**Kubernetes Pods Replicasets & Deployments**

Pod - it is the smallest unint in the kubernetes.

Replicaset - it is more than one number of pod

**Kubernetes Namespaces & Contexts**

Namespace- it is averitual cluster

The following name space will create when the K8s create:

default- All the default name space will deploy in this name space.

kube-public -

kube-system - it contains all the cluster related resource.

**Persistent Volumes and Claims in Kubernetes Cluster**

* **How to use persistent Volumes?**

1. Create a PV - Created by cluster administrator

2. Create a PVC - Requested by the user

3. Create a Pod that uses the PVC

This is not the automated. So, whenever we need the persistent volume then first we need to request Cluster administrator to create the volume for you and then we can use to later. This the static provising.

* **Dynamic Provisioning** - This is automated. In this case, the, the Cluster Admin is going to create storage class and then based on the storage class the volume get provision automatically. Once you are done with application, then you can delete the volume, which get created.
* **Reclaim Policy**:

1. Retain - this is the default. The data will not deleted.

2. Recycle - It is more for a dynamic provisioning. It is deprecated.

3. delete - when we delete the pod then it will also delete the volume

* **Access Mode:**

1. RWO (Read Write Once) - if we schedule the multiple Pod on a specific volume then only one Pod can able to write and the reset will able to read.

2. RWM (Read Write Many) - it is mounted on a different Pod and all the Pod is ready to read and write simultaneously

3. RO (Read Only) - Mount the any number of the Pod and all can read it.

* “**storageClassName**” and “**accessModes**” both should be same for both “**persistentVolume**” and “**persistentVolumeClaim**”, else the persistent claim will be in pending state.

#kubectl cluster-info

#kubectl get node

#kubectl version –sort

**Statefulsets in Kubernetes Cluster**

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* There are three things when we create statefulset

1. it has a unique name

2. it has unique network identity

3. it has unique stable storage

* It follow ordered provisioning. In order provisioning, not all, the pod create simultaneously. Initially, first pod will create and once it is ready then only the second pod will create and so on and when we delete the pod then the last pod will delete first and the second last and so on