K8S Cluster:
https://kubernetes.io/docs/setup/production-environment/tools/kubeadm/install-kubeadm/

https://kubernetes.io/docs/setup/production-environment/container-runtimes/#docker

https://docs.docker.com/engine/install/ubuntu/

ON ALL SERVERS:

- **Create 3 ubuntu 16 server with t2.medium**
- **Install docker**
- `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
- `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

- **# kubeadm init**

Your Kubernetes control-plane has initialized successfully!

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 172.31.31.201:6443 --token yhw2d8.3bs6uy3sdk7io3a6 \
    --discovery-token-ca-cert-hash
sha256:dce968b1437bd4f2dc122cfc2416003186a0bf744ac17767f4e2f053fe4
34586
```

kubectl get nodes

kubectl get pods

On master as root:

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

STEPS TO CREATE PODS

Create a Sample Pod i.e file with pod.yml

```
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**