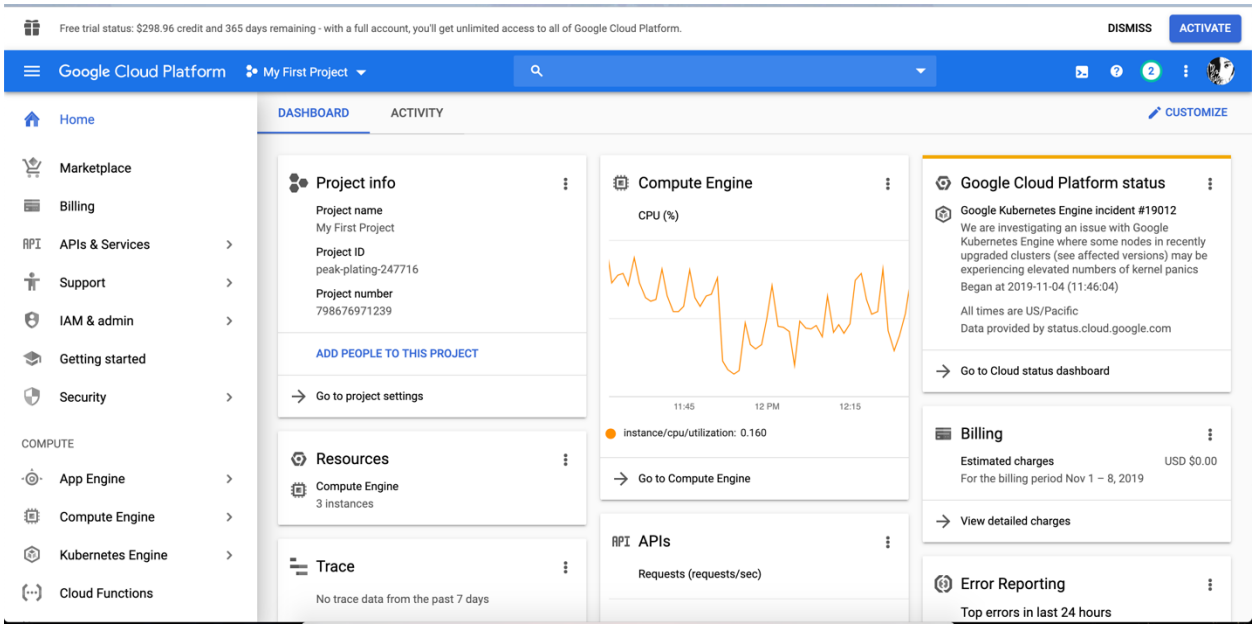
SWE 645 – Assignment 2
Aachal Thapa

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

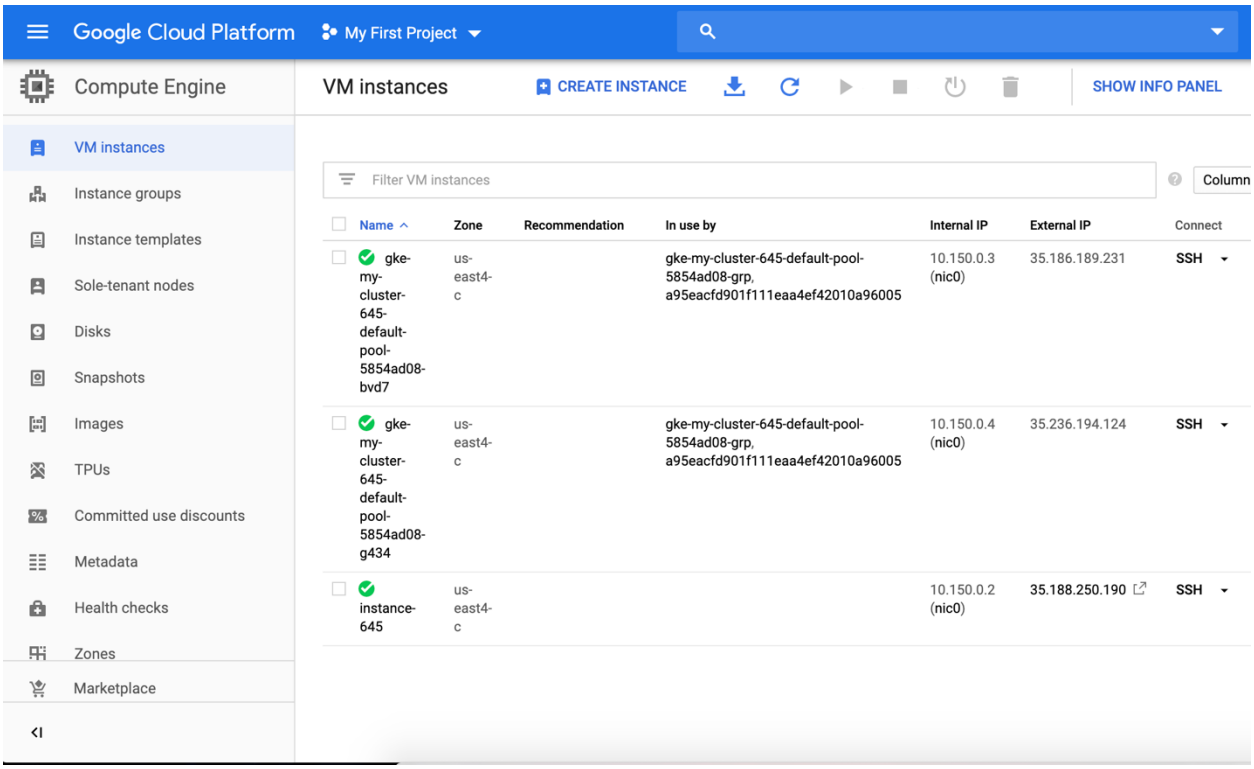
- I signed up with my existing google account for google cloud platform (**GCP**), https://cloud.google.com/

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



- 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 **

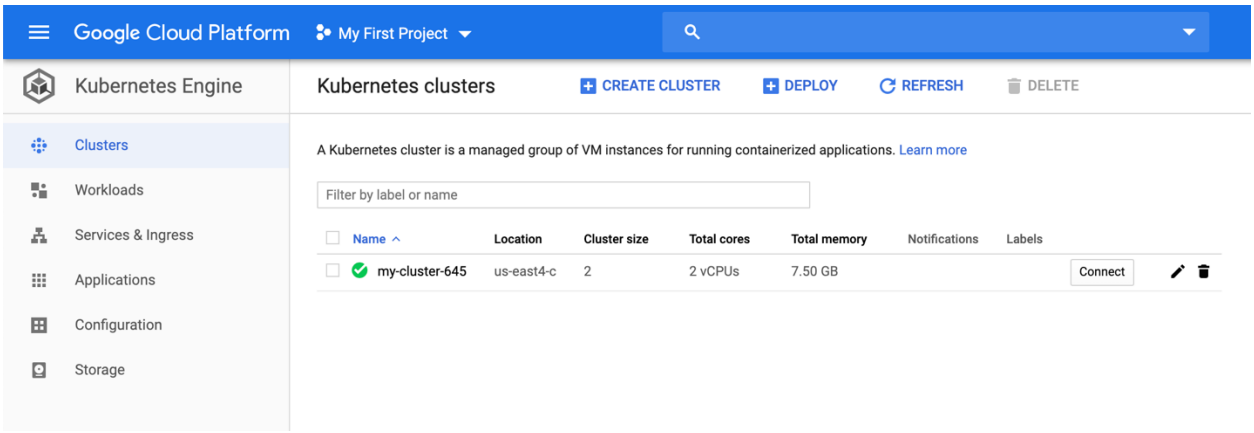
  All of my git files are here: https://github.com/athapa20/645p2

- 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/