```
sudo apt update
sudo apt install docker.io -y
sudo systemctl enable docker
sudo systemctl start docker
sudo systemctl status docker
sudo apt-get update
sudo apt-get install -y apt-transport-https ca-certificates curl gpg
curl -fsSL https://pkgs.k8s.io/core:/stable:/v1.28/deb/Release.key | sudo gpg --dearmor -o
/etc/apt/keyrings/kubernetes-apt-keyring.gpg
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
sudo apt-get update
sudo apt install kubeadm kubelet kubectl
sudo apt-mark hold kubeadm kubelet kubectl
kubeadm version
sudo swapoff -a
sudo sed -i '/ swap / s/^\(.*\)$/#\1/g' /etc/fstab
sudo vi /etc/modules-load.d/containerd.conf
        overlay
        br_netfilter

sudo modprobe overlay
sudo modprobe overlay
sudo modprobe br_netfilter
sudo vim /etc/sysctl.d/kubernetes.conf
        net.bridge.bridge-nf-call-ip6tables = 1
        net.bridge.bridge-nf-call-iptables = 1
        net.ipv4.ip_forward = 1

sudo sysctl --system
sudo hostnamectl set-hostname master-node
hostname -i
sudo vim /etc/hosts                     # skip if you dont have any worker-node
        172.31.46.21 master-node
        172.31.15.170 worker-node1
sudo vim /etc/default/kubelet
        KUBELET_EXTRA_ARGS="--cgroup-driver=cgroupfs"
sudo vim /etc/docker/daemon.json
        {
                 "exec-opts": ["native.cgroupdriver=systemd"],
                "log-driver": "json-file",
                 "log-opts": {
                 "max-size": "100m"
          },
                "storage-driver": "overlay2"
                }
sudo systemctl daemon-reload && sudo systemctl restart docker
sudo systemctl daemon-reload && sudo systemctl restart kubelet
```

```
sudo kubeadm init --control-plane-endpoint=master-node --upload-certs
--ignore-preflight-errors=all

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


curl https://raw.githubusercontent.com/projectcalico/calico/v3.27.0/manifests/calico.yaml -O
kubectl apply -f calico.yaml

kubectl run test --image=docker.io/nginx
```

Worker-Node

```
sudo apt update -y
sudo hostnamectl set-hostname worker-node1
sudo vim /etc/hosts
        172.31.15.170 worker-node1
        172.31.46.21 master-node

sudo apt install docker.io  -y
sudo systemctl status docker.service
sudo systemctl enable docker.service
sudo systemctl start docker.service
sudo apt-get install -y apt-transport-https ca-certificates curl gpg
curl -fsSL https://pkgs.k8s.io/core:/stable:/v1.28/deb/Release.key | sudo gpg --dearmor -o
/etc/apt/keyrings/kubernetes-apt-keyring.gpg
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
sudo apt-get update
sudo apt install kubeadm kubelet kubectl
sudo apt install kubeadm kubelet
sudo apt-mark hold kubeadm kubelet
sudo swapoff -a
sudo sed -i '/ swap / s/^\(.*\)$/#\1/g' /etc/fstab
sudo vim /etc/modules-load.d/containerd.conf
        overlay
        br_netfilter
sudo modprobe overlay
sudo modprobe br_netfilter
sudo vi /etc/sysctl.d/kubernetes.conf
        net.bridge.bridge-nf-call-ip6tables = 1
        net.bridge.bridge-nf-call-iptables = 1
        net.ipv4.ip_forward = 1
```

```
sudo sysctl --system
sudo vim /etc/default/kubelet
        KUBELET_EXTRA_ARGS="--cgroup-driver=cgroupfs"

sudo vi /etc/docker/daemon.json
        {
                  "exec-opts": ["native.cgroupdriver=systemd"],
                   "log-driver": "json-file",
                    "log-opts": {
                   "max-size": "100m"
                 },
                   "storage-driver": "overlay2"
                   }
sudo systemctl daemon-reload && sudo systemctl restart docker
sudo systemctl daemon-reload && sudo systemctl restart kubelet
sudo systemctl stop apparmor && sudo systemctl disable apparmor
sudo systemctl restart containerd.service
```