**All Kubernetes Object list:**

**1. Pod:** A thin wrapper around one or more containers

**2. Service:** Maps a fixed IP address to a logical group of pods

**3. Volume:** a directory with data that is accessible across multiple containers in a Pod

**4. Namespace:** a way to organize clusters into virtual sub-clusters

**5. ReplicaSets:** Ensures a defined number of pods are always running

**6. Replica Controller:** Ensures a defined number of pods are always running

**7. Secrets:** an object that contains a small amount of sensitive data such as a password, a tok1en, or a key

**8. Config Maps:** an API object that lets you store configuration for other objects to use

**9. Deployments:** Details how to roll out (or roll back) across versions of your application

**10. StatefulSets:** the workload API object used to manage stateful applications

**11. Jobs:** Ensures a pod properly runs to completion and stop after process complete its execution

**12. Daemon Sets:** Implements a single instance of a pod on all (or filtered subset of) worker node(s)

**13. Label:** Key/Value pairs used for association and filtering

**Fundamental Of Kubernetes Object Pod:**

* A Pod (as in a pod of whales or pea pod) is a group of one or more containers, with shared storage and network resources, and a specification for how to run the containers.
* When a Pod creation happen then master will automatically decide that on which node it should create until you have not specified the node.
* Pods remain on node until is not terminated or until node failure not happen , until pod is not deleted, lack of required resource of pod creation .
* If node die then after a timeout period pod will also get delete
* If a pod get deleted then same pod (id) cannot restart always start a new pod with different unique ID
* Volume inside pod also die if the pods die
* Controller can manage pod Autoscaling, self-healing etc.

**Example OF Pod Yaml File:**

apiVersion: v1

kind: Pod

metadata:

name: singlecontainerpod

spec:

containers:

- name: container1

image: ubuntu

command: ["/bin/bash", "-c", "while true; do echo c1; sleep 5 ; done"]

Defaults to Always kubectl apply -f pod1.yml

**Higher level kubernetes objects**

* Replication set - scaling and healing
* Deployment - versioning and rollback
* Service - Static IP and Networking
* Volume -non epemeral - storage from outside

Epemeral - short live