

# Kubernetes

1. Deploy an Nginx Pod
2. Create an Nginx Deployment and Scale It

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To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
master@master-vm:~$ kubectl run nginx-pod --image=nginx --restart=Never
pod/nginx-pod created
master@master-vm:~$ kubectl get pods
NAME      READY   STATUS             RESTARTS   AGE
nginx-pod  0/1     ContainerCreating   0           31s
master@master-vm:~$ kubectl describe pod nginx-pod
Name:      nginx-pod
Namespace: default
Priority:   0
Service Account: default
Node:      minikube/192.168.49.2
Start Time: Thu, 13 Mar 2025 11:45:00 +0530
Labels:    run=nginx-pod
Annotations: <none>
Status:    Running
IP:        10.244.0.3
IPs:
  IP: 10.244.0.3
Containers:
  nginx-pod:
    Container ID:  docker://7a9992a5cabb790ab76ee2a98ca1f438a973e40601c3ce7c957a2f154a15c74
    Image:         nginx
    Image ID:      docker-pullable://nginx@sha256:9d6b58feebd2dbd3c56ab5853333d627cc6e281011cf6d050fa4bcf2072c9496
    Port:         <none>
    Host Port:    <none>
    State:        Running
      Started:    Thu, 13 Mar 2025 11:45:32 +0530
      Ready:      True
      Restart Count: 0
    Environment:  <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-fwq5z (ro)
Conditions:
  Type              Status

```

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Activities Workstation 11 Master Worker1 Worker2
master@master-vm: ~
Normal Pulling 48s kubelet Pulling image "nginx"
Normal Pulled 18s kubelet Successfully pulled image "nginx" in 29.975s (29.975s including waiting). Image size:
191998640 bytes.
Normal Created 17s kubelet Created container: nginx-pod
Normal Started 17s kubelet Started container nginx-pod
master@master-vm:~$ kubectl delete pod nginx-pod
pod "nginx-pod" deleted
master@master-vm:~$ kubectl create deployment nginx-deployment --image=nginx
deployment.apps/nginx-deployment created
master@master-vm:~$ kubectl get deployments
NAME READY UP-TO-DATE AVAILABLE AGE
nginx-deployment 1/1 1 1 17s
master@master-vm:~$ kubectl scale deployment nginx-deployment --replicas=3
deployment.apps/nginx-deployment scaled
master@master-vm:~$ kubectl get pods -o wide
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES
nginx-deployment-6cfb98644c-4q8qw 1/1 Running 0 74s 10.244.0.4 minikube <none> <none>
nginx-deployment-6cfb98644c-6s7tk 1/1 Running 0 43s 10.244.0.5 minikube <none> <none>
nginx-deployment-6cfb98644c-k5kgh 1/1 Running 0 43s 10.244.0.6 minikube <none> <none>
master@master-vm:~$ kubectl delete deployment nginx-deployment
deployment.apps "nginx-deployment" deleted
master@master-vm:~$ nano nginx-pod.yaml
master@master-vm:~$ kubectl apply -f nginx-pod.yaml
pod/nginx-pod created
master@master-vm:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
nginx-pod 1/1 Running 0 13s
master@master-vm:~$ ^C
: command not found
master@master-vm:~$ kubectl delete -f nginx-pod.yaml
pod "nginx-pod" deleted
master@master-vm:~$ history
1 sudo apt-get update
2 sudo apt update
3 sudo apt install openssl-server
4 sudo apt install openssl
5
```