

## SWE 645 – Assignment 2

### Aachal Thapa

#### Part1:

I used one of the W3.CSS Templates to enhance the look and feel of my homepage on Amazon S3. The link to my homepage is

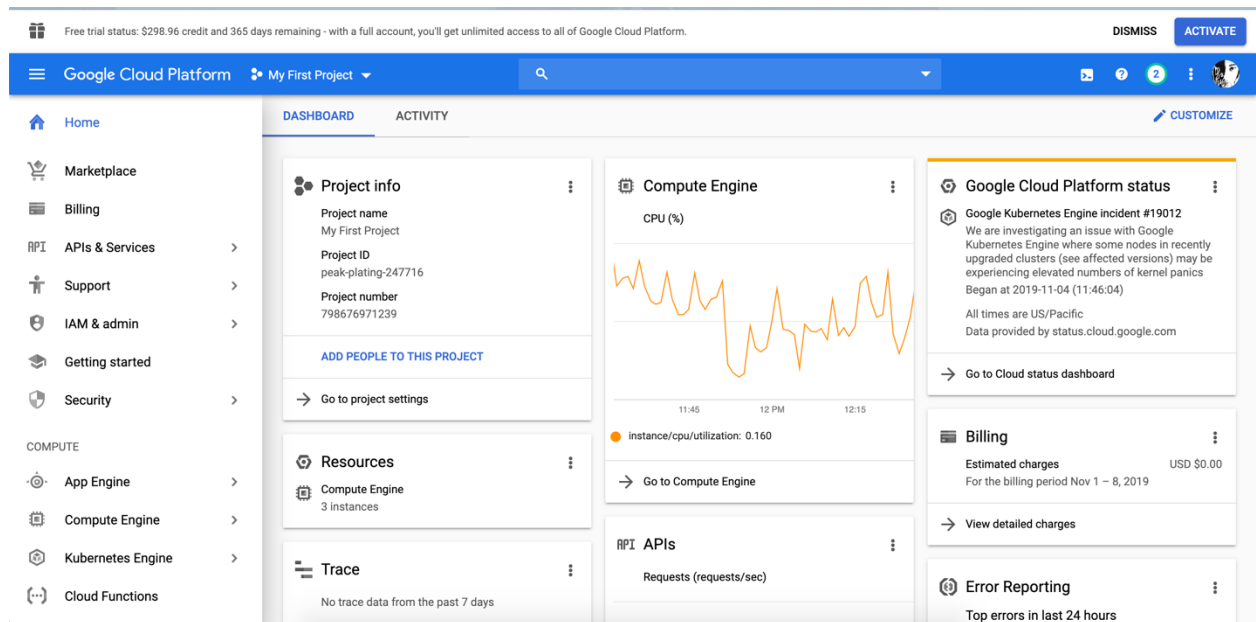
<https://my-645-bucket.s3.amazonaws.com/index.html>

#### Part2:

##### Containerize the application

- I signed up with my existing google account for google cloud platform (GCP),  
<https://cloud.google.com/>

##### Screenshot 1 - Dashboard of my GCP



- I installed google cloud SDK which is a set of tools for Google Cloud Platform so that I can access the products and services from the command-line
- The commands used to configure gcloud is  
`./google-cloud-sdk/bin/gcloud init`
- I created an instance with the following commands:
  - `source ~/.bashrc`
  - `gcloud beta compute --project "peak-plating-247716" ssh --zone "us-east4-c" "instance 645"`
  - `google-cloud-sdk aachalthapa$ curl https://sdk.cloud.google.com | bash`

## Screenshot 2 - The instance on my GCP

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Google Cloud Platform

My First Project

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Compute Engine

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VM instances

👤

Instance groups

📄

Instance templates

👤

Sole-tenant nodes

💾

Disks

📷

Snapshots

🖼️

Images

⚙️

TPUs

📊

Committed use discounts

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Metadata

🏠

Health checks

🏠

Zones

🛒

Marketplace

⏪

VM instances

CREATE INSTANCE

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▶️

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SHOW INFO PANEL

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Filter VM instances

🔍

Column

| <input type="checkbox"/> | Name ^  | Zone       | Recommendation | In use by   | Internal IP       | External IP      | Connect |
|--------------------------|---|------------|----------------|---|-------------------|------------------|---------|
| <input type="checkbox"/> | 🟢 gke-my-cluster-645-default-pool-5854ad08-bvd7 | us-east4-c |                | gke-my-cluster-645-default-pool-5854ad08-grp.a95eacfd901f111eaa4ef42010a96005 | 10.150.0.3 (nic0) | 35.186.189.231   | SSH ▾   |
| <input type="checkbox"/> | 🟢 gke-my-cluster-645-default-pool-5854ad08-g434 | us-east4-c |                | gke-my-cluster-645-default-pool-5854ad08-grp.a95eacfd901f111eaa4ef42010a96005 | 10.150.0.4 (nic0) | 35.236.194.124   | SSH ▾   |
| <input type="checkbox"/> | 🟢 instance-645                                  | us-east4-c |                |   | 10.150.0.2 (nic0) | 35.188.250.190 ↗ | SSH ▾   |

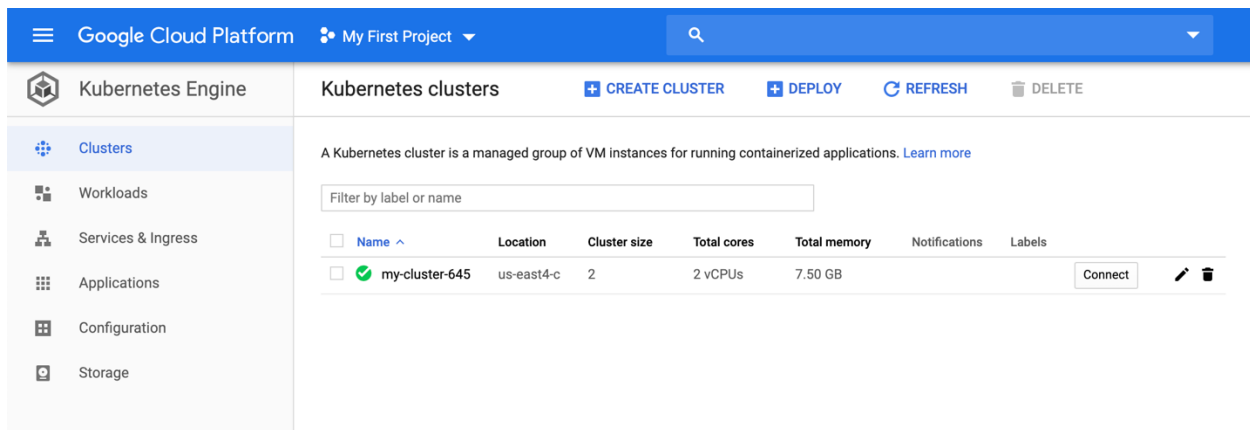
- I created a repository in docker hub  
<https://hub.docker.com/repository/docker/athapa20/valar>
- I used git clone command to clone the project from my github repository to create an image for my application  
`git clone https://github.com/athapa20/645p2.git`  
`jar -cvf surveyform.war *`

All of my git files are here: <https://github.com/athapa20/645p2>

- The I prepared a dockerfile and build the docker image using following command  
`sudo docker build -t athapa20/valar:v1 .`  
`sudo docker push athapa20/valar:v1`

## Deploying the containerized application

### Screenshot 3 -Kubernetes cluster on my GCP



- Installed kubectl using the steps covered in this website  
<https://kubernetes.io/docs/tasks/tools/install-kubectl/>
- I used the following commands to containerize my application:  

```
gcloud container clusters create my-cluster-645 --zone=us-east4-c --num-nodes=2
gcloud container clusters get-credentials my-cluster-645 --zone us-east4-c
kubectl create deployment deploycluster645 --image=athapa20/valar:v1
kubectl get deployments
kubectl expose deployment/deploycluster645 --type="LoadBalancer" --port 8080
kubectl get svc
```

Screenshot 4 -The following was my final output with **35.199.22.86** being the external IP

```
aachalthapa@instance-645:~/645p2/src$ kubectl get svc
NAME                TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
deploycluster645    LoadBalancer  10.35.244.196  35.199.22.86   8080:30805/TCP   58s
[kubernetes         ClusterIP     10.35.240.1   <none>         443/TCP          48m
```

I copy pasted the IP with the port number and war file,  
<http://35.199.22.86:8080/surveyform/>