

# GCP DEVOPS CLOUD NATIVE PROJECT

By  
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## 1) Create a git repository

The screenshot shows the Google Cloud console interface. At the top, there's a navigation bar with the Google Cloud logo, a dropdown menu for 'My First Project', and a search bar. Below the navigation bar, a sidebar on the left shows a list of products and pages. The main content area displays a search results for 'source repository'. The results show 'Source Repositories' as a 'Hosted private git repos' and 'Marketplace' as another option. Below the search results, a modal dialog titled 'Add a repository' is open. The dialog contains the text 'Select one of the following options to continue:' and two radio button options. The first option is 'Create new repository' with the description 'Choose this option to create an empty repository.' The second option is 'Connect external repository' with the description 'Choose this option to mirror a repository from a hosted service, such as GitHub or Bitbucket.' At the bottom right of the dialog, there are two buttons: 'Cancel' and 'Continue'.

Google Cloud My First Project

source repository

PRODUCTS & PAGES


- Source Repositories  
Hosted private git repos
- Marketplace

### Add a repository

Select one of the following options to continue:

- ☒ Create new repository  
Choose this option to create an empty repository.
- ☐ Connect external repository  
Choose this option to mirror a repository from a hosted service, such as GitHub or Bitbucket.

Cancel Continue

 Cloud Source Repositories


Create new repository

Repository name \*  
Devops-project

?

Project \*  
custom-dominion-409912

OR [Create project](#) ?

 Your repository is billed based on [Cloud Source Repositories pricing](#).

Cancel

Create

## 2)activate cloud shell

Terminal (custom-dominion-409912) x + [Open Editor](#)

```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to custom-dominion-409912.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
taruntiwari_4113@cloudshell:~ (custom-dominion-409912) $
```

## 2)clone the repository

```
taruntiwari_4113@cloudshell:~/gcp-devops (custom-dominion-409912) $ pwd
/home/taruntiwari_4113/gcp-devops
taruntiwari_4113@cloudshell:~/gcp-devops (custom-dominion-409912) $ gcloud source repos clone Devops-project
Cloning into '/home/taruntiwari_4113/gcp-devops/Devops-project'...
warning: You appear to have cloned an empty repository.
Project [custom-dominion-409912] repository [Devops-project] was cloned to [/home/taruntiwari_4113/gcp-devops/Devops-project]
taruntiwari_4113@cloudshell:~/gcp-devops (custom-dominion-409912) $ ls
Devops-project
taruntiwari_4113@cloudshell:~/gcp-devops (custom-dominion-409912) $
```

## 3)open the cloud editor enter the repository and create a python file called main.py

The screenshot shows the Google Cloud Cloud Shell Editor interface. At the top, there's a search bar and a project dropdown set to 'My First Project'. The left sidebar shows the Explorer with a tree view containing 'GCP-DEVOPS', 'Devops-project', and 'main.py'. The main editor area displays the code for 'main.py', which is a Flask application. The code includes imports for Flask, render\_template, and request. It defines a Flask app, a route for '/', and a main function that returns a template with a model containing a title. The app is run on host '0.0.0.0' and port '8080'.

```
1 from flask import Flask, render_template, request
2 app = Flask(__name__)
3 @app.route("/")
4 def main():
5     model = {'title': "Hello! Welcome to the GCP DevOps Project!!"}
6     return render_template("index.html", model=model)
7 if __name__ == "__main__":
8     app.run(host='0.0.0.0', port=8080, debug=True, threaded=True)
```

#### 4)Create other html files for the template

This screenshot shows the Google Cloud Cloud Shell Editor with the 'layout.html' file open. The Explorer on the left shows the project structure with 'templates' as a subdirectory containing 'index.html' and 'layout.html'. The main editor shows the HTML code for 'layout.html', which uses Bootstrap 4.4.1 and includes a container for the main content and a footer.

```
1 <!doctype html>
2 <html lang="en">
3 <head>
4     <title>{{model.title}}</title>
5     <!-- Bootstrap CSS -->
6     <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/css/bootstrap.min.css">
7 </head>
8 <body>
9     <div class="container">
10         {% block content %}{% endblock %}
11         <footer></footer>
12     </div>
13 </body>
14 </html>
```

This screenshot shows the Google Cloud Cloud Shell Editor with the 'index.html' file open. The Explorer on the left shows the project structure. The main editor shows the Jinja2 template code for 'index.html', which extends the 'layout.html' template and defines a 'jumbotron' section with a 'container' and an 'h1' tag.

```
1 {% extends "layout.html" %}
2 {% block content %}
3 <div class="jumbotron">
4     <div class="container">
5         <h1>{{model.title}}</h1>
6     </div>
7 </div>
8 {% endblock %}
```

#### 4)create a requirements.txt file



## 5) Add the files to the git repository

```
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ ls
main.py requirements.txt templates
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git add .
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$
```

```
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
    new file:   main.py
    new file:   requirements.txt
    new file:   templates/index.html
    new file:   templates/layout.html

taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$
```

## 6) Configure git account

```
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git config --global user.email "taruntiwari.4113@gmail.com"
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git config --global user.name "Tarun"
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$
```

## 7) commit changes

```
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git commit -m "Templates and the python file added"
[master (root-commit) 25eeb4b] Templates and the python file added
 4 files changed, 31 insertions(+)
 create mode 100644 main.py
 create mode 100644 requirements.txt
 create mode 100644 templates/index.html
 create mode 100644 templates/layout.html
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$
```

## 8) push the changes

```
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git push origin master
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (7/7), 983 bytes | 983.00 KiB/s, done.
Total 7 (delta 0), reused 0 (delta 0), pack-reused 0
remote: Waiting for private key checker: 4/4 objects left
To https://source.developers.google.com/p/custom-dominion-409912/r/Devops-project
 * [new branch]      master -> master
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$
```

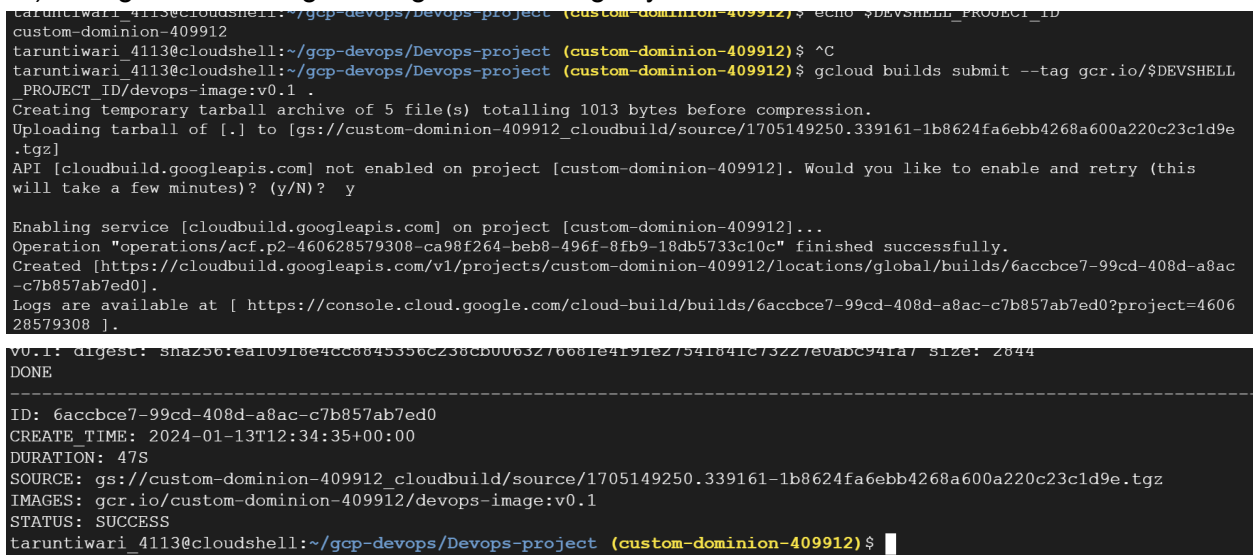
## 9) Create a Dockerfile



```
main.py layout.html index.html requirements.txt Dockerfile U X
Devops-project > Dockerfile
1 FROM python:3.7
2 WORKDIR /app
3 COPY . .
4 RUN pip install gunicorn
5 RUN pip install -r requirements.txt
6 ENV PORT=80
7 CMD exec gunicorn --bind :$PORT --workers 1 --threads 8 main:app
```

Note: gunicorn is a python webserver that will be used to run the webapp

## 10)Manage docker images using container registry

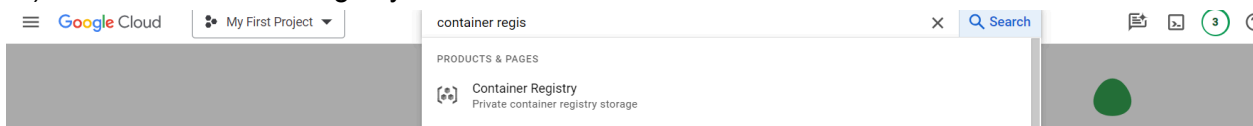


```
taruntiari_4113@cloudshell:~/gcp-devops/devops-project (custom-dominion-409912) $ echo $DEVSHHELL_PROJECT_ID
custom-dominion-409912
taruntiari_4113@cloudshell:~/gcp-devops/devops-project (custom-dominion-409912) $ ^C
taruntiari_4113@cloudshell:~/gcp-devops/devops-project (custom-dominion-409912) $ gcloud builds submit --tag gcr.io/$DEVSHHELL_PROJECT_ID/devops-image:v0.1 .
Creating temporary tarball archive of 5 file(s) totalling 1013 bytes before compression.
Uploading tarball of [.] to [gs://custom-dominion-409912_cloudbuild/source/1705149250.339161-1b8624fa6ebb4268a600a220c23c1d9e.tgz]
API [cloudbuild.googleapis.com] not enabled on project [custom-dominion-409912]. Would you like to enable and retry (this will take a few minutes)? (y/N)? y
Enabling service [cloudbuild.googleapis.com] on project [custom-dominion-409912]...
Operation "operations/acf.p2-460628579308-ca98f264-beb8-496f-8fb9-18db5733c10c" finished successfully.
Created [https://cloudbuild.googleapis.com/v1/projects/custom-dominion-409912/locations/global/builds/6accbce7-99cd-408d-a8ac-c7b857ab7ed0].
Logs are available at [ https://console.cloud.google.com/cloud-build/builds/6accbce7-99cd-408d-a8ac-c7b857ab7ed0?project=460628579308 ].

v0.1: digest: sha256:ea10918e4cc8845356c238cb0063276681e4191e27541841c73227e0abc941a7 size: 2844
DONE

ID: 6accbce7-99cd-408d-a8ac-c7b857ab7ed0
CREATE TIME: 2024-01-13T12:34:35+00:00
DURATION: 47S
SOURCE: gs://custom-dominion-409912_cloudbuild/source/1705149250.339161-1b8624fa6ebb4268a600a220c23c1d9e.tgz
IMAGES: gcr.io/custom-dominion-409912/devops-image:v0.1
STATUS: SUCCESS
taruntiari_4113@cloudshell:~/gcp-devops/devops-project (custom-dominion-409912) $
```

## 11) Go to the container registry



## 12)You can see the image that has been pushed

Google Cloud My First Project container regis Search

Container Registry Repositories

Container Registry is deprecated. After May 15, 2024, Artifact Registry will host images for the gcr.io domain in projects without previous Container Registry usage. [Learn more](#)

### Transition to Artifact Registry

Artifact Registry is the recommended service for managing container images. Container Registry is deprecated and will only receive critical security fixes. Learn more about options to transition to Artifact Registry.

[TRY ARTIFACT REGISTRY](#) [LEARN MORE](#)

My First Project

Filter Enter property name or value

Name	Hostname	Visibility
<a href="#">devops-image</a>	gcr.io	Private

Marketplace Release Notes

13)Go to cloud build to get CICD

Google Cloud My First Project cloud build dashboard Search

Container Registry Repositories

PRODUCTS & PAGES

Dashboard Cloud Build

in projects without previous Co

Google Cloud My First Project cloud build Search

Navigation menu build

Build history STOP STREAMING BUILDS LEARN

Region global (non-regional)

Filter Enter property name or value

Status	Build	Source	Ref	Commit	Trigger Name	Created	Duration	Security Insights
✓	<a href="#">6accbce7</a>	<a href="#">Google Cloud Storage</a>	-	-	-	1/13/24, 6:04 PM	47 sec	<a href="#">VIEW</a>

Dashboard History Repositories Triggers Settings

14)You can see the build logs once you click on the build

✓ Successful: 6accbce7-99cd-408d-a8ac-c7b857ab7ed0

Source

Started on Jan 13, 2024, 6:04:38 PM

[gs://custom-dominion-409912-cloudbuild/source/1705149250.339161-1b8624fa6ebb4268a600a220c23c1d9e.tgz](https://custom-dominion-409912-cloudbuild/source/1705149250.339161-1b8624fa6ebb4268a600a220c23c1d9e.tgz)

Steps	Duration	BUILD LOG	EXECUTION DETAILS	BUILD ARTIFACTS
✓ <b>Build Summary</b>	00:00:47	<div><input type="checkbox"/> Wrap lines <input type="checkbox"/> Show newest entries first <div>T</div> <div>↓</div></div> <div>EXPAND VIEW RAW</div>		
1 Step				
✓ 0: gcr.io/cloud-builders/docker	00:00:30	<pre>1 starting build "6accbce7-99cd-408d-a8ac-c7b857ab7ed0" 2 3 FETCHSOURCE 4 Fetching storage object: gs://custom-dominion-409912-cloudbuild/source/1705149250.339161-1b8624fa6ebb4268a600a220c23c1d9e.tgz#170514925285325 5 Copying gs://custom-dominion-409912-cloudbuild/source/1705149250.339161-1b8624fa6ebb4268a600a220c23c1d9e.tgz#1705149252853252... 6 / [0 files][ 0.0 B/ 1.0 KiB] 7 / [1 files][ 1.0 KiB/ 1.0 KiB] 8 Operation completed over 1 objects/1.0 KiB. 9 BUILD 10 Already have image (with digest): gcr.io/cloud-builders/docker 11 Sending build context to Docker daemon 6.656kB 12 13 Step 1/7 : FROM python:3.7 14 3.7: Pulling from library/python 15 167b8a53ca45: Pulling fs layer 16 b47a22d2d8fa: Pulling fs layer 17 debce5f9f3a9: Pulling fs layer 18 1d7ca7cd2e06: Pulling fs layer 19 ff3119080f58: Pulling fs layer 20 c2423a76a32b: Pulling fs layer 21 e1c98ca4926a: Pulling fs layer 22 3b62c8e1d79b: Pulling fs layer 23 ff3119080f58: Waiting 24 c2423a76a32b: Waiting 25 e1c98ca4926a: Waiting 26 3b62c8e1d79b: Waiting</pre>		

## 15)Go to compute engine to create an instance

Google Cloud

My First Project

Search (/) for resources, docs, products, and more

Search

3

?

⋮

T

Compute Engine

VM instances

CREATE INSTANCE

IMPORT VM

REFRESH

LEARN

Virtual machines

VM Instances

Instance templates

Sole-tenant nodes

Machine images

TPUs

Committed use discounts

Reservations

Migrate to Virtual Machin...

Storage

Disks

Marketplace

Release Notes

INSTANCES

OBSERVABILITY

INSTANCE SCHEDULES

VM instances

Filter Enter property name or value

Status

Name

Zone

Recommendations

In use by

Internal IP

External IP

Connect

VM Instances

Compute Engine lets you use virtual machines that run on Google's

## 16)create an instance

create a VM instance, select one of the options:

- New VM instance

Create a single VM instance from scratch
- New VM instance from template

Create a single VM instance from an existing template
- New VM instance from machine image

Create a single VM instance from an existing machine image
- Marketplace

Deploy a ready-to-go solution onto a VM instance

Name \*  
instance-1

MANAGE TAGS AND LABELS

Region \*  
asia-south1 (Mumbai)  
Region is permanent

Zone \*  
asia-south1-c  
Zone is permanent

Machine configuration

General purpose

Compute optimized

Memory optimized

GPUs

Machine types for common workloads, optimized for cost and flexibility

Series	Description	vCPUs	Memory
<input type="radio"/> C3	Consistently high performance	4 - 176	8 - 1,408 GB
<input type="radio"/> C3D	Consistently high performance	4 - 360	8 - 2,880 GB
<input checked="" type="radio"/> E2	Low cost, day-to-day computing	0.25 - 32	1 - 128 GB
<input type="radio"/> N2	Balanced price & performance	2 - 128	2 - 864 GB
<input type="radio"/> N2D	Balanced price & performance	2 - 224	2 - 896 GB
<input type="radio"/> T2A	Scale-out workloads	1 - 48	4 - 192 GB

Monthly estimate

\$29.86

That's about \$0.04 hourly

Pay for what you use: no upfront costs and per second billing

Item	Monthly estimate
2 vCPU + 4 GB memory	\$29.38
10 GB standard persistent disk	\$0.48
Total	\$29.86

Compute Engine pricing

LESS

CREATE

CANCEL

EQUIVALENT CODE



## Configure container

### Container image \*

gcr.io/custom-domainion-409912/devops-image:v0.1

For example, gcr.io/google-containers/busybox

### Restart policy

Always

- ☐ Run as privileged
- ☐ Allocate a buffer for STDIN
- ☐ Allocate a pseudo-TTY

Command

### Arguments

+ ADD ARGUMENT

### Environment variables

+ ADD VARIABLE

### Volume mounts

Use to mount directories (host path), tmpfs and additional disks to container.

ADD A VOLUME MOUNT

SELECT

CANCEL

Compute Engine

Virtual machines

VM instances

Instance templates

Sole-tenant nodes

Machine images

TPUs

Committed use discounts

Reservations

Migrate to Virtual Machin...

Storage

Disks

Marketplace

VM instances

CREATE INSTANCE

IMPORT VM

REFRESH

LEARN

INSTANCES

OBSERVABILITY

INSTANCE SCHEDULES

VM instances

Filter

Enter property name or value

	Status	Name	Zone	Recommendations	In use by	Internal IP	External IP	Connect
<input type="checkbox"/>		instance-1	asia-south1-c			10.160.0.7 (nic0)	35.244.59.227 (nic0)	SSH

Related actions

Explore Backup and DR

View billing report

Monitor VMs

Explore VM logs


Set up firewall rules

Patch management

Load balance between VMs


17)Make a trigger

## No triggers found in global

Automatically start a build whenever you make changes to your source code or in response to other events. [Learn more](#) 

CREATE TRIGGER

CONNECT REPOSITORY

 Create trigger

Name \*

devops-trigger

Must be unique within the project's region

Region \*

global (Global) ▼

Description

this is a trigger for devops-gcp project

Tags



### Event

Repository event that invokes trigger

☒ Push to a branch

☐ Push new tag

☐ Pull request

Not available for Cloud Source Repositories

Or in response to

☐ Manual invocation

☐ Pub/Sub message

☐ Webhook event

Repository \*

Devops-project (Cloud Source Repositories)



Select the repository to watch for events and clone when the trigger is invoked

Branch \*

.\*

Trigger only for a branch that matches the given regular expression [Learn more](#)

☐ Invert Regex

Matches the branch: master

▼ SHOW INCLUDED AND IGNORED FILES FILTERS

## Configuration

Type

- ☐ Cloud Build configuration file (yaml or json)
- ☒ Dockerfile
- ☐ Buildpacks

Location

- ☒ Repository
- Devops-project (Cloud Source Repositories)

/ Dockerfile directory



The directory will also be used as the Docker build context

Dockerfile name

The filename is relative to the Dockerfile directory

Image name \*

gcr.io/custom-dominion-409912/devops-project:\$COMMIT\_SHA



Supported variables: \$PROJECT\_ID, \$REPO\_NAME, \$BRANCH\_NAME, \$TAG\_NAME, \$COMMIT\_SHA, \$SHORT\_SHA

### Docker command preview

The command will be executed at the root of your repository. For more advanced usage, configure a cloudbuild.yaml file. [Learn More](#)

```
$ docker build \
  -t gcr.io/custom-dominion-409912/devops-project:$COMMIT_SHA
.
```



Timeout

seconds

### 18)to test the trigger click on run

Name	Description	Repository	Event	Build configuration	Status	
<a href="#">devops-trigger</a>	this is a trigger for devops-gcp project	<a href="#">Devops-project</a>	Push to branch	Dockerfile	Enabled	<b>RUN</b>

## Run trigger

---

### Trigger

devops-trigger

### Repository

 [Devops-project](#) 

### Revision type

☒ Branch

☐ Commit hash

### Branch

---

**RUN TRIGGER**

CANCEL

## Running: 6950a834-97e8-42ed-b110-b5c8931b26c6

Started on Jan 13, 2024, 6:26:10 PM

Steps	Duration	BUILD LOG	EXECUTION DETAILS
<b>Build Summary</b> 1 Step	00:00:00	<input type="checkbox"/> Wrap lines <input type="checkbox"/> Show newest entries	
0: gcr.io/cloud-builders/docker build -t gcr.io/custom-dominion-409912/...	-	28 ff3119008f58: Pulling fs layer 29 c2423a76a32b: Pulling fs layer 30 e1c98ca4926a: Pulling fs layer 31 3b62c8e1d79b: Pulling fs layer 32 1d7ca7cd2e06: Waiting 33 ff3119008f58: Waiting 34 c2423a76a32b: Waiting	

### 19) Test the build trigger by changing the file

main.py M x	<> layout.html	<> index.html	≡ requirements.txt	Dockerfile
-------------	----------------	---------------	--------------------	------------

Devops-project > main.py > main

```
1 from flask import Flask, render_template, request
2 app = Flask(__name__)
3 @app.route("/")
4 def main():
5     model = {"title": "Hello! Welcome to my GCP DevOps project"}
6     return render_template('index.html', model=model)
7 if __name__ == "__main__":
8     app.run(host='0.0.0.0', port=8080, debug=True, threaded=True)
```

```
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git push origin master
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 321 bytes | 321.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2)
remote: Waiting for private key checker: 1/1 objects left
To https://source.developers.google.com/p/custom-dominion-409912/r/Devops-project
78192e6..4ce7923 master -> master
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$
```

Running: Devops-project - devops-trigger

Latest Build

1/13/24, 6:35 PM

Duration

00:00:00

Trigger description

this is a trigger for devops-gcp project

Source

[Devops-project](#)

Commit

[4ce7923](#)

Build History

Latest

[View all](#)

Average Duration

00:00:47

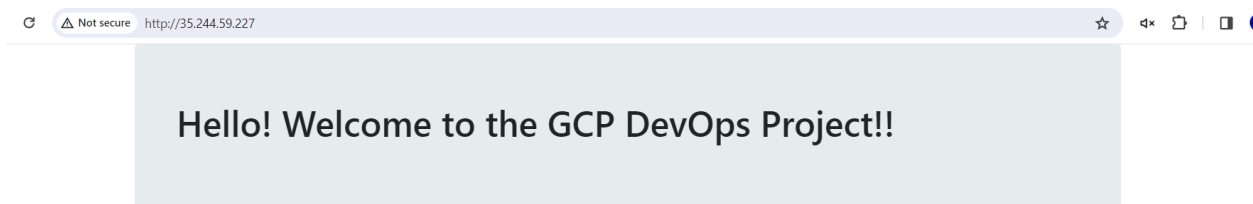
Pass - Fail %

100% - 0%

<div> <div>Filter</div> <div>Trigger Id : 39c2d0cb-1113-4b02-a583-91b44fd3be36 </div> <div>Enter property name or value</div> </div>										
<input type="checkbox"/>	Status	Build	Source	Ref	Commit	Trigger Name	Created	Duration	Security Insights	
<input type="checkbox"/>	✓	<a href="#">37d40f9b</a>	<a href="#">Devops-project</a>	master	<a href="#">4ce7923</a>	<a href="#">devops-trigger</a>	1/13/24, 6:35 PM	45 sec	-	
<input type="checkbox"/>	✓	<a href="#">6950a834</a>	<a href="#">Devops-project</a>	master	<a href="#">78192e6</a>	<a href="#">devops-trigger</a>	1/13/24, 6:26 PM	47 sec	VIEW	

History				
	ID	Author	Commit Date	Description
▼	<a href="#">4ce7923</a>	Tarun	2024-01-13 18:35	Changes made to check Trigger
▼	<a href="#">78192e6</a>	Tarun	2024-01-13 18:18	docker file added
▼	<a href="#">25eeb4b</a>	Tarun	2024-01-13 17:54	Templates and the python file added

## 20)Check the instance for the output



## 21)You can also use GKE to deploy the service

←

Create a Kubernetes cluster

+

ADD NODE POOL

🗑

REMOVE NODE POOL

📖

USE A SETUP GUIDE

⚙

SWITCH TO AUTOPILOT CLUSTER

Cluster basics

NODE POOLS

default-pool

▼

CLUSTER

Automation

Networking

Security

Metadata

Features

Fleet

❗

To experiment with an affordable cluster, try **My first cluster** in the **Cluster set-up guides**

Name

devops-gcp-project

Cluster names must start with a lowercase letter followed by up to 39 lowercase letters, numbers, or hyphens. They can't end with a hyphen. You cannot change the cluster's name once it's created.

Location type

Resource prices may vary between certain regions. [Learn more](#)

☒ Zonal
 ☐ Regional

Zone

asia-south1-c

▼ ?

☐ Specify default node locations

Increase availability by selecting more than one zone

Current default: asia-south1-c

Estimated monthly cost

PREVIEW

\$197.13

That's about \$0.27 per hour

Pricing is based on the resources y fees, discounts and credits. [Learn i](#)

▼

SHOW COST BREAKDOWN

OVERVIEW

OBSERVABILITY

COST OPTIMIZATION

select all rows

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="#">devops-gcp-project</a>	asia-south1-c	3 <span>❗</span>	0	0 GB		—

## 22)create a directory inside the git directory

```
tarun@tarun:~/gcp-devops/Devops-project/k8s$ pwd
/home/tarun/gcp-devops/Devops-project/k8s
tarun@tarun:~/gcp-devops/Devops-project/k8s$
```

## 23)Write the deployment.yml script to create a deployment



```
! deployment.yml U X    ! service.yml U
k8s > ! deployment.yml > {} spec > {} template > {} spec > [ ] containers > [ ] ports
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    name: flask-deployment
5  spec:
6    replicas: 3
7    selector:
8      matchLabels:
9        app: flaskapp
10   template:
11     metadata:
12       labels:
13         app: flaskapp
14     spec:
15       containers:
16       - name: flaskapp
17         image: gcr.io/custom-dominion-409912/devops-image:v0.1
18         ports:
19         - containerPort: 80
20
```

24) Write the service.yml to create a service file to deploy it as a load balancer service

```
! deployment.yml U      ! service.yml U X
k8s > ! service.yml > ...
 1  apiVersion: v1
 2  kind: Service
 3  metadata:
 4    name: flask-service
 5  spec:
 6    selector:
 7      app: flaskapp
 8    ports:
 9      - protocol: TCP
10      port: 80
11      targetPort: 80
12    type: LoadBalancer
13
```

## 25)Run the commands to create the deployment and service

```
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project/k8s (custom-dominion-409912)$ kubectl apply -f deployment.yml
deployment.apps/flask-deployment created
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project/k8s (custom-dominion-409912)$
```

```
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project/k8s (custom-dominion-409912)$ kubectl apply -f service.yml
service/flask-service created
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project/k8s (custom-dominion-409912)$
```

## 26)using kubectl get all check the deployment and service

```
NAME                                READY    STATUS    RESTARTS   AGE
pod/flask-deployment-7ff954fbb5-97dd2 1/1      Running   0           66s
pod/flask-deployment-7ff954fbb5-clhzz 1/1      Running   0           66s
pod/flask-deployment-7ff954fbb5-djvfx 1/1      Running   0           66s

NAME                                TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
service/flask-service               LoadBalancer  10.36.10.38   <pending>      80:31811/TCP     25s
service/kubernetes                   ClusterIP      10.36.0.1     <none>         443/TCP          11m

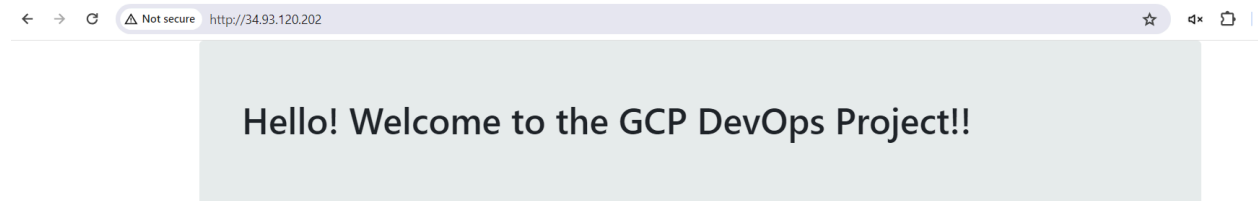
NAME                                READY    UP-TO-DATE   AVAILABLE   AGE
deployment.apps/flask-deployment    3/3      3             3           67s

NAME                                DESIRED    CURRENT    READY    AGE
replicaset.apps/flask-deployment-7ff954fbb5 3          3          3        67s
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project/k8s (custom-dominion-409912)$
```

## 27)wait for the service to be active

```
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project/k8s (custom-dominion-409912)$ kubectl get svc
NAME          TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
flask-service  LoadBalancer  10.36.10.38    34.93.120.202  80:31811/TCP     98s
kubernetes    ClusterIP      10.36.0.1      <none>         443/TCP          13m
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project/k8s (custom-dominion-409912)$
```

## 28) Now using the external ip access the webpage



## 29) push all the changes to the repository

```
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
      k8s/

nothing added to commit but untracked files present (use "git add" to track)
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$

taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git add .
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git commit -m "k8s files created the application is successfully deployed"
[master 5b3b27e] k8s files created the application is successfully deployed
 2 files changed, 31 insertions(+)
   create mode 100644 k8s/deployment.yml
   create mode 100644 k8s/service.yml
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$

taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$ git push origin master
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 4 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 720 bytes | 720.00 KiB/s, done.
Total 5 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1)
remote: Waiting for private key checker: 2/2 objects left
To https://source.developers.google.com/p/custom-dominion-409912/r/Devops-project
   4ce7923..5b3b27e  master -> master
taruntiwari_4113@cloudshell:~/gcp-devops/Devops-project (custom-dominion-409912)$
```

## 30) You can see the build being created automatically

History				
	ID	Author	Commit Date	Description
▼	5b3b27e	Tarun	2024-01-14 19:08	k8s files created the application is successfully deployed
▼	4ce7923	Tarun	2024-01-13 18:35	Changes made to check Trigger
▼	78192e6	Tarun	2024-01-13 18:18	docker file added
▼	25eeb4b	Tarun	2024-01-13 17:54	Templates and the python file added

 **Filter** Enter property name or value

<input type="checkbox"/>	Status	Build	Source	Ref	Commit	Trigger Name	Created 	Duration	Security Insights	
<input type="checkbox"/>	✓	<a href="#">bcfdcf8f</a>	<a href="#">Devops-project</a> 	master	<a href="#">5b3b27e</a> 	<a href="#">devops-trigger</a>	1/14/24, 7:08 PM	41 sec	<b>VIEW</b>	
<input type="checkbox"/>	✓	<a href="#">37d40f9b</a>	<a href="#">Devops-project</a> 	master	<a href="#">4ce7923</a> 	<a href="#">devops-trigger</a>	1/13/24, 6:35 PM	45 sec	<b>VIEW</b>	
<input type="checkbox"/>	✓	<a href="#">6950a834</a>	<a href="#">Devops-project</a> 	master	<a href="#">78192e6</a> 	<a href="#">devops-trigger</a>	1/13/24, 6:26 PM	47 sec	<b>VIEW</b>	
<input type="checkbox"/>	✓	<a href="#">6accbce7</a>	<a href="#">Google Cloud Storage</a>	-	-	-	1/13/24, 6:04 PM	47 sec	<b>VIEW</b>	