

# Laboratorio 8: GCP y Kubernetes

Debido a los problemas técnicos que se han desarrollado a lo largo de la práctica en todas las ocasiones en las que lo he intentado, he optado por documentar los avances mediante el uso de pantallazos.

## 3.1. Familiarizarte con GCP Kubernetes

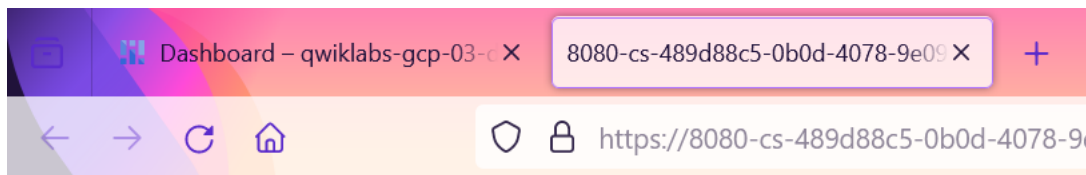
```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to qwiklabs-gcp-03-d438621a10df.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
student_00_e0e0fc4dffe1@cloudshell:~ (quiklabs-gcp-03-d438621a10df)$ gcloud auth list
Credentialed Accounts

ACTIVE: *
ACCOUNT: student-00-e0e0fc4dffe1@quiklabs.net

To set the active account, run:
  $ gcloud config set account `ACCOUNT`

student_00_e0e0fc4dffe1@cloudshell:~ (quiklabs-gcp-03-d438621a10df)$ gcloud config list project
[core]
project = qwiklabs-gcp-03-d438621a10df

Your active configuration is: [cloudshell-17074]
student_00_e0e0fc4dffe1@cloudshell:~ (quiklabs-gcp-03-d438621a10df)$ nano server.js
student_00_e0e0fc4dffe1@cloudshell:~ (quiklabs-gcp-03-d438621a10df)$ node server.js
```



Hello World!

```

=> [internal] load build context
=> => transferring context: 239B
=> [1/2] FROM docker.io/library/node:6.9.2@sha256:2e95be60faf429d6c97d928c762cb36f1940f4456ce4bd33fbdc34de94a5e043
=> => resolve docker.io/library/node:6.9.2@sha256:2e95be60faf429d6c97d928c762cb36f1940f4456ce4bd33fbdc34de94a5e043
=> => sha256:2e95be60faf429d6c97d928c762cb36f1940f4456ce4bd33fbdc34de94a5e043 1.79kB / 1.79kB
=> => sha256:faaadb4aaf9b2077deec668e07fd55540d205f1c9382d5da34bba87b92790050 5.06kB / 5.06kB
=> => sha256:57de64c72267e88e952b064236cb906c7626f7c07a1a2d5900cf6953e72632b3 18.53MB / 18.53MB
=> => sha256:4306be1e8943b446026b96c2ef7b3ab8471c760774fd1cd11334df7084fed57b 42.50MB / 42.50MB
=> => sha256:75a822cd7888e394c49828b951061402d31745f596b1f502758570f2d0ee79e2 51.36MB / 51.36MB
=> => sha256:871436ab7225503e9e951a7acb7b1689a91a60d033bf8cbabdc40fe5ca4cfc87 129.82MB / 129.82MB
=> => sha256:0110c26a367a1906458e53dd2df6b9adb3dd3115eb14cbb42b26b82d8a6d2a4e 4.36kB / 4.36kB
=> => sha256:1f04fe713f1b4a69e025clacc5861877c9b2f799ec814734732ed9bb78bb607c 97.21kB / 97.21kB
=> => extracting sha256:75a822cd7888e394c49828b951061402d31745f596b1f502758570f2d0ee79e2
=> => sha256:ac7c0b5fb55330194d7a9d0f22a5313481e41a86d6b25c8386835417259579e7 13.93MB / 13.93MB
=> => extracting sha256:57de64c72267e88e952b064236cb906c7626f7c07a1a2d5900cf6953e72632b3
=> => extracting sha256:4306be1e8943b446026b96c2ef7b3ab8471c760774fd1cd11334df7084fed57b
=> => extracting sha256:871436ab7225503e9e951a7acb7b1689a91a60d033bf8cbabdc40fe5ca4cfc87
=> => extracting sha256:0110c26a367a1906458e53dd2df6b9adb3dd3115eb14cbb42b26b82d8a6d2a4e
=> => extracting sha256:1f04fe713f1b4a69e025clacc5861877c9b2f799ec814734732ed9bb78bb607c
=> => extracting sha256:ac7c0b5fb55330194d7a9d0f22a5313481e41a86d6b25c8386835417259579e7
=> [2/2] COPY server.js.
=> exporting to image
=> => exporting layers
=> => writing image sha256:819e67d88308a4a35d60af0bfce138e2303cb4497fb7844381b7b732b999772a
=> => naming to gcr.io/qwiklabs-gcp-03-d438621a10df/hello-world:v1
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ docker run -d -p 8080:8080 gcr.io/qwiklabs-gcp-03-d438621a10df/hello-world:v1
901a5938127a47189f3b37120721c0344a69e660ee94c007b5c752ac60470be5
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ curl http://localhost:8080
Hello World!student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$

```

```

Hello World!student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ docker ps -a

```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
901a5938127a	gcr.io/qwiklabs-gcp-03-d438621a10df/hello-world:v1	"/bin/sh -c 'node se..."	58 seconds ago	Up 57 seconds	0.0.0.0:8080->8080/tcp	determine

```

d_shtern
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ docker stop 901a5938127a
901a5938127a
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$

```

```
"us-south1-docker.pkg.dev": "gcloud",  
"us-west1-docker.pkg.dev": "gcloud",  
"us-west2-docker.pkg.dev": "gcloud",  
"us-west3-docker.pkg.dev": "gcloud",  
"us-west4-docker.pkg.dev": "gcloud",  
"gcr.io": "gcloud",  
"us.gcr.io": "gcloud",  
"eu.gcr.io": "gcloud",  
"asia.gcr.io": "gcloud",  
"staging-k8s.gcr.io": "gcloud",  
"marketplace.gcr.io": "gcloud"  
}  
}
```

Do you want to continue (Y/n)? y

Docker configuration file updated.

student\_00\_e0e0fc4dffef1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)\$ docker push gcr.io/qwiklabs-gcp-03-d438621a10df/hello-world:v1

The push refers to repository [gcr.io/qwiklabs-gcp-03-d438621a10df/hello-world]

0a5eedda3b3a: Pushed

381c97ba7dc3: Pushed

604c78617f34: Pushed

fa18e5fffd316: Pushed

0a5e2b2ddeaa: Pushed

53c779688d06: Pushed

60a0858edcd5: Layer already exists

b6ca02dfe5e6: Layer already exists

v1: digest: sha256:bd20edbfed6d8d325f7a42896a480dfccac21a14d912efe51642d866a65ec33 size: 2002

student\_00\_e0e0fc4dffef1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)\$

Google Cloud

qwiklabs-gcp-03-d438621a10df

Container Registry

Container Registry

Images

Settings

Marketplace

Release Notes

<|

Repositories

Container Registry is deprecated. After May 15, 2024, Artifact Registry will host images for the gcr.

Learn more


qwiklabs-gcp-03-d438621a10df

Filter

Enter property name or value

Name ↑	Hostname ?	Visibility ?
<div>hello-world</div>	gcr.io	Private

```
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df) $ gcloud config set project qwiklabs-gcp-03-d438621a10df
Updated property [core/project].
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df) $ gcloud container clusters create hello-world \
    --num-nodes 2 \
    --machine-type n1-standard-1 \
    --zone us-central1-a
Default change: VPC-native is the default mode during cluster creation for versions greater than 1.21.0-gke.1500. To create advanced routes based clusters, please pass the `--no-enable-ip-alias` flag
Note: Your Pod address range (`--cluster-ipv4-cidr`) can accommodate at most 1008 node(s).
Creating cluster hello-world in us-central1-a... Cluster is being health-checked (master is healthy)...done.
Created [https://container.googleapis.com/v1/projects/qwiklabs-gcp-03-d438621a10df/zones/us-central1-a/clusters/hello-world].
To inspect the contents of your cluster, go to: https://console.cloud.google.com/kubernetes/workload_/gcloud/us-central1-a/hello-world?project=qwiklabs-gcp-03-d438621a10df
kubeconfig entry generated for hello-world.
NAME: hello-world
LOCATION: us-central1-a
MASTER_VERSION: 1.27.3-gke.100
MASTER_IP: 34.135.166.228
MACHINE_TYPE: n1-standard-1
NODE_VERSION: 1.27.3-gke.100
NUM_NODES: 2
STATUS: RUNNING
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df) $
```

 **Kubernetes Engine**

Learn about Enterprise

Resource Management

Marketplace

Release Notes

<|

Kubernetes clusters

[+ CREATE](#) [+ DEPLOY](#) [REFRESH](#) [ONBOARDING](#) [NEW](#) [OPERATIONS](#) [LEARN](#)

OVERVIEW

OBSERVABILITY

COST OPTIMIZATION

Filter

Enter property name or value

☐

Status

☐

✓

hello-world

us-central1-a


2

2

7.5 GB

Notifications

Labels

 **CLOUD SHELL**

Terminal











(qwiklabs-gcp-03-d438621a10df)

×

+

▼

Open Editor

```
kubeconfig entry generated for hello-world.
NAME: hello-world
LOCATION: us-central1-a
MASTER_VERSION: 1.27.3-gke.100
MASTER_IP: 34.135.166.228
MACHINE_TYPE: n1-standard-1
NODE_VERSION: 1.27.3-gke.100
NUM_NODES: 2
STATUS: RUNNING
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ gcloud container clusters get-credentials hello-world --zone us-central1-a --project qwiklabs-gcp-03-d438621a10df
Fetching cluster endpoint and auth data.
kubeconfig entry generated for hello-world.
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$
```

Es hora de implementar su propia aplicación en contenedores en el clúster de Kubernetes. A partir de ahora, use la línea de comandos `kubect1` (que ya está configurada en su entorno de Cloud Shell).

Haga clic en **Verificar mi progreso** a continuación para revisar su progreso en el lab.



Cree su clúster

Revisar mi progreso

*Please specify cluster name as hello-world.*

```
MASTER_IP: 34.135.166.228
MACHINE_TYPE: n1-standard-1
NODE_VERSION: 1.27.3-gke.100
NUM_NODES: 2
STATUS: RUNNING
student_00_e0e0fc4dffef1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ gcloud container clusters get-credentials hello-world --zone us-central1-a --project qwiklabs-gcp-03-d438621a10df
Fetching cluster endpoint and auth data.
kubeconfig entry generated for hello-world.
student_00_e0e0fc4dffef1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ kubectl create deployment hello-world \
--image=gcr.io/qwiklabs-gcp-03-d438621a10df/hello-world:v1
deployment.apps/hello-world created
student_00_e0e0fc4dffef1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ kubectl get deployments
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
hello-world   1/1     1            1           24s
student_00_e0e0fc4dffef1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
hello-world-75d9566cc-64494   1/1     Running   0          44s
student_00_e0e0fc4dffef1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ kubectl cluster-info
Kubernetes control plane is running at https://34.135.166.228
GLBCDefaultBackend is running at https://34.135.166.228/api/v1/namespaces/kube-system/services/default-http-backend:http/proxy
KubeDNS is running at https://34.135.166.228/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy
Metrics-server is running at https://34.135.166.228/api/v1/namespaces/kube-system/services/https:metrics-server:/proxy

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
student_00_e0e0fc4dffef1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df)$ kubectl config view
apiVersion: v1
clusters:
- cluster:
    certificate-authority-data: DATA+OMITTED
```

```

provideClusterInfo: true
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df) $ kubectl get events
LAST SEEN   TYPE      REASON              OBJECT                                          MESSAGE
9m32s       Normal    Starting            node/gke-hello-world-default-pool-116a39ce-6gx9  Starting kubelet.
9m32s       Warning   InvalidDiskCapacity node/gke-hello-world-default-pool-116a39ce-6gx9  invalid capacity 0 on image filesystem
7m42s       Normal    NodeHasSufficientMemory node/gke-hello-world-default-pool-116a39ce-6gx9  Node gke-hello-world-default-pool-116a39ce-6gx9
status is now: NodeHasSufficientMemory
7m44s       Normal    NodeHasNoDiskPressure node/gke-hello-world-default-pool-116a39ce-6gx9  Node gke-hello-world-default-pool-116a39ce-6gx9
status is now: NodeHasNoDiskPressure
7m44s       Normal    NodeHasSufficientPID node/gke-hello-world-default-pool-116a39ce-6gx9  Node gke-hello-world-default-pool-116a39ce-6gx9
status is now: NodeHasSufficientPID
9m32s       Normal    NodeAllocatableEnforced node/gke-hello-world-default-pool-116a39ce-6gx9  Updated Node Allocatable limit across pods
6m26s       Warning   NodeRegistrationCheckerStart node/gke-hello-world-default-pool-116a39ce-6gx9  Fri Dec 29 15:19:21 UTC 2023 - ** Starting Node
Registration Checker **
6m26s       Normal    Synced              node/gke-hello-world-default-pool-116a39ce-6gx9  Node synced successfully
6m26s       Normal    Starting            node/gke-hello-world-default-pool-116a39ce-6gx9
6m25s       Normal    RegisteredNode       node/gke-hello-world-default-pool-116a39ce-6gx9  Node gke-hello-world-default-pool-116a39ce-6gx9
event: Registered Node gke-hello-world-default-pool-116a39ce-6gx9 in Controller
2m33s       Warning   NodeRegistrationCheckerDidNotRunChecks node/gke-hello-world-default-pool-116a39ce-6gx9  Fri Dec 29 15:26:22 UTC 2023 - ** Node read
y and registered. **
9m25s       Normal    Starting            node/gke-hello-world-default-pool-116a39ce-wvmj  Starting kubelet.
9m24s       Warning   InvalidDiskCapacity node/gke-hello-world-default-pool-116a39ce-wvmj  invalid capacity 0 on image filesystem
7m42s       Normal    NodeHasSufficientMemory node/gke-hello-world-default-pool-116a39ce-wvmj  Node gke-hello-world-default-pool-116a39ce-wvmj
status is now: NodeHasSufficientMemory
7m43s       Normal    NodeHasNoDiskPressure node/gke-hello-world-default-pool-116a39ce-wvmj  Node gke-hello-world-default-pool-116a39ce-wvmj
status is now: NodeHasNoDiskPressure

```

A partir de aquí me sale este mensaje de error:

```

student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df) $ kubectl get pods
error: You must be logged in to the server (Unauthorized)
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df) $ kubectl get pods
error: You must be logged in to the server (Unauthorized)

```

Y al intentar reconectarme:

```

student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df) $ gcloud container clusters get-credentials hello-world --zone us-central1-a
Fetching cluster endpoint and auth data.
ERROR: (gcloud.container.clusters.get-credentials) ResponseError: code=401, message=Request had invalid authentication credentials. Expected OAuth 2 access token, login cookie or other valid authentication credential. See https://developers.google.com/identity/sign-in/web/devconsole-project.
student_00_e0e0fc4dffe1@cloudshell:~ (qwiklabs-gcp-03-d438621a10df) $ 


```



# He intentado hacerlo 4 veces:



Rutas de acceso



Actividades



Insignias

Curso

Lab

Quest

Cuestionario

Tarea calificada por compañeros

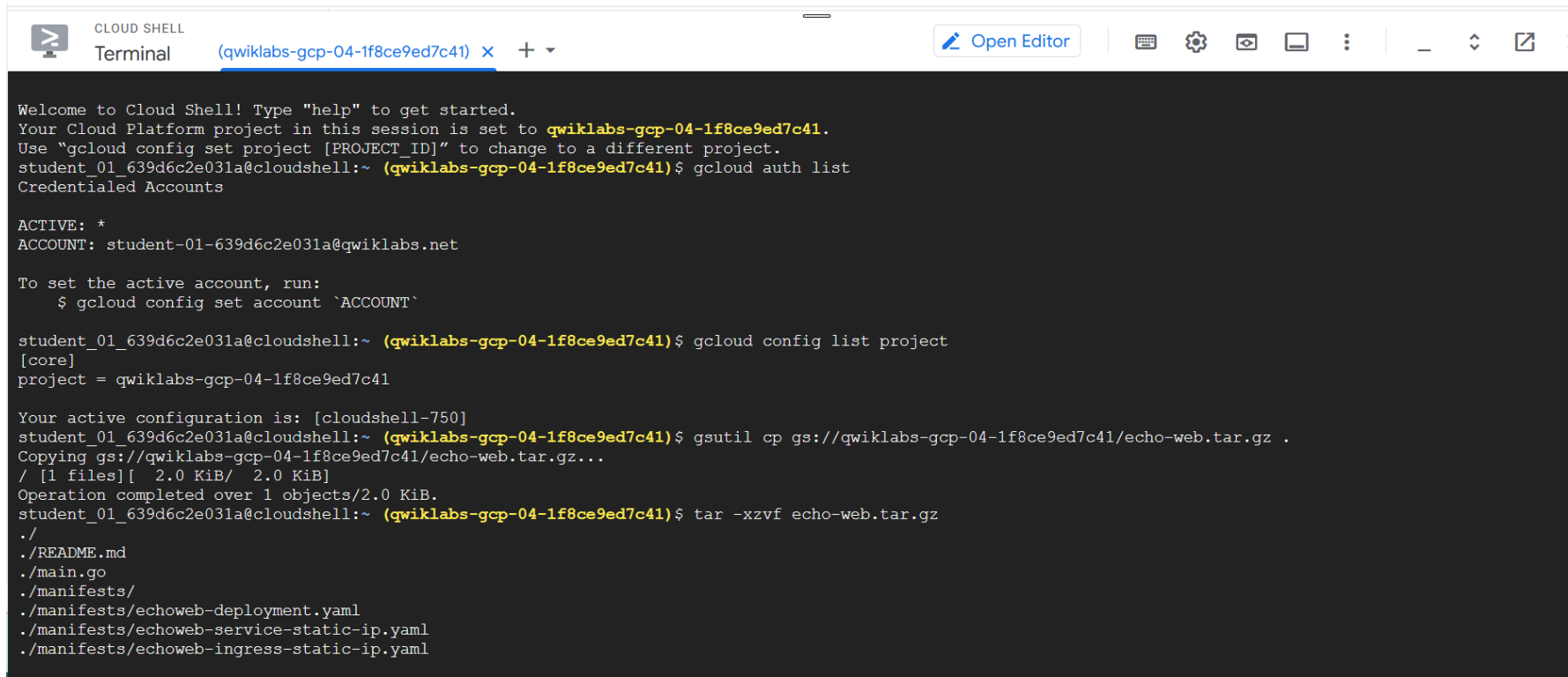
Juego

En curso

Completo

Actividad	Tipo	Fecha de inicio	Fecha de finalización	Puntuación	Correcto
<a href="#">Hello Node Kubernetes</a>	Lab	hace 35 minutos	hace 0 minutos	0.0/100.0	
<a href="#">Build and Deploy a Docker Image to a Kubernetes Cluster: Challenge Lab</a>	Lab	hace 1 hora	hace 36 minutos	25.0/100.0	
<a href="#">Hello Node Kubernetes</a>	Lab	hace 2 horas	hace 2 horas	0.0/100.0	
<a href="#">Hello Node Kubernetes</a>	Lab	hace 3 horas	hace 2 horas	0.0/100.0	
<a href="#">Hello Node Kubernetes</a>	Lab	hace 4 horas	hace 3 horas	0.0/100.0	

## 3.2. Realizar un *desafío* con GCP Kubernetes



```
CLOUD SHELL
Terminal (qwiklabs-gcp-04-1f8ce9ed7c41) x + ▾
Open Editor

Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to qwiklabs-gcp-04-1f8ce9ed7c41.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ gcloud auth list
Credentialed Accounts

ACTIVE: *
ACCOUNT: student-01-639d6c2e031a@qwiklabs.net

To set the active account, run:
$ gcloud config set account `ACCOUNT`

student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ gcloud config list project
[core]
project = qwiklabs-gcp-04-1f8ce9ed7c41

Your active configuration is: [cloudshell-750]
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ gsutil cp gs://qwiklabs-gcp-04-1f8ce9ed7c41/echo-web.tar.gz .
Copying gs://qwiklabs-gcp-04-1f8ce9ed7c41/echo-web.tar.gz...
/ [1 files][ 2.0 KiB/ 2.0 KiB]
Operation completed over 1 objects/2.0 KiB.
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ tar -xzf echo-web.tar.gz
./
./README.md
./main.go
./manifests/
./manifests/echoweb-deployment.yaml
./manifests/echoweb-service-static-ip.yaml
./manifests/echoweb-ingress-static-ip.yaml
```

```

./manifests/echoweb-deployment.yaml
./manifests/echoweb-service-static-ip.yaml
./manifests/echoweb-ingress-static-ip.yaml
./Dockerfile
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ ls
Dockerfile  echo-web.tar.gz  main.go  manifests  README-cloudshell.txt  README.md
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ docker build -t gcr.io/[PROJECT_ID]/echo-app:v1 .
[+] Building 0.0s (0/0)
ERROR: invalid tag "gcr.io/[PROJECT_ID]/echo-app:v1": invalid reference format
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ docker build -t gcr.io/qwiklabs-gcp-04-1f8ce9ed7c41/echo-app:v1 .
[+] Building 8.9s (11/11) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 195B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/alpine:latest
=> [internal] load metadata for docker.io/library/golang:1.8-alpine
=> [internal] load build context
=> => transferring context: 19.89kB
=> [stage-1 1/2] FROM docker.io/library/alpine:latest@sha256:51b67269f354137895d43f3b3d810bfacd3945438e94dc5ac55fdac340352f48
=> => resolve docker.io/library/alpine:latest@sha256:51b67269f354137895d43f3b3d810bfacd3945438e94dc5ac55fdac340352f48
=> => sha256:51b67269f354137895d43f3b3d810bfacd3945438e94dc5ac55fdac340352f48 1.64kB / 1.64kB
=> => sha256:13b7e62e8df80264dbb747995705a986aa530415763a6c58f84a3ca8af9a5bcd 528B / 528B
=> => sha256:f8c20f8bbcb684055b4fea470fdd169c86e87786940b3262335b12ec3adef418 1.47kB / 1.47kB
=> => sha256:661ff4d9561e3fd050929ee5097067c34bafc523ee60f5294a37fd08056a73ca 3.41MB / 3.41MB
=> => extracting sha256:661ff4d9561e3fd050929ee5097067c34bafc523ee60f5294a37fd08056a73ca
=> [stage-0 1/3] FROM docker.io/library/golang:1.8-alpine@sha256:693568f2ab0dae1e19f44b41628d2aea148fac65974cfd18f83cb9863ab1a177
=> => resolve docker.io/library/golang:1.8-alpine@sha256:693568f2ab0dae1e19f44b41628d2aea148fac65974cfd18f83cb9863ab1a177
=> => sha256:cbc8da23026a6f8a7d1254ad40c91449a96ca7ee3263195b70dec76020fab46a 350.67kB / 350.67kB
=> => sha256:693568f2ab0dae1e19f44b41628d2aea148fac65974cfd18f83cb9863ab1a177 434B / 434B

```

```

=> => sha256:46ca6ce0ffd195964343d5d6afa214c30ee0bca12cacf7dbe64ef06fd9f0a4d9 75.65MB / 75.65MB
=> => sha256:7a270aeb80a722432503e5c547c8159489d2c0a55387e976ec53cfc52138c24 126B / 126B
=> => extracting sha256:cbc8da23026a6f8a7d1254ad40c91449a96ca7ee3263195b70dec76020fab46a
=> => sha256:8695117c367ea4ccf3098c70d1cd8dc9a483cccef9e56320534e65b717695535 1.36kB / 1.36kB
=> => extracting sha256:9b35aaa06d7a456c2bccf1c8fd8d51384d549806dfe2b50e4f8dall1a64e940c4
=> => extracting sha256:46ca6ce0ffd195964343d5d6afa214c30ee0bca12cacf7dbe64ef06fd9f0a4d9
=> => extracting sha256:7a270aeb80a722432503e5c547c8159489d2c0a55387e976ec53cfc52138c24
=> => extracting sha256:8695117c367ea4ccf3098c70d1cd8dc9a483cccef9e56320534e65b717695535
=> [stage-0 2/3] ADD . /go/src/echo-app
=> [stage-0 3/3] RUN go install echo-app
=> [stage-1 2/2] COPY --from=0 /go/bin/echo-app .
=> exporting to image
=> => exporting layers
=> => writing image sha256:bf3cdc5b176863a92be523b7e3e379124c9a2d501c39dc5406e7711ae5556986
=> => naming to gcr.io/qwiklabs-gcp-04-1f8ce9ed7c41/echo-app:v1
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ gcloud auth configure-docker
WARNING: Your config file at [/home/student_01_639d6c2e031a/.docker/config.json] contains these credential helper entries:

```

```

{
  "credHelpers": {
    "asia-docker.pkg.dev": "gcloud",
    "asia-east1-docker.pkg.dev": "gcloud",
    "asia-east2-docker.pkg.dev": "gcloud",
    "asia-northeast1-docker.pkg.dev": "gcloud",
    "asia-northeast2-docker.pkg.dev": "gcloud",
    "asia-northeast3-docker.pkg.dev": "gcloud",
    "asia-south1-docker.pkg.dev": "gcloud",
    "asia-south2-docker.pkg.dev": "gcloud",
    "asia-southeast1-docker.pkg.dev": "gcloud",
    "asia-southeast2-docker.pkg.dev": "gcloud",
  }
}

```

```

"europe-southwest1-docker.pkg.dev": "gcloud",
"europe-west1-docker.pkg.dev": "gcloud",
"europe-west10-docker.pkg.dev": "gcloud",
"europe-west12-docker.pkg.dev": "gcloud",
"europe-west2-docker.pkg.dev": "gcloud",
"europe-west3-docker.pkg.dev": "gcloud",
"europe-west4-docker.pkg.dev": "gcloud",
"europe-west6-docker.pkg.dev": "gcloud",
"europe-west8-docker.pkg.dev": "gcloud",
"europe-west9-docker.pkg.dev": "gcloud",
"me-central1-docker.pkg.dev": "gcloud",
"me-central2-docker.pkg.dev": "gcloud",
"me-west1-docker.pkg.dev": "gcloud",
"northamerica-northeast1-docker.pkg.dev": "gcloud",
"northamerica-northeast2-docker.pkg.dev": "gcloud",
"southamerica-east1-docker.pkg.dev": "gcloud",
"us-docker.pkg.dev": "gcloud",
"us-central1-docker.pkg.dev": "gcloud",
"us-east1-docker.pkg.dev": "gcloud",
"us-east4-docker.pkg.dev": "gcloud",
"us-east5-docker.pkg.dev": "gcloud",
"us-east7-docker.pkg.dev": "gcloud",
"us-south1-docker.pkg.dev": "gcloud",
"us-west1-docker.pkg.dev": "gcloud",
"us-west2-docker.pkg.dev": "gcloud",
"us-west3-docker.pkg.dev": "gcloud",
"us-west4-docker.pkg.dev": "gcloud"
}
}
Adding credentials for all GCR repositories.

```

```

}
Adding credentials for all GCR repositories.
WARNING: A long list of credential helpers may cause delays running 'docker build'. We recommend passing the registry name to configure only the registry you are using.
After update, the following will be written to your Docker config file located at [/home/student_01_639d6c2e031a/.docker/config.json]:
{
  "credHelpers": {
    "asia-docker.pkg.dev": "gcloud",
    "asia-east1-docker.pkg.dev": "gcloud",
    "asia-east2-docker.pkg.dev": "gcloud",
    "asia-northeast1-docker.pkg.dev": "gcloud",
    "asia-northeast2-docker.pkg.dev": "gcloud",
    "asia-northeast3-docker.pkg.dev": "gcloud",
    "asia-south1-docker.pkg.dev": "gcloud",
    "asia-south2-docker.pkg.dev": "gcloud",
    "asia-southeast1-docker.pkg.dev": "gcloud",
    "asia-southeast2-docker.pkg.dev": "gcloud",
    "australia-southeast1-docker.pkg.dev": "gcloud",
    "australia-southeast2-docker.pkg.dev": "gcloud",
    "europe-docker.pkg.dev": "gcloud",
    "europe-central2-docker.pkg.dev": "gcloud",
    "europe-north1-docker.pkg.dev": "gcloud",
    "europe-southwest1-docker.pkg.dev": "gcloud",
    "europe-west1-docker.pkg.dev": "gcloud",
    "europe-west10-docker.pkg.dev": "gcloud",
    "europe-west12-docker.pkg.dev": "gcloud",
    "europe-west2-docker.pkg.dev": "gcloud",
    "europe-west3-docker.pkg.dev": "gcloud",
    "europe-west4-docker.pkg.dev": "gcloud",

```

```

    "staging-k8s.gcr.io": "gcloud",
    "marketplace.gcr.io": "gcloud"
  }
}

Do you want to continue (Y/n)? y


Docker configuration file updated.
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ docker push gcr.io/qwiklabs-gcp-04-1f8ce9ed7c41/echo-app:v1
The push refers to repository [gcr.io/qwiklabs-gcp-04-1f8ce9ed7c41/echo-app]
e3da922e251a: Pushed
5af4f8f59b76: Layer already exists
v1: digest: sha256:a2b7cf9e158813b3eddf47db8a8d21986b3fa65558549de27bb30b48e7ba9f7d size: 739
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ gcloud container clusters create echo-cluster --num-nodes=2 --machine-type=e2-standard-2 --zone=us-central1-a
Default change: VPC-native is the default mode during cluster creation for versions greater than 1.21.0-gke.1500. To create advanced routes based clusters, please pass the `--no-enable-ip-alias` flag
Note: Your Pod address range (`--cluster-ip4-cidr`) can accommodate at most 1008 node(s).
Creating cluster echo-cluster in us-central1-a... Cluster is being health-checked (master is healthy)...done.
Created [https://container.googleapis.com/v1/projects/qwiklabs-gcp-04-1f8ce9ed7c41/zones/us-central1-a/clusters/echo-cluster].
To inspect the contents of your cluster, go to: https://console.cloud.google.com/kubernetes/workload_/gcloud/us-central1-a/echo-cluster?project=qwiklabs-gcp-04-1f8ce9ed7c41
kubeconfig entry generated for echo-cluster.
NAME: echo-cluster
LOCATION: us-central1-a
MASTER_VERSION: 1.27.3-gke.100
MASTER_IP: 34.70.217.209
MACHINE_TYPE: e2-standard-2
NODE_VERSION: 1.27.3-gke.100
NUM_NODES: 2

```

```

NAME: echo-cluster
LOCATION: us-central1-a
MASTER_VERSION: 1.27.3-gke.100
MASTER_IP: 34.70.217.209
MACHINE_TYPE: e2-standard-2
NODE_VERSION: 1.27.3-gke.100
NUM_NODES: 2
STATUS: RUNNING
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ gcloud container clusters get-credentials echo-cluster --zone=us-central1-a
Fetching cluster endpoint and auth data.
kubeconfig entry generated for echo-cluster.
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ kubectl create deployment echo-web --image=gcr.io/qwiklabs-gcp-04-1f8ce9ed7c41/echo-app:v1
deployment.apps/echo-web created
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ kubectl expose deployment echo-web --type=LoadBalancer --port=80 --target-port=8000
service/echo-web exposed
student_01_639d6c2e031a@cloudshell:~ (qwiklabs-gcp-04-1f8ce9ed7c41)$ 

```


 **Kubernetes Engine**


E


[Learn about Enterprise](#)


Resource Management

⌵


 Overview


 Clusters


 Marketplace


 Release Notes

**Kubernetes clusters**


 CREATE


 REFRESH

 DEPLOY

 ONBOARDING 

NEW

 OPERATIONS ▾

 LEARN

OVERVIEW

OBSERVABILITY


COST OPTIMIZATION

≡ Filter

Enter property name or value

?

☰

<input type="checkbox"/> Status	Name ↑	Location	Number of nodes	Total vCPUs	Total memory	Notifications	Labels
<input type="checkbox"/> 	<a href="#">echo-cluster</a>	us-central1-a	2	4	16 GB	—	⋮