

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: (Copy 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

Step 2: Apply the ReplicaSet Configuration

Apply the configuration to create the ReplicaSet:

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

```
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> code .
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl apply -f .\replicaset.yaml
replicaset.apps/my-nginx-rs created
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl get pods
NAME                READY   STATUS            RESTARTS   AGE
my-nginx-rs-9tkx8   0/1     ContainerCreating  0           13s
my-nginx-rs-t7pcs   0/1     ContainerCreating  0           13s
my-nginx-rs-wblxp   0/1     ContainerCreating  0           13s
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\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\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl get pods
NAME                READY   STATUS            RESTARTS   AGE
my-nginx-rs-9tkx8   0/1     ContainerCreating  0           13s
my-nginx-rs-t7pcs   0/1     ContainerCreating  0           13s
my-nginx-rs-wblxp   0/1     ContainerCreating  0           13s
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl get replicasets
NAME                DESIRED   CURRENT   READY   AGE
my-nginx-rs         3         3         0       64s
```

Step 4: Scale the ReplicaSet

Scale the ReplicaSet to 5 replicas:

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

```
my-nginx-rs scaled
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl scale replicaset my-nginx-rs --replicas=5
replicaset.apps/my-nginx-rs scaled
```

Step 5: Delete the ReplicaSet

Delete the ReplicaSet:

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

```
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl delete replicaset my-nginx-rs
replicaset.apps "my-nginx-rs" deleted
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\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.

A new Alpine image was made with replicaset initially set to 6

```

apiVersion: apps/v1

kind: ReplicaSet

metadata:
  name: my-image

spec:
  replicas: 6

  selector:
    matchLabels:
      app: alpine

  template:
    metadata:
      labels:
        app: alpine

    spec:
      containers:
        - name: apline
          image: alpine

```

```

PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl apply -f .\replicaSet.yaml
replicaset.apps/my-image created
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9>

```

After which it gets scaled to 5 replica sets

```

PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl scale replicaset my-image --replicas=5
replicaset.apps/my-image scaled
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl get replicaset

```

NAME	DESIRED	CURRENT	READY	AGE
my-image	5	5	0	2m26s
my-nginx-rs	3	3	3	3m17s

To delete the replica set “my-image”

```
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> kubectl delete replicaset my-image
replicaset.apps "my-image" deleted
PS C:\Users\hp\Desktop\ACO-LAB-2021-25-SUBMISSION\R2142211343\Exp9> |
```