



Informe y evidencias codelab: Introducción practica a kubernetes (nivel básico)

Desarrollo de Software 3

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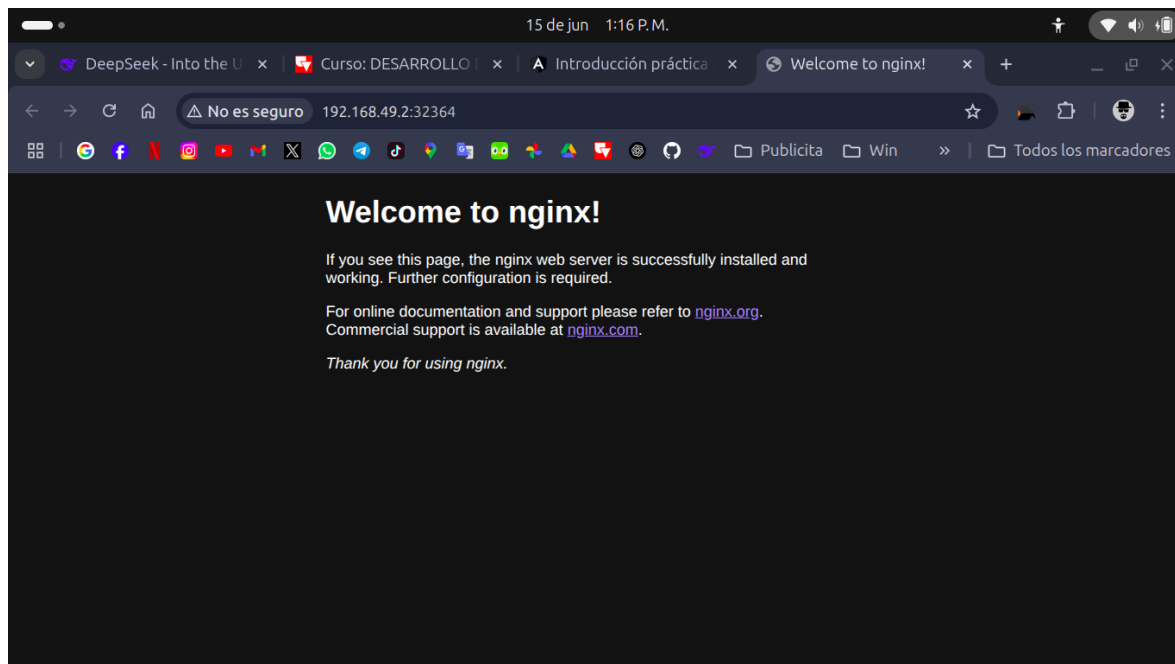
## Instalación e iniciación del cluster kubernetes:

```
15 de jun 1:12 P.M.
sebas@sebas-Inspiron-3421:~$ sudo install -o root -g root -m 0755 kubectl /usr/local/bin/kubectl
sebas@sebas-Inspiron-3421:~$ kubectl version --client
Client Version: v1.33.1
Kustomize Version: v5.6.0
sebas@sebas-Inspiron-3421:~$ minikube start
minikube v1.36.0 en Ubuntu 24.04
Controlador docker seleccionado automáticamente. Otras opciones: virtualbox, ssh, none
Using Docker driver with root privileges
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.47 ...
Descargando Kubernetes v1.33.1 ...
> gcr.io/k8s-minikube/kicbase...: 502.25 MiB / 502.26 MiB 100.00% 2.33 Mi
> preloaded-images-k8s-v18-v1...: 347.04 MiB / 347.04 MiB 100.00% 1.46 Mi
Creating docker container (CPUs=2, Memory=2200MB) ...
Preparando Kubernetes v1.33.1 en Docker 28.1.1...
■ Generando certificados y llaves
■ Iniciando plano de control
■ Configurando reglas RBAC...
Configurando CNI bridge CNI ...
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
sebas@sebas-Inspiron-3421:~$
```

## Despliegue de la primera aplicación:

```
15 de jun 1:17 P.M.
sebas@sebas-Inspiron-3421:~$ kubectl create deployment nginx-deploy --image=nginx
deployment.apps/nginx-deploy created
sebas@sebas-Inspiron-3421:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
nginx-deploy-c9d9f6c6c-l9l2d 0/1 ContainerCreating 0 16s
sebas@sebas-Inspiron-3421:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
nginx-deploy-c9d9f6c6c-l9l2d 1/1 Running 0 45s
sebas@sebas-Inspiron-3421:~$ kubectl expose deployment nginx-deploy --type=NodePort --port=80
service/nginx-deploy exposed
sebas@sebas-Inspiron-3421:~$ kubectl get services
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 3m58s
nginx-deploy NodePort 10.100.45.44 <none> 80:32364/TCP 16s
sebas@sebas-Inspiron-3421:~$ minikube service nginx-deploy
|-----|-----|-----|-----|
| NAMESPACE | NAME | TARGET PORT | URL |
|-----|-----|-----|-----|
| default | nginx-deploy | 80 | http://192.168.49.2:32364 |
|-----|-----|-----|-----|
Opening service default/nginx-deploy in default browser...
sebas@sebas-Inspiron-3421:~$ Se está abriendo en una sesión de navegador existente.
```

Acceder desde el navegador:



Escalación de la aplicación:

```
15 de jun 1:19 P.M.
sebas@sebas-Inspiron-3421: ~
service/nginx-deploy exposed
sebas@sebas-Inspiron-3421:~$ kubectl get services
NAME          TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
kubernetes    ClusterIP     10.96.0.1     <none>         443/TCP          3m58s
nginx-deploy   NodePort      10.100.45.44  <none>         80:32364/TCP     16s
sebas@sebas-Inspiron-3421:~$ minikube service nginx-deploy
|-----|-----|-----|-----|
| NAMESPACE | NAME      | TARGET PORT | URL              |
|-----|-----|-----|-----|
| default   | nginx-deploy | 80          | http://192.168.49.2:32364 |
|-----|-----|-----|-----|
🔗 Opening service default/nginx-deploy in default browser...
sebas@sebas-Inspiron-3421:~$ Se está abriendo en una sesión de navegador existente.
sebas@sebas-Inspiron-3421:~$ kubectl scale deployment nginx-deploy --replicas=3
deployment.apps/nginx-deploy scaled
sebas@sebas-Inspiron-3421:~$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deploy-c9d9f6c6c-gprc5        1/1     Running   0           9s
nginx-deploy-c9d9f6c6c-l9l2d        1/1     Running   0          3m51s
nginx-deploy-c9d9f6c6c-qhm47        1/1     Running   0           9s
sebas@sebas-Inspiron-3421:~$ kubectl get deployments
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deploy  3/3     3             3           4m16s
sebas@sebas-Inspiron-3421:~$
```

## Eliminación de recursos creados:

```
15 de jun 1:21 P.M.
sebas@sebas-Inspiron-3421: ~
-----|-----|-----|-----|
| default | nginx-deploy | 80 | http://192.168.49.2:32364 |
|-----|-----|-----|-----|
Opening service default/nginx-deploy in default browser...
sebas@sebas-Inspiron-3421:~$ Se está abriendo en una sesión de navegador existente.
X Introducción práctica a Kubernetes (nivel básico)

sebas@sebas-Inspiron-3421:~$ kubectl scale deployment nginx-deploy --replicas=3
deployment.apps/nginx-deploy scaled
sebas@sebas-Inspiron-3421:~$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deploy-c9d9f6c6c-gprc5        1/1     Running   0           9s
nginx-deploy-c9d9f6c6c-l9l2d        1/1     Running   0          3m51s
nginx-deploy-c9d9f6c6c-qhm47        1/1     Running   0           9s
sebas@sebas-Inspiron-3421:~$ kubectl get deployments
NAME                                READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deploy                        3/3     3             3           4m16s
sebas@sebas-Inspiron-3421:~$ kubectl delete service nginx-deploy
service "nginx-deploy" deleted
sebas@sebas-Inspiron-3421:~$ kubectl delete deployment nginx-deploy
deployment.apps "nginx-deploy" deleted
sebas@sebas-Inspiron-3421:~$ minikube stop
🔥 Stopping node "minikube" ...
🔴 Apagando "minikube" mediante SSH...
🔴 1 node stopped.
sebas@sebas-Inspiron-3421:~$
```