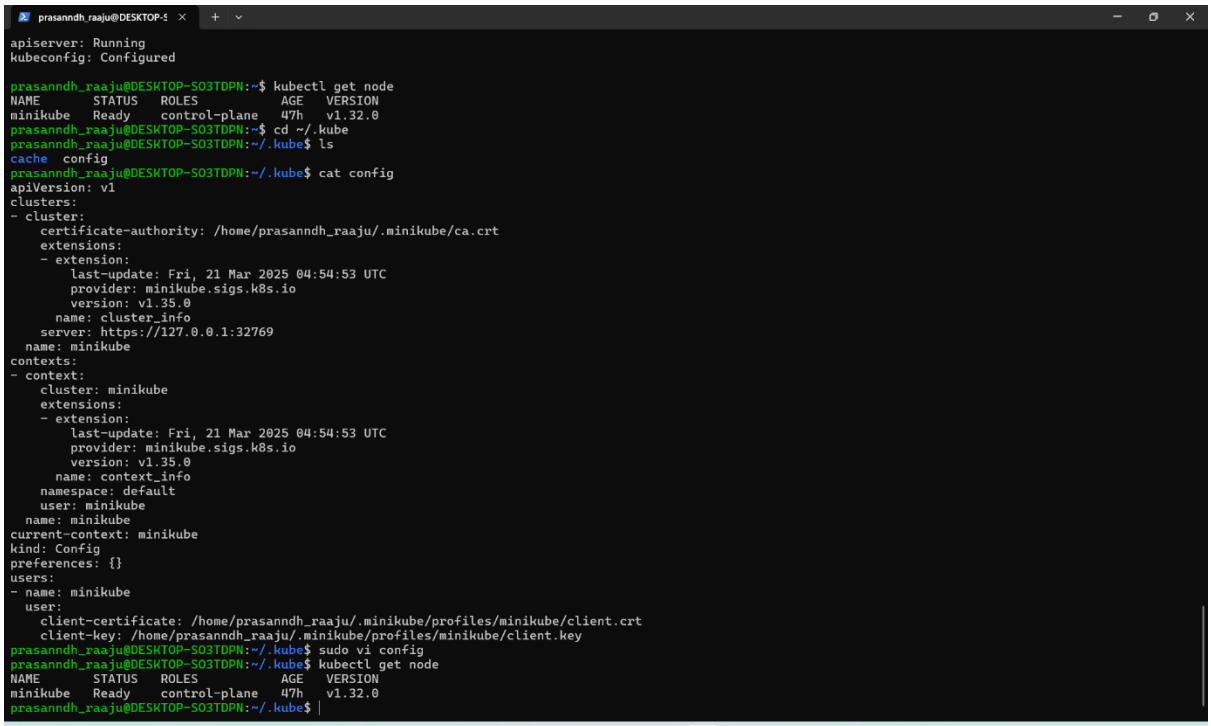
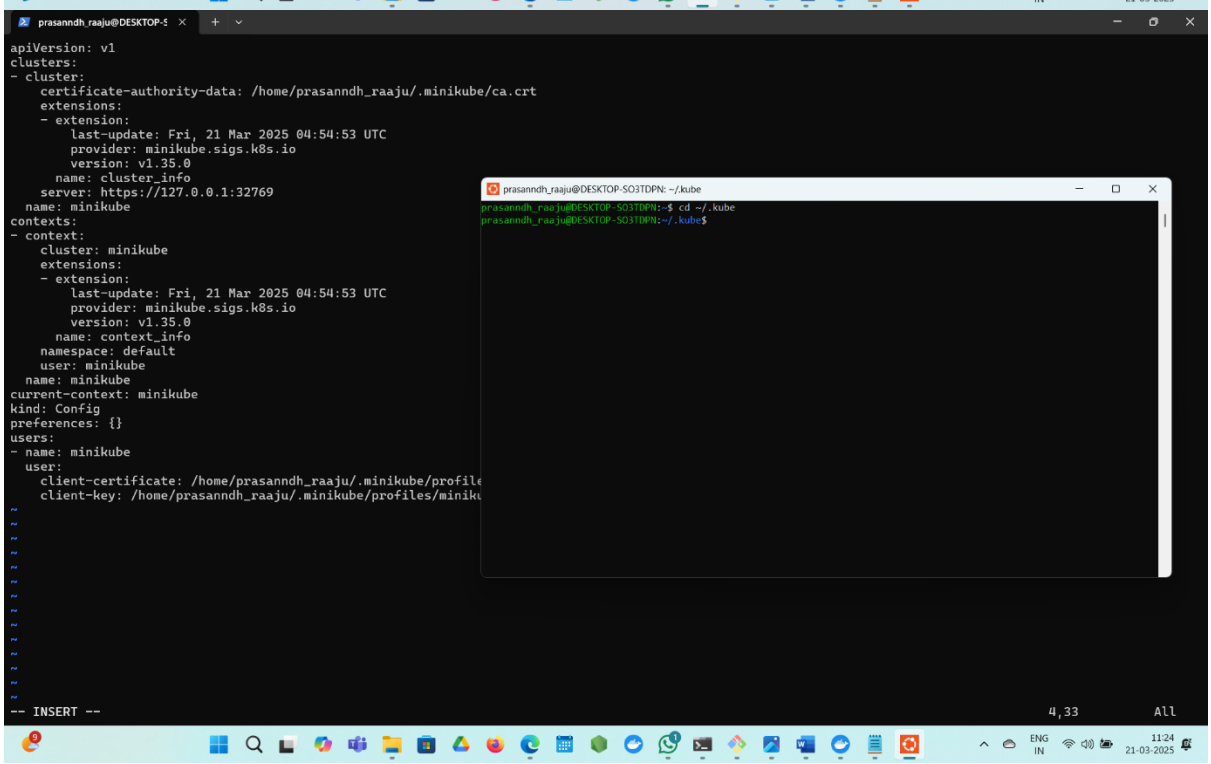
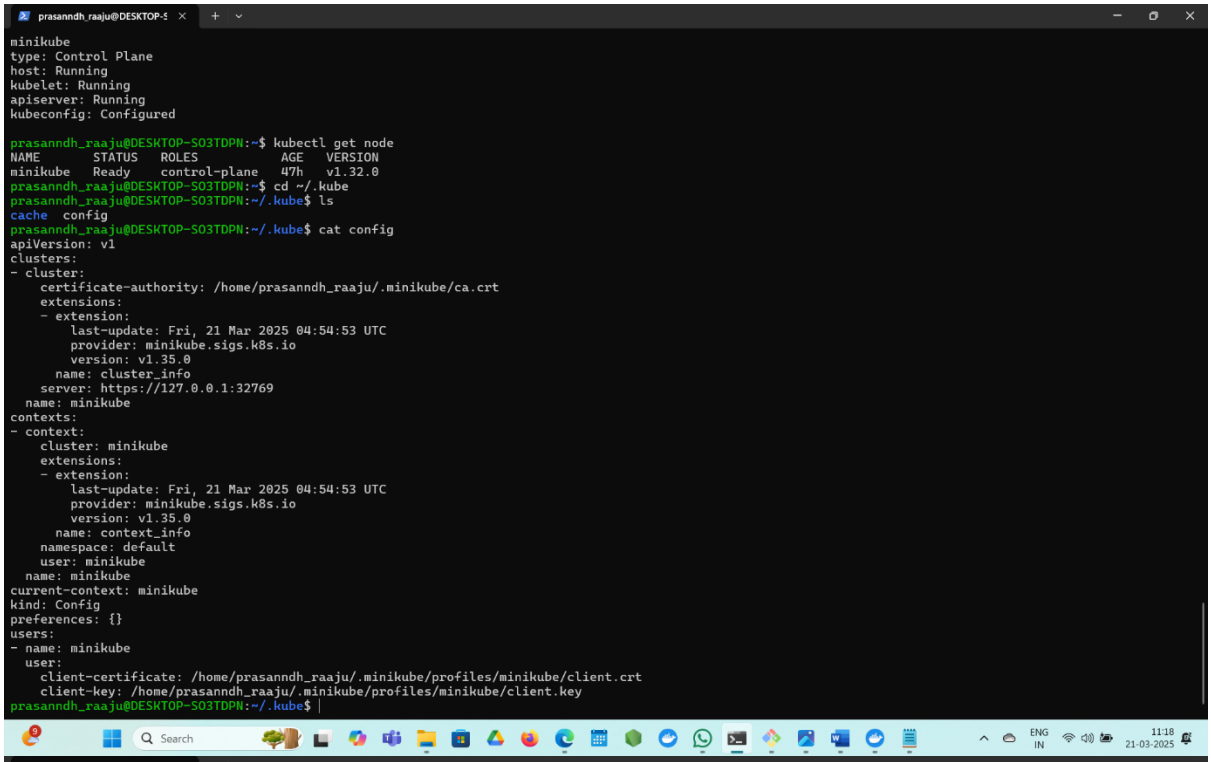
DAY 5 Tasks – minikube deployment, Terraform

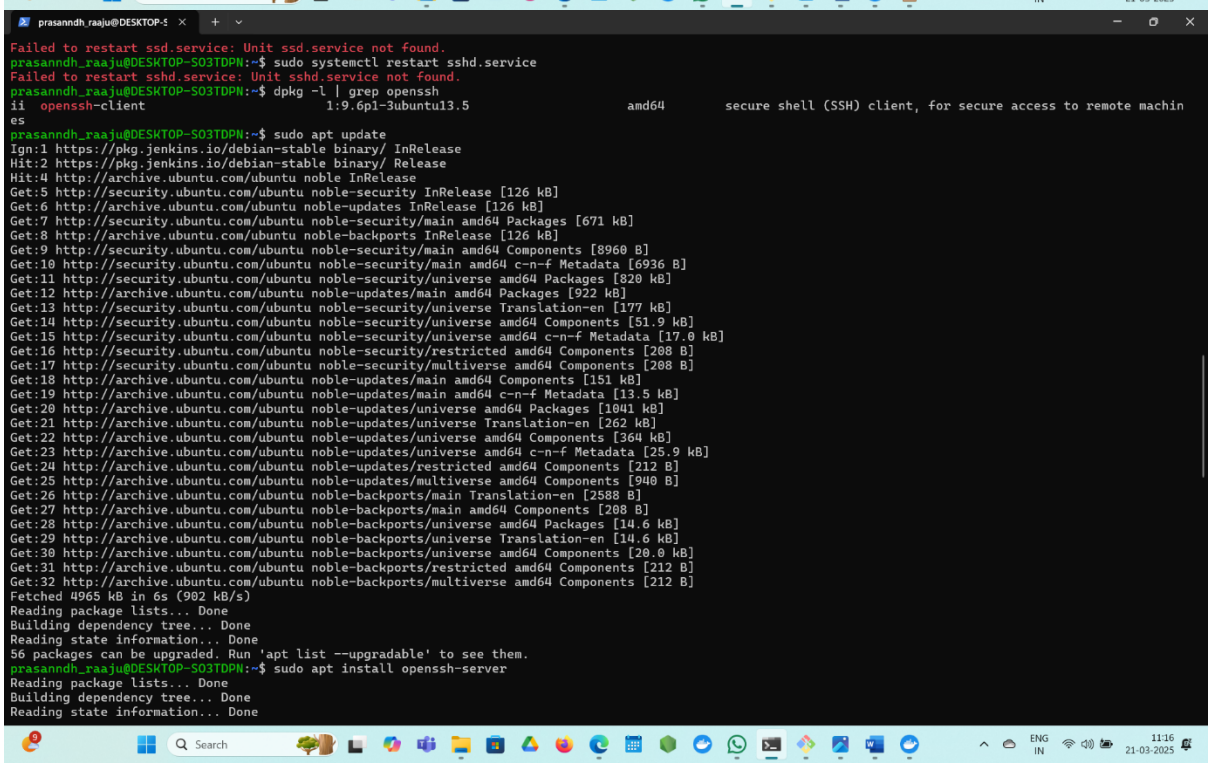
Minikube Deployment:

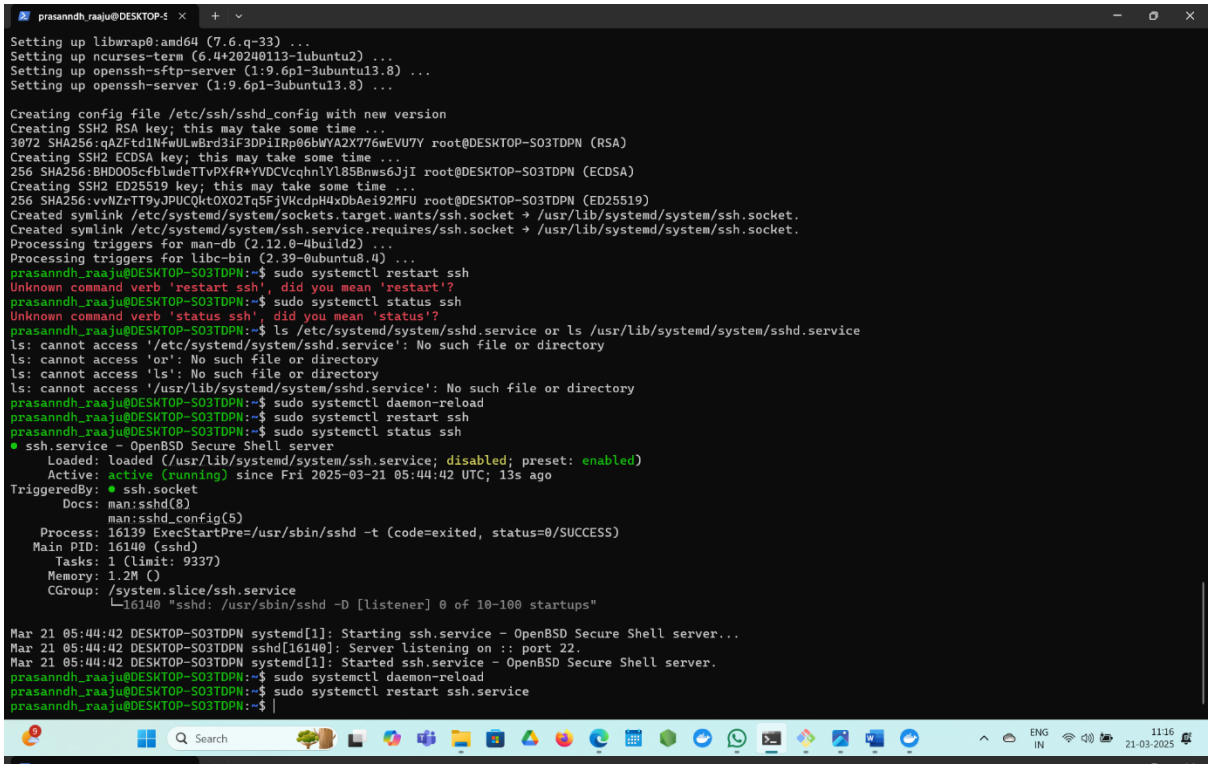
Step 1: Config file updation

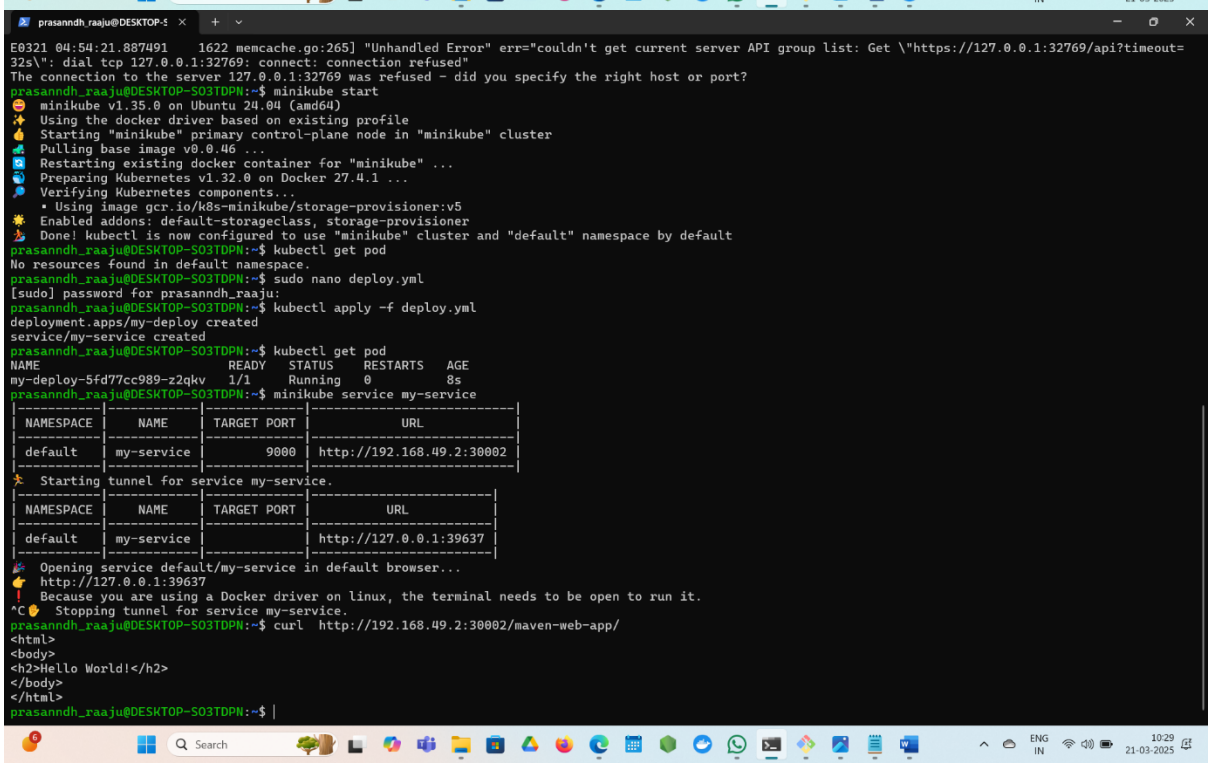


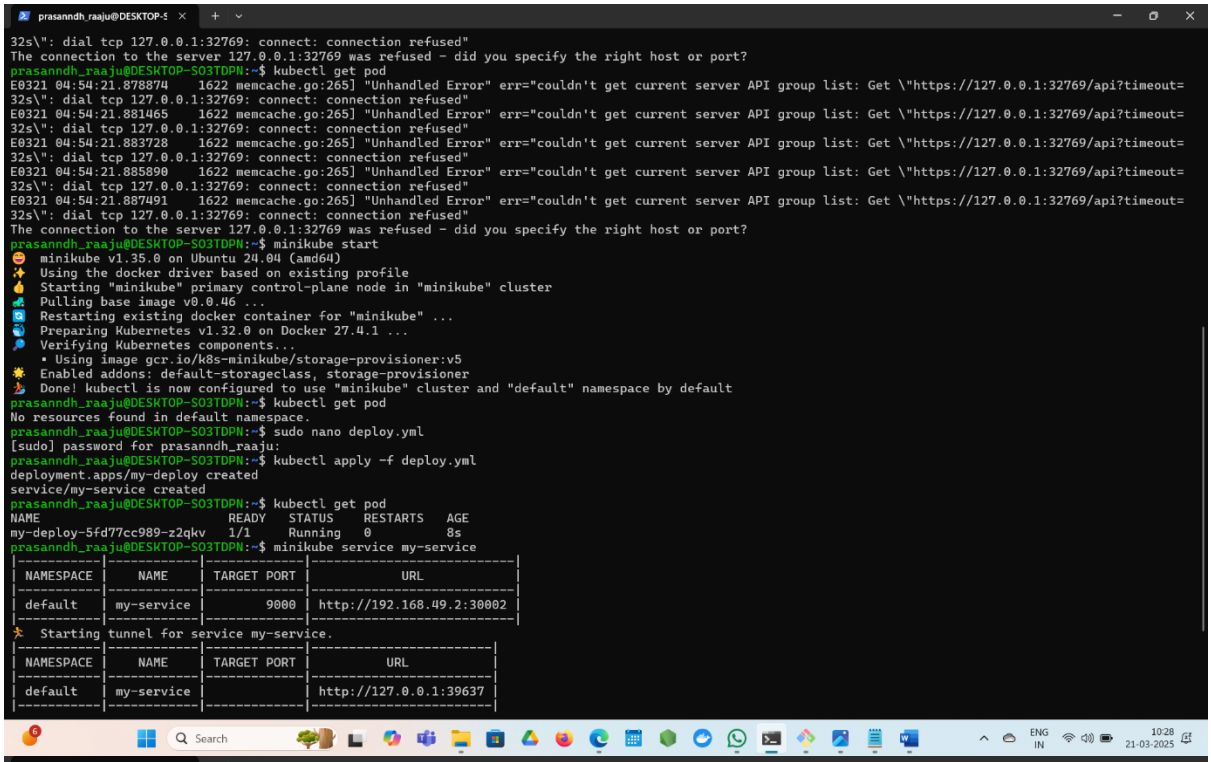


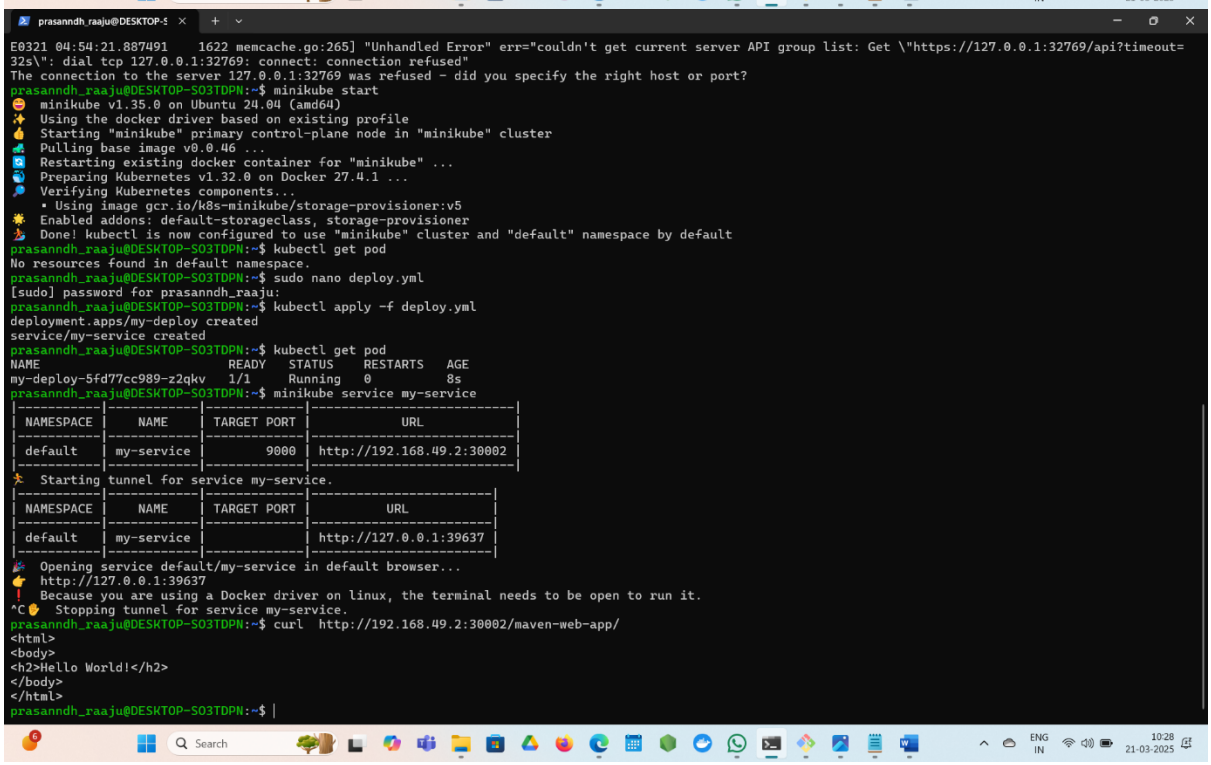

minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl get node
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 47h v1.32.0
prasanndh_raaju@DESKTOP-SO3TDPN:~$ cd ~/.kube
prasanndh_raaju@DESKTOP-SO3TDPN:~/.kube$ ls
cache config
prasanndh_raaju@DESKTOP-SO3TDPN:~/.kube$ cat config
apiVersion: v1
clusters:
- cluster:
certificate-authority: /home/prasanndh_raaju/.minikube/ca.crt
extensions:
- extension:
last-update: Fri, 21 Mar 2025 04:54:53 UTC
provider: minikube.sigs.k8s.io
version: v1.35.0
name: cluster_info
server: https://127.0.0.1:32769
name: minikube
contexts:
- context:
cluster: minikube
extensions:
- extension:
last-update: Fri, 21 Mar 2025 04:54:53 UTC
provider: minikube.sigs.k8s.io
version: v1.35.0
name: context_info
namespace: default
user: minikube
name: minikube
current-context: minikube
kind: Config
preferences: {}
users:
- name: minikube
user:
client-certificate: /home/prasanndh_raaju/.minikube/profiles/minikube/client.crt
client-key: /home/prasanndh_raaju/.minikube/profiles/minikube/client.key
prasanndh_raaju@DESKTOP-SO3TDPN:~/.kube$
Search
ENG
IN
11:18
21-03-2025

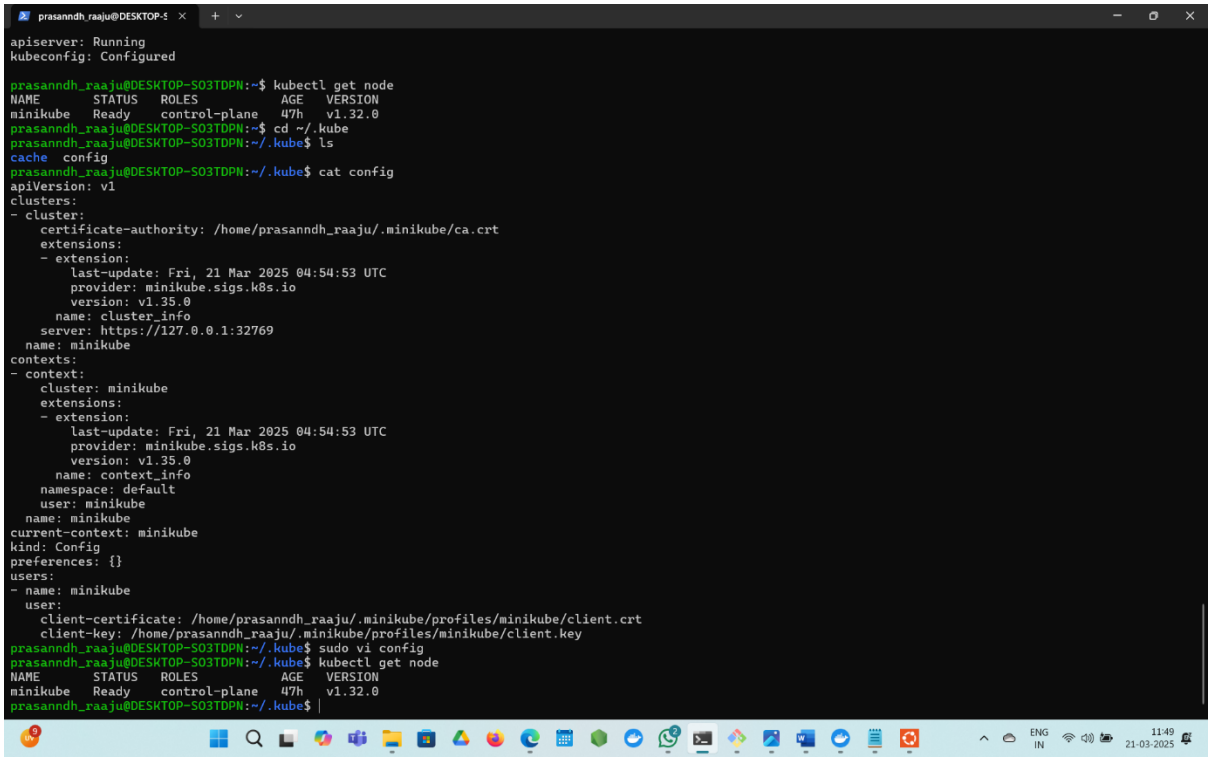

Failed to restart ssd.service: Unit ssd.service not found.
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo systemctl restart sshd.service
Failed to restart sshd.service: Unit sshd.service not found.
prasanndh_raaju@DESKTOP-SO3TDPN:~$ dpkg -l | grep openssh
ii openssh-client 1:9.6p1-3ubuntu13.5 amd64 secure shell (SSH) client, for secure access to remote machin
es
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo apt update
Ign:1 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:2 https://pkg.jenkins.io/debian-stable binary/ Release
Hit:4 http://archive.ubuntu.com/ubuntu noble InRelease
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [671 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [8960 B]
Get:10 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [6936 B]
Get:11 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [820 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [922 kB]
Get:13 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [177 kB]
Get:14 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [51.9 kB]
Get:15 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [17.0 kB]
Get:16 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [208 B]
Get:17 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Get:18 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [151 kB]
Get:19 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [13.5 kB]
Get:20 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1041 kB]
Get:21 http://archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [262 kB]
Get:22 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [364 kB]
Get:23 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [25.9 kB]
Get:24 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:25 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:26 http://archive.ubuntu.com/ubuntu noble-backports/main Translation-en [2588 B]
Get:27 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:28 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [14.6 kB]
Get:29 http://archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [14.6 kB]
Get:30 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [20.0 kB]
Get:31 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [212 B]
Get:32 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Fetched 4965 kB in 6s (902 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
56 packages can be upgraded. Run 'apt list --upgradable' to see them.
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo apt install openssh-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Search
ENG
IN
11:16
21-03-2025


prasanndh_raaju@DESKTOP-S
Setting up libwrap0:amd64 (7.6.q-33) ...
Setting up ncurses-term (6.4+20240113-1ubuntu2) ...
Setting up openssh-sftp-server (1:9.6p1-3ubuntu13.8) ...
Setting up openssh-server (1:9.6p1-3ubuntu13.8) ...
Creating config file /etc/ssh/sshd_config with new version
Creating SSH2 RSA key; this may take some time ...
3072 SHA256:qAZFtd1NfwULwBrd3iF3DPiIRp06bWYA2X776wEVU7Y root@DESKTOP-SO3TDPN (RSA)
Creating SSH2 ECDSA key; this may take some time ...
256 SHA256:BHDOO5cfblwdeTTvPXfR+YVDCVcqhnlYl85Bnws6JjI root@DESKTOP-SO3TDPN (ECDSA)
Creating SSH2 ED25519 key; this may take some time ...
256 SHA256:vvNZrTT9yJPUCQktOXO2Tq5FjVKcdpH4xDbAei92MFU root@DESKTOP-SO3TDPN (ED25519)
Created symlink /etc/systemd/system/sockets.target.wants/ssh.socket → /usr/lib/systemd/system/ssh.socket.
Created symlink /etc/systemd/system/ssh.service.requires/ssh.socket → /usr/lib/systemd/system/ssh.socket.
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.4) ...
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo systemctl restart ssh
Unknown command verb 'restart ssh', did you mean 'restart'?
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo systemctl status ssh
Unknown command verb 'status ssh', did you mean 'status'?
prasanndh_raaju@DESKTOP-SO3TDPN:~$ ls /etc/systemd/system/sshd.service or ls /usr/lib/systemd/system/sshd.service
ls: cannot access '/etc/systemd/system/sshd.service': No such file or directory
ls: cannot access 'or': No such file or directory
ls: cannot access 'ls': No such file or directory
ls: cannot access '/usr/lib/systemd/system/sshd.service': No such file or directory
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo systemctl daemon-reload
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo systemctl restart ssh
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
Active: active (running) since Fri 2025-03-21 05:44:42 UTC; 13s ago
TriggeredBy: ● ssh.socket
Docs: man:sshd(8)
man:sshd_config(5)
Process: 16139 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
Main PID: 16140 (sshd)
Tasks: 1 (limit: 9337)
Memory: 1.2M ()
CGroup: /system.slice/ssh.service
└─16140 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"
Mar 21 05:44:42 DESKTOP-SO3TDPN systemd[1]: Starting ssh.service - OpenBSD Secure Shell server...
Mar 21 05:44:42 DESKTOP-SO3TDPN sshd[16140]: Server listening on :: port 22.
Mar 21 05:44:42 DESKTOP-SO3TDPN systemd[1]: Started ssh.service - OpenBSD Secure Shell server.
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo systemctl daemon-reload
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo systemctl restart ssh.service
prasanndh_raaju@DESKTOP-SO3TDPN:~$
Search
ENG
IN
11:16
21-03-2025


prasanndh_raaju@DESKTOP-S
E0321 04:54:21.887491 1622 memcache.go:265] "Unhandled Error" err="couldn't get current server API group list: Get \"https://127.0.0.1:32769/api?timeout=32s\": dial tcp 127.0.0.1:32769: connect: connection refused"
The connection to the server 127.0.0.1:32769 was refused - did you specify the right host or port?
prasanndh_raaju@DESKTOP-SO3TDPN:~$ minikube start
minikube v1.35.0 on Ubuntu 24.04 (amd64)
Using the docker driver based on existing profile
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.46 ...
Restarting existing docker container for "minikube" ...
Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
Verifying Kubernetes components...
▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: default-storageclass, storage-provisioner
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl get pod
No resources found in default namespace.
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo nano deploy.yml
[sudo] password for prasanndh_raaju:
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl apply -f deploy.yml
deployment.apps/my-deploy created
service/my-service created
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl get pod
NAME READY STATUS RESTARTS AGE
my-deploy-5fd77cc989-z2qkv 1/1 Running 0 8s
prasanndh_raaju@DESKTOP-SO3TDPN:~$ minikube service my-service
| NAMESPACE | NAME | TARGET PORT | URL |
| default | my-service | 9000 | http://192.168.49.2:30002 |
Starting tunnel for service my-service.
| NAMESPACE | NAME | TARGET PORT | URL |
| default | my-service | | http://127.0.0.1:39637 |
Opening service default/my-service in default browser...
http://127.0.0.1:39637
Because you are using a Docker driver on linux, the terminal needs to be open to run it.
^C Stopping tunnel for service my-service.
prasanndh_raaju@DESKTOP-SO3TDPN:~$ curl http://192.168.49.2:30002/maven-web-app/
<html>
<body>
<h2>Hello World!</h2>
</body>
</html>
prasanndh_raaju@DESKTOP-SO3TDPN:~$
Search
ENG
IN
10:29
21-03-2025


prasanndh_raaju@DESKTOP-S
32s\": dial tcp 127.0.0.1:32769: connect: connection refused"
The connection to the server 127.0.0.1:32769 was refused - did you specify the right host or port?
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl get pod
E0321 04:54:21.878874 1622 memcache.go:265] "Unhandled Error" err="couldn't get current server API group list: Get \"https://127.0.0.1:32769/api?timeout=
32s\": dial tcp 127.0.0.1:32769: connect: connection refused"
E0321 04:54:21.881465 1622 memcache.go:265] "Unhandled Error" err="couldn't get current server API group list: Get \"https://127.0.0.1:32769/api?timeout=
32s\": dial tcp 127.0.0.1:32769: connect: connection refused"
E0321 04:54:21.883728 1622 memcache.go:265] "Unhandled Error" err="couldn't get current server API group list: Get \"https://127.0.0.1:32769/api?timeout=
32s\": dial tcp 127.0.0.1:32769: connect: connection refused"
E0321 04:54:21.885890 1622 memcache.go:265] "Unhandled Error" err="couldn't get current server API group list: Get \"https://127.0.0.1:32769/api?timeout=
32s\": dial tcp 127.0.0.1:32769: connect: connection refused"
E0321 04:54:21.887491 1622 memcache.go:265] "Unhandled Error" err="couldn't get current server API group list: Get \"https://127.0.0.1:32769/api?timeout=
32s\": dial tcp 127.0.0.1:32769: connect: connection refused"
The connection to the server 127.0.0.1:32769 was refused - did you specify the right host or port?
prasanndh_raaju@DESKTOP-SO3TDPN:~$ minikube start
minikube v1.35.0 on Ubuntu 24.04 (amd64)
Using the docker driver based on existing profile
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.46 ...
Restarting existing docker container for "minikube" ...
Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
Verifying Kubernetes components...
▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: default-storageclass, storage-provisioner
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl get pod
No resources found in default namespace.
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo nano deploy.yml
[sudo] password for prasanndh_raaju:
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl apply -f deploy.yml
deployment.apps/my-deploy created
service/my-service created
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl get pod
NAME READY STATUS RESTARTS AGE
my-deploy-5fd77cc989-z2qkv 1/1 Running 0 8s
prasanndh_raaju@DESKTOP-SO3TDPN:~$ minikube service my-service
| NAMESPACE | NAME | TARGET PORT | URL |
| default | my-service | 9000 | http://192.168.49.2:30002 |
Starting tunnel for service my-service.
| NAMESPACE | NAME | TARGET PORT | URL |
| default | my-service | | http://127.0.0.1:39637 |
Search
ENG
IN
10:28
21-03-2025


prasanndh_raaju@DESKTOP-S
E0321 04:54:21.887491 1622 memcache.go:265] "Unhandled Error" err="couldn't get current server API group list: Get \"https://127.0.0.1:32769/api?timeout=
32s\": dial tcp 127.0.0.1:32769: connect: connection refused"
The connection to the server 127.0.0.1:32769 was refused - did you specify the right host or port?
prasanndh_raaju@DESKTOP-SO3TDPN:~$ minikube start
minikube v1.35.0 on Ubuntu 24.04 (amd64)
Using the docker driver based on existing profile
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.46 ...
Restarting existing docker container for "minikube" ...
Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
Verifying Kubernetes components...
▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: default-storageclass, storage-provisioner
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl get pod
No resources found in default namespace.
prasanndh_raaju@DESKTOP-SO3TDPN:~$ sudo nano deploy.yml
[sudo] password for prasanndh_raaju:
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl apply -f deploy.yml
deployment.apps/my-deploy created
service/my-service created
prasanndh_raaju@DESKTOP-SO3TDPN:~$ kubectl get pod
NAME READY STATUS RESTARTS AGE
my-deploy-5fd77cc989-z2qkv 1/1 Running 0 8s
prasanndh_raaju@DESKTOP-SO3TDPN:~$ minikube service my-service
| NAMESPACE | NAME | TARGET PORT | URL |
| default | my-service | 9000 | http://192.168.49.2:30002 |
Starting tunnel for service my-service.
| NAMESPACE | NAME | TARGET PORT | URL |
| default | my-service | | http://127.0.0.1:39637 |
Opening service default/my-service in default browser...
http://127.0.0.1:39637
Because you are using a Docker driver on linux, the terminal needs to be open to run it.
^C Stopping tunnel for service my-service.
prasanndh_raaju@DESKTOP-SO3TDPN:~$ curl http://192.168.49.2:30002/maven-web-app/
<html>
<body>
<h2>Hello World!</h2>
</body>
</html>
prasanndh_raaju@DESKTOP-SO3TDPN:~$
Search
ENG
IN
10:28
21-03-2025



Commands:

jenkins ALL=(ALL) NOPASSWD: ALL

sudo systemctl restart ssh.service
sudo systemctl restart sshd.service

sudo apt update
#Installing SSH key
sudo apt install openssh-server
sudo systemctl restart ssh
sudo systemctl status ssh
ls /etc/systemd/system/sshd.service or ls /usr/lib/systemd/system/sshd.service

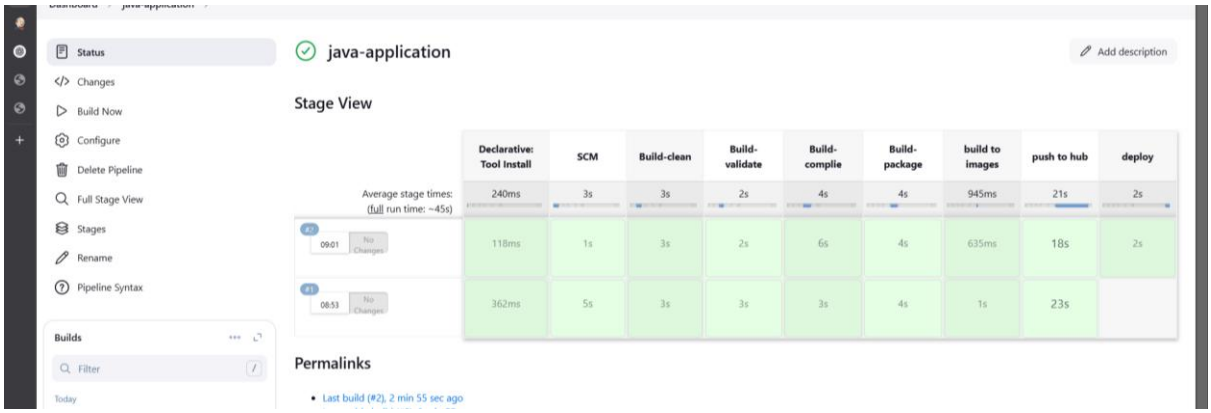
sudo systemctl daemon-reload
sudo systemctl status ssh
sudo systemctl restart ssh.service
cat /home/david/.minikube/ca.crt | base64 -w 0; echo
sudo chmod 666 /var/run/docker.sock
https://192.168.39.226:8443
sh 'kubectl apply -f deployment.yml --validate=false'
minikube service my-service --url | xargs curl

```
pipeline {
    agent any

    stages {
        stage('scm') {
            steps {
        git branch: ''
            }
```

```
        }
        stage('builb-clean') {
            steps {
              sh "mvn clean"
}
}
        stage('build-validate') {
            steps {
              sh "mvn validate"
}
}
        stage('build-com') {
            steps {
              sh "mvn compile"
}
}

        stage('build-test') {
            steps {
              sh "mvn test"
}
}
        stage('build-install') {
            steps {
              sh "mvn package"
}
}
stage('build to images') {
            steps {
              script{
                sh 'docker build -t  .'
              }
    }
}
stage('push to hub') {
            steps {
              script{
                withDockerRegistry(credentialsId: 'Docker_cred', url: 'https://index.docker.io/v1/') {
                 sh 'docker push '
              }
            }
            }
}
        stage('Deploy App') {
            steps {
                withKubeConfig(caCertificate: '', clusterName: 'minikube', contextName: 'minikube',
credentialsId: 'mukubeconfig_011', namespace: '', restrictKubeConfigAccess: false, serverUrl:
'https://192.168.49.2:8443') {
                 sh 'kubectl apply -f deployment.yml --validate=false'
            }
        }
```

```
      }
   stage('Test') {
     steps {
        withKubeConfig(caCertificate: '', clusterName: 'minikube', contextName: 'minikube',
credentialsId: 'mukubeconfig_011', namespace: '', restrictKubeConfigAccess: false, serverUrl:
'https://192.168.49.2:8443') {

       sh 'minikube service my-service --url | xargs curl'
   }
}
}
}
}
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.92.0"
    }
  }
}

provider "aws" {
  # Configuration options
}
```

Stage View of Pipeline:



- minikube service my-service
- curl http://192.168.49.2:30002/my-web/

Terraform:

#terraform init
#terraform validate
#terraform plan
#terraform apply
#terraform destroy

```
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.92.0"
    }
  }
}

provider "aws" {
    region = "us-east-1"
}

resource "aws_vpc" "myvpc" {
  cidr_block       = "10.0.0.0/16"

  tags = {
    Name = "demovpc"
  }
}

resource "aws_subnet" "pubsub" {
  vpc_id     = aws_vpc.myvpc.id
  cidr_block = "10.0.1.0/24"
  availability_zone = "us-east-1a"

  tags = {
    Name = "sn1"
  }
}
resource "aws_subnet" "pub_sub" {
  vpc_id     = aws_vpc.myvpc.id
  cidr_block = "10.0.2.0/24"
  availability_zone = "us-east-1a"
  tags = {
    Name = "sn1"
  }
}
resource "aws_subnet" "prisub" {
  vpc_id     = aws_vpc.myvpc.id
  cidr_block = "10.0.3.0/24"
  availability_zone = "us-east-1a"
  tags = {
    Name = "sn1"
  }
}
resource "aws_subnet" "pri_sub" {
  vpc_id     = aws_vpc.myvpc.id
  cidr_block = "10.0.4.0/24"
  availability_zone = "us-east-1a"

  tags = {
    Name = "sn1"
  }
}
resource "aws_internet_gateway" "tfigw" {
  vpc_id = aws_vpc.myvpc.id
```

```
  tags = {
    Name = "tfigw"
  }
}
resource "aws_route_table" "tfpubrt" {
  vpc_id = aws_vpc.myvpc.id
  route {
    cidr_block = "0.0.0.0/0"
    gateway_id = aws_internet_gateway.tfigw.id
  }
  tags = {
    Name = "tfpublicroute"
  }
}
resource "aws_route_table_association" "pubsn1" {
  subnet_id      = aws_subnet.pubsub.id
  route_table_id = aws_route_table.tfpubrt.id
}
resource "aws_route_table_association" "pubsn2" {
  subnet_id      = aws_subnet.pub_sub.id
  route_table_id = aws_route_table.tfpubrt.id
}

resource "aws_eip" "tfeip" {
  domain   = "vpc"
}

resource "aws_nat_gateway" "tfnat" {
  allocation_id = aws_eip.tfeip.id
  subnet_id     = aws_subnet.pub_sub.id
  tags = {
    Name = "gw NAT"
  }
}

resource "aws_route_table" "tfprirt" {
  vpc_id = aws_vpc.myvpc.id
  route {
    cidr_block = "0.0.0.0/0"
    gateway_id = aws_nat_gateway.tfnat.id
  }
  tags = {
    Name = "tfprivateroute"
  }
}
resource "aws_route_table_association" "prisn3" {
  subnet_id      = aws_subnet.prisub.id
  route_table_id = aws_route_table.tfprirt.id
}
resource "aws_route_table_association" "prisn4" {
  subnet_id      = aws_subnet.pri_sub.id
  route_table_id = aws_route_table.tfprirt.id
}

resource "aws_security_group" "allow_tfsg" {
  name        = "allow_tfsg"
  description = "Allow TLS inbound traffic"
```

```
  vpc_id      = aws_vpc.myvpc.id
  ingress {
    description      = "HTTPS "
    from_port        = 443
    to_port          = 443
    protocol         = "tcp"
    cidr_blocks      = ["0.0.0.0/0"]
  }
   ingress {
    description      = "HTTP "
    from_port        = 80
    to_port          = 80
    protocol         = "tcp"
    cidr_blocks      = ["0.0.0.0/0"]
  }
   ingress {
    description      = "SSH"
    from_port        = 22
    to_port          = 22
    protocol         = "tcp"
    cidr_blocks      = ["0.0.0.0/0"]
  }
  egress {
    from_port        = 0
    to_port          = 0
    protocol         = "-1"
    cidr_blocks      = ["0.0.0.0/0"]
  }
  tags = {
    Name = "TfsecurityGroup"
  }
}
resource "aws_instance" "pub_ins" {
  ami                         = "ami-0fc5d935ebf8bc3bc"
  instance_type               = "t2.micro"
  subnet_id                   = aws_subnet.pub_sub.id
  vpc_security_group_ids      = [aws_security_group.allow_tfsg.id]
 key_name                     = ""
 associate_public_ip_address   =  "true"
}
```

Terraform commands: