Replicaset -------🡪

We know that pod can hold one or more containers but what happens if pod itself fail -🡪 so application not accessiable (down time for app) so we need some kind of monitoring and when pod is failed, new pod is provisioned with same requirements of failed pod and new ip address so we have 2 solutions --🡪

1. Replicaset 2) Replication controller

Both Replication controller && Replicaset has controllers that are responsible for monitor replicas and make sure that desired num of pods equal currently running pods and if there is un match it make sure to cover gap by provision pods.

A diagram of a computer

Description automatically generated

If pod crashed , app will be out of service.

So solution to use Replcation controller or Replicaset.

What is difference between Replication controller && Replicaset ?

Replication controller ------🡪 old version , not recommended.

We’re configuring number of replicas to be running .

Replicaset -------🡪 new version ,recommened.

Has selector --🡪 mandatory , why ? Because RS can manage pods that not created as part of RS creation but has labels that match with selector.

A screenshot of a computer

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We can think of RC or RS as box or container that hold num of repeated pods (replicas) to achieve fault-tolerance and high Availability.

Notes ------🡪

Why after deleting pod num of pods 5 ? because rs has controller that monitor num of pods and if pod failed,or deleted it make sure to create anew pod to make sure current num of running pods = desired number of running pods.

A screenshot of a computer screen

Description automatically generated

By default replication controllers has selector but its optional and if we don’t specify it it assumes to be identical to labels on pod definition.

How to create Replication controller?

apiVersion: v1

kind: ReplicationController

metadata:

name: rs-2

spec:

replicas: 4

selector:

matchLabels:

app: tier

template:

metadata:

name: pod1

labels:

app: tier

spec:

containers:

* name: c1

image: image\_name

How to create Replicaset ?

apiVersion: apps/v1

kind: ReplicaSet

metadata:

name: replicaset-1

spec:

replicas: 2

selector:

matchLabels:

tier: frontend

template:

metadata:

labels:

tier: frontend

spec:

containers:

- name: nginx

image: nginx

How to scale RS ?

$ kubectl scale rs rs\_name --replicas=new\_num

Or edit on yaml file

Open vi -🡪 update num of replicas on spec section ---🡪

Changes will take effect automatic thanks to controller.

Or $ kubectl scale rs --replicas=num -f file\_name

Best way (Recommended ) is open yaml file and update it to make it easy for other teammate .

kubectl scale replicaset new-replica-set --replicas=5

A screenshot of a computer program

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Note the previous screen shot after deleting pod new pod is provisioned because controller of replicaset notice there is one pod deleted so it will provision new one.