Kubernetes Day-3

ReplicaSets - Ensures that the desired number of Pods are created and available as defined in the manifest file.

```
ubuntu@ip-172-31-3-118:~/Kubernetes-Manifest-Files$ vi replicaset.yaml
ubuntu@ip-172-31-3-118:~/Kubernetes-Manifest-Files$ cat replicaset.yaml
kind: ReplicaSet
apiVersion: apps/v1
metadata:
  name: nginx-replicasets
  namespace: nginx
spec:
  replicas: 2
  selector:
    matchLabels:
      app: nginx
template:
  metadata:
    name: nginx-replica-pod
    labels:
      app: nginx
spec:
containers:
- name: nginx
  image: nginx:latest
  ports:
  - containerPort: 80
```

```
ubuntu@ip-172-31-12-22:~/kubernetes-in-one-shot/nginx$ kubectl apply -f repl
icasets.yml
replicaset.apps/nginx-replicasets created
ubuntu@ip-172-31-12-22:~/kubernetes-in-one-shot/nginx$ kubectl get replicase
ts -n nginx
NAME                DESIRED   CURRENT   READY   AGE
nginx-replicasets   2         2         2       11s
```

DeamonSets - Ensures that atleast one pod is always running in every node.

```
ubuntu@ip-172-31-3-118:~/Kubernetes-Manifest-Files$ vi deamonsets.yml
ubuntu@ip-172-31-3-118:~/Kubernetes-Manifest-Files$ cat deamonsets.yml
kind: DeamonSet
apiVersion: apps/vi
metadata:
  name: nginx-deamonsets
  namespace: nginx
spec:
  selector:
    matchLabels:
      app: nginx
template:
  metadata:
    name: nginx-dmn-pod
  labels:
    app: nginx
spec:
  containers:
    name: nginx
    image: nginx:latest
    ports:
      - containerPort: 80
```

```
ubuntu@ip-172-31-12-22:~/kubernetes-in-one-shot/nginx$ kubectl get pods -n n
ginx -o wide
NAME                      READY   STATUS    RESTARTS   AGE   IP            NO
DE                  NOMINATED NODE   READINESS GATES
nginx-daemonsets-7lptf    1/1     Running   0          26s   10.244.2.17   tw
s-cluster-worker2   <none>           <none>
nginx-daemonsets-c76gm    1/1     Running   0          26s   10.244.3.16   tw
s-cluster-worker3   <none>           <none>
nginx-daemonsets-z5v4n    1/1     Running   0          26s   10.244.1.17   tw
s-cluster-worker    <none>           <none>
```

Jobs

- If we want to run a one time/one way job
- Use case: To role of job is the complete the task and then pod will be terminated

```yaml
kind: Job
apiVersion: batch/v1
metadata:
  name: nginx-job
  namespace: nginx
spec:
  completions: 1
  parallelism: 1
  template:
    metadata:
      name: demo-job-pod
      labels:
        app: batch-tasks
spec:
  contai1ners:
    name: batch-task
    image: busybox:latest
    command: ["sh", "-c" , "echo run pod! && sleep 10"]
  restartPolicy: Never

~
~
```

```
ubuntu@ip-172-31-12-22:~/kubernetes-in-one-shot/nginx$ kubectl get pods -n n
ginx
NAME             READY   STATUS      RESTARTS   AGE
demo-job-qqrkh   0/1     Completed   0          22s
```

Cron Job — means to run a task in schedule following a particular schedule.

If my task is to backup

```yaml
kind: CronJob
apiVersion: batch/v1
metadata:
  name: minute-backup
  namespace: nginx
spec:
  schedule: "* * * * *"
  jobTemplate:
    spec:
      template:
      metadata:
        name: minute-backup
        labels:
          app: minute-backup
      spec:
        contai1ners:
        name: backup-container
        image: busybox
        command:
        - sh
        - -c
        - >
          echo "Backup Started";
          mkdir -p /backups &&
          mkdir -p /demo-data &&
          cp -r /demo-data /backups &&
          echo "Backup Completed" ;
        volumeMounts:
        - name: data-volume
          mountPath: /demo-data
        - name: backup-volume
          mountPath: /backups
    restartPolicy: OnFailure
    volumes:
    - name: data-volume
      hostPath:
        path: / demo-data
        type: DirectoryOrCreate
    - name: backup-volume
      hostPath:
        path: /backups
        type: DirectoryOrCreate
```

```
NAME                                READY   STATUS      RESTARTS   AGE
minute-backup-28898593-z9ksg        0/1     Completed   0          66s
minute-backup-28898594-qnhqk        0/1     Completed   0          6s
```

$kubectl delete -f cron-job.yml