◆ “Kubernetes Fundamentals and Deployment with Minikube”

Name: Wajid Iqbal – Cloud & DevOps Specialist (AWS Certified)

Project: Kubernetes Fundamentals and Deployment with Minikube

Description:

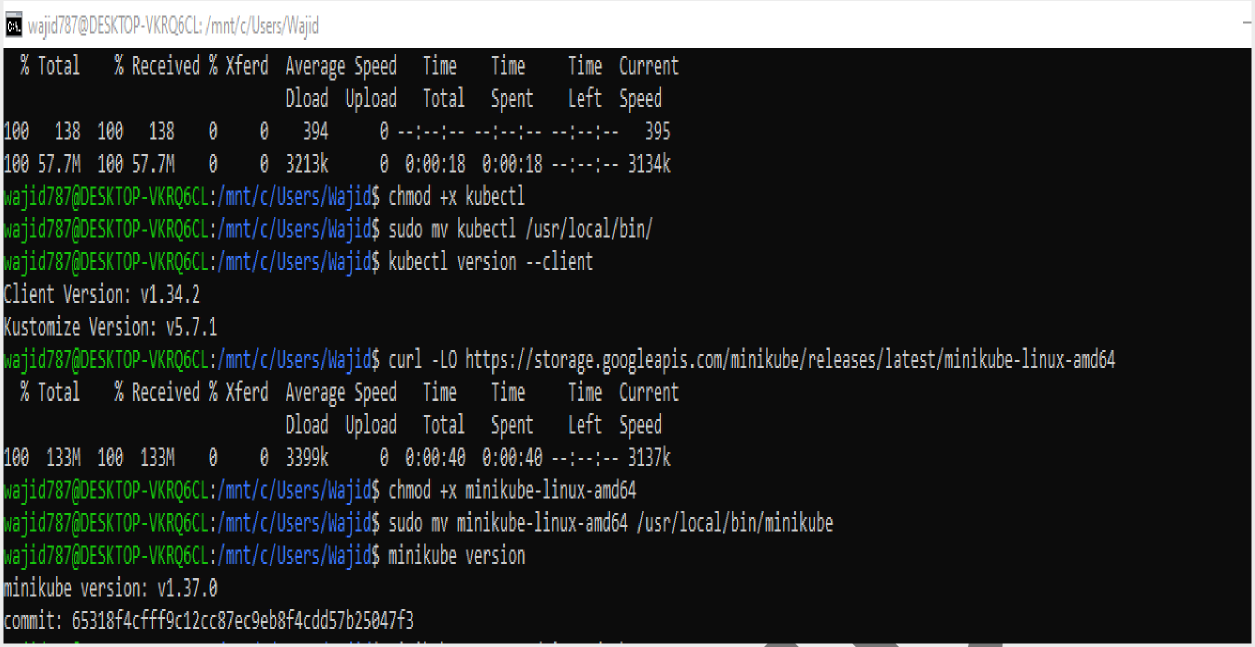
Implemented and automated the deployment and management of containerized applications using Kubernetes. Set up a local Kubernetes cluster using Minikube, managed pods and services, deployed applications via YAML manifests, and explored cluster management through the Minikube dashboard.

Key Skills / Technologies Used:

- **Kubernetes Architecture & Components**
- **Minikube Setup & Management**
- **Kubectl Commands & Cluster Operations**
- **YAML File Deployment**
- **Pod and Service Management**
- **Minikube Dashboard Exploration**
- **Container Orchestration & DevOps Practices**

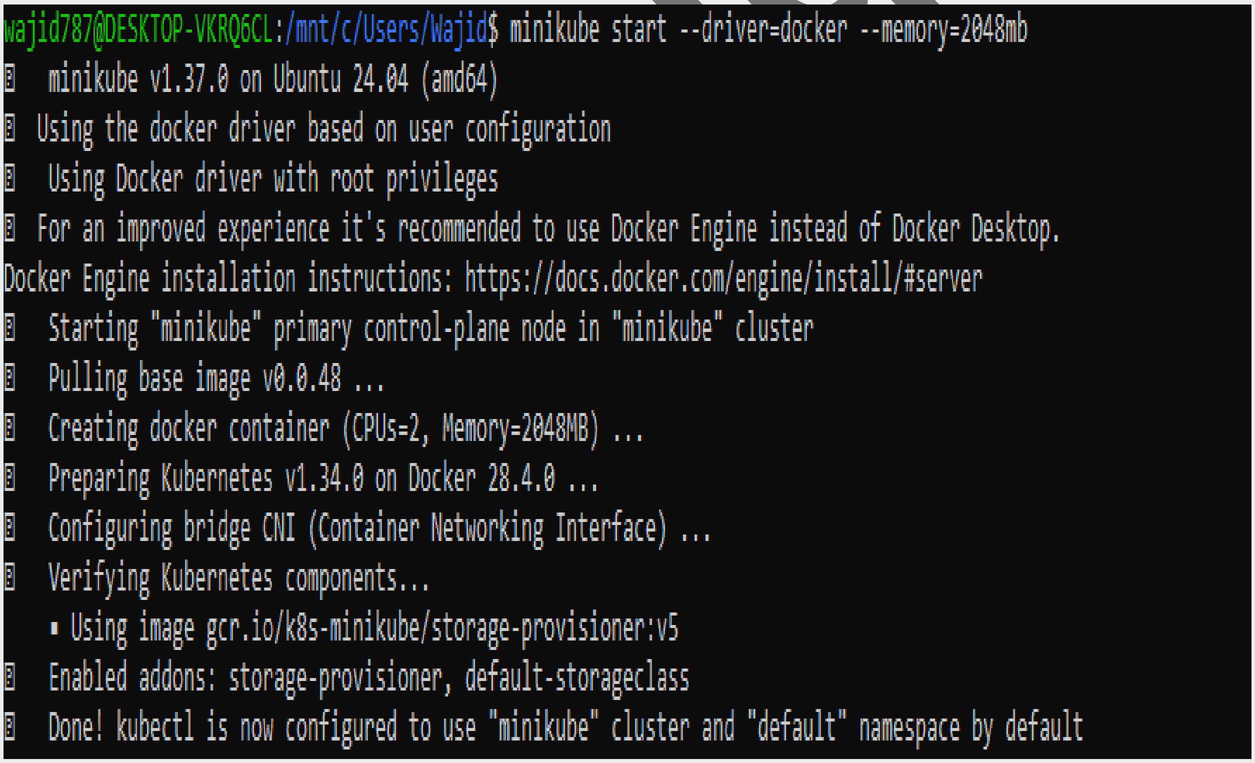
Outcome / Achievement:

- **Successfully set up a local Kubernetes cluster using Minikube**
- **Deployed and managed applications via YAML manifests**
- **Gained hands-on experience with pods, deployments, and services**
- **Used Minikube dashboard for cluster visualization and management**
- **Developed practical understanding of Kubernetes architecture and orchestration**

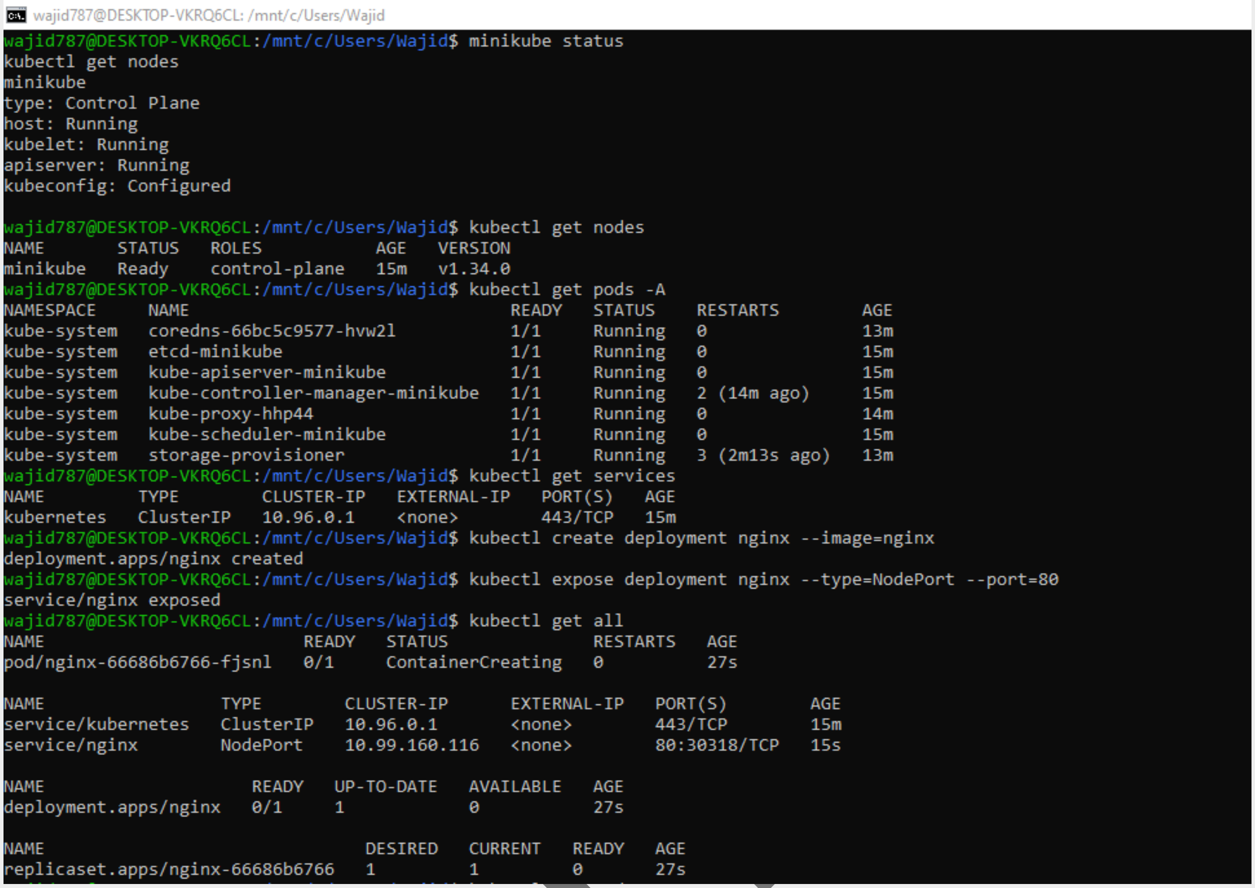


wajid787@DESKTOP-VKRQ6CL: /mnt/c/Users/Wajid

```
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   138  100   138    0     0    394      0 --:--:-- --:--:-- --:--:--   395
100 57.7M  100 57.7M    0     0  3213k      0  0:00:18  0:00:18 --:--:-- 3134k
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ chmod +x kubectl
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ sudo mv kubectl /usr/local/bin/
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl version --client
Client Version: v1.34.2
Kustomize Version: v5.7.1
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  133M  100  133M    0     0  3399k      0  0:00:40  0:00:40 --:--:-- 3137k
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ chmod +x minikube-linux-amd64
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ sudo mv minikube-linux-amd64 /usr/local/bin/minikube
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube version
minikube version: v1.37.0
commit: 65318f4cfff9c12cc87ec9eb8f4cdd57b25047f3
```



```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube start --driver=docker --memory=2048mb
□  minikube v1.37.0 on Ubuntu 24.04 (amd64)
□ Using the docker driver based on user configuration
□  Using Docker driver with root privileges
□ For an improved experience it's recommended to use Docker Engine instead of Docker Desktop.
Docker Engine installation instructions: https://docs.docker.com/engine/install/#server
□  Starting "minikube" primary control-plane node in "minikube" cluster
□  Pulling base image v0.0.48 ...
□  Creating docker container (CPUs=2, Memory=2048MB) ...
□  Preparing Kubernetes v1.34.0 on Docker 28.4.0 ...
□  Configuring bridge CNI (Container Networking Interface) ...
□  Verifying Kubernetes components...
    ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
□  Enabled addons: storage-provisioner, default-storageclass
□  Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
```



wajid787@DESKTOP-VKRQ6CL: /mnt/c/Users/Wajid

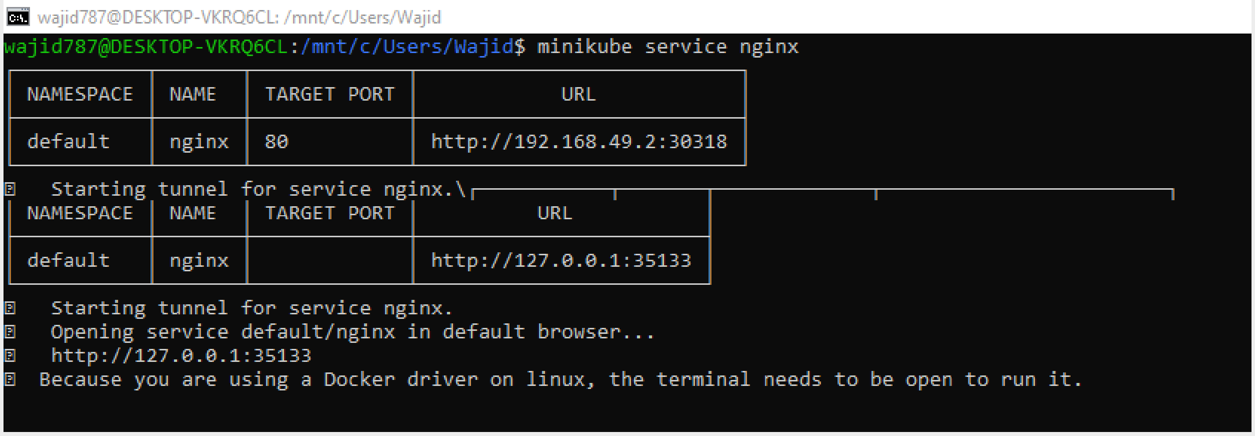
```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube status
kubectl get nodes
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured

wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get nodes
NAME       STATUS   ROLES           AGE   VERSION
minikube   Ready    control-plane   15m   v1.34.0
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get pods -A
NAMESPACE     NAME                               READY   STATUS    RESTARTS        AGE
kube-system   coredns-66bc5c9577-hvw2l           1/1     Running   0               13m
kube-system   etcd-minikube                      1/1     Running   0               15m
kube-system   kube-apiserver-minikube            1/1     Running   0               15m
kube-system   kube-controller-manager-minikube   1/1     Running   2 (14m ago)     15m
kube-system   kube-proxy-hhp44                   1/1     Running   0               14m
kube-system   kube-scheduler-minikube            1/1     Running   0               15m
kube-system   storage-provisioner                1/1     Running   3 (2m13s ago)   13m
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get services
NAME         TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
kubernetes   ClusterIP   10.96.0.1    <none>        443/TCP   15m
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl create deployment nginx --image=nginx
deployment.apps/nginx created
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl expose deployment nginx --type=NodePort --port=80
service/nginx exposed
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get all
NAME                         READY   STATUS              RESTARTS   AGE
pod/nginx-66686b6766-fjsnl   0/1     ContainerCreating   0          27s

NAME                 TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)        AGE
service/kubernetes   ClusterIP   10.96.0.1       <none>        443/TCP        15m
service/nginx        NodePort    10.99.160.116   <none>        80:30318/TCP   15s

NAME                    READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/nginx   0/1     1            0           27s

NAME                               DESIRED   CURRENT   READY   AGE
replicaset.apps/nginx-66686b6766   1         1         0       27s
```

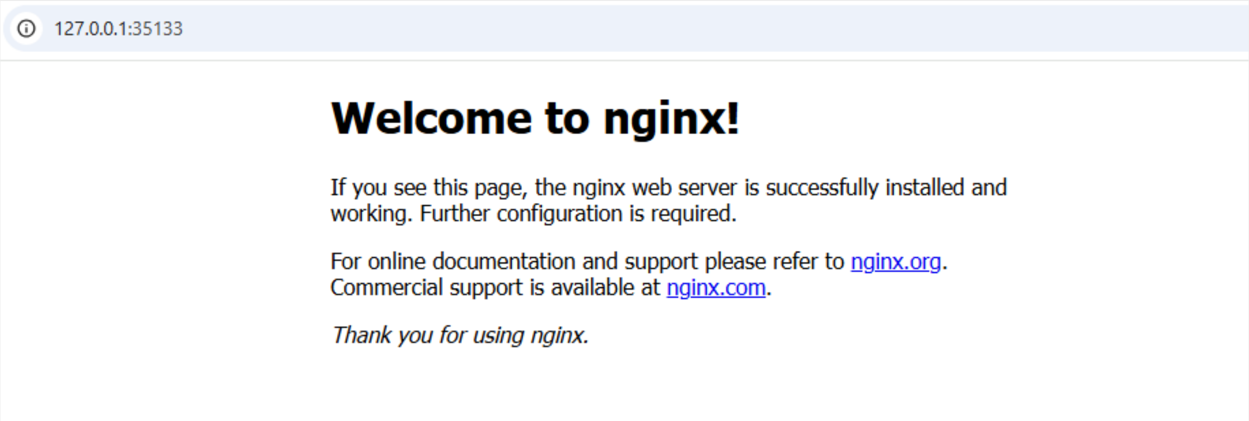


wajid787@DESKTOP-VKRQ6CL: /mnt/c/Users/Wajid

```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube service nginx
│ NAMESPACE │ NAME  │ TARGET PORT │            URL            │
│ default   │ nginx │ 80          │ http://192.168.49.2:30318 │

□  Starting tunnel for service nginx.\
│ NAMESPACE │ NAME  │ TARGET PORT │          URL           │
│ default   │ nginx │             │ http://127.0.0.1:35133 │

□  Starting tunnel for service nginx.
□  Opening service default/nginx in default browser...
□  http://127.0.0.1:35133
□  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```

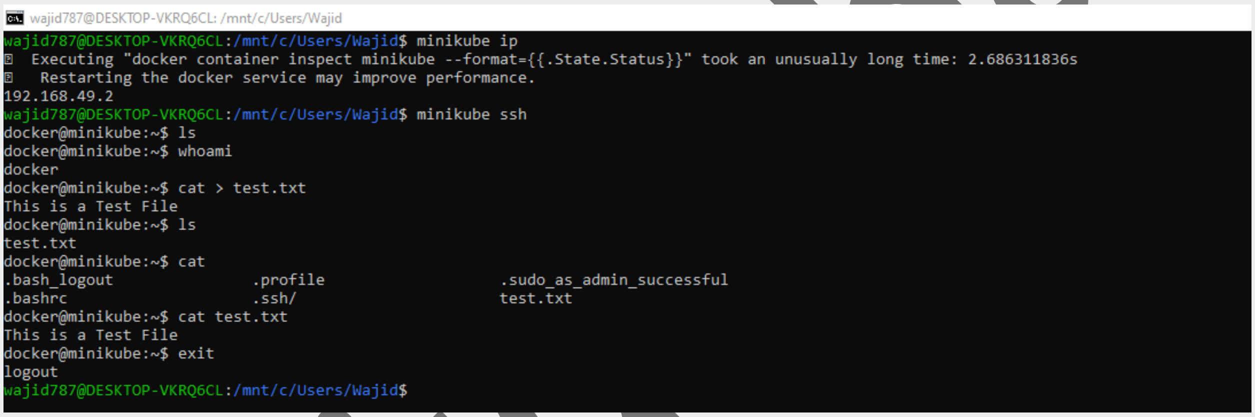

127.0.0.1:35133

Welcome to nginx!

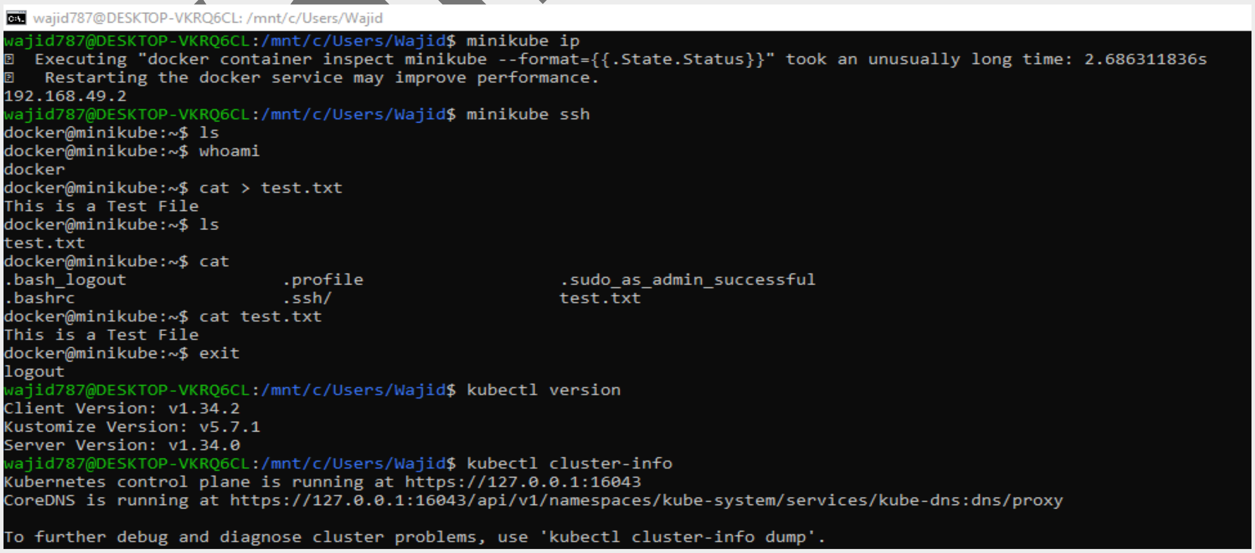
If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

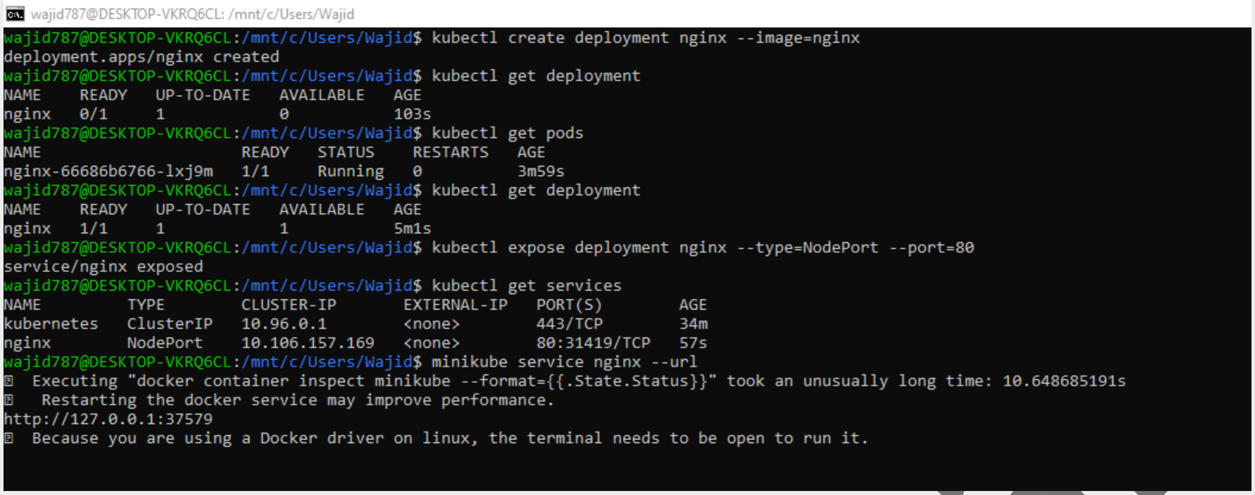

wajid787@DESKTOP-VKRQ6CL: /mnt/c/Users/Wajid

```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube ip
□  Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 2.686311836s
□   Restarting the docker service may improve performance.
192.168.49.2
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube ssh
docker@minikube:~$ ls
docker@minikube:~$ whoami
docker
docker@minikube:~$ cat > test.txt
This is a Test File
docker@minikube:~$ ls
test.txt
docker@minikube:~$ cat
.bash_logout               .profile                   .sudo_as_admin_successful
.bashrc                    .ssh/                      test.txt
docker@minikube:~$ cat test.txt
This is a Test File
docker@minikube:~$ exit
logout
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$
```


wajid787@DESKTOP-VKRQ6CL: /mnt/c/Users/Wajid

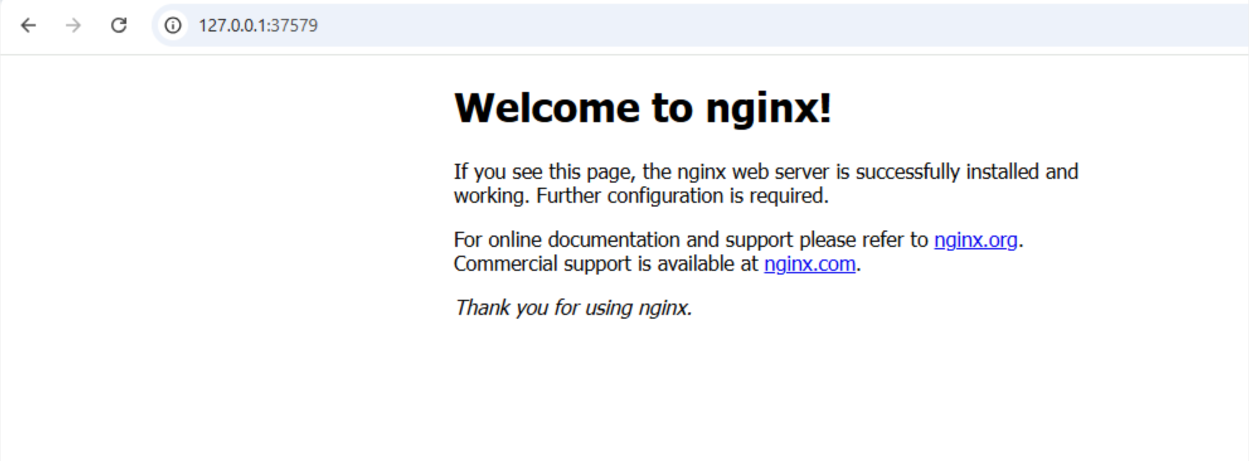
```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube ip
□  Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 2.686311836s
□   Restarting the docker service may improve performance.
192.168.49.2
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube ssh
docker@minikube:~$ ls
docker@minikube:~$ whoami
docker
docker@minikube:~$ cat > test.txt
This is a Test File
docker@minikube:~$ ls
test.txt
docker@minikube:~$ cat
.bash_logout               .profile                   .sudo_as_admin_successful
.bashrc                    .ssh/                      test.txt
docker@minikube:~$ cat test.txt
This is a Test File
docker@minikube:~$ exit
logout
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl version
Client Version: v1.34.2
Kustomize Version: v5.7.1
Server Version: v1.34.0
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl cluster-info
Kubernetes control plane is running at https://127.0.0.1:16043
CoreDNS is running at https://127.0.0.1:16043/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
```



wajid787@DESKTOP-VKRQ6CL: /mnt/c/Users/Wajid

```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl create deployment nginx --image=nginx
deployment.apps/nginx created
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get deployment
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
nginx   0/1     1            0           103s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get pods
NAME                     READY   STATUS    RESTARTS   AGE
nginx-66686b6766-lxj9m   1/1     Running   0          3m59s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get deployment
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
nginx   1/1     1            1           5m1s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl expose deployment nginx --type=NodePort --port=80
service/nginx exposed
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get services
NAME         TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)        AGE
kubernetes   ClusterIP   10.96.0.1        <none>        443/TCP        34m
nginx        NodePort    10.106.157.169   <none>        80:31419/TCP   57s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube service nginx --url
□  Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 10.648685191s
□   Restarting the docker service may improve performance.
http://127.0.0.1:37579
□  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```



Welcome to nginx!

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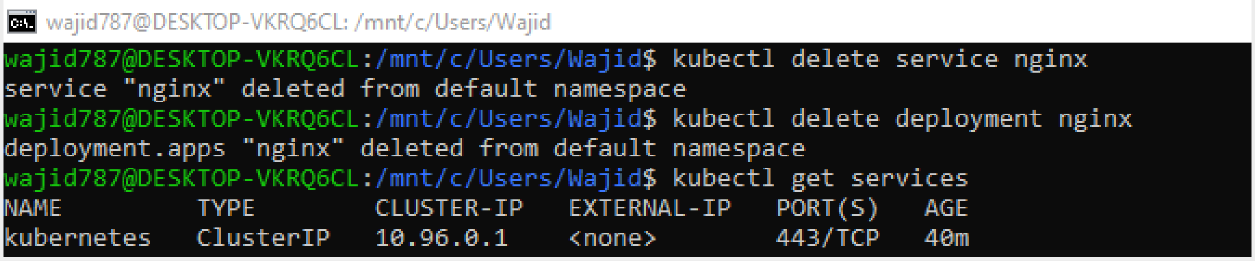
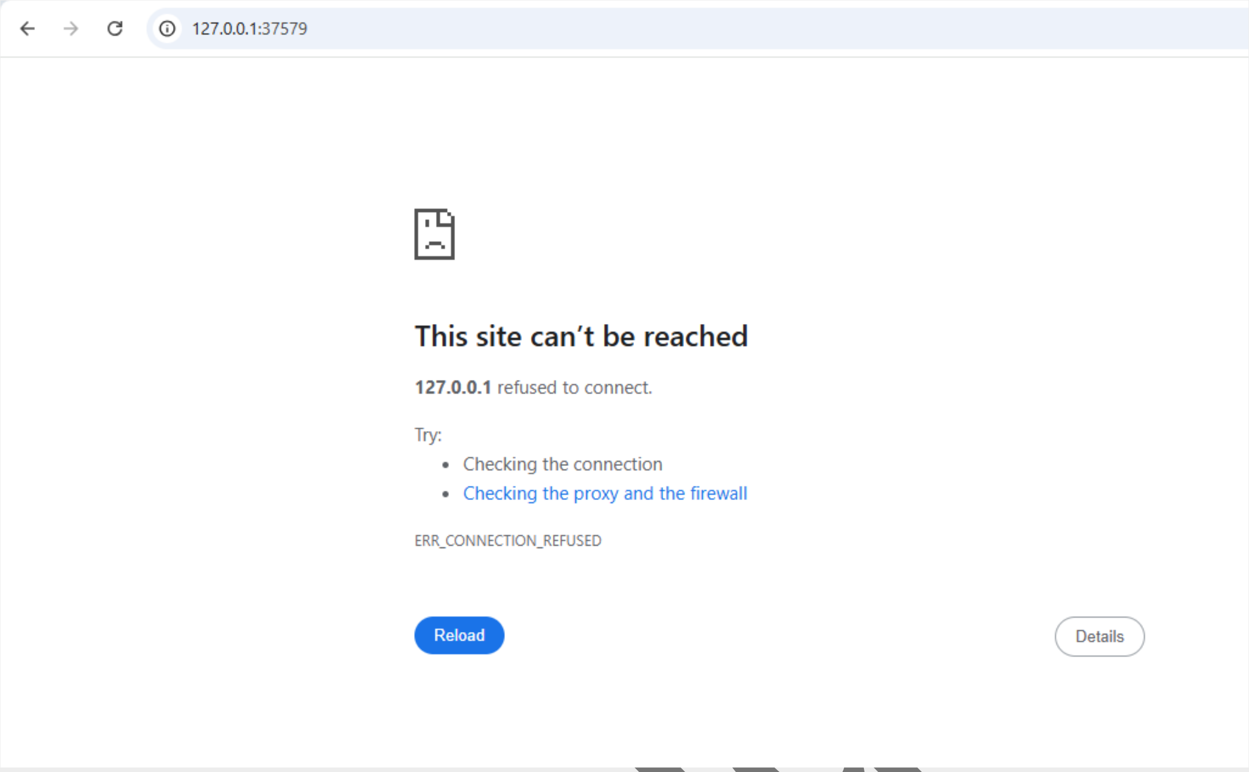
Thank you for using nginx.



wajid787@DESKTOP-VKRQ6CL: /mnt/c/Users/Wajid

```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl delete service nginx
service "nginx" deleted from default namespace
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl delete deployment nginx
deployment.apps "nginx" deleted from default namespace
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get services
NAME         TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
kubernetes   ClusterIP   10.96.0.1    <none>        443/TCP   40m
```



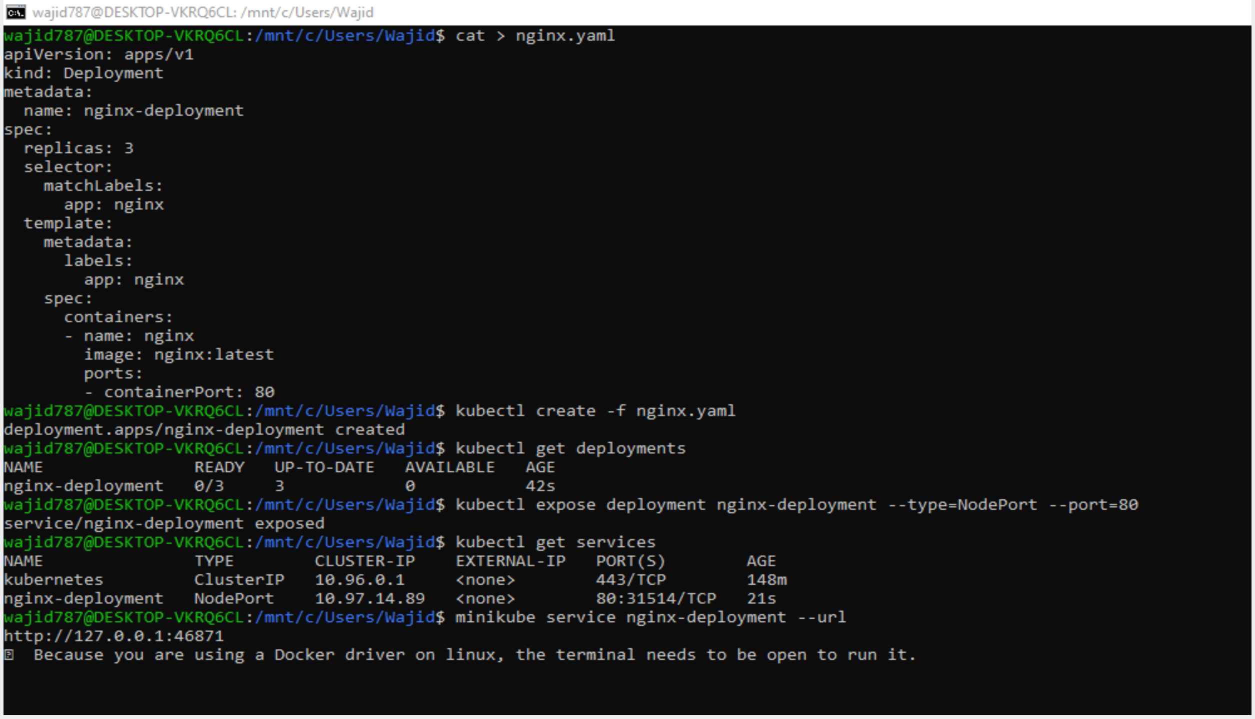
This site can’t be reached

127.0.0.1 refused to connect.

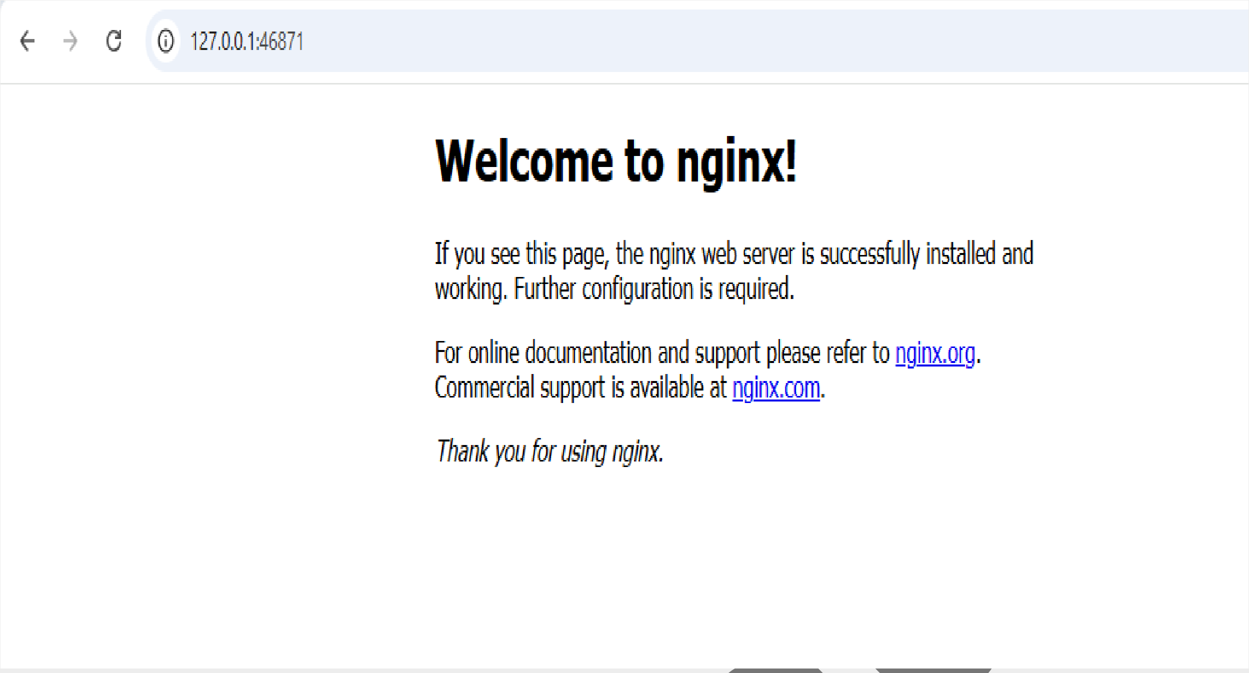
Try:

- Checking the connection
- Checking the proxy and the firewall

ERR_CONNECTION_REFUSED



```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ cat > nginx.yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx:latest
        ports:
        - containerPort: 80
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl create -f nginx.yaml
deployment.apps/nginx-deployment created
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get deployments
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment   0/3     3            0           42s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl expose deployment nginx-deployment --type=NodePort --port=80
service/nginx-deployment exposed
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ kubectl get services
NAME               TYPE        CLUSTER-IP    EXTERNAL-IP   PORT(S)        AGE
kubernetes         ClusterIP   10.96.0.1     <none>        443/TCP        148m
nginx-deployment   NodePort    10.97.14.89   <none>        80:31514/TCP   21s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Users/Wajid$ minikube service nginx-deployment --url
http://127.0.0.1:46871
□  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```



Welcome to nginx!

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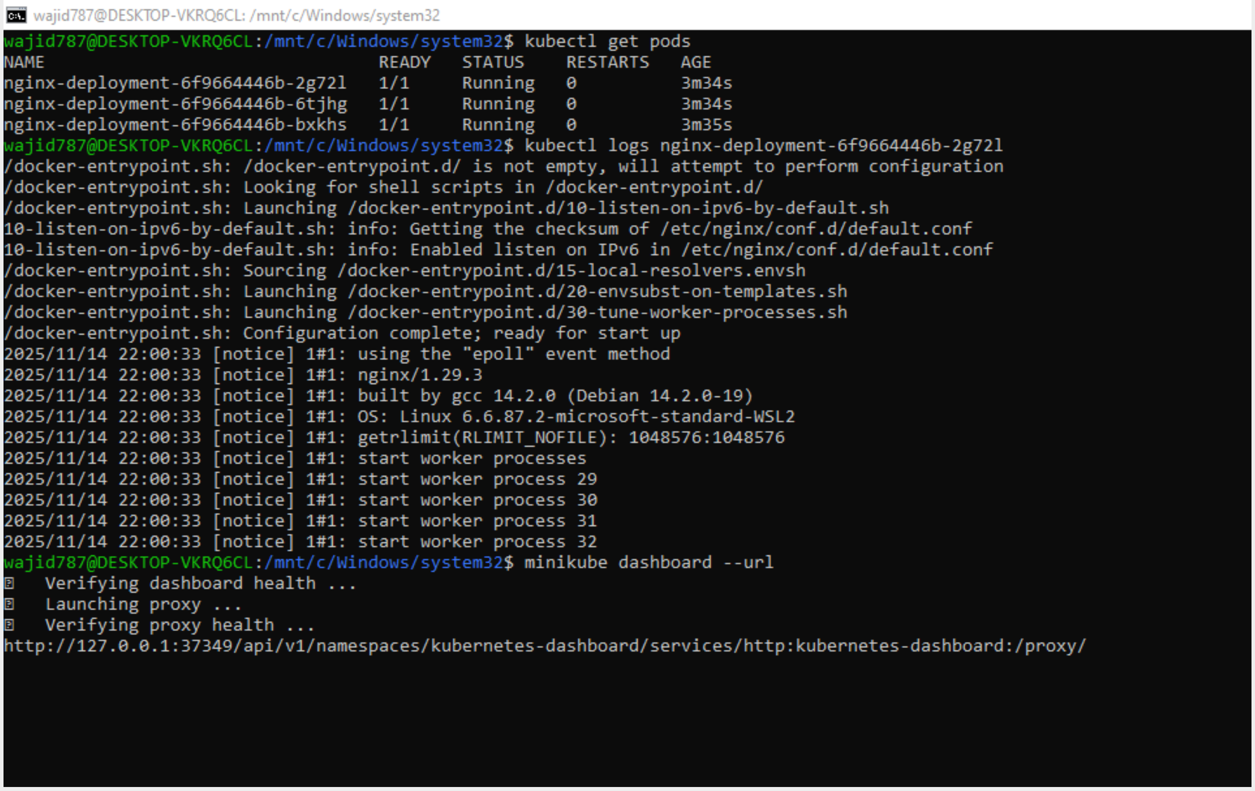
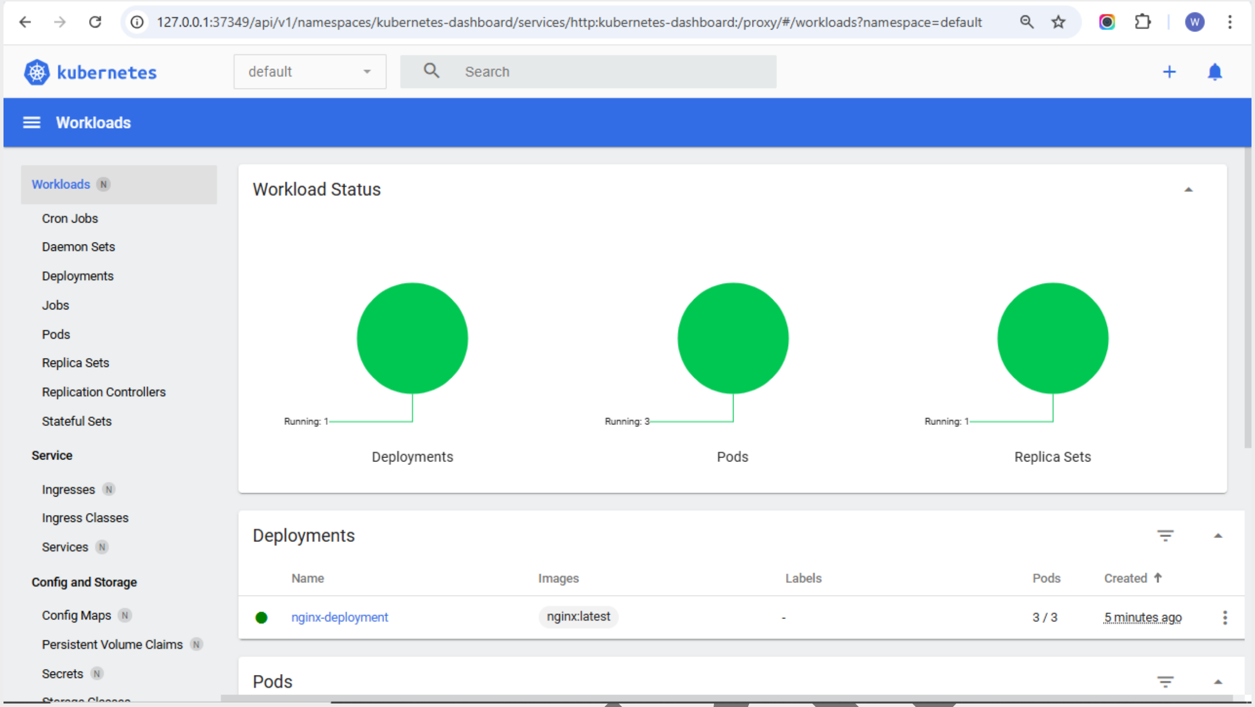
Commercial support is available at nginx.com.

Thank you for using nginx.



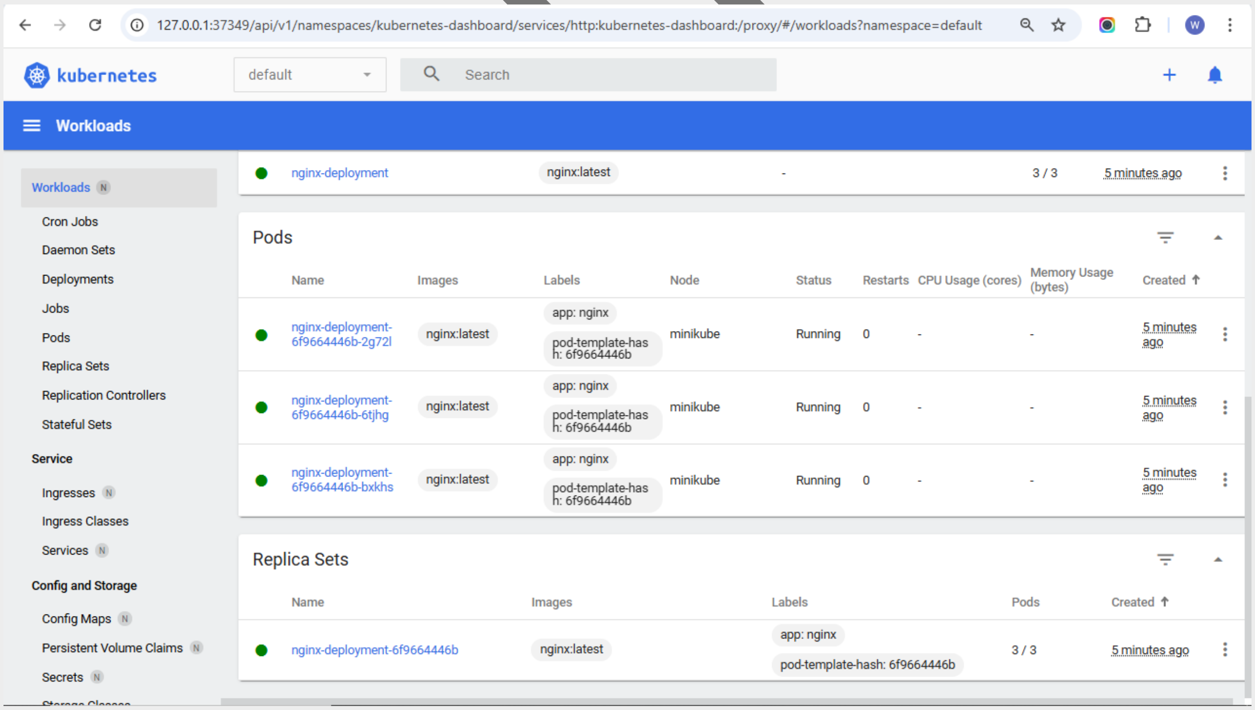
```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deployment-6f9664446b-2g72l   1/1     Running   0          3m34s
nginx-deployment-6f9664446b-6tjhg   1/1     Running   0          3m34s
nginx-deployment-6f9664446b-bxkhs   1/1     Running   0          3m35s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl logs nginx-deployment-6f9664446b-2g72l
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2025/11/14 22:00:33 [notice] 1#1: using the "epoll" event method
2025/11/14 22:00:33 [notice] 1#1: nginx/1.29.3
2025/11/14 22:00:33 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)
2025/11/14 22:00:33 [notice] 1#1: OS: Linux 6.6.87.2-microsoft-standard-WSL2
2025/11/14 22:00:33 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2025/11/14 22:00:33 [notice] 1#1: start worker processes
2025/11/14 22:00:33 [notice] 1#1: start worker process 29
2025/11/14 22:00:33 [notice] 1#1: start worker process 30
2025/11/14 22:00:33 [notice] 1#1: start worker process 31
2025/11/14 22:00:33 [notice] 1#1: start worker process 32
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ minikube dashboard --url
□   Verifying dashboard health ...
□   Launching proxy ...
□   Verifying proxy health ...
http://127.0.0.1:37349/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/
```



Deployments

	Name	Images	Labels	Pods	Created ↑
●	nginx-deployment	nginx:latest	-	3 / 3	5 minutes ago

Pods



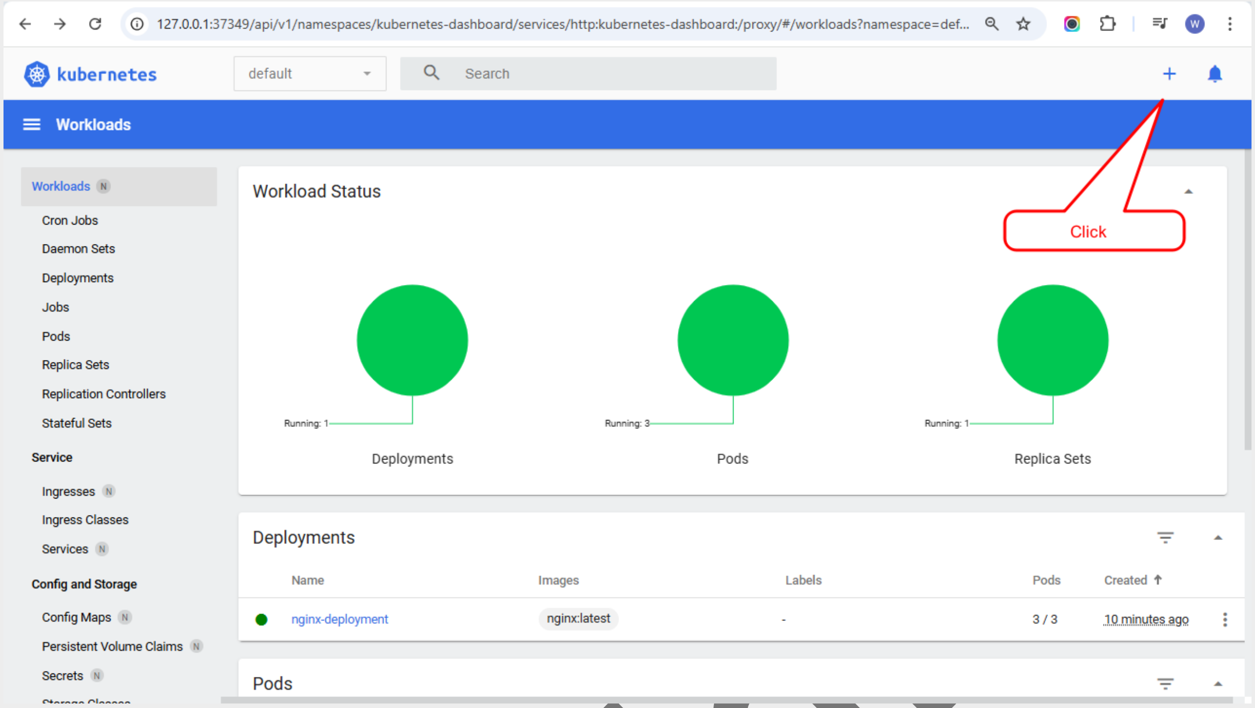
●	nginx-deployment	nginx:latest	-	3 / 3	5 minutes ago

Pods

	Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created ↑
●	nginx-deployment-6f9664446b-2g72l	nginx:latest	app: nginx pod-template-hash: 6f9664446b	minikube	Running	0	-	-	5 minutes ago
●	nginx-deployment-6f9664446b-6tjhg	nginx:latest	app: nginx pod-template-hash: 6f9664446b	minikube	Running	0	-	-	5 minutes ago
●	nginx-deployment-6f9664446b-bxkhs	nginx:latest	app: nginx pod-template-hash: 6f9664446b	minikube	Running	0	-	-	5 minutes ago

Replica Sets

	Name	Images	Labels	Pods	Created ↑
●	nginx-deployment-6f9664446b	nginx:latest	app: nginx pod-template-hash: 6f9664446b	3 / 3	5 minutes ago



127.0.0.1:37349/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/workloads?namespace=def...

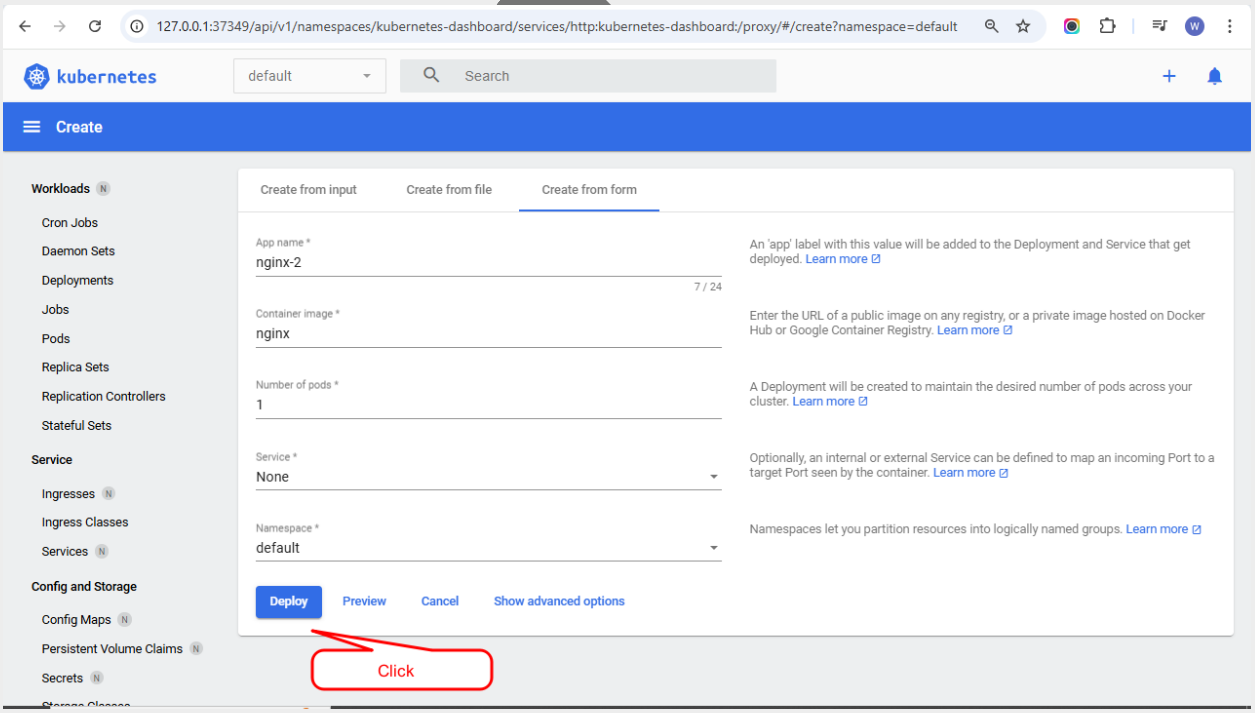
Workload Status

Deployments	Pods	Replica Sets
Running: 1	Running: 3	Running: 1

Deployments

	Name	Images	Labels	Pods	Created ↑
●	nginx-deployment	nginx:latest	-	3 / 3	10 minutes ago

Pods



127.0.0.1:37349/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/create?namespace=default

App name *
nginx-2
7 / 24

An 'app' label with this value will be added to the Deployment and Service that get deployed. Learn more

Container image *
nginx

Enter the URL of a public image on any registry, or a private image hosted on Docker Hub or Google Container Registry. Learn more

Number of pods *
1

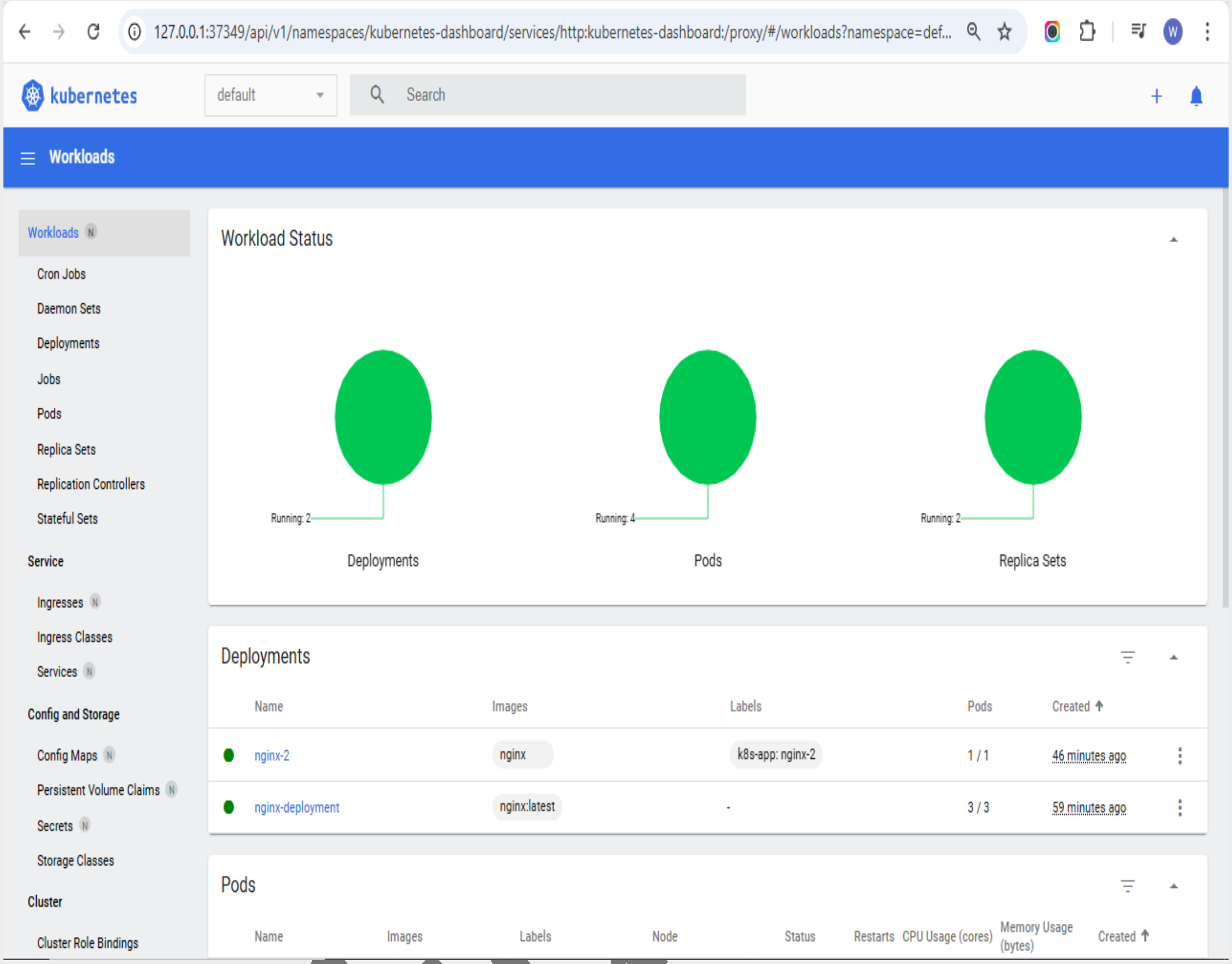
A Deployment will be created to maintain the desired number of pods across your cluster. Learn more

Service *
None

Optionally, an internal or external Service can be defined to map an incoming Port to a target Port seen by the container. Learn more

Namespace *
default

Namespaces let you partition resources into logically named groups. Learn more



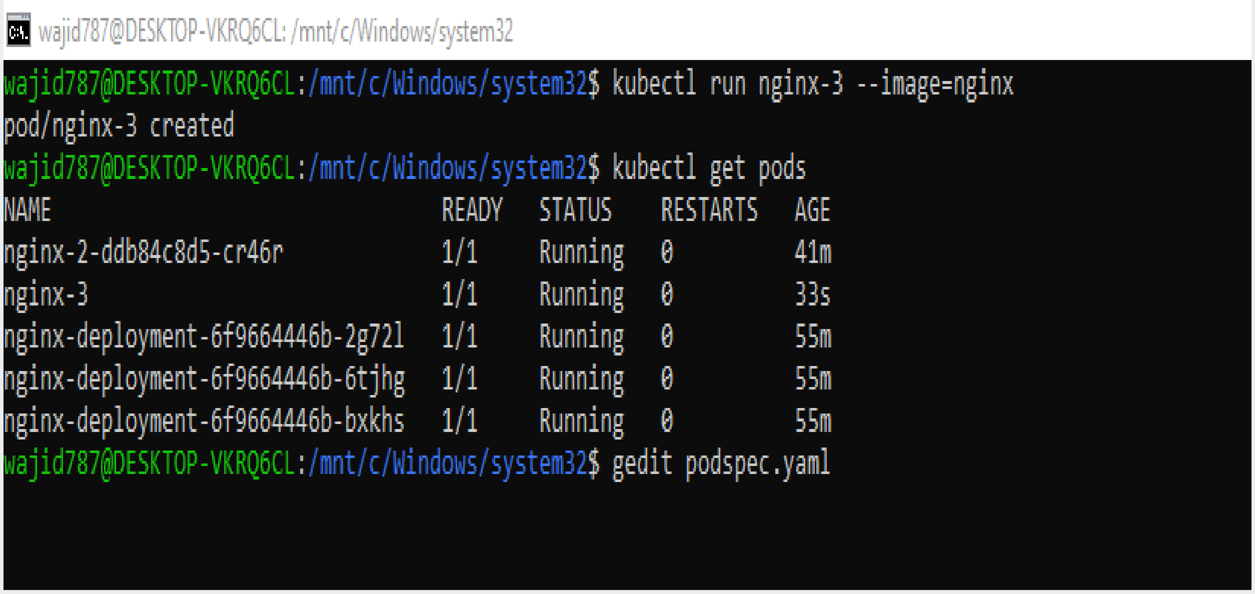
Workload Status

Deployments

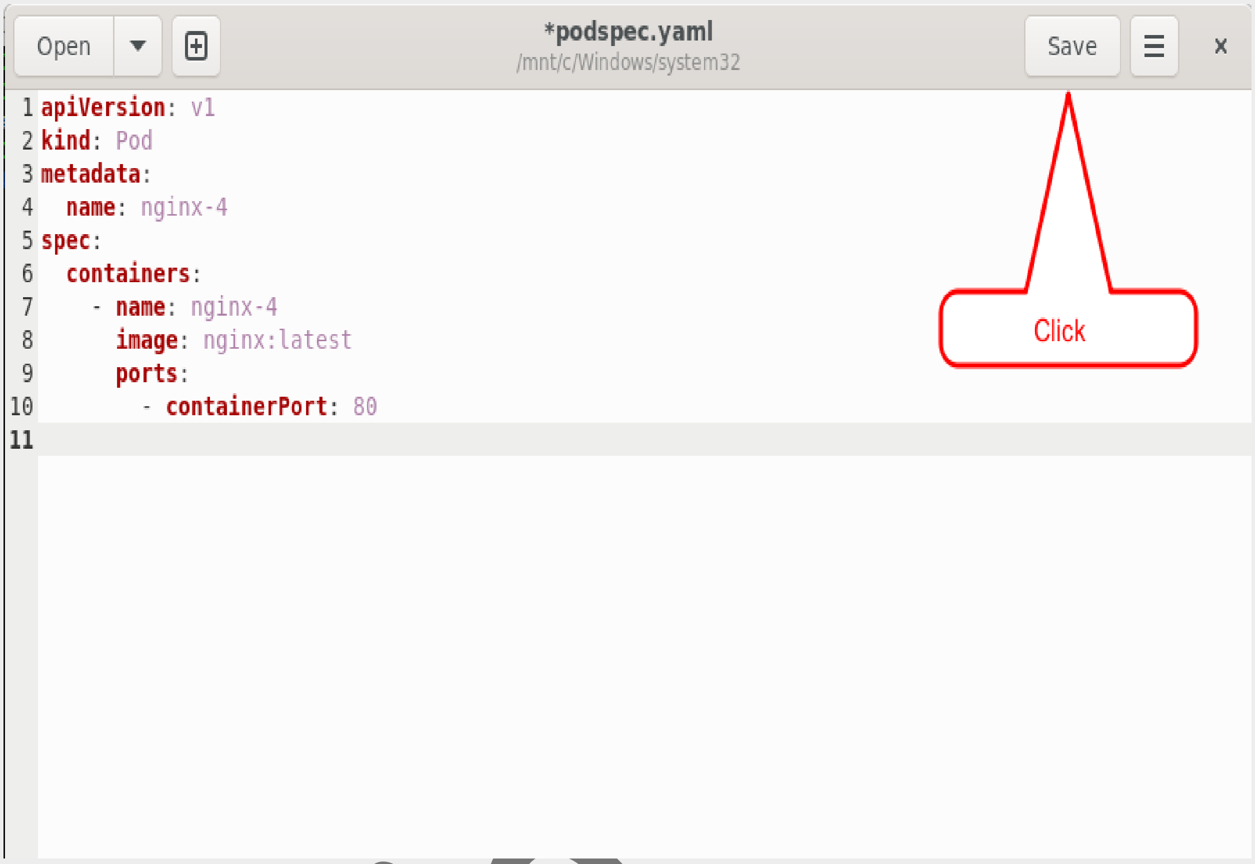
	Name	Images	Labels	Pods	Created ↑	
●	nginx-2	nginx	k8s-app: nginx-2	1 / 1	46 minutes ago	⋮
●	nginx-deployment	nginx:latest	-	3 / 3	59 minutes ago	⋮

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created ↑

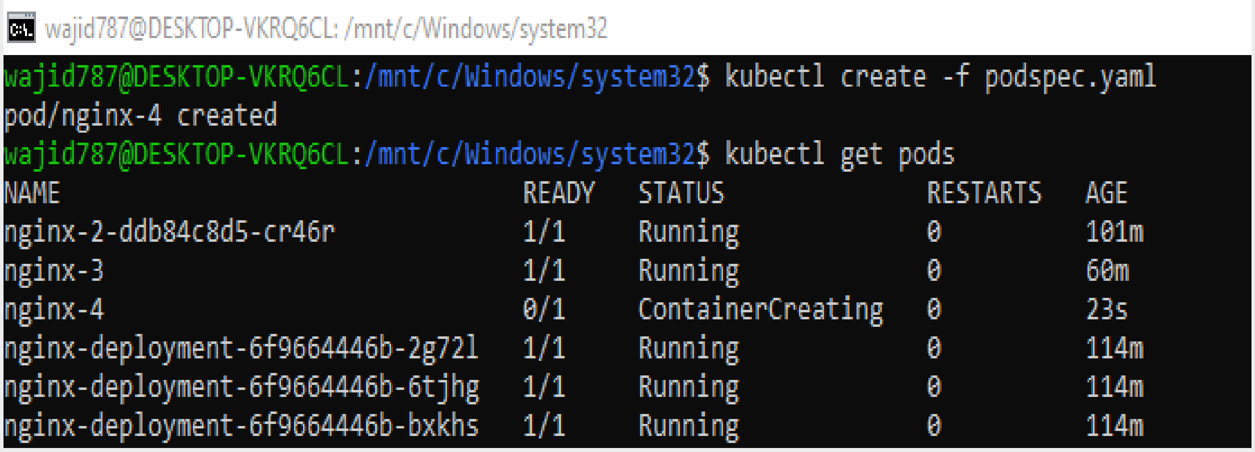

wajid787@DESKTOP-VKRQ6CL: /mnt/c/Windows/system32

```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl run nginx-3 --image=nginx
pod/nginx-3 created
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-2-ddb84c8d5-cr46r             1/1     Running   0          41m
nginx-3                             1/1     Running   0          33s
nginx-deployment-6f9664446b-2g72l   1/1     Running   0          55m
nginx-deployment-6f9664446b-6tjhg   1/1     Running   0          55m
nginx-deployment-6f9664446b-bxkhs   1/1     Running   0          55m
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ gedit podspec.yaml
```

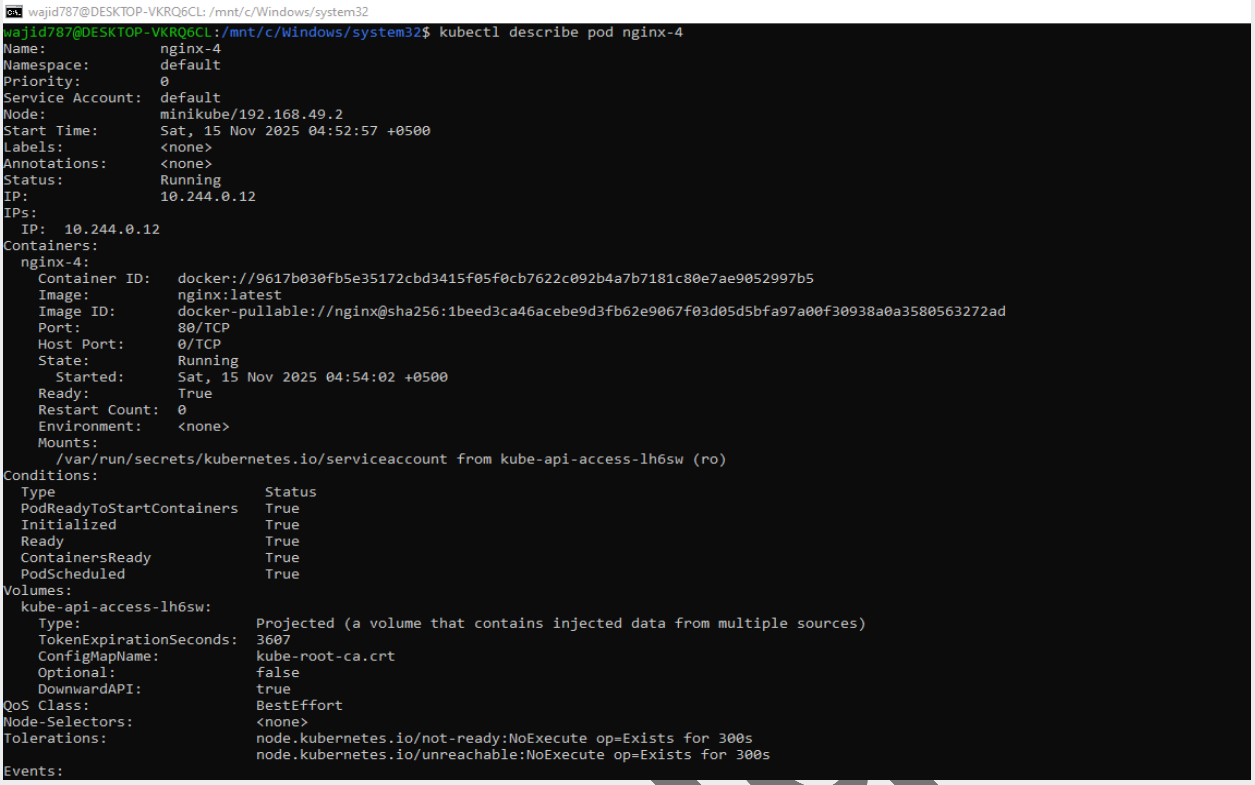


```yaml
apiVersion: v1
kind: Pod
metadata:
  name: nginx-4
spec:
  containers:
    - name: nginx-4
      image: nginx:latest
      ports:
        - containerPort: 80

```

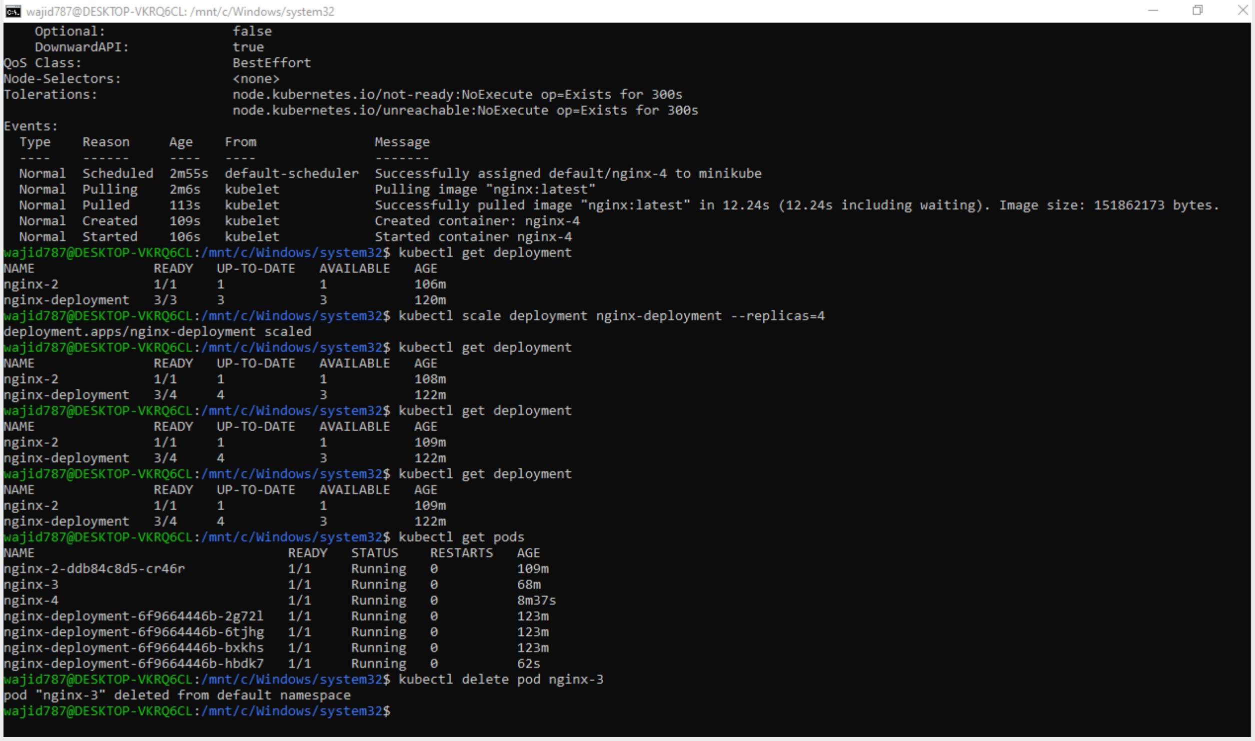
Click



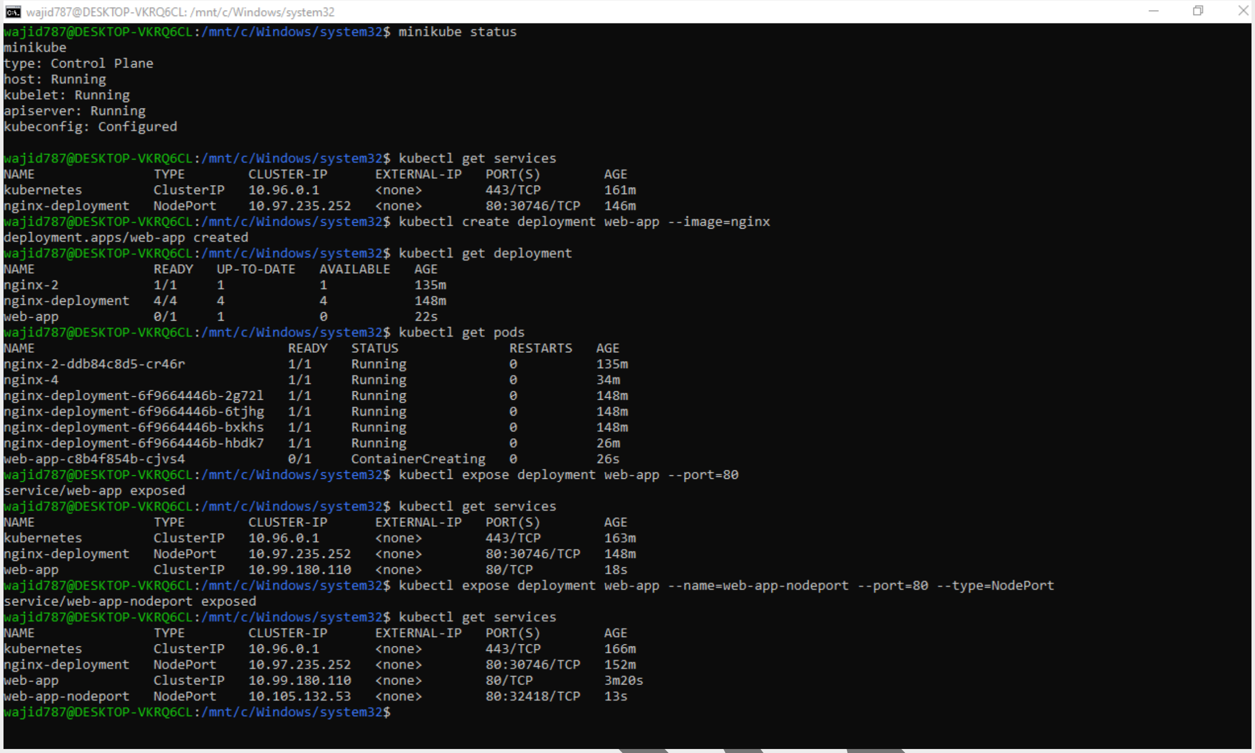
```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl create -f podspec.yaml
pod/nginx-4 created
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get pods
NAME                                READY   STATUS              RESTARTS   AGE
nginx-2-ddb84c8d5-cr46r             1/1     Running             0          101m
nginx-3                             1/1     Running             0          60m
nginx-4                             0/1     ContainerCreating   0          23s
nginx-deployment-6f9664446b-2g72l   1/1     Running             0          114m
nginx-deployment-6f9664446b-6tjhg   1/1     Running             0          114m
nginx-deployment-6f9664446b-bxkhs   1/1     Running             0          114m
```



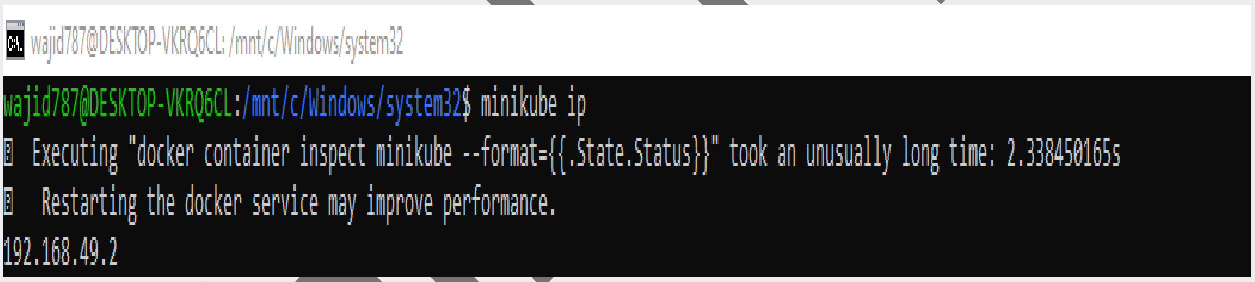
```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl describe pod nginx-4
Name:             nginx-4
Namespace:        default
Priority:         0
Service Account:  default
Node:             minikube/192.168.49.2
Start Time:       Sat, 15 Nov 2025 04:52:57 +0500
Labels:           <none>
Annotations:      <none>
Status:           Running
IP:               10.244.0.12
IPs:
  IP:  10.244.0.12
Containers:
  nginx-4:
    Container ID:   docker://9617b030fb5e35172cbd3415f05f0cb7622c092b4a7b7181c80e7ae9052997b5
    Image:          nginx:latest
    Image ID:       docker-pullable://nginx@sha256:1beed3ca46acebe9d3fb62e9067f03d05d5bfa97a00f30938a0a3580563272ad
    Port:           80/TCP
    Host Port:      0/TCP
    State:          Running
      Started:      Sat, 15 Nov 2025 04:54:02 +0500
    Ready:          True
    Restart Count:  0
    Environment:    <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-lh6sw (ro)
Conditions:
  Type                        Status
  PodReadyToStartContainers   True
  Initialized                 True
  Ready                       True
  ContainersReady             True
  PodScheduled                True
Volumes:
  kube-api-access-lh6sw:
    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:
```



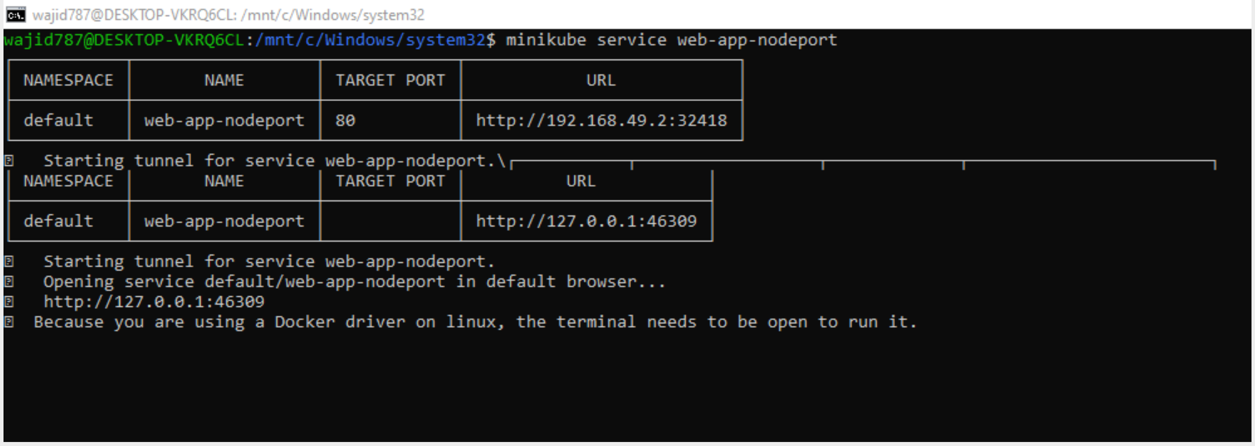
```
    Optional:                false
    DownwardAPI:             true
QoS Class:                   BestEffort
Node-Selectors:              <none>
Tolerations:                 node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
                             node.kubernetes.io/unreachable:NoExecute op=Exists for 300s

Events:
  Type    Reason     Age    From               Message
  ----    ------     ----   ----               -------
  Normal  Scheduled  2m55s  default-scheduler  Successfully assigned default/nginx-4 to minikube
  Normal  Pulling    2m6s   kubelet            Pulling image "nginx:latest"
  Normal  Pulled     113s   kubelet            Successfully pulled image "nginx:latest" in 12.24s (12.24s including waiting). Image size: 151862173 bytes.
  Normal  Created    109s   kubelet            Created container: nginx-4
  Normal  Started    106s   kubelet            Started container nginx-4
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get deployment
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-2            1/1     1            1           106m
nginx-deployment   3/3     3            3           120m
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl scale deployment nginx-deployment --replicas=4
deployment.apps/nginx-deployment scaled
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get deployment
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-2            1/1     1            1           108m
nginx-deployment   3/4     4            3           122m
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get deployment
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-2            1/1     1            1           109m
nginx-deployment   3/4     4            3           122m
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get deployment
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-2            1/1     1            1           109m
nginx-deployment   3/4     4            3           122m
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-2-ddb84c8d5-cr46r             1/1     Running   0          109m
nginx-3                             1/1     Running   0          68m
nginx-4                             1/1     Running   0          8m37s
nginx-deployment-6f9664446b-2g72l   1/1     Running   0          123m
nginx-deployment-6f9664446b-6tjhg   1/1     Running   0          123m
nginx-deployment-6f9664446b-bxkhs   1/1     Running   0          123m
nginx-deployment-6f9664446b-hbdk7   1/1     Running   0          62s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl delete pod nginx-3
pod "nginx-3" deleted from default namespace
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$
```



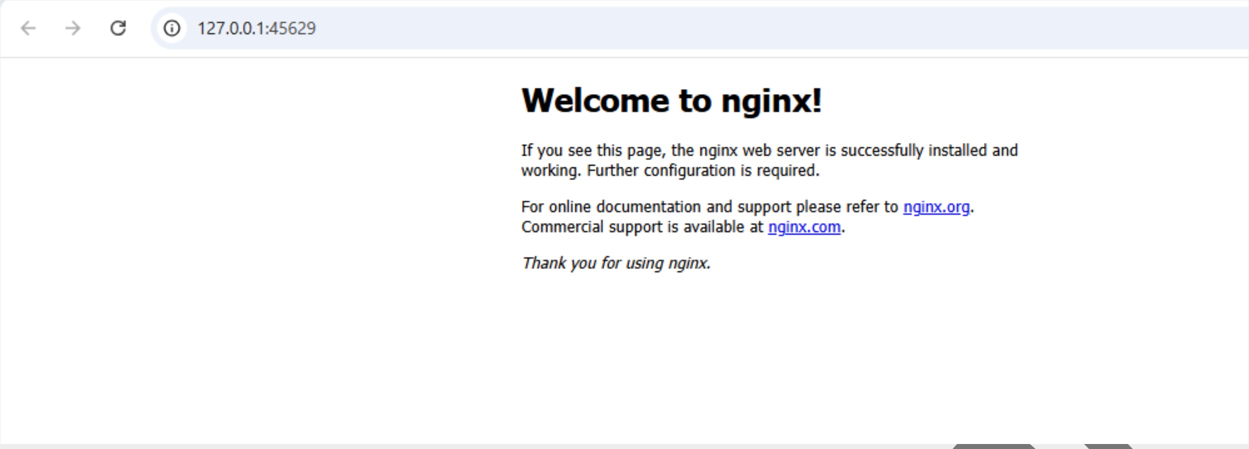
```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured

wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get services
NAME               TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)        AGE
kubernetes         ClusterIP   10.96.0.1       <none>        443/TCP        161m
nginx-deployment   NodePort    10.97.235.252   <none>        80:30746/TCP   146m
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl create deployment web-app --image=nginx
deployment.apps/web-app created
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get deployment
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-2            1/1     1            1           135m
nginx-deployment   4/4     4            4           148m
web-app            0/1     1            0           22s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get pods
NAME                                READY   STATUS              RESTARTS   AGE
nginx-2-ddb84c8d5-cr46r             1/1     Running             0          135m
nginx-4                             1/1     Running             0          34m
nginx-deployment-6f9664446b-2g72l   1/1     Running             0          148m
nginx-deployment-6f9664446b-6tjhg   1/1     Running             0          148m
nginx-deployment-6f9664446b-bxkhs   1/1     Running             0          148m
nginx-deployment-6f9664446b-hbdk7   1/1     Running             0          26m
web-app-c8b4f854b-cjvs4             0/1     ContainerCreating   0          26s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl expose deployment web-app --port=80
service/web-app exposed
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get services
NAME               TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)        AGE
kubernetes         ClusterIP   10.96.0.1       <none>        443/TCP        163m
nginx-deployment   NodePort    10.97.235.252   <none>        80:30746/TCP   148m
web-app            ClusterIP   10.99.180.110   <none>        80/TCP         18s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl expose deployment web-app --name=web-app-nodeport --port=80 --type=NodePort
service/web-app-nodeport exposed
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ kubectl get services
NAME               TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)        AGE
kubernetes         ClusterIP   10.96.0.1       <none>        443/TCP        166m
nginx-deployment   NodePort    10.97.235.252   <none>        80:30746/TCP   152m
web-app            ClusterIP   10.99.180.110   <none>        80/TCP         3m20s
web-app-nodeport   NodePort    10.105.132.53   <none>        80:32418/TCP   13s
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$
```



```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ minikube ip
□  Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 2.338450165s
□   Restarting the docker service may improve performance.
192.168.49.2
```



```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ minikube service web-app-nodeport
|-----------|------------------|-------------|---------------------------|
| NAMESPACE |       NAME       | TARGET PORT |            URL            |
|-----------|------------------|-------------|---------------------------|
| default   | web-app-nodeport | 80          | http://192.168.49.2:32418 |
|-----------|------------------|-------------|---------------------------|
□  Starting tunnel for service web-app-nodeport.\
| NAMESPACE |       NAME       | TARGET PORT |          URL           |
|-----------|------------------|-------------|------------------------|
| default   | web-app-nodeport |             | http://127.0.0.1:46309 |
|-----------|------------------|-------------|------------------------|
□  Starting tunnel for service web-app-nodeport.
□  Opening service default/web-app-nodeport in default browser...
□  http://127.0.0.1:46309
□  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```

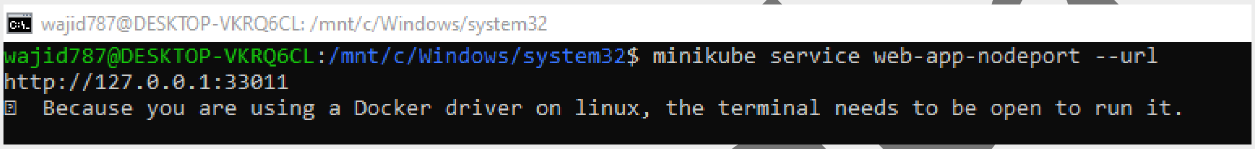


Welcome to nginx!

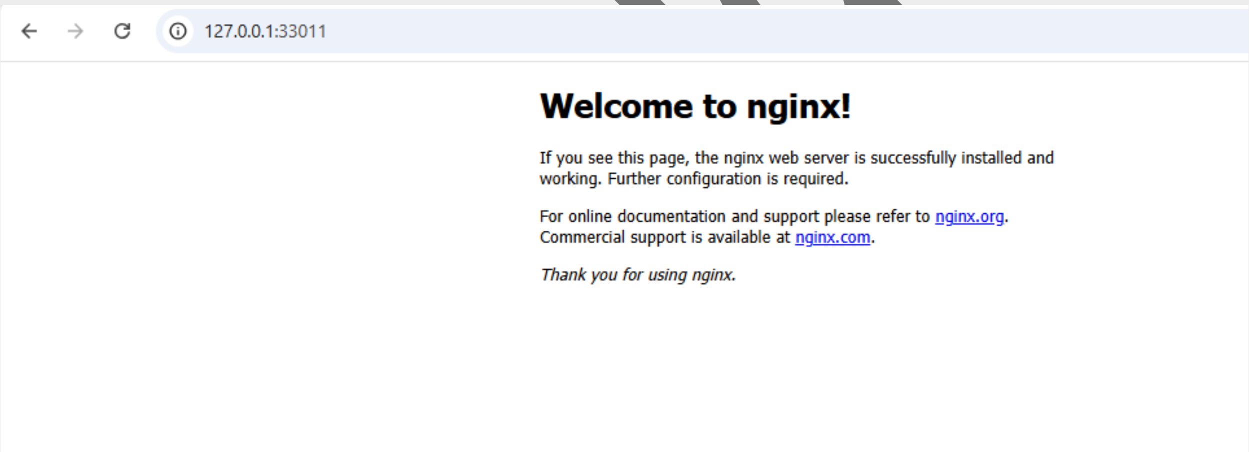
If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.



```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ minikube service web-app-nodeport --url
http://127.0.0.1:33011
□  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```



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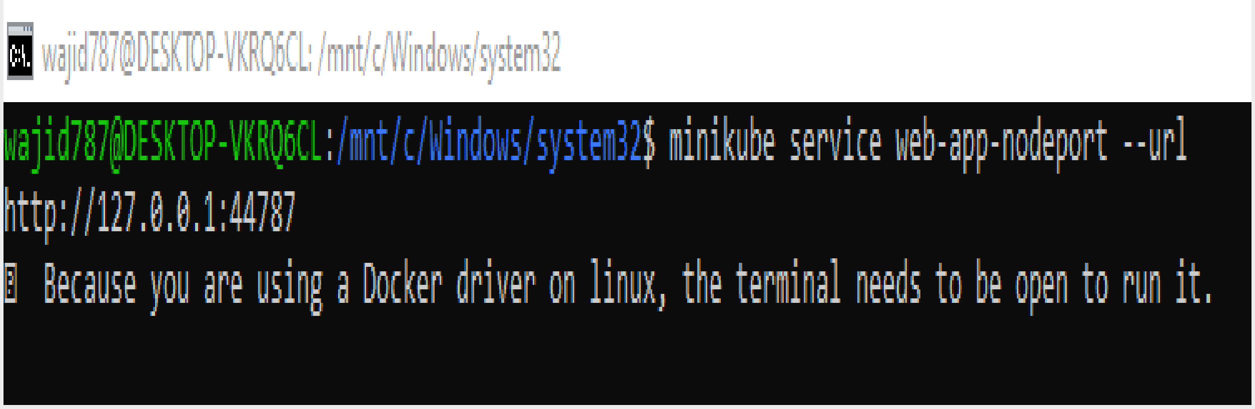
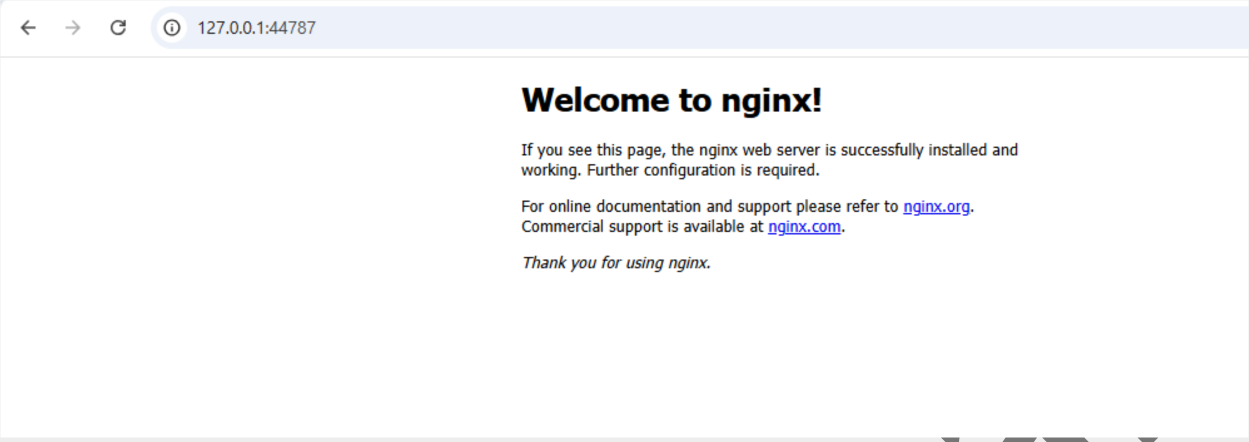
Commercial support is available at nginx.com.

Thank you for using nginx.



```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ minikube service web-app-nodeport --url
http://127.0.0.1:44787
□  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```



127.0.0.1:44787

Welcome to nginx!

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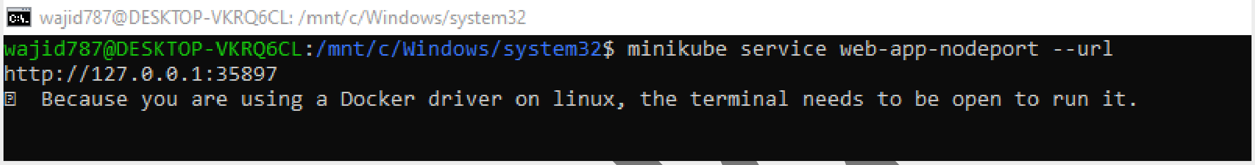
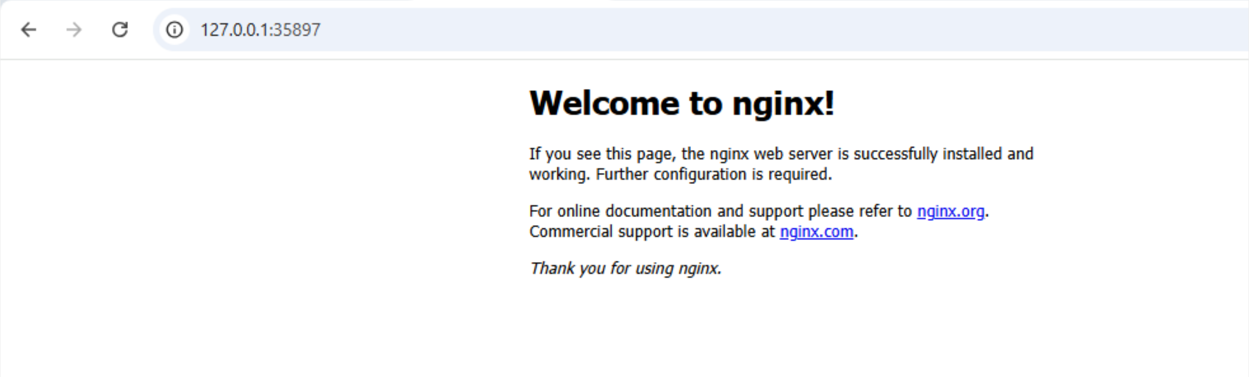
Thank you for using nginx.



wajid787@DESKTOP-VKRQ6CL: /mnt/c/Windows/system32

```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ minikube service web-app-nodeport --url
http://127.0.0.1:35897
□  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```



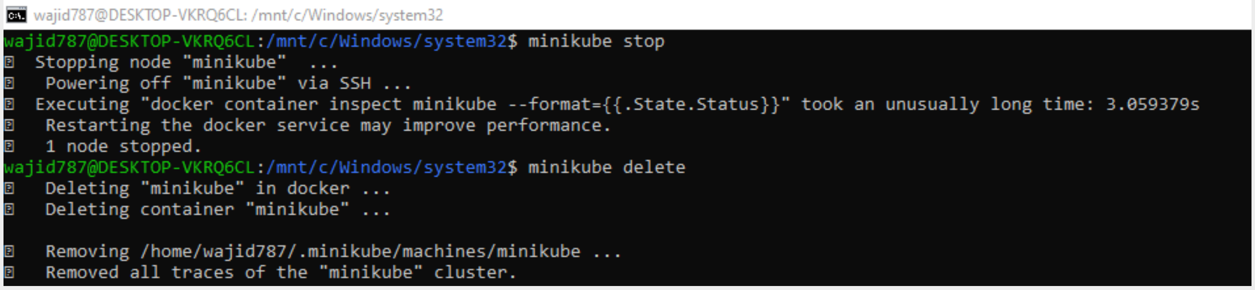
127.0.0.1:35897

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.



wajid787@DESKTOP-VKRQ6CL: /mnt/c/Windows/system32

```
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ minikube stop
□  Stopping node "minikube"  ...
□  Powering off "minikube" via SSH ...
□  Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 3.059379s
□  Restarting the docker service may improve performance.
□  1 node stopped.
wajid787@DESKTOP-VKRQ6CL:/mnt/c/Windows/system32$ minikube delete
□  Deleting "minikube" in docker ...
□  Deleting container "minikube" ...

□  Removing /home/wajid787/.minikube/machines/minikube ...
□  Removed all traces of the "minikube" cluster.
```