

Kubernetes Architecture :

Node :

- Machine Physical / Virtual on which Kubernetes is installed.
- It is a Worker Machine, where containers will be launched by Kn.
- Known as Minions

① What if the Node on which my App is running fails?

→ The App goes down.

→ We need to have more than

1 Node.

↳ Cluster

Cluster:

- Set of nodes grouped together
 - If one node fails, the app is still accessible from the other nodes.
 - Helps in Sharing load ..
- Who is Responsible for Managing the Cluster?
- ⇒ Where is Info about the members stored ??.
- ⇒ How are the Nodes Monitored

⇒ Master

Masters ..

- Another node with Kubernetes installed on it
- Configured as a master
- Watches over the nodes in the cluster
- Responsible for the actual orchestration of containers on the worker nodes

Kubernetes Components

- | | |
|-------------------|---------------------|
| ① API Server | ④ Container runtime |
| ② etcd Service | ⑤ Controllers |
| ③ Kubelet Service | ⑥ Schedulers |

① API Server: ○ FE - of the Kubernetes
○ users, management devices, and line
interfaces talk to the API
to interact with the Kubernetes
cluster.

② etcd Key store :

- distributed, reliable, key-value store
to store all data to manage
the cluster.
- responsible for implementing logs within
the cluster \Rightarrow ensure no conflict
between the masters

⑥ Scheduler :

- Responsible for distributing work/
containers across multiple nodes

- looks for Newly created containers and assigns them to nodes

⑤ Controllers:

- Brain behind Orchestration
- Notices when Nodes / Containers / Endpoints goes down.
- Make decisions to bring up new Container in such cases

⑥ Container Runtime:

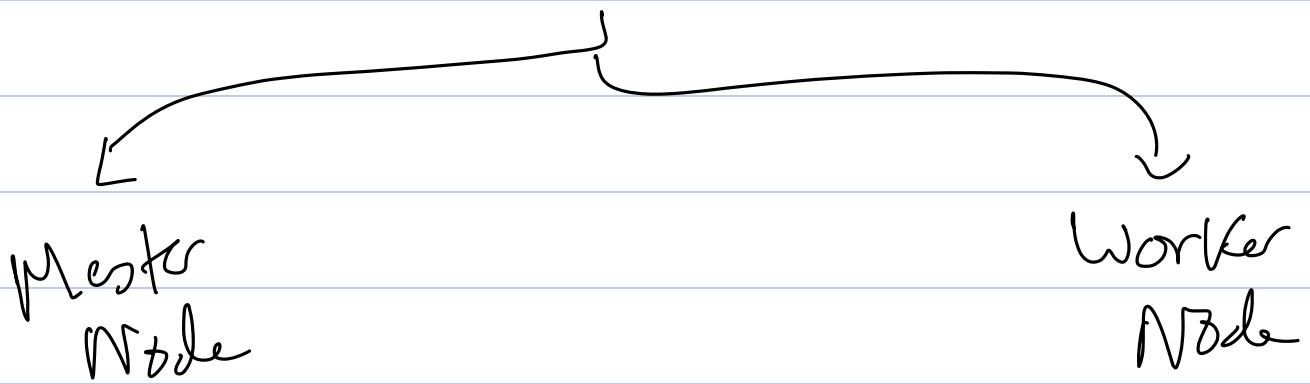
- Underlying Software used to run Containers
 - Docker

③ Kubelet:

→ Agent that runs on each node on the cluster

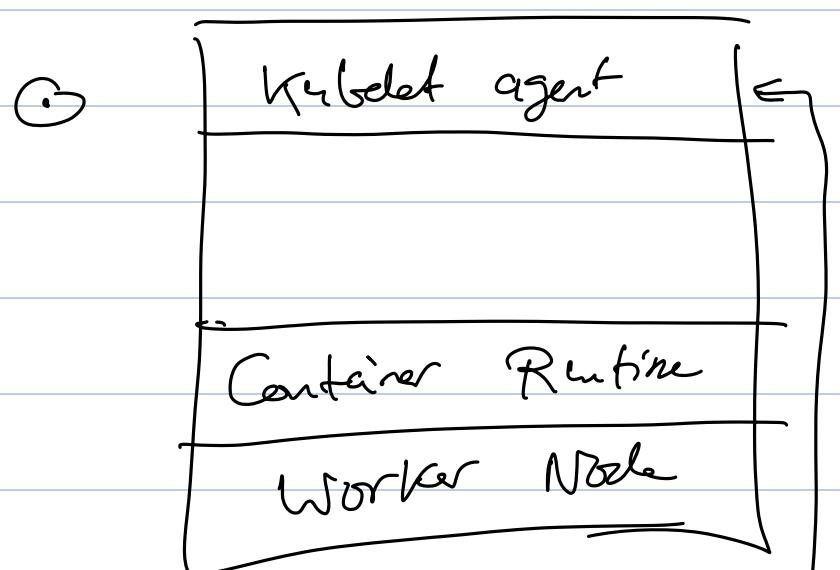
- Make sure Containers are running on the nodes as expected.

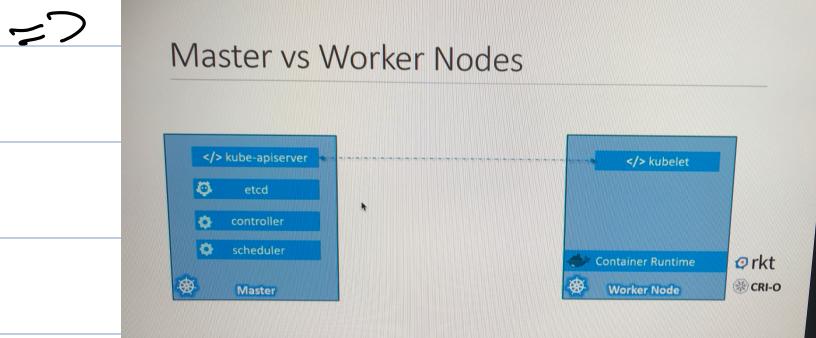
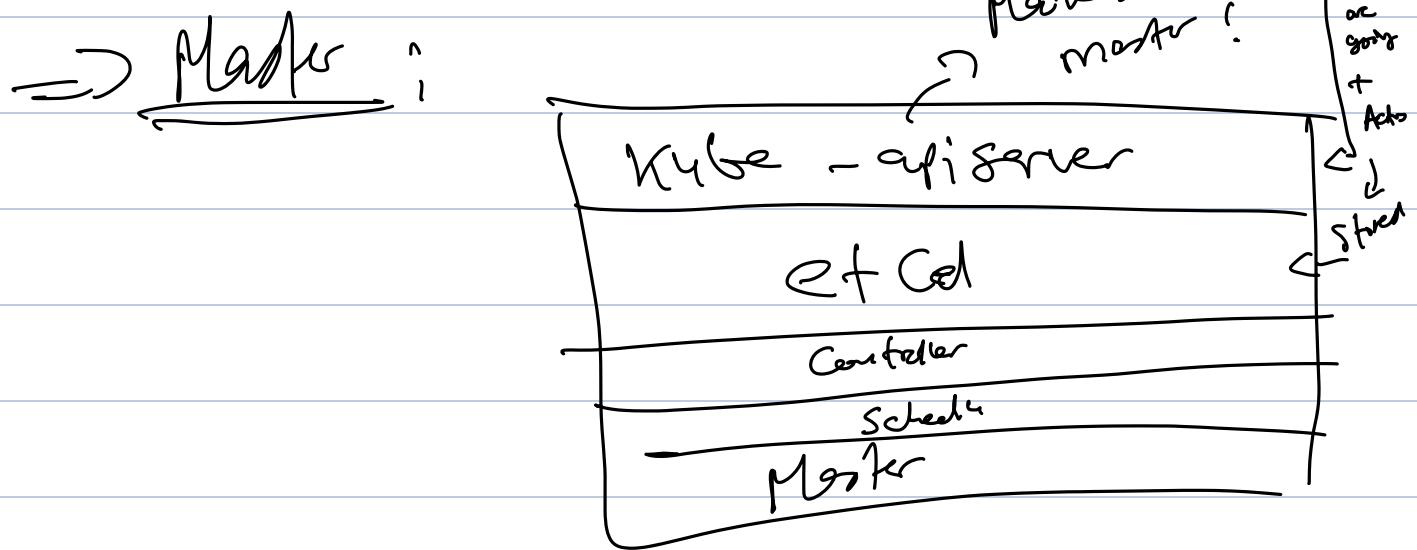
Servers



How Does one Server become a Master
8 the other the slave??

⇒ Worker node : ① Where the containers are hosted.





Kube Command line Tool

⇒ also called Kubectl (control)

⇒ deploy + Manage apps on a
Kubernetes cluster

⇒ get Cluster Info, Status of Nodes,

⇒ Kubectl run

↳ Deploy an app on the
cluster

⇒ Kubectl Cluster info

↳ View Info about cluster,

⇒ Kubectl get nodes

↳ List all nodes in
cluster