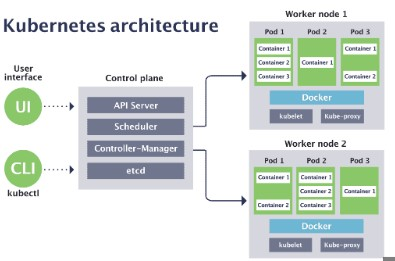
**KUBERNETES**

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**Kubernetes :-kubernetes is an open source container management tool which automates container deployment,container scaling and load balancing.**

**kubernetes architecture**

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**Kubernetes components**

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API server :-acts as the front end for the kubernetes control plane.

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Etc d :-A distributed key-value store that store the cluster's configuration data.

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scheduler :-assigns nodes for newly created pods.

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controller manager:-monitors the cluster's state and make changes as needed.

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Kubelet:-it’s a kind of process for API server to manage the node machines.

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Kubeproxy:-maintains network rules on nodes and enables communication between pods.

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Kubectl :- command line for kubernetes master.

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Kubeadm :- cluster management uses for managing kubernetes cluster, can delete and install kubernetes cluster by using kubeadm.

**Kubernetes installation steps**

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**Commands same for master and worker node**

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**\*apt-get update && apt-get install -y curl apt-transport-https**

**\*sudo mkdir -p /etc/apt/keyrings**

**\*curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg**

**\*echo "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/ubuntu $(lsb\_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null**

**\*sudo apt-get update**

**\*sudo apt-get install -y containerd.io docker-ce**

**\*curl -s https://packages.cloud.google.com/apt/doc/yum-key.gpg | apt-key add -**

**\*echo "deb http://apt.kubernetes.io/ kubernetes-xenial main" >/etc/apt/sources.list.d/kubernetes.list**

**\*apt-get update**

**\*apt -y install kubeadm kubectl kubelet**

**#Open Below file and then comment disabled\_plugin for CRI Runtime**

**vi /etc/containerd/config.toml (Add # in front of disabled\_plugin in this file and save it)**

**\*service containerd restart**

**Commands on for master node**

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**\*kubeadm init**

**\*mkdir -p $HOME/.kube**

**\*sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config**

**\*sudo chown $(id -u):$(id -g) $HOME/.kube/config**

**\*kubeadm token create --print-join-command --- (this command is used to connect with worker node.)**

**COMMANDS:-**

**\*kubectl apply -f file.yml :- apply(used to create or update resources)**

**-f (specifies that the configuration is provided in a file)**

**\*kubectl create -f file.yml :- it will create a deployment using configuration specified in the file.**

**\*kubectl get deployment : it gives information about deployment**

**\*kubectl get pods : list all pods running in the current name space**

**\*kubectl describe pods [pod-name] :-View details about a particular pod**

**\*kubectl describe pods :-Show details about all pods**

**\*kubectl delete pods --all :- Remove all pods**

**\*kubectl logs [pod-name]:- to print logs from containers in a pod, use the kubectl logs command.**

**kubernetes servers :- 1)load balancer**

**2) node port**

**3)cluster ip**

**types of load balancers:-1)application load balancer**

**2)nerwork load balancer**

**3)gateway load balancer**

**load balancer:- it is used to allow incoming traffic equally to the servers**

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