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
```

```yaml
1   apiVersion: apps/v1
2
3   kind: Deployment
4
5   metadata:
6
7     name: apache-deployment
8
9     labels:
10
11      app: web
12
13  spec:
14
15    replicas: 10
16
17    selector:
18
19      matchLabels:
20
21        app: web
22
23    template:
24
25      metadata:
26
27        labels:
28
29          app: web
30
31      spec:
32
33        containers:
34
35        - name: httpd
36
37          image: httpd
```

Step 2: Apply the Deployment Configuration

Apply the configuration to create the Deployment:

```
kubectl apply -f deployment.yaml
```

```
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\exp10> kubectl apply -f .\deployment.yaml
deployment.apps/apache-deployment created
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\exp10>
```

Step 3: View the Deployment and Pods

View the created Deployment and the associated Pods:

```
kubectl get deployments

kubectl get pods
```

```
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\exp10> kubectl get deployment
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
apache-deployment   3/10    10           3           83s
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\exp10> kubectl get pods
NAME                                READY   STATUS              RESTARTS   AGE
apache-deployment-788fbf66b5-2kg2w  1/1     Running             0          91s
apache-deployment-788fbf66b5-92bkz  0/1     ContainerCreating   0          91s
apache-deployment-788fbf66b5-bfpxh  0/1     ContainerCreating   0          91s
apache-deployment-788fbf66b5-cv599  0/1     ContainerCreating   0          91s
apache-deployment-788fbf66b5-dj79s  1/1     Running             0          91s
apache-deployment-788fbf66b5-f7rb4  1/1     Running             0          91s
apache-deployment-788fbf66b5-hrnhd  0/1     ContainerCreating   0          91s
apache-deployment-788fbf66b5-n7hwx  1/1     Running             0          91s
apache-deployment-788fbf66b5-s8wtd  0/1     ContainerCreating   0          91s
apache-deployment-788fbf66b5-sh4v5  1/1     Running             0          91s
my-nginx-rs-dv6nz                   1/1     Running             0          28m
my-nginx-rs-k7lm7                   1/1     Running             0          28m
```

Step 4: Delete the Deployment

Delete the Deployment:

```
kubectl delete deployment my-deployment
```

```
Error from server (NotFound): deployments.apps "my-deployment" not found
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\exp10> kubectl delete deployment apache-deployment
deployment.apps "apache-deployment" deleted
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\exp10>
```

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.