Kubernetes Setup

Run Steps 1,2,3,4,5,6,7 [On Master & Worker Node]

1. **Update Package Lists**:

```
sudo apt-get update
```

2. **Install Docker**:

```
sudo apt install docker.io -y
sudo chmod 666 /var/run/docker.sock
```

3. **Install Dependencies for Kubernetes**:

```
sudo apt-get install -y apt-transport-https ca-certificates curl gnupg
sudo mkdir -p -m 755 /etc/apt/keyrings
```

4. **Add Kubernetes Repository Key**:

```
curl -fsSL https://pkgs.k8s.io/core:/stable:/v1.28/deb/Release.key | sudo gpg --dearmor -o /etc/apt/keyrings/kubernetes-apt-keyring.gpg
```

5. **Add Kubernetes Repository**:

```
echo 'deb [signed-by=/etc/apt/keyrings/kubernetes-apt-keyring.gpg]
https://pkgs.k8s.io/core:/stable:/v1.28/deb/ /' | sudo tee
/etc/apt/sources.list.d/kubernetes.list
```

6. **Update Package Lists**:

```
sudo apt update
```

7. **Install Kubernetes Components**:

```
sudo apt install -y kubeadm=1.28.1-1.1 kubelet=1.28.1-1.1 kubectl=1.28.1-1.1
```

9. **Initialize Kubernetes Master Node**: [On Master Node]

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

```
the output will give a join command. Run it on slave nodes.
```

10. **Set Up Kubernetes Configuration for Current User**: [On Master Node]

```
mkdir -p $HOME/.kube
sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
sudo chown $(id -u):$(id -g) $HOME/.kube/config
```

11. **Deploy Networking and Ingress Controllers**: [On Master Node]

- **Deploy Calico Network Plugin**:

```
kubectl apply -f https://docs.projectcalico.org/v3.20/manifests/calico.yaml
```

- **Deploy NGINX Ingress Controller**:

```
kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-
nginx/controller-v0.49.0/deploy/static/provider/baremetal/deploy.yaml
```