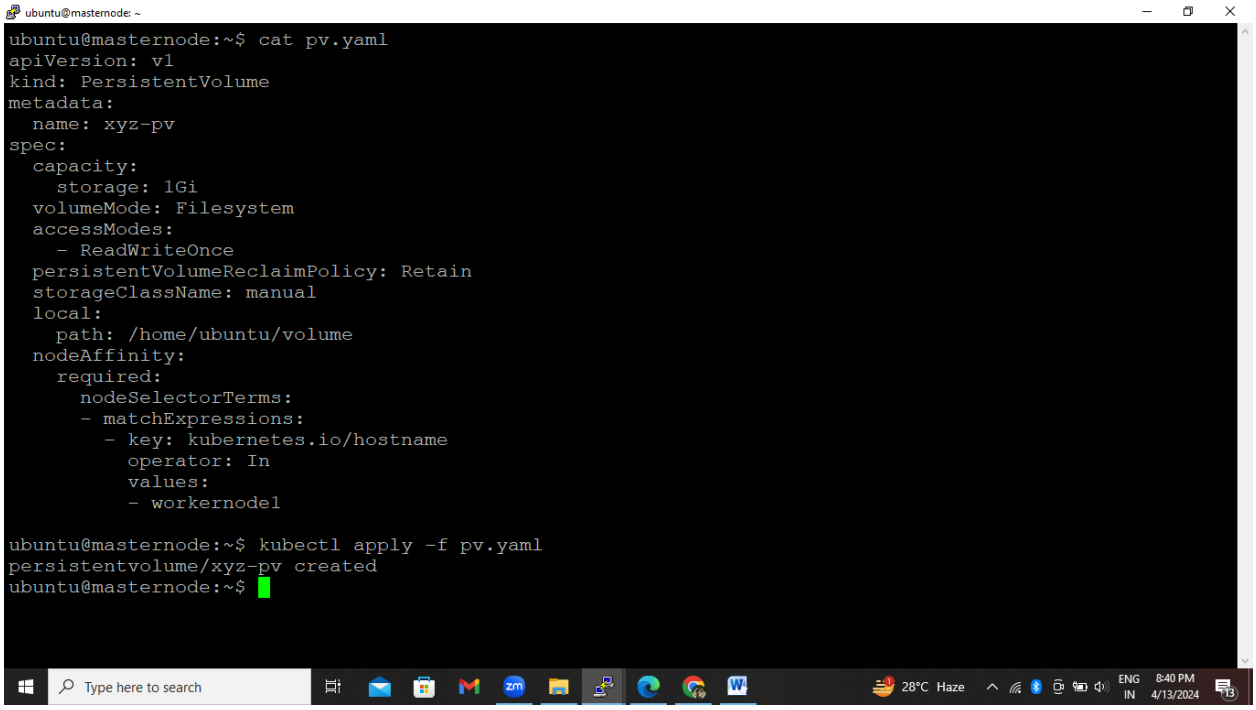
Kubernetes 1 - Assignment

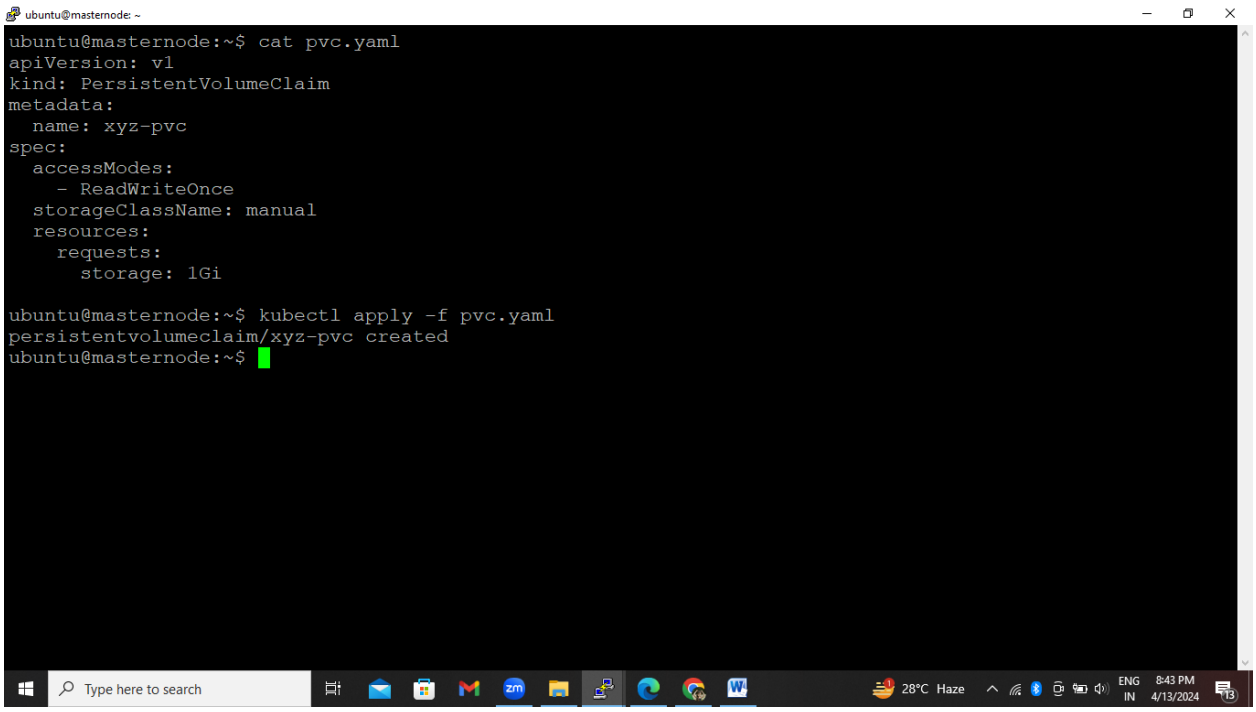
Problem Statement:

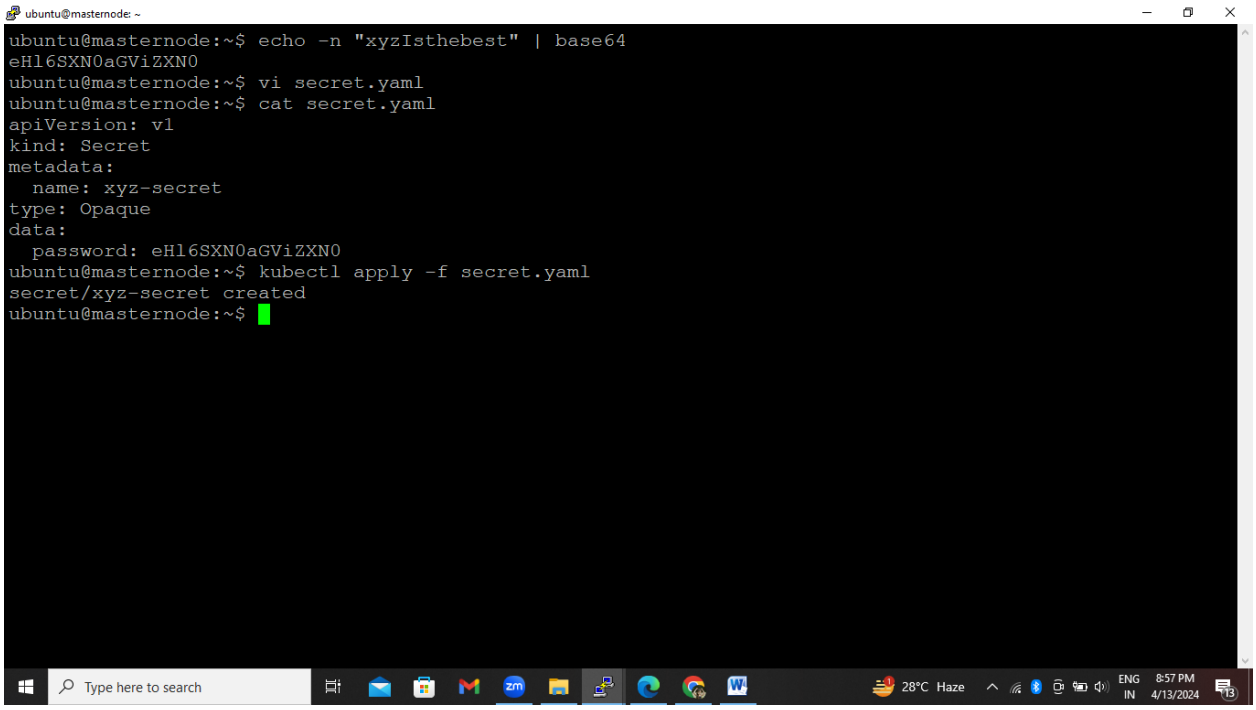
You work for the xyz organization. Your organization uses Kubernetes for container orchestration. Your organization has recently created pods from which data was being lost. Now they require volume mounts which preserve data and save a password called “xyzIsthebest” and this has to be put on a particular node of your choice.

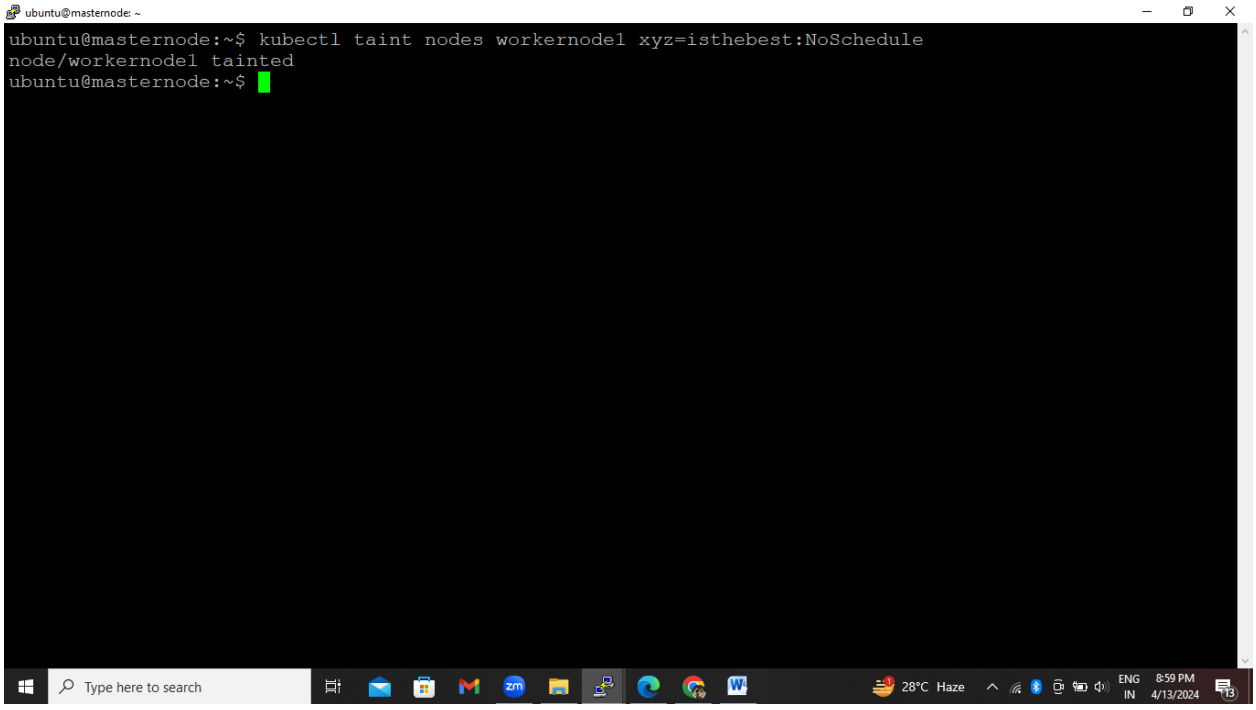
You have been asked to:

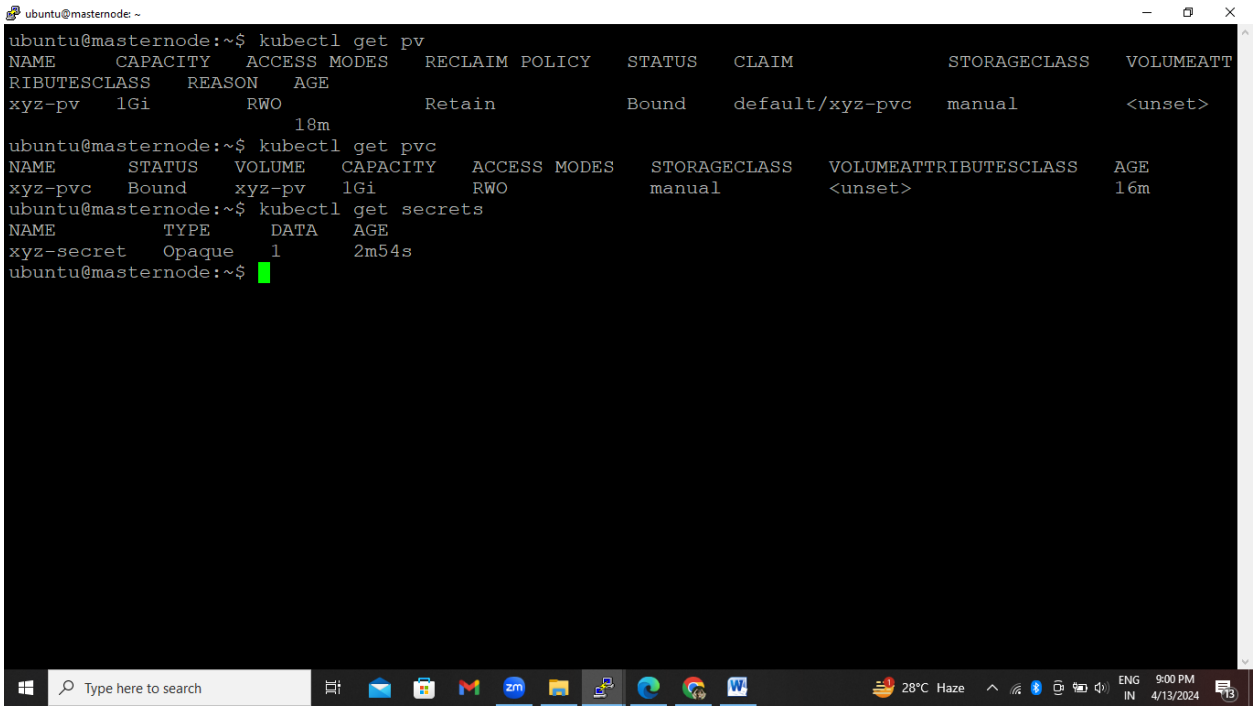
1. Create a persistent volume
2. create a persistent volume claim
3. create a secret “xyzIsthebest”
4. Taint one of the nodes of the cluster

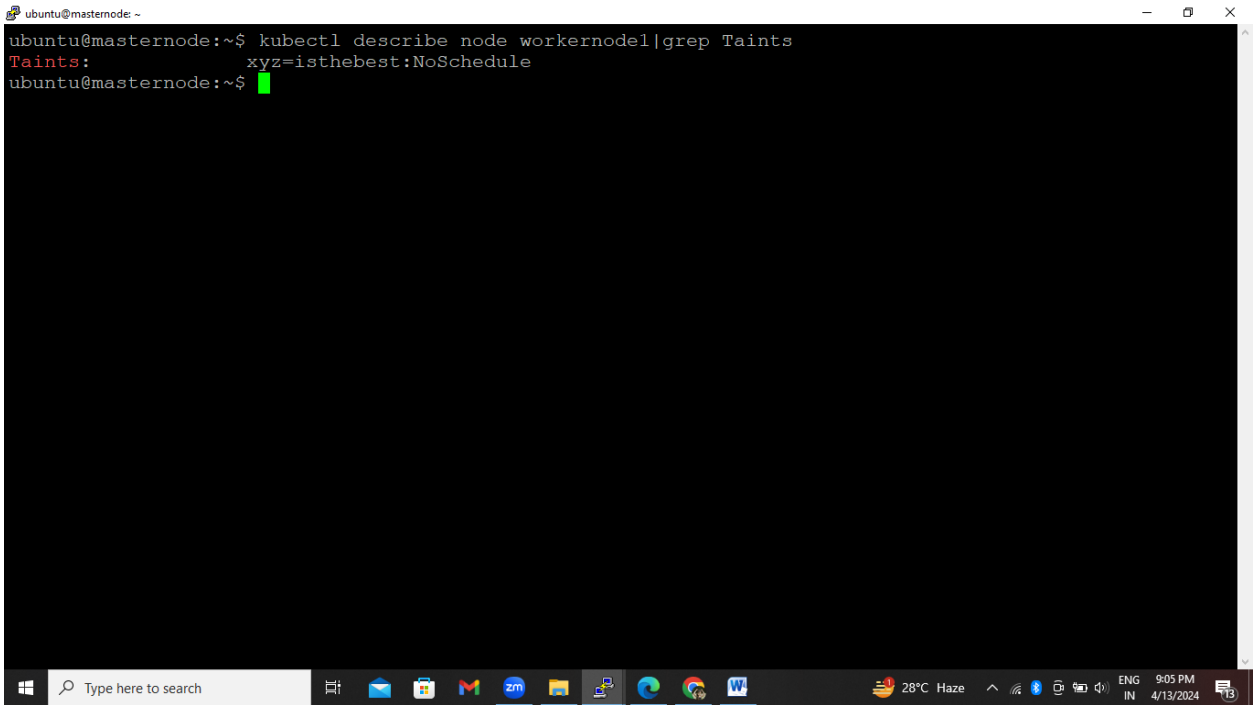

ubuntu@masternode: ~
ubuntu@masternode:~$ cat pv.yaml
apiVersion: v1
kind: PersistentVolume
metadata:
name: xyz-pv
spec:
capacity:
storage: 1Gi
volumeMode: Filesystem
accessModes:
- ReadWriteOnce
persistentVolumeReclaimPolicy: Retain
storageClassName: manual
local:
path: /home/ubuntu/volume
nodeAffinity:
required:
nodeSelectorTerms:
- matchExpressions:
- key: kubernetes.io/hostname
operator: In
values:
- workernode1
ubuntu@masternode:~$ kubectl apply -f pv.yaml
persistentvolume/xyz-pv created
ubuntu@masternode:~$
Type here to search
28°C Haze
ENG
IN
8:40 PM
4/13/2024


ubuntu@masternode: ~
ubuntu@masternode:~$ cat pvc.yaml
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
name: xyz-pvc
spec:
accessModes:
- ReadWriteOnce
storageClassName: manual
resources:
requests:
storage: 1Gi
ubuntu@masternode:~$ kubectl apply -f pvc.yaml
persistentvolumeclaim/xyz-pvc created
ubuntu@masternode:~$
Type here to search
28°C Haze
ENG
IN
8:43 PM
4/13/2024


ubuntu@masternode: ~
ubuntu@masternode:~$ echo -n "xyzIsthebest" | base64
eHl6SXN0aGViZXN0
ubuntu@masternode:~$ vi secret.yaml
ubuntu@masternode:~$ cat secret.yaml
apiVersion: v1
kind: Secret
metadata:
  name: xyz-secret
type: Opaque
data:
  password: eHl6SXN0aGViZXN0
ubuntu@masternode:~$ kubectl apply -f secret.yaml
secret/xyz-secret created
ubuntu@masternode:~$
Type here to search
28°C Haze
ENG
IN
8:57 PM
4/13/2024


ubuntu@masternode: ~
ubuntu@masternode:~$ kubectl taint nodes workernode1 xyz=isthebest:NoSchedule
node/workernode1 tainted
ubuntu@masternode:~$
Type here to search
28°C Haze
ENG
IN
8:59 PM
4/13/2024


ubuntu@masternode: ~
ubuntu@masternode:~$ kubectl get pv
NAME CAPACITY ACCESS MODES RECLAIM POLICY STATUS CLAIM STORAGECLASS VOLUMEATTRIBUTESCLASS REASON AGE
xyz-pv 1Gi RWO Retain Bound default/xyz-pvc manual <unset> 18m
ubuntu@masternode:~$ kubectl get pvc
NAME STATUS VOLUME CAPACITY ACCESS MODES STORAGECLASS VOLUMEATTRIBUTESCLASS AGE
xyz-pvc Bound xyz-pv 1Gi RWO manual <unset> 16m
ubuntu@masternode:~$ kubectl get secrets
NAME TYPE DATA AGE
xyz-secret Opaque 1 2m54s
ubuntu@masternode:~$
Type here to search
28°C Haze
ENG IN
9:00 PM 4/13/2024


ubuntu@masternode: ~
ubuntu@masternode:~$ kubectl describe node workernode1|grep Taints
Taints: xyz=isthebest:NoSchedule
ubuntu@masternode:~$
Type here to search
28°C Haze
ENG IN
9:05 PM 4/13/2024