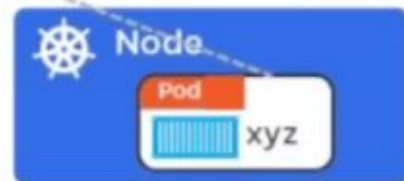
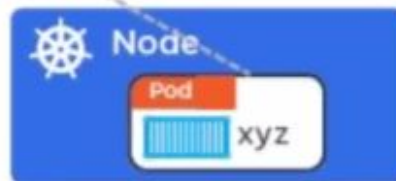
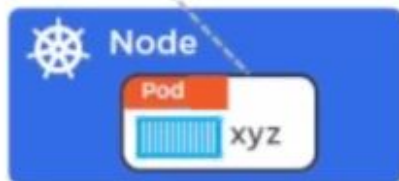
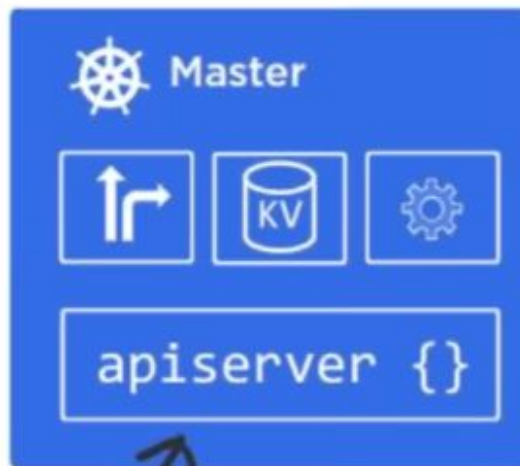
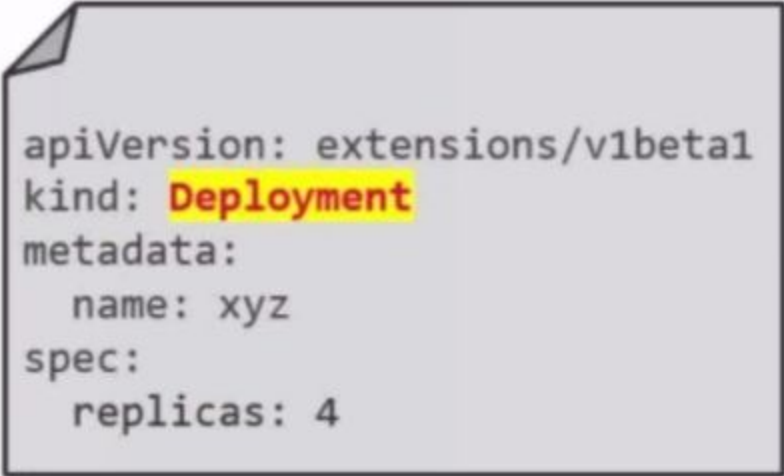


Deployments

```
apiVersion: v1
kind: ReplicationController
metadata:
  name: xyz
spec:
  replicas: 4
```



Deployments are all about declarations



```
apiVersion: extensions/v1beta1
kind: Deployment
metadata:
  name: xyz
spec:
  replicas: 4
```



Kubernetes Deployments

The Theory

Updates &
Rollbacks

Deployment

Updates and rollbacks...

Replication Controller

Scalability, reliability, desired state...

Pod



more
pods

.....



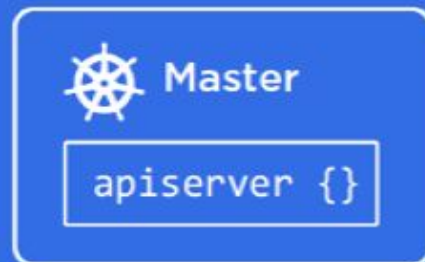
- **The theory of Deployments**
- **Create a new Deployment**
- **Update a Deployment**
 - Rolling update and a rollback
- **Recap**

Kubernetes Deployments

The Theory

Updates &
Rollbacks

```
apiVersion:  
extensions/v1beta1  
kind: Deployment  
metadata:  
  name: hello-deploy  
spec:  
  replicas: 10  
  ...
```



Deployed
to cluster

Replica Set

(Revision 1)

Pod

Pod

Pod



Kubernetes Deployments

The Theory

Updates &
Rollbacks

```
apiVersion:  
  extensions/v1beta1  
kind: Deployment  
metadata:  
  name: hello-deploy  
spec:  
  replicas: 10  
  ...
```



Deployed
to cluster

Replica Set

(Revision 1)

Pod



Pod



Pod



Replica Set

(Revision 2)

Pod



Pod



Pod



CREATING DEPLOYMENT

Create `deploy.yml` with following content

```
apiVersion: extensions/v1beta1
```

```
kind: Deployment
```

```
metadata:
```

```
  name: jenkins-deploy
```

```
spec:
```

```
  replicas: 2
```

```
  minReadySeconds: 2
```

```
  strategy:
```

```
    type: RollingUpdate
```

```
    rollingUpdate:
```

```
      maxUnavailable: 1
```

```
      maxSurge: 1
```

```
  template:
```

```
    metadata:
```

```
    labels:
```

```
    app: jenkins
```

CREATING DEPLOYMENT

```
kubectl create -f deploy.yml
```

```
kubectl describe deploy myjavaapp-deploy
```

```
kubectl get rs
```

```
kubectl describe rs
```

```
kubectl get deploy
```

```
kubectl delete deploy/myjavaapp-deploy
```

```
kubectl delete rs/myjavaapp-deploy-6858bf488c
```

ROLLING UPDATE TO THE DEPLOYMENT

```
kubectl apply -f deploy.yml --record
```

```
kubectl rollout status deployments myjavaapp-deploy
```

```
kubectl get deploy myjavaapp-deploy
```

```
kubectl rollout history deployments myjavaapp-deploy
```

```
kubectl get rs
```

UNDO ROLLED back

```
kubectl describe deploy myjavaapp-deploy
```

```
kubectl rollout undo deployment myjavaapp-deploy --to-revision=1
```

```
kubectl get deploy
```

```
kubectl rollout status deployments myjavaapp-deploy
```

```
kubectl rollout history deployments myapp-deploy
```

For Updating:

```
kubectl --record deployment.apps/myjavaapp-deploy set image  
deployment.v1.apps/myjavaapp-deploy  
myjavaapp-container=maha4iac/myonlineapp25oct21:2
```

```
kubectl rollout status deployments myjavaapp-deploy
```

```
kubectl rollout history deployments myjavaapp-deploy
```

Rolling Back a Deployment:

```
kubectl set image deployment.v1.apps/myjavaapp-deploy  
myjavaapp-container=maha4iac/myonlinebooking:2 --record=true
```

```
kubectl rollout undo deployment myjavaapp-deploy --to-revision=1
```

```
kubectl rollout status deployments myjavaapp-deploy
```

```
kubectl rollout history deployments myapp-deploy
```

Scaling a Deployment

```
kubectl scale deployment.v1.apps/myapp-deploy --replicas=3
```

Pausing and Resuming a Deployment

```
kubectl rollout pause deployment.v1.apps/myjavaapp-deploy
```

```
kubectl set resources deployment.v1.apps/myjavaapp-deploy  
-c=myjavaapp-container --limits=cpu=200m,memory=512Mi
```

```
kubectl rollout resume deployment.v1.apps/myjavaapp-deploy
```


horizontal Pod autoscaling:

```
kubectl autoscale deployment.v1.apps/myapp-deploy --min=2 --max=8  
--cpu-percent=10
```

```
kubectl autoscale deployment myjavaapp-deploy --cpu-percent=10 --min=1  
--max=10
```

```
kubectl get hpa
```

```
kubectl describe hpa
```

```
kubectl run -i --tty load-generator --image=busybox /bin/sh
```

```
while true: do wget -q -o http://myjavaapp-deploy.default.svc.cluster.local:  
done
```

```
kubectl delete hpa/myjavaapp-deploy
```