**Kubernetes Installation using kubeadm**

**Install Docker**

# apt update

# apt install -y docker.io (Docker version – 20.10.25)

**Letting iptables see bridged traffic**

cat <<EOF | sudo tee /etc/modules-load.d/k8s.conf

br\_netfilter

EOF

cat <<EOF | sudo tee /etc/sysctl.d/k8s.conf

net.bridge.bridge-nf-call-ip6tables = 1

net.bridge.bridge-nf-call-iptables = 1

EOF

# sysctl --system

**Update the apt repository for kubectl kubeadm and kubelet**

# apt update && apt install -y apt-transport-https curl

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

# cat <<EOF >/etc/apt/sources.list.d/kubernetes.list

deb http://apt.kubernetes.io/ kubernetes-xenial main

EOF

# apt update

# apt install -y kubelet=1.22.0-00 kubeadm=1.22.0-00 kubectl=1.22.0-00

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**On Master Node**

kubeadm init --pod-network-cidr=192.168.0.0/16 --apiserver-advertise-address= 43.205.253.46

**Use the below commands to use kubectl CLI**

**To use kubectl as a non-root user**

mkdir -p $HOME/.kube

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

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

**To use kubectl as a root user**

export KUBECONFIG=/etc/kubernetes/admin.conf

**Command to bring up the pod network. Using Calico Network**

kubectl create -f https://raw.githubusercontent.com/projectcalico/calico/v3.24.6/manifests/tigera-operator.yaml

kubectl create -f https://raw.githubusercontent.com/projectcalico/calico/v3.24.6/manifests/custom-resources.yaml

**Link for Installation of Calico Network**

<https://docs.tigera.io/calico/latest/getting-started/kubernetes/quickstart>

**Generate Token to add worker Node(Only on Master node)**

**#Create a new Token**

sudo kubeadm token create

**#List Tokens created**

sudo kubeadm token list

**#Find Certificate Hash on Master**

openssl x509 -pubkey -in /etc/kubernetes/pki/ca.crt |

openssl rsa -pubin -outform der 2>/dev/null |

openssl dgst -sha256 -hex | sed 's/^.\* //'

**Join Nodes (Only on Worker nodes)**

sudo kubeadm join --token TOKEN\_ID CONTROL\_PLANE\_HOSTNAME:CONTROL\_PLANE\_PORT --discovery-token-ca-cert-hash sha256:HASH

(Formed using outputs from step 10, treat CAPS as variables to be replaced)

kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-nginx/master/deploy/static/provider/cloud/deploy.yaml