**Topic: Kubernetes Object Model**

The Kubernetes Platform contains control over the resources related to Storage and Compute

There are five types of Object model:

1] Namespace

2] POD

3] Replicaset

4] Deployment

5] Service

**NameSpace**:

1] Namespace is like a package name, Logical partionaning of the kubernities cluster is said to be Namespace.

2] Namespaces are a way to organize clusters into virtual sub-clusters

3] Any resource that exists within Kubernetes exists either in the default namespace or a namespace that is created by the cluster operator

4] Namespaces provide a scope for names. Names of resources need to be unique within a namespace, but not across namespaces.

5] Namespaces cannot be nested inside one another and each Kubernetes resource can only be in one namespace.

6] To create namespace ,  my-namespace.yaml

7] To Run namespace - kubectl create -f ./my-namespace.yaml

8] To list the namespace in Cluster we should use below command

kubectl get namespaces

9] To delete Namespace - kubectl delete namespaces <insert-some-namespace-name>

10] Attaching the link for my reference - <https://kubernetes.io/docs/concepts/overview/working-with-objects/namespaces/>

**PODS**

1] Pods are the smallest deployable units of computing that you can create and manage in Kubernetes.

2] A Pod is a group of one or more containers, with shared storage and network resources, and a specification for how to run the containers.

3] A Pod is similar to a set of containers with shared namespaces and shared filesystem volumes

4] To Create a POD , kubectl apply -f <https://k8s.io/examples/pods/simple-pod.yaml>

5] Link for reference - <https://kubernetes.io/docs/concepts/workloads/pods/>

Replica Set

1] A ReplicaSet's purpose is to maintain a stable set of replica Pods running at any given time.

2] Commands which are listed to operate on Replica set

<https://kubernetes.io/docs/concepts/workloads/controllers/replicaset/>

Deployment

1] A Deployment provides declarative updates for Pods and ReplicaSets.

2] We can create a deployment by using following command , kubectl apply -f <https://k8s.io/examples/controllers/nginx-deployment.yaml>

3] To check if the deployed or not , use the below command kubectl get deployments

4] To get deployment roll out status- kubectl rollout status deployment/nginx-deployment

5] Attaching the link which includes all the command and also the commands if we get any error,

<https://kubernetes.io/docs/concepts/workloads/controllers/deployment/>