

Deploy, Scale, and Update Your Website on Google Kubernetes Engine - LAB

GSP663



Overview

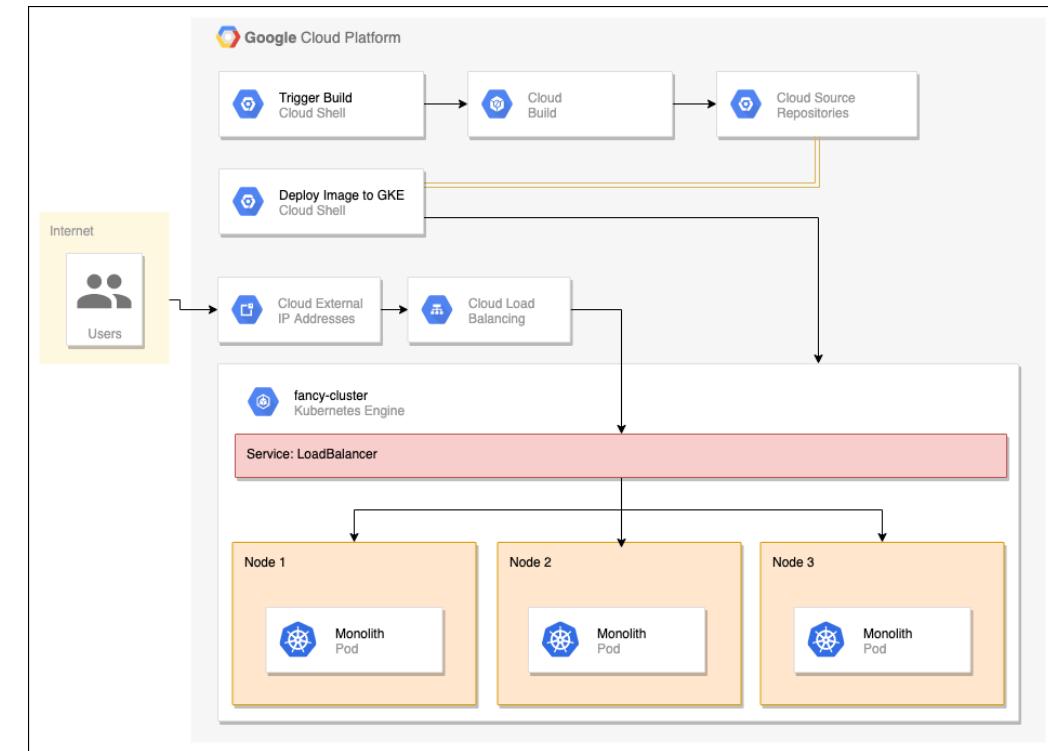
Running websites and applications is hard. Things go wrong when they shouldn't, servers crash, increase in demand causes more resources to be utilized, and making changes without downtime is complicated and stressful. With Kubernetes, you can do all this and even automate it!

In this lab you will assume the role of a developer at a fictional company, Fancy Store, running an ecommerce website. Due to problems with scaling and outages, you are tasked with deploying your application onto the Google Kubernetes Engine (GKE).

The exercises in this lab are ordered to reflect a common cloud developer experience:

- 1.Create a GKE cluster
- 2.Create a Docker container
- 3.Deploy the container to GKE
- 4.Expose the container via a service
- 5.Scale the container to multiple replicas
- 6.Modify the website
- 7.Rollout a new version with zero downtime

Architecture Diagram





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Password

L3fZEAou87Gv



Project ID

qwiklabs-gcp-02-f74464f1



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Task 1. Create a GKE cluster

You need a Kubernetes cluster to deploy your website to. First, make sure the proper APIs are enabled.

- Run the following to create a GKE cluster named `fancy-cluster` with 3 nodes:

```
gcloud container clusters create fancy-cluster --num-nodes 3
```



Note: If you get an error about region/zone not being specified, please see the environment setup section to make sure you set the default compute zone.

It will take a few minutes for the cluster to be created.

- Now run the following command and see the cluster's three worker VM instances:

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Dashboard – qwiklabs-gcp-02-f74464ff833e X +

https://console.cloud.google.com/home/dashboard?project=qwiklabs-gcp-02-f74464ff833e&pli=1&cloudshell=true

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```
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$ gcloud config list project
INFORMATION: Project 'qwiklabs-gcp-02-f74464ff833e' has no 'environment' tag set. Use either 'Production', 'Development', 'Test', or 'Staging'. Add an 'environment' tag using `gcloud resource
manager tags create`.
[core]
project = qwiklabs-gcp-02-f74464ff833e

Your active configuration is: [cloudshell-19302]
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$ gcloud config set compute/zone us-central1-a
Updated property [compute/zone].
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$ gcloud container clusters create fancy-cluster --num-nodes 3
Note: Your Pod address range (`--cluster-ipv4-cidr`) can accommodate at most 1008 node(s).
Creating cluster fancy-cluster in us-central1-a... Cluster is being health-checked (Kubernetes Control Plane is healthy)...done.
Created [https://container.googleapis.com/v1/projects/qwiklabs-gcp-02-f74464ff833e/zones/us-central1-a/clusters/fancy-cluster].
To inspect the contents of your cluster, go to: https://console.cloud.google.com/kubernetes/workload_gcloud/us-central1-a/fancy-cluster?project=qwiklabs-gcp-02-f74464ff833e
kubeconfig entry generated for fancy-cluster.
NAME: fancy-cluster
LOCATION: us-central1-a
MASTER_VERSION: 1.33.5-gke.1201000
MASTER_IP: 35.239.41.163
MACHINE_TYPE: e2-medium
NODE_VERSION: 1.33.5-gke.1201000
NUM_NODES: 3
STATUS: RUNNING
STACK_TYPE: IPV4
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$
```

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Note: If you get an error about region/zone not being specified, please see the environment setup section to make sure you set the default compute zone.

It will take a few minutes for the cluster to be created.

2. Now run the following command and see the cluster's three worker VM instances:

gcloud compute instances list

**Output:**

```
NAME: gke-fancy-cluster-default-pool-fb932da6-4sk6
ZONE: us-central1-f
MACHINE_TYPE: e2-medium
PREEMPTIBLE:
INTERNAL_IP: 10.128.0.3
EXTERNAL_IP: 34.172.106.173
STATUS: RUNNING
```

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```
MASTER_VERSION: 1.33.5-gke.1201000
MASTER_IP: 35.239.41.163
MACHINE_TYPE: e2-medium
NODE_VERSION: 1.33.5-gke.1201000
NUM_NODES: 3
STATUS: RUNNING
STACK_TYPE: IPV4
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$ gcloud compute instances list
NAME: gke-fancy-cluster-default-pool-adf9a85f-4xsp
ZONE: us-central1-a
MACHINE_TYPE: e2-medium
PREEMPTIBLE:
INTERNAL_IP: 10.128.0.5
EXTERNAL_IP: 104.198.213.230
STATUS: RUNNING

NAME: gke-fancy-cluster-default-pool-adf9a85f-8tmar
ZONE: us-central1-a
MACHINE_TYPE: e2-medium
PREEMPTIBLE:
INTERNAL_IP: 10.128.0.4
EXTERNAL_IP: 34.46.79.24
STATUS: RUNNING

NAME: gke-fancy-cluster-default-pool-adf9a85f-bd47
ZONE: us-central1-a
MACHINE_TYPE: e2-medium
PREEMPTIBLE:
INTERNAL_IP: 10.128.0.3
EXTERNAL_IP: 34.55.103.28
STATUS: RUNNING
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$
```

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Kubernetes Engine / Clusters

All Fleets

No fleets in the current project

Resource Management

- Overview
- Clusters**
- Marketplace
- Release Notes

Kubernetes clusters

+ Create + Deploy Refresh Attach cluster New

Health ② 100% healthy No recommendations

Upgrade ② 100% up to date No recommendations

Estimated monthly cost ② \$0.00 / month · 0% No recommendations

Filter Enter property name or value

Status	Name ↑	Location	Number of nodes	Total vCPUs	Total memory	Notifications	Labels
<input type="checkbox"/>	<input checked="" type="checkbox"/> fancy-cluster	us-central1-a	3	6	12 GB	–	⋮

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INTERNAL_IP: 10.128.0.4
EXTERNAL_IP: 34.46.79.24
STATUS: RUNNING

NAME: gke-fancy-cluster-default-pool-adf9a85f-bd47
ZONE: us-central1-a
MACHINE_TYPE: e2-medium
PREEMPTIBLE:
INTERNAL_IP: 10.128.0.3
EXTERNAL_IP: 34.55.103.28
STATUS: RUNNING
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)\$

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Deploy, Scale, and Update Your Website on Google

2. Change to the appropriate directory.

3. You will also install the NodeJS dependencies so you can test your application before deploying:

```
cd ~/monolith-to-microservices
```

```
./setup.sh
```

Wait a few minutes for this script to finish running.

4. Ensure you are running Cloud Shell with the latest version of npm:

```
nvm install --lts
```

5. Change to the appropriate directory and test the application by running the following command to start the web server:

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Task 5. Expose GKE deployment

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```
Resolving deltas: 100% (629/629), done.
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$ cd ~/monolith-to-microservices
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices (qwiklabs-gcp-02-f74464ff833e)$ ./setup.sh
Installing monolith dependencies...

added 68 packages, and audited 69 packages in 2s

14 packages are looking for funding
  run `npm fund` for details

5 vulnerabilities (3 low, 2 high)

To address all issues, run:
  npm audit fix

Run `npm audit` for details.
npm notice
npm notice New patch version of npm available! 11.6.2 → 11.6.4
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.6.4
npm notice To update run: npm install -g npm@11.6.4
npm notice
Completed.

Installing microservices dependencies...

added 95 packages, and audited 96 packages in 5s

20 packages are looking for funding
  run `npm fund` for details

2 high severity vulnerabilities

To address all issues, run:
```

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npx update-browserslist-db@latest
Why you should do it regularly: <https://github.com/browserslist/update-db#readme>
Compiled successfully.

File sizes after gzip:

88.22 kB (+19 B) build/static/js/main.e4fbf856.js

The project was built assuming it is hosted at /.
You can control this with the homepage field in your package.json.

The build folder is ready to be deployed.
You may serve it with a static server:

npm install -g serve
serve -s build

Find out more about deployment here:

<https://cra.link/deployment>

> frontend@0.1.0 postbuild
> node scripts/post-build.js ./build ../microservices/src/frontend/public

Deleting stale folder: ../microservices/src/frontend/public
Deleted stale destination folder: ../microservices/src/frontend/public
Copying files from ./build to ../microservices/src/frontend/public
Copied ./build to ../microservices/src/frontend/public successfully!
Completed.

Setup completed successfully!

student_02_953d929d59b2@cloudshell:~/monolith-to-microservices (qwiklabs-gcp-02-f74464ff833e) \$

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Password

L3fZEou87Gv

Project ID

qwiklabs-gcp-02-f74464f1

`cd ~/monolith-to-microservices``./setup.sh`

Wait a few minutes for this script to finish running.

4. Ensure you are running Cloud Shell with the latest version of npm:

`nvm install --lts`

5. Change to the appropriate directory and test the application by running the following command to start the web server:

`cd ~/monolith-to-microservices/monolith``npm start`

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File sizes after gzip:

```
88.22 kB (+19 B) build/static/js/main.e4fbf856.js
```

The project was built assuming it is hosted at /. You can control this with the homepage field in your package.json.

The build folder is ready to be deployed. You may serve it with a static server:

```
npm install -g serve
serve -s build
```

Find out more about deployment here:

<https://cra.link/deployment>

```
> frontend@0.1.0 postbuild
> node scripts/post-build.js ./build ../microservices/src/frontend/public

Deleting stale folder: ../microservices/src/frontend/public
Deleted stale destination folder: ../microservices/src/frontend/public
Copying files from ./build to ../microservices/src/frontend/public
Copied ./build to ../microservices/src/frontend/public successfully!
Completed.

Setup completed successfully!
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices (qwiklabs-gcp-02-f74464ff833e)$ nvm install --lts
Installing latest LTS version.
v24.11.1 is already installed.
Now using node v24.11.1 (npm v11.6.2)
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices (qwiklabs-gcp-02-f74464ff833e)$
```

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Password

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Project ID

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nvm install --lts



5. Change to the appropriate directory and test the application by running the following command to start the web server:

cd ~/monolith-to-microservices/monolith



npm start



Output:

Monolith listening on port 8080!

6. You can preview your application by clicking the web preview icon and selecting [Preview on port 8080](#):

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The `build` folder is ready to be deployed.
You may serve it with a static server:

```
npm install -g serve  
serve -s build
```

Find out more about deployment here:
<https://cra.link/deployment>

Preview on port 8080 Change port About web preview

Don't show again Dismiss

```
> frontend@0.1.0 postbuild  
> node scripts/post-build.js ./build ../microservices/src/frontend/public  
  
Deleting stale folder: ../microservices/src/frontend/public  
Deleted stale destination folder: ../microservices/src/frontend/public  
Copying files from ./build to ../microservices/src/frontend/public  
Copied ./build to ../microservices/src/frontend/public successfully!  
Completed.  
  
Setup completed successfully!  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices (qwiklabs-gcp-02-f74464ff833e)$ nvm install --lts  
Installing latest LTS version.  
v24.11.1 is already installed.  
Now using node v24.11.1 (npm v11.6.2)  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices (qwiklabs-gcp-02-f74464ff833e)$ cd ~/monolith-to-microservices/monolith  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ npm start  
  
> monolith@1.0.0 start  
> node ./src/server.js  
  
Monolith listening on port 8080!
```

Fancy Store

Home

Products

Orders

Welcome to the Fancy Store!

Take a look at our wide variety of products.



Kubernetes clusters – Kubernetes Fancy Store

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```
npm install -g serve
serve -s build

Find out more about deployment here:
https://cra.link/deployment

> frontend@0.1.0 postbuild
> node scripts/post-build.js ./build ../microservices/src/frontend/public

Deleting stale folder: ../microservices/src/frontend/public
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Copied ./build to ../microservices/src/frontend/public successfully!
Completed.

Setup completed successfully!
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices (qwiklabs-gcp-02-f74464ff833e)$ nvm install --lts
Installing latest LTS version.
v24.11.1 is already installed.
Now using node v24.11.1 (npm v11.6.2)
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices (qwiklabs-gcp-02-f74464ff833e)$ cd ~/monolith-to-microservices/monolith
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ npm start

> monolith@1.0.0 start
> node ./src/server.js

Monolith listening on port 8080!
^C
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ gcloud services enable cloudbuild.googleapis.com
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```

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Deploy, Scale, and Update Your Website on Google

be pushed to the Artifact Registry.

- First, to make sure you have the Cloud Build API enable, run the following command:

```
gcloud services enable cloudbuild.googleapis.com
```

- Run the following to start the build process:

```
cd ~/monolith-to-microservices/monolith
```

```
gcloud builds submit --tag
gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:1.0.0 .
```

- This process will take a few minutes.

There will be output in the terminal similar to the following:

ID	CREATE_TIME	DURATION	SOURCE	IMAGES	STATUS
1ae295d9-63cb-482c-959b-bc52e9644d53	2019-08-29T01:56:35+00:00	33S			

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Task 6. Scale GKE deployment

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```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ cd ~/monolith-to-microservices/monolith
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ gcloud builds submit --tag gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:1.0.0 .
Creating temporary archive of 27 file(s) totalling 2.4 MiB before compression.
Uploading tarball of [...] to [gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764115310.311894-5c7925aa48dd4c089ddc8159d2bf087d.tgz]
Created [https://cloudbuild.googleapis.com/v1/projects/qwiklabs-gcp-02-f74464ff833e/locations/global/builds/b7357c0e-1cbf-4cf8-a53f-b2a0c0c27aa4].
Logs are available at [ https://console.cloud.google.com/cloud-build/builds/b7357c0e-1cbf-4cf8-a53f-b2a0c0c27aa4?project=866268510822 ].
Waiting for build to complete. Polling interval: 1 second(s).
----- REMOTE BUILD OUTPUT -----
starting build "b7357c0e-1cbf-4cf8-a53f-b2a0c0c27aa4"

FETCHSOURCE
Fetching storage object: gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764115310.311894-5c7925aa48dd4c089ddc8159d2bf087d.tgz#1764115314184403
Copying gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764115310.311894-5c7925aa48dd4c089ddc8159d2bf087d.tgz#1764115314184403...
/ [1 files] [ 1.4 MiB/ 1.4 MiB]
Operation completed over 1 objects/1.4 MiB.

BUILD
Already have image (with digest): gcr.io/cloud-builders/gcb-internal
Sending build context to Docker daemon 2.577MB
Step 1/7 : FROM node:16
16: Pulling from library/node
311da6c465ea: Pulling fs layer
7e9bf114588c: Pulling fs layer
ffd9397e94b7: Pulling fs layer
513d77925604: Pulling fs layer
ae3b95bbaa61: Pulling fs layer
0e421f66aff4: Pulling fs layer
ca266fd61921: Pulling fs layer
ee7d78be1eb9: Pulling fs layer
ca266fd61921: Waiting
ee7d78be1eb9: Waiting
ae3b95bbaa61: Verifying Checksum
ae3b95bbaa61: Download complete
ca266fd61921: Verifying Checksum
```

Air: Very poor Now

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Kubernetes clusters – Kubernetes Fancy Store

https://console.cloud.google.com/kubernetes/list/overview?cloudshell=true&project=qwiklabs-gcp-02-f74464ff833e

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```
bcd82dfa358f: Preparing  
be322b479aee: Preparing  
d41bcd3a037b: Preparing  
fe0d845e767b: Preparing  
f25ec1d93a58: Preparing  
794ce8b1b516: Preparing  
3220beed9b06: Preparing  
684f82921421: Preparing  
9af5f53e8f62: Preparing  
684f82921421: Waiting  
9af5f53e8f62: Waiting  
d41bcd3a037b: Layer already exists  
be322b479aee: Layer already exists  
794ce8b1b516: Layer already exists  
3220beed9b06: Layer already exists  
fe0d845e767b: Layer already exists  
f25ec1d93a58: Layer already exists  
bcd82dfa358f: Pushed  
684f82921421: Layer already exists  
9af5f53e8f62: Layer already exists  
1186aa817771: Pushed  
8468d7b79235: Pushed  
34e69472cdb9: Pushed  
1.0.0: digest: sha256:8e1db1e16b9a4e3830739d0633780198d4fd346900ef6ba8e2d3b84f2ad0c788 size: 2841  
DONE
```

```
ID: b7357c0e-1cbf-4cf8-a53f-b2a0c0c27aa4  
CREATE_TIME: 2025-11-26T00:01:54+00:00  
DURATION: 46S  
SOURCE: gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764115310.311894-5c7925aa48dd4c089ddc8159d2bf087d.tgz  
IMAGES: gcr.io/qwiklabs-gcp-02-f74464ff833e/monolith:1.0.0  
STATUS: SUCCESS  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```

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Cloud Build / History / Build details: b7357c0e-1cbf-4cf8-a53f-b2a0c0c27aa4

Dashboard History Repositories Triggers Worker Pools Permissions Release Notes

Build details [Retry build](#) [Copy url](#)

Successful: b7357c0e-1cbf-4cf8-a53f-b2a0c0c27aa4

Started on Nov 26, 2025, 5:32:01 AM

Source gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764115310.311894-5c7925aa48dd4c089ddc8159d2bf087d.tgz

Steps	Duration
Build Summary	00:00:46
1 Step	
0: gcr.io/cloud-builders/gcb-internal docker build --network cloudbuild --no-cache -t gcr.io/qw...	00:00:23

Build Summary

Execution details

Build id	b7357c0e-1cbf-4cf8-a53f-b2a0c0c27aa4
Status	Successful
Region	global
Timing	
Created	November 26, 2025 at 5:31:54 AM UTC+5:30
Started	November 26, 2025 at 5:32:01 AM UTC+5:30
Finished	November 26, 2025 at 5:32:47 AM UTC+5:30
Queued time	6 sec
Total build time	46 sec
Fetch source	2 sec
Build step(s)	23 sec
Push	16 sec
Timeout	1 hr
Source	gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764115310.311894-5c7925aa48dd4c089ddc8159d2bf087d.tgz
Image	gcr.io/qwiklabs-gcp-02-f74464ff833e/monolith:1.0.0
Service Account	866268510822-compute@developer.gserviceaccount.com
Built-in substitutions	
BUILD_ID	b7357c0e-1cbf-4cf8-a53f-b2a0c0c27aa4
LOCATION	global
PROJECT_ID	qwiklabs-gcp-02-f74464ff833e
PROJECT_NUMBER	866268510822

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Google Skills Partner

Build a Website on Google Cloud Deploy, Scale, and Update Your Website on Google Kubernetes Engine

Contents

Deploy, Scale, and Update Your Website on Google

CREATE DOCKER CONTAINER WITH CLOUD BUILD

Lab setup instructions and requirements

Protect your account and progress. Always use a private browser window and lab

Check my progress

Assessment completed!

End Lab 01:08:16

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Learn more

Open Google Cloud console

Username: student-02-953d929d59b2c

Password: L3fZEAou87Gv

Project ID: qwiklabs-gcp-02-f74464f

40/100 Lab instructions and tasks

GSP663

Overview

Setup and requirements

Task 1. Create a GKE cluster

Task 2. Clone source repository

Task 3. Create Docker container with Cloud Build

Task 4. Deploy container to GKE

Task 5. Expose GKE deployment

Task 6. Scale GKE deployment

Task 4. Deploy container to GKE

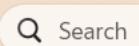
Now that you have containerized your website and pushed your container to Artifact Registry, it is time to deploy to Kubernetes!

To deploy and manage applications on a GKE cluster, you must communicate with the Kubernetes cluster management system. You typically do this by using the `kubectl` command-line tool.

Kubernetes represents applications as Pods, which are units that represent a container (or group of tightly-coupled containers). The Pod is the smallest deployable unit in Kubernetes. In this lab, each Pod contains only your monolith container.

To deploy your application, create a Deployment resource. The Deployment manages multiple copies of your application, called replicas, and schedules them to run on the individual nodes in your cluster. For this lab the Deployment will be running only one Pod of your application. Deployments ensure this by creating a ReplicaSet. The ReplicaSet is

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Deploy, Scale, and Update Your Website on Google

Lab setup instructions and requirements

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End Lab

01:08:07

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[Learn more.](#)

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Username: student-02-953d929d59b2f
Password: L3fZEAou87Gv
Project ID: qwiklabs-gcp-02-f74464f

Kubernetes represents applications as [Pods](#), which are units that represent a container (or group of tightly-coupled containers). The Pod is the smallest deployable unit in Kubernetes. In this lab, each Pod contains only your monolith container.

To deploy your application, create a [Deployment](#) resource. The Deployment manages multiple copies of your application, called replicas, and schedules them to run on the individual nodes in your cluster. For this lab the Deployment will be running only one Pod of your application. Deployments ensure this by creating a [ReplicaSet](#). The ReplicaSet is responsible for making sure the number of replicas specified are always running.

The `kubectl create deployment` command you'll use next causes Kubernetes to create a Deployment named `monolith` on your cluster with 1 replica.

- Run the following command to deploy your application:

```
kubectl create deployment monolith --  
image=gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:1.0.0
```

Note: As a best practice, using YAML file and a source control system such as GitHub is recommended to store those changes. Learn more about these resources from the [Deployments documentation](#).

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```
684f82921421: Preparing  
9af5f53e8f62: Preparing  
684f82921421: Waiting  
9af5f53e8f62: Waiting  
d41bcd3a037b: Layer already exists  
be322b479aee: Layer already exists  
794ce8b1b516: Layer already exists  
3220beed9b06: Layer already exists  
fe0d845e767b: Layer already exists  
f25ec1d93a58: Layer already exists  
bcd82dfa358f: Pushed  
684f82921421: Layer already exists  
9af5f53e8f62: Layer already exists  
1186aa817771: Pushed  
8468d7b79235: Pushed  
34e69472cdb9: Pushed  
1.0.0: digest: sha256:8e1db1e16b9a4e3830739d0633780198d4fd346900ef6ba8e2d3b84f2ad0c788 size: 2841  
DONE  
-----  
ID: b7357c0e-1cbf-4cf8-a53f-b2a0c0c27aa4  
CREATE_TIME: 2025-11-26T00:01:54+00:00  
DURATION: 46s  
SOURCE: gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764115310.311894-5c7925aa48dd4c089ddc8159d2bf087d.tgz  
IMAGES: gcr.io/qwiklabs-gcp-02-f74464ff833e/monolith:1.0.0  
STATUS: SUCCESS  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl create deployment monolith --image=gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:1.0.0  
deployment.apps/monolith created  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```

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Deploy, Scale, and Update Your Website on Google
☰

Lab setup instructions
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End Lab
01:07:14

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[Learn more.](#)
Open Google Cloud console

Username

student-02-953d929d59b2


Password

L3fZEAou87Gv


Project ID

qwiklabs-gcp-02-f74464f


Verify deployment

1. Verify the Deployment was created successfully:

```
kubectl get all
```



Rerun the command until the pod status is Running.

Output:

NAME	READY	STATUS	RESTARTS	AGE
pod/monolith-7d8bc7bf68-htm7z	1/1	Running	0	6m21s

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	10.27.240.1	<none>	443/TCP	24h

NAME	DESIRED	CURRENT	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/monolith	1	1	1	1	20m

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Open Google Cloud console

Username: student-02-953d929d59b2✖

Password: L3fZEAou87Gv✖

Project ID: qwiklabs-gcp-02-f74464f✖

Task 5. Expose GKE deployment

You have deployed your application on GKE, but there isn't a way to access it outside of the cluster. By default, the containers you run on GKE are not accessible from the Internet because they do not have external IP addresses. You must explicitly expose your application to traffic from the Internet via a [Service](#) resource. A Service provides networking and IP support to your application's Pods. GKE creates an external IP and a Load Balancer for your application.

- Run the following command to expose your website to the Internet:

```
kubectl expose deployment monolith --type=LoadBalancer --port 80
--target-port 8080
```

Accessing the service

GKE assigns the external IP address to the Service resource, not the Deployment.

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Task 6. Scale GKE deployment

 Gemini CLI is available in Cloud Shell terminal! Type `gemini` to try it. [Learn more](#)

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```
deployment.apps/monolith created
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get all
NAME          READY   STATUS    RESTARTS   AGE
pod/monolith-c855d468c-n5mqv   1/1     Running   0          43s

NAME           TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
service/kubernetes   ClusterIP   34.118.224.1   <none>        443/TCP   16m

NAME          READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/monolith   1/1       1            1           44s

NAME          DESIRED   CURRENT   READY   AGE
replicaset.apps/monolith-c855d468c   1         1         1       44s
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl expose deployment monolith --type=LoadBalancer --port 80 --target-port 8080
service/monolith exposed
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```

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CLOUD SHELL

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```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get all
```

NAME	READY	STATUS	RESTARTS	AGE
pod/monolith-c855d468c-n5mqv	1/1	Running	0	43s

```
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	34.118.224.1	<none>	443/TCP	16m

```
NAME READY UP-TO-DATE AVAILABLE AGE
```

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/monolith	1/1	1	1	44s

```
NAME DESIRED CURRENT READY AGE
```

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/monolith-c855d468c	1	1	1	44s

```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl expose deployment monolith --type=LoadBalancer --port 80 --target-port 8080
```

service/monolith exposed

```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
kubernetes	ClusterIP	34.118.224.1	<none>	443/TCP	18m
monolith	LoadBalancer	34.118.235.203	<pending>	80:32699/TCP	22s

```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```

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Build a Website on Google Cloud > Deploy, Scale, and Update Your Website on Google Kubernetes Engine

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Deploy, Scale, and Update Your Website on Google

End Lab 01:03:52

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[Open Google Cloud console](#)

Username: student-02-953d929d59b20

Password: L3fZEaou87Gv

Project ID: gwiklabs-nan-02-f74464f-

NAME	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
monolith	10.3.251.122	203.0.113.0	80:30877/TCP	3d

Re-run the command until your service has an external IP address.

2. Once you've determined the external IP address for your application, copy the IP address, then point your browser the URL (such as "http://203.0.113.0") to check if your application is accessible.

You should see the same website you tested earlier. You now have your website fully running on Kubernetes!

Click **Check my progress** to verify the objective.

Expose GKE Deployment

Check my progress

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GSP663

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CLOUD SHELL Terminal (qwiklabs-gcp-02-f74464ff833e) + Open Editor

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NAME READY UP-TO-DATE AVAILABLE AGE
deployment.apps/monolith 1/1 1 1 44s

NAME DESIRED CURRENT READY AGE
replicaset.apps/monolith-c855d468c 1 1 1 44s

```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl expose deployment monolith --type=LoadBalancer --port 80 --target-port 8080  
service/monolith exposed  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service  
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE  
kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m  
monolith LoadBalancer 34.118.235.203 <pending> 80:32699/TCP 22s  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service  
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE  
kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m  
monolith LoadBalancer 34.118.235.203 35.223.117.189 80:32699/TCP 44s  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service  
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE  
kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m  
monolith LoadBalancer 34.118.235.203 35.223.117.189 80:32699/TCP 60s  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service  
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE  
kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m  
monolith LoadBalancer 34.118.235.203 35.223.117.189 80:32699/TCP 64s  
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```

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https://console.cloud.google.com/kubernetes/list/overview?cloudshell=true&project=qwiklabs-gcp-02-f74464ff833e

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Google Cloud qwiklabs-gcp-02-f74464ff833e cloud build X Search

CLOUD SHELL Terminal (qwiklabs-gcp-02-f74464ff833e) + Open Editor | ☰ ⚙️ 🎯 📁 ⋮ - ⌂ X

Gemini CLI is available in Cloud Shell terminal! Type gemini to try it. [Learn more](#)

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```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl expose deployment monolith --type=LoadBalancer --port 80 --target-port 8080 service/monolith exposed student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m monolith LoadBalancer 34.118.235.203 <pending> 80:32699/TCP 22s student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m monolith LoadBalancer 34.118.235.203 35.223.117.189 80:32699/TCP 44s student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m monolith LoadBalancer 34.118.235.203 35.223.117.189 80:32699/TCP 60s student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m monolith LoadBalancer 34.118.235.203 35.223.117.189 80:32699/TCP 64s student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ ^C student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```

8 10°C Clear

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ENG US 05:41 AM 26-11-2025

Fancy Store

Home

Products

Orders

Welcome to the Fancy Store!

Take a look at our wide variety of products.



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★ 5336 🔥 1 ⚡ ? 🌐

🔍

Build a Website on Google Cloud > Deploy, Scale, and Update Your Website on Google Kubernetes Engine

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Deploy, Scale, and Update Your Website on Google ☰

Task 6. Scale GKE deployment

End Lab 01:01:48

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[Open Google Cloud console](#)

Username: student-02-953d929d59b20 📋

Password: L3fZEaou87Gv 📋

Project ID: gwikilabs-001-f74464f 📋

70/100 Lab instructions and tasks

GSP663 Overview Setup and requirements Task 1. Create a GKE cluster Task 2. Clone source repository Task 3. Create Docker container with Cloud Build Task 4. Deploy container

Now that your application is running in GKE and is exposed to the internet, imagine your website has become extremely popular! You need a way to scale your application to multiple instances so it can handle all this traffic. Next you will learn how to scale the application up to 3 replicas.

1. In Cloud Shell, run the following command to scale your deployment up to 3 replicas:

```
kubectl scale deployment monolith --replicas=3
```

2. Verify the Deployment was scaled successfully:

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```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl expose deployment monolith --type=LoadBalancer --port 80 --target-port 8080 service/monolith exposed student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m monolith LoadBalancer 34.118.235.203 <pending> 80:32699/TCP 22s student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m monolith LoadBalancer 34.118.235.203 35.223.117.189 80:32699/TCP 44s student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m monolith LoadBalancer 34.118.235.203 35.223.117.189 80:32699/TCP 60s student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE kubernetes ClusterIP 34.118.224.1 <none> 443/TCP 18m monolith LoadBalancer 34.118.235.203 35.223.117.189 80:32699/TCP 64s student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ ^C student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl scale deployment monolith --replicas=3 deployment.apps/monolith scaled student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```

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> Build a Website on Google Cloud > Deploy, Scale, and Update Your Website on Google Kubernetes Engine



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1. In Cloud Shell, run the following command to scale your deployment up to 3 replicas:

```
kubectl scale deployment monolith --replicas=3
```



2. Verify the Deployment was scaled successfully:

```
kubectl get all
```



Output:

NAME	READY	STATUS	RESTARTS	AGE
pod/monolith-7d8bc7bf68-2bxts	1/1	Running	0	36m
pod/monolith-7d8bc7bf68-7ds7q	1/1	Running	0	45s
pod/monolith-7d8bc7bf68-c5kxk	1/1	Running	0	45s

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ASSESSMENT COMPLETED.

Lab setup instructions and requirements

Protect your account and progress. Always use a private browser window and lab

End Lab

01:00:07

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Password

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Task 4. Deploy container to GKE

Task 5. Expose GKE deployment

Task 6. Scale GKE deployment

Task 7. Make changes to the website

Scenario: Your marketing team has asked you to change the homepage for your site. They think it should be more informative of who your company is and what you actually sell.

Task: You will add some text to the homepage to make the marketing team happy! It looks like one of the developers has already created the changes with the file name `index.js.new`. You can just copy this file to `index.js` and the changes should be reflected. Follow the instructions below to make the appropriate changes.

- Run the following commands copy the updated file to the correct file name:

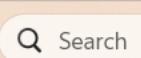
```
cd ~/monolith-to-microservices/react-app/src/pages/Home
mv index.js.new index.js
```

- Print its contents to verify the changes:



10°C

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ENG US

05:43 AM
26-11-2025

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G Gemini CLI is available in Cloud Shell terminal! Type gemini to try it. [Learn more](#)

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```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get service
NAME           TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)        AGE
kubernetes     ClusterIP   34.118.224.1    <none>          443/TCP       18m
monolith       LoadBalancer 34.118.235.203  35.223.117.189  80:32699/TCP  64s
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ ^C
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl scale deployment monolith --replicas=3
deployment.apps/monolith scaled
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get all
NAME                  READY   STATUS    RESTARTS   AGE
pod/monolith-c855d468c-n5mqv  1/1     Running   0          6m31s
pod/monolith-c855d468c-s9mn4  0/1     ContainerCreating   0          19s
pod/monolith-c855d468c-snkd5  0/1     ContainerCreating   0          19s

NAME           TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)        AGE
service/kubernetes ClusterIP   34.118.224.1    <none>          443/TCP       21m
service/monolith LoadBalancer 34.118.235.203  35.223.117.189  80:32699/TCP  4m14s

NAME          READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/monolith  1/3      3            1           6m32s

NAME          DESIRED   CURRENT   READY   AGE
replicaset.apps/monolith-c855d468c  3         3         1       6m33s
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ cd ~/monolith-to-microservices/react-app/src/pages/Home
mv index.js.new index.js
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/react-app/src/pages/Home (qwiklabs-gcp-02-f74464ff833e)$
```

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Task: You will add some text to the homepage to make the marketing team happy! It looks like one of the developers has already created the changes with the file name `index.js.new`. You can just copy this file to `index.js` and the changes should be reflected. Follow the instructions below to make the appropriate changes.

- Run the following commands copy the updated file to the correct file name:

```
cd ~/monolith-to-microservices/react-app/src/pages/Home
mv index.js.new index.js
```

- Print its contents to verify the changes:

```
cat ~/monolith-to-microservices/react-app/src/pages/Home/index.js
```

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked.

[Learn more.](#)[Open Google Cloud console](#)

Username

student-02-953d929d59b2f



Password

L3fZEAou87Gv



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Task 4. Deploy container to GKE

Task 5. Expose GKE deployment

Task 6. Scale GKE deployment




```
import React from "react";
import { Box, Paper, Typography } from "@mui/material";

export default function Home() {
  return (
    <Box sx={{ flexGrow: 1 }}>
      <Paper
        elevation={3}
        sx={{
          width: "800px",
          margin: "0 auto",
          padding: (theme) => theme.spacing(3, 2),
        }}
      >
        <Typography variant="h5">Fancy Fashion & Style Online</Typography>
        <br />
        <Typography variant="body1">
          Tired of mainstream fashion ideas, popular trends and societal norms?
          This line of lifestyle products will help you catch up with the latest
          trend and express your personal style. Start shopping Fancy items now!
        </Typography>
      </Paper>
    </Box>
  );
}

student 02 953d929d59b2@cloudshell:~/monolith-to-microservices/react-app/src
```



https://partner.skills.google/course_templates/638/labs/598620

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Build a Website on Google Cloud > Deploy, Scale, and Update Your Website on Google Kubernetes Engine

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Lab setup instructions and requirements

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End Lab 00:58:51

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[Open Google Cloud console](#)

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Password: L3fZEAou87Gv
Project ID: qwiklabs-gcp-02-f74464f

</paper>
</div>
);
}

The React components were updated, but the React app needs to be built to generate the static files.

3. Run the following command to build the React app and copy it into the monolith public directory:

```
cd ~/monolith-to-microservices/react-app
npm run build:monolith
```

Now that the code is updated, you need to rebuild the Docker container and publish it to the Artifact Registry. Use the same command as earlier, except this time update the version label.

4. Run the following command to trigger a new cloud build with an updated image version of 2.0.0:

```
cd ~/monolith-to-microservices/monolith
```

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```
> CLOUD SHELL
Terminal (qwiklabs-gcp-02-f74464ff833e) x + ▾
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 ⓘ Gemini CLI is available in Cloud Shell terminal! Type gemini to try it. Learn more
Don't show again Dismiss

</Box>
};

}
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/react-app/src/pages/Home (qwiklabs-gcp-02-f74464ff833e)$ cd ~/monolith-to-microservices/react-app
npm run build:monolith

> frontend@0.1.0 build:monolith
> env-cmd -f .env.monolith react-scripts build

(node:2849) [DEP0176] DeprecationWarning: fs.F_OK is deprecated, use fs.constants.F_OK instead
(Use `node --trace-deprecation ...` to show where the warning was created)
Creating an optimized production build...
Browserslist: caniuse-lite is outdated. Please run:
  npx update-browserslist-db@latest
  Why you should do it regularly: https://github.com/browserslist/update-db#readme
Compiled successfully.

File sizes after gzip:

  88.3 kB (+80 B)  build/static/js/main.0b89069c.js

The project was built assuming it is hosted at /.
You can control this with the homepage field in your package.json.

The build folder is ready to be deployed.
```

i Gemini CLI is available in Cloud Shell terminal! Type `gemini` to try it. [Learn more](#)

File sizes after gzip:

```
88.3 kB (+80 B) build/static/js/main.0b89069c.js
```

The project was built assuming it is hosted at `/`.
You can control this with the `homepage` field in your `package.json`.

The `build` folder is ready to be deployed.
You may serve it with a static server:

```
npm install -g serve
serve -s build
```

Find out more about deployment here:

```
https://cra.link/deployment
```

```
> frontend@0.1.0 postbuild:monolith
> node scripts/post-build.js ./build ../monolith/public

Deleting stale folder: ../monolith/public
Deleted stale destination folder: ../monolith/public
Copying files from ./build to ../monolith/public
Copied ./build to ../monolith/public successfully!
student 02 953d929d59b2@cloudshell:~/monolith-to-microservices/react-app (qwiklabs-gcp-02-f74464ff833e) $
```

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Deploy, Scale, and Update Your Website on Google

Now that the code is updated, you need to rebuild the Docker container and publish it to the Artifact Registry. Use the same command as earlier, except this time update the version label.

- Run the following command to trigger a new cloud build with an updated image version of 2.0.0:

```
cd ~/monolith-to-microservices/monolith
```

```
gcloud builds submit --tag
gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:2.0.0 .
```

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[Learn more.](#)
[Open Google Cloud console](#)
Username


Password


Project ID



In the next section you will use this image to update your application with zero downtime.

Click **Check my progress** to verify the objective.

Make changes to the website

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Don't show again Dismiss

```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/react-app (qwiklabs-gcp-02-f74464ff833e)$ cd ~/monolith-to-microservices/monolith
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ gcloud builds submit --tag gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:2.0.0 .
Creating temporary archive of 27 file(s) totalling 2.4 MiB before compression.
Uploading tarball of [.] to [gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764116194.213843-a15d63758cea4b4bbadb019d41313c39.tgz]
Created [https://cloudbuild.googleapis.com/v1/projects/qwiklabs-gcp-02-f74464ff833e/locations/global/builds/8409708a-2a6e-4ac1-af51-7160c3dc10a0].
Logs are available at [ https://console.cloud.google.com/cloud-build/builds/8409708a-2a6e-4ac1-af51-7160c3dc10a0?project=866268510822 ].
Waiting for build to complete. Polling interval: 1 second(s).
----- REMOTE BUILD OUTPUT -----
starting build "8409708a-2a6e-4ac1-af51-7160c3dc10a0"

FETCHSOURCE
Fetching storage object: gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764116194.213843-a15d63758cea4b4bbadb019d41313c39.tgz#1764116196850981
Copying gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764116194.213843-a15d63758cea4b4bbadb019d41313c39.tgz#1764116196850981...
/ [1 files] [ 1.4 MiB/ 1.4 MiB]
Operation completed over 1 objects/1.4 MiB.
BUILD
Already have image (with digest): gcr.io/cloud-builders/gcb-internal
Sending build context to Docker daemon 2.577MB
Step 1/7 : FROM node:16
16: Pulling from library/node
311da6c465ea: Pulling fs layer
7e9bf114588c: Pulling fs layer
ffd9397e94b7: Pulling fs layer
513d77925604: Pulling fs layer
ae3b95bbaa61: Pulling fs layer
```

8 10°C Clear Search

ENG US 05:47 AM 26-11-2025

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```
684f82921421: Preparing
9af5f53e8f62: Preparing
684f82921421: Waiting
9af5f53e8f62: Waiting
f25ec1d93a58: Layer already exists
794ce8b1b516: Layer already exists
fe0d845e767b: Layer already exists
be322b479aee: Layer already exists
3220beed9b06: Layer already exists
d41bcd3a037b: Layer already exists
684f82921421: Layer already exists
9af5f53e8f62: Layer already exists
5cf58600617d: Pushed
d494f4966d45: Pushed
111585cf5331: Pushed
248b0dacc46a: Pushed
2.0.0: digest: sha256:71fb501924b82c3eb9f909d1bd1cf137674e8a590da52b7adb8bc76592845500 size: 2841
DONE
```

```
ID: 8409708a-2a6e-4ac1-af51-7160c3dc10a0
CREATE_TIME: 2025-11-26T00:16:37+00:00
DURATION: 40S
SOURCE: gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764116194.213843-a15d63758cea4b4bbadb019d41313c39.tgz
IMAGES: gcr.io/qwiklabs-gcp-02-f74464ff833e/monolith:2.0.0
STATUS: SUCCESS
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e) $
```

8 10°C Clear Search

ENG US 05:47 AM 26-11-2025

https://partner.skills.google/course_templates/638/labs/598620

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5336 1



[Build a Website on Google Cloud](#) > Deploy, Scale, and Update Your Website on Google Kubernetes Engine

Contents
Deploy, Scale, and Update Your Website on Google ≡

Task 8. Update website with zero downtime

The changes are completed and the marketing team is happy with your updates! It is time to update the website without interruption to the users.

GKE's rolling update mechanism ensures that your application remains up and available even as the system replaces instances of your old container image with your new one across all the running replicas.

- Tell Kubernetes that you want to update the image for your deployment to a new version with the following command:

```
kubectl set image deployment/monolith
monolith=gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:2.0.0
```

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked.
[Learn more.](#)

[Open Google Cloud console](#)

Username: student-02-953d929d59b2c

Password: L3fZEAou87Gv

Project ID: qwiklabs-gcp-02-f74464f

00:55:35

90/100

- Lab instructions and tasks
- GSP663
 - Overview
 - Setup and requirements
 - Task 1. Create a GKE cluster
 - Task 2. Clone source repository
 - Task 3. Create Docker container with Cloud Build
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 - Task 5. Expose GKE deployment
 - Task 6. Scale GKE deployment

Verify deployment

- You can validate your deployment update by running the following command:

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Kubernetes clusters – Kubernetes Build details – Cloud Build – qwiklabs Fancy Store Fancy Store +

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Google Cloud qwiklabs-gcp-02-f74464ff833e cloud build X Search

CLOUD SHELL Terminal (qwiklabs-gcp-02-f74464ff833e) + Open Editor |

G Gemini CLI is available in Cloud Shell terminal! Type gemini to try it. [Learn more](#)

Don't show again Dismiss

```
9af5f53e8f62: Waiting
f25ec1d93a58: Layer already exists
794ce8b1b516: Layer already exists
fe0d845e767b: Layer already exists
be322b479aee: Layer already exists
3220beed9b06: Layer already exists
d41bcd3a037b: Layer already exists
684f82921421: Layer already exists
9af5f53e8f62: Layer already exists
5cf58600617d: Pushed
d494f4966d45: Pushed
111585cf5331: Pushed
248b0dacc46a: Pushed
2.0.0: digest: sha256:71fb501924b82c3eb9f909d1bd1cf137674e8a590da52b7adb8bc76592845500 size: 2841
DONE
-----
ID: 8409708a-2a6e-4acl-af51-7160c3dc10a0
CREATE_TIME: 2025-11-26T00:16:37+00:00
DURATION: 40S
SOURCE: gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764116194.213843-a15d63758cea4b4bbadb019d41313c39.tgz
IMAGES: gcr.io/qwiklabs-gcp-02-f74464ff833e/monolith:2.0.0
STATUS: SUCCESS
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl set image deployment/monolith monolith=gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:2.0.0
deployment.apps/monolith image updated
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```

8 10°C Clear

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Build a Website on Google Cloud > Deploy, Scale, and Update Your Website on Google Kubernetes Engine



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Deploy, Scale, and Update Your Website on Google

Tell Kubernetes that you want to update the image for your deployment to a new version with the following command:

```
kubectl set image deployment/monolith
monolith=gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:2.0.0
```

00:54:55

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked.

[Learn more.](#)
[Open Google Cloud console](#)

Username

student-02-953d929d59b2c



Password

L3fZEAou87Gv



Project ID

qwiklabs-gcp-02-f74464f



```
kubectl get pods
```

Output:

NAME	READY	STATUS	RESTARTS	AGE
monolith-584fbcb994b-4hj68	1/1	Terminating	0	60m
monolith-584fbcb994b-fpfdw	1/1	Running	0	60m
monolith-584fbcb994b-xsk8s	1/1	Terminating	0	60m
monolith-75f4cf58d5-24cq8	1/1	Running	0	3s
monolith-75f4cf58d5-rfi8r	1/1	Running	0	5s

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```
9af5f53e8f62: Layer already exists
5cf58600617d: Pushed
d494f4966d45: Pushed
111585cf5331: Pushed
248b0dacc46a: Pushed
2.0.0: digest: sha256:71fb501924b82c3eb9f909d1bd1cf137674e8a590da52b7adb8bc76592845500 size: 2841
DONE

ID: 8409708a-2a6e-4ac1-af51-7160c3dc10a0
CREATE_TIME: 2025-11-26T00:16:37+00:00
DURATION: 40S
SOURCE: gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764116194.213843-a15d63758cea4b4bbadb019d41313c39.tgz
IMAGES: gcr.io/qwiklabs-gcp-02-f74464ff833e/monolith:2.0.0
STATUS: SUCCESS
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl set image deployment/monolith monolith=gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:2.0.0
deployment.apps/monolith image updated
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get pods
NAME      READY   STATUS    RESTARTS   AGE
monolith-64dc6dbfd8-f9c7w   1/1     Running   0          20s
monolith-64dc6dbfd8-nn2hd   1/1     Running   0          26s
monolith-64dc6dbfd8-v6plv   1/1     Running   0          23s
monolith-c855d468c-n5mqv   1/1     Terminating   0          13m
monolith-c855d468c-s9mn4   1/1     Terminating   0          6m49s
monolith-c855d468c-snkd5   1/1     Terminating   0          6m49s
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$
```



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Build a Website on Google Cloud > Deploy, Scale, and Update Your Website on Google Kubernetes Engine



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Deploy, Scale, and Update Your Website on Google

monolith-584fbc994b-fpwdw	1/1	Running	0	60m
monolith-584fbc994b-xsk8s	1/1	Terminating	0	60m
monolith-75f4cf58d5-24cq8	1/1	Running	0	3s
monolith-75f4cf58d5-rfj8r	1/1	Running	0	5s
monolith-75f4cf58d5-xm44v	0/1	ContainerCreating	0	1s

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Protect your account and progress. Always use a private browser window and lab

End Lab

00:53:45

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[Learn more.](#)[Open Google Cloud console](#)

Username

student-02-953d929d59b2



Password

L3fZEAou87Gv



Project ID

qwiklabs-gcp-02-f74464f



Build a Website on Google Cloud > Deploy, Scale, and Update Your Website on Google Kubernetes Engine

monolith-584fbc994b-fpwdw	1/1	Running	0	60m
monolith-584fbc994b-xsk8s	1/1	Terminating	0	60m
monolith-75f4cf58d5-24cq8	1/1	Running	0	3s
monolith-75f4cf58d5-rfj8r	1/1	Running	0	5s
monolith-75f4cf58d5-xm44v	0/1	ContainerCreating	0	1s

Here you will see 3 new pods being created and your old pods getting shut down. You can tell by the age which are new and which are old. Eventually, you will only see 3 pods again which will be your 3 updated pods.

2. Test the application by running the following command to start the web server:

npm start

3. To verify our changes, return to the app web page tab and refresh the page.

Notice that your application has been updated.

Your website should now be displaying the text you just added to the homepage component!

Fancy Store

Home

Products

Fancy Fashion & Style Online

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https://console.cloud.google.com/kubernetes/list/overview?cloudshell=true&project=qwiklabs-gcp-02-f74464ff833e

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i Gemini CLI is available in Cloud Shell terminal! Type gemini to try it. [Learn more](#)

DONE

ID: 8409708a-2a6e-4acl-af51-7160c3dc10a0
CREATE_TIME: 2025-11-26T00:16:37+00:00
DURATION: 40S
SOURCE: gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764116194.213843-a15d63758cea4b4bbadb019d41313c39.tgz
IMAGES: gcr.io/qwiklabs-gcp-02-f74464ff833e/monolith:2.0.0
STATUS: SUCCESS

```
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl set image deployment/monolith monolith=gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:2.0.0
deployment.apps/monolith image updated
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
monolith-64dc6dbfd8-f9c7w  1/1     Running   0          20s
monolith-64dc6dbfd8-nn2hd  1/1     Running   0          26s
monolith-64dc6dbfd8-v6plv  1/1     Running   0          23s
monolith-c855d468c-n5mqv   1/1     Terminating   0          13m
monolith-c855d468c-s9mn4   1/1     Terminating   0          6m49s
monolith-c855d468c-snkd5  1/1     Terminating   0          6m49s
student_02_953d929d59b2@cloudshell:~/monolith-to-microservices/monolith (qwiklabs-gcp-02-f74464ff833e)$ npm start
> monolith@1.0.0 start
> node ./src/server.js

Monolith listening on port 8080!
```

Preview on port 8080 | Change port | About web preview

Don't show again | Dismiss

8 10°C Clear | Search | 🏛️ | 📺 | 📱 | 🚗 | 🚧 | 📁 | 🚪 | 🚩 | 🚫 | 🚫 | ENG US | 05:50 AM | 26-11-2025

Fancy Store

Home

Products

Orders

Fancy Fashion & Style Online

Tired of mainstream fashion ideas, popular trends and societal norms? This line of lifestyle products will help you catch up with the Fancy trend and express your personal style. Start shopping Fancy items now!



Kubernetes clusters – Kubernetes Eng Fancy Store Build details – Cloud Build – qwiklabs Fancy Store +

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https://8080-cs-815608469588-default.ql-asia-southeast1-crbf.cloudshell.dev/products

Fancy Store

Home Products Orders



Vintage Typewriter - \$67.99



Vintage Camera Lens - \$12.49



Home Barista Kit - \$124



Terrarium - \$36.45



Film Camera - \$2245



Vintage Record Player - \$65.5







8 10°C Clear Search ENG US 05:50 AM 26-11-2025

Fancy Store

Home

Products

Orders

Orders

Order Id	Date	Total Items	Cost
ORD-000001	7/01/2019	1	\$67.99
ORD-000002	7/24/2019	1	\$124
ORD-000003	8/03/2019	1	\$12.49
ORD-000004	8/14/2019	2	\$89.83
ORD-000005	8/29/2019	1	\$12.3

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https://console.cloud.google.com/cloud-build/builds?cloudshell=true&project=qwiklabs-gcp-02-f74464ff833e

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Google Cloud qwiklabs-gcp-02-f74464ff833e Search (/) for resources, docs, products, and more Search

Cloud Build / History

Dashboard History Repositories Triggers Worker Pools Permissions Release Notes

Build history Stop streaming builds

This page shows your builds, sorted by the most recently started. Explore the build details to see logs, execution details, and build artifacts.

Filter Enter property name or value

Status	Build	Region	Source	Ref	Commit	Trigger Name	Created	Duration	Secur
<input checked="" type="checkbox"/>	8409708a	global	—	—	—	—	11/26/25, 5:46 AM	40 sec	View ⋮
<input checked="" type="checkbox"/>	b7357c0e	global	—	—	—	—	11/26/25, 5:31 AM	46 sec	View ⋮

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monolith – Deployment details – x Fancy Store Build history – Cloud Build – qwiklabs Fancy Store +

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Kubernetes Engine / Deployment: monolith / Deployment overview

All Fleets No fleets in the current project

Resource Management Overview Clusters Workloads AI/ML New Teams Applications Secrets & ConfigMaps Storage Object Browser Marketplace Release Notes

Deployment details Refresh Edit Delete Actions kubectl Show info panel Learn

monolith Set up an automated pipeline for this workload Dismiss Set up

Overview Details Observability Revision history Events Logs App Errors (0) YAML

1 hour 6 hours 12 hours 1 day 2 days 4 days 7 days 14 days 30 days Custom

CPU UTC+5:30 5:10 AM 5:20 AM 5:30 AM 5:40 AM 5:50 AM 0.01 0.005 0

Memory UTC+5:30 5:10 AM 5:20 AM 5:30 AM 5:40 AM 5:50 AM 50MB 0

Disk UTC+5:30 5:10 AM 5:20 AM 5:30 AM 5:40 AM 5:50 AM 15GiB 10GiB 5GiB 0

Cloud Shell Terminal (qwiklabs-gcp-02-f74464ff833e) + Open Editor

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monolith – Deployment details – [Fancy Store](#) | Build history – Cloud Build – qwiklabs | Fancy Store +

https://console.cloud.google.com/kubernetes/deployment/us-central1-a/fancy-cluster/default/monolith/overview?cloudshell=true&project=qwik...

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Google Cloud [qwiklabs-gcp-02-f74464ff833e](#) cloud build X Search

Kubernetes Engine / Deployment: monolith / Deployment overview

All Fleets No fleets in the current project

Resource Management Overview Clusters Workloads (selected)

AI/ML New Teams Applications Secrets & ConfigMaps Storage Object Browser Marketplace Release Notes

Deployment details Refresh Edit Delete Actions kubectl Show info panel Learn

Cluster: fancy-cluster Namespace: default Labels: app: monolith

Node type: User-managed Logs: Container logs, Audit logs

Replicas: 3 updated, 3 ready, 3 available, 0 unavailable

Pod specification: Revision 2, containers: monolith

Horizontal Pod: Not configured Configure

Autoscaler: Not configured Configure

Vertical Pod: Not configured Configure

Autoscaler: Not configured Configure

Active revisions:

Revision	Name	Status	Summary	Created on	Pods running/Pods total
2	monolith-64dc6dbfd8	OK	monolith: gcr.io/qwiklabs-gcp-02-f74464ff833e/monolith:2.0.0	Nov 26, 2025, 5:48:35 AM	3/3

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monolith – Deployment details – x

Fancy Store Build history – Cloud Build – qwiklabs Fancy Store +

https://console.cloud.google.com/kubernetes/deployment/us-central1-a/fancy-cluster/default/monolith/overview?cloudshell=true&project=qwik...

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Google Cloud qwiklabs-gcp-02-f74464ff833e cloud build x Search

Kubernetes Engine / Deployment: monolith / Deployment overview

All Fleets No fleets in the current project

Resource Management Overview Clusters Workloads AI/ML New Teams Applications Secrets & ConfigMaps Storage Object Browser Marketplace Release Notes

Deployment details Refresh Edit Delete Actions kubectl Show info panel Learn

Autoscaler ?

Active revisions

Revision	Name	Status	Summary	Created on	Pods running/Pods total
2	monolith-64dc6dbfd8	✓ OK	monolith: gcr.io/qwiklabs-gcp-02-f74464ff833e/monolith:2.0.0	Nov 26, 2025, 5:48:35 AM	3/3

Managed pods

Filter Filter pods

Revision	Name	Status	Restarts	Created on
2	monolith-64dc6dbfd8-nn2hd	✓ Running	0	Nov 26, 2025, 5:48:35 AM
2	monolith-64dc6dbfd8-v6plv	✓ Running	0	Nov 26, 2025, 5:48:38 AM
2	monolith-64dc6dbfd8-f9c7w	✓ Running	0	Nov 26, 2025, 5:48:41 AM

Exposing services ?

Name	Type	Endpoints
monolith	Load balancer	35.223.117.189:80

CLOUD SHELL Terminal (qwiklabs-gcp-02-f74464ff833e) x Open Editor

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Protect your account and progress. Always use a private browser window and lab

End Lab 00:51:58

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[Open Google Cloud console](#)

Username: student-02-953d929d59b2f... Copy

Password: L3fZEAou87Gv Copy

Project ID: qwiklabs-gcp-02-f74464f... Copy

Update website with zero downtime

Check my progress

Assessment completed!

100/100

Lab instructions and tasks

GSP663

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Task 1. Create a GKE cluster

Task 2. Clone source repository

Task 3. Create Docker container with Cloud Build

Task 4. Deploy container to GKE

Task 5. Expose GKE deployment

Task 6. Scale GKE deployment

Task 9. Cleanup

Although all resources will be deleted when you complete this lab, in your own environment it's a good idea to remove resources you no longer need.

1. Delete git repository:

```
cd ~
rm -rf monolith-to-microservices
```

2. Delete Artifact Registry images:

```
# Delete the container image for version 1.0.0 of the monolith
gcloud container images delete
--tag=gcr.io/[GOOGLE CLOUD PROJECT]/monolith:1.0.0
--quiet
```

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Protect your account and progress. Always use a private browser window and lab

End Lab

00:49:47

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[Learn more.](#)[Open Google Cloud console](#)

Username

student-02-953d929d59b2f



Password

L3fZEAou87Gv



Project ID

qwiklabs-gcp-02-f74464f



Although all resources will be deleted when you complete this lab, in your own environment it's a good idea to remove resources you no longer need.

1. Delete git repository:

```
cd ~
rm -rf monolith-to-microservices
```

2. Delete Artifact Registry images:

```
# Delete the container image for version 1.0.0 of the monolith
gcloud container images delete
gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:1.0.0 --quiet
```

```
# Delete the container image for version 2.0.0 of the monolith
gcloud container images delete
gcr.io/${GOOGLE_CLOUD_PROJECT}/monolith:2.0.0 --quiet
```

3. Delete Google Cloud Build artifacts from Google Cloud Storage:

```
# The following command will take all source archives from all
builds and delete them from cloud storage
```

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Lab instructions and tasks

GSP663

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Protect your account and progress. Always use a private browser window and lab

End Lab

00:48:37

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked.

[Learn more.](#)[Open Google Cloud console](#)

Username

student-02-953d929d59b2



Password

L3fZEAou87Gv



Project ID

qwiklabs-gcp-02-f74464f



Delete the container image for version 1.0.0 of the monolith

gcloud container images delete
gcr.io/\${GOOGLE_CLOUD_PROJECT}/monolith:1.0.0 --quiet

Delete the container image for version 2.0.0 of the monolith

gcloud container images delete
gcr.io/\${GOOGLE_CLOUD_PROJECT}/monolith:2.0.0 --quiet

3. Delete Google Cloud Build artifacts from Google Cloud Storage:

The following command will take all source archives from all builds and delete them from cloud storage

Run this command to print all sources:
gcloud builds list | awk 'NR > 1 {print \$4}'

gcloud builds list | grep 'SOURCE' | cut -d ' ' -f2 | while read line; do gsutil rm \$line; done

4. Delete GKE Service:

kubectl delete service monolith

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Lab instructions and tasks

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Task 2. Clone source repository

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Task 4. Deploy container to GKE

Task 5. Expose GKE deployment

Task 6. Scale GKE deployment





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Protect your account and progress. Always use a private browser window and lab

End Lab

00:48:05

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked.

[Learn more.](#)[Open Google Cloud console](#)

Username

student-02-953d929d59b2f



Password

L3fZEAou87Gv



Project ID

qwiklabs-gcp-02-f74464f



Congratulations!

You successfully deployed, scaled, and updated your website on GKE. You are now

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10°C

Clear



Search



monolith – Workloads – Kuberne X +

https://console.cloud.google.com/kubernetes/workload/overview?cloudshell=true&project=qwiklabs-gcp-02-f74464ff833e

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Google Cloud qwiklabs-gcp-02-f74464ff833e cloud build X Search

CLOUD SHELL Terminal (qwiklabs-gcp-02-f74464ff833e) + Open Editor

(i) Gemini CLI is available in Cloud Shell terminal! Type gemini to try it. [Learn more](#)

Don't show again Dismiss

```
# Run this command to print all sources:  
# gcloud builds list | awk 'NR > 1 {print $4}'  
  
gcloud builds list | grep 'SOURCE' | cut -d ' ' -f2 | while read line; do gsutil rm $line; done  
Removing gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764116194.213843-a15d63758cea4b4bbadb019d41313c39.tgz...  
/ [1 objects]  
Operation completed over 1 objects.  
Removing gs://qwiklabs-gcp-02-f74464ff833e_cloudbuild/source/1764115310.311894-5c7925aa48dd4c089ddc8159d2bf087d.tgz...  
/ [1 objects]  
Operation completed over 1 objects.  
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$ kubectl delete service monolith  
kubectl delete deployment monolith  
service "monolith" deleted  
deployment.apps "monolith" deleted  
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$ gcloud container clusters delete fancy-cluster us-central1  
The following clusters will be deleted.  
- [fancy-cluster] in [us-central1-a]  
- [us-central1] in [us-central1-a]  
  
Do you want to continue (Y/n)? Y  
  
Deleting cluster fancy-cluster...done.  
Deleted [https://container.googleapis.com/v1/projects/qwiklabs-gcp-02-f74464ff833e/zones/us-central1-a/clusters/fancy-cluster].  
ERROR: (gcloud.container.clusters.delete) Some requests did not succeed:  
- args: ["ResponseError: code=404, message=Not found: projects/qwiklabs-gcp-02-f74464ff833e/zones/us-central1-a/clusters/us-central1. This command is authenticated as student-02-953d929d59b2@qwiklabs.net which is the active account specified by the [core/account] property.\nNo cluster named 'us-central1' in qwiklabs-gcp-02-f74464ff833e."]  
exit_code: 1  
  
student_02_953d929d59b2@cloudshell:~ (qwiklabs-gcp-02-f74464ff833e)$
```

Air: Poor Saturday

Search

ENG US 06:00 AM 26-11-2025