Kubernetes K8s:

Setup the cluster using Minikube

Follow the Documentation:
https://minikube.sigs.k8s.io/docs/start/

Use the below link for kubernetes cluster minikube cluster setup

https://github.com/devopshydclub/vprofile-project/tree/master

You can follow below setup steps:

1. Download the repository from github and user branch name as Kubernetes_setup, here you will find the file name as Minikube, goto that file and cat the content and follow the prerequisites and instruction given
2. Install chocolaty and Minikube cli as given in the script
3. Check the minikube is started or not using below command
   $ minikube.exe –help (you will see all commands here
4. Once your minikube is install you need to start open git bash shell and start
   $ minikube start (it will start and launch a machine on oracle virtual box)
5. Once your machine launch and install you can file below command to checkout
   $ kubectl get nodes
   Here your cluster details you can see in
   $ cat .kube/config
   Now you can check
   $ kubectl.exe get nodes
6. Now follow the kubernetes Documentation for test purpose, and create the deployment so that you can see
   $ kubectl.exe get pod
   $ kubectl.exe get deploy
7. See the url and check the cluster is up and running on webUI
8. Now if you want to wrap up follow below steps
   $ kubectl.exe get svc

   $ kubectl.exe delete svc <service name>

$ kubectl.exe get deploy
$ Kubectl.exe delete deploy <deploy name>
$ minikube.exe stop
$ minikube.exe delete

Multi-node Cluster Setup:

For more detail you can refer the below document :

https://jhooq.com/14-steps-to-install-kubernetes-on-ubuntu-18-04-and-16-04/

Use the below command to setup:

Create 1 Master and 3 Worker EC2 instances with all traffic anywhere SG and ubuntu 20.04 with t3 medium instance.

Sudo su
apt-get update

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

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

apt-get update

apt install docker.io kubectl=1.20.5-00 kubeadm=1.20.5-00 kubelet=1.20.5-00

service docker status

exit from Root user ——

sudo kubeadm init

mkdir -p $HOME/.kube

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

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

Note: copy the join password and fire it in all worker notes to have connection between master and worker

kubectl get nodes

To make ready

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

kubectl get nodes

Create a pod:

kubectl run tomcat --image=tomcat:8.0

kubectl get pods

kubectl describe pod tomcat

kubectl taint nodes --all node-role.kubernetes.io/master-

kubectl get pods

```
sudo vi /run/flannel/subnet.env

FLANNEL_NETWORK=10.244.0.0/16
FLANNEL_SUBNET=10.244.0.1/24
FLANNEL_MTU=1450
FLANNEL_IPMASQ=true

kubectl get pods

kubectl delete pod tomcat

kubectl run tomcat --image=tomcat:8.0

kubectl get pods -o wide
```