#You will need 4 centos 7 servers for hosting a kubernetes cluster of 3 nodes and 1 master.

#Kubernetes main server is called a master server

#The worker nodes on which docker containers are deployed, are called Minions

#Kubernetes orchestrates docker containers on those minion servers. The docker+application combo that gets deployed on the minion servers are called the Pods.

#kubectl is the command line tool to do things in Kubernetes

#Out of the 4 servers mark one as the master server.

#Now on the master server do the following as root user:

yum -y install nano wget tree

systemctl stop firewalld

systemctl disable firewalld

yum -y install ntp

systemctl start ntpd

systemctl enable ntpd

yum -y install etcd kubernetes

#Then on the master server, open up /etc/etcd/etcd.conf

nano /etc/etcd/etcd.conf

#inside the master server etcd.conf file make sure the following is maintained:

ETCD_NAME=default

ETCD_DATA_DIR="/var/lib/etcd/default.etcd"

ETCD_LISTEN_CLIENT_URLS="http://0.0.0.0:2379"

ETCD_ADVERTISE_CLIENT_URLS="http://localhost:2379"

#Save and Close the file with Ctrl+X

#Then open up /etc/kubernetes/apiserver:

nano /etc/kubernetes/apiserver

#Make sure the following content is there inside the /etc/kubernetes/apiserver file

KUBE_API_ADDRESS="--address=0.0.0.0"

KUBE_API_PORT="--port=8080"

KUBELET_PORT="--kubelet_port=10250"

KUBE_ETCD_SERVERS="--etcd_servers=http://127.0.0.1:2379"

KUBE_SERVICE_ADDRESSES="--service-cluster-ip-range=10.254.0.0/16"

KUBE_ADMISSION_CONTROL="--admission_control=NamespaceLifecycle,NamespaceExists,LimitRanger,ResourceQuota"

KUBE_API_ARGS=""

#Save and Close the file with Ctrl+X

systemctl start etcd

systemctl enable etcd

systemctl start kube-apiserver

systemctl enable kube-apiserver

systemctl start kube-controller-manager

systemctl enable kube-controller-manager

systemctl start kube-scheduler

systemctl enable kube-scheduler

etcdctl mk /atomic.io/network/config '{"Network":"172.17.0.0/16"}'

#At this point you can run command “kubectl get nodes” which will output an empty set

#Then on one of the rest of the 3 servers: Lets call it Minion 1: Do as follows:

yum -y install nano wget tree

yum -y install flannel kubernetes

nano /etc/sysconfig/flanneld

Make sure the content is compliant to as mentioned below

FLANNEL_ETCD="http://masterserverip:2379"

#Save and Close the file with Ctrl+X

nano /etc/kubernetes/config

Make sure the content is compliant to as mentioned below

KUBE_MASTER="--master=http://masterserverip:8080"

#Save and Close the file with Ctrl+X

nano /etc/kubernetes/kubelet

Make sure the content is compliant to as mentioned below

KUBELET_ADDRESS="--address=0.0.0.0"

KUBELET_PORT="--port=10250"

change the hostname to this host’s IP address

KUBELET_HOSTNAME="--hostname_override=minion1ip"

KUBELET_API_SERVER="--api_servers=http://masterserverip:8080"

KUBELET_ARGS=""

#Save and Close the file with Ctrl+X

systemctl start kube-proxy

systemctl enable kube-proxy

systemctl start kubelet

systemctl enable kubelet

systemctl restart docker

systemctl enable docker

systemctl start flanneld

systemctl enable flanneld

#Then on one of the rest of the 2 servers: Lets call it Minion 2: Do as follows:

yum -y install nano wget tree

yum -y install flannel kubernetes

nano /etc/sysconfig/flanneld

Make sure the content is compliant to as mentioned below

FLANNEL_ETCD="http://masterserverip:2379"

#Save and Close the file with Ctrl+X

nano /etc/kubernetes/config

Make sure the content is compliant to as mentioned below

KUBE_MASTER="--master=http://masterserverip:8080"

#Save and Close the file with Ctrl+X

nano /etc/kubernetes/kubelet

Make sure the content is compliant to as mentioned below

KUBELET_ADDRESS="--address=0.0.0.0"

KUBELET_PORT="--port=10250"

change the hostname to this host’s IP address

KUBELET_HOSTNAME="--hostname_override=minion2ip"

KUBELET_API_SERVER="--api_servers=http://masterserverip:8080"

KUBELET_ARGS=""

#Save and Close the file with Ctrl+X

systemctl start kube-proxy

systemctl enable kube-proxy

systemctl start kubelet

systemctl enable kubelet

systemctl restart docker

systemctl enable docker

systemctl start flanneld

systemctl enable flanneld

#Then on the last server: Lets call it Minion 3: Do as follows:

yum -y install nano wget tree

yum -y install flannel kubernetes

nano /etc/sysconfig/flanneld

Make sure the content is compliant to as mentioned below

FLANNEL_ETCD="http://masterserverip:2379"

#Save and Close the file with Ctrl+X

nano /etc/kubernetes/config

Make sure the content is compliant to as mentioned below

KUBE_MASTER="--master=http://masterserverip:8080"

#Save and Close the file with Ctrl+X

nano /etc/kubernetes/kubelet

Make sure the content is compliant to as mentioned below

KUBELET_ADDRESS="--address=0.0.0.0"

KUBELET_PORT="--port=10250"

change the hostname to this host’s IP address

KUBELET_HOSTNAME="--hostname_override=minion3ip"

KUBELET_API_SERVER="--api_servers=http://masterserverip:8080"

KUBELET_ARGS=""

#Save and Close the file with Ctrl+X

systemctl start kube-proxy

systemctl enable kube-proxy

systemctl start kubelet

systemctl enable kubelet

systemctl restart docker

systemctl enable docker

systemctl start flanneld

systemctl enable flanneld

#Now go to master server and type

kubectl get nodes

You should get 3 line output for 3 minions in the formatted table of NAME LABELS STATUS

Note: In latest kubernetes, replication controllers are an obsolete idea and instead deployments and replication sets are used