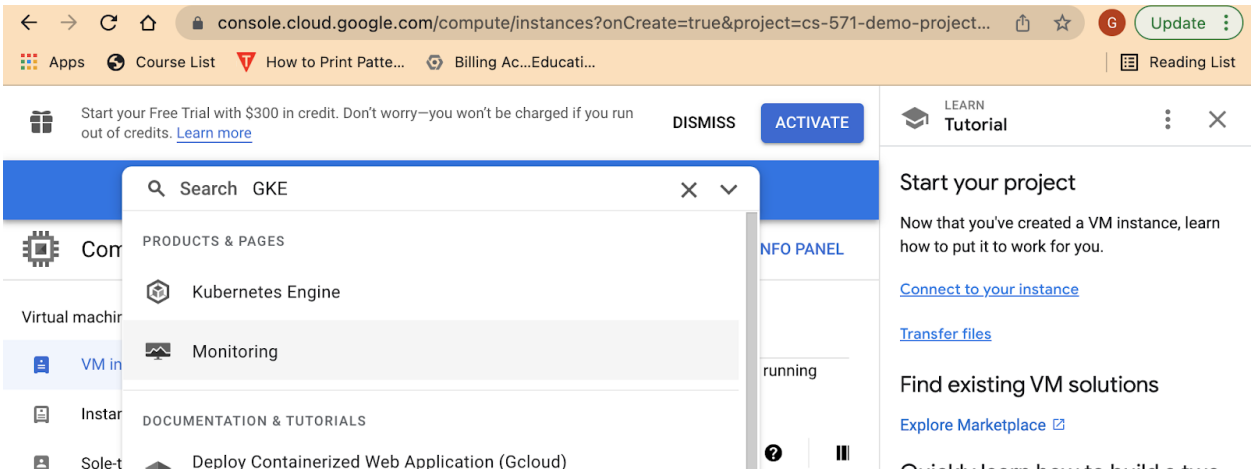
CS571_Cloud Computing Infrastructure

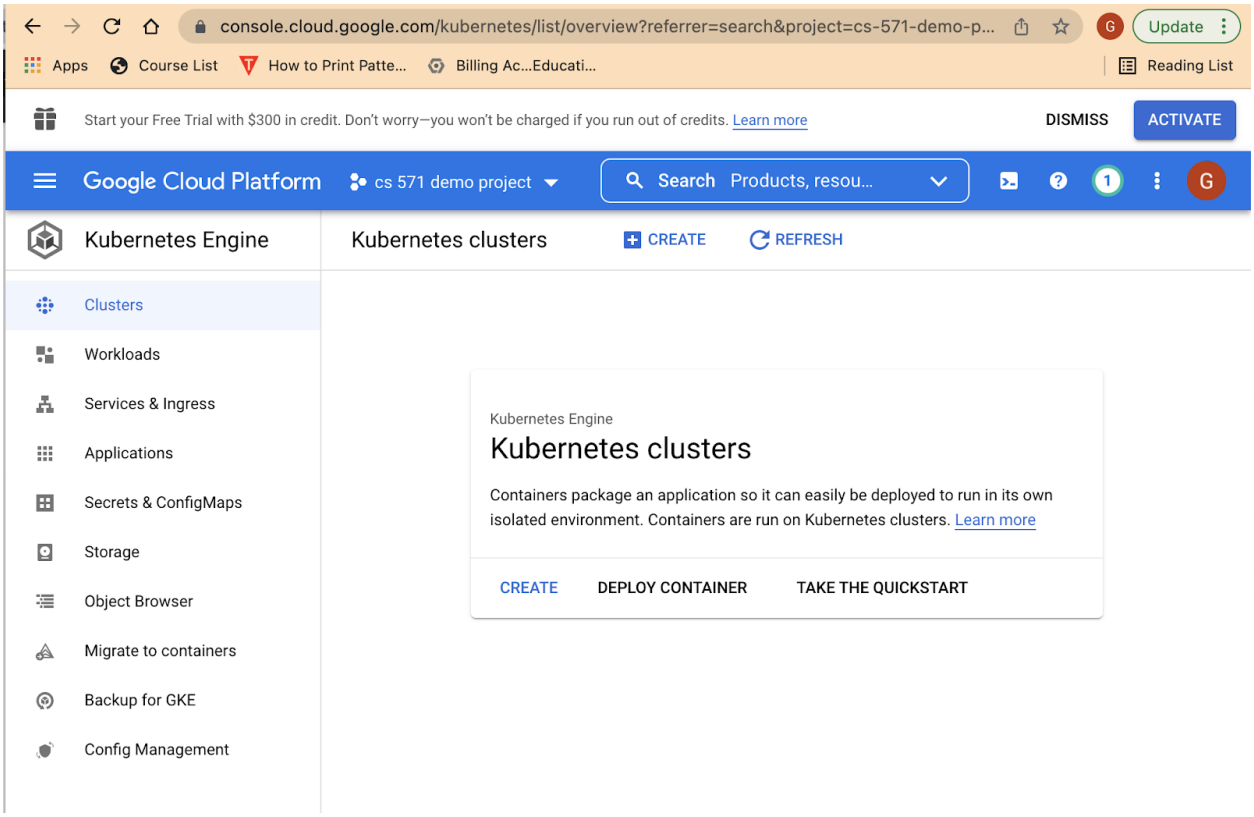
19615_Gayatri_Kolekar

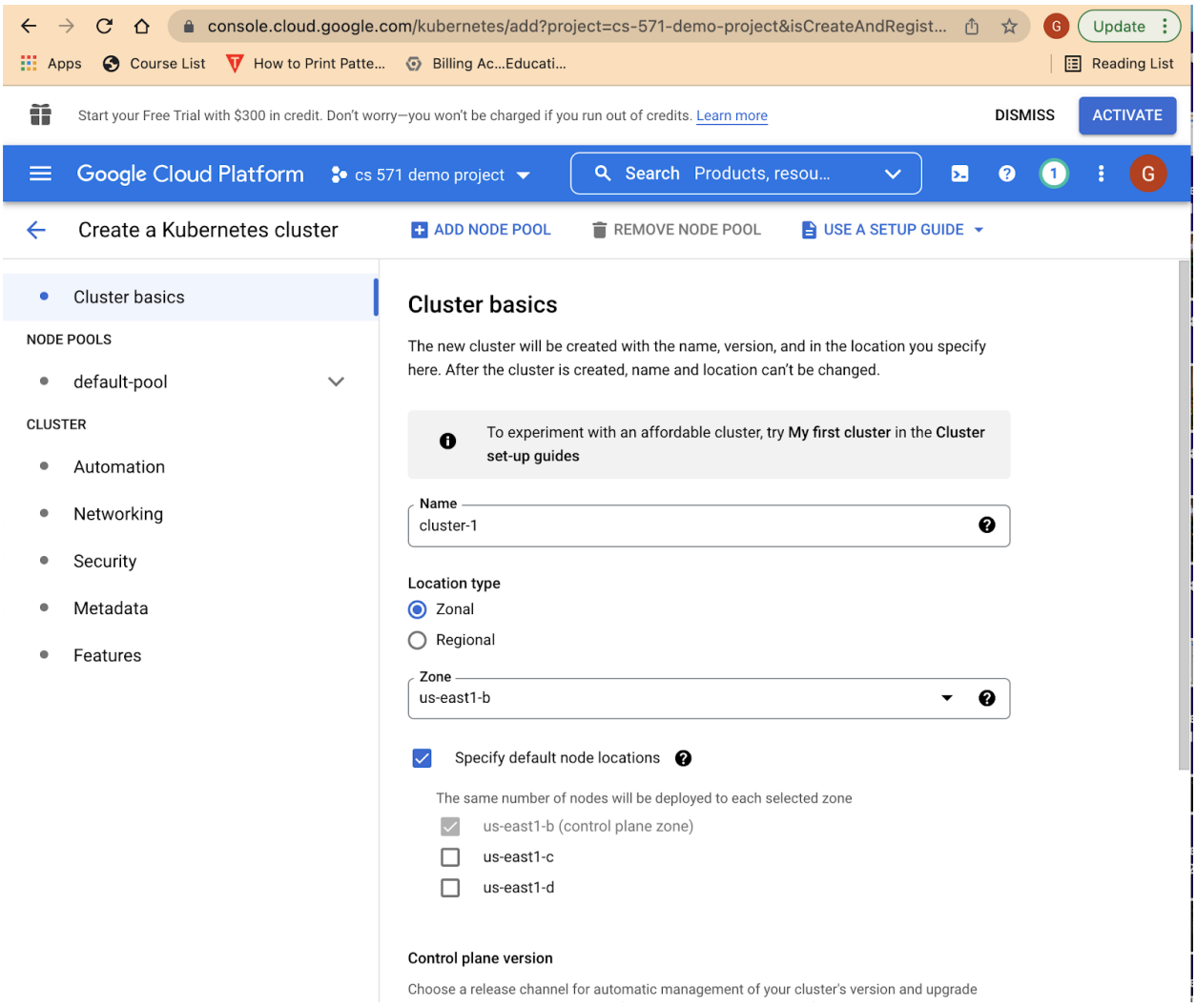
Homework04

Step 2: Running your first app on Kubernetes

1. On your GCP control panel, in the search bar, type “GKE” and enable Google Kubernetes Engine






console.cloud.google.com/kubernetes/add?project=cs-571-demo-project&isCreateAndRegist...
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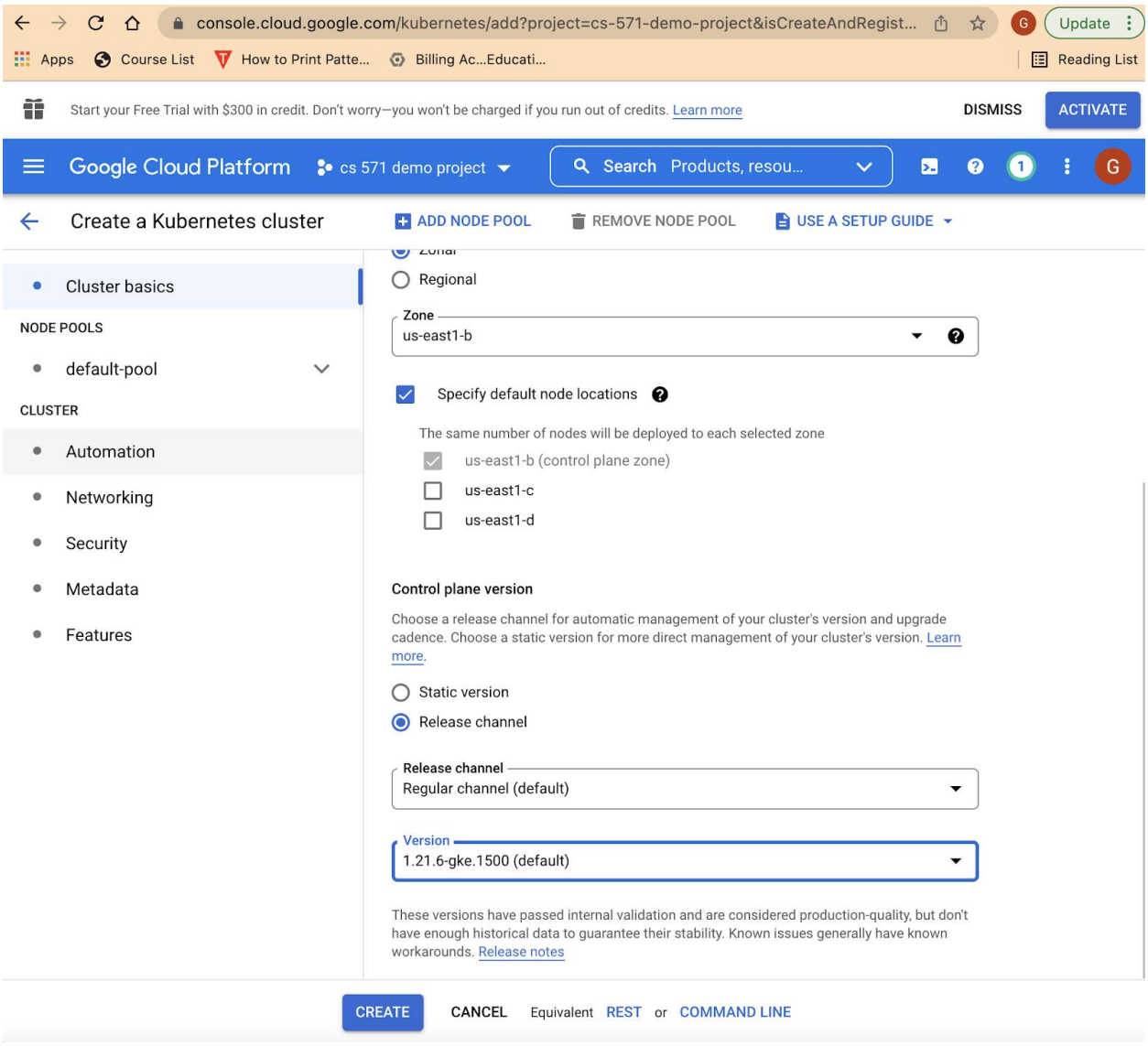
Create a Kubernetes cluster
ADD NODE POOL
REMOVE NODE POOL
USE A SETUP GUIDE
Cluster basics
NODE POOLS
default-pool
CLUSTER
Automation
Networking
Security
Metadata
Features
Cluster basics
The new cluster will be created with the name, version, and in the location you specify here. After the cluster is created, name and location can't be changed.
To experiment with an affordable cluster, try My first cluster in the Cluster set-up guides
Name
cluster-1
Location type
Zonal
Regional
Zone
us-east1-b
Specify default node locations
The same number of nodes will be deployed to each selected zone
us-east1-b (control plane zone)
us-east1-c
us-east1-d
Control plane version
Choose a release channel for automatic management of your cluster's version and upgrade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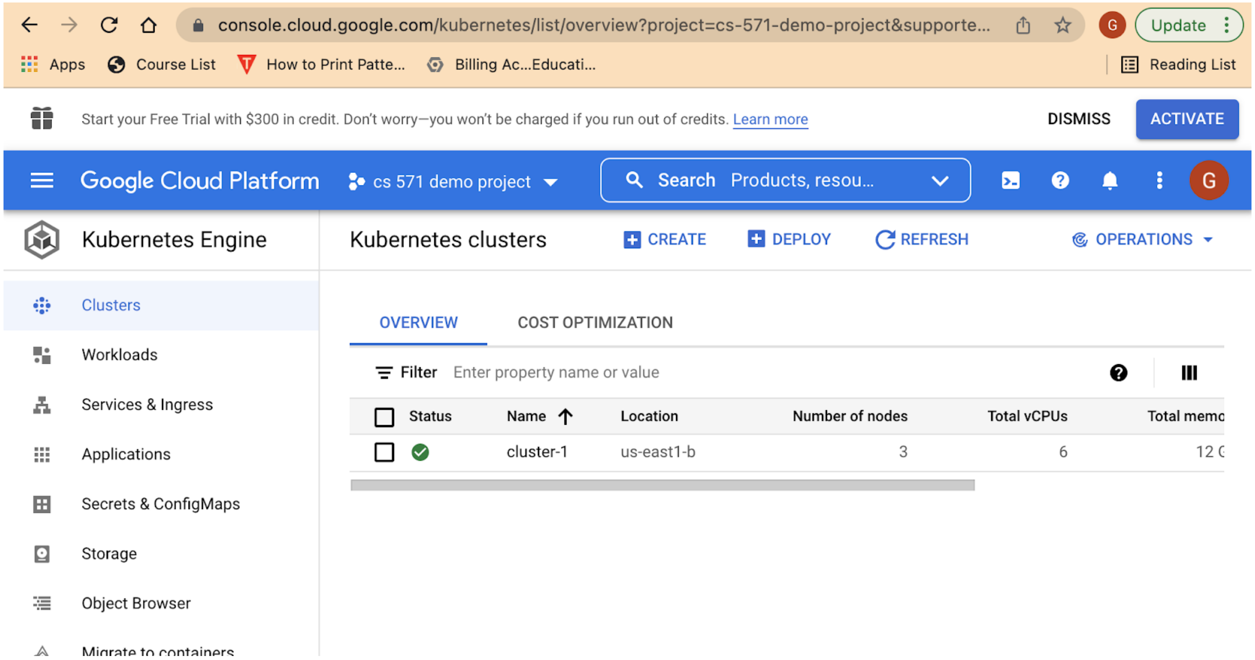
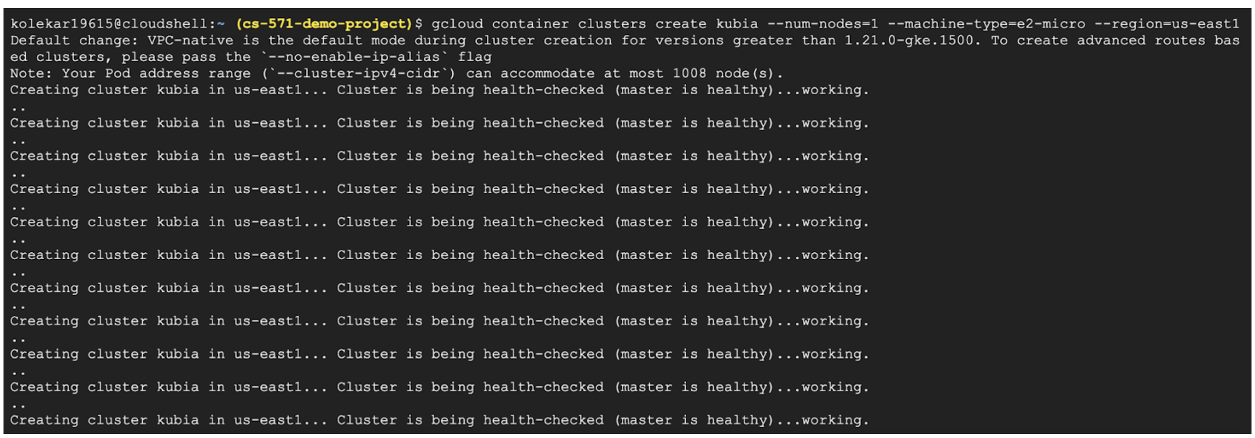
Specify default node locations
The same number of nodes will be deployed to each selected zone
us-east1-b (control plane zone)
us-east1-c
us-east1-d
Control plane version
Choose a release channel for automatic management of your cluster's version and upgrade cadence. Choose a static version for more direct management of your cluster's version. Learn more.
Static version
Release channel
Release channel
Regular channel (default)
Version
1.21.6-gke.1500 (default)
These versions have passed internal validation and are considered production-quality, but don't have enough historical data to guarantee their stability. Known issues generally have known workarounds. Release notes
CREATE
CANCEL
Equivalent REST or COMMAND LINE



2. On top right corner of the webpage, click to open the gcp terminal

Gcloud container clusters create kubia –num-nodes=1 –machine-type=e2-micro –region=us-east1



```
kolekar19615@cloudshell:~ (cs-571-demo-project)$ gcloud container clusters create kubia --num-nodes=1 --machine-type=e2-micro --region=us-east1
Default change: VPC-native is the default mode during cluster creation for versions greater than 1.21.0-gke.1500. To create advanced routes bas
ed clusters, please pass the `--no-enable-ip-alias` flag
Note: Your Pod address range (`--cluster-ipv4-cidr`) can accommodate at most 1008 node(s).
Creating cluster kubia in us-east1... Cluster is being health-checked (master is healthy)...working.
..
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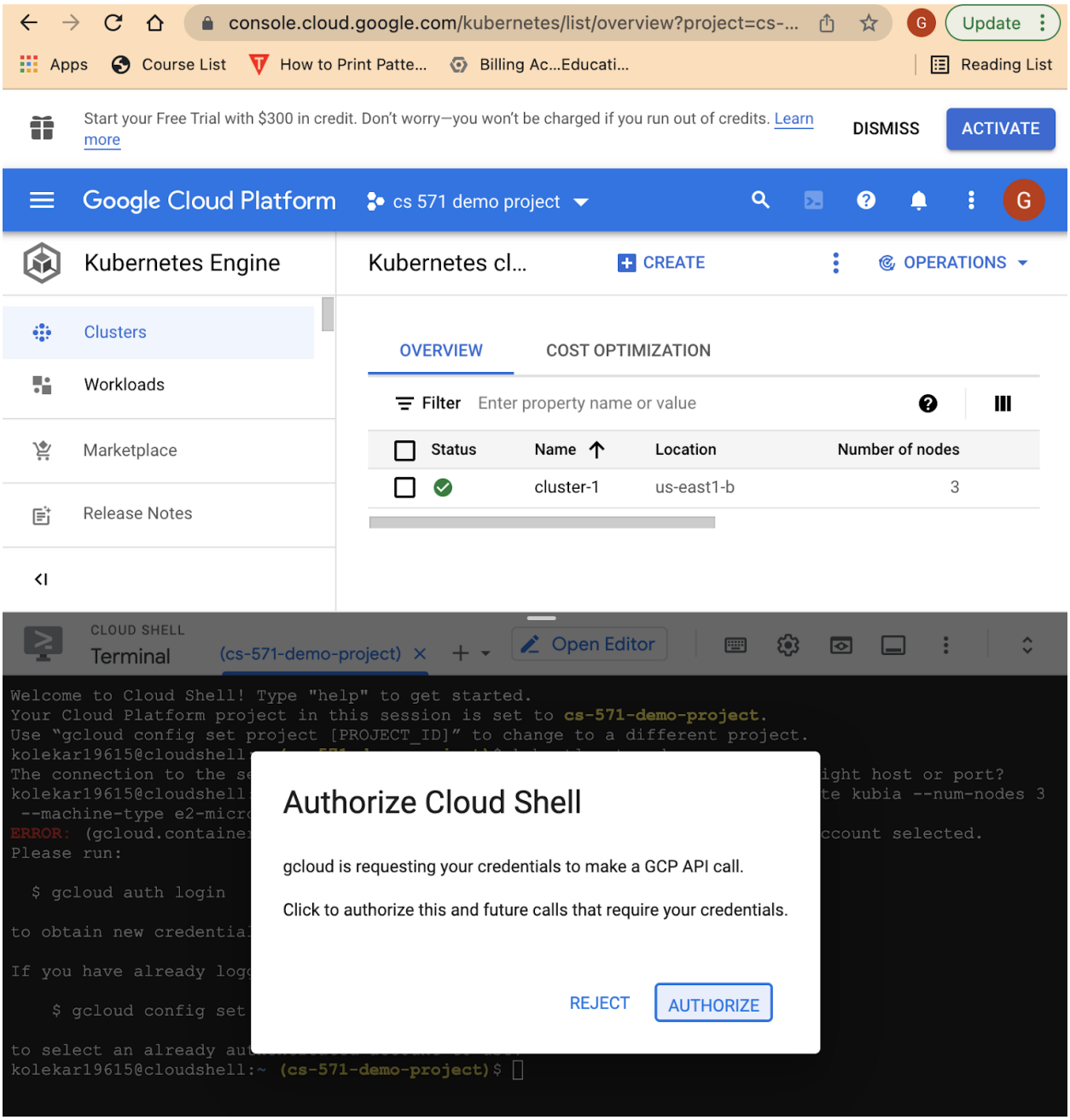

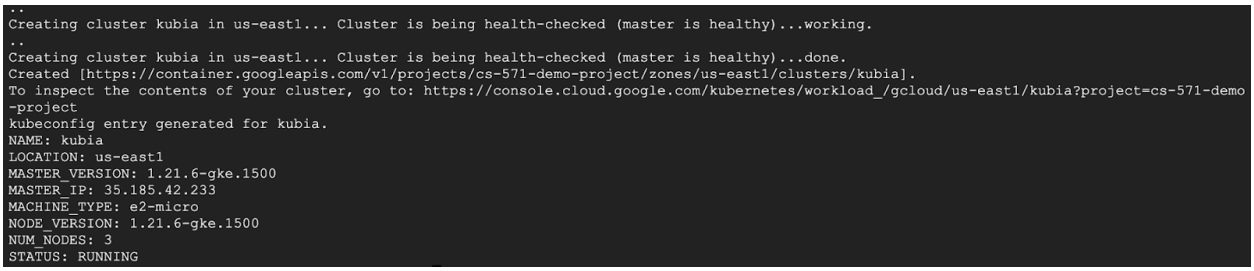

5. double check if nodes are correctly created

Kubectl get nodes

You should see three nodes being created

```
kolekar19615@cloudshell:~ (cs-571-demo-project)$ kubectl get nodes
NAME                                   STATUS   ROLES    AGE     VERSION
gke-kubia-default-pool-2be64bf7-x37c   Ready    <none>   3m12s   v1.21.6-gke.1500
gke-kubia-default-pool-4ec48f0f-qxr1   Ready    <none>   3m13s   v1.21.6-gke.1500
gke-kubia-default-pool-6dc7a5c9-9tsf   Ready    <none>   3m12s   v1.21.6-gke.1500
```

```
kolekar19615@cloudshell:~ (cs-571-demo-project)$ alias k=kubectl
kolekar19615@cloudshell:~ (cs-571-demo-project)$ source <(kubectl completion bash)
kolekar19615@cloudshell:~ (cs-571-demo-project)$ source <(kubectl completion bash | sed s/kubectl
/k/g)
```

6. Create a kubia-rc.yaml with the following contents.

```
apiVersion: v1
 kind: ReplicationController
 metadata:
   name: kubia-rc
spec:
    replicas: 3
   selector:
         app: kubia-rc
   template:
          metadata:
             name: kubia-rc
              labels:
                    app: kubia-rc
         spec:
             containers:
            - name: kubia-rc
             image: 19539zq/myrep
            ports:
            - containerPort: 80
```

```
kolekar19615@cloudshell:~ (cs-571-demo-project)$ nano kubia-rc.yaml
```

7. Create replicationController with the above file

Kubectl create –f kubia-rc.yaml

```
kolekar19615@cloudshell:~ (cs-571-demo-project)$ kubectl create -f kubia-rc.yaml
replicationcontroller/kubia created
```

8. Wait for couple minutes and list all the pods created

Kubectl get pods

```
kolekar19615@cloudshell:~ (cs-571-demo-project)$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
kubia-2jgmr   1/1     Running   0          2m13s
kubia-ldmmj   1/1     Running   0          2m13s
kubia-s5vw9   1/1     Running   0          2m13s
```

9. Create a service and expose the app with an external IP

Kubectl expose rc kubia –type=LoadBalancer –name kubia-http

```
kolekar19615@cloudshell:~ (cs-571-demo-project)$ kubectl expose rc kubia --type=LoadBalancer --na
me kubia-http
service/kubia-http exposed
```

10. Get the service running

Kubectl get service

```
kolekar19615@cloudshell:~ (cs-571-demo-project)$ kubectl get service
NAME         TYPE        CLUSTER-IP    EXTERNAL-IP   PORT(S)   AGE
kubernetes   ClusterIP   10.112.0.1    <none>        443/TCP   29m
```

11. You have finished, please stop the vm while you are not using it.