Kubernetes Installation Instructions

Following steps needs to be performed on Master and all the worker nodes:

1. The first thing that we are going to do is use SSH to log in to all machines. Once we have logged in, we need to elevate privileges using sudo.

```
sudo su
```

2. Disable SELinux.

```
setenforce 0
sed -i --follow-symlinks 's/SELINUX=enforcing/SELINUX=disabled/g'
/etc/sysconfig/selinux
```

3. Enable the br_netfilter module for cluster communication.

```
modprobe br_netfilter
echo '1' > /proc/sys/net/bridge/bridge-nf-call-iptables
```

4. Disable swap to prevent memory allocation issues.

```
swapoff -a
vim /etc/fstab.  ->  Comment out the swap line
```

5. Install Docker CE.
6. Install the Docker prerequisites.

```
yum install -y yum-utils device-mapper-persistent-data lvm2
```

7. Add the Docker repo and install Docker.

```
yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo
yum install -y docker-ce
```

8. Add the Kubernetes repo.

```
cat <<EOF > /etc/yum.repos.d/kubernetes.repo
[kubernetes]
name=Kubernetes
baseurl=https://packages.cloud.google.com/yum/repos/kubernetes-el7-x86_64
enabled=1
gpgcheck=0
repo_gpgcheck=0
gpgkey=https://packages.cloud.google.com/yum/doc/yum-key.gpg
       https://packages.cloud.google.com/yum/doc/rpm-package-key.gpg
EOF
```

9. Install Kubernetes.

```
yum install -y kubelet kubeadm kubectl
```

10. Reboot.
11. Enable and start Docker and Kubernetes.

```
systemctl enable docker
systemctl enable kubelet
systemctl start docker
systemctl start kubelet
```

12. Check the group Docker is running in.

```
docker info | grep -i cgroup
```

13. Set Kubernetes to run in the same group.

```
sed -i 's/cgroup-driver=systemd/cgroup-driver=cgroupfs/g' /etc/systemd/system/kubelet.service.d/10-kubeadm.conf
```

14. Reload systemd for the changes to take effect, and then restart Kubernetes.

```
systemctl daemon-reload
systemctl restart kubelet
```

Following steps needs to be performed ONLY on Master!

15. Initialize the cluster using the IP range for Flannel.

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

16. Copy the kubeadmin join command.
17. Deploy Flannel.

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

18. Exit sudo and run the following:

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

19. Check the cluster state.

```
Kubectl get pods —all-namespaces
```

Note: Complete the following steps on the NODES ONLY!

20. Run the join command that you copied earlier, then check your nodes from the master.

```
Kubectl get nodes
```