Kubernetes Installation on RHEL/Centos

This lesson covers how to install Kubernetes on a CentOS 7 server in our Cloud Playground. Below, you will find a list of the commands used in this lesson.

\*\*Note Commands 1-10 need to be run on all nodes.

\*Note in this lesson we are using 3 unit servers as this meets the minimum requirements for the Kubernetes installation. Use of a smaller size server (less than 2 cpus) will result in errors during installation.

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

1. Disable SELinux.

setenforce 0

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

1. Enable the br\_netfilter module for cluster communication.

modprobe br\_netfilter

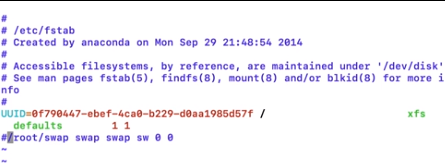
echo '1' > /proc/sys/net/bridge/bridge-nf-call-iptables

1. Disable swap to prevent memory allocation issues.

swapoff -a

vim /etc/fstab -> Comment out the swap line

**fatab file**:



1. Install the Docker prerequisites.

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

1. 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

1. Conigure the Docker Cgroup Driver to systemd, enable and start Docker

sed -i '/^ExecStart/ s/$/ --exec-opt native.cgroupdriver=systemd/' /usr/lib/systemd/system/docker.service

systemctl daemon-reload

systemctl start docker

systemctl start docker

1. 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

1. Install Kubernetes.

yum install -y kubelet kubeadm kubectl

1. Enable Kubernetes. The kubelet service will not start until you run kubeadm init.

systemctl enable kubelet

\**Note: Complete the following section on the MASTER ONLY!*

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

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

1. Copy the kubeadmin join command.
2. 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

1. Deploy Flannel.

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

1. Check the cluster state.

kubectl get pods --all-namespaces

\**Note: Complete the following steps on the NODES ONLY!*

1. Run the join command that you copied earlier (this command needs to be run as sudo), then check your nodes from the master.

kubectl get nodes