# Deployment Scaling

1. Scale your deployment to zeros replicas and back imperatively?

🤔 What is use-case for scaling down to zero and back?

1. Scale your deployment declaratively.
2. Scale current ReplicaSet of your Deployment to any number.

🤔 What’s happened? Why?

## Solution

1. Scale your deployment to zeros replicas and back imperatively?

$ kubectl scale deployment nginx-deployment --replicas=0  
deployment.apps/nginx-deployment scaled  
  
$ kubectl scale deployment nginx-deployment --replicas=10  
deployment.apps/nginx-deployment scaled

🤔 What is use-case for scaling down to zero and back?

You remove workloads while keeping their controller:

* it keeps history of changes, you can rollback any revision
* you can restart pods again (e.g. if image was updated but has the same name)

1. Scale your deployment declaratively.

apiVersion: apps/v1  
 kind: Deployment  
 metadata:  
 name: nginx-deployment  
 annotations:  
 kubernetes.io/change-cause: image updated to 1.19.6  
 spec:  
 minReadySeconds: 2  
- replicas: 10  
+ replicas: 0  
 strategy:  
 rollingUpdate:  
 maxSurge: 20%  
 maxUnavailable: 20%  
 selector:  
 matchLabels:  
 app: nginx  
 template:  
 metadata:  
 labels:  
 app: nginx  
 spec:  
 containers:  
 - name: nginx  
 image: nginx:1.19.6  
 imagePullPolicy: IfNotPresent  
 ports:  
 - containerPort: 80

$ kubectl apply -f deploy/nginx-deploy.yaml  
deployment.apps/nginx-deployment configured

It requires more actions to do than imperative technique.

1. Scale current ReplicaSet of your Deployment to any number.

🤔 What’s happened? Why?

Get information about current ReplicaSets:

$ kubectl get rs  
NAME DESIRED CURRENT READY AGE  
nginx-deployment-559d658b74 0 0 0 23m  
nginx-deployment-66b6c48dd5 0 0 0 23m  
nginx-deployment-67dfd6c8f9 0 0 0 22m  
nginx-deployment-76ccf9dd9d 10 10 10 22m

Scale the active ReplicaSet:

$ kubectl scale rs nginx-deployment-76ccf9dd9d --replicas=5  
replicaset.apps/nginx-deployment-76ccf9dd9d scaled  
  
$ kubectl get rs  
NAME DESIRED CURRENT READY AGE  
nginx-deployment-559d658b74 0 0 0 23m  
nginx-deployment-66b6c48dd5 0 0 0 24m  
nginx-deployment-67dfd6c8f9 0 0 0 23m  
nginx-deployment-76ccf9dd9d 10 10 5 23m

Deployment scale the ReplicaSet back to 10. After a little delay, there are all 10 pods are running:

$ kubectl get rs  
NAME DESIRED CURRENT READY AGE  
nginx-deployment-559d658b74 0 0 0 23m  
nginx-deployment-66b6c48dd5 0 0 0 24m  
nginx-deployment-67dfd6c8f9 0 0 0 23m  
nginx-deployment-76ccf9dd9d 10 10 10 23m