Lab Exercise 9– Creating Replicaset in Kubernetes

Below is a lab exercise that will help you understand and practice creating a Replicaset in Kubernetes:

Step 1: Create a ReplicaSet Configuration File

Create a file named replicaset.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/replicaset.yaml

```
apiVersion: apps/v1
kind: ReplicaSet
metadata:
  name: my-nginx-rs
spec:
  replicas: 3
  selector:
    matchLabels:
      app: lbnginx
  template:
    metadata:
      labels:
        app: lbnginx
    spec:
      containers:
```

```
    - name: nginx

      image: nginx
```

```yaml
apiVersion: apps/v1
kind: ReplicaSet
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spec:
  replicas: 3
  selector:
    matchLabels:
      app: lbnginx
  template:
    metadata:
      labels:
        app: lbnginx
    spec:
      containers:
      - name: nginx
        image: nginx
```

Step 2: Apply the ReplicaSet Configuration

Apply the configuration to create the ReplicaSet:

```
kubectl apply -f replicaset.yaml
```

```
No resources found in default namespace.
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9> kubectl apply -f replicaset.yaml
replicaset.apps/my-nginx-rs created
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9>
```

Step 3: View the ReplicaSet and Pods

View the created ReplicaSet and the associated Pods:

```
kubectl get replicaset

kubectl get pods
```

```
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9> kubectl apply -f replicaset.yaml
replicaset.apps/my-nginx-rs created
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9> kubectl get replicaset
NAME          DESIRED   CURRENT   READY   AGE
my-nginx-rs   3         3         0       29s
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9> kubectl get pods
NAME                READY   STATUS              RESTARTS   AGE
my-nginx-rs-6hw84   0/1     ErrImagePull        0          32s
my-nginx-rs-7z7f8   0/1     ContainerCreating   0          32s
my-nginx-rs-qhhr6   0/1     ContainerCreating   0          32s
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9>
```

Step 4: Scale the ReplicaSet

Scale the ReplicaSet to 5 replicas:

```
kubectl scale replicaset my-nginx-rs --replicas=5
```

```
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9> kubectl scale replicaset my-nginx-rs --replicas=5
replicaset.apps/my-nginx-rs scaled
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9> kubectl get replicaset
NAME          DESIRED   CURRENT   READY   AGE
my-nginx-rs   5         5         3       62s
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9> kubectl get pods
NAME                READY   STATUS              RESTARTS   AGE
my-nginx-rs-482jh   0/1     ContainerCreating   0          8s
my-nginx-rs-6hw84   1/1     Running             0          65s
my-nginx-rs-7z7f8   1/1     Running             0          65s
my-nginx-rs-bjv7t   0/1     ContainerCreating   0          8s
my-nginx-rs-qhhr6   1/1     Running             0          65s
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9>
```

Step 5: Delete the ReplicaSet

Delete the ReplicaSet:

```
kubectl delete replicaset my-replicaset
```

```
Error from server (NotFound): replicasets.apps "my-replicaset" not found
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9> kubectl delete replicaset my-nginx-rs
replicaset.apps "my-nginx-rs" deleted
PS C:\Users\manya\OneDrive\Desktop\ACO\exp9>
```

Conclusion

This exercise demonstrated how to create, manage, and update a ReplicaSet in Kubernetes. You learned how to scale the ReplicaSet, update the image, and delete the ReplicaSet from the cluster. Experiment further with different configurations and scaling options to deepen your understanding of managing ReplicaSets in Kubernetes.