## Table of Contents

# Topic

## Version

| Author | Version | Last update | Comment |
|---|---|---|---|
| tinaxiao@cn.ibm.com | V1.0 | 03/26/18 | Create the document |
| | | | |

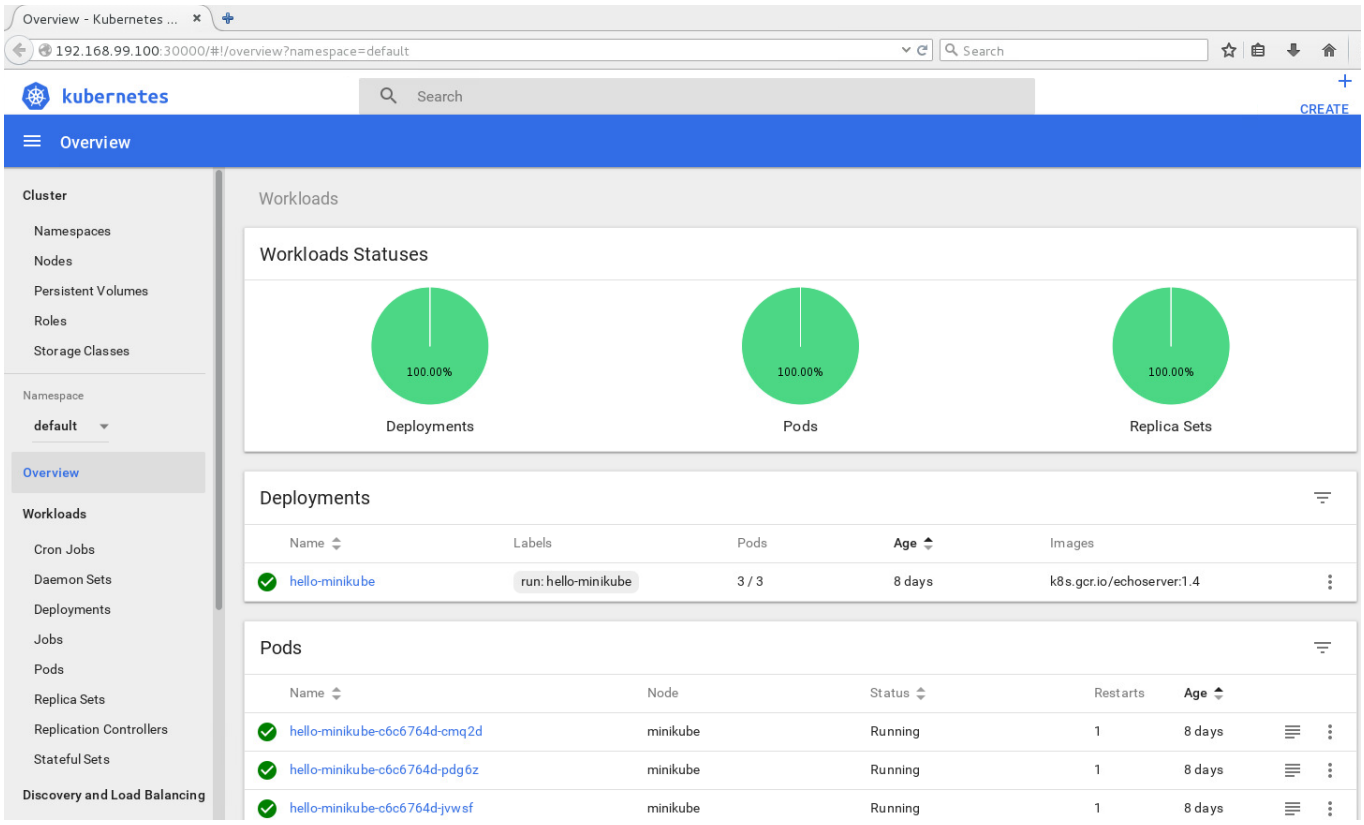
## Start minikube

[root@sbybz3137 ~]# **minikube status**
minikube: Stopped
cluster:
kubectl:
[root@sbybz3137 ~]# **minikube start**
Starting local Kubernetes v1.9.0 cluster...
Starting VM...
Getting VM IP address...
Moving files into cluster...
Setting up certs...
Connecting to cluster...
Setting up kubeconfig...
Starting cluster components...
Kubectl is now configured to use the cluster.
Loading cached images from config file.
[root@sbybz3137 ~]# **minikube status**
minikube: Running
cluster: Running
kubectl: Correctly Configured: pointing to minikube-vm at 192.168.99.100

## Minikube has dashboard integrated

Execute the command from VNC
Minikube dashboard

```
File  Edit  View  Search  Terminal  Help
[root@sbybz3137 ~]# minikube dashboard
Opening kubernetes dashboard in default browser...
[root@sbybz3137 ~]# console.error:
  [CustomizableUI]
  Custom widget with id loop-button does not return a valid node
console.error:
  [CustomizableUI]
  Custom widget with id loop-button does not return a valid node
```




# Most useful kubectl commands

## Get the cluster information

[root@sbybz3137 ~]# **kubectl cluster-info**
Kubernetes master is running at https://192.168.99.100:8443

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.

## Get kubectl version

[root@sbybz3137 ~]# **kubectl version**
Client Version: version.Info{Major:"1", Minor:"9", GitVersion:"v1.9.4", GitCommit:"bee2d1505c4fe820744d26d41ecd3fdd4a3d6546", GitTreeState:"clean", BuildDate:"2018-03-12T16:29:47Z", GoVersion:"go1.9.3", Compiler:"gc", Platform:"linux/amd64"}
Server Version: version.Info{Major:"", Minor:"", GitVersion:"v1.9.0", GitCommit:"925c127ec6b946659ad0fd596fa959be43f0cc05", GitTreeState:"clean", BuildDate:"2018-01-26T19:04:38Z", GoVersion:"go1.9.1", Compiler:"gc", Platform:"linux/amd64"}

## Get api-versions

[root@sbybz3137 ~]# **kubectl api-versions**
admissionregistration.k8s.io/v1alpha1
admissionregistration.k8s.io/v1beta1
apiextensions.k8s.io/v1beta1

apiregistration.k8s.io/v1beta1
apps/v1
apps/v1beta1
apps/v1beta2
authentication.k8s.io/v1
authentication.k8s.io/v1beta1
authorization.k8s.io/v1
authorization.k8s.io/v1beta1
autoscaling/v1
autoscaling/v2beta1
batch/v1
batch/v1beta1
batch/v2alpha1
certificates.k8s.io/v1beta1
events.k8s.io/v1beta1
extensions/v1beta1
networking.k8s.io/v1
policy/v1beta1
rbac.authorization.k8s.io/v1
rbac.authorization.k8s.io/v1alpha1
rbac.authorization.k8s.io/v1beta1
scheduling.k8s.io/v1alpha1
settings.k8s.io/v1alpha1
storage.k8s.io/v1
storage.k8s.io/v1alpha1
storage.k8s.io/v1beta1
V1

## Get the node

[root@sbybz3137 ~]# **kubectl get no**
NAME STATUS ROLES AGE VERSION
minikube Ready <none> 8d v1.9.0

## Deploy app

[root@sbybz3137 ~]# **kubectl run nginx --image=nginx**
deployment "nginx" created

## Get deploy information

[root@sbybz3137 ~]# **kubectl get deploy**
NAME DESIRED CURRENT UP-TO-DATE AVAILABLE AGE
hello-minikube 3 3 3 3 8d
nginx 1 1 1 1 1m

```
[root@sbybz3137 ~]# kubectl get deploy
NAME             DESIRED   CURRENT   UP-TO-DATE   AVAILABLE   AGE
hello-minikube   3         3         3            3           8d
nginx            1         1         1            1           1m
```

```
[root@sbybz3137 ~]# kubectl get deploy nginx
NAME     DESIRED   CURRENT   UP-TO-DATE   AVAILABLE   AGE
nginx    1         1         1            1           1m

[root@sbybz3137 ~]# kubectl describe deploy nginx
Name:                   nginx
Namespace:              default
CreationTimestamp:      Thu, 22 Mar 2018 09:33:25 -0500
Labels:                 run=nginx
Annotations:            deployment.kubernetes.io/revision=1
Selector:               run=nginx
Replicas:               1 desired | 1 updated | 1 total | 1 available | 0 unavailable
StrategyType:           RollingUpdate
MinReadySeconds:        0
RollingUpdateStrategy:  1 max unavailable, 1 max surge
Pod Template:
  Labels:  run=nginx
  Containers:
   nginx:
    Image:      nginx
    Port:       <none>
    Environment:  <none>
    Mounts:     <none>
  Volumes:      <none>
Conditions:
  Type          Status  Reason
  ----          ------  ------
  Available     True    MinimumReplicasAvailable
OldReplicaSets:  <none>
NewReplicaSet:   nginx-8586cf59 (1/1 replicas created)
Events:
  Type    Reason             Age   From                   Message
  ----    ------             ----  ----                   -------
  Normal  ScalingReplicaSet  3m    deployment-controller  Scaled up replica set nginx-8586cf59 to 1
```

## Get Replication Set

**Replication Set= rs**

```
[root@sbybz3137 ~]# kubectl get rs
NAME                  DESIRED   CURRENT   READY     AGE
hello-minikube-c6c6764d   3         3         3         8d
nginx-8586cf59            1         1         1         8m
```

## Replication Set information

```
[root@sbybz3137 ~]# kubectl describe rs
Name:           hello-minikube-c6c6764d
Namespace:      default
```

```
Selector:       pod-template-hash=72723208,run=hello-minikube
Labels:         pod-template-hash=72723208
                run=hello-minikube
Annotations:    deployment.kubernetes.io/desired-replicas=3
                deployment.kubernetes.io/max-replicas=4
                deployment.kubernetes.io/revision=1
Controlled By:  Deployment/hello-minikube
Replicas:       3 current / 3 desired
Pods Status:    3 Running / 0 Waiting / 0 Succeeded / 0 Failed
Pod Template:
  Labels:  pod-template-hash=72723208
           run=hello-minikube
  Containers:
   hello-minikube:
    Image:        k8s.gcr.io/echoserver:1.4
    Port:         8080/TCP
    Environment:  <none>
    Mounts:       <none>
  Volumes:        <none>
Events:           <none>


Name:           nginx-8586cf59
Namespace:      default
Selector:       pod-template-hash=41427915,run=nginx
Labels:         pod-template-hash=41427915
                run=nginx
Annotations:    deployment.kubernetes.io/desired-replicas=1
                deployment.kubernetes.io/max-replicas=2
                deployment.kubernetes.io/revision=1
Controlled By:  Deployment/nginx
Replicas:       1 current / 1 desired
Pods Status:    1 Running / 0 Waiting / 0 Succeeded / 0 Failed
Pod Template:
  Labels:  pod-template-hash=41427915
           run=nginx
  Containers:
   nginx:
    Image:        nginx
    Port:         <none>
    Environment:  <none>
    Mounts:       <none>
  Volumes:        <none>
Events:
  Type    Reason          Age   From                   Message
  ----    ------          ----  ----                   -------
  Normal  SuccessfulCreate  10m   replicaset-controller  Created pod: nginx-8586cf59-fdwct
```

```
Name:           nginx-8586cf59
Namespace:      default
Selector:       pod-template-hash=41427915,run=nginx
Labels:         pod-template-hash=41427915
                run=nginx
Annotations:    deployment.kubernetes.io/desired-replicas=1
                deployment.kubernetes.io/max-replicas=2
                deployment.kubernetes.io/revision=1
Controlled By:  Deployment/nginx
Replicas:       1 current / 1 desired
Pods Status:    1 Running / 0 Waiting / 0 Succeeded / 0 Failed
Pod Template:
  Labels:  pod-template-hash=41427915
           run=nginx
  Containers:
   nginx:
    Image:        nginx
    Port:         <none>
    Environment:  <none>
    Mounts:       <none>
  Volumes:        <none>
Events:
  Type    Reason            Age   From                   Message
  ----    ------            ----  ----                   -------
  Normal  SuccessfulCreate  10m   replicaset-controller  Created pod: nginx-8586cf59-fdwct
```

## Get the pod

**Pod=po**

[root@sbybz3137 ~]# **kubectl get po**

NAME READY STATUS RESTARTS AGE
hello-minikube-c6c6764d-cmq2d 1/1 Running 1 8d
hello-minikube-c6c6764d-jvwsf 1/1 Running 1 8d
hello-minikube-c6c6764d-pdg6z 1/1 Running 1 8d
nginx-8586cf59-fdwct 1/1 Running 0 15m

[root@sbybz3137 ~]# **kubectl get po nginx-8586cf59-fdwct -o wide**

NAME READY STATUS RESTARTS AGE IP NODE
nginx-8586cf59-fdwct 1/1 Running 0 17m 172.17.0.7 minikube

**Pod IP is the docker IP , it may be changed after kill, we should not visit the POD IP but we can visit the service IP.**

## Check log

[root@sbybz3137 ~]# **kubectl logs nginx-8586cf59-fdwct**

No log for nginx since no out put to terminal.

## Execute the commands in the pod

[root@sbybz3137 ~]# **kubectl exec -it nginx-8586cf59-fdwct /bin/bash**

root@nginx-8586cf59-fdwct:/#

**Now into the container, you can execute the commands**

root@nginx-8586cf59-fdwct:/# uname -a
Linux nginx-8586cf59-fdwct 4.9.64 #1 SMP Tue Jan 23 23:15:00 UTC 2018 x86_64 GNU/Linux
root@nginx-8586cf59-fdwct:/# nginx -v
nginx version: nginx/1.13.10

# How to access container

## Create sample service

[root@sbybz3137 DST]# **cat nginx.svc.yaml**

```
apiVersion: v1
kind: Service
metadata:
  name: nginx
  labels:
    app: nginx
spec:
  ports:
  - name: http
    port: 8888
    nodePort: 30001
    targetPort: 80
  selector:
    run: nginx
  type: NodePort
```

[root@sbybz3137 DST]# **kubectl create -f nginx.svc.yaml**
service "nginx" created

## Get service information

**svc=service**

[root@sbybz3137 DST]# **kubectl get svc**

```
NAME          TYPE       CLUSTER-IP     EXTERNAL-IP   PORT(S)          AGE
hello-minikube   NodePort    10.105.78.121   <none>       8080:30065/TCP   8d
kubernetes       ClusterIP   10.96.0.1       <none>       443/TCP          8d
nginx            NodePort    10.108.74.128   <none>       8888:30001/TCP   3m
```

**Expose port 30001, can access from out side**


## Another method of creating service

**Expose it for access**

[root@sbybz3137 DST]# **kubectl expose deploy nginx --type=NodePort --name=nginx-ext --port=80**
service "nginx-ext" exposed

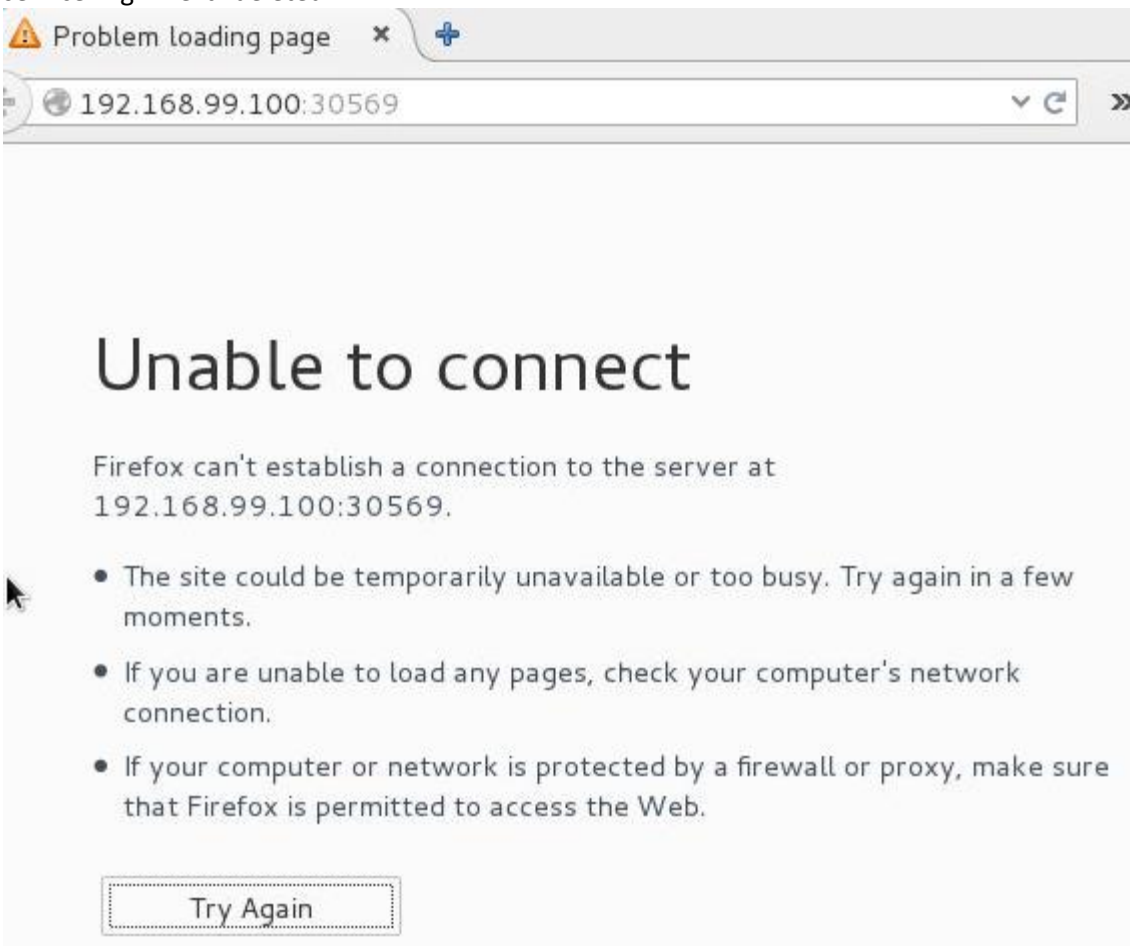
[root@sbybz3137 DST]# **kubectl get svc**

| NAME | TYPE | CLUSTER-IP | EXTERNAL-IP | PORT(S) | AGE |
|---|---|---|---|---|---|
| hello-minikube | NodePort | 10.105.78.121 | <none> | 8080:30065/TCP | 8d |
| kubernetes | ClusterIP | 10.96.0.1 | <none> | 443/TCP | 8d |
| nginx | NodePort | 10.108.74.128 | <none> | 8888:30001/TCP | 14m |
| nginx-ext | NodePort | 10.111.32.138 | <none> | 80:30569/TCP | 49s |

## Delete the service

Can not access after delete

[root@sbybz3137 ~]# **kubectl delete svc nginx-ext**
service "nginx-ext" deleted




## Get endpoint

### Check the port mapping

[root@sbybz3137 ~]# **kubectl get ep**
NAME  ENDPOINTS  AGE
hello-minikube  172.17.0.2:8080,172.17.0.4:8080,172.17.0.6:8080  8d
kubernetes  10.0.2.15:8443  8d
nginx  172.17.0.7:80  21m

[root@sbybz3137 ~]# **kubectl expose deploy nginx --type=NodePort --name=nginx-ext --port=80**
service "nginx-ext" exposed

[root@sbybz3137 ~]# **kubectl get ep**
NAME  ENDPOINTS  AGE
hello-minikube  172.17.0.2:8080,172.17.0.4:8080,172.17.0.6:8080  8d

```
kubernetes      10.0.2.15:8443                  8d
nginx           172.17.0.7:80                   22m
nginx-ext       172.17.0.7:80                   6s
```

## Scale

```
[root@sbybz3137 ~]# kubectl scale deploy nginx --replicas=3
deployment "nginx" scaled

[root@sbybz3137 ~]# kubectl get deploy nginx
NAME    DESIRED   CURRENT   UP-TO-DATE   AVAILABLE   AGE
nginx   3         3         3            3           1h

[root@sbybz3137 ~]# kubectl get rs
NAME                  DESIRED   CURRENT   READY   AGE
hello-minikube-c6c6764d   3         3         3       8d
nginx-8586cf59            3         3         3       1h

[root@sbybz3137 ~]# kubectl get po
NAME                        READY     STATUS    RESTARTS   AGE
hello-minikube-c6c6764d-cmq2d   1/1       Running   1          8d
hello-minikube-c6c6764d-jvwsf   1/1       Running   1          8d
hello-minikube-c6c6764d-pdg6z   1/1       Running   1          8d
nginx-8586cf59-9zmnf            1/1       Running   0          1m
nginx-8586cf59-fdwct            1/1       Running   0          1h
nginx-8586cf59-wkhds            1/1       Running   0          1m

[root@sbybz3137 ~]# kubectl get ep
NAME           ENDPOINTS                                     AGE
hello-minikube   172.17.0.2:8080,172.17.0.4:8080,172.17.0.6:8080   8d
kubernetes       10.0.2.15:8443                                8d
nginx            172.17.0.7:80,172.17.0.8:80,172.17.0.9:80     26m
nginx-ext        172.17.0.7:80,172.17.0.8:80,172.17.0.9:80     4m
```

**Access port 30001, it will balance to the 3 containers**

```
[root@sbybz3137 ~]# kubectl scale deploy nginx --replicas=2
deployment "nginx" scaled

[root@sbybz3137 ~]# kubectl get ep
NAME           ENDPOINTS                                     AGE
hello-minikube   172.17.0.2:8080,172.17.0.4:8080,172.17.0.6:8080   8d
kubernetes       10.0.2.15:8443                                8d
nginx            172.17.0.7:80,172.17.0.8:80                   28m
nginx-ext        172.17.0.7:80,172.17.0.8:80                   5m
```

## Upgrade by update the image

[root@sbybz3137 ~]# **kubectl set image deploy nginx nginx=nginx:1.9.1**
deployment "nginx" image updated

## Check the status

[root@sbybz3137 ~]# **kubectl rollout status deploy nginx**
deployment "nginx" successfully rolled out

[root@sbybz3137 ~]# **kubectl rollout history deploy nginx**
deployments "nginx"
REVISION CHANGE-CAUSE
1 <none>
2 <none>

**There are 2 versions, we can check the rollout update process**

[root@sbybz3137 ~]# **kubectl describe deploy nginx**
Name: nginx
Namespace: default
CreationTimestamp: Thu, 22 Mar 2018 09:33:25 -0500
Labels: run=nginx
Annotations: deployment.kubernetes.io/revision=2
Selector: run=nginx
Replicas: 2 desired | 2 updated | 2 total | 2 available | 0 unavailable
StrategyType: RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 1 max unavailable, 1 max surge
Pod Template:
Labels: run=nginx
Containers:
nginx:
Image: nginx:1.9.1
Port: <none>
Environment: <none>
Mounts: <none>
Volumes: <none>
Conditions:
Type Status Reason
---- ------ ------
Available True MinimumReplicasAvailable
OldReplicaSets: <none>
NewReplicaSet: nginx-86dcb9cf54 (2/2 replicas created)
Events:
Type Reason Age From Message
---- ------ ---- ---- -------
Normal ScalingReplicaSet 10m deployment-controller Scaled up replica set nginx-8586cf59 to 3
Normal ScalingReplicaSet 6m deployment-controller Scaled down replica set nginx-8586cf59 to 2

```
  Normal  ScalingReplicaSet  4m    deployment-controller  Scaled up replica set nginx-86dcb9cf54 to 1
  Normal  ScalingReplicaSet  4m    deployment-controller  Scaled down replica set nginx-8586cf59 to 1
  Normal  ScalingReplicaSet  4m    deployment-controller  Scaled up replica set nginx-86dcb9cf54 to 2
  Normal  ScalingReplicaSet  3m    deployment-controller  Scaled down replica set nginx-8586cf59 to 0
```

```
[root@sbybz3137 ~]# kubectl get rs
NAME                 DESIRED   CURRENT   READY     AGE
hello-minikube-c6c6764d  3         3         3         8d
nginx-8586cf59           0         0         0         1h
nginx-86dcb9cf54         2         2         2         5m
```

## If there is error, the update will be pending, rollout shows hanging

```
[root@sbybz3137 ~]# kubectl set image deploy nginx nginx=nginx:1.915
deployment "nginx" image updated

[root@sbybz3137 ~]# kubectl rollout status deploy nginx
Waiting for rollout to finish: 1 old replicas are pending termination...

[root@sbybz3137 ~]# kubect rollout history deploy nginx
deployments "nginx"
REVISION  CHANGE-CAUSE
1         <none>
2         <none>
3         <none>
4         <none>

[root@sbybz3137 ~]# kubectl rollout history deploy nginx --revision=3
deployments "nginx" with revision #3
Pod Template:
  Labels:       pod-template-hash=871556521
        run=nginx
  Containers:
   nginx:
    Image:      nginx:1.9.15
    Port:       <none>
    Environment:        <none>
    Mounts:     <none>
  Volumes:      <none>

[root@sbybz3137 ~]# kubectl get rs
NAME                 DESIRED   CURRENT   READY     AGE
hello-minikube-c6c6764d  3         3         3         8d
nginx-6bdb4646b5         2         2         0         2m
nginx-8586cf59           0         0         0         1h
nginx-86dcb9cf54         1         1         1         9m
nginx-dc599b965          0         0         0         2m
```

```
[root@sbybz3137 ~]# kubectl describe rs nginx-6bdb4646b5
Name:         nginx-6bdb4646b5
Namespace:    default
Selector:     pod-template-hash=2686020261,run=nginx
Labels:       pod-template-hash=2686020261
              run=nginx
Annotations:  deployment.kubernetes.io/desired-replicas=2
              deployment.kubernetes.io/max-replicas=3
              deployment.kubernetes.io/revision=4
Controlled By:  Deployment/nginx
Replicas:     2 current / 2 desired
Pods Status:  0 Running / 2 Waiting / 0 Succeeded / 0 Failed
Pod Template:
  Labels:  pod-template-hash=2686020261
           run=nginx
  Containers:
   nginx:
    Image:      nginx:1.915
    Port:       <none>
    Environment:  <none>
    Mounts:     <none>
  Volumes:      <none>
Events:
  Type    Reason            Age   From                   Message
  ----    ------            ----  ----                   -------
  Normal  SuccessfulCreate  6m    replicaset-controller  Created pod: nginx-6bdb4646b5-dmctj
  Normal  SuccessfulCreate  6m    replicaset-controller  Created pod: nginx-6bdb4646b5-zdkx4

[root@sbybz3137 ~]# kubectl get po
NAME                     READY     STATUS             RESTARTS   AGE
hello-minikube-c6c6764d-cmq2d   1/1       Running            1          8d
hello-minikube-c6c6764d-jvwsf   1/1       Running            1          8d
hello-minikube-c6c6764d-pdg6z   1/1       Running            1          8d
nginx-6bdb4646b5-dmctj          0/1       ImagePullBackOff   0          8m
nginx-6bdb4646b5-zdkx4          0/1       ImagePullBackOff   0          8m
nginx-86dcb9cf54-kvjxv          1/1       Running            0          14m

[root@sbybz3137 ~]# kubectl describe po nginx-6bdb4646b5-dmctj
Name:         nginx-6bdb4646b5-dmctj
Namespace:    default
Node:         minikube/192.168.99.100
Start Time:   Thu, 22 Mar 2018 10:49:07 -0500
Labels:       pod-template-hash=2686020261
              run=nginx
Annotations:  <none>
Status:       Pending
IP:           172.17.0.8
Controlled By:  ReplicaSet/nginx-6bdb4646b5
```

```
Containers:
  nginx:
    Container ID:
    Image:          nginx:1.915
    Image ID:
    Port:           <none>
    State:          Waiting
      Reason:       ImagePullBackOff
    Ready:          False
    Restart Count:  0
    Environment:    <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from default-token-n5rbr (ro)
Conditions:
  Type          Status
  Initialized   True
  Ready         False
  PodScheduled  True
Volumes:
  default-token-n5rbr:
    Type:       Secret (a volume populated by a Secret)
    SecretName:  default-token-n5rbr
    Optional:   false
QoS Class:      BestEffort
Node-Selectors:  <none>
Tolerations:    <none>
Events:
  Type     Reason                 Age                From               Message
  ----     ------                 ----               ----               -------
  Normal   Scheduled              9m                 default-scheduler  Successfully assigned nginx-6bdb4646b5
-dmctj to minikube
  Normal   SuccessfulMountVolume  9m                 kubelet, minikube  MountVolume.SetUp succeeded for volume
"default-token-n5rbr"
  Normal   Pulling                7m (x4 over 9m)    kubelet, minikube  pulling image "nginx:1.915"
  Warning  Failed                 7m (x4 over 8m)    kubelet, minikube  Failed to pull image "nginx:1.915": rp
c error: code = Unknown desc = Error response from daemon: manifest for nginx:1.915 not found
  Warning  Failed                 7m (x4 over 8m)    kubelet, minikube  Error: ErrImagePull
  Warning  Failed                 6m (x6 over 8m)    kubelet, minikube  Error: ImagePullBackOff
  Normal   BackOff                4m (x17 over 8m)   kubelet, minikube  Back-off pulling image "nginx:1.915"
```

## Rollout failed, but the old nginx is still alive

```
[root@sbybz3137 ~]# curl http://192.168.99.100:30001
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
```

```
    body {
        width: 35em;
        margin: 0 auto;
        font-family: Tahoma, Verdana, Arial, sans-serif;
    }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
```

## Rollback

```
[root@sbybz3137 ~]# kubectl rollout undo deploy nginx
deployment "nginx"
[root@sbybz3137 ~]# kubectl get rs
NAME                 DESIRED   CURRENT   READY     AGE
hello-minikube-c6c6764d   3         3         3         8d
nginx-6bdb4646b5     0         0         0         14m
nginx-8586cf59       0         0         0         1h
nginx-86dcb9cf54     0         0         0         21m
nginx-dc599b965      2         2         2         14m
```

### There will be new pod created if you delete a pod

```
[root@sbybz3137 ~]# kubectl get po
NAME                     READY     STATUS    RESTARTS   AGE
hello-minikube-c6c6764d-cmq2d   1/1       Running   1          8d
hello-minikube-c6c6764d-jvwsf   1/1       Running   1          8d
hello-minikube-c6c6764d-pdg6z   1/1       Running   1          8d
nginx-dc599b965-dt4c5        1/1       Running   0          2m
nginx-dc599b965-spcwh        1/1       Running   0          1m

[root@sbybz3137 ~]# kubectl get ep
NAME         ENDPOINTS                                     AGE
hello-minikube   172.17.0.2:8080,172.17.0.4:8080,172.17.0.6:8080   8d
kubernetes   10.0.2.15:8443                                8d
nginx        172.17.0.10:80,172.17.0.7:80                  56m
```

```
nginx-ext       172.17.0.10:80,172.17.0.7:80                33m

[root@sbybz3137 ~]# kubectl delete po nginx-dc599b965-spcwh
pod "nginx-dc599b965-spcwh" deleted
[root@sbybz3137 ~]# kubectl get ep
NAME           ENDPOINTS                                     AGE
hello-minikube   172.17.0.2:8080,172.17.0.4:8080,172.17.0.6:8080   8d
kubernetes       10.0.2.15:8443                                8d
nginx          172.17.0.7:80,172.17.0.8:80                   56m
nginx-ext       172.17.0.7:80,172.17.0.8:80                  34m

[root@sbybz3137 ~]# kubectl get po
NAME                      READY    STATUS    RESTARTS   AGE
hello-minikube-c6c6764d-cmq2d   1/1      Running   1        8d
hello-minikube-c6c6764d-jvwsf   1/1      Running   1        8d
hello-minikube-c6c6764d-pdg6z   1/1      Running   1        8d
nginx-dc599b965-dt4c5         1/1      Running   0        6m
nginx-dc599b965-jpjxc         1/1      Running   0        40s
```