

CLOUD COMPUTING ASSIGNMENT 3

NAME- HAMSINI RAMESH

SRN- PES2UG21CS183

SECTION- D

1a

```
C:\Windows\System32\cmd.exe
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>minikube start
W0216 10:42:41.183716 13656 main.go:291] Unable to resolve the current Docker CLI context "default": context "default": context not found: open C:\Users\Hamsini\docker\contexts\meta\37a8ee1ce19687d132fe29851dca629d164e2c4958ba141d5f4133a33f0688f\meta.json: The system cannot find the path specified.
* minikube v1.32.0 on Microsoft Windows 11 Home Single Language 10.0.22631.3085 Build 22631.3085
* Using the docker driver based on existing profile
* Starting control plane node minikube in cluster minikube
* Pulling base image ...
* Updating the running docker "minikube" container ...
! This container is having trouble accessing https://registry.k8s.io
* To pull new external images, you may need to configure a proxy: https://minikube.sigs.k8s.io/docs/reference/networking/proxy/
* Preparing Kubernetes v1.28.3 on Docker 24.0.7 ...
* Configuring bridge CNI (Container Networking Interface) ...
* 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" namespace by default

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl get nodes
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 12h v1.28.3

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl get pod.
No resources found in default namespace.

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl get services
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 12h

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl create -h
Create a resource from a file or from stdin.

JSON and YAML formats are accepted.

Examples:
# Create a pod using the data in pod.json
kubectl create -f ./pod.json

# Create a pod based on the JSON passed into stdin
cat pod.json | kubectl create -f -
```

2a

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl get nodes
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 12h v1.28.3

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl get pod.
No resources found in default namespace.

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl get services
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 12h
```

2b

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl create deployment pes2ug21cs183 --image=nginx
deployment.apps/pes2ug21cs183 created
```

2c

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl get deployment
NAME READY UP-TO-DATE AVAILABLE AGE
pes1ug21cs183 1/1 1 1 56m
pes2ug21cs183 0/1 1 0 7s

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183>kubectl get pod
NAME READY STATUS RESTARTS AGE
pes1ug21cs183-59d54b46f9-ddhxxh 1/1 Running 0 56m
pes1ug21cs183-6679bb5d85-dslnp 0/1 ImagePullBackOff 0 2m29s
pes2ug21cs183-b5b9fcfb6-h89w 0/1 ContainerCreating 0 13s
```

2d

```

    app: pes2ug21cs183
spec:
  containers:
  - image: nginx:1.16
    imagePullPolicy: Always
    name: nginx
    resources: {}
    terminationMessagePath: /dev/termination-log
    terminationMessagePolicy: File

```

2e

```

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl edit deployment pes2ug21cs183
deployment.apps/pes2ug21cs183 edited

```

2f

```

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3> kubectl rollout undo deployment pes2ug21cs183
deployment.apps/pes2ug21cs183 rolled back

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>

```

2g

```

  containers:
  - image: nginx
    imagePullPolicy: Always
    name: nginx
    resources: {}
    terminationMessagePath: /dev/termination-log
    terminationMessagePolicy: File

```

3a

```

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl get pod

```

NAME	READY	STATUS	RESTARTS	AGE
pes1ug21cs183-6679bb5d85-dslnp	1/1	Running	1 (10m ago)	26h
pes2ug21cs183-b5b9fcfb6-ht89w	1/1	Running	2 (10m ago)	26h

```

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl logs pes2ug21cs183-b5b9fcfb6-ht89w
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2024/02/17 08:22:28 [notice] 1#1: using the "epoll" event method
2024/02/17 08:22:28 [notice] 1#1: nginx/1.25.4
2024/02/17 08:22:28 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)
2024/02/17 08:22:28 [notice] 1#1: OS: Linux 5.15.133.1-microsoft-standard-WSL2
2024/02/17 08:22:28 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2024/02/17 08:22:28 [notice] 1#1: start worker processes
2024/02/17 08:22:28 [notice] 1#1: start worker process 29
2024/02/17 08:22:28 [notice] 1#1: start worker process 30
2024/02/17 08:22:28 [notice] 1#1: start worker process 31
2024/02/17 08:22:28 [notice] 1#1: start worker process 32
2024/02/17 08:22:28 [notice] 1#1: start worker process 33
2024/02/17 08:22:28 [notice] 1#1: start worker process 34
2024/02/17 08:22:28 [notice] 1#1: start worker process 35
2024/02/17 08:22:28 [notice] 1#1: start worker process 36
2024/02/17 08:22:28 [notice] 1#1: start worker process 37
2024/02/17 08:22:28 [notice] 1#1: start worker process 38
2024/02/17 08:22:28 [notice] 1#1: start worker process 39
2024/02/17 08:22:28 [notice] 1#1: start worker process 40

```

3b

```
C:\Windows\System32\cmd.exe
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl describe pod pes2ug21cs183-b5b9fcfb6-ht89w
Name: pes2ug21cs183-b5b9fcfb6-ht89w
Namespace: default
Priority: 0
Service Account: default
Node: minikube/192.168.49.2
Start Time: Fri, 16 Feb 2024 11:44:05 +0530
Labels: app=pes2ug21cs183
pod-template-hash=b5b9fcfb6
Annotations: <none>
Status: Running
IP: 10.244.0.17
IPs: 10.244.0.17
Controlled By: ReplicaSet/pes2ug21cs183-b5b9fcfb6
Containers:
  nginx:
    Container ID: docker://663e0f70b6e81b08c04c9124a4650f421166e4cd3c9750c6675960989727fbad
    Image: nginx
    Image ID: docker-pullable://nginx@sha256:25ff478171a2fd27d61a1774d97672bb7c13e888749fc70c711e207be34d370a
    Port: <none>
    Host Port: <none>
    State: Running
      Started: Sat, 17 Feb 2024 13:52:28 +0530
    Last State: Terminated
      Reason: Error
      Exit Code: 255
      Started: Fri, 16 Feb 2024 12:06:51 +0530
      Finished: Sat, 17 Feb 2024 13:51:19 +0530
    Ready: True
    Restart Count: 2
    Environment: <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-rqz55 (ro)
Conditions:
  Type              Status
  Initialized        True
  Ready              True
  ContainersReady    True
  PodScheduled       True
```

3c

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl create deployment pes2ug21cs183-mongo --image=mongo
deployment.apps/pes2ug21cs183-mongo created
```

3d

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl delete deployment pes2ug21cs183
deployment.apps "pes2ug21cs183" deleted

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl delete deployment pes2ug21cs183-mongo
deployment.apps "pes2ug21cs183-mongo" deleted
```

4a

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl apply -f nginx-deployment.yaml
deployment.apps/nginx-deployment-pes2ug21cs183 created

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl get pod
NAME                                READY   STATUS             RESTARTS   AGE
nginx-deployment-pes2ug21cs183-67856bc4f5-62tth  0/1     ContainerCreating   0          26s
nginx-deployment-pes2ug21cs183-67856bc4f5-p9p56  0/1     ContainerCreating   0          26s
peslug21cs183-6679bb5d85-dslnp                1/1     Running             1 (19m ago)  26h

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl get deployment
NAME                                READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment-pes2ug21cs183      2/2     2             2           94s
peslug21cs183                       1/1     1             1           27h

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl get replicaset
NAME                                DESIRED   CURRENT   READY   AGE
nginx-deployment-pes2ug21cs183-67856bc4f5  2         2         2       112s
peslug21cs183-59d54b46f9                0         0         0       27h
peslug21cs183-6679bb5d85                 1         1         1       26h

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>
```

4b

```
C:\Windows\System32\cmd.exe x + v

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl get deployment nginx-deployment-pes2ug21cs183 -o yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  annotations:
    deployment.kubernetes.io/revision: "1"
    kubectl.kubernetes.io/last-applied-configuration: |
      {"apiVersion":"apps/v1","kind":"Deployment","metadata":{"annotations":{},"labels":{"app":"nginx"},"name":"nginx-deployment-pes2ug21cs183","namespace":"default"},"spec":{"replicas":2,"selector":{"matchLabels":{"app":"nginx"},"template":{"metadata":{"labels":{"app":"nginx"},"spec":{"containers":[{"image":"nginx:1.22","name":"nginx","ports":[{"containerPort":80}]}]}}}}
  creationTimestamp: "2024-02-17T08:40:51Z"
  generation: 1
  labels:
    app: nginx
  name: nginx-deployment-pes2ug21cs183
  namespace: default
  resourceVersion: "9777"
  uid: 2ca387a3-853c-42ad-ad8d-513629e5698f
spec:
  progressDeadlineSeconds: 600
  replicas: 2
  revisionHistoryLimit: 10
  selector:
    matchLabels:
      app: nginx
  strategy:
    rollingUpdate:
      maxSurge: 25%
      maxUnavailable: 25%
    type: RollingUpdate
  template:
    metadata:
      creationTimestamp: null
      labels:
        app: nginx
    spec:
      containers:
        - image: nginx:1.22
          imagePullPolicy: IfNotPresent
```

5a

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl get pod
NAME                                READY   STATUS    RESTARTS   AGE
nginx-deployment-pes2ug21cs183-67856bc4f5-62tth  1/1     Running   0           11m
nginx-deployment-pes2ug21cs183-67856bc4f5-p9p56  1/1     Running   0           11m
pes1ug21cs183-6679bb5d85-dslnp  1/1     Running   1 (31m ago)  26h

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl delete pod nginx-deployment-pes2ug21cs183-67856bc4f5-62tth
pod "nginx-deployment-pes2ug21cs183-67856bc4f5-62tth" deleted
```

6a

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl apply -f nginx-service.yaml
service/nginx-service-pes2ug21cs183 created

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl get service
NAME                TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)    AGE
kubernetes          ClusterIP   10.96.0.1     <none>         443/TCP    39h
nginx-service-pes2ug21cs183  ClusterIP   10.107.207.177 <none>         8080/TCP   13s

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl describe service nginx-service
Name:                 nginx-service-pes2ug21cs183
Namespace:            default
Labels:               <none>
Annotations:          <none>
Selector:              app=nginx
Type:                 ClusterIP
IP Family Policy:     SingleStack
IP Families:          IPv4
IP:                   10.107.207.177
IPs:                  10.107.207.177
Port:                 <unset> 8080/TCP
TargetPort:           80/TCP
Endpoints:            10.244.0.20:80,10.244.0.22:80
Session Affinity:     None
Events:               <none>
```

6b

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl get pod -o wide
NAME                                READY   STATUS    RESTARTS   AGE   IP            NODE       NOMINATED NODE   READINESS GATES
nginx-deployment-pes2ug21cs183-67856bc4f5-bhsrd  1/1     Running   0           3m37s  10.244.0.22  minikube  <none>           <none>
nginx-deployment-pes2ug21cs183-67856bc4f5-p9p56  1/1     Running   0           15m    10.244.0.20  minikube  <none>           <none>
pes1ug21cs183-6679bb5d85-dslnp  1/1     Running   1 (35m ago)  26h    10.244.0.16  minikube  <none>           <none>
```

7a

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl port-forward service/nginx-service-pes2ug21cs183 8080:8080
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080
Handling connection for 8080
```

7b



8a

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl delete deployment nginx-deployment-pes2ug21cs183
deployment.apps "nginx-deployment-pes2ug21cs183" deleted

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl delete service nginx-service-pes2ug21cs183
service "nginx-service-pes2ug21cs183" deleted
```

9a

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl create deployment nginx-pes2ug21cs183 --image=nginx
deployment.apps/nginx-pes2ug21cs183 created

D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl expose deployment nginx-pes2ug21cs183 --type=NodePort --port=80
service/nginx-pes2ug21cs183 exposed
```

9b

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>kubectl get service nginx-pes2ug21cs183
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
nginx-pes2ug21cs183	NodePort	10.102.216.243	<none>	80:32334/TCP	112s

9c

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>minikube ip
W0217 15:31:16.687778 16572 main.go:291] Unable to resolve the current Docker CLI context "default": context "default": context not found: open C:\Users\Hamsini Ramesh\.docker\contexts\meta\37a8eec1ce19687d132fe29051dca629d164e2c4958ba141d5f4133a33f0688f\meta.json: The system cannot find the path specified.
192.168.49.2
```

```
D:\6th sem\CLOUD_COMPUTING\CC LAB\HAMSINI RAMESH\PES2UG21CS183\assignment 3>minikube service nginx-pes2ug21cs183
W0217 15:34:45.330536 17036 main.go:291] Unable to resolve the current Docker CLI context "default": context "default": context not found: open C:\Users\Hamsini R\docker\contexts\meta\37a8ee1ce19687d132fe29851dca629d164e2c4958ba141d5f4133a33f0688f\meta.json: The system cannot find the path specified.

NAMESPACE | NAME | TARGET PORT | URL
----- | --- | --- | ---
default | nginx-pes2ug21cs183 | 80 | http://192.168.49.2:32334

* Starting tunnel for service nginx-pes2ug21cs183.

NAMESPACE | NAME | TARGET PORT | URL
----- | --- | --- | ---
default | nginx-pes2ug21cs183 | 80 | http://127.0.0.1:65530

* Opening service default/nginx-pes2ug21cs183 in default browser...
! Because you are using a Docker driver on windows, the terminal needs to be open to run it.
```

9d

