



Codelab:

Kubernetes nivel básico

Desarrollo de Software III

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1. Iniciar minikube y obtener los nodos

```
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs> minikube start
minikube v1.34.0 on Microsoft Windows 11 Home Single Language 10.0.26100.4351 Build 26100.4351
minikube 1.36.0 is available! Download it: https://github.com/kubernetes/minikube/releases/tag/v1.36.0
To disable this notice, run: 'minikube config set WantUpdateNotification false'

Using the docker driver based on existing profile
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.45 ...
Restarting existing docker container for "minikube" ...
Failing to connect to https://registry.k8s.io/ from inside the minikube container
To pull new external images, you may need to configure a proxy: https://minikube.sigs.k8s.io/docs/reference/networking/proxy/
Preparando Kubernetes v1.31.0 en Docker 27.2.0...
Verifying Kubernetes components...
  Using image gcr.io/k8s-minikube/storage-provisioner:v5
Complementos habilitados: storage-provisioner, default-storageclass
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs> kubectl get nodes
NAME          STATUS    ROLES    AGE   VERSION
minikube      Ready     control-plane 37d   v1.31.0
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs>
```

2. Desplegar la aplicación

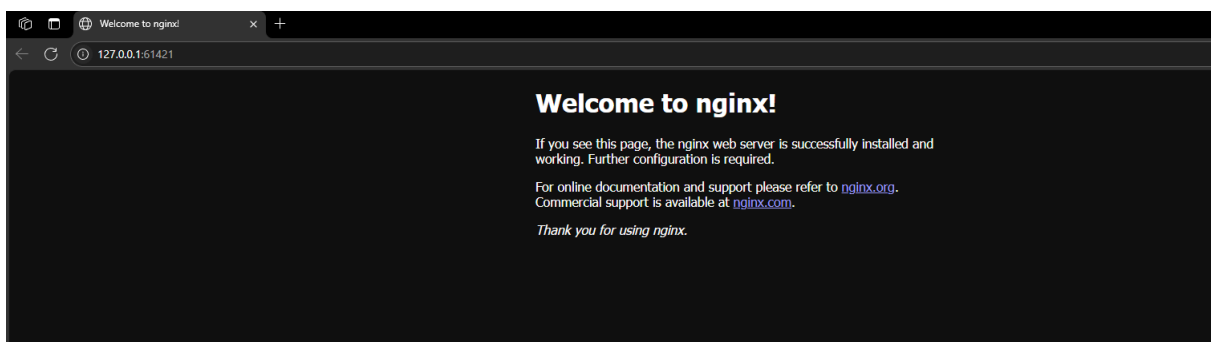
```
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs> kubectl create deployment nginx-deploy --image=nginx
deployment.apps/nginx-deploy created
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deploy-5fd7574f9f-ggws8       0/1     ContainerCreating   0           5s
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deploy-5fd7574f9f-ggws8       1/1     Running        0          10s
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deploy-5fd7574f9f-ggws8       1/1     Running        0          13s
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs> kubectl expose deployment nginx-deploy --type=NodePort --port=80
service/nginx-deploy exposed
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs> kubectl get services
NAME      TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)    AGE
kubernetes ClusterIP   10.96.0.1     <none>        443/TCP    37d
nginx-deploy NodePort    10.108.132.60 <none>        80:31232/TCP 4s
```

3. Accedo a nginx

```
PS C:\Users\SH\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Code\labs> minikube service nginx-deploy
NAMESPACE   NAME       TARGET PORT  URL
default     nginx-deploy 80           http://192.168.49.2:31232

Starting tunnel for service nginx-deploy.
NAMESPACE   NAME       TARGET PORT  URL
default     nginx-deploy 80           http://127.0.0.1:61421

Opening service default/nginx-deploy in default browser...
! Porque estás usando controlador Docker en windows, la terminal debe abrirse para ejecutarlo.
```



4. Escalar la aplicación

```
Windows PowerShell
PS C:\Users\SHP\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Codelabs> kubectl scale deployment nginx-deploy --replicas=3
deployment.apps/nginx-deploy scaled
PS C:\Users\SHP\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Codelabs> kubectl get pods
NAME                                READY   STATUS             RESTARTS   AGE
nginx-deploy-5fd7574f9f-b468j       0/1     ContainerCreating   0           3s
nginx-deploy-5fd7574f9f-ggws8       1/1     Running             0           6m8s
nginx-deploy-5fd7574f9f-rtz74       0/1     ContainerCreating   0           3s
PS C:\Users\SHP\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Codelabs> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deploy-5fd7574f9f-b468j       1/1     Running   0           10s
nginx-deploy-5fd7574f9f-ggws8       1/1     Running   0          6m15s
nginx-deploy-5fd7574f9f-rtz74       1/1     Running   0           10s
PS C:\Users\SHP\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Codelabs> |
```

5. Eliminar todo

```
Windows PowerShell
PS C:\Users\SHP\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Codelabs> kubectl delete service nginx-deploy
service "nginx-deploy" deleted
PS C:\Users\SHP\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Codelabs> kubectl delete deployment nginx-deploy
deployment.apps "nginx-deploy" deleted
PS C:\Users\SHP\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Codelabs> minikube stop
✖ Stopping node "minikube" ...
● Apagando "minikube" mediante SSH...
● 1 node stopped.
PS C:\Users\SHP\OneDrive\Escritorio\Carpetas\Universidad\Septimo semestre\Desarrollo III\Codelabs> |
```