KUBERNETES & IT'S COMPONENTS

A Beginner's Guide

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What is Kubernetes?

Kubernetes is an open-source orchestration platform, which is used for deployment, autoscaling and management of containerized applications.
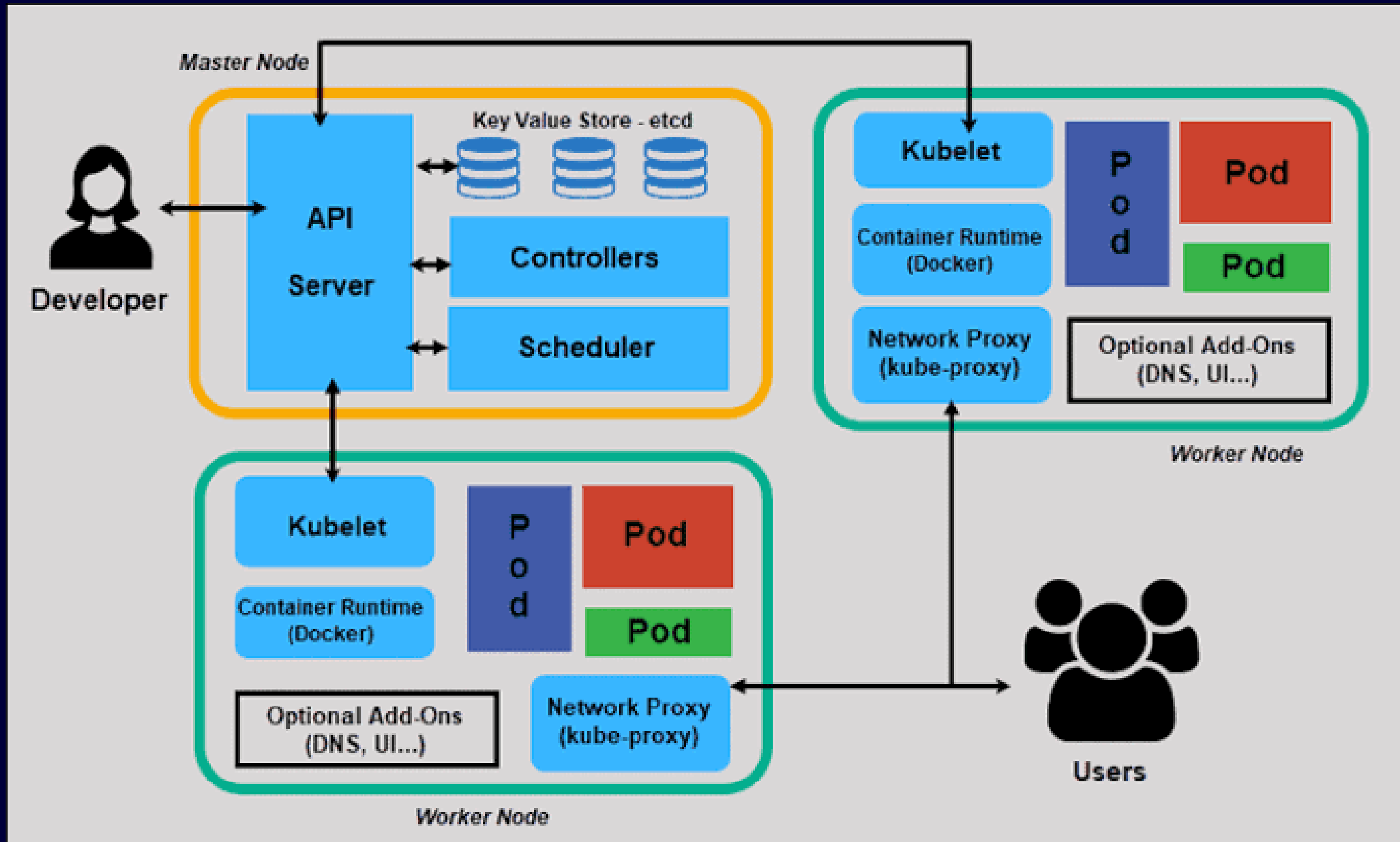
What is a Cluster?

Cluster is a group of master and node machines that are used to deploy containerised applications.

An example of a Cluster

Components of Master Machine

1. Kube API server:

It's a central component of K8s, which acts as a bridge between the user and the cluster. All components of the cluster will communicate with the API server to perform their actions.

2.Etcd: It is a key-value store of the k8s cluster. It stores the current state of nodes, pods, containers.

3.Kube Scheduler: is a component of K8s which is responsible for assigning the pods to nodes and to maintain the desired state of the cluster.

4.Controller Manager: It makes sure the actual state of the cluster matches the desired state. It will check the current state of the cluster in etcd and if that is not matching the desired state it will communicate with the Kube scheduler to match the desired state.

Components of Node Machine

1.Kubelet: is an agent on a node machine which communicates with master to maintain the state of pods. It also communicates with container runtime to start and stop containers. It uses port 10255.

2.Kube proxy: it assigns dynamic IP to pods. It runs on each node to make sure that each pod will get unique IP.

3.Container Runtime: Responsible for running containers within pods.

4.Pods: are the smallest deployable units in K8s. They are the group of one or more containers that share the same network namespace and can communicate with each other. We can deploy pods by two methods one is imperative i.e, by commands and other is declarative i.e, by manifests.

Thank you for Reading!

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