**Task-1**

gcloud compute instances create nucleus-jumphost --machine-type f1-micro --zone us-east1-b

**Task 2**

gcloud config set compute/zone us-east1-b

gcloud container clusters create my-cluster

gcloud container clusters get-credentials my-cluster

kubectl create deployment hello-server --image=gcr.io/google-samples/hello-app:1.0

kubectl expose deployment hello-server --type=LoadBalancer --port 8080

kubectl get service

[http://[EXTERNAL-IP]:8080 (Replace](http://[EXTERNAL-IP]:8080%20(Replace) external ip with your ip)

**Task-3**

**1)cat << EOF > startup.sh**

**#! /bin/bash**

**apt-get update**

**apt-get install -y nginx**

**service nginx start**

**sed -i -- 's/nginx/Google Cloud Platform - '"\$HOSTNAME"'/' /var/www/html/index.nginx-debian.html**

**EOF**

**2)**

**gcloud compute instance-templates create web-server-template \**

**--metadata-from-file startup-script=startup.sh \**

**--network nucleus-vpc \**

**--machine-type g1-small \**

**--region us-east1**

**3)** **gcloud compute instance-groups managed create lb-backend-group \**

**--template=lb-backend-template --size=2 --zone=us-east1-b-a**

**4)** **gcloud compute firewall-rules create fw-allow-health-check \**

**--network=default \**

**--action=allow \**

**--direction=ingress \**

**--source-ranges=130.211.0.0/22,35.191.0.0/16 \**

**--target-tags=allow-health-check \**

**--rules=tcp:80**

**5) gcloud compute health-checks create http http-basic-check \**

**--port 80**

**6) gcloud compute backend-services add-backend web-backend-service \**

**--instance-group=lb-backend-group \**

**--instance-group-zone=us-central1-a \**

**--global**

**7) gcloud compute url-maps create web-map-http \**

**--default-service web-backend-service**

**8) gcloud compute target-http-proxies create http-lb-proxy \**

**--url-map web-map-http**

**9) gcloud compute forwarding-rules create http-content-rule \**

**--address=lb-ipv4-1\**

**--global \**

**--target-http-proxy=http-lb-proxy \**

**--ports=80**