UNIVERSITY OF PETROLEUM & ENERGY STUDIES

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ACO LAB

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Lab Exercise 10– Creating Deployment in Kubernetes

Below is a lab exercise that demonstrates how to create and manage a Deployment in Kubernetes.

Step 1: Create a Deployment Configuration File

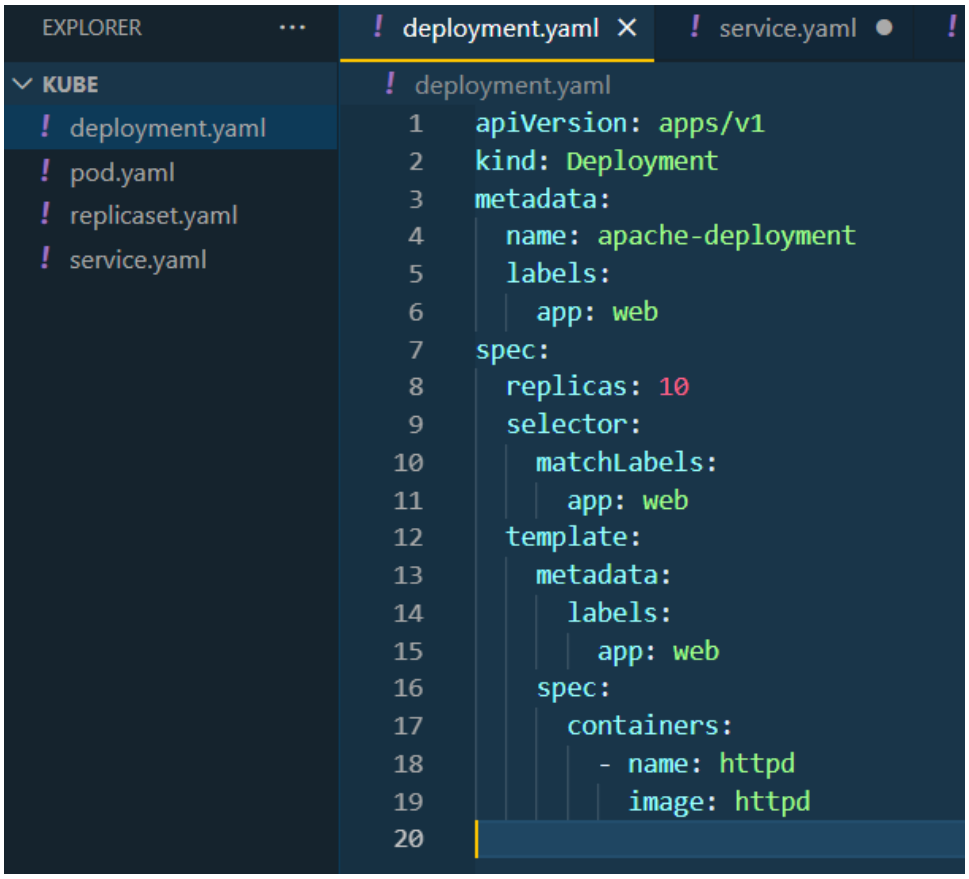
Create a file named deployment.yaml with the following configuration:

Link of file: (Coly following code from my GitHub repo)

https://github.com/hkshitesh/ACO-LAB-2021-25/blob/main/scripts/deployment.yaml

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: apache-deployment
  labels:
    app: web
spec:
  replicas: 10
  selector:
    matchLabels:
      app: web
  template:
    metadata:
      labels:
        app: web
    spec:
      containers:
      - name: httpd
```

image: httpd



Step 2: Apply the Deployment Configuration

Apply the configuration to create the Deployment:

kubectl apply -f deployment.yaml

```
C:\Users\ABC\OneDrive\Desktop\ACO\Kube>kubectl apply -f deployment.yaml
deployment.apps/apache-deployment created
```

Step 3: View the Deployment and Pods

View the created Deployment and the associated Pods:

kubectl get deployments

```
C:\Users\ABC\OneDrive\Desktop\ACO\Kube>kubectl get deployments
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
apache-deployment   0/10    10           0           112s
```

```
C:\Users\ABC\OneDrive\Desktop\ACO\Kube>kubectl get deployments
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
apache-deployment   10/10   10           10          4m48s
```

```
C:\Users\ABC\OneDrive\Desktop\ACO\Kube>kubectl get all
NAME                                    READY   STATUS    RESTARTS   AGE
pod/apache-deployment-788fbf66b5-8vqzn   1/1     Running   0          20m
pod/apache-deployment-788fbf66b5-cclv5   1/1     Running   0          20m
pod/apache-deployment-788fbf66b5-mlmqx   1/1     Running   0          20m
pod/apache-deployment-788fbf66b5-pfht6   1/1     Running   0          20m
pod/apache-deployment-788fbf66b5-pk6vc   1/1     Running   0          20m
pod/apache-deployment-788fbf66b5-qz2c7   1/1     Running   0          20m
pod/apache-deployment-788fbf66b5-s57hg   1/1     Running   0          20m
pod/apache-deployment-788fbf66b5-t8l8v   1/1     Running   0          20m
pod/apache-deployment-788fbf66b5-x42ms   1/1     Running   0          20m
pod/apache-deployment-788fbf66b5-z2p5q   1/1     Running   0          20m

NAME                 TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
service/kubernetes   ClusterIP   10.96.0.1    <none>        443/TCP   39d

NAME                                READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/apache-deployment   10/10   10           10          20m

NAME                                           DESIRED   CURRENT   READY   AGE
replicaset.apps/apache-deployment-788fbf66b5   10        10        10      20m
```

kubectl get pods

```
C:\Users\ABC\OneDrive\Desktop\ACO\Kube>kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
apache-deployment-788fbf66b5-8vqzn   1/1     Running   0          20m
apache-deployment-788fbf66b5-cclv5   1/1     Running   0          20m
apache-deployment-788fbf66b5-mlmqx   1/1     Running   0          20m
apache-deployment-788fbf66b5-pfht6   1/1     Running   0          20m
apache-deployment-788fbf66b5-pk6vc   1/1     Running   0          20m
apache-deployment-788fbf66b5-qz2c7   1/1     Running   0          20m
apache-deployment-788fbf66b5-s57hg   1/1     Running   0          20m
apache-deployment-788fbf66b5-t8l8v   1/1     Running   0          20m
apache-deployment-788fbf66b5-x42ms   1/1     Running   0          20m
apache-deployment-788fbf66b5-z2p5q   1/1     Running   0          20m

C:\Users\ABC\OneDrive\Desktop\ACO\Kube>
```

Step 4: Delete the Deployment

Delete the Deployment:

kubectl delete deployment my-deployment

```
C:\Users\ABC\OneDrive\Desktop\ACO\Kube>kubectl delete deployment apache-deployment
deployment.apps "apache-deployment" deleted

C:\Users\ABC\OneDrive\Desktop\ACO\Kube>
```

Conclusion

This exercise demonstrated how to create, manage, and update a Deployment in Kubernetes. You learned how to scale the Deployment, update the image, and perform a rolling update to the Deployment. Experiment further with different configurations and update strategies to deepen your understanding of managing Deployments in Kubernetes.