

# KUBERNETES ASSIGNMENT -1

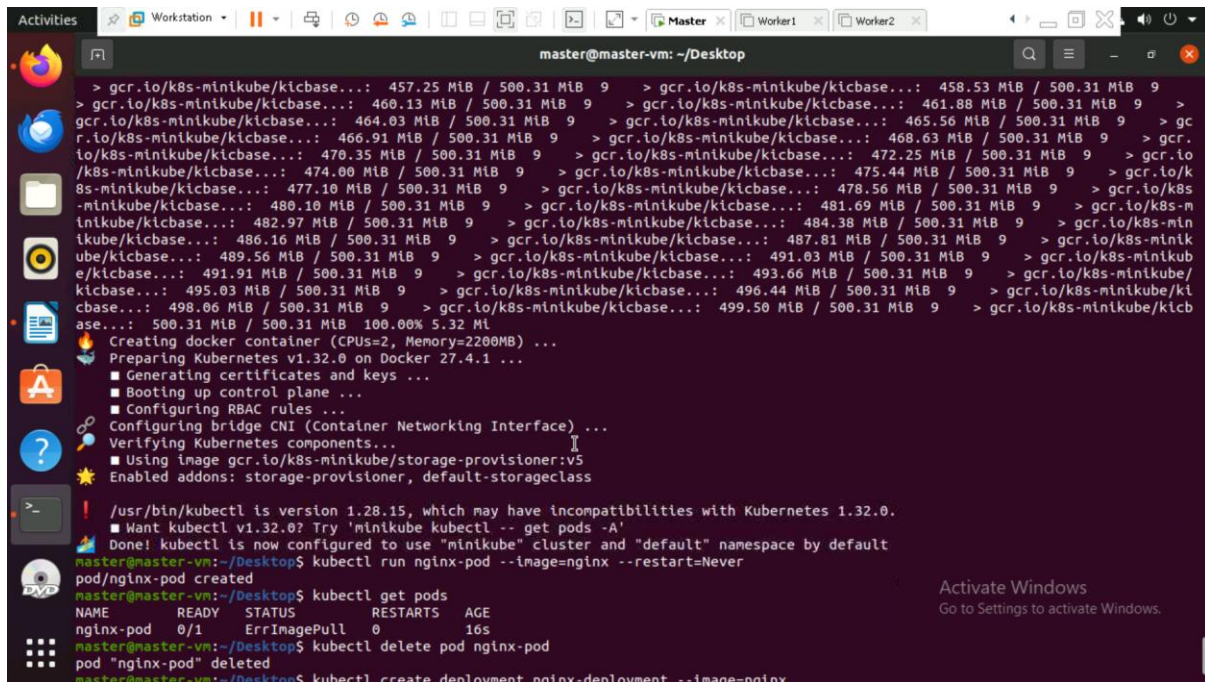
## Exercise 1: Deploy an Nginx Pod

**Objective:** Deploy a simple Nginx pod and access it.

1. Start a Kubernetes cluster (Minikube or other cluster):

```
minikube start
```

```
kubectl delete pod nginx-pod
```



```
master@master-vm: ~/Desktop
> gcr.io/k8s-minikube/kicbase...: 457.25 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 458.53 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 460.13 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 461.88 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 464.03 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 465.56 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 466.91 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 468.63 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 470.35 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 472.25 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 474.00 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 475.44 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 477.10 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 478.56 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 480.10 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 481.69 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 482.97 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 484.38 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 486.16 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 487.81 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 489.56 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 491.03 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 491.91 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 493.66 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 495.03 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 496.44 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 498.06 MiB / 500.31 MiB 9 > gcr.io/k8s-minikube/kicbase...: 499.50 MiB / 500.31 MiB 9
> gcr.io/k8s-minikube/kicbase...: 500.31 MiB / 500.31 MiB 100.00% 5.32 Mi
Creating docker container (CPUs=2, Memory=2200MB) ...
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
! /usr/bin/kubectl is version 1.28.15, which may have incompatibilities with Kubernetes 1.32.0.
  ■ Want kubectl v1.32.0? Try 'minikube kubectl -- get pods -A'
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
master@master-vm:~/Desktop$ kubectl run nginx-pod --image=nginx --restart=Never
pod/nginx-pod created
master@master-vm:~/Desktop$ kubectl get pods
NAME      READY   STATUS    RESTARTS   AGE
nginx-pod  0/1     ErrImagePull  0          16s
master@master-vm:~/Desktop$ kubectl delete pod nginx-pod
pod "nginx-pod" deleted
master@master-vm:~/Desktop$ kubectl create deployment nginx-deployment --image=nginx
```

## Exercise 2: Create an Nginx Deployment and Scale It

**Objective:** Create an Nginx deployment and scale it up.

### Steps & Commands:

1. **Create a deployment with Nginx:**

```
kubectl create deployment nginx-deployment --image=nginx
```

2. **Check the deployment:**

```
kubectl get deployments
```

3. **Scale the deployment to 3 replicas:**

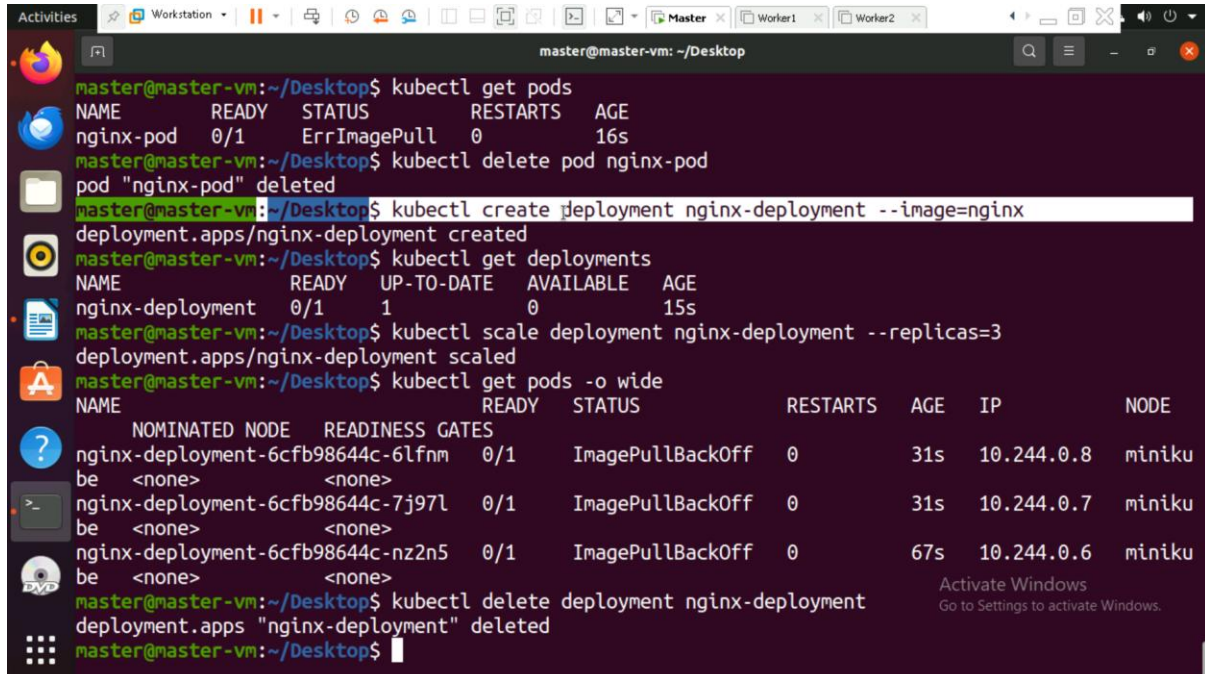
```
kubectl scale deployment nginx-deployment --replicas=3
```

4. **Check the running pods:**

```
kubectl get pods -o wide
```

## 5. Delete the deployment:

```
kubectl delete deployment nginx-deployment
```



```
master@master-vm:~/Desktop$ kubectl get pods
NAME        READY   STATUS    RESTARTS   AGE
nginx-pod   0/1     ErrImagePull  0          16s
master@master-vm:~/Desktop$ kubectl delete pod nginx-pod
pod "nginx-pod" deleted
master@master-vm:~/Desktop$ kubectl create deployment nginx-deployment --image=nginx
deployment.apps/nginx-deployment created
master@master-vm:~/Desktop$ kubectl get deployments
NAME        READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment  0/1     1            0          15s
master@master-vm:~/Desktop$ kubectl scale deployment nginx-deployment --replicas=3
deployment.apps/nginx-deployment scaled
master@master-vm:~/Desktop$ kubectl get pods -o wide
NAME                                READY   STATUS    RESTARTS   AGE   IP            NODE
nginx-deployment-6cfb98644c-6lfnm  0/1     ImagePullBackOff  0      31s   10.244.0.8    miniku
nginx-deployment-6cfb98644c-7j97l  0/1     ImagePullBackOff  0      31s   10.244.0.7    miniku
nginx-deployment-6cfb98644c-nz2n5  0/1     ImagePullBackOff  0      67s   10.244.0.6    miniku
master@master-vm:~/Desktop$ kubectl delete deployment nginx-deployment
deployment.apps "nginx-deployment" deleted
master@master-vm:~/Desktop$
```