k8s\_cluster\_setup.yml

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- name: Kubernetes Cluster Setup - Common Tasks

hosts: all

become: yes

tasks:

- name: Set Hostname

hostname:

name: "{{ inventory\_hostname }}"

- name: Install required packages for containerd

yum:

name:

- yum-utils

- device-mapper-persistent-data

- lvm2

state: present

- name: Add Docker CE repository

get\_url:

url: https://download.docker.com/linux/centos/docker-ce.repo

dest: /etc/yum.repos.d/docker-ce.repo

- name: Install containerd

yum:

name: containerd.io

state: present

- name: Create containerd config directory

file:

path: /etc/containerd

state: directory

- name: Generate containerd default config

command: containerd config default

register: containerd\_config

- name: Write containerd config to file

copy:

content: "{{ containerd\_config.stdout }}"

dest: /etc/containerd/config.toml

- name: Enable systemd cgroup driver

replace:

path: /etc/containerd/config.toml

regexp: 'SystemdCgroup = false'

replace: 'SystemdCgroup = true'

- name: Restart and enable containerd

systemd:

name: containerd

state: restarted

enabled: yes

- name: Add Kubernetes repository

copy:

dest: /etc/yum.repos.d/kubernetes.repo

content: |

[kubernetes]

name=Kubernetes

baseurl=https://pkgs.k8s.io/core:/stable:/v1.29/rpm/

enabled=1

gpgcheck=1

gpgkey=https://pkgs.k8s.io/core:/stable:/v1.29/rpm/repodata/repomd.xml.key

- name: Install Kubernetes tools

yum:

name:

- kubelet

- kubeadm

- kubectl

state: present

- name: Enable and start kubelet

systemd:

name: kubelet

enabled: yes

state: started

- name: Disable swap

command: swapoff -a

- name: Comment swap entry in fstab

replace:

path: /etc/fstab

regexp: '^([^#].\*swap)'

replace: '# \1'

- name: Load kernel modules

copy:

dest: /etc/modules-load.d/k8s.conf

content: |

overlay

br\_netfilter

- name: Apply kernel modules

shell: |

modprobe overlay

modprobe br\_netfilter

- name: Set sysctl parameters

copy:

dest: /etc/sysctl.d/k8s.conf

content: |

net.bridge.bridge-nf-call-ip6tables = 1

net.bridge.bridge-nf-call-iptables = 1

net.ipv4.ip\_forward = 1

- name: Apply sysctl settings

command: sysctl --system

- name: Kubernetes Cluster Setup - Master Node

hosts: master

become: yes

tasks:

- name: Initialize Kubernetes master

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

register: kubeadm\_init

ignore\_errors: yes

- name: Create .kube directory

file:

path: /root/.kube

state: directory

mode: 0755

- name: Copy admin.conf to kube config

copy:

src: /etc/kubernetes/admin.conf

dest: /root/.kube/config

remote\_src: yes

- name: Set ownership of kube config

file:

path: /root/.kube/config

owner: root

group: root

mode: '0600'

- name: Deploy Flannel CNI

shell: |

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