

Launching Kubernetes Instance Setup:

1. Select t2.medium of Ubuntu
2. Edit network settings & from Security group rule 1 (TCP, 22, 0.0.0.0/0) type select all traffic instead of ssh.
3. Increase from 8 to 30 GB.
4. Rest of the setup is same.

Wikipedia, Printrest adopted K8S.

Minikube is the software that lets you run Kubernetes cluster on your computer.

manifest (JavaScript/Yaml) Scripts written.

Kubect!: The Kubernetes command-line tool, kubectl, allows you to run commands against Kubernetes clusters.

Kubeadm: Use in Cloud System

Kubefed: Kubernetes Federation, or KubeFed, is a tool for coordinating the configuration of multiple clusters in Kubernetes.

1 master & 1000 working nodes in giants.

Control plane: The control plane manages the worker nodes and the Pods in the cluster.

Master node: full fledged instance. inside it we have control plane.

etcd is not the component of master node. Its not the integral part of master node. Keep the status of all the cluster. Write User manifest.

api server works on rest api. only responsible component for communication. Every component works under it.

Pod can be created by Kubelet. but kubelet doesn't create container inside it.

Scheduler: action / The Kubernetes scheduler is a control plane process which assigns Pods to Nodes.

Kubelet: communication / The kubelet is the primary "node agent" that runs on each node.

Container engine: creates container / Container Engine for Kubernetes uses Kubernetes - the open-source system for automating deployment, scaling, and management of containerized applications across clusters of hosts.

Proxy: network sort of things / kube-proxy can only route traffic within a Kubernetes cluster.

2 pods can never interact with each other.

Kube Scheduler checks on which node to create by checking load balancing.

Pod: Center of gravity in worker node.

Ephemeral Storage. Linked to node / Kubernetes supports two volume types — persistent and ephemeral — for different use cases. While persistent volumes retain data irrespective of a pod's lifecycle, ephemeral volumes last only for the lifetime of a pod and are deleted as soon as the pod terminates.

Labels are used to group multiple pods.

Selectors are used to group labels.

Extension yml s used with pod object files.

When you write manifest known as declarative.

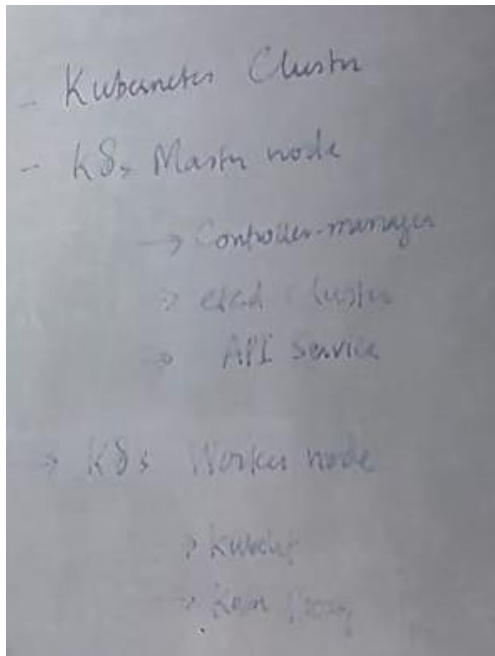
When you assign new label at runtime its imperative.

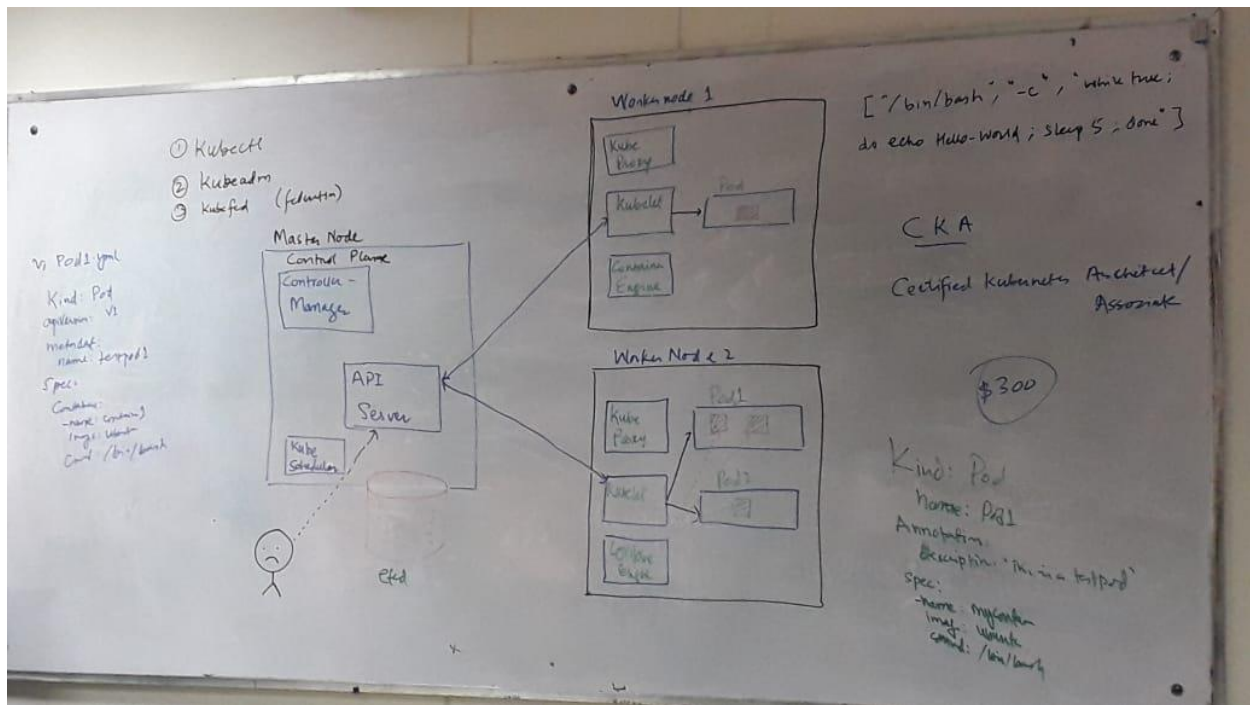
More about labels & selectors:

<https://kubernetes.io/docs/concepts/overview/working-with-objects/labels/>

Three ways to delete pod:

1. Deleting Yaml file forcefully.
2. Deleting pod name.
3. Kubectl Command(kubectl delete pod -l env=development).





Sample Manifest  
vi testpod.yml

```
Kind: Pod
apiVersion: v1
metadata:
  name: mypod
spec:
  containers:
  - name: mycontainer1
    image: ubuntu
    command: ["/bin/bash", "-c", "while true; do echo Hello-world; sleep 5; done"]
```

vi labpod.yml

```
Kind: Pod
apiVersion: v1
metadata:
  name: developmentpod
  labels:
    env: development
    class: pod
    dept: MCR
spec:
  containers:
  - name: mycontainer2
    image: ubuntu
    command: ["/bin/bash", "-c", "while true; do echo Hello-world; sleep 5; done"]
```

]\$ kubectl apply -f labpod.yml  
]\$ kubectl get pods --show-labels  
]\$ kubectl label pods developmentpod myname=Zabin  
]\$ kubectl get pods --show-labels  
]\$ kubectl get pods -l env=development  
]\$ kubectl get pods -l env!=development  
]\$ kubectl delete pod -l env!=development  
]\$ kubectl get pods