

# KubeLocal: Hands-On Kubernetes Workshop

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## Install Kubernetes Locally

Screenshot or pasted outputs of both commands

```
sotir@sotir-Dell:~$ kubectl get nodes
NAME          STATUS    ROLES          AGE    VERSION
minikube      Ready    control-plane  14h    v1.33.1
sotir@sotir-Dell:~$ kubectl get pods -n kube-system
NAME                                READY   STATUS    RESTARTS   AGE
coredns-674b8bbfcf-lpm97           0/1     Running   1 (14h ago) 14h
etcd-minikube                      1/1     Running   1 (14h ago) 14h
kube-apiserver-minikube             1/1     Running   1 (37s ago) 14h
kube-controller-manager-minikube    1/1     Running   1 (14h ago) 14h
kube-proxy-mbw9v                   1/1     Running   1 (14h ago) 14h
kube-scheduler-minikube             1/1     Running   1 (14h ago) 14h
storage-provisioner                 1/1     Running   2 (14h ago) 14h
sotir@sotir-Dell:~$
```

## Write Your First Pod Manifest

The nginx-pod.yaml file and the output of kubectl describe pod nginx

This is a link the [nginx-pod.yaml file](#)

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx
spec:
  containers:
  - name: nginx-container
    image: nginx:latest
    ports:
    - containerPort: 80
```

```
$ kubectl describe pod nginx
```

```
Name:          nginx
Namespace:     default
Priority:       0
Service Account: default
Node:          minikube/192.168.49.2
```

```

Start Time:      Wed, 30 Jul 2025 18:13:23 +0300
Labels:          <none>
Annotations:     <none>
Status:          Running
IP:              10.244.0.5
IPs:
  IP:  10.244.0.5
Containers:
  nginx-container:
    Container ID:
docker://fb6f4a18f9685959a8af74f17d68f659e792d31ad775179cdf580040f15ae45
9
    Image:          nginx:latest
    Image ID:       docker-
pullable://nginx@sha256:84ec966e61a8c7846f509da7eb081c55c1d5681744872892
4a87ab32f12a72fb
    Port:           80/TCP
    Host Port:      0/TCP
    State:          Running
      Started:      Wed, 30 Jul 2025 18:13:26 +0300
    Ready:          True
    Restart Count:  0
    Environment:    <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-
access-p4thd (ro)
Conditions:
  Type                                Status
  PodReadyToStartContainers          True
  Initialized                        True
  Ready                              True
  ContainersReady                    True
  PodScheduled                       True
Volumes:
  kube-api-access-p4thd:
    Type:          Projected (a volume that contains injected
data from multiple sources)
    TokenExpirationSeconds: 3607
    ConfigMapName:      kube-root-ca.crt
    Optional:           false
    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   6m39s default-scheduler Successfully assigned
default/nginx to minikube
Normal    Pulling     6m39s kubelet        Pulling image

```

```
"nginx:latest"
```

```
Normal Pulled 6m36s kubelet
```

```
Successfully pulled image
```

```
"nginx:latest" in 2.409s (2.409s including waiting). Image size:
```

```
192231837 bytes.
```

```
Normal Created 6m36s kubelet  
container
```

```
Created container: nginx-
```

```
Normal Started 6m36s kubelet  
container
```

```
Started container nginx-
```

## Manage Deployments & Replicas

Updated manifest plus CLI logs showing both the rollout and the rollback

To review CLI logs find this [session.log](#) file and execute this command in a terminal

```
cat session.log
```

The image shows two terminal windows from a session titled 'sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1'.

The top terminal window shows the following commands and output:

```
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ kubectl apply -f nginx-deployment.yaml
deployment.apps/nginx created
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ kubectl rollout status deployment/nginx
deployment "nginx" successfully rolled out
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ cat nginx-deployment.yaml | grep "image:"
image: nginx:latest
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ nano nginx-deployment.yaml
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ nano nginx-deployment.yaml | grep "image:"
image: nginx:1.20
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ cat nginx-deployment.yaml
kubectl apply -f nginx-deployment.yaml
deployment.apps/nginx configured
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ kubectl rollout undo deployment/nginx
deployment.apps/nginx rolled back
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx                                1/1     Running   0           3h21m
nginx-84c5b8588f-gzbf6              1/1     Running   0           74s
nginx-84c5b8588f-hkhln              1/1     Running   0           68s
nginx-84c5b8588f-nphzq              1/1     Running   0           71s
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ kubectl describe pod nginx-84c5b8588f-gzbf6
Name:                               nginx-84c5b8588f-gzbf6
Namespace:                           default
Priority:                             0
Service Account:                      default
Node:                                 minikube/192.168.49.2
Start Time:                           Wed, 30 Jul 2025 21:33:34 +0300
Labels:                               app=nginx
                                      pod-template-hash=84c5b8588f
Annotations:                           Status: Running
IP:                                   10.244.0.30
IPs:                                  10.244.0.30
Controlled By:                         ReplicaSet/nginx-84c5b8588f
Containers:
  nginx-container:
    Container ID:   docker://c3ffb07aaae6de73d33695e35e44da61cb57ceb36dd38c2fd
    Container Image: nginx:latest
    Image ID:       docker-pullable://nginx@sha256:84ec966e61a8c7846f599da7eb081c55cd5d56817448728924a87ab3f12a72fb
    Ports:          80/TCP
    Host Port:      0/TCP
```

The bottom terminal window shows the following output:

```
Host Port:      0/TCP
State:          Running
Started:        Wed, 30 Jul 2025 21:33:36 +0300
Ready:          True
Restart Count:  0
Environment:    <none>
Mounts:
  /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-xdsg7 (
ro)
Conditions:
  Type                               Status
PodReadyToStartContainers            True
Initialized                          True
Ready                                True
ContainersReady                      True
PodScheduled                         True
Volumes:
  kube-api-access-xdsg7:
    Type:                               Projected (a volume that contains injected data fro
n multiple sources)
    TokenExpirationSeconds:              3607
    ConfigMapName:                       kube-root-ca.crt
    Optional:                            false
    DownwardAPI:                         true
    QoS Class:                           BestEffort
    Node-Selectors:                      <none>
    Tolerations:                         node.kubernetes.io/not-ready:NoExecute op=Exists fo
r 300s
                                         node.kubernetes.io/unreachable:NoExecute op=Exists
                                         for 300s
Events:
  Type    Reason      Age    From          Message
  ----    -
Normal   Scheduled   2m1s  default-scheduler  Successfully assigned default/nginx-84c5b8588f-gzbf6 to minikube
Normal   Pulling     2m1s  kubelet         Pulling image "nginx:latest"
Normal   Pulled      119s  kubelet         Successfully pulled image "nginx:latest" in 2.136s (2.136s including waiting). Image size: 192231837 bytes.
Normal   Created     119s  kubelet         Created container: nginx-container
Normal   Started     118s  kubelet         Started container nginx-container
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$ exit
exit
Script done on 2025-07-30 21:35:58+03:00 [COMMAND_EXIT_CODE="0"]
sotir@sotir-Dell: ~/Desktop/BIternship/K8s Session1$
```