

## 5.1 Install Kubernetes

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

echo "deb <http://apt.kubernetes.io/> kubernetes-xenial main"  
>/etc/apt/sources.list.d/kubernetes.list

apt-get update

apt-get install -y kubelet kubeadm kubectl

```
root@ip-172-31-86-69:~# curl -s https://packages.cloud.google.com/apt/doc/apt-key.gpg | apt-key add -
OR
root@ip-172-31-86-69:~# echo "deb http://apt.kubernetes.io/ kubernetes-xenial main" >/etc/apt/sources.list.d/kubernetes.list
root@ip-172-31-86-69:~# apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu bionic-security InRelease
Get:5 https://packages.cloud.google.com/apt kubernetes-xenial InRelease [8993 B]
Get:6 https://packages.cloud.google.com/apt kubernetes-xenial/main amd64 Packages [27.5 kB]
Fetched 36.5 kB in 1s (64.9 kB/s)
Reading package lists... Done
root@ip-172-31-86-69:~# apt-get install -y kubelet kubeadm kubectl
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  conntrack cri-tools kubernetes-cni socat
The following NEW packages will be installed:
  conntrack cri-tools kubeadm kubectl kubelet kubernetes-cni socat
0 upgraded, 7 newly installed, 0 to remove and 2 not upgraded.
Need to get 52.9 MB of archives.
After this operation, 280 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 conntrack amd64 1:1.4.4+snapshot20161117-6ubuntu2 [30.6 kB]
```

kubeadm init

```
root@ip-172-31-86-69:~# kubeadm init
[init] Using Kubernetes version: v1.15.0
[preflight] Running pre-flight checks
[WARNING Service-Docker]: docker service is not enabled, please run 'systemctl enable docker.service'
[WARNING IsDockerSystemdCheck]: detected "cgroupfs" as the Docker cgroup driver. The recommended driver
tes.io/docs/setup/cri/
[preflight] Pulling images required for setting up a Kubernetes cluster
[preflight] This might take a minute or two, depending on the speed of your internet connection
[preflight] You can also perform this action in beforehand using 'kubeadm config images pull'
[kubelet-start] Writing kubelet environment file with flags to file "/var/lib/kubelet/kubeadm-flags.env"
[kubelet-start] Writing kubelet configuration to file "/var/lib/kubelet/config.yaml"
```

mkdir -p \$HOME/.kube

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

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

```
Your Kubernetes control-plane has initialized successfully!

To start using your cluster, you need to run the following as a regular user:

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

You should now deploy a pod network to the cluster.
Run "kubectl apply -f [podnetwork].yaml" with one of the options listed at:
  https://kubernetes.io/docs/concepts/cluster-administration/addons/

Then you can join any number of worker nodes by running the following on each as root:

kubeadm join 172.31.86.69:6443 --token 7jp400.ldgq81o8qzqwdrwa \
  --discovery-token-ca-cert-hash sha256:50515elfd7c9454ab794ba72f8d4f5ad30433b3be83126e868817e0114198e9d
root@ip-172-31-86-69:~#
```

export kubever=\$(kubectl version | base64 | tr -d '\n')

kubectl apply -f "[https://cloud.weave.works/k8s/net?k8s-version=\\$kubever](https://cloud.weave.works/k8s/net?k8s-version=$kubever)"

```

root@ip-172-31-86-69:~# export kubever=$(kubectl version | base64 | tr -d '\n')
root@ip-172-31-86-69:~# kubectl apply -f "https://cloud.weave.works/k8s/net?k8s-version=$kubever"
serviceaccount/weave-net created
clusterrole.rbac.authorization.k8s.io/weave-net created
clusterrolebinding.rbac.authorization.k8s.io/weave-net created
role.rbac.authorization.k8s.io/weave-net created
rolebinding.rbac.authorization.k8s.io/weave-net created
daemonset.extensions/weave-net created
root@ip-172-31-86-69:~# kubectl get node
NAME                STATUS    ROLES    AGE   VERSION
ip-172-31-86-69     NotReady  master   12m   v1.15.0
root@ip-172-31-86-69:~# kubectl get node
NAME                STATUS    ROLES    AGE   VERSION
ip-172-31-86-69     Ready     master   12m   v1.15.0
root@ip-172-31-86-69:~#

```

**kubectl get node**

**kubectl get pods --all-namespaces**

```

root@ip-172-31-86-69:~# kubectl get node
NAME                STATUS    ROLES    AGE   VERSION
ip-172-31-86-69     Ready     master   15m   v1.15.0
root@ip-172-31-86-69:~# kubectl get pods --all-namespaces
NAMESPACE   NAME                                     READY   STATUS    RESTARTS   AGE
kube-system  coredns-5c98db65d4-6x7g2               1/1     Running   0           15m
kube-system  coredns-5c98db65d4-zz14t               1/1     Running   0           15m
kube-system  etcd-ip-172-31-86-69                   1/1     Running   0           13m
kube-system  kube-apiserver-ip-172-31-86-69         1/1     Running   0           14m
kube-system  kube-controller-manager-ip-172-31-86-69 1/1     Running   0           14m
kube-system  kube-proxy-4n9br                       1/1     Running   0           15m
kube-system  kube-scheduler-ip-172-31-86-69         1/1     Running   0           14m
kube-system  weave-net-ht9nf                        2/2     Running   0           3m2s
root@ip-172-31-86-69:~#

```