Kubernetes Lab 5

1-create pod from the below yaml file

```yaml
apiVersion: v1
kind: Pod
metadata:
  name: webapp
spec:
  containers:
  - env:
    - name: LOG_HANDLERS
      value: file
    image: kodekloud/event-simulator
    imagePullPolicy: Always
    name: event-simulator
```

```
nathan@nathan-G3-3500:~$ vim pod.yaml
nathan@nathan-G3-3500:~$ kubectl apply -f pod.yaml
pod/webapp created
nathan@nathan-G3-3500:~$ kubectl get pod
NAME     READY   STATUS              RESTARTS   AGE
webapp   0/1     ContainerCreating   0          11s
nathan@nathan-G3-3500:~$ kubectl get pod
NAME     READY   STATUS    RESTARTS   AGE
webapp   1/1     Running   0          64s
nathan@nathan-G3-3500:~$
```

2-Configure a volume to store these logs at /var/log/webapp on the host.

```yaml
apiVersion: v1
kind: Pod
metadata:
  name: webapp
spec:
  volumes:
  - name: webapp
    hostPath:
      path: /var/log/webapp
  containers:
  - env:
    - name: LOG_HANDLERS
      value: file
    image: kodekloud/event-simulator
    imagePullPolicy: Always
    name: event-simulator
    volumeMounts:
      - name: webapp
        mountPath: /log
```

```
Containers:
  event-simulator:
    Container ID:   docker://5e3f5604a5b559615309f03918b3a0bedff9234f57d298a1e0d1f17690950118
    Image:          kodekloud/event-simulator
    Image ID:       docker-pullable://kodekloud/event-simulator@sha256:1e3e9c72136bbc76c96dd98f
29c04f298c3ae241c7d44e2bf70bcc209b030bf9
    Port:           <none>
    Host Port:      <none>
    State:          Running
      Started:      Wed, 04 Jan 2023 12:48:16 +0200
    Ready:          True
    Restart Count:  0
    Environment:
      LOG_HANDLERS:  file
    Mounts:
      /log from webapp (rw)
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-ft4jg (ro)
```

3- Create a Persistent Volume with the given specification.

```yaml
apiVersion: v1
kind: PersistentVolume
metadata:
  name: pv-log
  labels:
    type: local
spec:
  storageClassName: manual
  capacity:
    storage: 100Mi
  accessModes:
    - ReadWriteMany
  hostPath:
    path: "/pv/log"
  persistentVolumeReclaimPolicy: Retain
```

```
nathan@nathan-G3-3500:~$ kubectl apply -f persistentVolume.yaml
persistentvolume/pv-log configured
nathan@nathan-G3-3500:~$ kubectl get pv
NAME     CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS      CLAIM   STORAGECLASS   REASON   AGE
pv-log   100Mi      RWX            Retain           Available           manual                  77s
nathan@nathan-G3-3500:~$
```

4- Let us claim some of that storage for our application. Create a Persistent Volume Claim with the given specification.

```yaml
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
  name: claim-log-1
spec:
  storageClassName: manual
  accessModes:
    - ReadWriteOnce
  resources:
    requests:
      storage: 50Mi
```

```
nathan@nathan-G3-3500:~$ kubectl apply -f PersistentVolumeClaim.yaml
persistentvolumeclaim/claim-log-1 created
nathan@nathan-G3-3500:~$
```

5- What is the state of the Persistent Volume Claim?

```
nathan@nathan-G3-3500:~$ kubectl get pvc
NAME          STATUS    VOLUME   CAPACITY   ACCESS MODES   STORAGECLASS   AGE
claim-log-1   Pending                                      manual         110s
nathan@nathan-G3-3500:~$
```

6- What is the state of the Persistent Volume?

```
nathan@nathan-G3-3500:~$ kubectl get pv
NAME     CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS      CLAIM   STORAGECLASS   REASON   AGE
pv-log   100Mi      RWX            Retain           Available           manual                  77s
nathan@nathan-G3-3500:~$
```

7-Why is the claim not bound to the available Persistent Volume?
because the access Mode is Once must be the same as the PV Many.

8-Update the Access Mode on the claim to bind it to the PV?

```yaml
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
  name: claim-log-1
spec:
  storageClassName: manual
  accessModes:
    - ReadWriteMany
  resources:
    requests:
      storage: 50Mi
```

```
nathan@nathan-G3-3500:~$ kubectl apply -f PersistentVolumeClaim.yaml
persistentvolumeclaim/claim-log-1 created
nathan@nathan-G3-3500:~$ kubectl get pvc
NAME          STATUS   VOLUME   CAPACITY   ACCESS MODES   STORAGECLASS   AGE
claim-log-1   Bound    pv-log   100Mi      RWX            manual         4s
nathan@nathan-G3-3500:~$
```