1. By default the minimum number of container in a POD is 2 . One is the PAUSE container which keeps networking information of POD.
2. Join the cluster

kubeadm join 172.31.63.115:6443 --token 2pu1v0.1god6jpycmx7mwf6 \

--discovery-token-ca-cert-hash sha256:56a03a2e78951f4e60310dc80442815cf2825ba207240477f56fc30e6daaa9d3

**Step 2: Install Docker**

Install Docker on all nodes (master and worker nodes):

# Update the package repository

sudo yum update -y

# Install Docker

sudo amazon-linux-extras install docker

sudo systemctl start docker

sudo systemctl enable docker

**Step 3: Install kubeadm, kubelet, and kubectl**

Install Kubernetes components manually:

# Add the Kubernetes repository

sudo tee /etc/yum.repos.d/kubernetes.repo <<EOF

[kubernetes]

name=Kubernetes

baseurl=https://packages.cloud.google.com/yum/repos/kubernetes-el7-\$basearch

enabled=1

gpgcheck=1

repo\_gpgcheck=1

gpgkey=https://packages.cloud.google.com/yum/doc/yum-key.gpg https://packages.cloud.google.com/yum/doc/rpm-package-key.gpg

EOF

# Install Kubernetes tools

sudo yum install -y kubelet kubeadm kubectl

# Start and enable kubelet

sudo systemctl enable kubelet

sudo systemctl start kubelet

**Step 4: Initialize the Master Node**

On the master node, initialize the Kubernetes cluster with **kubeadm**. Replace **<MASTER\_IP>** with the private IP address of your master node:

sudo kubeadm init --apiserver-advertise-address=<MASTER\_IP> --pod-network-cidr=10.244.0.0/16Follow the instructions provided in the output, including running **kubeadm join** on worker nodes.

**Step 5: Configure kubectl on the Master Node**

Copy the **kubeconfig** file to your user's home directory to configure **kubectl** for the master node:

mkdir -p $HOME/.kube

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

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

**Step 6: Install a Pod Network Add-On (Calico)**

Install a pod network add-on, such as Calico, to enable pod-to-pod communication:

kubectl apply -f https://raw.githubusercontent.com/coreos/flannel/bc79dd1505b0c8681ece4de4c0d86c5cd2643275/Documentation/kube-flannel.yml

**Step 7: Join Worker Node(s)**

On each worker node, run the **kubeadm join** command provided during the initialization of the master node:

bashCopy code

sudo kubeadm join <MASTER\_IP>:6443 --token <TOKEN> --discovery-token-ca-cert-hash <CERT-HASH>

Replace **<MASTER\_IP>**, **<TOKEN>**, and **<CERT-HASH>** with the values provided in your **kubeadm init** output.

**Step 8: Verify Cluster**

On the master node, check if the nodes are ready:

bashCopy code

kubectl get nodes