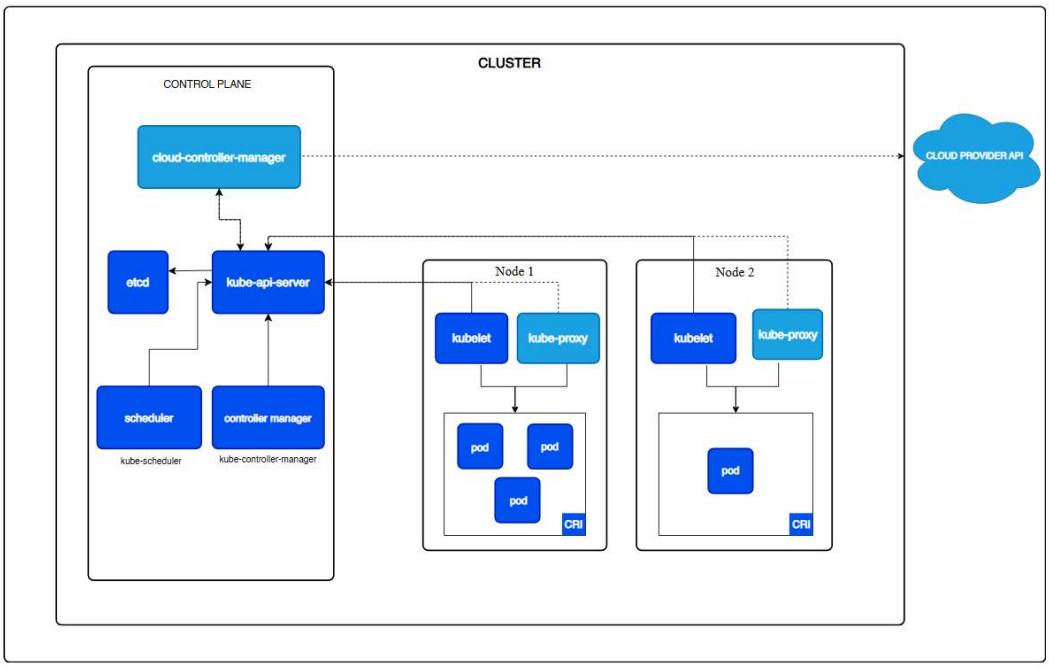
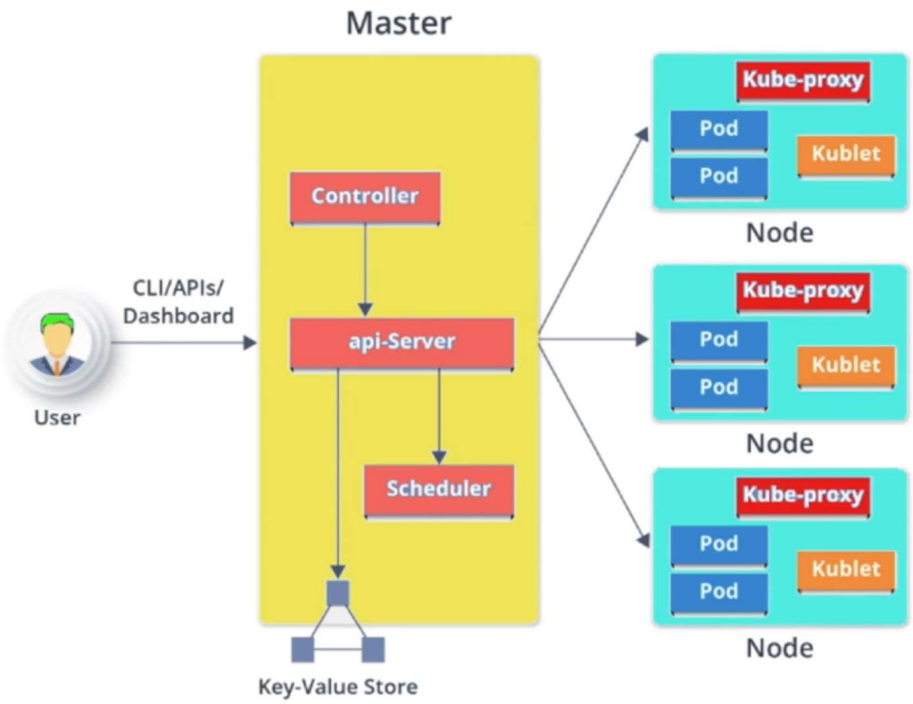
Architecture

Monday, December 29, 2025 1:35 PM



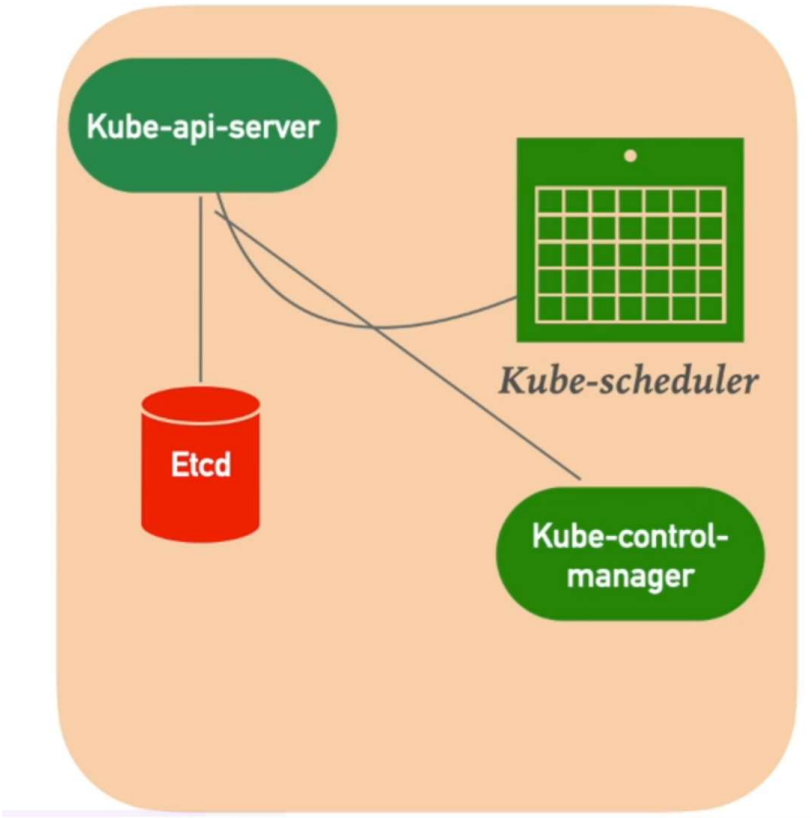
https://kubernetes.io/docs/concepts/architecture/

CLUSTER



- Can have one or multiple master nodes, one or multiple slave (worker) nodes.

MASTER NODE



Api server

- Accepts user requests via REST api

Etcd

- Key-value store for the cluster state
- Should be stored outside of the cluster
- Can be used to recover the cluster if it's lost/broken

Scheduler

- Monitors worker nodes resources
- Regulates tasks on the worker nodes
- Schedules jobs

Control manager

- Runs all automated jobs within the cluster

WORKER NODE

- Managed by the master node
- A physical machine or a VM that runs the containers
- Contains all services need for networking between containers/workers/master
- Can assign resources to containers

KUBELET

- K8s agent running on the worker node
- Reads the Pod config from the api server and ensures that described containers are running

Kube-proxy

- Manages subnetting
- Exposed nodes for external connections

POD

- Group of one or more containers that share storage, network and run specification
- Single IP per pod, not per container

Kubernetes +Architec...

TWO WAYS TO INSTALL

High Availability Deployment

- One master node, two worker nodes
- Production suitable

Minikube

- One node
- Suitable for development/testing