

Assignment 9 – Google Kubernetes Engine

DS 561 – Cloud Computing

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GitHub Url: <https://github.com/vishwas21/DS561-vishwas-assignments>

Please Note: I am working based on the documentation provided by Google and the Slides of the professor. My answers might match others as well.

Commands Used to run and deploy the GKE Cluster:

```
gcloud artifacts repositories create ds561-a9-docker-repo --repository-format=docker --location=us-east1 --description="Docker repository"
```

```
gcloud artifacts repositories list
```

```
gcloud config get-value project
```

```
gcloud builds submit --region=us-central1 --tag us-central1-docker.pkg.dev/ds561-visb-assignment/ds561-a9-docker-repo/ds561-a9-image:latest
```

```
gcloud components install gke-gcloud-auth-plugin
```

```
gcloud container clusters create-auto ds561-a9-cluster --location=us-central1
```

Docker Image path: us-central1-docker.pkg.dev/ds561-visb-assignment/ds561-a9-docker-repo/ds561-a9-image

```
kubectl create deployment ds561-a9-server-gke \
  --image=us-central1-docker.pkg.dev/ds561-visb-assignment/ds561-a9-docker-repo/ds561-a9-image:latest
```

```
kubectl expose deployment ds561-a9-server-gke \
  --type LoadBalancer \
  --port 8080 \
  --target-port 8080
```

```
kubectl logs ds561-a9-server-gke-d88bd484d-fr4w5 -c ds561-a9-image -n default
```

```
kubectl get service ds561-a9-server-gke
```

```
kubectl create secret generic sa-key --from-file=key.json=./googleCredentials.json
```

Curl Commands:

```
curl --location 'http://34.16.22.90:8080/166.html' \  
--header 'X-Country: India' \  
--header 'X-gender: male' \  
--header 'X-age: 66' \  
--header 'X-client-ip: 8.9.8.9' \  
--header 'X-income: 797322'
```

```
+ assignment9 git:(master) * curl --location 'http://34.16.22.90:8080/166.html' \  
--header 'X-Country: India' \  
--header 'X-gender: male' \  
--header 'X-age: 66' \  
--header 'X-client-ip: 8.9.8.9' \  
--header 'X-income: 797322' \  
<!DOCTYPE html> \  
<html> \  
<body> \  
  Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad  
  minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse  
  cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. \  
<p> \  
<a href="/6532.html"> This is a link </a> \  
<p> \  
  Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad  
  minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse  
  cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. \  
<p> \  
<a href="/6832.html"> This is a link </a> \  
<p> \  
  Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad  
  minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse  
  cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. \  
<p> \  
<a href="/9379.html"> This is a link </a> \  
<p> \  
  Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad  
  minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse  
  cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. \  
<p> \  
<a href="/2139.html"> This is a link </a> \  
<p> \  
  Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad  
  minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse  
  cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. \  
<p> \  
<a href="/2985.html"> This is a link </a> \  
<p> \  
  Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad  
  minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse  
  cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. \  
<p> \  
<a href="/785.html"> This is a link </a> \  
<p> \  
  Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad  
  minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse  
  cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. \  
<p> \  
<a href="/2671.html"> This is a link </a>
```

```
curl --location 'http://34.16.22.90:8080/16f6.html' \  
--header 'X-Country: India' \  
--header 'X-gender: male' \  
--header 'X-age: 66' \  
--header 'X-client-ip: 8.9.8.9' \  
--header 'X-income: 797322'
```

```
→ assignment9 git:(master) * curl --location 'http://34.16.22.90:8080/16f6.html' \  
--header 'X-Country: India' \  
--header 'X-gender: male' \  
--header 'X-age: 66' \  
--header 'X-client-ip: 8.9.8.9' \  
--header 'X-income: 797322' \  
File Not Found
```

```
→ assignment9 git:(master) *
```

```
curl --location --request POST 'http://34.16.22.90:8080/16f6.html' \
--header 'X-Country: India' \
--header 'X-gender: male' \
--header 'X-age: 66' \
--header 'X-client-ip: 8.9.8.9' \
--header 'X-income: 797322'
```

```
→ assignment9 git:(master) x curl --location --request POST 'http://34.16.22.90:8080/16f6.html' \
--header 'X-Country: India' \
--header 'X-gender: male' \
--header 'X-age: 66' \
--header 'X-client-ip: 8.9.8.9' \
--header 'X-income: 797322'
Not Implemented yet
→ assignment9 git:(master) x
```

```
curl --location --request POST 'http://34.16.22.90:8080/166.html' \
--header 'X-Country: Iran' \
--header 'X-gender: male' \
--header 'X-age: 66' \
--header 'X-client-ip: 8.9.8.9' \
--header 'X-income: 797322'
```

```
→ assignment9 git:(master) x curl --location --request POST 'http://34.16.22.90:8080/166.html' \
--header 'X-Country: Iran' \
--header 'X-gender: male' \
--header 'X-age: 66' \
--header 'X-client-ip: 8.9.8.9' \
--header 'X-income: 797322'
Permission Denied - Unauthorized Country
→ assignment9 git:(master) x
```

My Consumer App reading all details regarding 501 cases:

```
o (env) + assignment9 git:(master) x python3 consumerApp.py
Listening for messages on projects/ds561-visb-assignment/subscriptions/ds561-assignment3-sub..
Received the message from pub : b'{"country": "Iran", "request": "GET", "args": "ImmutableMultiDict({})", "data": "b\\\'", "message": "Request from an unauthorized cou
ntry"}'.
Listening for messages on projects/ds561-visb-assignment/subscriptions/ds561-assignment3-sub..
Listening for messages on projects/ds561-visb-assignment/subscriptions/ds561-assignment3-sub..
```

```
python3 http_client.py -d 34.16.22.90 -p 8080 -b none -i 10000 -n 100 -v -w
none
```

Deployment console view:

```
→ assignment9 git:(master) x kubectl get deployments
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
ds561-a9-server-gke 1/1     1             1           92m
→ assignment9 git:(master) x kubectl get deployment/ds561-a9-server-gke
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
ds561-a9-server-gke 1/1     1             1           93m
```