## ****OpenStack Deployment with Ansible & Kolla — Refined Guide****

### ****Project Structure****

openstack-deploy/

├── ansible.cfg

├── group\_vars/

│ └── all.yml

├── inventory/

│ └── multinode

├── playbooks/

│ └── site.yml

├── roles/

│ ├── install\_deps/

│ ├── install\_kolla/

│ ├── prepare\_configs/

│ ├── bootstrap\_kolla/

│ ├── deploy\_openstack/

│ └── post\_deploy/

├── requirements.yml

└── precheck.log

### ****Setup Prerequisites****

#### 1. Create Virtual Environment

python3 -m venv /root/kolla-venv

source /root/kolla-venv/bin/activate

pip install -U pip setuptools wheel

#### 2. Install Dependencies

pip install ansible kolla-ansible

#### 3. Install Ansible Collections

ansible-galaxy collection install -r requirements.yml

#### 4. Configure ansible.cfg

[defaults]

collections\_paths = ~/.ansible/collections:/usr/share/ansible/collections

### ****Deployment Workflow****

#### 1. Install OS Dependencies (Docker, SSH, etc.)

ansible-playbook playbooks/site.yml --tags install\_deps

#### 2. Install Kolla-Ansible

ansible-playbook playbooks/site.yml --tags install\_kolla

#### 3. Prepare Configuration Files

ansible-playbook playbooks/site.yml --tags prepare\_configs

Includes:

* Rendering globals.yml
* Copying passwords.yml
* Injecting Ceph configs (if applicable)

#### 4. (Conditional) Octavia TLS Certificates

If enable\_octavia: true in globals.yml:

kolla-ansible octavia-certificates

ansible-playbook playbooks/site.yml --tags prepare\_configs

#### 5. Bootstrap Kolla Runtime

ansible-playbook playbooks/site.yml --tags bootstrap\_kolla

#### 6. Deploy OpenStack

Recommended:

ansible-playbook playbooks/site.yml --tags deploy\_openstack

Alternative:

/root/kolla-venv/bin/kolla-ansible -i inventory/multinode deploy

#### 7. Post-Deploy Configuration

ansible-playbook playbooks/site.yml --tags post\_deploy

Alternative:

/root/kolla-venv/bin/kolla-ansible -i inventory/multinode post-deploy

Handles:

* Adding CA cert path to admin-openrc.sh
* Installing python-openstackclient

### ****Validation Checks****

#### Load CLI Environment

source /etc/kolla/admin-openrc.sh

#### Run Health Checks

openstack service list

openstack compute service list

openstack network agent list

#### Horizon Access

Visit:

http://<controller-vip> or http://<controller-ip>

Credentials:

Username: admin

Password: (found in /etc/kolla/passwords.yml under keystone\_admin\_password)