Kubernetes

Launch one instance ubuntu **sudo su -**

Update the ubuntu **apt udate –y**

Install docker **sudo curl -fsSL https://get.docker.com -o get-docker.sh**

Permissions **chmod 700 get-docker.sh**

Execute permissions **./get-docker.sh**

See the version **docker version**

Check the status **systemctl status docker**

```
root@ip-172-31-83-109:~# systemctl status docker
● docker.service - Docker Application Container Engine
     Loaded: loaded (/usr/lib/systemd/system/docker.service; enabled;
     Active: active (running) since Thu 2024-11-14 10:43:02 UTC; 3min 1
TriggeredBy: ● docker.socket
       Docs: https://docs.docker.com
   Main PID: 2856 (dockerd)
      Tasks: 9
     Memory: 20.8M (peak: 24.2M)
        CPU: 313ms
     CGroup: /system.slice/docker.service
             └─2856 /usr/bin/dockerd -H fd:// --containerd=/run/contai
```

Install minikube

curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64

sudo install minikube-linux-amd64 /usr/local/bin/minikube

Move **sudo mv minikube-linux-amd64 /usr/local/bin/minikube**

sudo chmod +x /usr/local/bin/minikube

Check the version **sudo minikube version**

Install http **sudo apt install curl wget apt-transport-https –y**

Install kubectl

sudo curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"

sudo curl -LO "https://dl.k8s.io/$(curl -L -s

https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl.sha256"

sudo echo "$(cat kubectl.sha256) kubectl" | sha256sum –check

```
root@ip-172-31-83-109:~# sudo echo
kubectl: OK
```

Install root user

sudo install -o root -g root -m 0755 kubectl /usr/local/bin/kubectl

Version **sudo kubectl version –clien**t

Verify output **sudo kubectl version —client –output= yaml**

```
root@ip-172-31-83-109:~# sudo install -o root -g root -m 0755 kubectl /u
root@ip-172-31-83-109:~# sudo kubectl version --client
Client Version: v1.31.2
Kustomize Version: v5.4.2
root@ip-172-31-83-109:~# sudo kubectl version --client --output
error: flag needs an argument: --output
See 'kubectl version --help' for usage.
root@ip-172-31-83-109:~# sudo kubectl version --client --output=yaml
clientVersion:
  buildDate: "2024-10-22T20:35:25Z"
  compiler: gc
  gitCommit: 5864a4677267e6adeae276ad85882a8714d69d9d
  gitTreeState: clean
  gitVersion: v1.31.2
  goVersion: go1.22.8
  major: "1"
  minor: "31"
  platform: linux/amd64
kustomizeVersion: v5.4.2
```

Sudo minikube start —driver=docker —force

Execute the command creation of pod,pod will contain the containers

kubectl run pod1 --image=nginx

```
root@ip-172-31-83-109:~# kubectl run pod1 --image=nginx
pod/pod1 created
root@ip-172-31-83-109:~#
```

Running pods **Kubectl get pods**

Vi nginx-deployment.yaml

apiVersion: apps/v1

```yaml
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
    app: nginx
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx:latest
        ports:
        - containerPort: 80
```

Yaml file cluster apply

```
kubectl apply -f nginx-deployment.yaml

Kubectl get deployments

Kubectl get pods
```

```
root@ip-172-31-83-109:~# kubectl apply -f nginx-deployment.yaml
deployment.apps/nginx-deployment created
root@ip-172-31-83-109:~# kubectl get deployments
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment   3/3     3            3           110s
root@ip-172-31-83-109:~# kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deployment-54b9c68f67-9nmzz   1/1     Running   0          2m16s
nginx-deployment-54b9c68f67-bm7h6   1/1     Running   0          2m16s
nginx-deployment-54b9c68f67-cdlx8   1/1     Running   0          2m16s
pod1                                1/1     Running   0          27m
pod2                                1/1     Running   0          23m
```