**Tutorial Install 1 Node Kubernetes dengan 2 Worker Container (3 Komputer)**

|  |  |
| --- | --- |
| **Nama** | **: Farid Fadlizil Ikram** |
| **Kelas** | **: TK 2A** |
| **NIM** | **: 2301083013** |
|  |  |

# Topologi:

- Master Node (Kubernetes Control Plane): Komputer 1  
- Worker Node 1 (Docker container): Komputer 2  
- Worker Node 2 (Docker container): Komputer 3

# Langkah 1: Setup di Semua Node (Master & Worker)

1. Update & Install Dependency:  
  
**sudo apt update && sudo apt upgrade -y  
sudo apt install -y apt-transport-https ca-certificates curl**  
  
2. Tambahkan Repository Kubernetes:  
  
**sudo curl -fsSLo /usr/share/keyrings/kubernetes-archive-keyring.gpg https://packages.cloud.google.com/apt/doc/apt-key.gpg**

**echo "deb [signed-by=/usr/share/keyrings/kubernetes-archive-keyring.gpg] https://apt.kubernetes.io/ kubernetes-xenial main" | sudo tee /etc/apt/sources.list.d/kubernetes.list**

**sudo apt update**  
  
3. Install Kubernetes Components:  
  
**sudo apt install -y kubelet kubeadm kubectl  
sudo apt-mark hold kubelet kubeadm kubectl**  
  
4. Install Docker:  
  
**sudo apt install -y docker.io  
sudo systemctl enable docker**  
**sudo systemctl start docker**

# Langkah 2: Inisialisasi Master Node (Komputer 1)

1. Disable Swap:  
  
**sudo swapoff -a  
sudo sed -i '/ swap / s/^/#/' /etc/fstab**  
  
2. Inisialisasi Cluster:  
  
**sudo kubeadm init --pod-network-cidr=10.244.0.0/16**  
  
Setelah sukses, akan muncul perintah `kubeadm join ...` yang perlu disalin.  
  
3. Setup kubeconfig:  
  
**mkdir -p $HOME/.kube  
sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config  
sudo chown $(id -u):$(id -g) $HOME/.kube/config**  
  
4. Install Pod Network (Flannel):  
  
**kubectl apply -f https://raw.githubusercontent.com/coreos/flannel/master/Documentation/kube-flannel.yml**

# Langkah 3: Setup Worker Node (Komputer 2 & 3)

1. Disable Swap:  
  
**sudo swapoff -a  
sudo sed -i '/ swap / s/^/#/' /etc/fstab**  
  
2. Join ke cluster menggunakan perintah dari Master

**sudo kubeadm join 192.168.1.10:6443 --token <token> \**

**--discovery-token-ca-cert-hash sha256:<hash>**

# Langkah 4: Verifikasi dari Master

Jalankan:  
  
**kubectl get nodes**  
  
Seharusnya muncul 3 node: 1 master dan 2 worker.

# Opsional: Jalankan Pod di Worker

Contoh deploy pod nginx:  
  
**kubectl run nginx --image=nginx --restart=Never  
kubectl get pods -o wide**