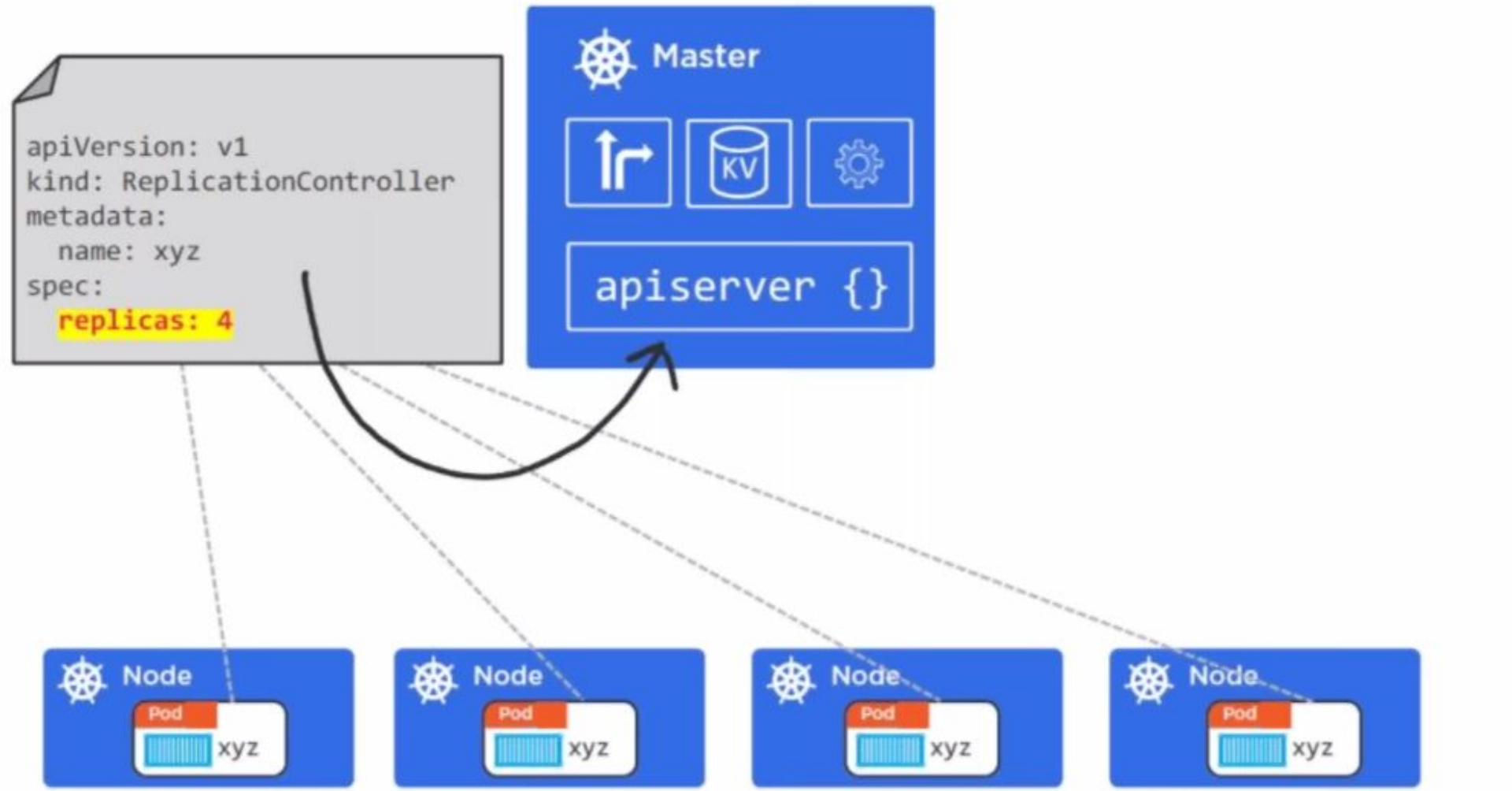
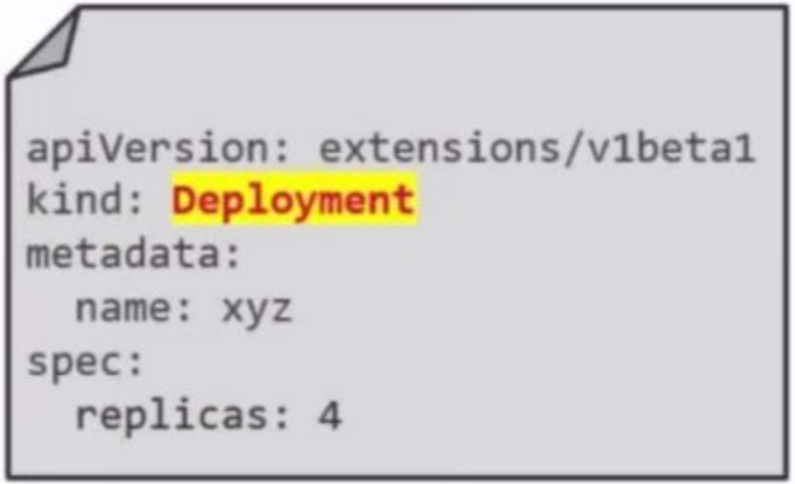
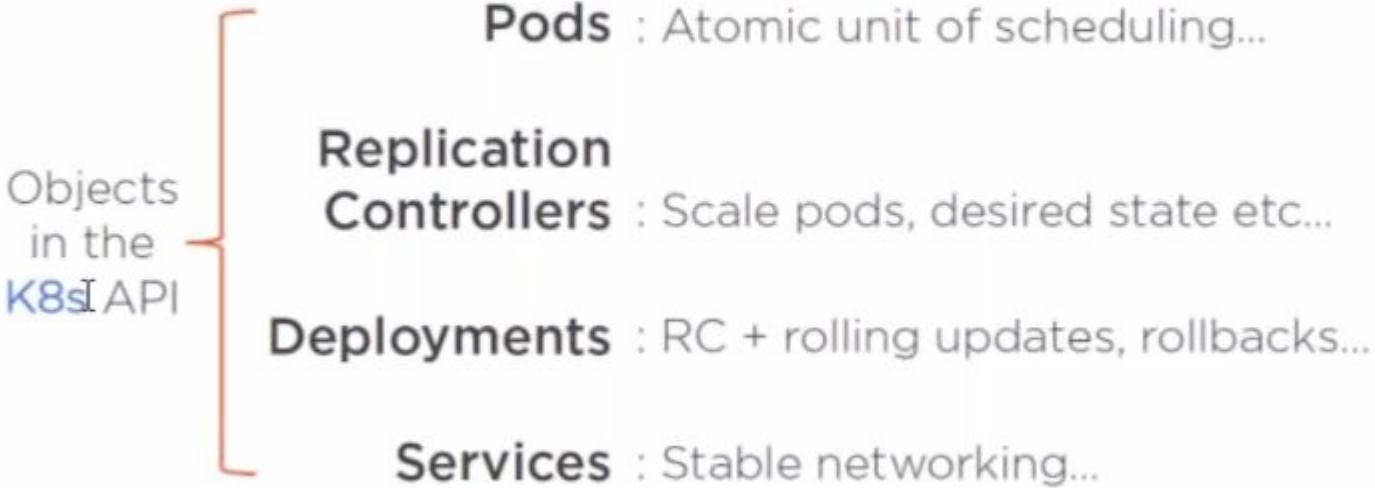
Deployments

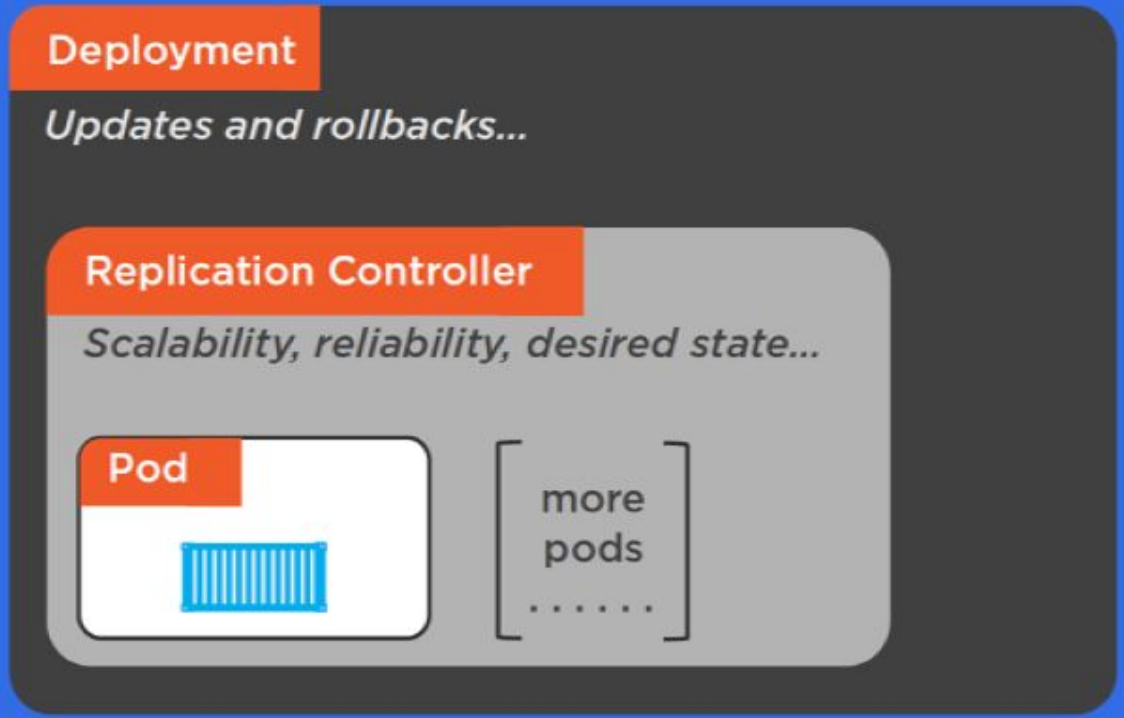

apiVersion: v1
kind: ReplicationController
metadata:
name: xyz
spec:
replicas: 4
Master
KV
apiserver {}
Node
Pod
xyz
Node
Pod
xyz
Node
Pod
xyz
Node
Pod
xyz

Deployments are all about declarations




Objects in the K8s API
Pods : Atomic unit of scheduling...
Replication Controllers : Scale pods, desired state etc...
Deployments : RC + rolling updates, rollbacks...
Services : Stable networking...

Kubernetes Deployments
The Theory



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

Kubernetes Deployments

The Theory

Updates & Rollbacks

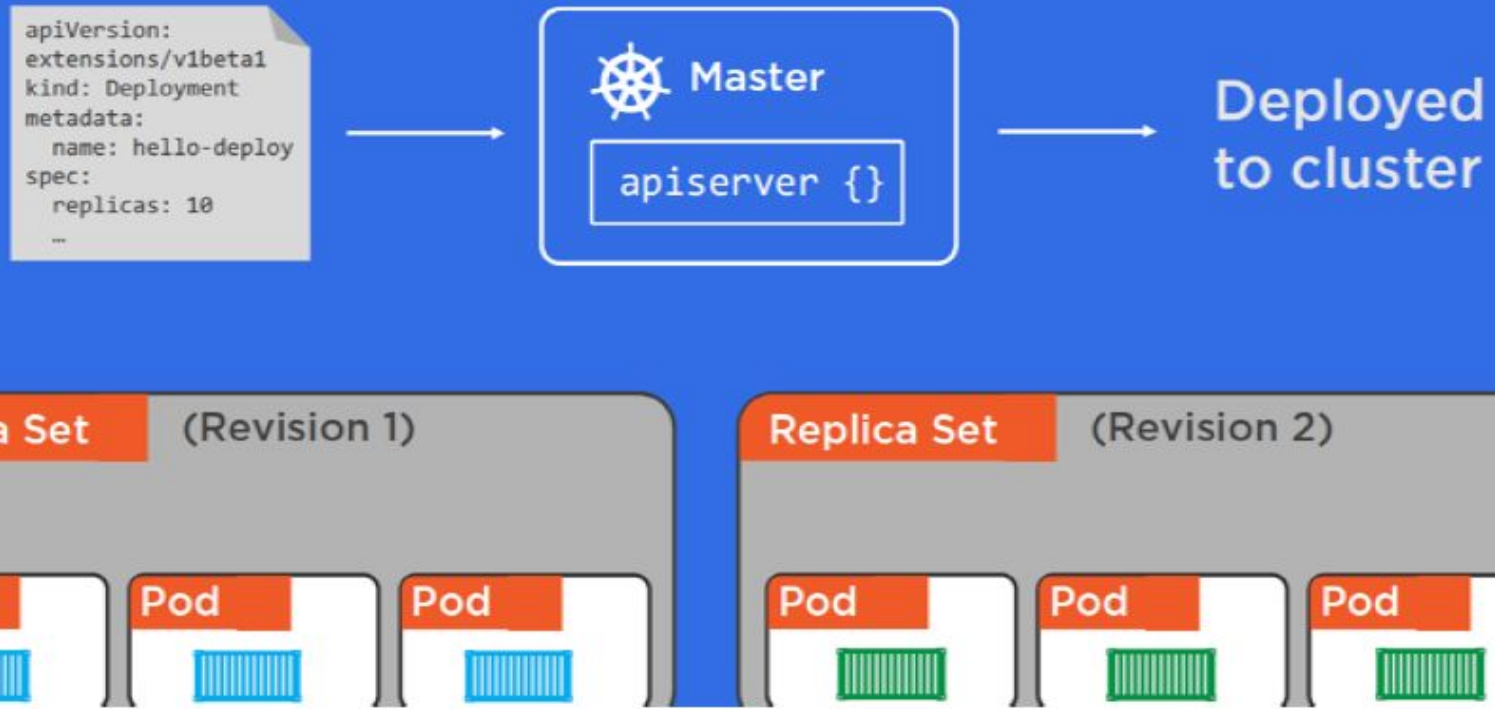
```
apiVersion:
extensions/v1beta1
kind: Deployment
metadata:
  name: hello-deploy
spec:
  replicas: 10
  …
```

Deployed to cluster

Kubernetes Deployments

The Theory

Updates & Rollbacks



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:
```

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 myjavaapp-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