Trong mô hình này cần có hạ tầng CEPH trước, do vậy xem tài liệu ceph để cài đặt hệ thống ceph.

# MÔ HÌNH

## Trên tất cả các node

Disable auto upgrade packages

vi /etc/apt/apt.conf.d/20auto-upgrades

APT::Periodic::Update-Package-Lists "0";

APT::Periodic::Unattended-Upgrade "0";

Update

sudo apt update

# Đặt IP

# Set hostname

| hostnamectl set-hostname CTL-VNPT-01  hostnamectl set-hostname CTL-VNPT-02  hostnamectl set-hostname CTL-VNPT-03  hostnamectl set-hostname COMPU-VNPT-01  hostnamectl set-hostname COMPU-VNPT-02  hostnamectl set-hostname COMPU-VNPT-LOCAL-101 |
| --- |

# Khai bao file hosts

| cat << EOF > /etc/hosts  10.10.100.11 CTL-VNPT-01  10.10.100.12 CTL-VNPT-02  10.10.100.13 CTL-VNPT-03  10.10.100.21 COMPU-VNPT-01  10.10.100.22 COMPU-VNPT-02  10.10.100.23 COMPU-VNPT-LOCAL-101  10.10.100.24 COMPU-VNPT-03  10.10.100.25 COMPU-VNPT-04  EOF |
| --- |

# Cấu hình ntp

| apt install chrony  vi /etc/chrony.conf  pool 10.10.240.50 iburst |
| --- |

# Active ntp

| systemctl restart chrony  chronyc sources |
| --- |

## Phần 2: Thực hiện trên node Controller-01

### Tạo thư mục trên node deploy

| ssh 10.10.100.11 sudo mkdir -p {/etc/kolla/config/cinder,/etc/kolla/config/cinder/cinder-volume,/etc/kolla/config/cinder/cinder-backup,/etc/kolla/config/glance,/etc/kolla/config/nova} |
| --- |

Copy file cấu hình Kolla

### Thực hiện trên ceph

# Chuyển file cấu hình sang node deploy

| ssh 10.10.100.11 sudo tee /etc/kolla/config/cinder/cinder-volume/ceph.conf < /etc/ceph/ceph.conf  ssh 10.10.100.11 sudo tee /etc/kolla/config/cinder/cinder-backup/ceph.conf < /etc/ceph/ceph.conf  ssh 10.10.100.11 sudo tee /etc/kolla/config/nova/ceph.conf < /etc/ceph/ceph.conf  ssh 10.10.100.11 sudo tee /etc/kolla/config/glance/ceph.conf < /etc/ceph/ceph.conf |
| --- |

# Gen key

| ceph auth get-or-create client.glance mon 'allow r, allow command "osd blocklist", allow command "blocklistop"' osd 'allow class-read object\_prefix rbd\_children, allow rwx pool=images'  ceph auth get-or-create client.cinder mon 'allow r, allow command "osd blocklist", allow command "blocklistop"' osd 'allow class-read object\_prefix rbd\_children, allow rwx pool=volumes, allow rwx pool=images'  ceph auth get-or-create client.cinder-backup mon 'profile rbd' osd 'profile rbd pool=backups' |
| --- |

# Chuyển key sang node deploy

| ceph auth get-or-create client.cinder | ssh 10.10.100.11 sudo tee /etc/kolla/config/cinder/cinder-volume/ceph.client.cinder.keyring  ceph auth get-or-create client.cinder | ssh 10.10.100.11 sudo tee /etc/kolla/config/cinder/cinder-backup/ceph.client.cinder.keyring  ceph auth get-or-create client.cinder-backup | ssh 10.10.100.11 sudo tee /etc/kolla/config/cinder/cinder-backup/ceph.client.cinder-backup.keyring  ceph auth get-or-create client.cinder | ssh 10.10.100.11 sudo tee /etc/kolla/config/nova/ceph.client.cinder.keyring  ceph auth get-or-create client.glance | ssh 10.10.100.11 sudo tee /etc/kolla/config/glance/ceph.client.glance.keyring |
| --- |

## Phần 3: Thực hiện trên node deploy

# Cấu hình keypair

| ssh-keygen -t rsa -f /root/.ssh/id\_rsa -q -P ""  ssh-copy-id -o StrictHostKeyChecking=no -i /root/.ssh/id\_rsa.pub root@CTL-VNPT-01  ssh-copy-id -o StrictHostKeyChecking=no -i /root/.ssh/id\_rsa.pub root@CTL-VNPT-02  ssh-copy-id -o StrictHostKeyChecking=no -i /root/.ssh/id\_rsa.pub root@CTL-VNPT-03  ssh-copy-id -o StrictHostKeyChecking=no -i /root/.ssh/id\_rsa.pub root@COMPU-VNPT-01  ssh-copy-id -o StrictHostKeyChecking=no -i /root/.ssh/id\_rsa.pub root@COMPU-VNPT-02  ssh-copy-id -o StrictHostKeyChecking=no -i /root/.ssh/id\_rsa.pub root@COMPU-VNPT-LOCAL-101 |
| --- |

Lưu ý: nhập pass khi được yêu cầu

# Cai dat cac goi can thiet

| apt install python3-dev libffi-dev gcc libssl-dev byobu -y |
| --- |

# Cai dat venv va tao virtual env

| apt install python3-venv -y  mkdir kolla  python3 -m venv ~/kolla  source ~/kolla/bin/activate  cd ~/kolla |
| --- |

# Cai dat ansible + kolla

| pip install 'ansible>=6,<8'  mkdir -p /etc/ansible  txt="[defaults]\nhost\_key\_checking=False\npipelining=True\nforks=100"  echo -e $txt >> /etc/ansible/ansible.cfg  pip3 install "kolla-ansible==16.2" |
| --- |

# Tao folder

| sudo mkdir -p /etc/kolla  sudo chown $USER:$USER /etc/kolla |
| --- |

# Copy file cấu hình

| cp /root/kolla/share/kolla-ansible/etc\_examples/kolla/\* /etc/kolla/  cp /root/kolla/share/kolla-ansible/ansible/inventory/\* /root/kolla/ |
| --- |

# Cài đặt dependency

| kolla-ansible install-deps |
| --- |

**# Chỉnh sửa file /root/kolla/multinode**

**vi /root/kolla/multinode**

| [control]  # These hostname must be resolvable from your deployment host  CTL-VNPT-01 ansible\_host=10.10.100.11 ansible\_connection=ssh ansible\_user=root  CTL-VNPT-02 ansible\_host=10.10.100.12 ansible\_connection=ssh ansible\_user=root  CTL-VNPT-03 ansible\_host=10.10.100.13 ansible\_connection=ssh ansible\_user=root  [network]  CTL-VNPT-01 ansible\_host=10.10.100.11 ansible\_connection=ssh ansible\_user=root  CTL-VNPT-02 ansible\_host=10.10.100.12 ansible\_connection=ssh ansible\_user=root  CTL-VNPT-03 ansible\_host=10.10.100.13 ansible\_connection=ssh ansible\_user=root  [compute]  COMPU-VNPT-01 ansible\_host=10.10.100.21 ansible\_connection=ssh ansible\_user=root  COMPU-VNPT-02 ansible\_host=10.10.100.22 ansible\_connection=ssh ansible\_user=root  COMPU-VNPT-LOCAL-101 ansible\_host=10.10.100.23 ansible\_connection=ssh ansible\_user=root  [monitoring]  10.10.100.168 ansible\_connection=ssh ansible\_user=root  [storage]  CTL-VNPT-01 ansible\_host=10.10.100.11 ansible\_connection=ssh ansible\_user=root  CTL-VNPT-02 ansible\_host=10.10.100.12 ansible\_connection=ssh ansible\_user=root  CTL-VNPT-03 ansible\_host=10.10.100.13 ansible\_connection=ssh ansible\_user=root  [deployment]  localhost ansible\_connection=local |
| --- |

# Gen password

| kolla-genpwd |
| --- |

cat /etc/kolla/passwords.yml

# Tao folder neutron

| mkdir -p /etc/kolla/config/neutron/ |
| --- |

# Them file cau hinh ml2

| cat << EOF > /etc/kolla/config/neutron/ml2\_conf.ini  [ml2\_type\_vlan]  network\_vlan\_ranges = physnet1  EOF |
| --- |

# Them file cau hinh glance-api

| cat << EOF > /etc/kolla/config/glance/glance-api.conf  [DEFAULT]  show\_image\_direct\_url = True  [glance\_store]  default\_store = rbd  stores = file,http,rbd  rbd\_store\_pool = images  rbd\_store\_user = glance  rbd\_store\_ceph\_conf = /etc/ceph/ceph.conf  rbd\_store\_chunk\_size = 8  EOF |
| --- |

# Thêm file cấu hình cinder

| cat << EOF > /etc/kolla/config/cinder/cinder-volume.conf  [DEFAULT]  notification\_driver = messagingv2  host = controller  glance\_api\_version = 2  EOF  cat << EOF > /etc/kolla/config/cinder/cinder-scheduler.conf  [DEFAULT]  host = controller  EOF  cat << EOF > /etc/kolla/config/cinder/cinder-backup.conf  [DEFAULT]  host = controller  EOF |
| --- |

# Chỉnh file cấu hình

| cat << EOF > /etc/kolla/globals.yml  # Valid options are ['centos', 'debian', 'rhel', 'ubuntu']  kolla\_base\_distro: "ubuntu"  # Valid options are [ binary, source ]  kolla\_install\_type: "source"  enable\_haproxy: "yes"  kolla\_internal\_vip\_address: "10.10.100.10"  network\_interface: "eno1"  neutron\_external\_interface: "bond1"  tunnel\_interface: "bond2"  # Valid options are [ qemu, kvm, vmware ]  nova\_compute\_virt\_type: "kvm"  keepalived\_virtual\_router\_id: "69"  enable\_central\_logging: "no"  enable\_grafana: "yes"  enable\_prometheus: "yes"  enable\_cinder: "yes"  enable\_cinder\_backup: "no"  glance\_backend\_ceph: "yes"  cinder\_backend\_ceph: "yes"  nova\_backend\_ceph: "no"  enable\_neutron\_agent\_ha: "yes"  enable\_neutron\_provider\_networks: "yes"  enable\_skyline: "yes"  enable\_mariabackup: "yes"  ceph\_glance\_keyring: "ceph.client.glance.keyring"  ceph\_glance\_user: "glance"  ceph\_glance\_pool\_name: "images"  ceph\_cinder\_keyring: "ceph.client.cinder.keyring"  ceph\_cinder\_user: "cinder"  ceph\_cinder\_pool\_name: "volumes"  EOF |
| --- |

# Bật byobu

| byobu |
| --- |

Lưu ý: Sau khi bật byobu, cần phải active lại môi trường

| source ~/kolla/bin/activate |
| --- |

# Khởi tạo môi trường dành cho Openstack Kolla

| kolla-ansible -i multinode bootstrap-servers |
| --- |

#Kiểm tra thiết lập Kolla Ansible

| kolla-ansible -i multinode prechecks |
| --- |

#Cài đặt Openstack

| kolla-ansible -i multinode deploy |
| --- |

#Thiết lập File Environment Openstack

| kolla-ansible -i multinode post-deploy |
| --- |

# Sau khi cài đặt hoàn tất, thoát byobu nếu đang ở trong byobu

| exit |
| --- |

#Cài đặt các gói openstack client trong virtualenv

| source ~/kolla/bin/activate  pip3 install python-openstackclient python-glanceclient python-neutronclient  source /etc/kolla/admin-openrc.sh |
| --- |

#Kiểm tra xem OpenStack hoạt động hay chưa

| openstack token issue |
| --- |

1. Upload image openstack .(cirror)

CEPH: pool Images + Volumes

1. Create Instance boot image.( tạo 1 volume từ project user).