

## 1 . Pods Replicasets & Deployments

## Pods

```

_zsh_tmux_plugin_run new-session -s main
apiVersion: v1
kind: Pod
metadata:
  name: nginx
spec:
  containers:
  - image: nginx
    name: nginx

```

```

_zsh_tmux_plugin_run new-session -s main
Every 2.0s: kubectl get all -o wide
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE
pod/nginx 0/1 ContainerCreating 0 4s <none> kworker1.example.com <none>

NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE SELECTOR
service/kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 11m <none>

~ ➤ cd play/kubernetes/yamls
yamls git:(master) ★ ➤ ls
1-nginx-deployment.yaml 1-nginx-pod.yaml 1-nginx-replicaset.yaml
yamls git:(master) ★ ➤ kubectl create -f 1-nginx-pod.yaml
pod/nginx created
yamls git:(master) ★ ➤ █

```

```

yamls git:(master) ★ ➡ kubectl get events

```

Time	Type	Reason	Object	Message
11m	Normal	NodeAllocatableEnforced	Node	Updated Node Allocatable limit across pods
11m	Normal	Starting	Node	Starting kube-proxy.
9m9s	Normal	Starting	Node	Starting kubelet.
9m9s	Normal	NodeHasSufficientDisk	Node	Node kworker1.example.com status is now: NodeHasSufficientDisk
9m9s	Normal	NodeHasSufficientMemory	Node	Node kworker1.example.com status is now: NodeHasSufficientMemory
9m9s	Normal	NodeHasNoDiskPressure	Node	Node kworker1.example.com status is now: NodeHasNoDiskPressure
9m9s	Normal	NodeHasSufficientPID	Node	Node kworker1.example.com status is now: NodeHasSufficientPID
9m8s	Normal	NodeAllocatableEnforced	Node	Updated Node Allocatable limit across pods
8m56s	Normal	Starting	Node	Starting kube-proxy.
8m38s	Normal	NodeReady	Node	Node kworker1.example.com status is now: NodeReady
6m35s	Normal	Starting	Node	Starting kubelet.
6m35s	Normal	NodeHasSufficientDisk	Node	Node kworker2.example.com status is now: NodeHasSufficientDisk
6m35s	Normal	NodeHasSufficientMemory	Node	Node kworker2.example.com status is now: NodeHasSufficientMemory
6m35s	Normal	NodeHasNoDiskPressure	Node	Node kworker2.example.com status is now: NodeHasNoDiskPressure
6m35s	Normal	NodeHasSufficientPID	Node	Node kworker2.example.com status is now: NodeHasSufficientPID
6m35s	Normal	NodeAllocatableEnforced	Node	Updated Node Allocatable limit across pods
6m15s	Normal	NodeReady	Node	Node kworker2.example.com status is now: NodeReady
6m12s	Normal	Starting	Node	Starting kube-proxy.
19s	Normal	Scheduled	Pod	Successfully assigned default/nginx to kworker1.example.com
8s	Normal	Pulling	Pod	pulling image "nginx"

```

yamls git:(master) ★ ➡ kubectl describe pod nginx

```

```

Ready:          True
ContainersReady: True
PodScheduled:   True
Volumes:
  default-token-mr29w:
    Type:          Secret (a volume populated by a Secret)
    SecretName:     default-token-mr29w
    Optional:       false
QoS Class:       BestEffort
Node-Selectors:  <none>
Tolerations:     node.kubernetes.io/not-ready:NoExecute for 300s
                  node.kubernetes.io/unreachable:NoExecute for 300s
Events:
  Type     Reason      Age    From                      Message
  ----     -
  Normal   Scheduled   32s    default-scheduler        Successfully assigned default/nginx to kworker1.example.com
  Normal   Pulling     21s    kubelet, kworker1.example.com  pulling image "nginx"
  Normal   Pulled      7s     kubelet, kworker1.example.com  Successfully pulled image "nginx"
  Normal   Created     7s     kubelet, kworker1.example.com  Created container
  Normal   Started     7s     kubelet, kworker1.example.com  Started container

```

```

yamls git:(master) ★ ➡ kubectl delete pod nginx
pod "nginx" deleted
yamls git:(master) ★ ➡ kubectl delete -f 1-nginx-pod.yaml

```

## Replicasets

```
apiVersion: extensions/v1beta1
kind: ReplicaSet
metadata:
  labels:
    run: nginx
  name: nginx-replicaset
spec:
  replicas: 2
  selector:
    matchLabels:
      run: nginx
  template:
    metadata:
      labels:
        run: nginx
    spec:
      containers:
        - image: nginx
          name: nginx
```

"1-nginx-replicaset.yaml" 19L, 302C

```
_zsh_tmux_plugin_run new-session -s main
Every 2.0s: kubectl get all -o wide
NAME                                READY   STATUS    RESTARTS   AGE   IP              NODE               NOMINATED NODE
pod/nginx-replicaset-gq24b          1/1     Running   0           64s   10.244.1.4      kworker1.example.com <none>
pod/nginx-replicaset-shfw9          1/1     Running   0           31s   10.244.2.3      kworker2.example.com <none>

NAME                                TYPE          CLUSTER-IP   EXTERNAL-IP   PORT(S)    AGE   SELECTOR
service/kubernetes                  ClusterIP      10.96.0.1    <none>        443/TCP    17m   <none>

NAME                                DESIRED   CURRENT   READY   AGE   CONTAINERS   IMAGES   SELECTOR
replicaset.apps/nginx-replicaset    2         2         2       2m12s nginx         nginx     run=nginx

rmls git:(master) ★ ➡ kubectl create -f 1-nginx-replicaset.yaml
replicaset.extensions/nginx-replicaset created
rmls git:(master) ★ ➡ kubectl delete pod nginx-replicaset-g5ct2
pod "nginx-replicaset-g5ct2" deleted
rmls git:(master) ★ ➡ kubectl delete pod nginx-replicaset-lkgrn
pod "nginx-replicaset-lkgrn" deleted
rmls git:(master) ★ ➡ kubectl delete replicaset nginx-replicaset
replicaset.extensions "nginx-replicaset" deleted
```

## Deployments

```
apiVersion: extensions/v1beta1
kind: Deployment
metadata:
  labels:
    run: nginx
  name: nginx-deploy
spec:
  replicas: 2
  selector:
    matchLabels:
      run: nginx
  template:
    metadata:
      labels:
        run: nginx
    spec:
      containers:
        - image: nginx
          name: nginx
```

```
_zsh_tmux_plugin_run new-session -s main
Every 2.0s: kubectl get all -o wide
demolap01: Wed Nov 28 15:32:53 2018
```

NAME	READY	STATUS	RESTARTS	AGE	IP	NODE	NOMINATED NODE
pod/nginx-deploy-dbddb74b8-jlv2	0/1	Terminating	0	47s	10.244.2.4	kworker2.example.com	<none>
pod/nginx-deploy-dbddb74b8-rjwrl	0/1	ContainerCreating	0	6s	<none>	kworker2.example.com	<none>
pod/nginx-deploy-dbddb74b8-wrdbx	1/1	Running	0	47s	10.244.1.5	kworker1.example.com	<none>

  

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE	SELECTOR
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	21m	<none>

  

NAME	DESIRED	CURRENT	UP-TO-DATE	AVAILABLE	AGE	CONTAINERS	IMAGES	SELECTOR
deployment.apps/nginx-deploy	2	2	2	1	47s	nginx	nginx	run=nginx

  

NAME	DESIRED	CURRENT	READY	AGE	CONTAINERS	IMAGES	SELECTOR
replicaset.apps/nginx-deploy-dbddb74b8	2	2	1	47s	nginx	nginx	pod-template-hash=dbddb74b8,run=nginx

  

```
yamls gti:(master) ★ ➔ ls
1-nginx-deployment.yaml 1-nginx-pod.yaml 1-nginx-replicaset.yaml
yamls gti:(master) ★ ➔ vi 1-nginx-deployment.yaml
yamls gti:(master) ★ ➔ kubectl create -f 1-nginx-deployment.yaml
deployment.extensions/nginx-deploy created
yamls gti:(master) ★ ➔ kubectl delete pod nginx-deploy-dbddb74b8-jlv2
pod "nginx-deploy-dbddb74b8-jlv2" deleted
```

```
yamls gti:(master) ★ ➔ kubectl describe pod nginx-deploy-dbddb74b8-rjwrl
```

```
Name:          nginx-deploy-dbddb74b8-rjwrl
Namespace:     default
Priority:       0
PriorityClassName: <none>
Node:          kworker2.example.com/172.42.42.102
Start Time:    Wed, 28 Nov 2018 15:32:47 +0000
Labels:        pod-template-hash=dbddb74b8
               run=nginx
Annotations:   <none>
Status:        Running
IP:            10.244.2.5
Controlled By: ReplicaSet/nginx-deploy-dbddb74b8
Containers:
  nginx:
    Container ID:  docker://85c368e7bce6194738f9f6f1d0966a20827bb1041a5bfa2aed32c1efc48a527f
    Image:         nginx
    Image ID:      docker-pullable://docker.io/nginx@sha256:5d32f60db294b5deb55d078cd4feb410ad88e6fe77500c87d3970eca977f54dba
    Port:          <none>
    Host Port:     <none>
    State:         Running
```

```
yamls git:(master) ★ ➤ kubectl describe replicaset nginx-deploy-dbddb74b8 | less
```

```
Name:          nginx-deploy-dbddb74b8
Namespace:     default
Selector:      pod-template-hash=dbddb74b8,run=nginx
Labels:        pod-template-hash=dbddb74b8
               run=nginx
Annotations:   deployment.kubernetes.io/desired-replicas: 2
               deployment.kubernetes.io/max-replicas: 3
               deployment.kubernetes.io/revision: 1
Controlled By: Deployment/nginx-deploy
Replicas:      2 current / 2 desired
Pods Status:   2 Running / 0 Waiting / 0 Succeeded / 0 Failed
Pod Template:
  Labels:  pod-template-hash=dbddb74b8
           run=nginx
  Containers:
    nginx:
      Image:      nginx
      Port:       <none>
      Host Port:  <none>
      Environment: <none>
```

```
yamls git:(master) ★ ➤ kubectl get pods -l run=nginx
```

NAME	READY	STATUS	RESTARTS	AGE
nginx-deploy-dbddb74b8-rjwrl	1/1	Running	0	3m37s
nginx-deploy-dbddb74b8-wrdbx	1/1	Running	0	4m18s

```
yamls git:(master) ★ ➤ kubectl describe pod nginx-deploy-dbddb74b8-rjwrl | grep -l controlled
```

```
Controlled By: ReplicaSet/nginx-deploy-dbddb74b8
```

```
yamls git:(master) ★ ➤ kubectl describe replicaset nginx-deploy-dbddb74b8 | grep -l contro
```

```
Controlled By: Deployment/nginx-deploy
```

Normal	SuccessfulCreate	5m6s	replicaset-controller	Created pod: nginx-deploy-dbddb74b8-jlvm2
Normal	SuccessfulCreate	5m6s	replicaset-controller	Created pod: nginx-deploy-dbddb74b8-wrdbx
Normal	SuccessfulCreate	4m25s	replicaset-controller	Created pod: nginx-deploy-dbddb74b8-rjwrl

```
_zsh_tmux_plugin_run new-session -s main
```

Every 2.0s: kubectl get all -o wide

NAME	READY	STATUS	RESTARTS	AGE	IP	NODE	NOMINATED NODE
pod/nginx-deploy-dbddb74b8-rjwrl	1/1	Running	0	5m	10.244.2.5	kworker2.example.com	<none>
pod/nginx-deploy-dbddb74b8-wrdbx	1/1	Running	0	5m41s	10.244.1.5	kworker1.example.com	<none>

  

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE	SELECTOR
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	26m	<none>

  

NAME	DESIRED	CURRENT	UP-TO-DATE	AVAILABLE	AGE	CONTAINERS	IMAGES	SELECTOR
deployment.apps/nginx-deploy	2	2	2	2	5m41s	nginx	nginx	run=nginx

  

NAME	DESIRED	CURRENT	READY	AGE	CONTAINERS	IMAGES	SELECTOR
replicaset.apps/nginx-deploy-dbddb74b8	2	2	2	5m41s	nginx	nginx	pod-template-hash=dbddb74b8,run=ngin

```
x
```

```
yamls git:(master) ★ ➤ kubectl scale deploy nginx-deploy --replicas=3
deployment.extensions/nginx-deploy scaled
yamls git:(master) ★ ➤
```

