Issue resolved :

Hello Students got a solution while getting an error in Kubernetes installation. For this i have updated the repo code of Kubernetes in step-7 for both VM's

repo_gpgcheck=0

I have updated the enotes, so try to install kubernetes under Laptop's VM. I hope you will do it easily. :)

Soon I will share the video of the installation.

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enotes

Pre-requisites:

Check ip address on both machines (Master and Worker node)
ifconfig

systemctl restart network

How to set STATIC IP address for master node and worker node:

IPADDR= ?	ifconfig
NETMASK= ?	ifconfig / nmcli
GATEWAY=?	ip route
DNS1=?	cat /etc/resolv.conf

vi /etc/sysconfig/network-scripts/ifcfg-ensp*

Master Node

Step-1 import CENTOS 7 image in Virtual Box

Step-2 Name first master node as controller
on Masternode

hostnamectl set-hostname master.tg.com

on worker node

hostnamectl set-hostname wn1.tg.com

Now check hostname at runtime using following command:

bash

192.168.1.8 = **master.tg.com**

Name first worker node-1 :

192.168.1.9 = **worker1.tg.com**

Step-3 open a file on both VM's and add hostnames (DNS Alias)

vi /etc/hosts

192.168.1.X master.tg.com
192.168.1.Y wn1.tg.com

Step-3.1 **Login without password in SSH via sharing our public key.**

Create ssh-keygen (Master Node ---> Worker node)

ssh-keygen -t **rsa**

ssh-copy-id -i /root/.ssh/id_rsa.pub root@192.168.1.X

Step-4 install Docker-CE Engine **(Execute on all VM's—> master + slave nodes both)**

A) yum install -y yum-utils device-mapper-persistent-data lvm2

B) yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo

C) yum install docker-ce-20* -y

systemctl start docker && systemctl enable docker

FOR AWS EC2 we only use **yum install docker -y**

TIP:
Ex:
docker-ce-1.20
Ex:
kubernetes-1.20
kubectl-1.20
kubeadm-1.20

Step-5 :

A) Disable firewalld on centos

systemctl status firewalld

systemctl stop firewalld
systemctl disable firewalld

B) Switch-off SElInux

getenforce

c) **Disable Swap Partition / Memory (V.V. imp)**

Test Swap Memory :

swapon -s

How to disable swap memory (**temp**):

swapoff -a

Permanently switch swap memory (**/etc/fstab**)

vi /etc/fstab

mark # beofore swap line

Save & Exit

mount -a

Step-6

Kernel argument need to be update / add **(Both vm's)**
(Bridge Enabled for both VM's of Cluster env)

Step-6.1

```
cat <<EOF > /etc/sysctl.d/k8s.conf
net.bridge.bridge-nf-call-ip6tables = 1
net.bridge.bridge-nf-call-iptables = 1
EOF
```

Step-6.2 (on both VM's)

sysctl --system

Step-7 Add Kubernetes Yum Repo from Google **(Execute on all VM's)**

```
cat <<EOF | sudo tee /etc/yum.repos.d/kubernetes.repo
[kubernetes]
name=Kubernetes
baseurl=https://packages.cloud.google.com/yum/repos/kubernetes-el7-\$basearch
enabled=1
gpgcheck=1
gpgkey=https://packages.cloud.google.com/yum/doc/rpm-package-key.gpg
exclude=kubelet kubeadm kubectl
EOF
```

```
yum install -y kubelet kubeadm kubectl --disableexcludes=kubernetes
```

Step-8.1: **Start Kubelet (Agent) [on all VM's]**

systemctl start kubelet ; systemctl enable kubelet ; systemctl status kubelet

OR

systemctl restart kubelet ; systemctl enable kubelet ; systemctl status kubelet

Step8.2 Start Docker Host (Run time containerd) services (**on both VM's)**

```
systemctl enable docker && systemctl restart docker
```

NOTE: Remember the Step-9 is very important and ***should be executed only on Master Node.***

Step-9 Start kubeadm init on master node (Only on MASTER NODE)

kubeadm init

Step9

To start cluster configuration at **MASTER NODE only**

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

Step-10

Download weave net (Execute only on Master Node) → (treated as Router)

```
kubectl apply -f
https://github.com/weaveworks/weave/releases/download/v2.8.1/weave-daemonset-k8s.yaml
```

Step-11: Go to output of Step-9 and find below code and copy at Worker nodes

(We will join Worker node with Master Node's inside Cluster in future, so keep output safely of step-9)

Example ::
[Below code is for my machine code, So dont copy / paste it try to find from at your laptop at step-9]

*kubeadm join 172.31.4.165:6443 --token kw9d4k.l44fcziztb3br21a *
--discovery-token-ca-cert-hash
sha256:2952821ac60c0ddb079cc82bd621a72e61aae08a4e700c4f8d457058d7f51dd7

Tip: If we forget join / hash then we can run following command :

kubeadm token create --print-join-command

Step-12 Check at Master Node

kubectl get nodes

kubectl get ns
kubectl get pods -n kube-system -o wide

kubectl get pods -n kube-system -w

kubect api-resources

kubectl get po -n kube-system -o wide
