K8s_LAB02

1- How many Namespaces exist on the system?

Answer: 4 namespaces

```
Editor   Tab 1   +
controlplane $ kubectl get namespaces
NAME                 STATUS   AGE
default              Active   35d
kube-node-lease      Active   35d
kube-public          Active   35d
kube-system          Active   35d
controlplane $
```

2- How many pods exist in the kube-system namespace?

Answer: 11 pods

```
Editor   Tab 1   +
controlplane $ kubectl get pods -n kube-system
NAME                                       READY   STATUS    RESTARTS   AGE
calico-kube-controllers-5f94594857-zsh2v   1/1     Running   3          35d
canal-7rjhl                                2/2     Running   0          19m
canal-qdz7h                                2/2     Running   0          19m
coredns-68dc769db8-drf8h                   1/1     Running   0          35d
coredns-68dc769db8-sbbx7                   1/1     Running   0          35d
etcd-controlplane                          1/1     Running   0          35d
kube-apiserver-controlplane                1/1     Running   2          35d
kube-controller-manager-controlplane       1/1     Running   2          35d
kube-proxy-xnz4r                           1/1     Running   0          35d
kube-proxy-zbxrb                           1/1     Running   0          35d
kube-scheduler-controlplane                1/1     Running   2          35d
controlplane $
```

3- create a Deployment with name= deployment-1 image= busybox replicas= 3

```
Editor   Tab 1   +
controlplane $ touch deployment-1.yaml
controlplane $ vim deployment-1.yaml
controlplane $ kubectl apply -f deployment-1.yaml
deployment.apps/deployment-1 created
controlplane $ kubectl get deployment
NAME           READY   UP-TO-DATE   AVAILABLE   AGE
deployment-1   3/3     3            3           16s
controlplane $
```

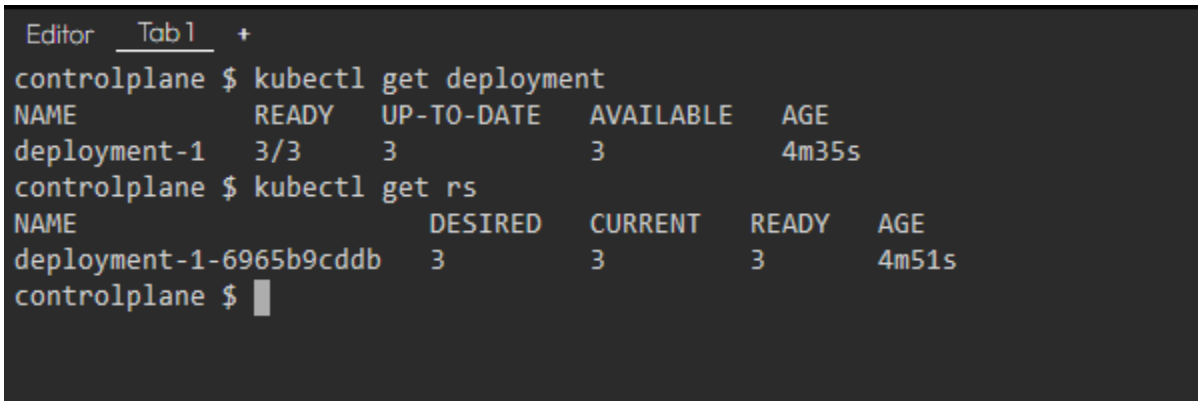
```
Editor   Tab 1   +
apiVersion: apps/v1
kind: Deployment
metadata:
  name: deployment-1
  labels:
    app: busybox
spec:
  replicas: 3
  selector:
    matchLabels:
      app: busybox
  template:
    metadata:
      labels:
        app: busybox
    spec:
      containers:
      - name: busybox
        image: busybox
        tty: true
~
~
~
```

4- How many Deployments and ReplicaSets exist on the system now?

Answer:

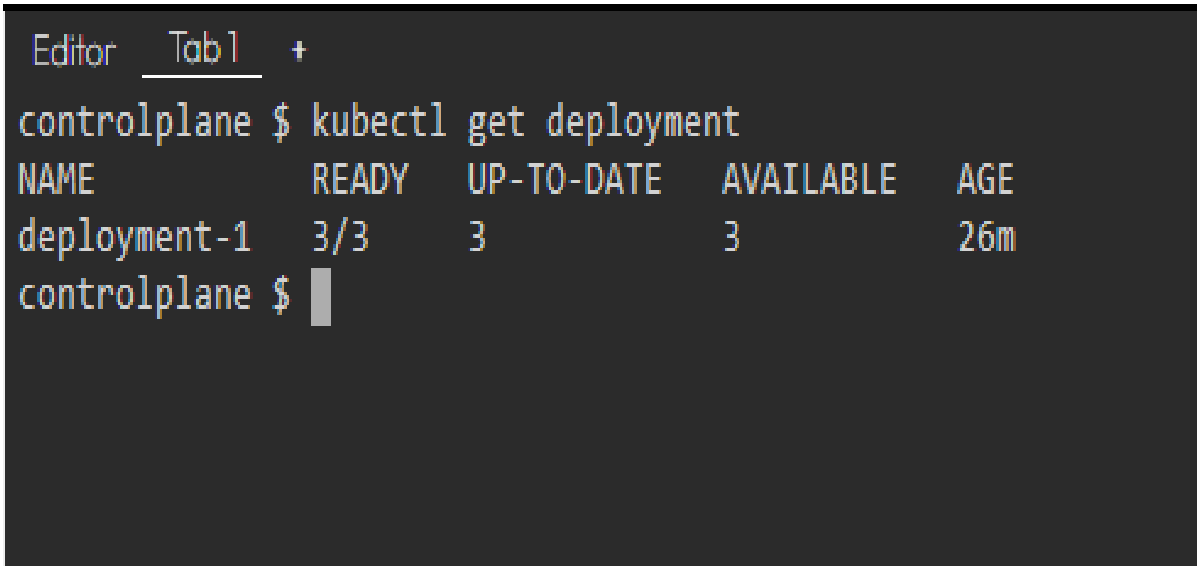
#Deployments: 1 deployment

#ReplicaSets: 1 deployment



5- How many pods are ready with the deployment-1?

Answer: 3 pods



6- Update deployment-1 image to nginx then check the ready pods again

```
controlplane $ kubectl set image deployment.v1.apps/deployment-1 busybox=nginx
deployment.apps/deployment-1 image updated
controlplane $ kubectl get deployment
NAME           READY   UP-TO-DATE   AVAILABLE   AGE
deployment-1   3/3     3            3           48m
controlplane $
```

Editor Tab 1 +

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: deployment-1
  labels:
    app: nginx
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx
        tty: true
~
~
~
```

7- Run kubectl describe deployment deployment-1 and check events What is the deployment strategy used to upgrade the deployment-1?

Answer: RollingUpdate.

```
Editor   Tab 1   +
controlplane $ kubectl describe deployment deployment-1
Name:                   deployment-1
Namespace:              default
CreationTimestamp:      Fri, 27 Jan 2023 02:51:03 +0000
Labels:                 app=busybox
Annotations:            deployment.kubernetes.io/revision: 1
Selector:               app=busybox
Replicas:               3 desired | 3 updated | 3 total | 3 available | 0 unavailable
StrategyType:           RollingUpdate
MinReadySeconds:        0
RollingUpdateStrategy:  25% max unavailable, 25% max surge
Pod Template:
  Labels:  app=busybox
  Containers:
   busybox:
    Image:        busybox
    Port:         <none>
    Host Port:    <none>
    Environment:  <none>
    Mounts:       <none>
  Volumes:        <none>
Conditions:
  Type           Status  Reason
  ----           ------  ------
  Available      True    MinimumReplicasAvailable
  Progressing    True    NewReplicaSetAvailable
OldReplicaSets:  <none>
NewReplicaSet:   deployment-1-6965b9cddb (3/3 replicas created)
Events:
```


8- Rollback the deployment-1 What is the used image with the deployment-1?

```
controlplane $ kubectl rollout undo deployment/deployment-1
deployment.apps/deployment-1 rolled back
controlplane $
```

```
Editor   Tab 1   +
controlplane $ kubectl get deployments -o wide
NAME           READY   UP-TO-DATE   AVAILABLE   AGE   CONTAINERS   IMAGES    SELECTOR
deployment-1   3/3     3            3           55m   busybox      busybox   app=busybox
controlplane $
```

10- Create a deployment with Name: dev-deploy Image: redis Replicas: 2 Namespace: dev Resources Requests: CPU: .5 vcpu Mem: 1G Resources Limits: CPU: 1 vcpu Mem: 2G

Editor Tab 1 +

50 min

```yaml
apiVersion: app/v1
kind: Deployment
metadata:
  name: dev-deploy
  labels:
    name: redis
spec:
  replicas: 2
  selector:
    matchLabels:
      app: redis
  template:
    metadata:
      namespace: dev
      labels:
        app: redis
    spec:
      containers:
      - name: redis
        image: redis
        resources:
          requests:
            cpu: "1"
            memory: "1Gi"
          limits:
            cpu: "5"
            memory: "2Gi"
```

Editor Tab 1 +

```yaml
apiVersion: v1
kind: Namespace
metadata:
   name: dev
   labels:
      name: dev
~
~
```

```
controlplane $ kubectl apply -f deployment.yaml
deployment.apps/dev-deploy created
controlplane $
```

```
controlplane $ kubectl apply -f namespace.yaml
namespace/dev created
controlplane $
```