LAB2

1- How many Namespaces exist on the system?

```
[maly@localhost K8S]$ kubectl get namespace
NAME              STATUS   AGE
default           Active   17d
kube-node-lease   Active   17d
kube-public       Active   17d
kube-system       Active   17d
[maly@localhost K8S]$
```

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

```
[maly@localhost K8S]$ kubectl get pod -n kube-system
NAME                               READY   STATUS    RESTARTS       AGE
coredns-565d847f94-lqhw8           1/1     Running   8 (40m ago)    17d
etcd-minikube                      1/1     Running   7 (40m ago)    17d
kube-apiserver-minikube            1/1     Running   12 (40m ago)   17d
kube-controller-manager-minikube   1/1     Running   11 (40m ago)   17d
kube-proxy-6bmjf                   1/1     Running   7 (40m ago)    17d
kube-scheduler-minikube            1/1     Running   7 (40m ago)    17d
storage-provisioner                1/1     Running   37 (37m ago)   17d
[maly@localhost K8S]$
```

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

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

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

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: deployment-1
  labels:
    app: lab2
spec:
  replicas: 3
  selector:
    matchLabels:
      app: lab2
  template:
    metadata:
      labels:
        app: lab2
    spec:
      containers:
      - name: busybox
        image: busybox
        tty: true
```

```
[maly@localhost K8S]$ kubectl apply -f labs.yaml
deployment.apps/deployment-1 created
[maly@localhost K8S]$ kubectl get rs
NAME                      DESIRED   CURRENT   READY   AGE
deployment-1-ccf6d9975    3         3         3       19s
[maly@localhost K8S]$ kubectl get deploy
NAME           READY   UP-TO-DATE   AVAILABLE   AGE
deployment-1   3/3     3            3           25s
[maly@localhost K8S]$ kubectl get pod
NAME                            READY   STATUS    RESTARTS      AGE
deployment-1-ccf6d9975-7pmgk    1/1     Running   0             31s
deployment-1-ccf6d9975-kzdsp    1/1     Running   0             31s
deployment-1-ccf6d9975-pl6r5    1/1     Running   0             31s
webserver                       1/1     Running   2 (57m ago)   18h
[maly@localhost K8S]$
```

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

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: deployment-1
  labels:
    app: lab2
spec:
  replicas: 3
  selector:
    matchLabels:
      app: lab2
  template:
    metadata:
      labels:
        app: lab2
    spec:
      containers:
      - name: nginx
        image: nginx
```

```
[maly@localhost K8S]$ kubectl apply -f labs.yaml
deployment.apps/deployment-1 configured
[maly@localhost K8S]$ kubectl get rs
NAME                      DESIRED   CURRENT   READY   AGE
deployment-1-7477d44b86   1         1         0       6s
deployment-1-ccf6d9975    3         3         3       5m53s
[maly@localhost K8S]$ kubectl get rs
NAME                      DESIRED   CURRENT   READY   AGE
deployment-1-7477d44b86   3         3         3       22s
deployment-1-ccf6d9975    0         0         0       6m9s
[maly@localhost K8S]$ kubectl get rs
NAME                      DESIRED   CURRENT   READY   AGE
deployment-1-7477d44b86   3         3         3       31s
deployment-1-ccf6d9975    0         0         0       6m18s
[maly@localhost K8S]$ kubectl get deploy
NAME           READY   UP-TO-DATE   AVAILABLE   AGE
deployment-1   3/3     3            3           6m22s
[maly@localhost K8S]$ kubectl get pod
NAME                            READY   STATUS        RESTARTS      AGE
deployment-1-7477d44b86-6r4m9   1/1     Running       0             36s
deployment-1-7477d44b86-gsn7n   1/1     Running       0             29s
deployment-1-7477d44b86-rdcth   1/1     Running       0             46s
```

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

```
[maly@localhost K8S]$ kubectl describe deployment deployment-1
Name:                   deployment-1
Namespace:              default
CreationTimestamp:      Fri, 03 Feb 2023 21:15:40 +0200
Labels:                 app=lab2
Annotations:            deployment.kubernetes.io/revision: 2
Selector:               app=lab2
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=lab2
  Containers:
   nginx:
    Image:        nginx
```

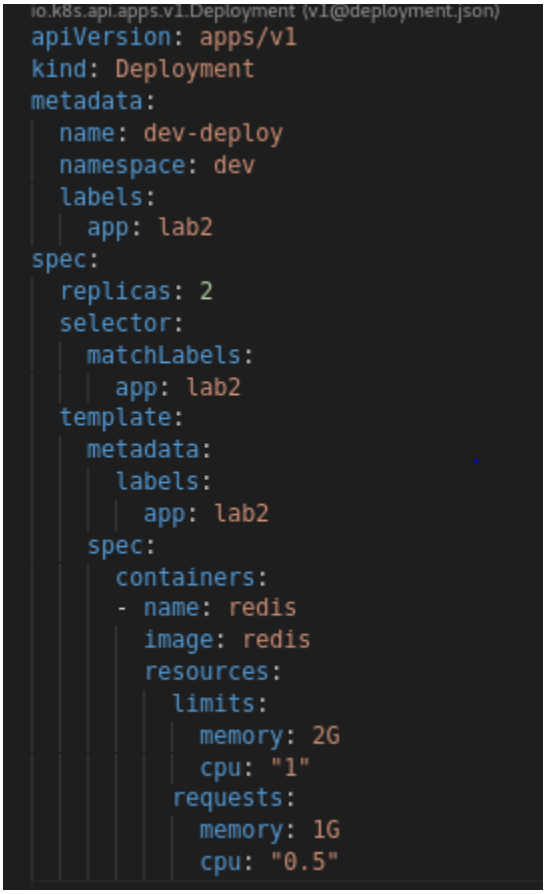
```
Conditions:
  Type           Status  Reason
  ----           ------  ------
  Available      True    MinimumReplicasAvailable
  Progressing    True    NewReplicaSetAvailable
OldReplicaSets:  <none>
NewReplicaSet:   deployment-1-7477d44b86 (3/3 replicas created)
Events:
  Type    Reason             Age    From                   Message
  ----    ------             ----   ----                   -------
  Normal  ScalingReplicaSet  10m    deployment-controller  Scaled up replica set deployme
nt-1-ccf6d9975 to 3
  Normal  ScalingReplicaSet  4m29s  deployment-controller  Scaled up replica set deployme
nt-1-7477d44b86 to 1
  Normal  ScalingReplicaSet  4m20s  deployment-controller  Scaled down replica set deploy
ment-1-ccf6d9975 to 2 from 3
  Normal  ScalingReplicaSet  4m19s  deployment-controller  Scaled up replica set deployme
nt-1-7477d44b86 to 2 from 1
  Normal  ScalingReplicaSet  4m12s  deployment-controller  Scaled down replica set deploy
ment-1-ccf6d9975 to 1 from 2
  Normal  ScalingReplicaSet  4m12s  deployment-controller  Scaled up replica set deployme
nt-1-7477d44b86 to 3 from 2
```

8- Rollback the deployment-1

9-What is the used image with the deployment-1?

```
[maly@localhost K8S]$ kubectl rollout undo  deployment/deployment-1
deployment.apps/deployment-1 rolled back
[maly@localhost K8S]$ kubectl describe deployment deployment-1
Name:                   deployment-1
Namespace:              default
CreationTimestamp:      Fri, 03 Feb 2023 21:15:40 +0200
Labels:                 app=lab2
Annotations:            deployment.kubernetes.io/revision: 3
Selector:               app=lab2
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=lab2
  Containers:
   busybox:
    Image:        busybox
```

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



```
[maly@localhost K8S]$ kubectl create ns dev
namespace/dev created
[maly@localhost K8S]$ kubectl get ns
NAME              STATUS   AGE
default           Active   17d
dev               Active   3s
kube-node-lease   Active   17d
kube-public       Active   17d
kube-system       Active   17d
[maly@localhost K8S]$ kubectl apply -f labs.yaml
deployment.apps/dev-deploy created
[maly@localhost K8S]$ kubectl get rs
No resources found in default namespace.
[maly@localhost K8S]$ kubectl get rs -n dev
NAME                    DESIRED   CURRENT   READY   AGE
dev-deploy-6866744ff7   2         2         2       20s
[maly@localhost K8S]$ kubectl get deploy -n dev
NAME         READY   UP-TO-DATE   AVAILABLE   AGE
dev-deploy   2/2     2            2           40s
```

```
[maly@localhost K8S]$ kubectl get pod -n dev
NAME                          READY   STATUS    RESTARTS   AGE
dev-deploy-6866744ff7-566lg   1/1     Running   0          74s
dev-deploy-6866744ff7-zg4tq   1/1     Running   0          74s
```

```
    Container ID:   docker://4f15d71bea8abb9185d75fbf2
3f75
    Image:          redis
    Image ID:       docker-pullable://redis@sha256:579
327243dec4da93e507af90c5a2
    Port:           <none>
    Host Port:      <none>
    State:          Running
      Started:      Fri, 03 Feb 2023 23:18:32 +0200
    Ready:          True
    Restart Count:  0
    Limits:
      cpu:     1
      memory:  2G
    Requests:
      cpu:        500m
      memory:     1G
    Environment:  <none>
```