

1- How many namespaces exist on the system?

```
[mohamed@Azzam kubernetes]$ kubectl get ns
NAME                STATUS    AGE
default              Active    28h
kube-node-lease      Active    28h
kube-public           Active    28h
kube-system           Active    28h
sprints-quota         Active    5h1m
[mohamed@Azzam kubernetes]$
```

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

```
[mohamed@Azzam kubernetes]$ kubectl get po --namespace=kube-system
NAME                                READY    STATUS    RESTARTS    AGE
coredns-565d847f94-9vqtm            1/1     Running   0            28h
etcd-minikube                       1/1     Running   0            28h
kube-apiserver-minikube             1/1     Running   0            28h
kube-controller-manager-minikube    1/1     Running   0            28h
kube-proxy-xkfbc                    1/1     Running   0            28h
kube-scheduler-minikube             1/1     Running   0            28h
storage-provisioner                 1/1     Running   1 (6h12m ago) 28h
[mohamed@Azzam kubernetes]$
```

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

```
File Edit View Search Term
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-1
        image: busybox
        tty: true
```

```
[mohamed@Azzam kubernetes]$ vim deployment.yaml
[mohamed@Azzam kubernetes]$ vim deployment-1.yaml
[mohamed@Azzam kubernetes]$ kubectl apply -f deployment-1.yaml
deployment.apps/deployment-1 created
[mohamed@Azzam kubernetes]$
```

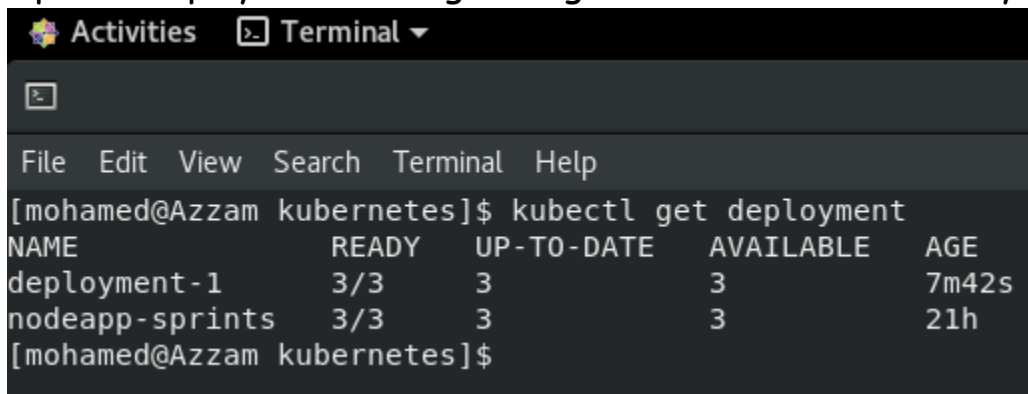
4- How many Deployments and ReplicaSets exist on the system now?

```
[mohamed@Azzam kubernetes]$ kubectl get deployment
NAME                READY    UP-TO-DATE    AVAILABLE    AGE
deployment-1        3/3      3              3             87s
nodeapp-sprints     3/3      3              3            21h
[mohamed@Azzam kubernetes]$
```

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

```
[mohamed@Azzam kubernetes]$ kubectl get pods --show-labels
NAME                                READY   STATUS    RESTARTS   AGE   LABELS
deployment-1-56cfc67856-bbhd4       1/1     Running   0           2m35s   app=busybox,pod-template-hash=56cfc67856
deployment-1-56cfc67856-h5xll       1/1     Running   0           2m35s   app=busybox,pod-template-hash=56cfc67856
deployment-1-56cfc67856-hdbph       1/1     Running   0           2m35s   app=busybox,pod-template-hash=56cfc67856
frontend-4crh8                      1/1     Running   0           27h     tier=frontend
frontend-6r5mn                      1/1     Running   0           27h     tier=frontend
frontend-dqbrs                      1/1     Running   0           27h     tier=frontend
frontend-h9ss7                      1/1     Running   0           27h     tier=frontend
frontend-zhjcg                      1/1     Running   0           27h     tier=frontend
nodeapp-sprints-76db686699-2bqsl    1/1     Running   0           8h      app=nodeapp,pod-template-hash=76db686699
nodeapp-sprints-76db686699-dppk2    1/1     Running   0           8h      app=nodeapp,pod-template-hash=76db686699
nodeapp-sprints-76db686699-hp7cx    1/1     Running   0           21h     app=nodeapp,pod-template-hash=76db686699
webserver                           1/1     Running   0           28h     <none>
[mohamed@Azzam kubernetes]$
```

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



A terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help). The command `kubectl get deployment` has been executed, showing the status of two deployments: `deployment-1` and `nodeapp-sprints`. Both are at version 3 and are available.

```
File Edit View Search Terminal Help
[mohamed@Azzam kubernetes]$ kubectl get deployment
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
deployment-1        3/3     3             3           7m42s
nodeapp-sprints     3/3     3             3           21h
[mohamed@Azzam kubernetes]$
```

```
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-1
        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?

```
mohamed@Azzam:~/kubern
File Edit View Search Terminal Help
[mohamed@Azzam kubernetes]$ kubectl describe deployment deployment-1
Name: deployment-1
Namespace: default
CreationTimestamp: Wed, 01 Feb 2023 18:34:35 +0200
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
```

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

```
name: dev-deployment
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:
            memory: "1Gi"
            cpu: "1"
          limits:
            memory: "2Gi"
            cpu: "5"
```