1) **Install docker by this link https://docs.docker.com/engine/install/ubuntu/**
2) **Configure docker by this link https://kubernetes.io/docs/setup/production-environment/container-runtimes/#docker**
3) **Installing kubeadm, kubelet and kubectl by this link https://kubernetes.io/docs/setup/production-environment/tools/kubeadm/install-kubeadm/**

1) **Create 3 t2.medium servers**

inStall Docker on all master and Nodes

```
sudo apt-get remove docker docker-engine docker.io containerd runc

sudo apt-get update

sudo apt-get install \
    ca-certificates \
    curl \
    gnupg \
    lsb-release

curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor
-o /usr/share/keyrings/docker-archive-keyring.gpg



echo \
  "deb [arch=$(dpkg --print-architecture)
signed-by=/usr/share/keyrings/docker-archive-keyring.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 docker-ce docker-ce-cli containerd.io
```

```
sudo mkdir /etc/docker
cat <<EOF | sudo tee /etc/docker/daemon.json
{
  "exec-opts": ["native.cgroupdriver=systemd"],
  "log-driver": "json-file",
  "log-opts": {
    "max-size": "100m"
  },
  "storage-driver": "overlay2"
}
EOF
```

```
sudo systemctl enable docker
sudo systemctl daemon-reload
sudo systemctl restart docker
```

Installing kubeadm, kubelet and kubectl on Master Nodes

```
sudo apt-get update

sudo apt-get install -y apt-transport-https ca-certificates curl

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-get update

sudo apt-get install -y kubelet kubeadm kubectl

sudo apt-mark hold kubelet kubeadm kubectl
```

ON MASTER as root user

```
# kubeadm init

ON Master :

----------------------------------------------

  mkdir -p $HOME/.kube

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

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

ON NODES:

-----------------------------------------------------

kubeadm join 172.31.21.73:6443 --token 67sq1b.u2qaff429zra4ktc \

        --discovery-token-ca-cert-hash
sha256:d3179e431190f4fe181f3589e00e1bddb75522f4e62bfb5377ed80f2d8a59
1bf


ON MASTER:

# kubectl get nodes
```

On master as root:

```
# kubectl apply -f
"https://cloud.weave.works/k8s/net?k8s-version=$(
kubectl version | base64 | tr -d '\n')"
```

```
# kubectl get nodes

# kubectl get pods
```

```yaml
apiVersion: v1
kind: Pod
metadata:
 name: hello-pod
spec:
 containers:
   - name: first-container
     image: nginx
     ports:
     - containerPort: 80
```

STEPS TO CREATE PODS

Execute the following commands

- kubectl get nodes
- kubectl create -f pod.yml
- kubectl get pods
- kubectl describe pods
- kubectl get pods -o wide
- kubectl get pods/hello-pod
- kubectl get pods --all-namespaces
- kubectl delete pods/hello-pod