

### 1- System default namespaces:

By default there is 4 namespaces on minikube

- default
- kube-node-lease
- kube-public
- kube-system

```
controlplane $ kubectl get ns
NAME                STATUS   AGE
default              Active   9d
kube-node-lease      Active   9d
kube-public          Active   9d
kube-system          Active   9d
```

### 2- there are 13 pods on kube-system

```
controlplane $ kubectl get po -n kube-system
NAME                                                    READY   STATUS    RESTARTS   AGE
calico-kube-controllers-5f94594857-5n2vd              1/1     Running   2           9d
canal-cqzn6                                             2/2     Running   0           18m
canal-qnbfl                                             2/2     Running   0           18m
coredns-68dc769db8-56kh8                              1/1     Running   0           9d
coredns-68dc769db8-ppqqg                              1/1     Running   0           9d
etcd-controlplane                                     1/1     Running   0           9d
kube-apiserver-controlplane                            1/1     Running   2           9d
kube-controller-manager-controlplane                  1/1     Running   2           9d
kube-proxy-7bh6f                                       1/1     Running   0           9d
kube-proxy-pml4f                                       1/1     Running   0           9d
kube-scheduler-controlplane                           1/1     Running   3 (4m56s ago) 9d
```

### 3- Deployment creation

```
controlplane $ vim dep-1.yml
controlplane $ kubectl create -f dep-1.yml
deployment.apps/deployment-1 created
controlplane $ kubectl describe deployments.apps deployment-1
Name: deployment-1
Namespace: default
CreationTimestamp: Sun, 05 Feb 2023 12:30:25 +0000
Labels: <none>
Annotations: deployment.kubernetes.io/revision: 1
Selector: app=frontend
Replicas: 3 desired | 3 updated | 3 total | 0 available | 3 unavailable
StrategyType: RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
  Labels: app=frontend
  Containers:
    busybox:
      Image: busybox
```

- 4- the system has 1 deployment and 1 replica set

```
controlplane $ kubectl get all
```

NAME	READY	STATUS	RESTARTS	AGE
pod/deployment-1-fd95d797-6djgg	0/1	CrashLoopBackOff	4 (65s ago)	2m32s
pod/deployment-1-fd95d797-pdngc	0/1	CrashLoopBackOff	4 (59s ago)	2m32s
pod/deployment-1-fd95d797-qr8vd	0/1	CrashLoopBackOff	4 (55s ago)	2m32s

  

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	9d

  

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/deployment-1	0/3	3	0	2m32s

  

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/deployment-1-fd95d797	3	3	0	2m32s

- 5- The system has zero ready pods

- 6- After changing dep image

```
controlplane $ kubectl set image deployment/deployment-1 busybox=nginx
deployment.apps/deployment-1 image updated
```

```
controlplane $ kubectl get pods
```

NAME	READY	STATUS	RESTARTS	AGE
deployment-1-79768ccffc-2t55j	1/1	Running	0	4s
deployment-1-79768ccffc-gdpf7	1/1	Running	0	12s
deployment-1-79768ccffc-w5xdz	1/1	Running	0	11s

- 7- The deployment strategy is RollingUpdate

- 8- The used image after the rollback is busybox

```
controlplane $ kubectl rollout undo deployment deployment-1
deployment.apps/deployment-1 rolled back
controlplane $ kubectl get deployments.apps deployment-1 -o wide
```

NAME	READY	UP-TO-DATE	AVAILABLE	AGE	CONTAINERS	IMAGES	SELECTOR
deployment-1	3/3	1	3	6m44s	busybox	busybox	app=frontend

```
controlplane $
```

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```
controlplane $ kubectl create namespace dev
namespace/dev created
```

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

```
controlplane $ kubectl create -f dev-dep.yml
deployment.apps/dev-deploy created
```