**K8 Installation**

installing kubernetes cluster

**## Execute on Both "Master" & "Worker Node"**

Run the following commands on both the master and worker nodes to prepare them for kubeadm.

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**##Update the system's package list and install necessary things:**

sudo apt-get update

sudo apt install apt-transport-https curl -y

## Install containerd

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 containerd.io -y

## Create containerd configuration

sudo mkdir -p /etc/containerd

sudo containerd config default | sudo tee /etc/containerd/config.toml

sudo sed -i -e 's/SystemdCgroup = false/SystemdCgroup = true/g' /etc/containerd/config.toml

sudo systemctl restart containerd

## Install Kubernetes

curl -fsSL<https://pkgs.k8s.io/core:/stable:/v1.30/deb/Release.key> | sudo gpg --dearmor -o /etc/apt/keyrings/kubernetes-apt-keyring.gpg

echo 'deb [signed-by=/etc/apt/keyrings/kubernetes-apt-keyring.gpg]<https://pkgs.k8s.io/core:/stable:/v1.30/deb/> /' | sudo tee /etc/apt/sources.list.d/kubernetes.list

sudo apt-get update

sudo apt-get install -y kubelet kubeadm kubectl

sudo apt-mark hold kubelet kubeadm kubectl

sudo systemctl enable --now kubelet

## Disable swap

sudo swapoff -a

sudo modprobe br\_netfilter

sudo sysctl -w net.ipv4.ip\_forward=1

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**## Execute ONLY on "Master Node"**

sudo kubeadm init --pod-network-cidr=10.244.0.0/16

mkdir -p $HOME/.kube

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

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

#Network plugin

kubectl apply -f<https://github.com/flannel-io/flannel/releases/latest/download/kube-flannel.yml>

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1. Perform pre-flight checks

**sudo kubeadm reset pre-flight checks**

2. Paste the join command you got from the master node and append `**--v=5**` at the end but first use **sudo su** command to become root (avoid using sudo your-token).

**sudo su**

**<your-token --v=5>**

## Verify Cluster Connection

\*\*On Master Node:\*\*

**kubectl get nodes**