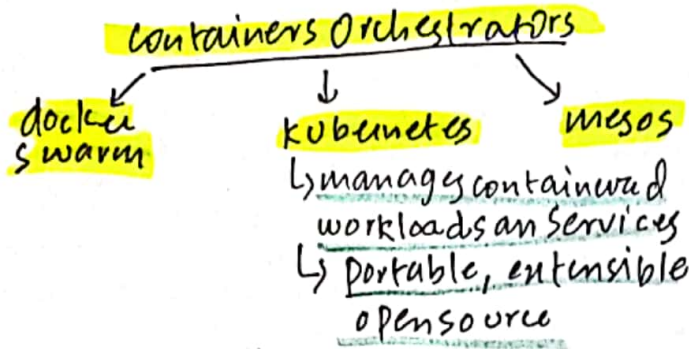


Basic Of Kubernetes

Immutable Infrastructure

- never modifies directly.
- changes cannot be made easily
- create copy from base image
- made changes
- replace with old one



Control plane components:

- makes global decision about Containers Clusters ie (Scheduling)
- Detects and response to cluster events.
- components of control plane can run on any ^{machine} container in cluster easily.

when you deploy kubernetes you get cluster. every cluster has at least one worker node called worker machines as well.

Control plane manages worker node and Pods in cluster.
comp. of Application.

- Kube controller manager: works as caretaker. makes sure they're running smoothly and according to your desired settings and rules.
- Cloud-controller-manager: takes care of tasks to make Kubernetes work smoothly with cloud services
- Kube-apiserver: front door of kubernetes, act as a gateway for communication btw users, application and cluster. receives request and make sure that they are processed correctly.
- Kube-scheduler: selects appropriate node in cluster for running new pod. (unit of work in k8s). Ensures optm resource utilization and app. performance.

→ etcd: Serves as the primary key value store for creating a functioning, fault tolerant cluster. Stores data in key value format.

master nodes

Kubernetes control plan → master node

- 1) Kube Controller manager
- 2) Kube-apiserver
- 3) etcd
- 4) Kubescheduler

(2) Pod create, pod delete, comm. of master and worker node. (API server)

(4) Schedule pods on nodes by considering required and available space.
api server pods k regarding info etcd mein save kar dega
Kube-scheduler se lekar. (Kubescheduler)

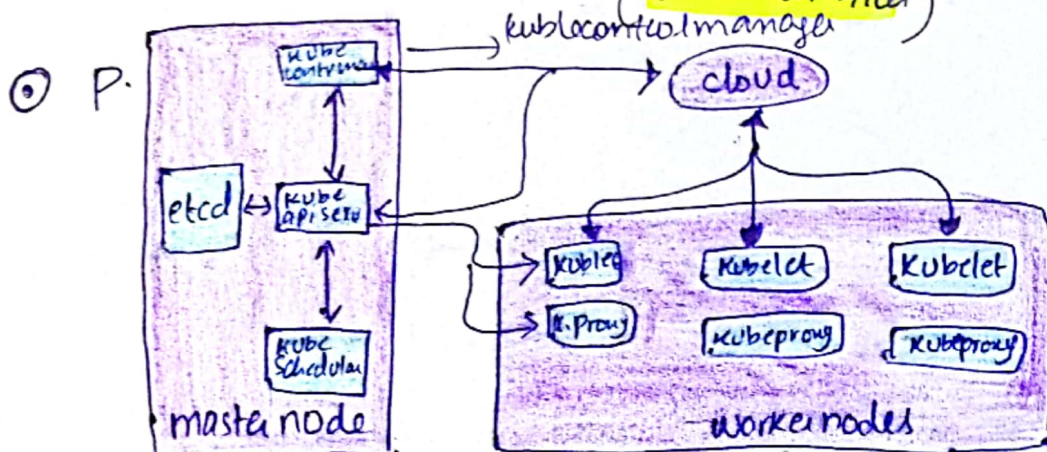
(3) cluster, pods se related configuration etcd mein save hota. (etcd)
stores all data of master and worker nodes in cluster

(1) maintains desired state. (Controller manager)

Worker nodes

⇒ Kubelet ⇒ responsible for master and worker node communication
monitors container, receive commands from master
containers runtime ko instructions dena.

⇒ Kubeproxy ⇒ DNS manager of Kubernetes, assigns IP to pods, service se interact kaise karana hai. cluster se request ko pod tk route karna. (load balancer)



① Pod

a group of one or more containers with shared storage and network resources, specs for how to run the container.

