

Day-1

Container Orchestration using Kubernetes

Kubernetes

K8S → Standard Term

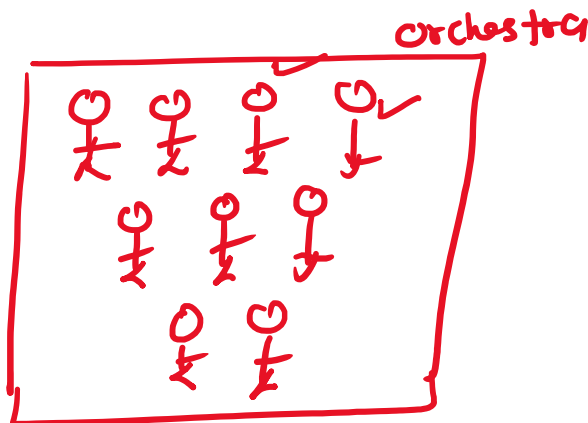
Container → shipping Industry



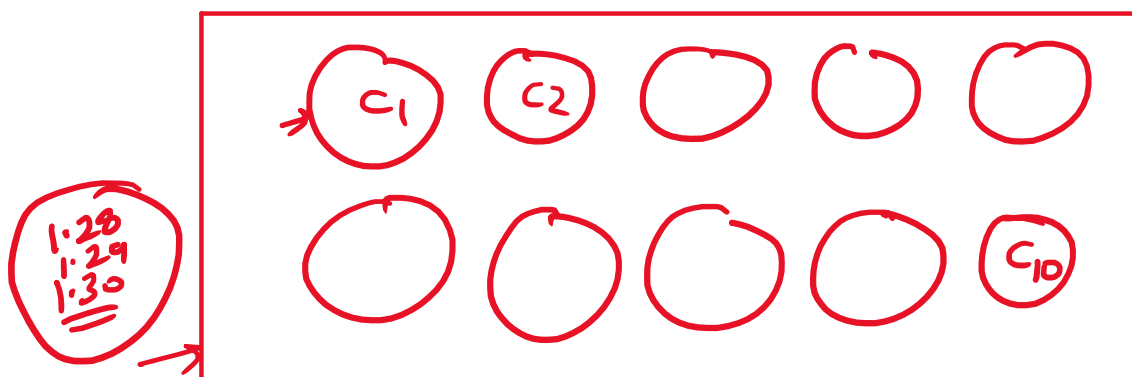
Container Orchestration

Orchestra (music)

[orchestra ✓
Orchestrator ✓
Orchestration ✓



Orchestration



Docker

Container Orchestration

1.32

Docker swarmX

Kubernetes

google

2015
CNCF

Controller

S/W platform
App Framework

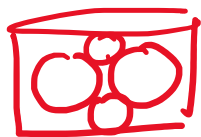
Container Orchestration
orchestration

Kubernetes → Container
POD ← Container
Containers

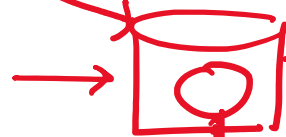
Docker

Containerd

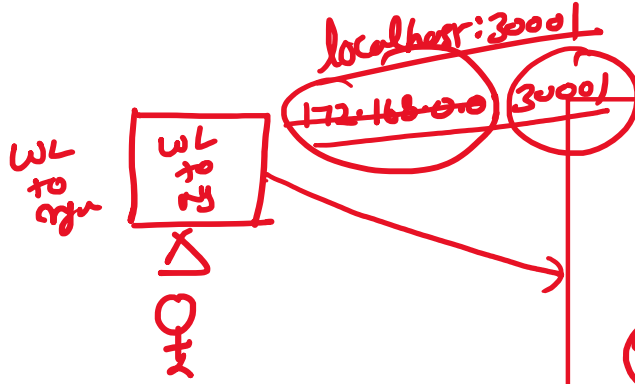
cri-o



Pod



Container



Kubernetes Cluster

30000 - 32267

172.168.0.1

Service

Resource

Pod
Service
Replicaset
Deployment

→ → YML

Label

app: myapp

RAM
CPU

Pod

has

Labels

10.0.0.1

10.0.0.2

10.0.0.3

10.0.0.4

10.0.0.5

app: myapp



apiVersion: v1
kind: Pod
metadata



my-pod

```

apiVersion: v1
kind: Pod
metadata:
  name: my-pod
  labels:
    app: myapp
spec:
  containers:
  - name: my-container
    image: nginx:latest

```



docker run

+

kubectl

create

apply -f pod.yml

.yaml

my-Container

Kubernetes

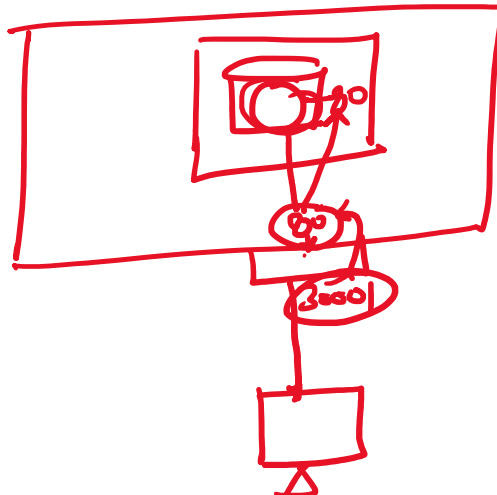
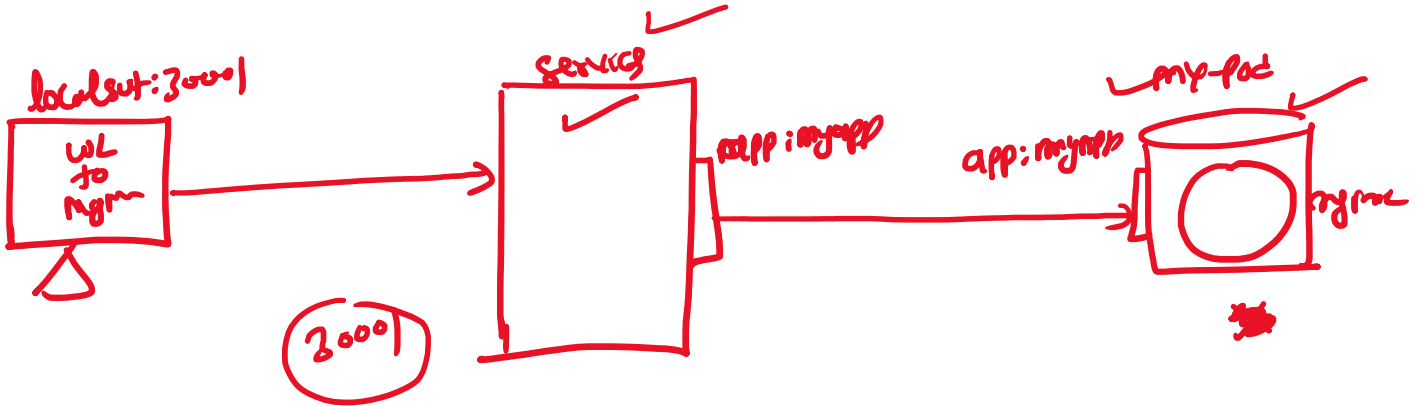
docker Containerd

CE

Service

ClusterIP NodePort

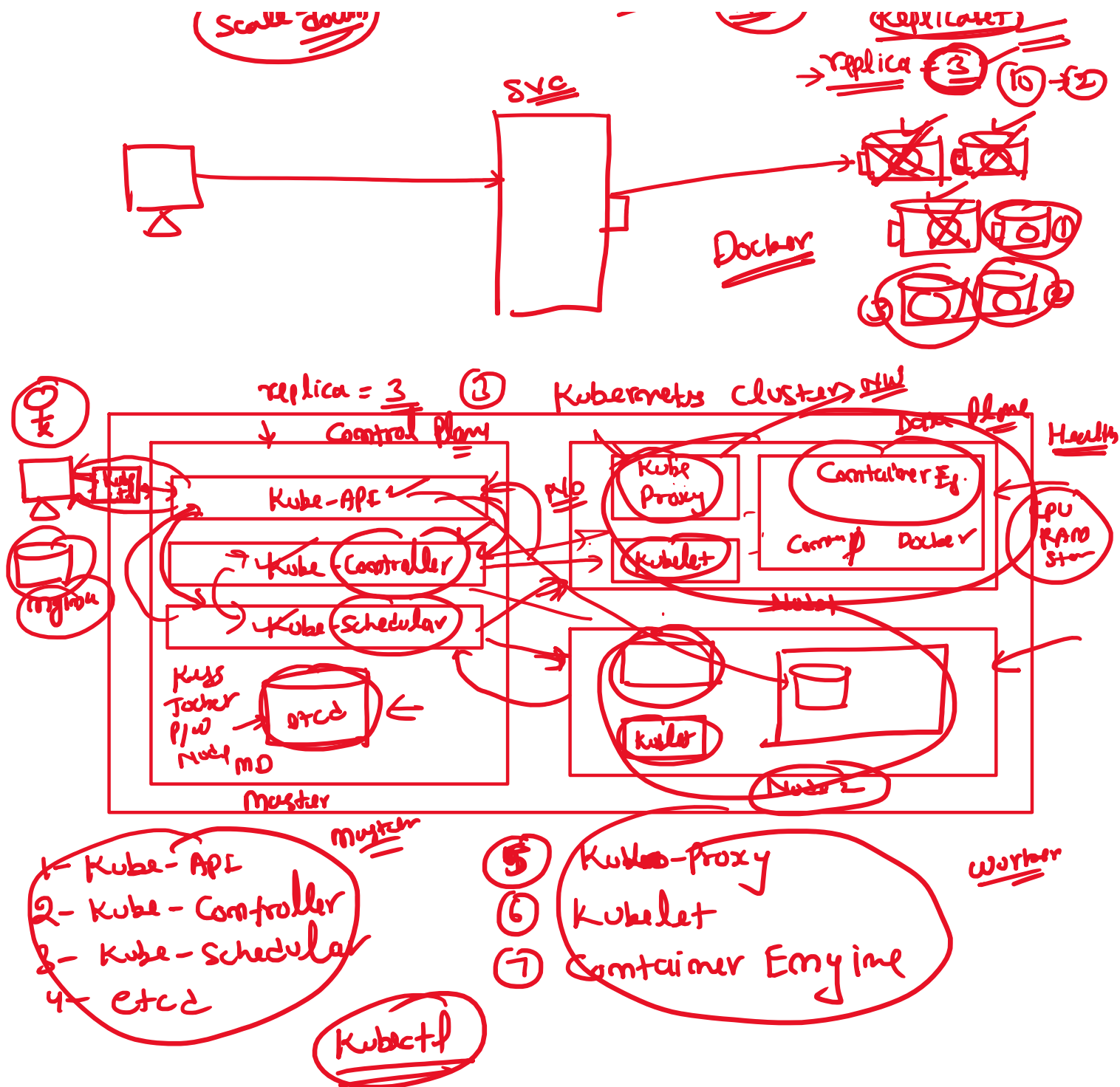
Load-balancer



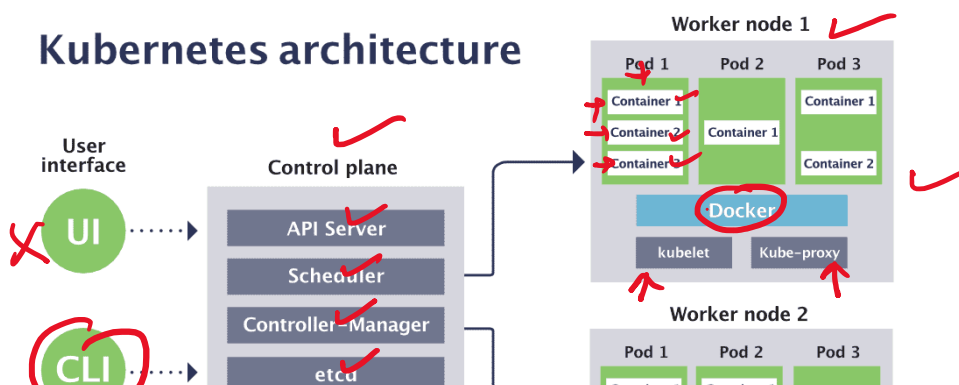
Scale-up
Scale-down

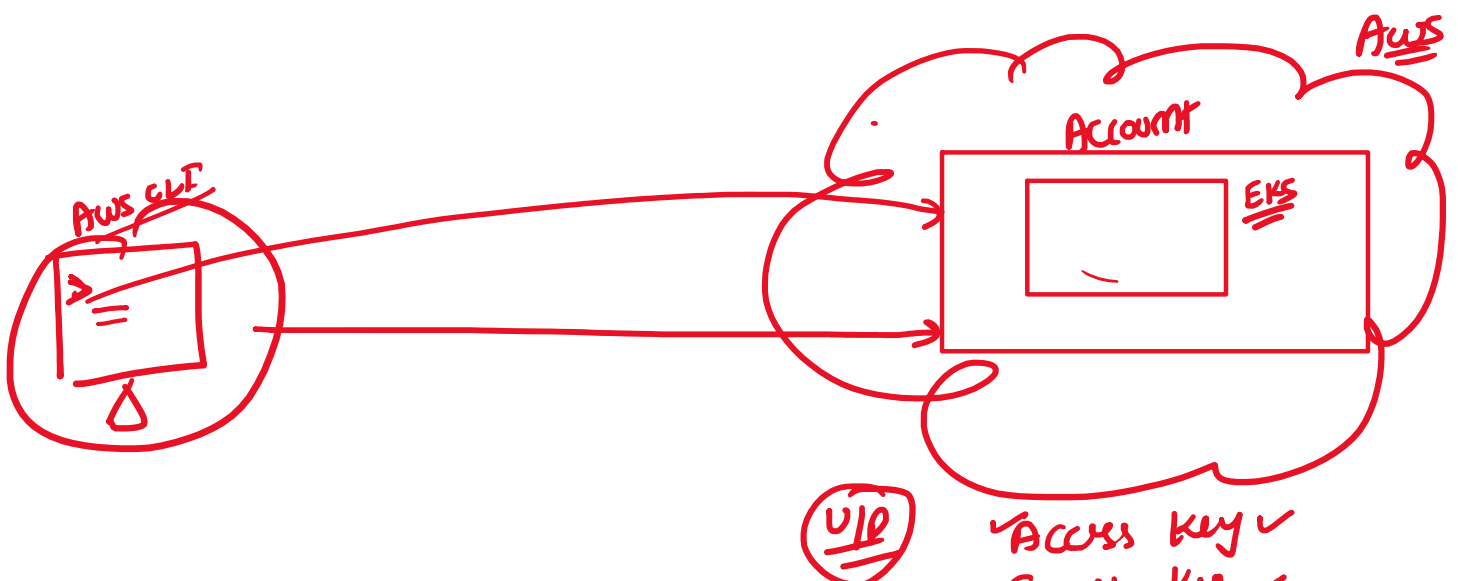
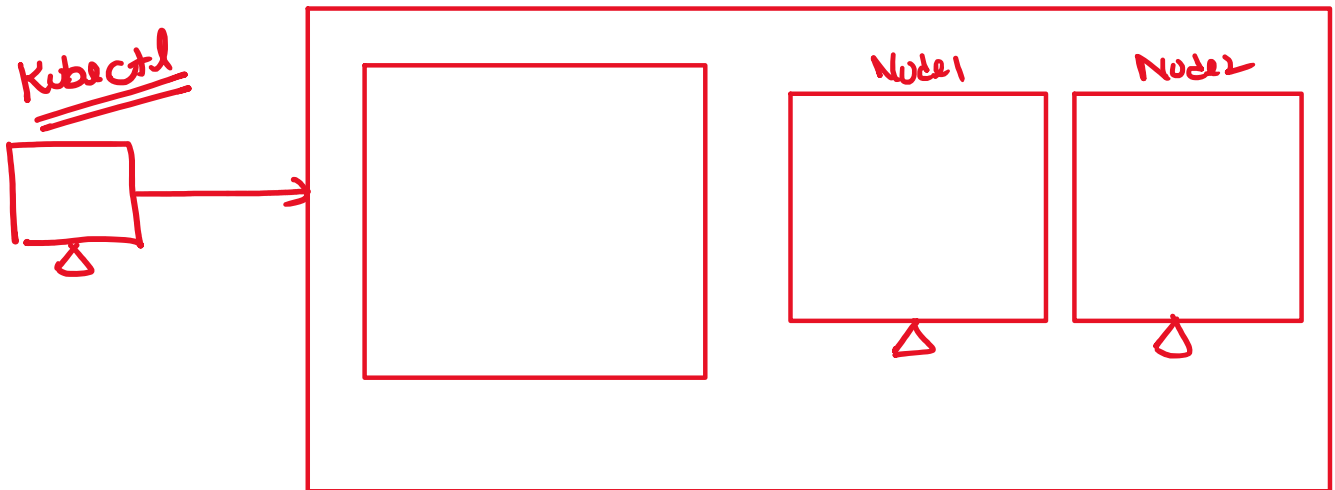
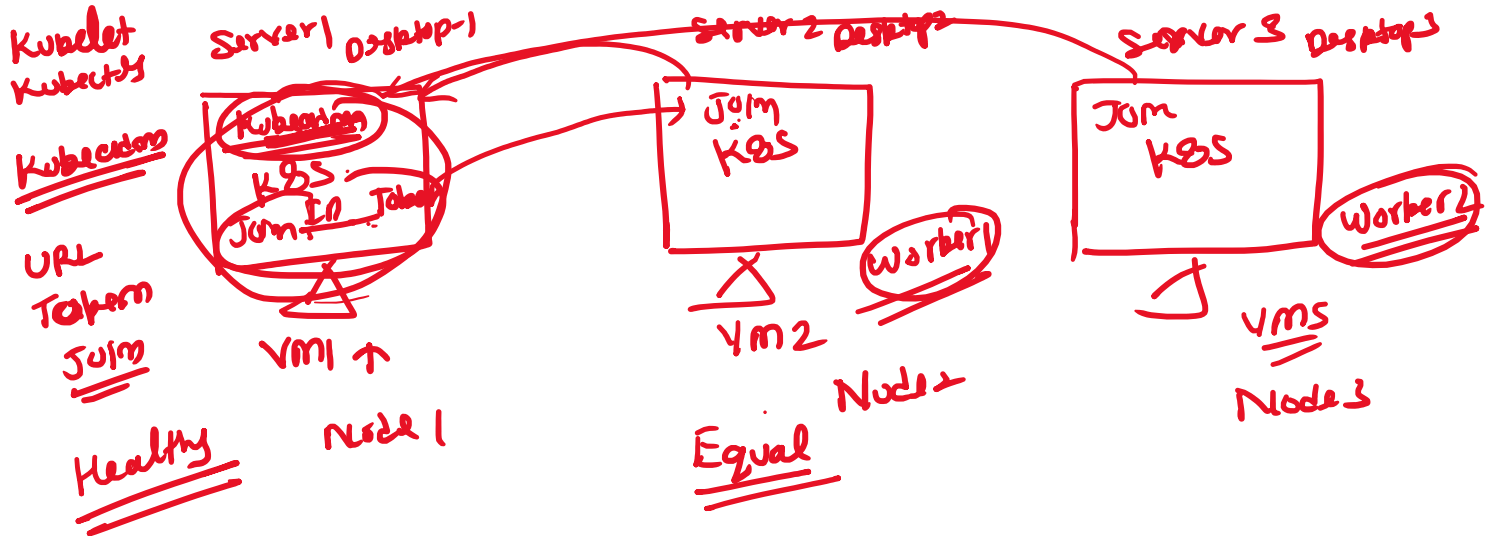
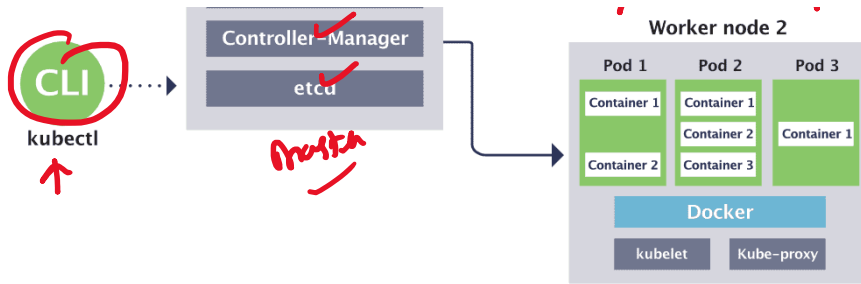
100% → F.T
H.A

Kubernetes
Replicaset
→ replica 3



Kubernetes architecture





UIP

✓ Access key ✓
✓ Secret key ✓
Admin