Kubernetes Task

Task Description:

Setup minikube at your local and explore creating namespaces (Go through official documentation).

Techstacks needs to be used :

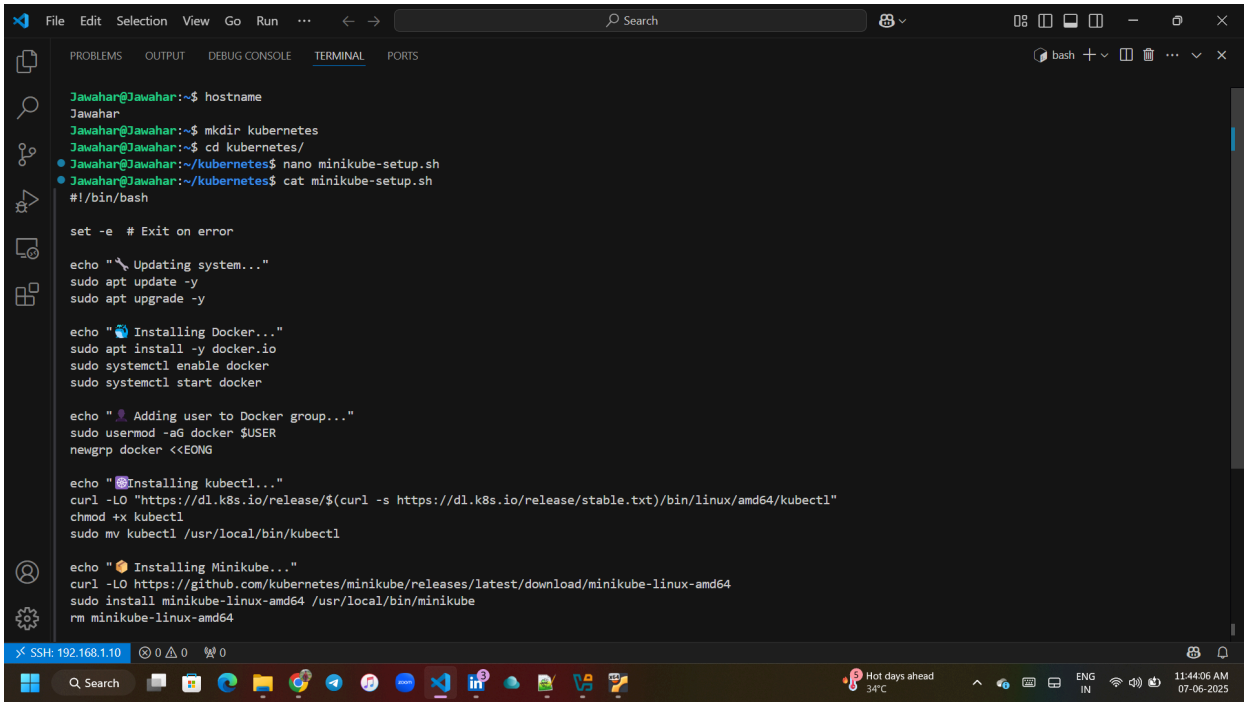
- Vbox, WSL
- Docker
- Minikube
- Kubectl

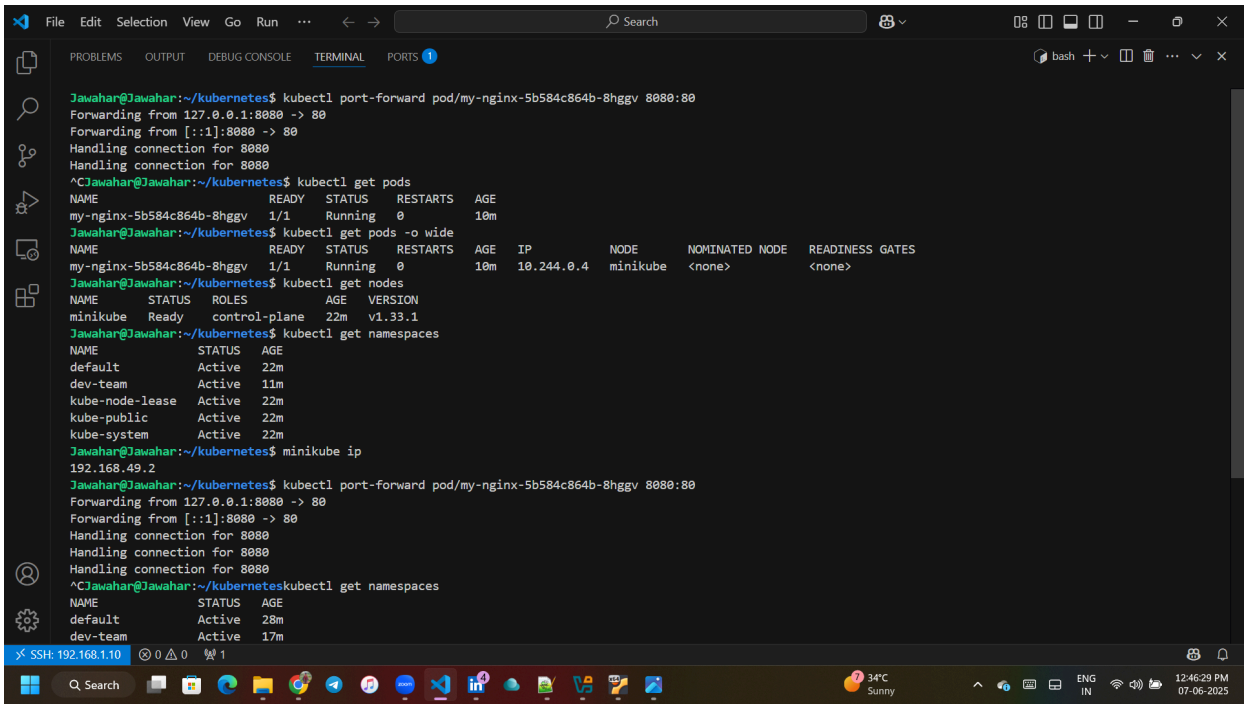
If the Local system has any issues you can use AWS.

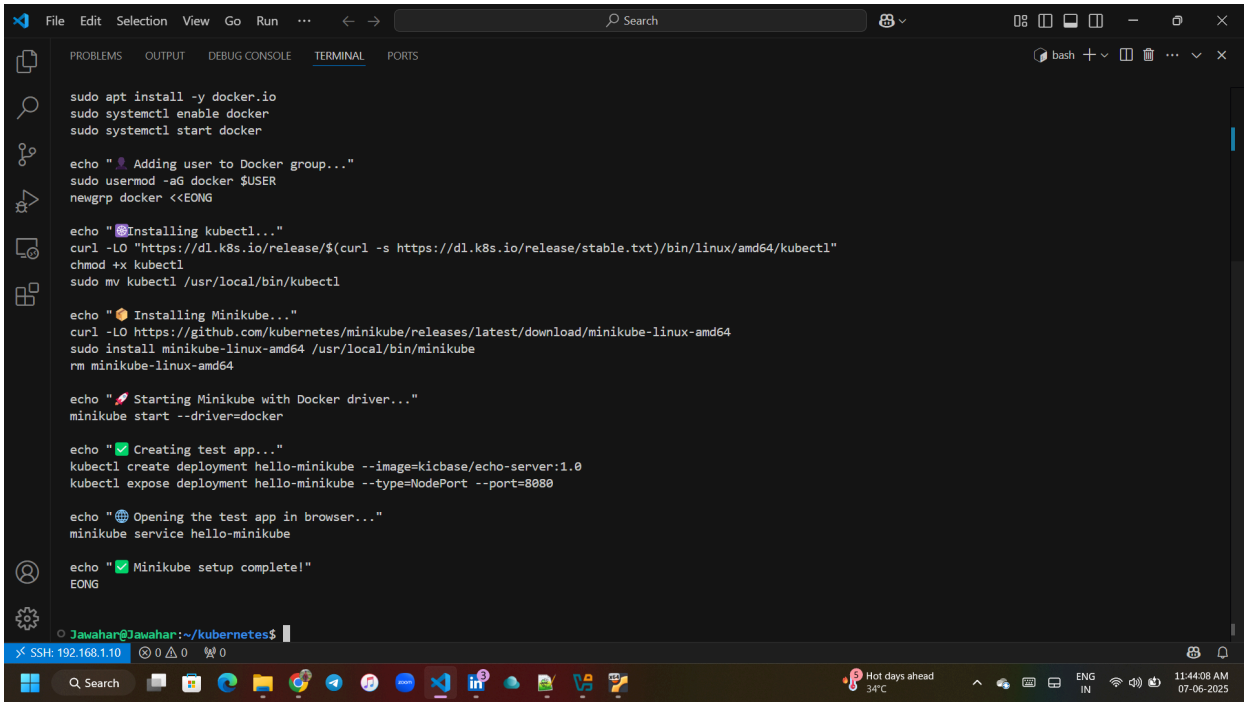
- AWS EC2 (t2.medium)

Screenshots:

Google Drive link : 1. Kubernetes Task 1 – GUVI


File Edit Selection View Go Run
Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
bash
Jawahar@Jawahar:~$ hostname
Jawahar
Jawahar@Jawahar:~$ mkdir kubernetes
Jawahar@Jawahar:~$ cd kubernetes/
Jawahar@Jawahar:~/kubernetes$ nano minikube-setup.sh
Jawahar@Jawahar:~/kubernetes$ cat minikube-setup.sh
#!/bin/bash
set -e # Exit on error
echo "🔧 Updating system..."
sudo apt update -y
sudo apt upgrade -y
echo "🐳 Installing Docker..."
sudo apt install -y docker.io
sudo systemctl enable docker
sudo systemctl start docker
echo "👤 Adding user to Docker group..."
sudo usermod -aG docker $USER
newgrp docker <<EONG
echo "☸️Installing kubectl..."
curl -LO "https://dl.k8s.io/release/$(curl -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
chmod +x kubectl
sudo mv kubectl /usr/local/bin/kubectl
echo "📦 Installing Minikube..."
curl -LO https://github.com/kubernetes/minikube/releases/latest/download/minikube-linux-amd64
sudo install minikube-linux-amd64 /usr/local/bin/minikube
rm minikube-linux-amd64
SSH: 192.168.1.10
Search
Hot days ahead
34°C
ENG
IN
11:44:06 AM
07-06-2025


File Edit Selection View Go Run
Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS 1
bash
Jawahar@Jawahar:~/kubernetes$ kubectl port-forward pod/my-nginx-5b584c864b-8hggv 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080
Handling connection for 8080
^CJawahar@Jawahar:~/kubernetes$ kubectl get pods
NAME READY STATUS RESTARTS AGE
my-nginx-5b584c864b-8hggv 1/1 Running 0 10m
Jawahar@Jawahar:~/kubernetes$ kubectl get pods -o wide
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES
my-nginx-5b584c864b-8hggv 1/1 Running 0 10m 10.244.0.4 minikube <none> <none>
Jawahar@Jawahar:~/kubernetes$ kubectl get nodes
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 22m v1.33.1
Jawahar@Jawahar:~/kubernetes$ kubectl get namespaces
NAME STATUS AGE
default Active 22m
dev-team Active 11m
kube-node-lease Active 22m
kube-public Active 22m
kube-system Active 22m
Jawahar@Jawahar:~/kubernetes$ minikube ip
192.168.49.2
Jawahar@Jawahar:~/kubernetes$ kubectl port-forward pod/my-nginx-5b584c864b-8hggv 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080
Handling connection for 8080
Handling connection for 8080
^CJawahar@Jawahar:~/kuberneteskubectl get namespaces
NAME STATUS AGE
default Active 28m
dev-team Active 17m
SSH: 192.168.1.10
Search
34°C
Sunny
ENG
IN
12:46:29 PM
07-06-2025


File Edit Selection View Go Run
Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
bash
sudo apt install -y docker.io
sudo systemctl enable docker
sudo systemctl start docker
echo "👤 Adding user to Docker group..."
sudo usermod -aG docker $USER
newgrp docker <<EONG
echo "☸️Installing kubectl..."
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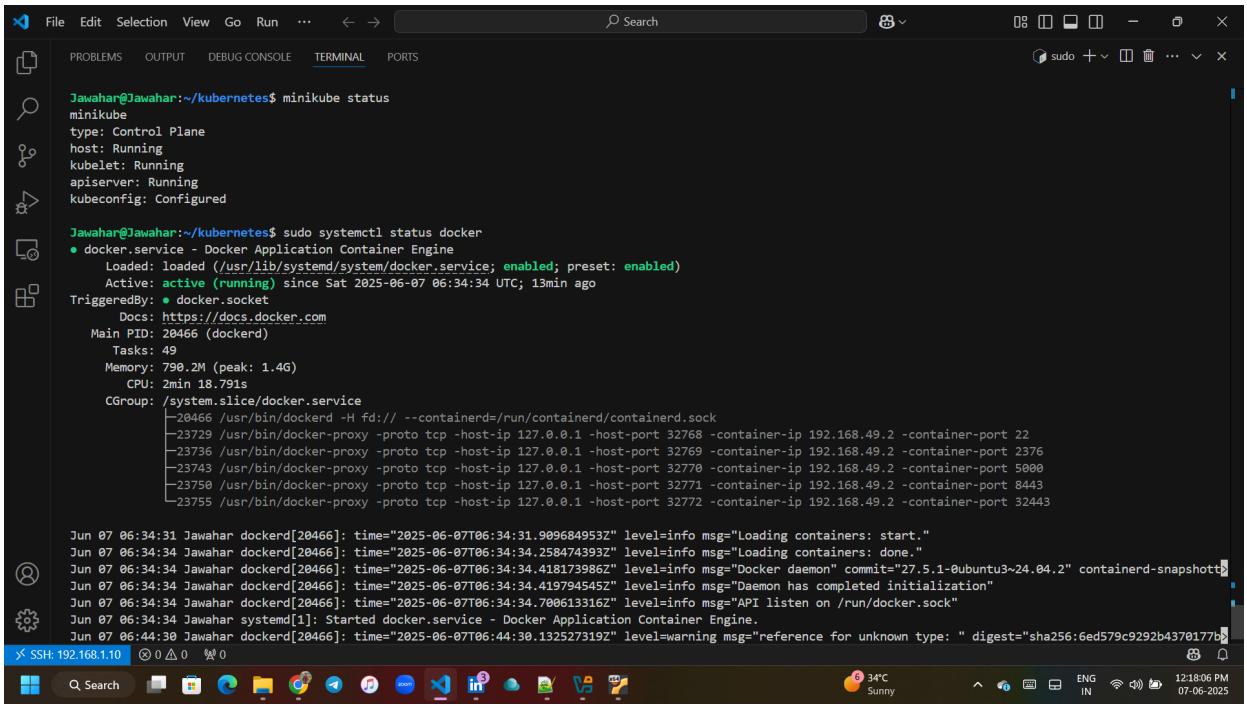
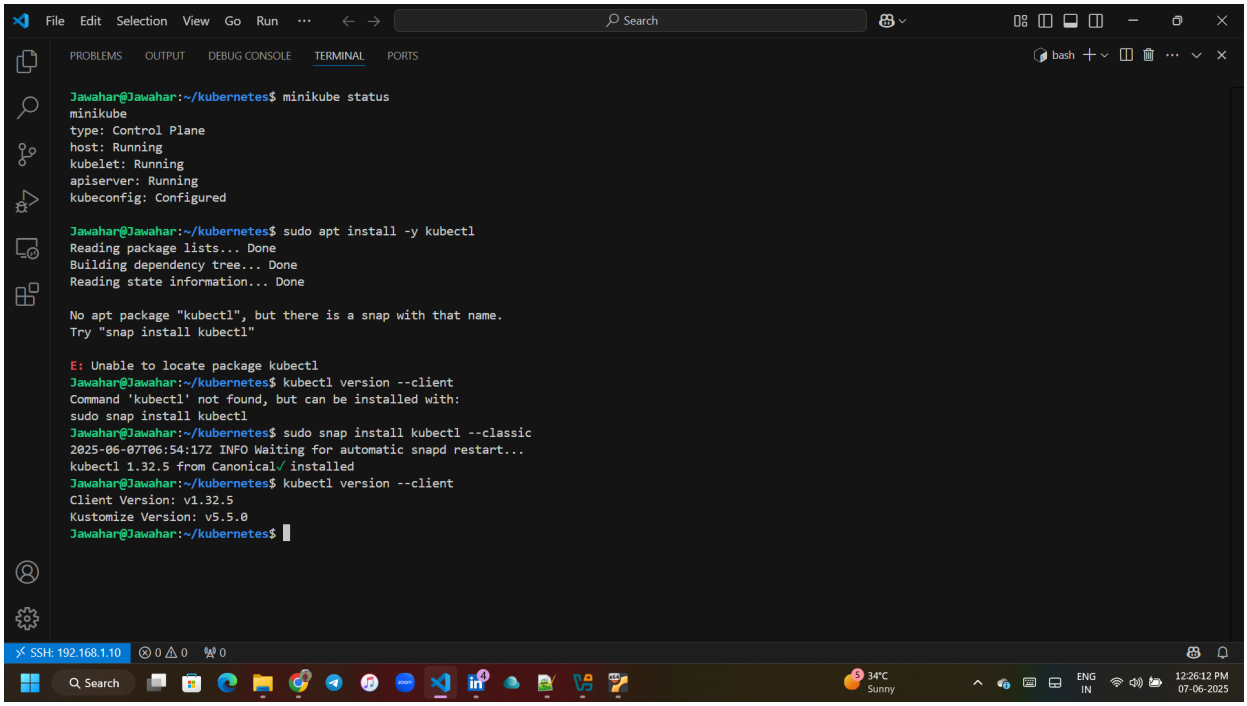
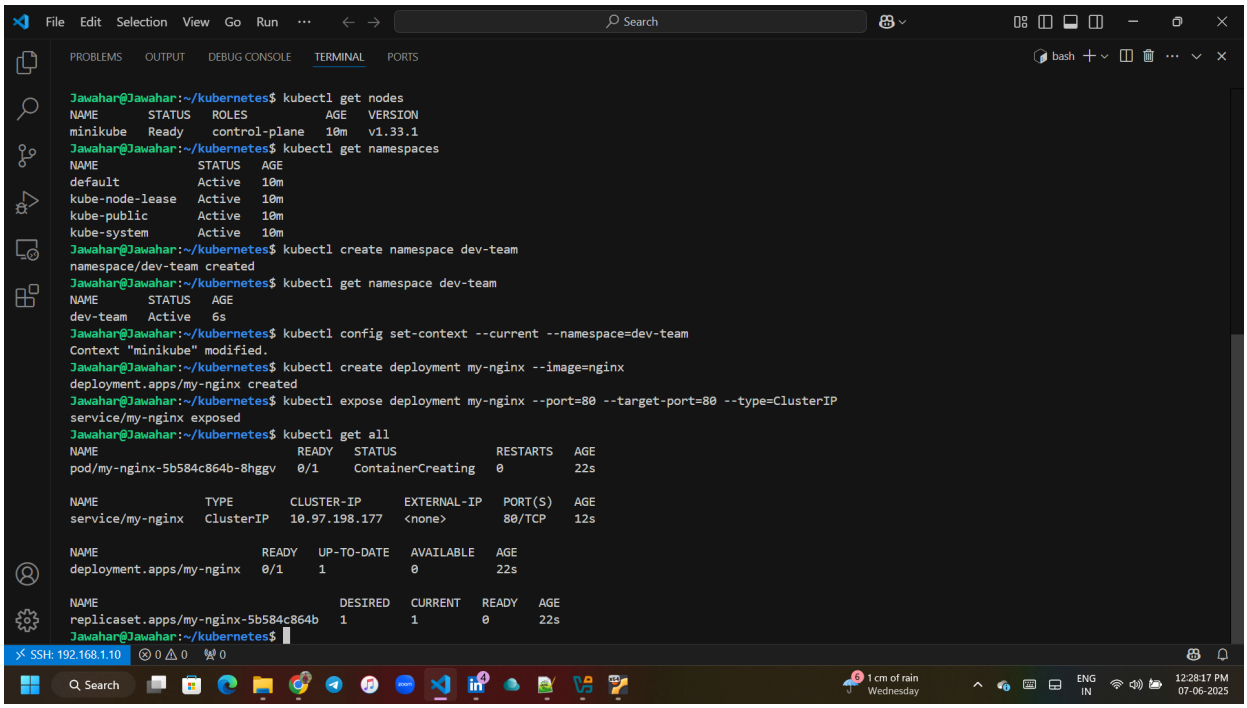
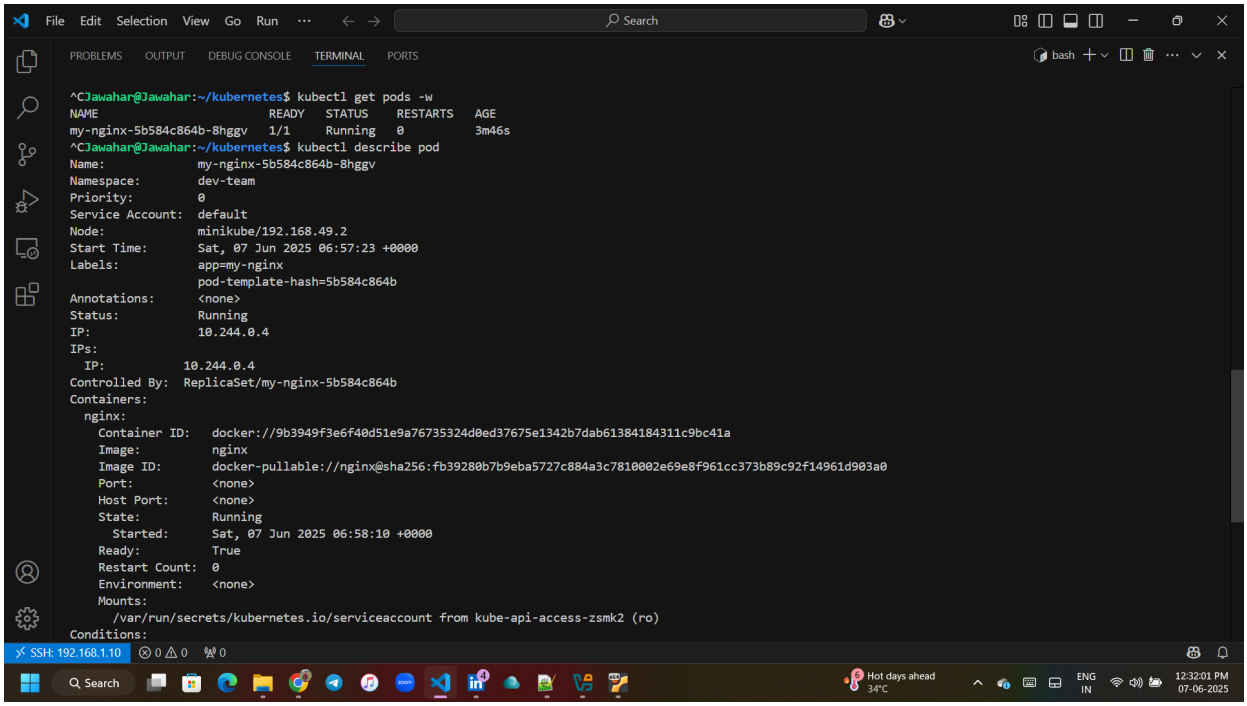
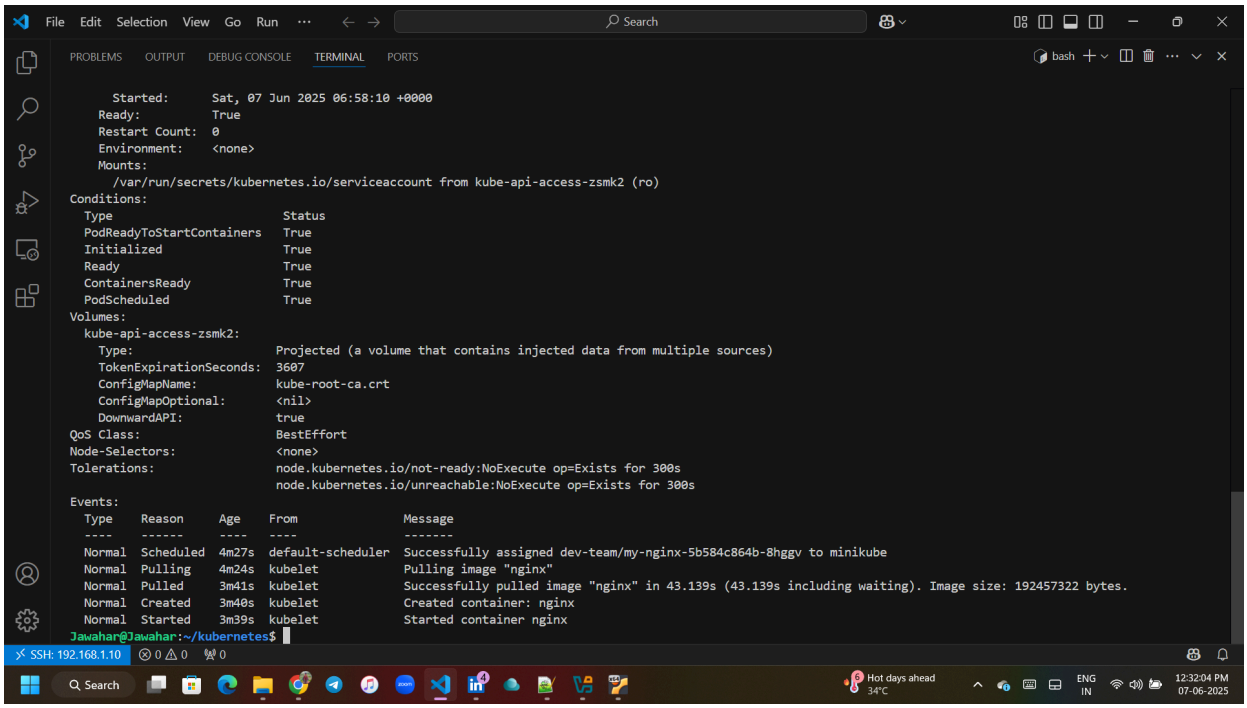
chmod +x kubectl
sudo mv kubectl /usr/local/bin/kubectl
echo "📦 Installing Minikube..."
curl -LO https://github.com/kubernetes/minikube/releases/latest/download/minikube-linux-amd64
sudo install minikube-linux-amd64 /usr/local/bin/minikube
rm minikube-linux-amd64
echo "🚀 Starting Minikube with Docker driver..."
minikube start --driver=docker
echo "✅ Creating test app..."
kubectl create deployment hello-minikube --image=kicbase/echo-server:1.0
kubectl expose deployment hello-minikube --type=NodePort --port=8080
echo "🌐 Opening the test app in browser..."
minikube service hello-minikube
echo "✅ Minikube setup complete!"
EONG
Jawahar@Jawahar:~/kubernetes$
SSH: 192.168.1.10
Search
Hot days ahead
34°C
ENG
IN
11:44:08 AM
07-06-2025

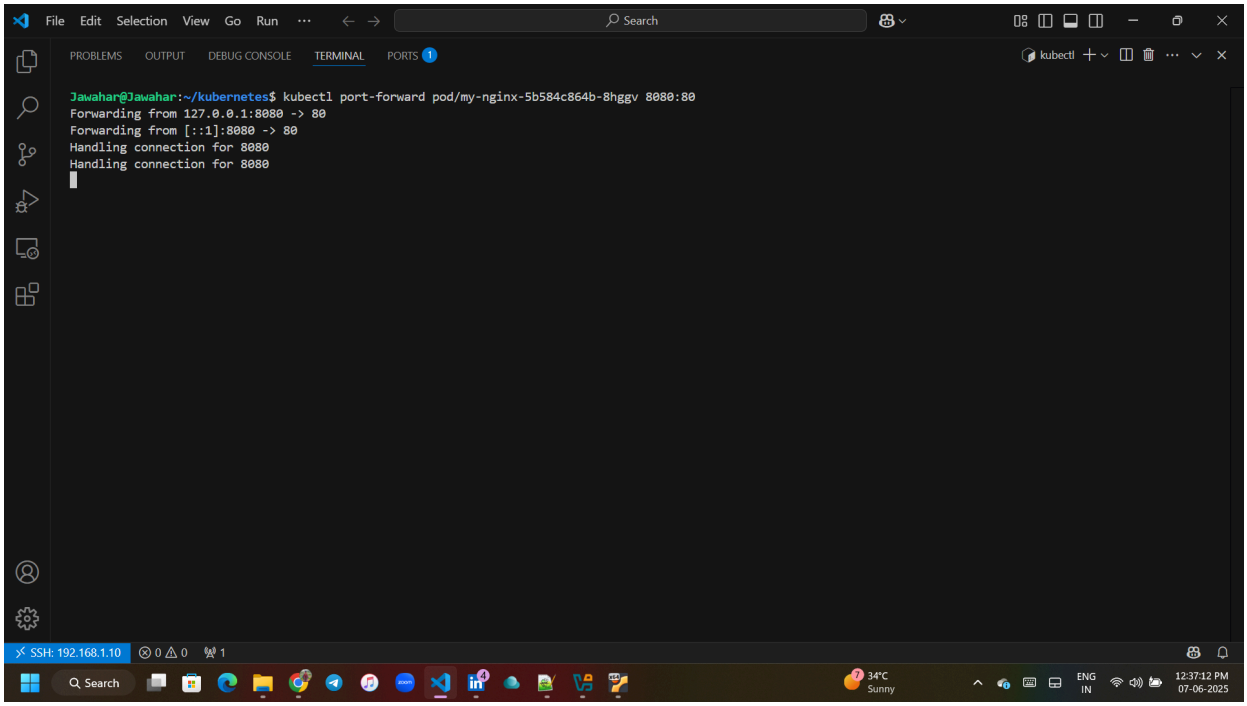

File Edit Selection View Go Run
Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
sudo
Jawahar@Jawahar:~/kubernetes$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
Jawahar@Jawahar:~/kubernetes$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
Loaded: loaded (/usr/lib/systemd/system/docker.service; enabled; preset: enabled)
Active: active (running) since Sat 2025-06-07 06:34:34 UTC; 13min ago
TriggeredBy: ● docker.socket
Docs: https://docs.docker.com
Main PID: 20466 (dockerd)
Tasks: 49
Memory: 790.2M (peak: 1.4G)
CPU: 2min 18.791s
CGroup: /system.slice/docker.service
├─20466 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock
├─23729 /usr/bin/docker-proxy -proto tcp -host-ip 127.0.0.1 -host-port 32768 -container-ip 192.168.49.2 -container-port 22
├─23736 /usr/bin/docker-proxy -proto tcp -host-ip 127.0.0.1 -host-port 32769 -container-ip 192.168.49.2 -container-port 2376
├─23743 /usr/bin/docker-proxy -proto tcp -host-ip 127.0.0.1 -host-port 32770 -container-ip 192.168.49.2 -container-port 5000
├─23750 /usr/bin/docker-proxy -proto tcp -host-ip 127.0.0.1 -host-port 32771 -container-ip 192.168.49.2 -container-port 8443
└─23755 /usr/bin/docker-proxy -proto tcp -host-ip 127.0.0.1 -host-port 32772 -container-ip 192.168.49.2 -container-port 32443
Jun 07 06:34:31 Jawahar dockerd[20466]: time="2025-06-07T06:34:31.9096849532" level=info msg="Loading containers: start."
Jun 07 06:34:34 Jawahar dockerd[20466]: time="2025-06-07T06:34:34.2584743932" level=info msg="Loading containers: done."
Jun 07 06:34:34 Jawahar dockerd[20466]: time="2025-06-07T06:34:34.4181739862" level=info msg="Docker daemon" commit="27.5.1-0ubuntu3~24.04.2" containerd-snapshott
Jun 07 06:34:34 Jawahar dockerd[20466]: time="2025-06-07T06:34:34.4197945452" level=info msg="Daemon has completed initialization"
Jun 07 06:34:34 Jawahar dockerd[20466]: time="2025-06-07T06:34:34.7006133162" level=info msg="API listen on /run/docker.sock"
Jun 07 06:34:34 Jawahar systemd[1]: Started docker.service - Docker Application Container Engine.
Jun 07 06:44:30 Jawahar dockerd[20466]: time="2025-06-07T06:44:30.1325273192" level=warning msg="reference for unknown type: " digest="sha256:6ed579c9292b4370177b
SSH: 192.168.1.10
Search
34°C
Sunny
ENG
IN
12:18:06 PM
07-06-2025

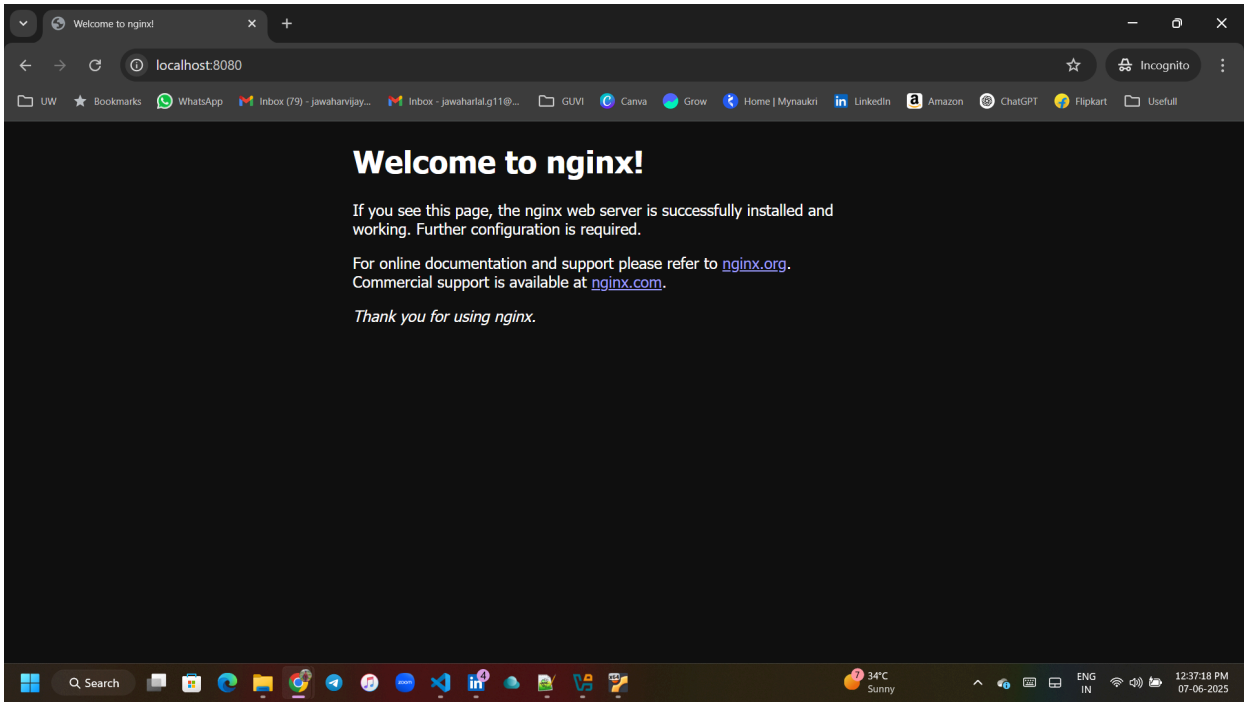

File Edit Selection View Go Run
Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
bash
Jawahar@Jawahar:~/kubernetes$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
Jawahar@Jawahar:~/kubernetes$ sudo apt install -y kubectl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
No apt package "kubectl", but there is a snap with that name.
Try "snap install kubectl"
E: Unable to locate package kubectl
Jawahar@Jawahar:~/kubernetes$ kubectl version --client
Command 'kubectl' not found, but can be installed with:
sudo snap install kubectl
Jawahar@Jawahar:~/kubernetes$ sudo snap install kubectl --classic
2025-06-07T06:54:17Z INFO Waiting for automatic snapd restart...
kubectl 1.32.5 from Canonical✓ installed
Jawahar@Jawahar:~/kubernetes$ kubectl version --client
Client Version: v1.32.5
Kustomize Version: v5.5.0
Jawahar@Jawahar:~/kubernetes$
SSH: 192.168.1.10
Search
34°C
Sunny
ENG
IN
12:26:12 PM
07-06-2025

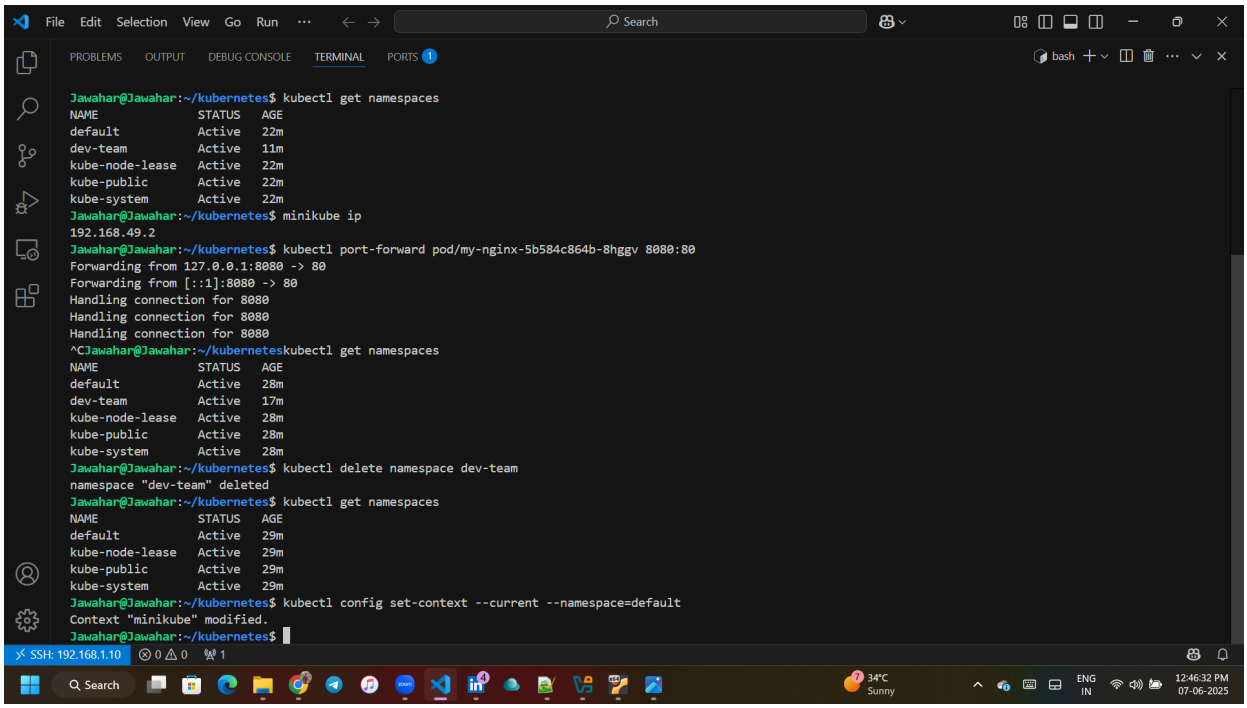

File Edit Selection View Go Run
Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
bash
Jawahar@Jawahar:~/kubernetes$ kubectl get nodes
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 10m v1.33.1
Jawahar@Jawahar:~/kubernetes$ kubectl get namespaces
NAME STATUS AGE
default Active 10m
kube-node-lease Active 10m
kube-public Active 10m
kube-system Active 10m
Jawahar@Jawahar:~/kubernetes$ kubectl create namespace dev-team
namespace/dev-team created
Jawahar@Jawahar:~/kubernetes$ kubectl get namespace dev-team
NAME STATUS AGE
dev-team Active 6s
Jawahar@Jawahar:~/kubernetes$ kubectl config set-context --current --namespace=dev-team
Context "minikube" modified.
Jawahar@Jawahar:~/kubernetes$ kubectl create deployment my-nginx --image=nginx
deployment.apps/my-nginx created
Jawahar@Jawahar:~/kubernetes$ kubectl expose deployment my-nginx --port=80 --target-port=80 --type=ClusterIP
service/my-nginx exposed
Jawahar@Jawahar:~/kubernetes$ kubectl get all
NAME READY STATUS RESTARTS AGE
pod/my-nginx-5b584c864b-8hggv 0/1 ContainerCreating 0 22s
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
service/my-nginx ClusterIP 10.97.198.177 <none> 80/TCP 12s
NAME READY UP-TO-DATE AVAILABLE AGE
deployment.apps/my-nginx 0/1 1 0 22s
NAME DESIRED CURRENT READY AGE
replicaset.apps/my-nginx-5b584c864b 1 1 0 22s
Jawahar@Jawahar:~/kubernetes$
SSH: 192.168.1.10
Search
1 cm of rain
Wednesday
ENG
IN
12:28:17 PM
07-06-2025


File Edit Selection View Go Run
Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
bash
^CJawahar@Jawahar:~/kubernetes$ kubectl get pods -w
NAME READY STATUS RESTARTS AGE
my-nginx-5b584c864b-8hggv 1/1 Running 0 3m46s
^CJawahar@Jawahar:~/kubernetes$ kubectl describe pod
Name: my-nginx-5b584c864b-8hggv
Namespace: dev-team
Priority: 0
Service Account: default
Node: minikube/192.168.49.2
Start Time: Sat, 07 Jun 2025 06:57:23 +0000
Labels: app=my-nginx
pod-template-hash=5b584c864b
Annotations: <none>
Status: Running
IP: 10.244.0.4
IPs:
IP: 10.244.0.4
Controlled By: ReplicaSet/my-nginx-5b584c864b
Containers:
nginx:
Container ID: docker://9b3949f3e6f40d51e9a76735324d0ed37675e1342b7dab6138418431 1c9bc41a
Image: nginx
Image ID: docker-pullable://nginx@sha256:fb39280b7b9eba5727c884a3c7810002e69e8f961cc373b89c92f14961d903a0
Port: <none>
Host Port: <none>
State: Running
Started: Sat, 07 Jun 2025 06:58:10 +0000
Ready: True
Restart Count: 0
Environment: <none>
Mounts:
/var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-zsmk2 (ro)
Conditions:
SSH: 192.168.1.10
Search
Hot days ahead 34°C
ENG IN
12:32:01 PM 07-06-2025


File Edit Selection View Go Run
Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
bash
Started: Sat, 07 Jun 2025 06:58:10 +0000
Ready: True
Restart Count: 0
Environment: <none>
Mounts:
/var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-zsmk2 (ro)
Conditions:
Type Status
PodReadyToStartContainers True
Initialized True
Ready True
ContainersReady True
PodScheduled True
Volumes:
kube-api-access-zsmk2:
Type: Projected (a volume that contains injected data from multiple sources)
TokenExpirationSeconds: 3607
ConfigMapName: kube-root-ca.crt
ConfigMapOptional: <nil>
DownwardAPI: true
QoS Class: BestEffort
Node-Selectors: <none>
Tolerations: node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
Type Reason Age From Message
Normal Scheduled 4m27s default-scheduler Successfully assigned dev-team/my-nginx-5b584c864b-8hggv to minikube
Normal Pulling 4m24s kubelet Pulling image "nginx"
Normal Pulled 3m41s kubelet Successfully pulled image "nginx" in 43.139s (43.139s including waiting). Image size: 192457322 bytes.
Normal Created 3m40s kubelet Created container: nginx
Normal Started 3m39s kubelet Started container nginx
Jawahar@Jawahar:~/kubernetes$
SSH: 192.168.1.10
Search
Hot days ahead 34°C
ENG IN
12:32:04 PM 07-06-2025


File Edit Selection View Go Run
Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS 1
kubectl
Jawahar@Jawahar:~/kubernetes$ kubectl port-forward pod/my-nginx-5b584c864b-8hggv 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080
Handling connection for 8080
SSH: 192.168.1.10
Search
34°C
Sunny
ENG
IN
12:37:12 PM
07-06-2025


Welcome to nginx!
localhost:8080
Incognito
Welcome to nginx!
If you see this page, the nginx web server is successfully installed and working. Further configuration is required.
For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.
Thank you for using nginx.
Search
34°C
Sunny
ENG
IN
12:37:18 PM
07-06-2025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Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS 1
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Jawahar@Jawahar:~/kubernetes$ kubectl get namespaces
NAME STATUS AGE
default Active 22m
dev-team Active 11m
kube-node-lease Active 22m
kube-public Active 22m
kube-system Active 22m
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192.168.49.2
Jawahar@Jawahar:~/kubernetes$ kubectl port-forward pod/my-nginx-5b584c864b-8hggv 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080
Handling connection for 8080
Handling connection for 8080
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NAME STATUS AGE
default Active 28m
dev-team Active 17m
kube-node-lease Active 28m
kube-public Active 28m
kube-system Active 28m
Jawahar@Jawahar:~/kubernetes$ kubectl delete namespace dev-team
namespace "dev-team" deleted
Jawahar@Jawahar:~/kubernetes$ kubectl get namespaces
NAME STATUS AGE
default Active 29m
kube-node-lease Active 29m
kube-public Active 29m
kube-system Active 29m
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Context "minikube" modified.
Jawahar@Jawahar:~/kubernetes$
SSH: 192.168.1.10
Search
34°C
Sunny
ENG
IN
12:46:32 PM
07-06-2025