

# CLOUD COMPUTING ASSIGNMENT

## KUBERNETES

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SECTION : I

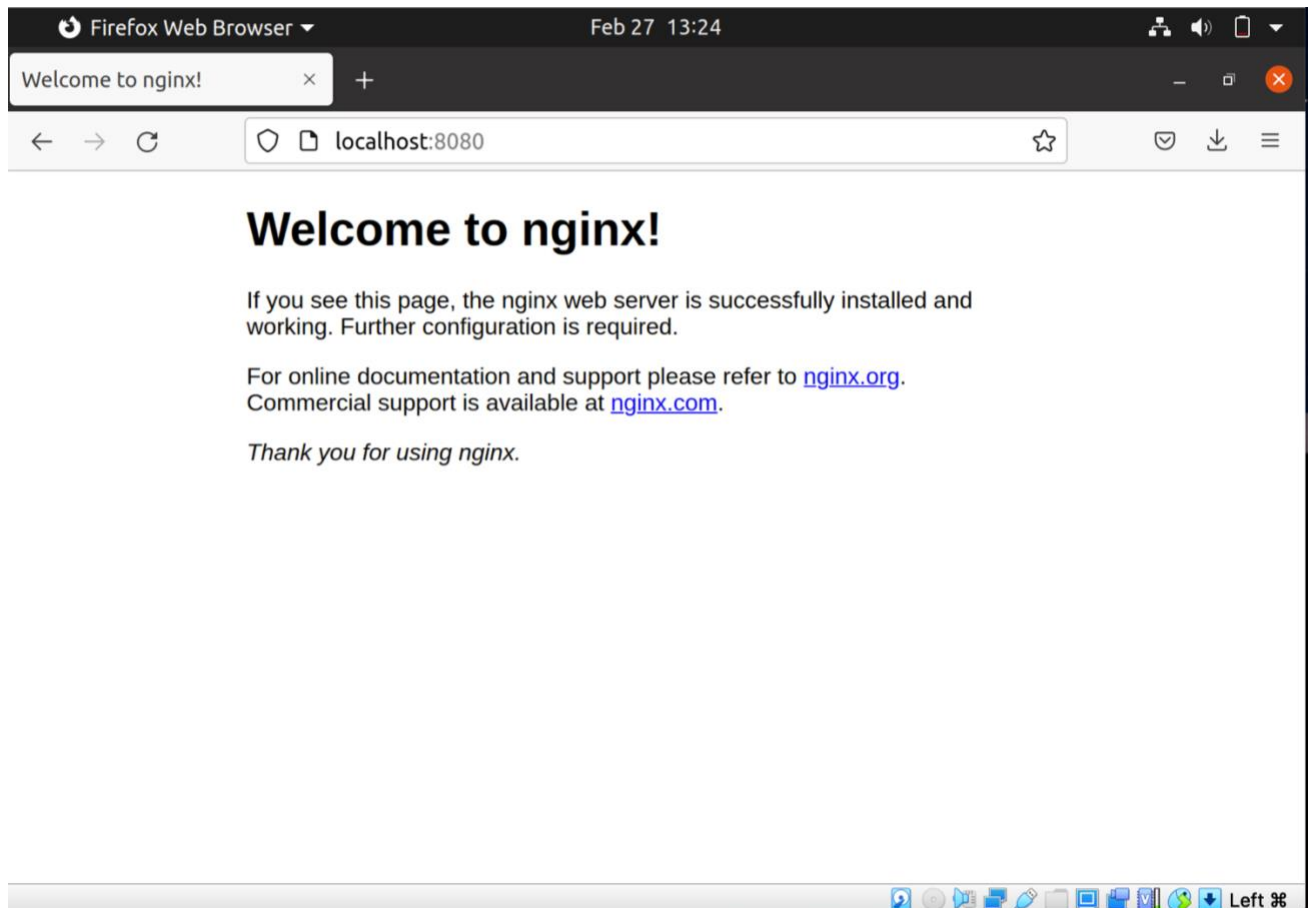
### TASK 1 : Setting up Kubernetes

```
trisha@trisha-VirtualBox:~$ minikube start --driver=docker
🐳 minikube v1.25.2 on Ubuntu 20.04 (vbox/amd64)
🌟 Using the docker driver based on user configuration
👍 Starting control plane node minikube in cluster minikube
📦 Pulling base image ...
📦 Downloading Kubernetes v1.23.3 preload ...
> preloaded-images-k8s-v17-v1...: 505.68 MiB / 505.68 MiB 100.00% 8.77 MiB
> gcr.io/k8s-minikube/kicbase: 379.06 MiB / 379.06 MiB 100.00% 5.54 MiB p/
🔥 Creating docker container (CPUs=2, Memory=2200MB) ...
📦 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: default-storageclass, storage-provisioner
📦 Done! kubectl is now configured to use "minikube" cluster and "default" name
space by default
trisha@trisha-VirtualBox:~$ kubectl get node
NAME          STATUS    ROLES          AGE    VERSION
minikube      Ready     control-plane,master  86s    v1.23.3
trisha@trisha-VirtualBox:~$
```

### TASK 2 : Deploying Kubernetes pods

```
trisha@trisha-VirtualBox:~/Downloads$ kubectl get all
NAME          READY   STATUS    RESTARTS   AGE
pod/nginx-pes1ug19cs542  1/1     Running   0           48s

NAME          TYPE          CLUSTER-IP   EXTERNAL-IP   PORT(S)    AGE
service/kubernetes  ClusterIP     10.96.0.1    <none>        443/TCP    12m
trisha@trisha-VirtualBox:~/Downloads$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-pes1ug19cs542  1/1     Running   0           66s
trisha@trisha-VirtualBox:~/Downloads$ kubectl port-forward pod/nginx-pes1ug19cs542 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

```
trisha@trisha-VirtualBox:~/Downloads$ kubectl delete pods --all
pod "mynginx-pes1ug19cs542-78f4db984f-chrjj" deleted
pod "mynginx-pes1ug19cs542-78f4db984f-rpjfc" deleted
pod "mynginx-pes1ug19cs542-78f4db984f-z7pmd" deleted
trisha@trisha-VirtualBox:~/Downloads$ kubectl get all
NAME                                     READY   STATUS    RESTARTS   AGE
pod/mynginx-pes1ug19cs542-78f4db984f-6x4l6  1/1     Running   0          44s
pod/mynginx-pes1ug19cs542-78f4db984f-kkjf7  0/1     Pending   0          44s
pod/mynginx-pes1ug19cs542-78f4db984f-zs928  1/1     Running   0          44s

NAME                TYPE          CLUSTER-IP   EXTERNAL-IP   PORT(S)    AGE
service/kubernetes  ClusterIP     10.96.0.1    <none>        443/TCP    42m

NAME                                     READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/mynginx-pes1ug19cs542  2/3     3            2          10m

NAME                                     DESIRED   CURRENT   READY   AGE
replicaset.apps/mynginx-pes1ug19cs542-78f4db984f  3         3         2      10m
trisha@trisha-VirtualBox:~/Downloads$
```



```

trisha@trisha-VirtualBox:~/Downloads$ kubectl set image --record=true deployment/mynginx-pes1ug19cs542 mynginx-pes1ug19cs542=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-pes1ug19cs542 image updated
trisha@trisha-VirtualBox:~/Downloads$ kubectl rollout history deployment/mynginx-pes1ug19cs542
deployment.apps/mynginx-pes1ug19cs542
REVISION  CHANGE-CAUSE
1          <none>
2          kubectl set image deployment/mynginx-pes1ug19cs542 mynginx-pes1ug19cs542=nginx:1.16.1 --record=true --record=true

```

```

trisha@trisha-VirtualBox:~/Downloads$ kubectl rollout undo deployment/mynginx-pes1ug19cs542
deployment.apps/mynginx-pes1ug19cs542 rolled back
^C
trisha@trisha-VirtualBox:~/Downloads$ kubectl rollout status deployment/mynginx-pes1ug19cs542
Waiting for deployment "mynginx-pes1ug19cs542" rollout to finish: 1 old replicas are pending termination...

```

#### TASK 4 : Scaling Kubernetes Services

```

trisha@trisha-VirtualBox:~/Downloads$ kubectl port-forward service/nginx-pes1ug19cs542 80:80
42 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080
trisha@trisha-VirtualBox:~/Downloads$ kubectl scale deploy mynginx-pes1ug19cs542 --replicas=10
deployment.apps/mynginx-pes1ug19cs542 scaled
trisha@trisha-VirtualBox:~/Downloads$ kubectl get all

```

NAME	READY	STATUS	RESTARTS	AGE
pod/mynginx-pes1ug19cs542-574bcf8999-499jc	0/1	Pending	0	7s
pod/mynginx-pes1ug19cs542-574bcf8999-5hq5f	0/1	ImagePullBackOff	0	6m12s
pod/mynginx-pes1ug19cs542-574bcf8999-6nvqd	0/1	Pending	0	7s
pod/mynginx-pes1ug19cs542-574bcf8999-9rs79	0/1	Pending	0	7s
pod/mynginx-pes1ug19cs542-574bcf8999-f27kj	0/1	Pending	0	7s
pod/mynginx-pes1ug19cs542-574bcf8999-hg5nr	0/1	ImagePullBackOff	0	6m12s
pod/mynginx-pes1ug19cs542-574bcf8999-hsf9g	0/1	Pending	0	7s
pod/mynginx-pes1ug19cs542-574bcf8999-qtshp	0/1	Pending	0	7s
pod/mynginx-pes1ug19cs542-574bcf8999-v8txp	0/1	Pending	0	7s
pod/mynginx-pes1ug19cs542-574bcf8999-xmsfb	0/1	Pending	0	7s

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	70m
service/nginx-pes1ug19cs542	LoadBalancer	10.104.19.137	<pending>	80:30805/TCP	6m12s

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/mynginx-pes1ug19cs542	0/10	10	0	6m12s

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/mynginx-pes1ug19cs542-574bcf8999	10	10	0	6m12s

```

trisha@trisha-VirtualBox:~/Downloads$

```

