**K8s cluster**

ON master node instance(t2.medium)

ubuntu@ip-172-31-10-152:~$ sudo -i

root@ip-172-31-10-152:~# apt-get update

root@ip-172-31-10-152:~# vi maste.sh

-----in above shell file paste below line of code-------

sudo apt-get install docker.io -y

sudo systemctl enable docker

sudo systemctl start docker

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

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

echo "deb 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

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

mkdir -p $HOME/.kube

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

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

kubectl apply -f https://raw.githubusercontent.com/coreos/flannel/master/Documentation/kube-flannel.yml

kubeadm token create --print-join-command

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

Run the above shell file

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root@ip-172-31-10-152:~# sh maste.sh

Reading package lists... Done

Building dependency tree

Reading state information... Done

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

It generate the join command paste in both node

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kubeadm join 172.31.10.152:6443 --token kq6mlv.ugf7w1ydcqimrjse --discovery-token-ca-cert-hash sha256:d66360b058c811ddc642b5daa0794457c66db95c97faf2c1e919c2ee28b21eda

On both node (t2.micro------connect using ssh)

ubuntu@ip-172-31-8-184:~$ sudo -i

root@ip-172-31-8-184:~# ls

snap

root@ip-172-31-8-184:~# apt-get update

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

Installation is done by using shell file

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root@ip-172-31-8-184:~# vi node\_two.sh

-----in above shell file paste below line of code on both nodes-------

sudo apt-get install docker.io -y

sudo systemctl enable docker

sudo systemctl start docker

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

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

echo "deb 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

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

-----------run above shell file on both nodes--------

root@ip-172-31-8-184:~# sh node\_two.sh

Reading package lists... Done

Building dependency tree

Reading state information... Done

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

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

master generate the join command paste in both node

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

In master bash--------kubectl get node-----------------

root@ip-172-31-10-152:~# kubectl get nodes

NAME STATUS ROLES AGE VERSION

ip-172-31-10-152 Ready control-plane 56s v1.27.4

ip-172-31-4-236 Ready <none> 18s v1.27.4

ip-172-31-8-184 Ready <none> 13s v1.27.4

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

It shows all 3 ip ready then k8s installation is done successfully

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root@ip-172-31-10-152:~# vi pod.yml

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Insert below code in pod.yml file

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apiVersion: v1

kind: Pod

metadata:

name: hello-pod

spec:

containers:

- name: first-container

image: nginx

ports:

- containerPort: 80

~

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root@ip-172-31-10-152:~# kubectl create -f pod.yml

pod/hello-pod created

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root@ip-172-31-10-152:~# kubectl get pod

NAME READY STATUS RESTARTS AGE

hello-pod 1/1 Running 0 11s

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root@ip-172-31-10-152:~# kubectl descride pods

Name: hello-pod

Namespace: default

Priority: 0

Service Account: default

Node: ip-172-31-8-184/172.31.8.184

Start Time: Thu, 10 Aug 2023 18:49:20 +0000

Labels: <none>

Annotations: <none>

Status: Running

IP: 10.244.2.2

IPs:

IP: 10.244.2.2

Containers:

first-container:

Container ID: containerd://37f41b02babe4147baee716db75ed35f259bbec17f4780f227e972fc3b89f795

Image: nginx

Image ID: docker.io/library/nginx@sha256:67f9a4f10d147a6e04629340e6493c9703300ca23a2f7f3aa56fe615d75d31ca

Port: 80/TCP

Host Port: 0/TCP

State: Running

Started: Thu, 10 Aug 2023 18:49:26 +0000

Ready: True

Restart Count: 0

Environment: <none>

Mounts:

/var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-rvzqs (ro)

Conditions:

Type Status

Initialized True

Ready True

ContainersReady True

PodScheduled True

Volumes:

kube-api-access-rvzqs:

Type: Projected (a volume that contains injected data from multiple sources)

TokenExpirationSeconds: 3607

ConfigMapName: kube-r

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root@ip-172-31-10-152:~# kubectl get pods -o wide

NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES

hello-pod 1/1 Running 0 19m 10.244.2.2 ip-172-31-8-184 <none> <none>

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root@ip-172-31-10-152:~# kubectl get pods/hello-pod

NAME READY STATUS RESTARTS AGE

hello-pod 1/1 Running 0 19m

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root@ip-172-31-10-152:~# kubectl get pods --all-namespaces

NAMESPACE NAME READY STATUS RESTARTS AGE

default hello-pod 1/1 Running 0 20m

kube-flannel kube-flannel-ds-c6c6v 1/1 Running 0 22m

kube-flannel kube-flannel-ds-vhjqh 1/1 Running 0 21m

kube-flannel kube-flannel-ds-w2cbv 1/1 Running 0 22m

kube-system coredns-5d78c9869d-pfzgh 1/1 Running 0 22m

kube-system coredns-5d78c9869d-wc9b8 1/1 Running 0 22m

kube-system etcd-ip-172-31-10-152 1/1 Running 0 22m

kube-system kube-apiserver-ip-172-31-10-152 1/1 Running 0 22m

kube-system kube-controller-manager-ip-172-31-10-152 1/1 Running 0 22m

kube-system kube-proxy-n6gxg 1/1 Running 0 21m

kube-system kube-proxy-q6d86 1/1 Running 0 22m

kube-system kube-proxy-rqrpn 1/1 Running 0 22m

kube-system kube-scheduler-ip-172-31-10-152 1/1 Running 0 22m

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