

# TASK 3-Minikube Deployment Task

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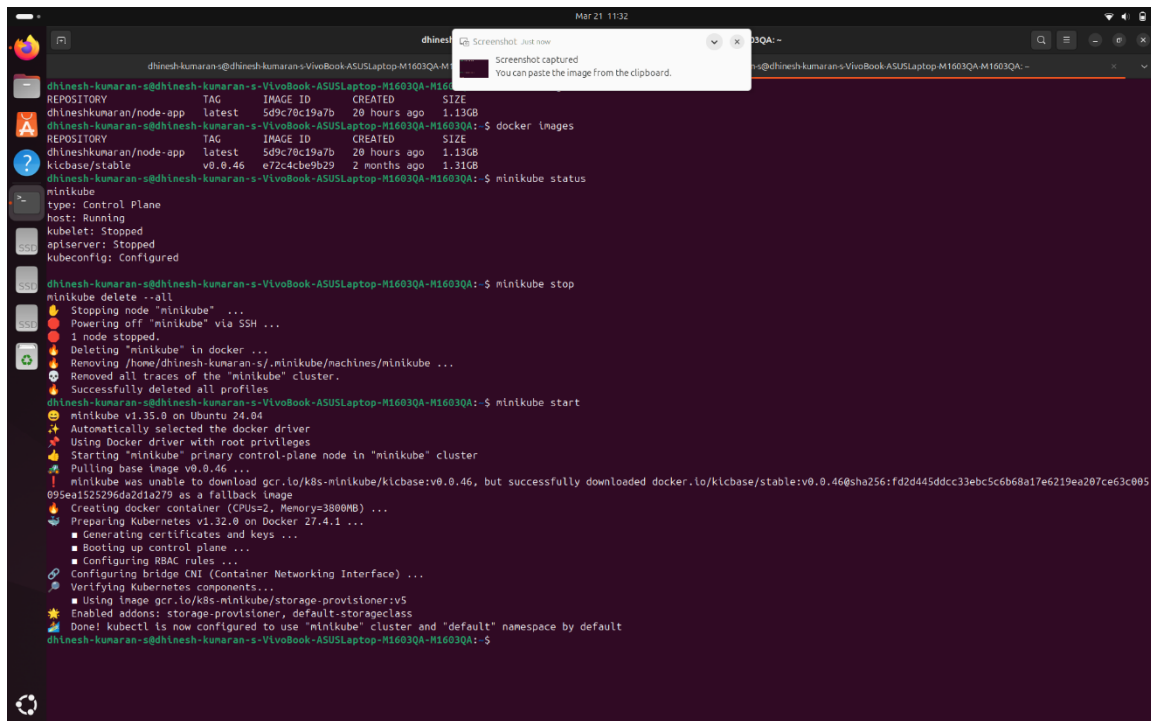
**RollNo:**22CSR061

## Step 1: Start Minikube

Start the Minikube cluster using the following command:

```
minikube start
```

This initializes the Minikube cluster using Docker as the driver.



```
dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA:~$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Stopped
apiserver: Stopped
kubeconfig: Configured

dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA:~$ minikube stop
minikube delete --all
Stopping node "minikube" ...
Powering off "minikube" via SSH ...
1 node stopped.
Deleting "minikube" in docker ...
Removing /home/dhinesh-kumaran-s/.minikube/machines/minikube ...
Removed all traces of the "minikube" cluster.
Successfully deleted all profiles

dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA:~$ minikube start
minikube v1.35.0 on Ubuntu 24.04
Automatically selected the docker driver
Using Docker driver with root privileges
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.46 ...
minikube was unable to download gcr.io/k8s-minikube/kicbase:v0.0.46, but successfully downloaded docker.io/kicbase/stable:v0.0.46@sha256:fd2d445ddcc33ebc5c6b68a17e6219ea207ce63c085
695ea1525296da2da279 as a fallback image
Creating docker container (CPUs=2, Memory=3800MB) ...
Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
Generating certificates and keys ...
Booting up control plane ...
Configuring RBAC rules ...
Configuring bridge CNI (Container Networking Interface) ...
Verifying Kubernetes components ...
Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: storage-provisioner, default-storageclass
Done! kubectrl is now configured to use "minikube" cluster and "default" namespace by default
dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA:~$
```

## Step 2: Install Kubectl

Since Kubectl is not found, install it with the following command:

```
sudo snap install kubectl --classic
```

Alternatively, you can download it using curl:

```
curl -LO "https://dl.k8s.io/release/$(curl -L -s
https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
sudo install -o root -g root -m 0755 kubectl /usr/local/bin/kubectl
```

### Step 3: Verify Kubectl Installation

Check the client version to confirm successful installation:

```
kubectl version --client
```

### Step 4: Create a Deployment

Create a deployment named `pod1` with the image `dhineshkumaran/spring-petshop`

```
kubectl create deployment pod1 --image= dhineshkumaran/spring-petshop --port=8080
```

### Step 5: Expose the Deployment

Expose the deployment as a NodePort service:

```
kubectl expose deployment pod1 --port=8080 --type=NodePort
```

### Step 6: Verify the Pod

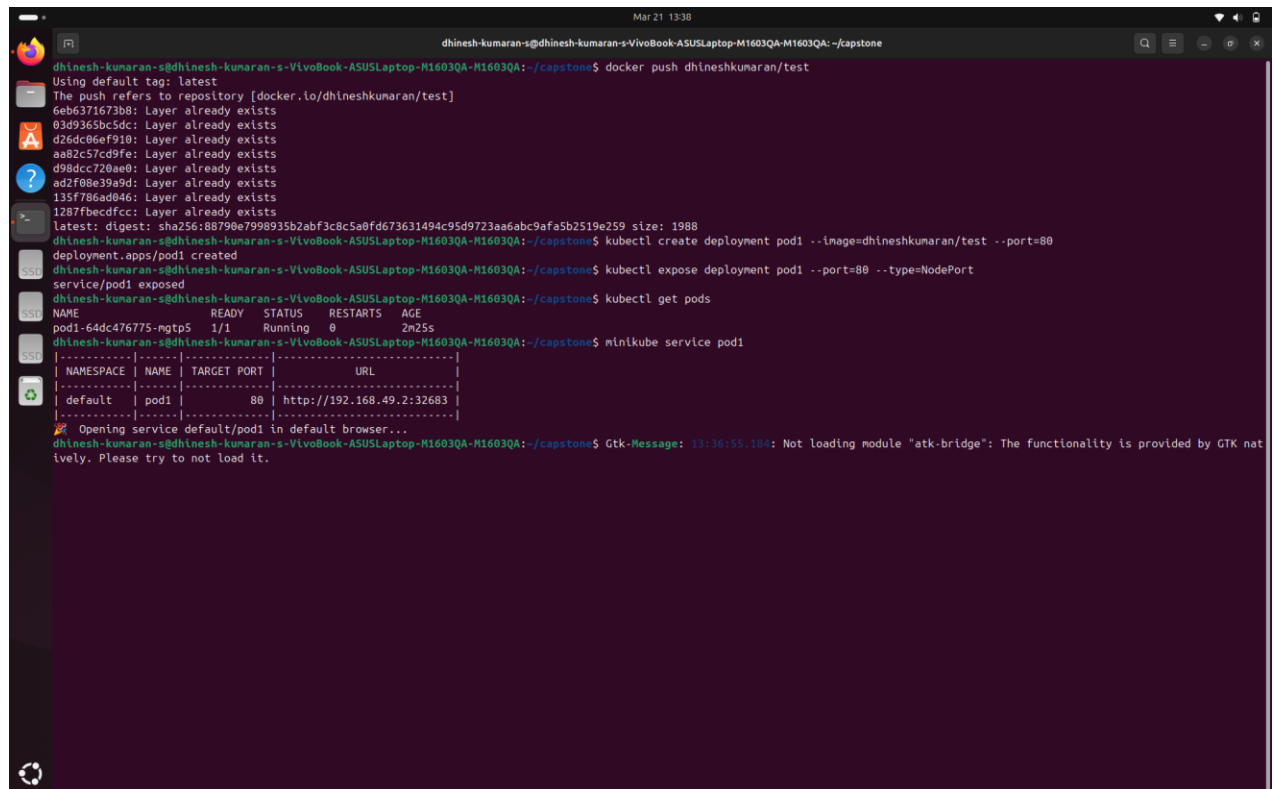
Check the running pods:

```
kubectl get pods
```

### Step 7: Access the Service

Expose the service using Minikube and get the URL:

```
minikube service pod1
```



```
dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA: ~/capstone
Using default tag: latest
The push refers to repository [docker.io/dhineshkumaran/test]
6eb6371673b8: Layer already exists
03d9365bc5dc: Layer already exists
d26dc06ef910: Layer already exists
aa82c57cd9fe: Layer already exists
d98dcc720ae0: Layer already exists
ad2f08e39a9d: Layer already exists
135f786ad846: Layer already exists
1287fbedcfcc: Layer already exists
latest: digest: sha256:08799e7998935b2abf3c8c5a8fd673631494c95d9723aa6abc9afa5b2519e259 size: 1988
dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA: ~/capstone$ kubectl create deployment pod1 --image=dhineshkumaran/test --port=80
deployment.apps/pod1 created
dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA: ~/capstone$ kubectl expose deployment pod1 --port=80 --type=NodePort
service/pod1 exposed
dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA: ~/capstone$ kubectl get pods
NAME                READY   STATUS    RESTARTS   AGE
pod1-64dc476775-mgtp5 1/1     Running   0           2m25s
dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA: ~/capstone$ minikube service pod1
|-----|
| NAMESPACE | NAME   | TARGET PORT | URL                                |
|-----|
| default   | pod1   | 80           | http://192.168.49.2:32683        |
|-----|
Opening service default/pod1 in default browser...
dhinesh-kumaran-s@dhinesh-kumaran-s-VivoBook-ASUSLaptop-M1603QA-M1603QA: ~/capstone$
```

## Step 8: Output in the Web Browser

