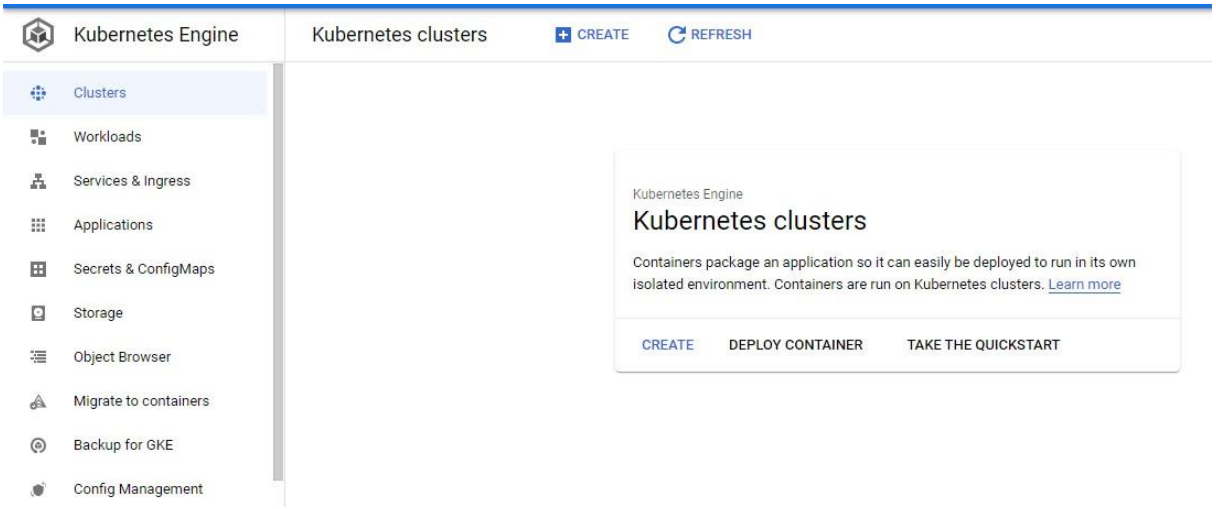
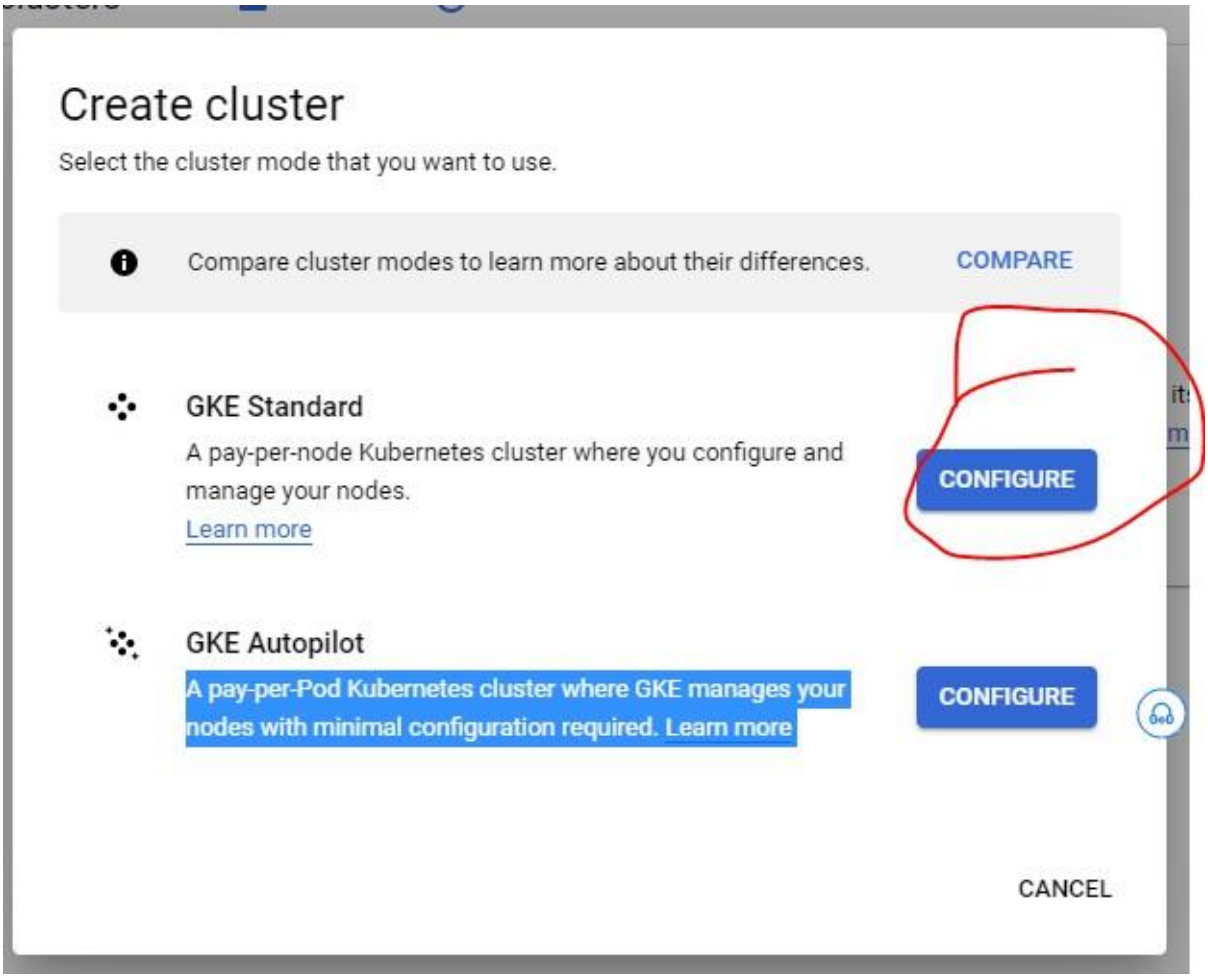
Module 4---- Assignment

Create a Kubernetes cluster.

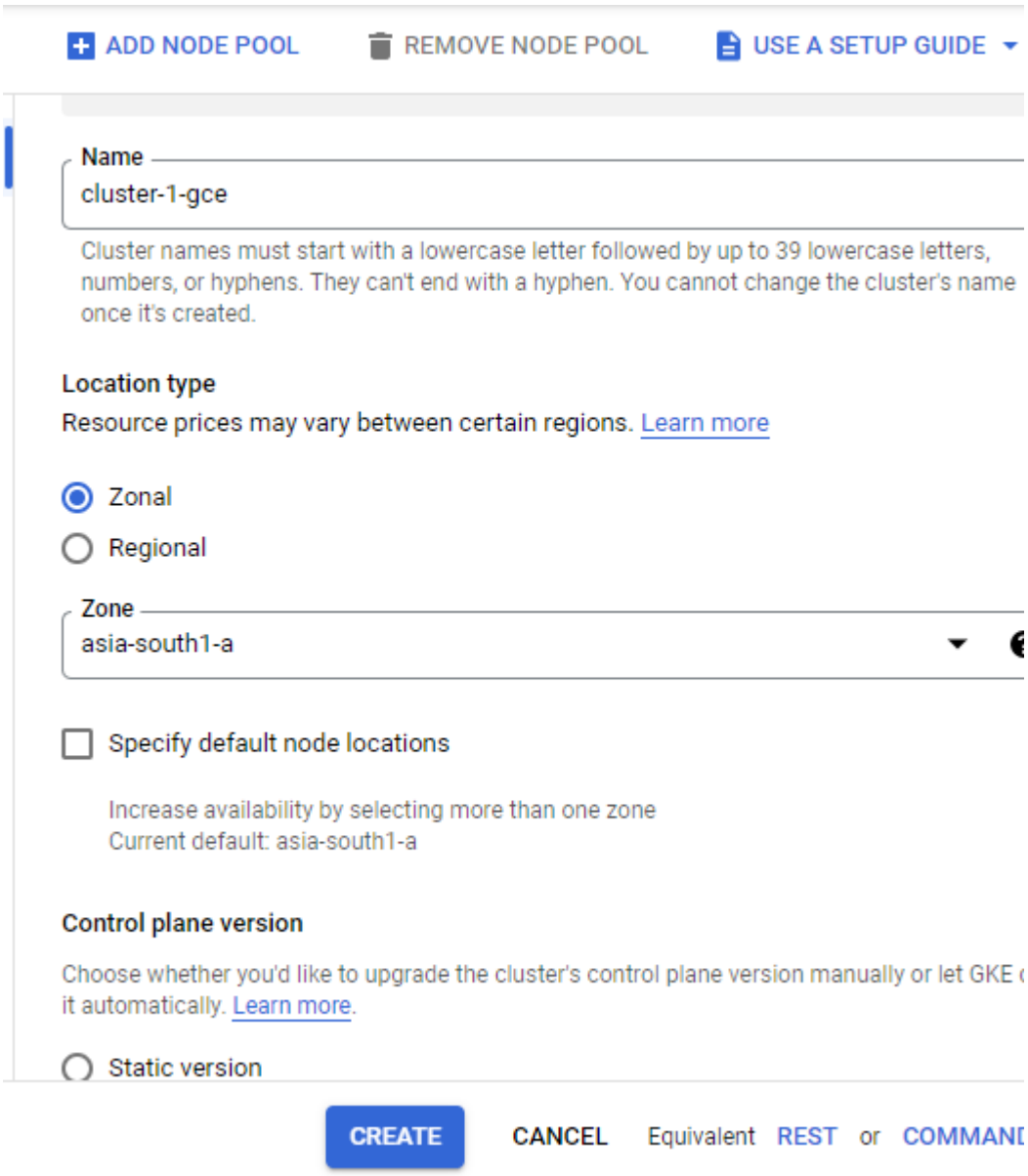
Go to Kubernetes cluster and create.

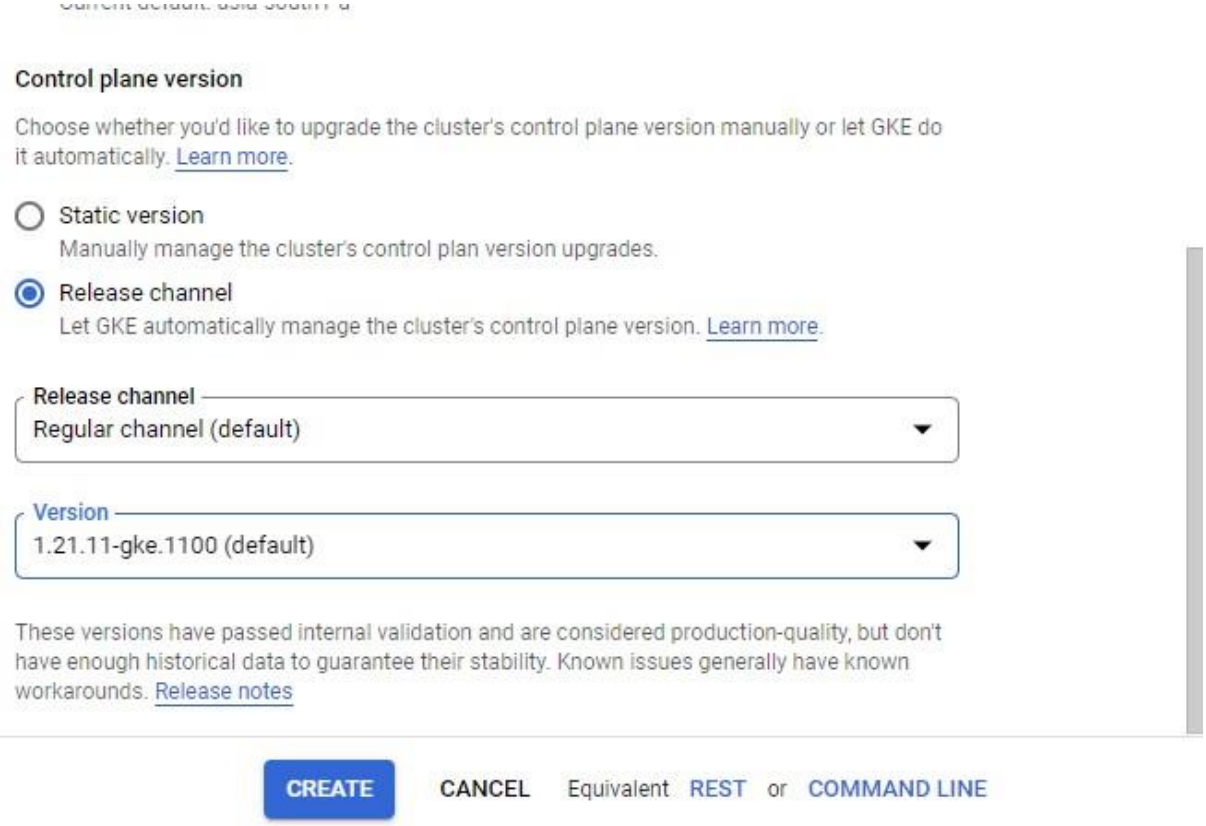


Select Standard.



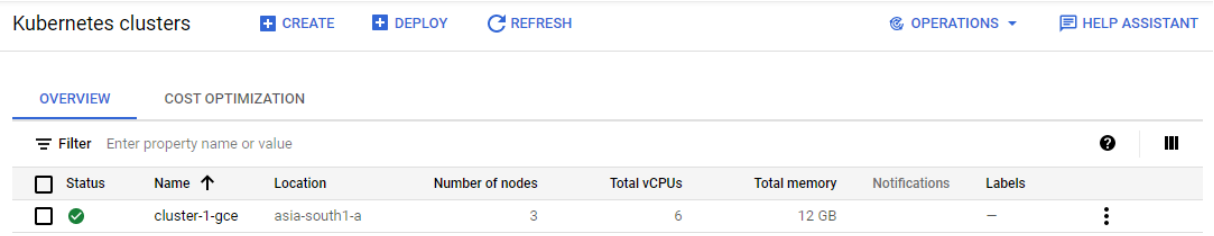
Provide details.


ADD NODE POOL
REMOVE NODE POOL
USE A SETUP GUIDE
Name
cluster-1-gce
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-a
Specify default node locations
Increase availability by selecting more than one zone
Current default: asia-south1-a
Control plane version
Choose whether you'd like to upgrade the cluster's control plane version manually or let GKE
it automatically. Learn more.
Static version
CREATE
CANCEL
Equivalent REST or COMMAND

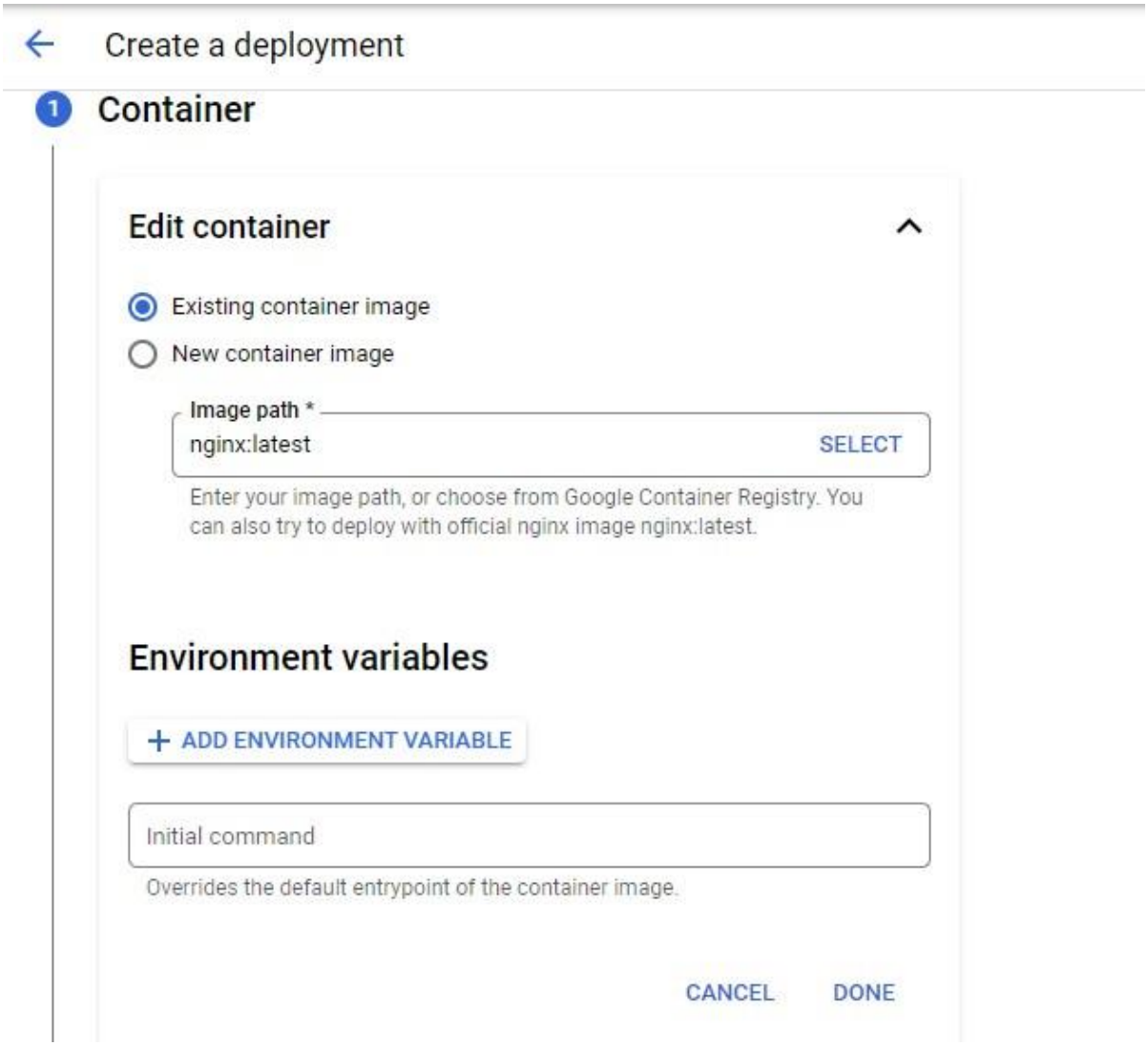


Cluster creation in progress.

Cluster created.



Click on Deploy to deploy nginx container.



2 Configuration

A deployment is a configuration which defines how Kubernetes deploys, manages, and scales your container image. Kubernetes will ensure your system matches this configuration.

Application name *
nginx-1

Namespace *
default

Labels

Key 1 *
app

Value 1
nginx-1

+ ADD KUBERNETES LABEL

Configuration YAML

Configuration YAML

Kubernetes deployments are defined declaratively using YAML files. The best practice is to store these files in version control, so you can track changes to your deployment configuration over time.

VIEW YAML

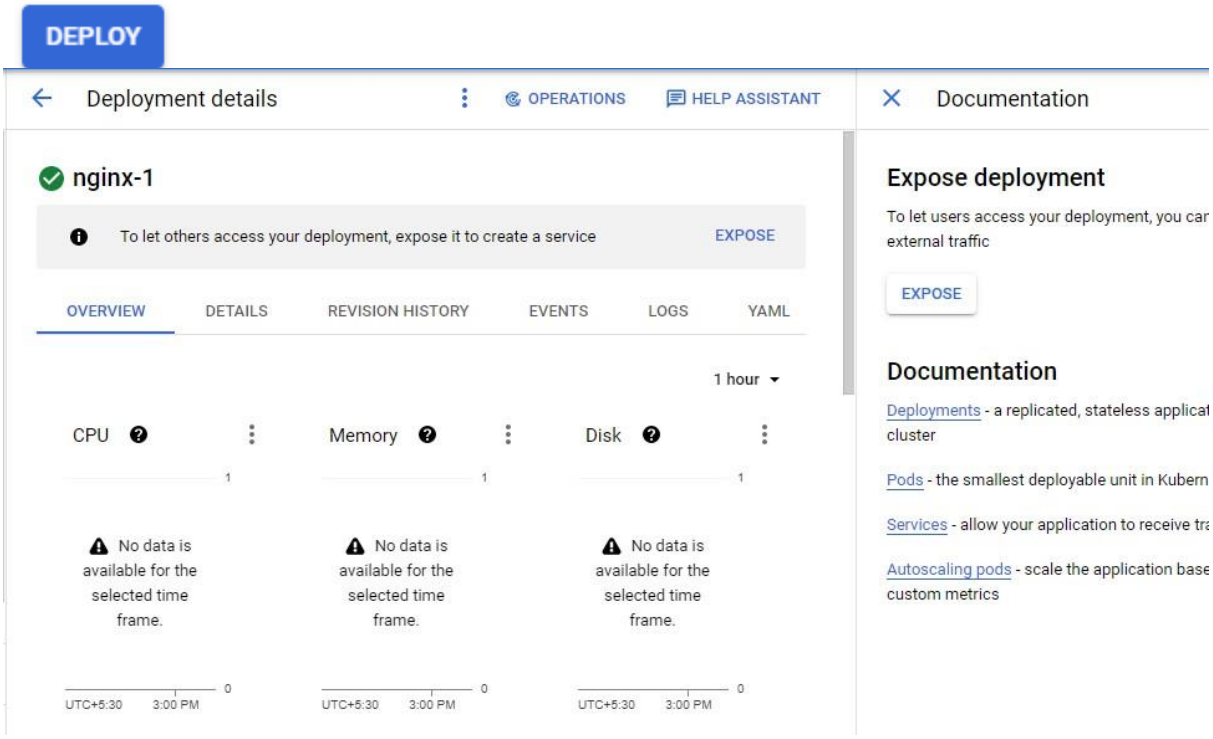
Cluster

Kubernetes Cluster

cluster-1-gce (asia-south1-a)

Cluster in which the deployment will be created.

CREATE NEW CLUSTER



3 pods created by default.

Active revisions

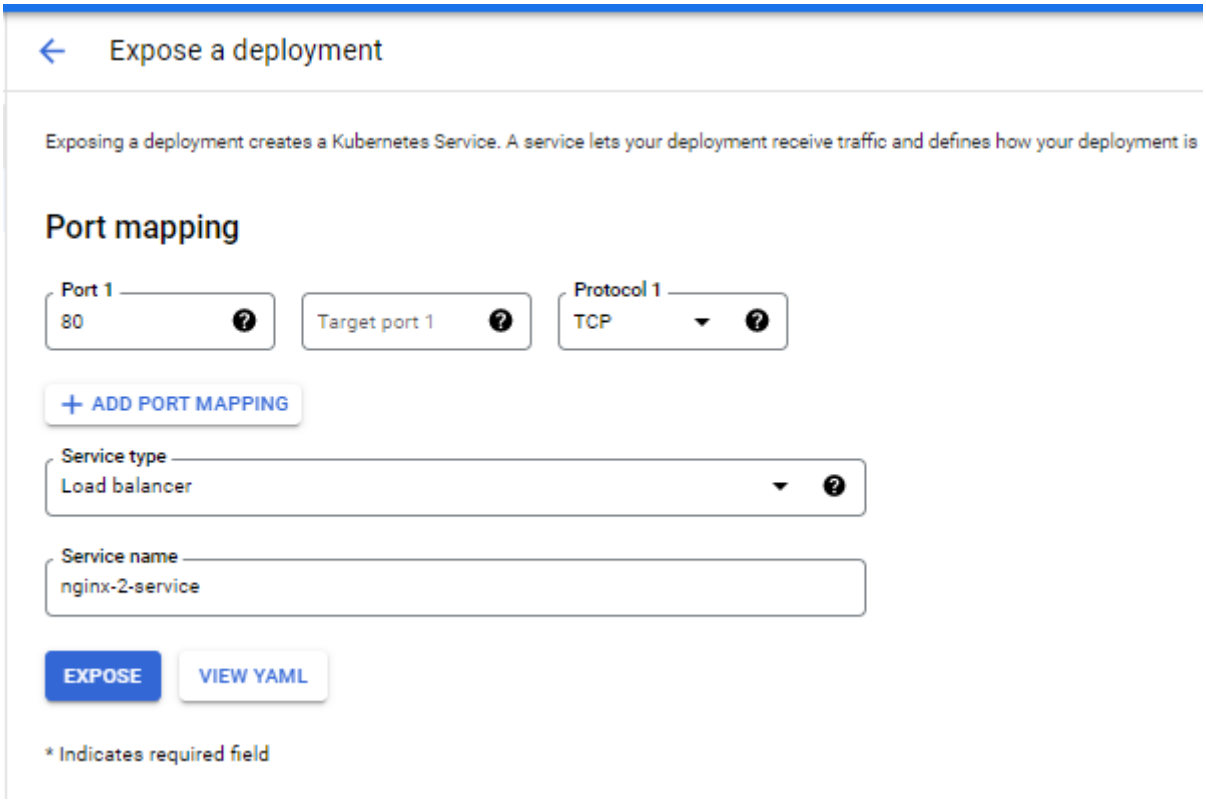
Revision	Name	Status	Summary	Created on	Pods running
1	nginx-1-754ddbcd6c	OK	nginx-1: nginx:latest	Jun 1, 2022, 3:15:12 PM	3/3

Managed pods

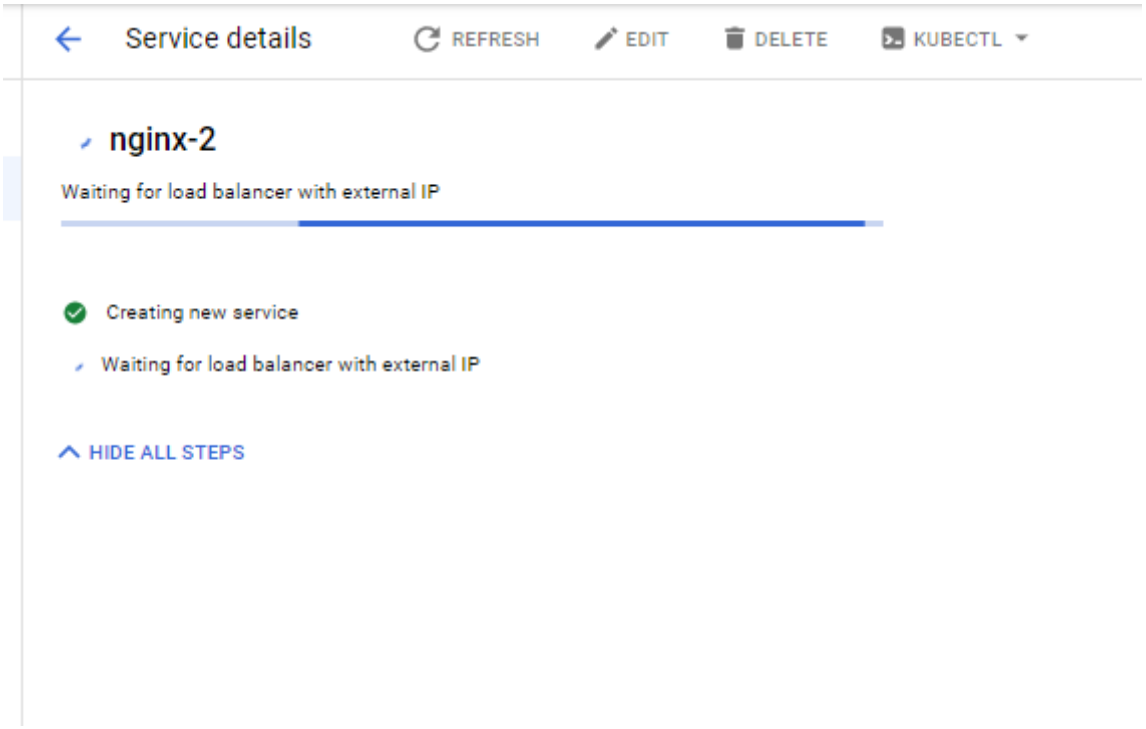
Revision	Name	Status	Restarts	Created on
1	nginx-1-754ddbcd6c-x2zsl	Running	0	Jun 1, 2022, 3:15:12 PM
1	nginx-1-754ddbcd6c-jv449	Running	0	Jun 1, 2022, 3:15:12 PM
1	nginx-1-754ddbcd6c-2fxfg	Running	0	Jun 1, 2022, 3:15:12 PM

Exposing services

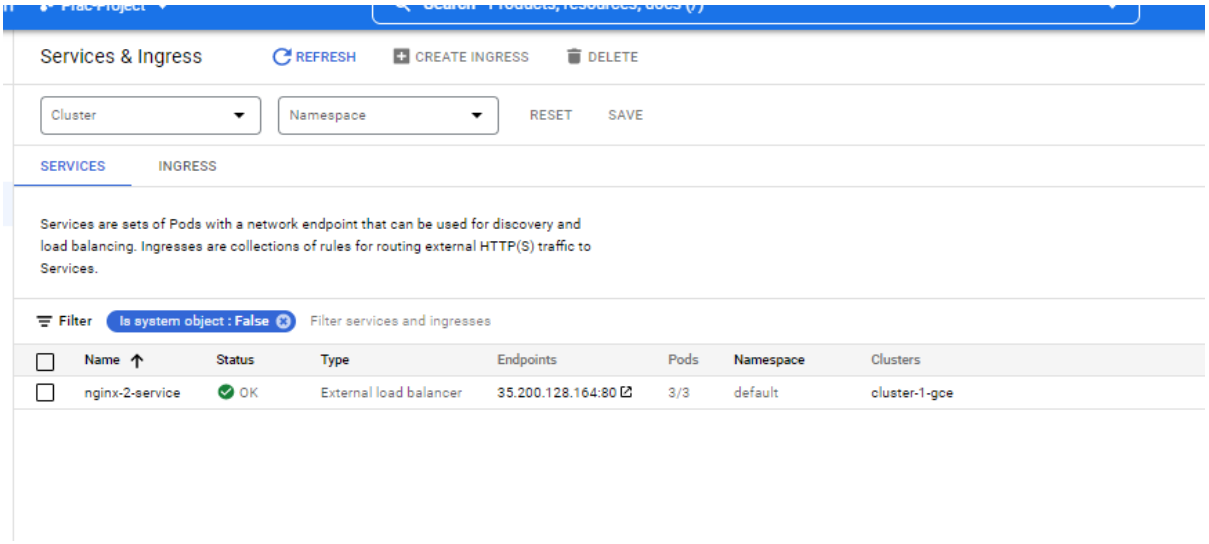
Expose to internet.

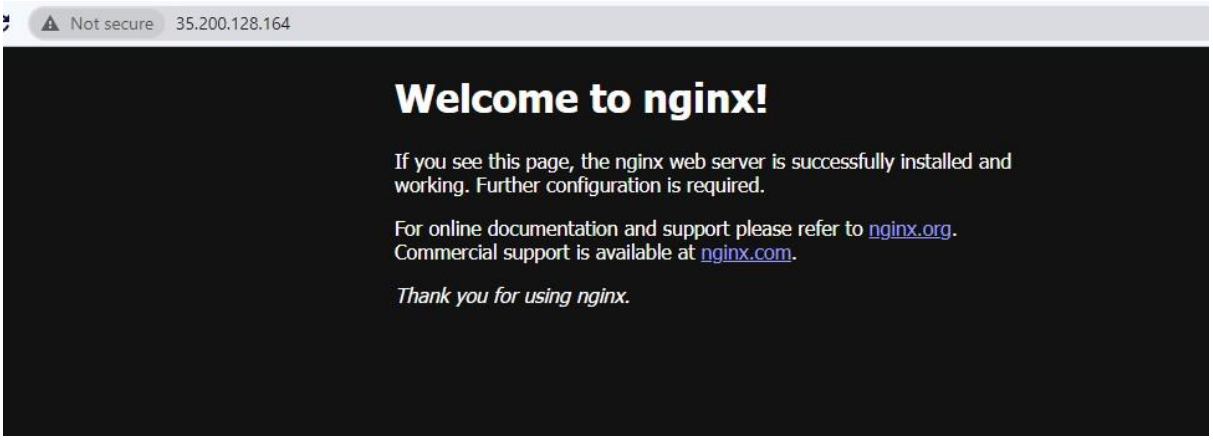


It will create a loadbalancer in background.



Expose to the internet.





Deploy a nodejs application on App Engine standard using gcloud

Clone this repository.

```
arpitacs0024@cloudshell:~$ cloudshell_open --repo_url "https://github.com/GoogleCloudPlatform/nodejs-docs-samples" --page "editor" --force_new_clone
2022/06/07 14:37:37 Cloning https://github.com/GoogleCloudPlatform/nodejs-docs-samples into /home/arpitacs0024/cloudshell_open/nodejs-docs-samples-5
Cloning into '/home/arpitacs0024/cloudshell_open/nodejs-docs-samples-5'...
remote: Enumerating objects: 27689, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 27689 (delta 0), reused 3 (delta 0), pack-reused 27685
Receiving objects: 100% (27689/27689), 21.01 MiB | 9.12 MiB/s, done.
Resolving deltas: 100% (18604/18604), done.
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5$ cd appengine/hello-world/standard
```

Run the below command.

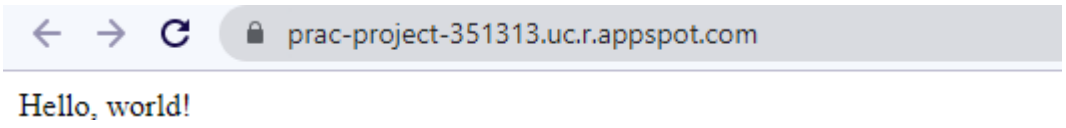
```
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard$ npm install

added 158 packages, and audited 159 packages in 7s

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

found 0 vulnerabilities
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard$ npm start

> appengine-hello-world@0.0.2 start
> node app.js

App listening on port 8080
Press Ctrl+C to quit.
```

Now, Deploy the app using below command.

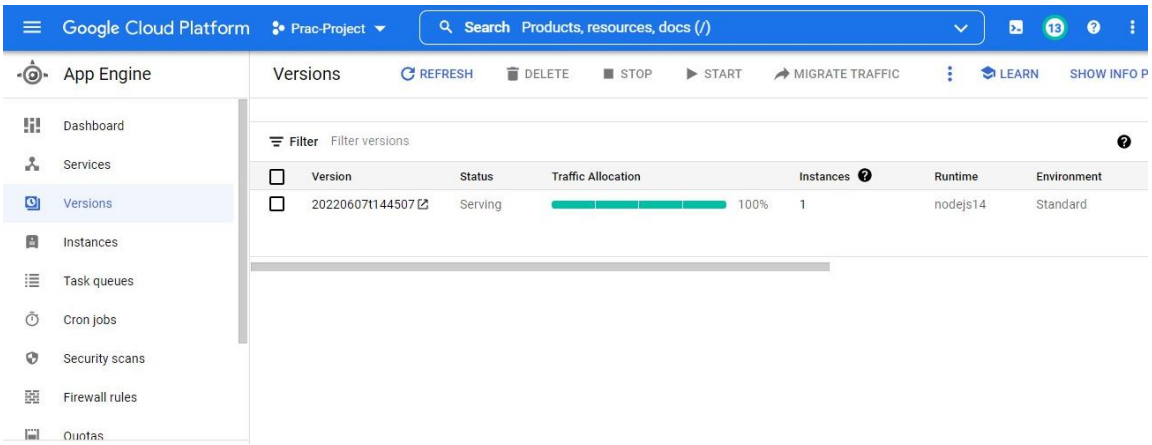
```
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard$ gcloud config set project prac-project-351313
Updated property [core/project].
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard (prac-project-351313)$ gcloud app deploy
Initializing App Engine resources...done.
Services to deploy:

descriptor:                  [/home/arpitacs0024/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard/app.yaml]
source:                      [/home/arpitacs0024/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard]
target project:              [prac-project-351313]
target service:              [default]
target version:              [20220607t144507]
target url:                  [https://prac-project-351313.uc.r.appspot.com]
target service account:      [App Engine default service account]
```

To view your application in the web browser.

```
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard (prac-project-351313)$ gcloud app browse
Did not detect your browser. Go to this link to view your app:
https://prac-project-351313.uc.r.appspot.com
```



On console, It is created as ver1.



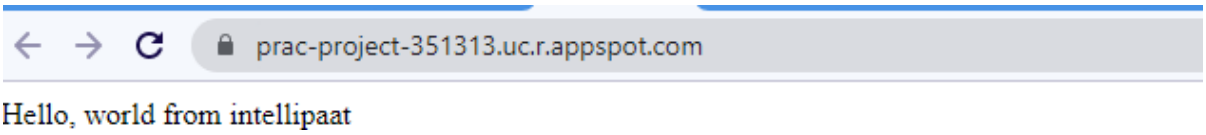
Edit the app.js file as Hello world from intellipaat.

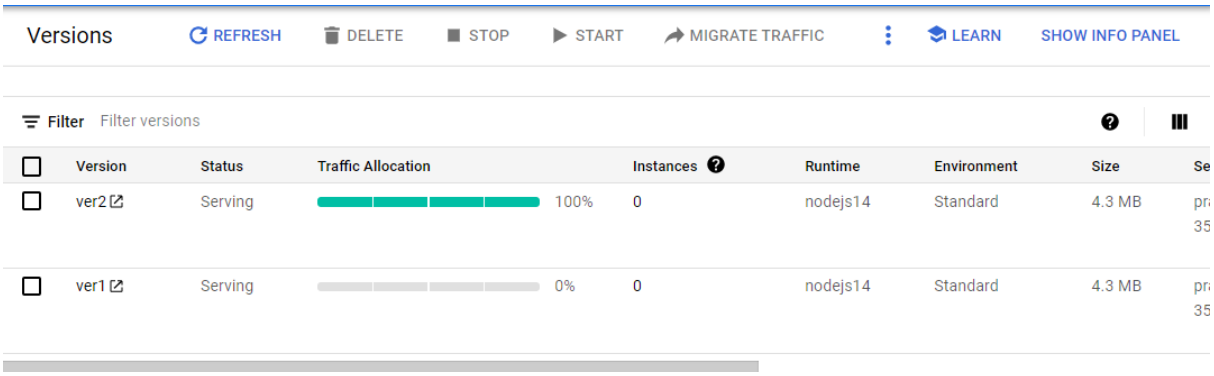
Deploy as ver2.

```
app.js  app.yaml  node_modules  package.json  package-lock.json  README.md  test
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard (prac-project-351313)$
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard (prac-project-351313)$ vi app.js
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard (prac-project-351313)$ gcloud app deploy -v ver2
Services to deploy:

descriptor:                  [/home/arpitacs0024/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard/app.yaml]
source:                      [/home/arpitacs0024/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard]
target project:              [prac-project-351313]
target service:              [default]
target version:              [ver2]
target url:                  [https://prac-project-351313.uc.r.appspot.com]
target service account:      [App Engine default service account]


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

Beginning deployment of service [default]...
```

Browse it.

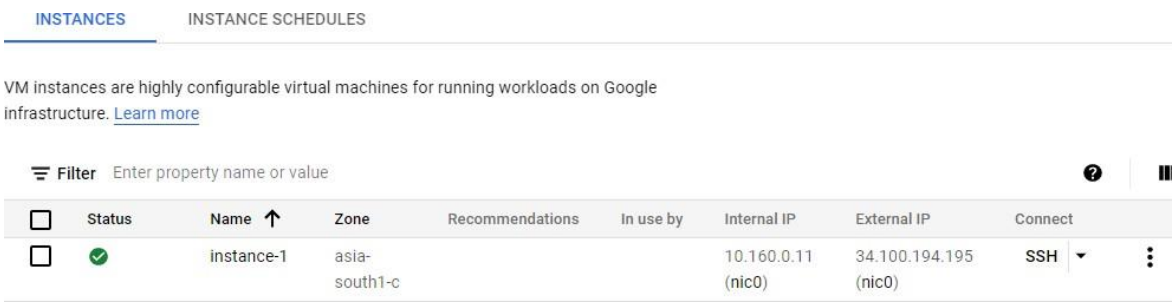
```
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard (prac-project-351313)$ gcloud app browse
Did not detect your browser. Go to this link to view your app:
https://prac-project-351313.uc.r.appspot.com
arpitacs0024@cloudshell:~/cloudshell_open/nodejs-docs-samples-5/appengine/hello-world/standard (prac-project-351313)$
```





Finally deploy a test instance, and load test on your instance with 5000 requests (do this using apache-utils)

Create an instance.



Update the VM and install apache utils.

```
Reading package lists... Done
arpitacs0024@instance-1:~$ sudo apt-get install apache2-utils
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapr1 libaprutil1
The following NEW packages will be installed:
  apache2-utils libapr1 libaprutil1
0 upgraded, 3 newly installed, 0 to remove and 7 not upgraded.
Need to get 456 kB of archives.
After this operation, 1089 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

Run the below command for 5000 requests- Auto scaling

```
arpitacs0024@instance-1:~$ ab -n 5000 -c 1000 https://prac-project-351313.uc.r.appspot.com/
This is ApacheBench, Version 2.3 <$Revision: 1879490 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking prac-project-351313.uc.r.appspot.com (be patient)
Completed 500 requests
Completed 1000 requests
Completed 1500 requests
Completed 2000 requests
Completed 2500 requests
Completed 3000 requests
Completed 3500 requests
Completed 4000 requests
Completed 4500 requests
```

Multiple requests .

```
Every 2.0s: gcloud app instances list                                    cs-558976651576-default: Tue Jun  7 16:04:07 2022

SERVICE: default
VERSION: ver1
ID: 00c61b117ca63c99f55f0de492509277fe45517b6c7f20736532552633daeff1b03d28f3e2bfefeadb92ea46b4ae62cc507d4e11e4b7686a
VM_STATUS: N/A
VM_LIVENESS:
DEBUG_MODE:

SERVICE: default
VERSION: ver2
ID: 00c61b117c007637d88d93148b605e750301dc91b2c849df4b20f0bb553c7bbc9de9e1247cf41fd9ff843b8724ff2b48493fd9450067105f28e2cf
VM_STATUS: N/A
VM_LIVENESS:
DEBUG_MODE:

SERVICE: default
VERSION: ver2
ID: 00c61b117c4f4c3558e8f462eb78e605e9f9387027edd168959c2bf76a5abd1936013c5dd81f873a83db81de344dde79d9f1149cdb5f5d8dd4ea73
```

Multiple instances provisioned.