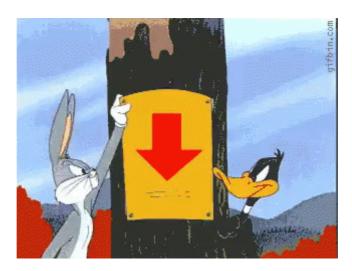# #037 Kubernetes - Scaling up & down

Introduction

this is part 37 from the journey it's a long journey(360 day) so go please check previous parts , and if you need to walk in the journey with me please make sure to follow because I may post more than once in 1 Day but surely I will post daily at least one 😎.

And I will cover lot of tools as we move on.

Scaling up & down

Scaling is very important because some times we need to scale our replicas , scale here is up or down , let's say the trending calendar has end , and visitors start to drop so we need to scale in this case.

Files for this lab

all the files can be found on the repository of this journey , if you already have it just pull if not clone it.
Files can be found here

Imperative scale

We have 2 methods to scale imperative and declarative (explained what is difference before [here](#)).

```
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl get replicasets
NAME              DESIRED    CURRENT    READY    AGE
myapp-replicaset    4          4          4        4d
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl get pods
NAME                      READY    STATUS     RESTARTS    AGE
myapp-replicaset-498cd    1/1      Running    2           3d23h
myapp-replicaset-6h2r7    1/1      Running    2           3d23h
myapp-replicaset-bjg2b    1/1      Running    2           3d23h
myapp-replicaset-g6c5f    1/1      Running    2           3d23h
(base) (master)in ~/Documents/DevOpsJourney/app_037
>
```

```
kubectl get replicasets
kubectl get pods
```

I have 1 replica and 4 pods created by this replica.
let's try to scale it:

- imperative (not recommended) :
  ```
  (base) (master)in ~/Documents/DevOpsJourney/app_037
  > kubectl scale --replicas=6 replicaset myapp-replicaset
  replicaset.apps/myapp-replicaset scaled
  ```

  ```
  kubectl scale --replicas=6 replicaset myapp-replicaset
  ```

we specify here how many we need , we take 6 as an example to scale up (was 4) .
And what we need to scale? replicaset and we pass here name.

```
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl get pods
NAME                      READY    STATUS             RESTARTS    AGE
myapp-replicaset-498cd    1/1      Running            2           3d23h
myapp-replicaset-6h2r7    1/1      Running            2           3d23h
myapp-replicaset-b5nsg    0/1      ContainerCreating  0           3s
myapp-replicaset-bjg2b    1/1      Running            2           3d23h
myapp-replicaset-fql6x    0/1      ContainerCreating  0           3s
myapp-replicaset-g6c5f    1/1      Running            2           3d23h
(base) (master)in ~/Documents/DevOpsJourney/app_037
>
```

as soon when we press enter , we can see 2 new pods are creating.

```
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl get pods
NAME                       READY   STATUS    RESTARTS   AGE
myapp-replicaset-498cd     1/1     Running   2          3d23h
myapp-replicaset-6h2r7     1/1     Running   2          3d23h
myapp-replicaset-b5nsg     1/1     Running   0          30s
myapp-replicaset-bjg2b     1/1     Running   2          3d23h
myapp-replicaset-fql6x     1/1     Running   0          30s
myapp-replicaset-g6c5f     1/1     Running   2          3d23h
(base) (master)in ~/Documents/DevOpsJourney/app_037
>
```

after few seconds , we see they are now 6 up and running :D

now time to scale down

```
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl scale --replicas=2 replicaset myapp-replicaset
replicaset.apps/myapp-replicaset scaled
```

```
kubectl scale --replicas=2 replicaset myapp-replicaset
```

just we decrease the number to 2

```
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl get pods
NAME                       READY   STATUS        RESTARTS   AGE
myapp-replicaset-498cd     0/1     Terminating   2          4d
myapp-replicaset-6h2r7     1/1     Running       2          4d
myapp-replicaset-b5nsg     0/1     Terminating   0          6m14s
myapp-replicaset-bjg2b     0/1     Terminating   2          4d
myapp-replicaset-fql6x     0/1     Terminating   0          6m14s
myapp-replicaset-g6c5f     1/1     Running       2          4d
```

We can see that 4 of our pods are terminating.

```
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl get pods
NAME                       READY   STATUS    RESTARTS   AGE
myapp-replicaset-6h2r7     1/1     Running   2          4d
myapp-replicaset-g6c5f     1/1     Running   2          4d
```

we can see we only have 2 pods running now.

Declarative scale

Declarative is better choice because it save our configurations.
I am going to use the app__037__declarative_scale_up.yml
here a look at it.

```
23 lines (20 sloc)    367 Bytes

1    apiVersion: apps/v1
2    kind: ReplicaSet
3    metadata:
4      name: myapp-replicaset
5
6    spec:
7      template:
8        metadata:
9          name: first-pod-dec
10         labels:
11           app: myapp
12           type: restapi
13
14       spec:
15         containers:
16           - name: simple-api
17             image: emondek/simple-api:latest
18
19     replicas: 6
20     selector:
21       matchLabels:
22         app: myapp
23         type: restapi
```

All what I do is change the replicas number to 6.

```
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl replace -f app_037_declarative_scale_up.yml
replicaset.apps/myapp-replicaset replaced
```

```
kubectl replace -f app_037_declarative_scale_up.yml
```

we use replace and -f then location of our file , since we are in the same directory
so we pass name directly. Also we need to scale now from 2 to 6 so I am going to
use the scale up yml.

```
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl get pods
NAME                     READY    STATUS              RESTARTS   AGE
myapp-replicaset-6f9zm   0/1      ContainerCreating   0          3s
myapp-replicaset-6h2r7   1/1      Running             2          4d
myapp-replicaset-b9lxh   0/1      ContainerCreating   0          2s
myapp-replicaset-g6c5f   1/1      Running             2          4d
myapp-replicaset-kbgsr   0/1      ContainerCreating   0          3s
myapp-replicaset-wg8sr   0/1      ContainerCreating   0          3s
```

We can see 6 pods are now creating.

```
(base) (master)in ~/Documents/DevOpsJourney/app_037
> kubectl get pods
NAME                     READY    STATUS     RESTARTS   AGE
myapp-replicaset-6f9zm   1/1      Running    0          29s
myapp-replicaset-6h2r7   1/1      Running    2          4d
myapp-replicaset-b9lxh   1/1      Running    0          28s
myapp-replicaset-g6c5f   1/1      Running    2          4d
myapp-replicaset-kbgsr   1/1      Running    0          29s
myapp-replicaset-wg8sr   1/1      Running    0          29s
(base) (master)in ~/Documents/DevOpsJourney/app_037
```

after seconds our pods are up and running.

To scale down do the same but replace with to down file(can be be found on github link)

End

Sorry for not writing daily because this month and half I am very busy , I will continue to do it daily on 09/08/2020.