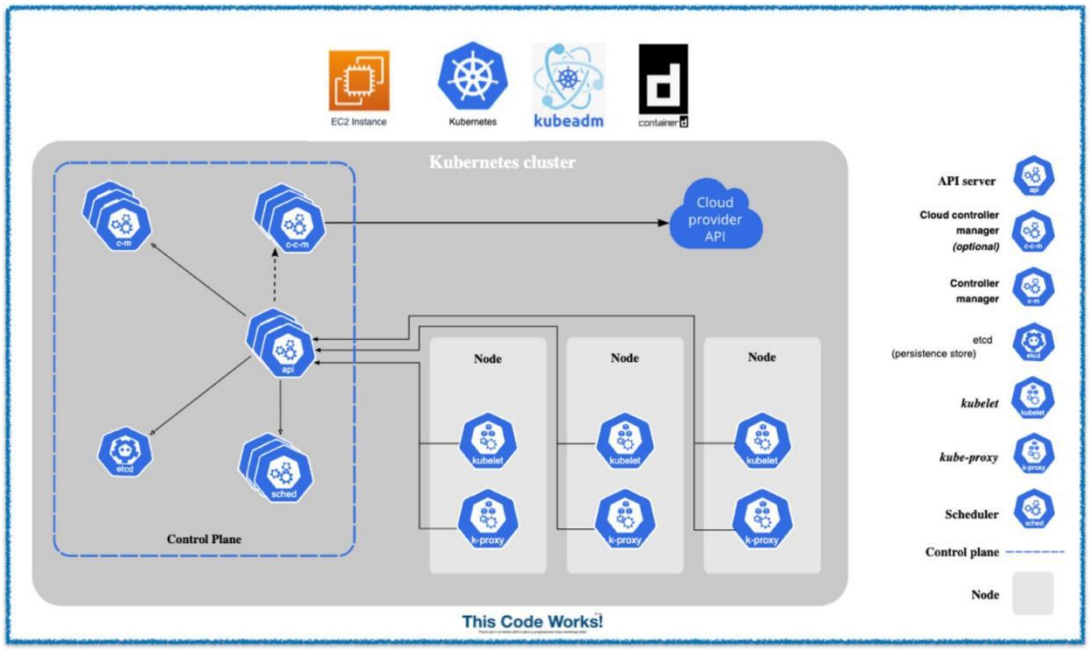
KUBERNETES KUBEADM INSTALLATION



Kubernetes kubeadm cluster ek **Kubernetes cluster** hota hai jo **kubeadm tool** se banaya gaya ho.Ye **cluster manually** banate hain apne **VMs** ya **physical machines** pe.

Yeh rahi step-by-step Kubeadm Cluster creation ki guide Roman Urdu mein

Step 1: Sabhi nodes pe Docker aur Kubernetes components install karo

```
 # Update packages
sudo apt update -y

 # Install Docker sudo apt
 install -y docker.io

 # Enable and start Docker service
 sudo systemctl enable docker
 sudo systemctl start docker

 # Install required dependencies
 sudo apt-get install -y apt-transport-https ca-certificates curl gpg

 # Add Kubernetes key and repository
 sudo mkdir -p -m 755 /etc/apt/keyrings
```

```
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

 # Update package index
 sudo apt-get update

# Install kubelet, kubeadm, and kubectl
sudo apt-get install -y kubelet kubeadm kubectl

#Prevent automatic updates
sudo apt-mark hold kubelet kubeadm kubectl
```

Step 2: Har node par hostname set karo

Har node par alag se yeh command run karo taake uska hostname set ho jaye

```
sudo hostnamectl set-hostname manager      # Run on Master Node
sudo hostnamectl set-hostname worker-1     # Run on Worker Node 1
sudo hostnamectl set-hostname worker-2     # Run on Worker Node 2
```

Step 3: Har node par installation verify karo

Docker aur kubeadm sahi se install hue hain ya nahi, check karo har node par yeh commands run karo

docker --version

kubeadm version

kubectl version --client

Step 4: Kubernetes cluster ko initialize karo (sirf Master Node par run karo)

Sirf Master Node par ye command run karo

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

Step 5: Master node par kubectl configure karo

Master Node par ye commands run kariye

```
mkdir -p $HOME/.kube sudo cp -i

/etc/kubernetes/admin.conf $HOME/.kube/config sudo

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

Step 6: Cluster ka status check karo

```
kubectl get nodes

kubectl get namespace
```

Step 7: Master node par Pod Network (Flannel) install karo

Master Node ye command and URL run karo

kubectl apply -f

https://github.com/flannelio/flannel/releases/latest/download/kube-flannel.yml

Note: This setup we doing in AWS EC-2 terminal first we need to create one instance make it as master and remaining instances for nodes or workers