# install k8s cluster and docker


follow me: github: kiu.kiu.duck.pea
note before install:

- I have 5 server ubuntu 20.04
- i will install k8s version 1.23.6
- containerd user in tutorial: docker
- k8s's going to support docker in version 1.23.6

# 1. set host name

login your server and set hostname

```
sudo hostnamectl set-hostname master
```

```
sudo hostnamectl set-hostname worker-1
```

```
sudo hostnamectl set-hostname worker-2
```

```
sudo hostnamectl set-hostname worker-3
```

```
sudo hostnamectl set-hostname worker-4
```

# 2. Install docker

note: install for 5 server
https://docs.docker.com/engine/install/ubuntu/

# 3. intall kubernet

note: install for 5 server
note: you should install old version.

https://kubernetes.io/docs/setup/production-environment/tools/kubeadm/install-kubeadm/

```
sudo apt-get install -qy kubeadm=1.23.6-00 kubelet=1.23.6-00 kubectl=1.23.6-00
```

hold

```
sudo apt-mark hold kubelet kubeadm kubectl
```

check version

```
kubectl version --client && kubeadm version
```

# 4. set config and restart.

note: config for 5 server
set user mod docker

```
sudo usermod -aG docker $USER
   newgrp docker
```

set config daemon

```
sudo tee /etc/docker/daemon.json  <<EOF
     {
       "exec-opts": ["native.cgroupdriver=systemd"],
       "log-driver": "json-file",
       "log-opts": {
         "max-size": "100m"
       },
       "storage-driver": "overlay2",
       "storage-opts": [
         "overlay2.override_kernel_check=true"
       ]
     }
EOF
```

restart docker

```
    sudo systemctl daemon-reload
    sudo systemctl restart docker
    sudo systemctl enable docker
```

# 5. install create and install network for cluster in master.

note: install for server master
restart kubeadm

```
 sudo kubeadm reset
```

create private network for cluster

```
sudo kubeadm init --pod-network-cidr=192.168.0.0/16
```

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

install calicao

```
kubectl apply -f https://docs.projectcalico.org/v3.20/manifests/calico.yaml
```

GET JOIN CLUSTER FOR WORKER NODE IF YOU FORGET. Run in server master:

```
kubeadm token create --print-join-command
```

join cluster for worker:

```
sudo kubeadm join host:port --token token-example --discovery-token-ca-cert-hash
sha256:key_example
```

get node in cluster k8s:

```
kuberctl get nodes
```

```
ubuntu@master:~$ kubectl get nodes
NAME       STATUS   ROLES                  AGE   VERSION
master     Ready    control-plane,master   48d   v1.23.6
worker-1   Ready    <none>                 48d   v1.23.6
worker-2   Ready    <none>                 48d   v1.23.6
worker-3   Ready    <none>                 48d   v1.23.6
worker-4   Ready    <none>                 48d   v1.23.6
```

# NOTE:

```
- tutorial for beginer
- if you have many server, you should install with k3s or kubespray.
```


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