Kubernetes Installation on Ubuntu 20.04

Add the GPG key for kubernetes:

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

Add the kubernetes repository:

cat << EOF | sudo tee /etc/apt/sources.list.d/kubernetes.list
deb https://apt.kubernetes.io/ kubernetes-xenial main
EOF

Update the repository:

sudo apt-get update

Install Kubernetes packages:

sudo apt-get install -y kubelet=1.21.1-00 kubeadm=1.21.1-00 kubectl=1.21.1-00

Hold the versions so that the versions will not get accidently upgraded:

sudo apt-mark hold docker-ce kubelet kubeadm kubectl

Enable the iptables bridge:

echo "net.bridge.bridge-nf-call-iptables=1" | sudo tee -a /etc/sysctl.conf

sudo sysctl -p

On the Kube master server:

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

To start using the cluster with current user:

mkdir -p $HOME/.kube

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

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

Set the flannel networking:

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

Check the nodes:

kubectl get nodes

On each of Kube node server:

Joining the node to the cluster:

sudo kubeadm join $controller_private_ip:6443 --token $token --discovery-token-ca-cert-hash $hash

If the joining code is lost, it can retrieve using below command:

kubeadm token create –print-join-command

Kubernetes : Enable Dashboard

Enable Dashboard on Master Node:

```
kubectl apply -f
https://raw.githubusercontent.com/kubernetes/dashboard/v2.0.3/aio/
deploy/recommended.yaml
```

Add an account for Dashboard management:

```
kubectl create serviceaccount -n kubernetes-dashboard admin-user
```

```
vi rbac.yml
```

```
# create new

apiVersion: rbac.authorization.k8s.io/v1
kind: ClusterRoleBinding
metadata:
  name: admin-user
roleRef:
  apiGroup: rbac.authorization.k8s.io
  kind: ClusterRole
  name: cluster-admin
subjects:
- kind: ServiceAccount
  name: admin-user
  namespace: kubernetes-dashboard
```

```
kubectl apply -f rbac.yml
```

```
kubectl -n kubernetes-dashboard describe secret $(kubectl -n
kubernetes-dashboard get secret | grep admin-user | awk '{print
$1}')
```

```
kubectl proxy
```

If you run [kubectl proxy], access to the URL below with an Web browser on Localhost:

http://localhost:8001/api/v1/namespaces/kubernetes-dashboard/services/https:kubernetes-dashboard:/proxy/