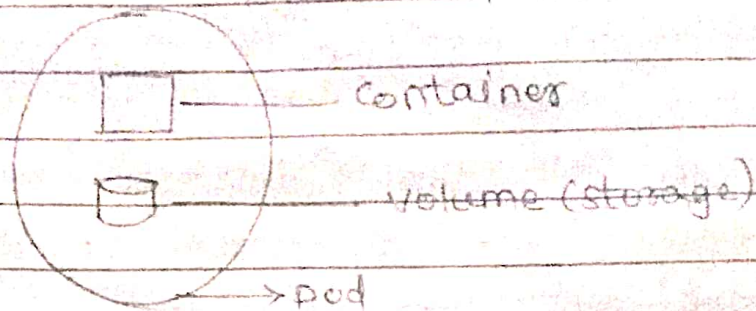


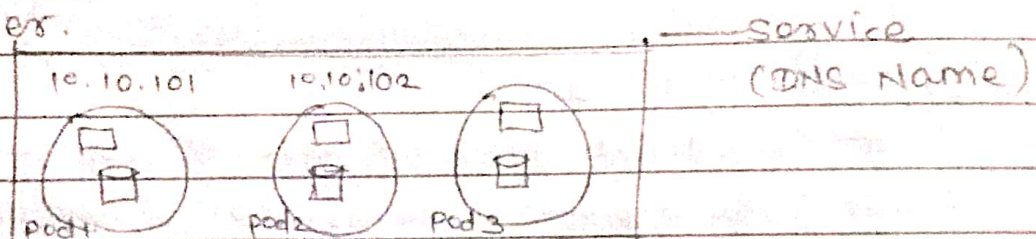
10.10.10.101 — unique IP



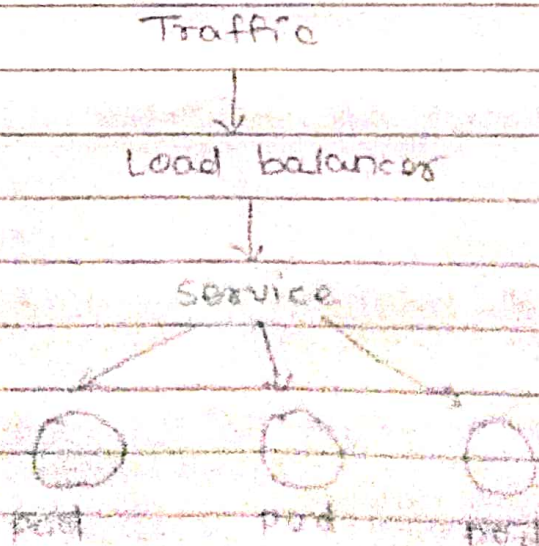
Pods that have the same set of functions are abstracted into sets, called services.

Kubernetes gives pods their own IP addresses and a single DNS name for a set of pods, and can load-balance across them.

A Kubernetes service is a set of pods that work together.



With this system, k8s has control over network and communication between pods and can load balance across them.



③ storage orchestration -

- Containers running inside a pod may need to store data
- Pods can have a storage volumes
- Usually a single volume is shared within all the containers in a pod.

Kubernetes allows to mount the storage system of your choice

Local

cloud (AWS)

Network (NFS)



Network File system

④ Self-Healing -

If container fails → restarts container

If node dies → replaces and reschedule containers on other nodes.

If container does not respond to user defined health check → kills container

All the processes are controlled by "Replication Controller"

⑤ Automated rollouts & rollbacks -

Rollout: deploy changes to the application or its configuration

Rollback - revert the changes & restore to previous state

kubernetes ensures there is no downtime during this process.

K8S progressively rolls out changes to your application or its configuration, while monitoring application health to ensure it doesn't kill all your instances at the same time. If something goes wrong, K8S will rollback the changes for you.

⑥ secret and configuration management -

secret

In K8S sensitive data like passwords, keys, tokens are handled using secrets

Secret is a K8S object

created outside pods and containers

Makes sensitive data portable and easy to manage

* Secret is a K8S object that separates sensitive data from pods and containers

config maps

In K8S configurations are handled using config maps

Config map is a K8S object

created outside pods and containers

Makes configuration portable and easy to manage

Config Map is a K8S object that separates configurations from pods & containers.