Kubernetes

## Virtualisation

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Ok, what is it?

- Kubernetes is a container orchestration system.
- More full featured than Compose/Swarm, and hence more complicated.
- Works with Docker and other container systems.
- Originally developed at Google, since spun off and currently managed by the Cloud Native Computing Foundation.
- https://kubernetes.io

ARCHITECTURE
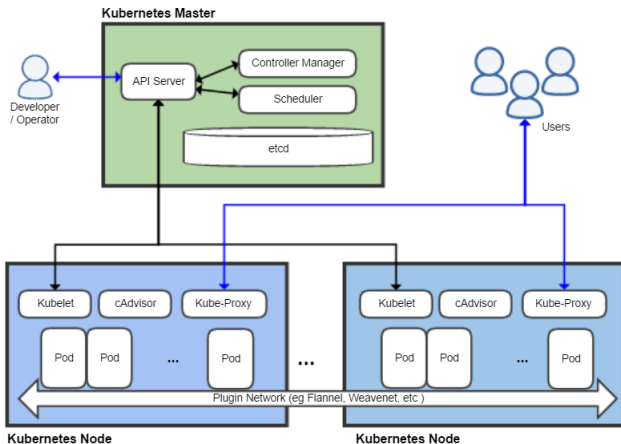
[1] Image from Wikipedia

CLUSTERS

A Kubernetes cluster is consists of multiple servers (physical or virtual), organised as

- One or more masters that coordinates the orchestration
- One or more nodes

Pods

The fundamental unit of Kubernetes is the Pod.

- ▶ Pods consist of one or more containers and related resources.
- ▶ Elements of a pod are all deployed on the same node.
- ▶ We can deploy multiple instances of the same kind of pod.
- ▶ All the elements of a pod share the same internal IP address.
- ▶ The configuration to run a set of Pods is called a Deployment.

Services

Pods can be organised to provide a Service

- ▶ The pods that comprise a service can be of different types.
- ▶ Service are exposed internally within a cluster.
- ▶ Services can also be exposed to users outside the cluster over the larger network.

Lab

Do the "Kubernetes Basics" tutorial at
`https://kubernetes.io/docs/tutorials/kubernetes-basics/`