

root@ahmed-Lenovo-Y520-15IKBN: /home/ahmed

```
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed# kubectl run imperative-nginx --image nginx:latest
pod/imperative-nginx created
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed# kubectl get po
NAME          READY   STATUS             RESTARTS   AGE
imperative-nginx 0/1     ContainerCreating  0          3s
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed# kubectl get po
NAME          READY   STATUS    RESTARTS   AGE
imperative-nginx 1/1     Running   0          8s
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed#
```

pod.yml - lab - Visual Studio Code

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EXPLORER

LAB

pod.yml

! pod.yml > {} spec > [] containers > {} 0 > image

io.k8s.api.core.v1.Pod (v1@pod.json)

1 apiVersion: v1

2 kind: Pod

3 metadata:

4 name: "webserver"

5 namespace: default

6 labels:

7 app: "myapp"

8 spec:

9 containers:

10 - name: myapp

11 image: "nginx123"

12 resources:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f pod.yml

pod/webserver created

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME	READY	STATUS	RESTARTS	AGE
imperative-nginx	1/1	Running	0	9m17s
webserver	0/1	ErrImagePull	0	15s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab#

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Get Started

! pod.yml

! pod.yml > {} spec > [] containers > {} 0 > image

io.k8s.api.core.v1.Pod (v1@pod.json)

1 apiVersion: v1

2 kind: Pod

3 metadata:

4 name: "webserver"

5 namespace: default

6 labels:

7 app: "myapp"

8 spec:

9 containers:

10 - name: myapp

11 image: "nginx"

12 resources:

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root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f pod.yml

pod/webserver created

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME	READY	STATUS	RESTARTS	AGE
imperative-nginx	1/1	Running	0	9m17s
webserver	0/1	ErrImagePull	0	15s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f pod.yml

pod/webserver configured

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME	READY	STATUS	RESTARTS	AGE
imperative-nginx	1/1	Running	0	9m58s
webserver	0/1	ErrImagePull	0	56s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME	READY	STATUS	RESTARTS	AGE
imperative-nginx	1/1	Running	0	10m
webserver	1/1	Running	0	72s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab#

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YAML

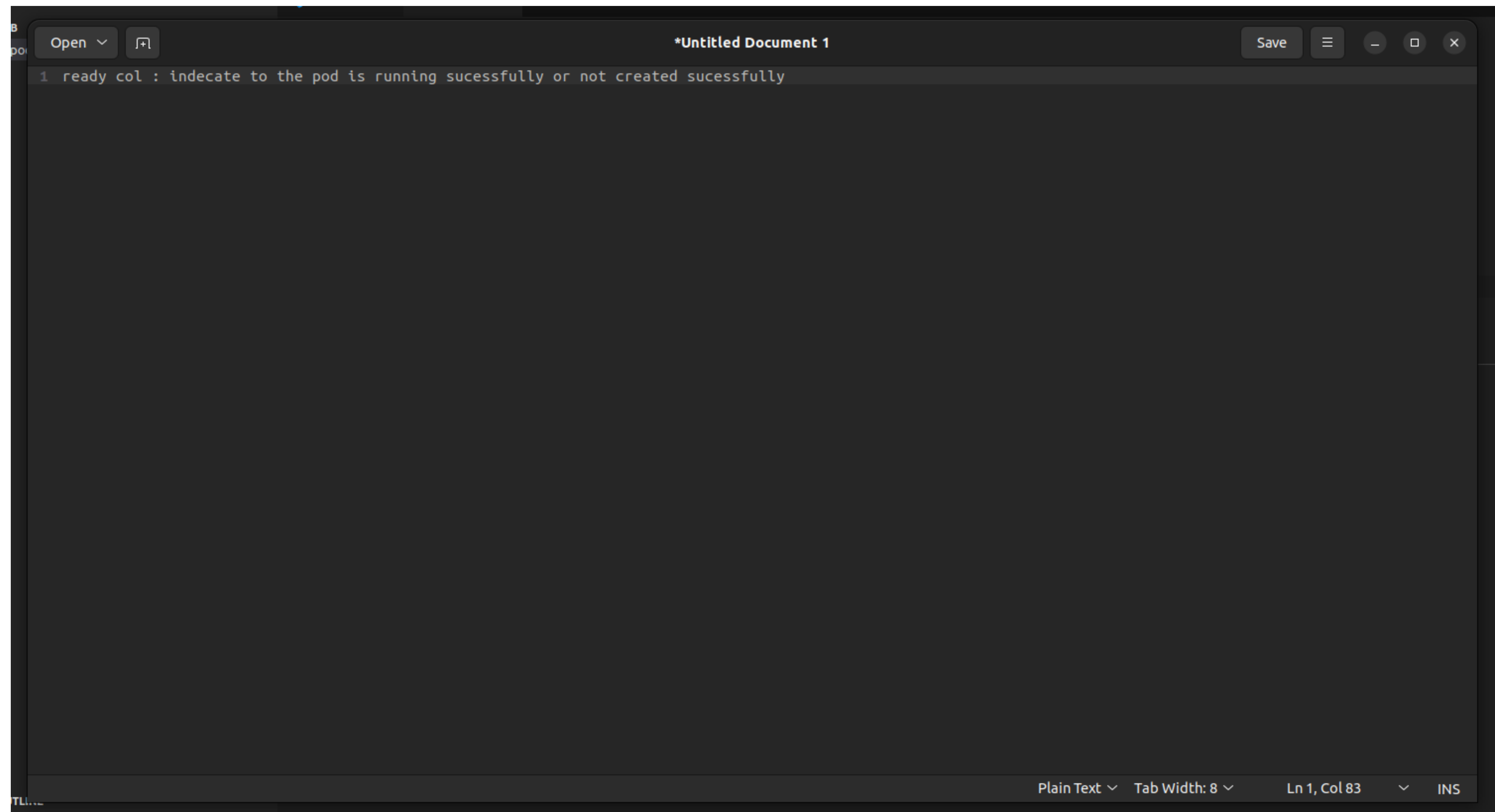
Go Live

kubernetes://schema/v1@pod

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NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
default	imperative-nginx	1/1	Running	0	11m
default	webserver	1/1	Running	0	2m3s
kube-system	coredns-565d847f94-hqj8k	1/1	Running	12 (12m ago)	16d
kube-system	etcd-minikube	1/1	Running	13 (12m ago)	16d
kube-system	kube-apiserver-minikube	1/1	Running	12 (12m ago)	16d
kube-system	kube-controller-manager-minikube	1/1	Running	12 (12m ago)	16d
kube-system	kube-proxy-dk4qr	1/1	Running	12 (12m ago)	16d
kube-system	kube-scheduler-minikube	1/1	Running	12 (22h ago)	16d
kube-system	storage-provisioner	1/1	Running	22 (12m ago)	16d
kubernetes-dashboard	dashboard-metrics-scraper-b74747df5-bp2x4	1/1	Running	8 (22h ago)	13d
kubernetes-dashboard	kubernetes-dashboard-57bbdc5f89-xqfcn	1/1	Running	18 (12m ago)	13d



root@ahmed-Lenovo-Y520-15IKBN: /home/ahmed

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed# kubectl get po --all-namespaces

NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
default	imperative-nginx	1/1	Running	0	11m
default	webserver	1/1	Running	0	2m3s
kube-system	coredns-565d847f94-hqj8k	1/1	Running	12 (12m ago)	16d
kube-system	etcd-minikube	1/1	Running	13 (12m ago)	16d
kube-system	kube-apiserver-minikube	1/1	Running	12 (12m ago)	16d
kube-system	kube-controller-manager-minikube	1/1	Running	12 (12m ago)	16d
kube-system	kube-proxy-dk4qr	1/1	Running	12 (12m ago)	16d
kube-system	kube-scheduler-minikube	1/1	Running	12 (22h ago)	16d
kube-system	storage-provisioner	1/1	Running	22 (12m ago)	16d
kubernetes-dashboard	dashboard-metrics-scraper-b74747df5-bp2x4	1/1	Running	8 (22h ago)	13d
kubernetes-dashboard	kubernetes-dashboard-57bbdc5f89-xqfcn	1/1	Running	18 (12m ago)	13d

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed# kubectl delete po imperative-nginx

pod "imperative-nginx" deleted

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed# kubectl get po

NAME	READY	STATUS	RESTARTS	AGE
webserver	1/1	Running	0	6m3s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed#


```
docker@minikube:~$
```

k8s_POD_webserver_default_753a1c

root@ahmed-Lenovo-Y520-15IKBN: /home/ahmed

```
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed# kubectl logs webserver
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2023/01/16 19:20:26 [notice] 1#1: using the "epoll" event method
2023/01/16 19:20:26 [notice] 1#1: nginx/1.23.3
2023/01/16 19:20:26 [notice] 1#1: built by gcc 10.2.1 20210110 (Debian 10.2.1-6)
2023/01/16 19:20:26 [notice] 1#1: OS: Linux 5.15.0-56-generic
2023/01/16 19:20:26 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2023/01/16 19:20:26 [notice] 1#1: start worker processes
2023/01/16 19:20:26 [notice] 1#1: start worker process 29
2023/01/16 19:20:26 [notice] 1#1: start worker process 30
2023/01/16 19:20:26 [notice] 1#1: start worker process 31
2023/01/16 19:20:26 [notice] 1#1: start worker process 32
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed#
```

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root@ahmed-Lenovo-Y520-15IKBN: /home/ahmed

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root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed# kubectl get rs --all-namespaces

NAMESPACE	NAME	DESIRED	CURRENT	READY	AGE
kube-system	coredns-565d847f94	1	1	1	16d
kubernetes-dashboard	dashboard-metrics-scraper-b74747df5	1	1	1	13d
kubernetes-dashboard	kubernetes-dashboard-57bbdc5f89	1	1	1	13d

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed#

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! rs.yml > {} spec > {} template > {} spec > [] containers > {} 0 > name

io.k8s.api.apps.v1.ReplicaSet (v1@replicaset.json)

1 apiVersion: apps/v1

2 kind: ReplicaSet

3 metadata:

4 name: replica-set-1

5 labels:

6 app: myapp

7 spec:

8 replicas: 3

9 selector:

10 matchLabels:

11 app: myapp

12 template:

13 metadata:

14 labels:

15 app: myapp

16 spec:

17 containers:

18 - name: busybox-container

19 image: busybox

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root@ahmed-Lenovo-Y520-15IKBN: /home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f rs.yml

replicaset.apps/replica-set-1 created

root@ahmed-Lenovo-Y520-15IKBN: /home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get rs

NAME DESIRED CURRENT READY AGE

replica-set-1 3 3 0 6s

root@ahmed-Lenovo-Y520-15IKBN: /home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME READY STATUS RESTARTS AGE

replica-set-1-2m24x 0/1 Completed 0 12s

replica-set-1-vt5sq 0/1 Completed 0 12s

replica-set-1-xfkl9 0/1 ContainerCreating 0 12s

root@ahmed-Lenovo-Y520-15IKBN: /home/ahmed/Downloads/Sprints/k8s/day-1/lab#

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kubernetes://schema/apps/v1@replicaset

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rs.yml

! rs.yml > {} spec > # replicas

io.k8s.api.apps.v1.ReplicaSet (v1@replicaset.json)

1 apiVersion: apps/v1

2 kind: ReplicaSet

3 metadata:

4 name: replica-set-1

5 labels:

6 app: myapp

7 spec:

8 replicas: 5

9 selector:

10 matchLabels:

11 app: myapp

12 template:

13 metadata:

14 labels:

15 app: myapp

16 spec:

17 containers:

18 - name: busybox-container

19 image: busybox

PROBLEMS

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root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f rs.yml

replicaset.apps/replica-set-1 created

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get rs

NAME DESIRED CURRENT READY AGE

replica-set-1 3 3 0 6s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME READY STATUS RESTARTS AGE

replica-set-1-2m24x 0/1 Completed 0 12s

replica-set-1-vt5sq 0/1 Completed 0 12s

replica-set-1-xfkl9 0/1 ContainerCreating 0 12s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f rs.yml

replicaset.apps/replica-set-1 configured

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME READY STATUS RESTARTS AGE

replica-set-1-2m24x 0/1 CrashLoopBackOff 2 (17s ago) 51s

replica-set-1-hr5ps 0/1 ContainerCreating 0 3s

replica-set-1-scwd5 0/1 ContainerCreating 0 3s

replica-set-1-vt5sq 0/1 CrashLoopBackOff 2 (14s ago) 51s

replica-set-1-xfkl9 0/1 Completed 2 (28s ago) 51s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab#

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rs.yml > {} spec > # replicas

io.k8s.api.apps.v1.ReplicaSet (v1@replicaset.json)

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root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f rs.yml

replicaset.apps/replica-set-1 created

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get rs

NAME DESIRED CURRENT READY AGE

replica-set-1 3 3 0 6s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME READY STATUS RESTARTS AGE

replica-set-1-2m24x 0/1 Completed 0 12s

replica-set-1-vt5sq 0/1 Completed 0 12s

replica-set-1-xfkl9 0/1 ContainerCreating 0 12s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f rs.yml

replicaset.apps/replica-set-1 configured

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME READY STATUS RESTARTS AGE

replica-set-1-2m24x 0/1 CrashLoopBackOff 2 (17s ago) 51s

replica-set-1-hr5ps 0/1 ContainerCreating 0 3s

replica-set-1-scwd5 0/1 ContainerCreating 0 3s

replica-set-1-vt5sq 0/1 CrashLoopBackOff 2 (14s ago) 51s

replica-set-1-xfkl9 0/1 Completed 2 (28s ago) 51s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl delete replica-set-1-2m24x

error: the server doesn't have a resource type "replica-set-1-2m24x"

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl delete po replica-set-1-2m24x

pod "replica-set-1-2m24x" deleted

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po

NAME READY STATUS RESTARTS AGE

replica-set-1-hr5ps 0/1 Completed 3 (37s ago) 76s

replica-set-1-scwd5 0/1 CrashLoopBackOff 2 (34s ago) 76s

replica-set-1-vqm9s 0/1 Completed 0 11s

replica-set-1-vt5sq 0/1 CrashLoopBackOff 3 (54s ago) 2m4s

replica-set-1-xfkl9 0/1 CrashLoopBackOff 3 (41s ago) 2m4s

root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab#

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kubernetes://schema/apps/v1@replicaset

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rs.yml > {} spec > # replicas

io.k8s.api.apps.v1.ReplicaSet (v1@replicaset.json)

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root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f rs.yml
replicaset.apps/replica-set-1 created
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get rs
NAME DESIRED CURRENT READY AGE
replica-set-1 3 3 0 6s
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po
NAME READY STATUS RESTARTS AGE
replica-set-1-2m24x 0/1 Completed 0 12s
replica-set-1-vt5sq 0/1 Completed 0 12s
replica-set-1-xfkl9 0/1 ContainerCreating 0 12s
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl apply -f rs.yml
replicaset.apps/replica-set-1 configured
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po
NAME READY STATUS RESTARTS AGE
replica-set-1-2m24x 0/1 CrashLoopBackOff 2 (17s ago) 51s
replica-set-1-hr5ps 0/1 ContainerCreating 0 3s
replica-set-1-scwd5 0/1 ContainerCreating 0 3s
replica-set-1-vt5sq 0/1 CrashLoopBackOff 2 (14s ago) 51s
replica-set-1-xfkl9 0/1 Completed 2 (28s ago) 51s
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl delete replica-set-1-2m24x
error: the server doesn't have a resource type "replica-set-1-2m24x"
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl delete po replica-set-1-2m24x
pod "replica-set-1-2m24x" deleted
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# kubectl get po
NAME READY STATUS RESTARTS AGE
replica-set-1-hr5ps 0/1 Completed 3 (37s ago) 76s
replica-set-1-scwd5 0/1 CrashLoopBackOff 2 (34s ago) 76s
replica-set-1-vqm9s 0/1 Completed 0 11s
replica-set-1-vt5sq 0/1 CrashLoopBackOff 3 (54s ago) 2m4s
replica-set-1-xfkl9 0/1 CrashLoopBackOff 3 (41s ago) 2m4s
root@ahmed-Lenovo-Y520-15IKBN:/home/ahmed/Downloads/Sprints/k8s/day-1/lab# the number of pods will be 5 again because the replica has desired 5 pods and when we delete any pod the replica will create another one to make number of pods 5

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kubernetes://schema/apps/v1@replicaset

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