

Rolling Strategy

```
[root@k8s-master day3]# kubectl get deployments.apps
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
nginx-mydeploy 4/4      4             4           5m7s
[root@k8s-master day3]# kubectl get rs
NAME          DESIRED   CURRENT   READY   AGE
nginx-mydeploy-75577696bd 4         4         4       5m9s
[root@k8s-master day3]# kubectl get pods --show-labels
NAME          READY   STATUS    RESTARTS   AGE   LABELS
nginx          1/1     Running   0          150m   app=nginx,location=in,tier=frontend
nginx-mydeploy-75577696bd-2fws 1/1     Running   0          5m16s   pod-template-hash=75577696bd,run=mynginx
nginx-mydeploy-75577696bd-4c7sf 1/1     Running   0          5m16s   pod-template-hash=75577696bd,run=mynginx
nginx-mydeploy-75577696bd-jbx2z 1/1     Running   0          5m16s   pod-template-hash=75577696bd,run=mynginx
nginx-mydeploy-75577696bd-tc5nq 1/1     Running   0          5m16s   pod-template-hash=75577696bd,run=mynginx
nginx-prod     1/1     Running   0          163m   app=nginx,environment=production
nginx-qa       1/1     Running   0          163m   app=nginx,environment=qa

[root@k8s-master day3]# kubectl describe deployments.apps nginx-mydeploy
Name:          nginx-mydeploy
Namespace:     default
CreationTimestamp: Wed, 06 Jan 2021 10:28:42 -0500
Labels:        run=mynginx
Annotations:    deployment.kubernetes.io/revision: 1
Selector:      run=mynginx
Replicas:      4 desired | 4 updated | 4 total | 4 available | 0 unavailable
StrategyType:  RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
  Labels:  run=mynginx
  Containers:
    nginx:
      Image:      nginx
      Port:       <none>
      Host Port:  <none>
      Environment: <none>
      Mounts:      <none>
      Volumes:     <none>
  Conditions:
    Type           Status  Reason
    ----           -
    Available       True    MinimumReplicasAvailable
    Progressing     True    NewReplicaSetAvailable
OldReplicaSets: <none>
NewReplicaSet:  nginx-mydeploy-75577696bd (4/4 replicas created)
Events:
  Type           Reason          Age    From          Message
  ----           -
  Normal         ScalingReplicaSet 6m9s   deployment-controller Scaled up replica set nginx-mydeploy-75577696bd to 4
[root@k8s-master day3]#
```

- Updated code/image deployment

```
[root@k8s-master day3]# kubectl get deployments.apps
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
nginx-mydeploy 4/4      4             4           10m
[root@k8s-master day3]# kubectl set image deployment/nginx-mydeploy nginx=nginx:1.16.1 --record
deployment.apps/nginx-mydeploy image updated
[root@k8s-master day3]# kubectl rollout status deployment/nginx-mydeploy
Waiting for deployment "nginx-mydeploy" rollout to finish: 2 out of 4 new replicas have been updated...
Waiting for deployment "nginx-mydeploy" rollout to finish: 2 out of 4 new replicas have been updated...
Waiting for deployment "nginx-mydeploy" rollout to finish: 2 out of 4 new replicas have been updated...
Waiting for deployment "nginx-mydeploy" rollout to finish: 2 out of 4 new replicas have been updated...
Waiting for deployment "nginx-mydeploy" rollout to finish: 3 out of 4 new replicas have been updated...
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Waiting for deployment "nginx-mydeploy" rollout to finish: 3 out of 4 new replicas have been updated...
Waiting for deployment "nginx-mydeploy" rollout to finish: 3 out of 4 new replicas have been updated...
Waiting for deployment "nginx-mydeploy" rollout to finish: 1 old replicas are pending termination...
Waiting for deployment "nginx-mydeploy" rollout to finish: 1 old replicas are pending termination...
Waiting for deployment "nginx-mydeploy" rollout to finish: 3 of 4 updated replicas are available...
deployment "nginx-mydeploy" successfully rolled out
[root@k8s-master day3]#
```

- Deployment created new pods with new image/code

```
[root@k8s-master day3]# kubectl get pods --show-labels
NAME          READY   STATUS    RESTARTS   AGE   LABELS
nginx          1/1     Running   0           158m   app=nginx,location=in,tier=frontend
nginx-mydeploy-6b4bc7c9df-2flgw  1/1     Running   0           98s    pod-template-hash=6b4bc7c9df,run=mynginx
nginx-mydeploy-6b4bc7c9df-bgg9q  1/1     Running   0          104s    pod-template-hash=6b4bc7c9df,run=mynginx
nginx-mydeploy-6b4bc7c9df-npl42  1/1     Running   0          2m10s   pod-template-hash=6b4bc7c9df,run=mynginx
nginx-mydeploy-6b4bc7c9df-r8pt4  1/1     Running   0          2m10s   pod-template-hash=6b4bc7c9df,run=mynginx
nginx-prod     1/1     Running   0          170m   app=nginx,environment=production
nginx-qa       1/1     Running   0          170m   app=nginx,environment=qa

[root@k8s-master day3]#

[root@k8s-master day3]# kubectl describe pod nginx-mydeploy-6b4bc7c9df-2flgw
Name:          nginx-mydeploy-6b4bc7c9df-2flgw
Namespace:     default
Priority:       0
Node:          worker3/192.168.1.64
Start Time:    Wed, 06 Jan 2021 10:37:00 -0500
Labels:        pod-template-hash=6b4bc7c9df
               run=mynginx
Annotations:    <none>
Status:        Running
IP:            192.168.3.89
IPs:
  IP:          192.168.3.89
Controlled By: ReplicaSet/nginx-mydeploy-6b4bc7c9df
Containers:
  nginx:
    Container ID:  docker://7706855fb2a0d301d39df1ed56cc61f4b497eb5fc39d1b60e6e5d96acaf32477
    Image:         nginx:1.16.1
    Image ID:      docker-pullable://nginx@sha256:d20aa6d1cae56fd17cd458f4807e0de462caf2336f0b70b5eeb69fcaaf30dd9c
    Port:          <none>
```

Recreate Strategy

```
[root@k8s-master day3]# kubectl get pods -w
NAME          READY   STATUS    RESTARTS   AGE
nginx          1/1     Running   0           171m
nginx-mydeploy-6b4bc7c9df-2flgw  0/1     Terminating   0           15m
nginx-mydeploy-6b4bc7c9df-bgg9q  0/1     Terminating   0           15m
nginx-mydeploy-6b4bc7c9df-npl42  0/1     Terminating   0           15m
nginx-mydeploy-6b4bc7c9df-r8pt4  0/1     Terminating   0           15m
nginx-prod     1/1     Running   0          3h4m
nginx-qa       1/1     Running   0          3h4m
nginx-mydeploy-6b4bc7c9df-bgg9q  0/1     Terminating   0           15m
nginx-mydeploy-6b4bc7c9df-bgg9q  0/1     Terminating   0           15m
nginx-mydeploy-6b4bc7c9df-2flgw  0/1     Terminating   0           15m
nginx-mydeploy-6b4bc7c9df-2flgw  0/1     Terminating   0           15m
[root@k8s-master day3]# kubectl get pods -w
[root@k8s-master day3]#
[root@k8s-master day3]# kubectl set image deployment/nginx-mydeploy nginx=nginx:1.9.1 --record
deployment.apps/nginx-mydeploy image updated
[root@k8s-master day3]# kubectl rollout status deployment/nginx-mydeploy
Waiting for deployment "nginx-mydeploy" rollout to finish: 0 out of 4 new replicas have been updated...
Waiting for deployment "nginx-mydeploy" rollout to finish: 0 out of 4 new replicas have been updated...
Waiting for deployment "nginx-mydeploy" rollout to finish: 0 out of 4 new replicas have been updated...
Waiting for deployment "nginx-mydeploy" rollout to finish: 0 of 4 updated replicas are available...
Waiting for deployment "nginx-mydeploy" rollout to finish: 1 of 4 updated replicas are available...
Waiting for deployment "nginx-mydeploy" rollout to finish: 2 of 4 updated replicas are available...
Waiting for deployment "nginx-mydeploy" rollout to finish: 3 of 4 updated replicas are available...
deployment "nginx-mydeploy" successfully rolled out
[root@k8s-master day3]#
```

Deployment rollout history

```
[root@k8s-master day3]# kubectl rollout history deployment nginx-mydeploy
deployment.apps/nginx-mydeploy
REVISION  CHANGE-CAUSE
1          <none>
2          kubectl set image deployment/nginx-mydeploy nginx=nginx:1.16.1 --record=true
3          kubectl set image deployment/nginx-mydeploy nginx=nginx:1.9.1 --record=true

[root@k8s-master day3]#
```

```
[root@k8s-master day3]# kubectl rollout history deployment nginx-mydeploy
deployment.apps/nginx-mydeploy
REVISION  CHANGE-CAUSE
1          <none>
2          kubectl set image deployment/nginx-mydeploy nginx=nginx:1.16.1 --record=true
3          kubectl set image deployment/nginx-mydeploy nginx=nginx:1.9.1 --record=true

[root@k8s-master day3]#
[root@k8s-master day3]#
[root@k8s-master day3]# kubectl describe deployments.apps nginx-mydeploy | grep -i Image
kubernetes.io/change-cause: kubectl set image deployment/nginx-mydeploy nginx=nginx:1.9.1 --record=true
image: nginx:1.9.1
[root@k8s-master day3]# kubectl rollout undo deployment/nginx-mydeploy --to-revision=2
deployment.apps/nginx-mydeploy rolled back
[root@k8s-master day3]#
```

► Image for the deployment rolled back to version 2 (previous state)

```
[root@k8s-master day3]# kubectl describe deployments.apps nginx-mydeploy | grep -i Image
kubernetes.io/change-cause: kubectl set image deployment/nginx-mydeploy nginx=nginx:1.16.1 --record=true
Image: nginx:1.16.1
[root@k8s-master day3]#
```

► Revisions are coming from the new replicasets generated by deployment rollout

- We can remove old replicasets, if we don't need to roll-back

```
[root@k8s-master day3]# kubectl get all
NAME                                READY    STATUS    RESTARTS   AGE
pod/nginx                           1/1      Running   0           3h7m
pod/nginx-mydeploy-6b4bc7c9df-dt84j 1/1      Running   0           8m17s
pod/nginx-mydeploy-6b4bc7c9df-kznz7 1/1      Running   0           8m17s
pod/nginx-mydeploy-6b4bc7c9df-rv7z8 1/1      Running   0           8m17s
pod/nginx-mydeploy-6b4bc7c9df-wtc2s 1/1      Running   0           8m17s
pod/nginx-prod                       1/1      Running   0           3h19m
pod/nginx-qa                         1/1      Running   0           3h19m

NAME                                TYPE        CLUSTER-IP    EXTERNAL-IP  PORT(S)    AGE
service/kubernetes                  ClusterIP    10.96.0.1     <none>        443/TCP    35h

NAME                                READY    UP-TO-DATE    AVAILABLE    AGE
deployment.apps/nginx-mydeploy      4/4      4              4            41m

NAME                                DESIRED    CURRENT    READY    AGE
replicaset.apps/nginx-mydeploy-6b4bc7c9df 4          4          4        31m
replicaset.apps/nginx-mydeploy-75577696bd 0          0          0        41m
replicaset.apps/nginx-mydeploy-d8b97d5bf 0          0          0        15m
[root@k8s-master day3]#
```