of Mon Sep 15 18:45:11 UTC 2025

System load: 0.0 Processes: 107

Usage of /: 24.7% of 9.51GB Users logged in: 0

Memory usage: 28% IPv4 address for ens4: 10.128.0.2

Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

15 updates can be applied immediately.

12 of these updates are standard security updates.

To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.

See https://ubuntu.com/esm or run: sudo pro status

New release '24.04.3 LTS' available.

Run 'do-release-upgrade' to upgrade to it.

vaishnavitiwari501@tf-web-gcp:~$  
  
  
gcp\_public\_ip = "34.44.2.206"  
  
gcloud auth login --no-launch-browser

4/0AVMBsJheb2HkAEnb3o7fhSIIyQkocoplXCcFUaZNLEOrXd\_iv6IvtBKLRQ6mLMRT4jQ2uA

vaishnavitiwari501@tf-web-gcp:~$ gcloud compute ssh tf-web-gcp --zone us-central1-a

WARNING: The private SSH key file for gcloud does not exist.

WARNING: The public SSH key file for gcloud does not exist.

WARNING: You do not have an SSH key for gcloud.

WARNING: SSH keygen will be executed to generate a key.

Generating public/private rsa key pair.

Enter passphrase (empty for no passphrase):

Enter same passphrase again:

Your identification has been saved in /home/vaishnavitiwari501/.ssh/google\_compute\_engine

Your public key has been saved in /home/vaishnavitiwari501/.ssh/google\_compute\_engine.pub

The key fingerprint is:

SHA256:kzi8o+FPcpI1rI7Ceer7mDbYDFzYMWYf8rc7wGGAPtE vaishnavitiwari501@tf-web-gcp

The key's randomart image is:

+---[RSA 3072]----+

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+----[SHA256]-----+

Updating project ssh metadata...⠼Updated [https://www.googleapis.com/compute/v1/projects/terraform-multicloud-lab].

Updating project ssh metadata...done.

Waiting for SSH key to propagate.

Warning: Permanently added 'compute.6876460785345095428' (ED25519) to the list of known hosts.

Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1036-gcp x86\_64)

\* Documentation: https://help.ubuntu.com

\* Management: https://landscape.canonical.com

\* Support: https://ubuntu.com/pro

System information as of Mon Sep 15 18:59:51 UTC 2025

System load: 0.04 Processes: 114

Usage of /: 24.7% of 9.51GB Users logged in: 1

Memory usage: 34% IPv4 address for ens4: 10.128.0.2

Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

15 updates can be applied immediately.

12 of these updates are standard security updates.

To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.

See https://ubuntu.com/esm or run: sudo pro status

New release '24.04.3 LTS' available.

Run 'do-release-upgrade' to upgrade to it.

Last login: Mon Sep 15 18:45:15 2025 from 34.142.188.126

vaishnavitiwari501@tf-web-gcp:~$

terraform import aws\_security\_group.web\_sg sg-0f6b297c8962a0b7f

tf-web-sg

terraform import aws\_instance.web i-02d35ecac90ad93d6

sg-00cf745d25121b7f2

aws\_public\_ip = "54.196.243.234"

gcp\_public\_ip = "34.173.74.103"

aws\_public\_ip = "13.218.249.197"

aws ec2 describe-security-groups --filters "Name=sg-0e7d5fc3acab51f53,Values=tf-web-sg"