

Assignment 2 - Kubernetes

Name – B Pravena

Section – B

SRN – PES2UG19CS076

TASK-1 (Setting up Kubernetes)

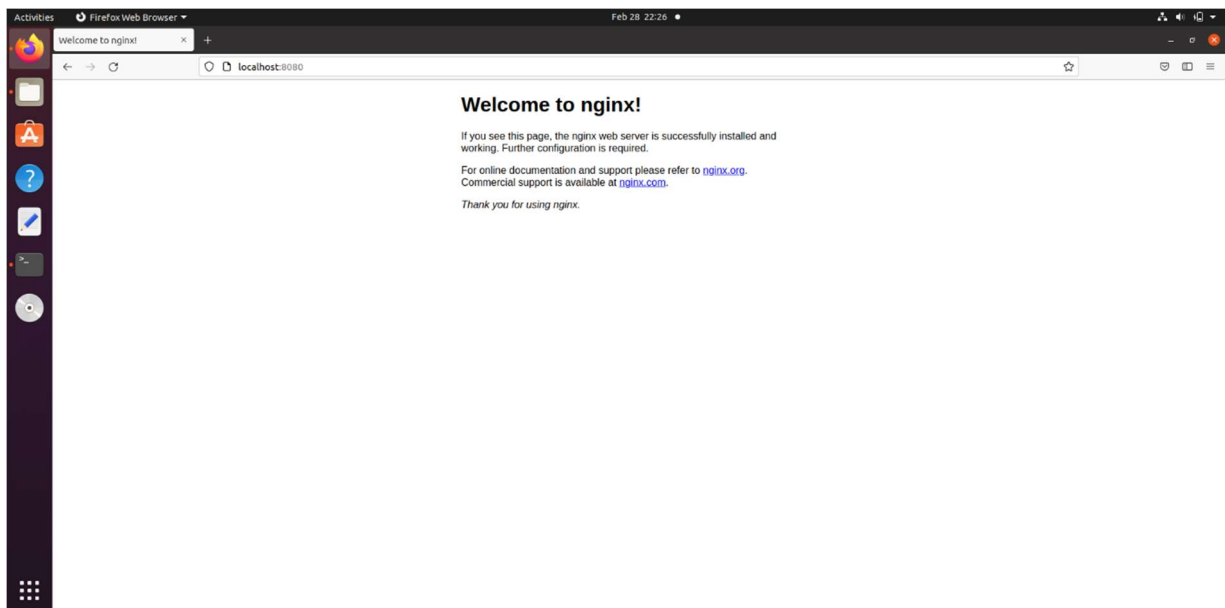
```
Starting control plane node minikube in cluster minikube
Pulling base image ...
Downloading Kubernetes v1.23.3 preload ...
> gcr.io/k8s-minikube/kicbase: 379.06 MiB / 379.06 MiB 100.00% 1.95 MiB p/
> preloaded-images-k8s-v17-v1...: 505.68 MiB / 505.68 MiB 100.00% 2.62 MiB
Creating docker container (CPUs=2, Memory=2200MB) ...
This container is having trouble accessing https://k8s.gcr.io
To pull new external images, you may need to configure a proxy: https://mini
k8s.sigs.k8s.io/docs/reference/networking/proxy/
Preparing Kubernetes v1.23.3 on Docker 20.10.12 ...
  ■ kubelet.housekeeping-interval=5m
  ■ Generating certificates and keys ...
  ■ Booting up control plane ...
  ■ Configuring RBAC rules ...
Verifying Kubernetes components...
  ■ Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: storage-provisioner, default-storageclass
Done! kubectl is now configured to use "minikube" cluster and "default" name
space by default
pes2ug19cs076@PES2UG19CS076:~$ kubectl get node
NAME          STATUS    ROLES          AGE    VERSION
minikube      Ready     control-plane,master  37s    v1.23.3
pes2ug19cs076@PES2UG19CS076:~$
```

TASK-2 (Deploying Kubernetes pods)

```
pes2ug19cs076@PES2UG19CS076:~$ kubectl get node
NAME          STATUS    ROLES          AGE    VERSION
minikube      Ready     control-plane,master  37s    v1.23.3
pes2ug19cs076@PES2UG19CS076:~$ kubectl create -f pod.yaml
error: the path "pod.yaml" does not exist
pes2ug19cs076@PES2UG19CS076:~$ kubectl create -f pod.yaml
pod/nginx-pes2ug19cs076 created
pes2ug19cs076@PES2UG19CS076:~$ kubectl get all
NAME          READY    STATUS             RESTARTS   AGE
pod/nginx-pes2ug19cs076  0/1      ContainerCreating   0           48s

NAME          TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)    AGE
service/kubernetes  ClusterIP    10.96.0.1     <none>         443/TCP    14m
pes2ug19cs076@PES2UG19CS076:~$ kubectl get pods
NAME          READY    STATUS    RESTARTS   AGE
nginx-pes2ug19cs076  1/1      Running   0           86s
pes2ug19cs076@PES2UG19CS076:~$ kubectl port-forward pod/nginx-pes2ug19cs076 80:80
Unable to listen on port 80: Listeners failed to create with the following errors: [unable to create
ten tcp6 [::1]:80: bind: permission denied]
error: unable to listen on any of the requested ports: [{80 80}]
pes2ug19cs076@PES2UG19CS076:~$ kubectl port-forward pod/nginx-pes2ug19cs076 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080

```



TASK-3 (Seal healing, updates and rollback with Kubernetes deployment)

```
^Repeatedly are available...
^Cpes2ug19cs076@PES2UG19CS076:~$ kubectl get all
NAME                                READY   STATUS    RESTARTS   AGE
pod/mynginx-pes2ug19cs076-6c4f5795c5-ftp4  0/1     Pending   0           6m17s
pod/mynginx-pes2ug19cs076-6c4f5795c5-gpqj2  1/1     Running   0           6m17s
pod/mynginx-pes2ug19cs076-6c4f5795c5-x4dj8  1/1     Running   0           6m17s

NAME              TYPE          CLUSTER-IP   EXTERNAL-IP   PORT(S)    AGE
service/kubernetes  ClusterIP     10.96.0.1    <none>        443/TCP    91m

NAME                                READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/mynginx-pes2ug19cs076  2/3     3            2           6m17s

NAME                                DESIRED   CURRENT   READY   A
GE
replicaset.apps/mynginx-pes2ug19cs076-6c4f5795c5  3         3         2       6
m17s
```

```
pes2ug19cs076@PES2UG19CS076:~$ kubectl set image --record=true deployment/mynginx-pes2ug19cs076 mynginx-pes2ug19cs076=nginx:1.16.1 --record=true
Flag --record has been deprecated, --record will be removed in the future
Flag --record has been deprecated, --record will be removed in the future
deployment.apps/mynginx-pes2ug19cs076 image updated
```

```
pes2ug19cs076@PES2UG19CS076:~$ kubectl rollout history deployment/mynginx-pes2ug19cs076
deployment.apps/mynginx-pes2ug19cs076
REVISION  CHANGE-CAUSE
1          <none>
2          kubectl set image deployment/mynginx-pes2ug19cs076 mynginx-pes2ug19cs076=nginx:1.16.1 --record=true --record=true
```

```
pes2ug19cs076@PES2UG19CS076:~$ kubectl rollout undo deployment/mynginx-pes2ug19cs076
deployment.apps/mynginx-pes2ug19cs076 rolled back
pes2ug19cs076@PES2UG19CS076:~$ kubectl rollout status deployment/mynginx-pes2ug19cs076
Waiting for deployment "mynginx-pes2ug19cs076" rollout to finish: 1 old replicas are pending termination...
```

TASK-4 (Scaling Kubernetes services)

```
pes2ug19cs076@PES2UG19CS076:~$ kubectl create -f deploy_service.yaml
deployment.apps/mynginx-pes2ug19cs076 created
service/nginx-pes2ug19cs076 created
pes2ug19cs076@PES2UG19CS076:~$ kubectl port-forward service/nginx-pes2ug19cs076 80:80
Unable to listen on port 80: Listeners failed to create with the following errors: [unable to create listener:
ten tcp6 [::1]:80: bind: permission denied]
error: unable to listen on any of the requested ports: [{80 80}]
pes2ug19cs076@PES2UG19CS076:~$ kubectl port-forward service/nginx-pes2ug19cs076 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080
Handling connection for 8080
pes2ug19cs076@PES2UG19CS076:~$ kubectl scale deploy mynginx-pes2u19cs076 --replicas=10
bash: pes2ug19cs076: No such file or directory
pes2ug19cs076@PES2UG19CS076:~$ kubectl scale deploy mynginx-pes2ug19cs076 --replicas=10
deployment.apps/mynginx-pes2ug19cs076 scaled
pes2ug19cs076@PES2UG19CS076:~$ kubectl get all
NAME                                READY    STATUS    RESTARTS   AGE
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-2wsf5    0/1     Pending   0           39s
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-8zzrf    0/1     Pending   0           39s
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-bq5jm    1/1     Running   0          4m34s
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-bshtp    0/1     Pending   0           39s
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-gz268    0/1     Pending   0           39s
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-kt6s4    0/1     Pending   0           39s
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-mnmpm    0/1     Pending   0           39s
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-tvzjj    0/1     Pending   0           39s
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-vmsqw    0/1     Pending   0           39s
pod/mynginx-pes2ug19cs076-7bbcd8d8d4-whwn4    1/1     Running   0          4m34s

NAME                                TYPE                CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
service/kubernetes                  ClusterIP          10.96.0.1     <none>         443/TCP          80m
service/nginx-pes2ug19cs076        LoadBalancer       10.99.227.163 <pending>      80:32713/TCP     4m34s

NAME                                READY    UP-TO-DATE    AVAILABLE    AGE
deployment.apps/mynginx-pes2ug19cs076 2/10     10             2            4m34s

NAME                                DESIRED    CURRENT    READY    AGE
replicaset.apps/mynginx-pes2ug19cs076-7bbcd8d8d4 10         10         2        4m34s
pes2ug19cs076@PES2UG19CS076:~$
```

