ANSIBLE ASSIGNMENT SUBMISSION

Name: Vikram

Assignment: Ansible – Setup Cluster, Install Java on Slave1 & MySQL on Slave2

Problem Statement

Set up an Ansible cluster with:

- 1 Master Node
- 2 Slave Nodes

Using Ansible Playbooks:

- Install Java on Slave1
- Install MySQL Server on Slave2

Environment Used

Three Ubuntu EC2 Instances:

Instance Name	Purpose
ansible-master	Controls the cluster
slave1	Java installation
slave2	MySQL installation

All three instances launched using the same keypair.

TASK 1 — Setup Ansible Cluster With 3 Nodes

Step 1: Launch 3 Ubuntu EC2 Instances

- ansible-master
- slave1
- slave2
- All use the same keypair
- Connect using EC2 Instance Connect

Step 2: Install Ansible on Master Node

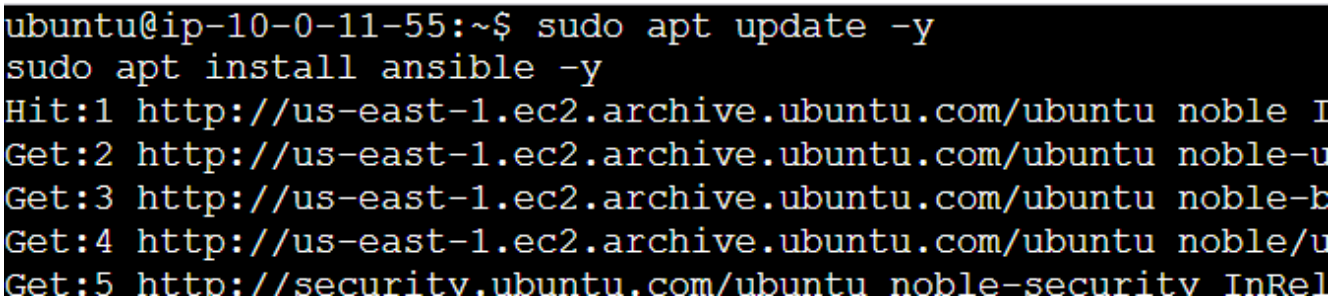
Login to ansible-master and run:

sudo apt update -y

sudo apt install ansible -y

Check version:

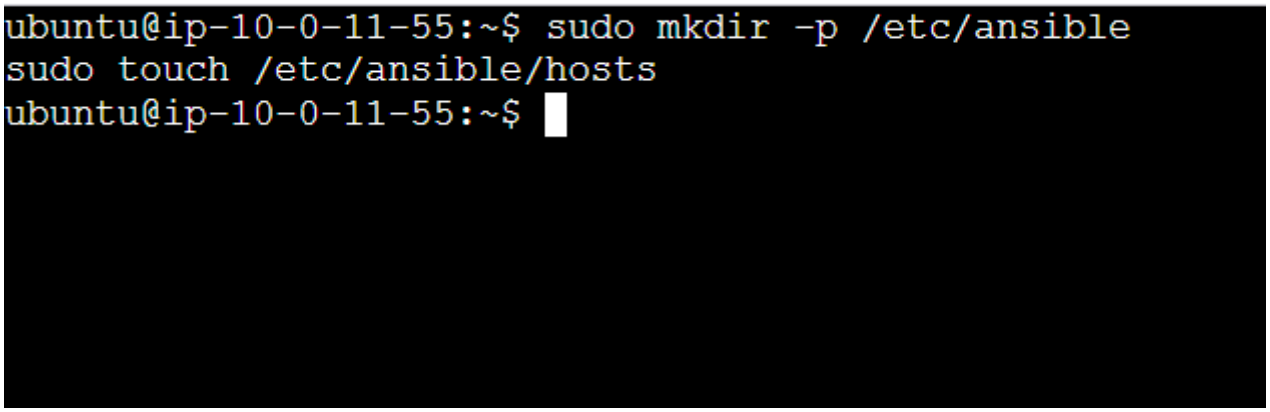
ansible –version



Step 3: Create Ansible Inventory Directory

sudo mkdir -p /etc/ansible

sudo touch /etc/ansible/hosts



Step 4: Upload Private Key to Master Node

On local computer → open your .pem key

Copy ALL contents → paste into master:

nano ~/.ssh/mykey.pem

Paste key → Save → Exit.

Set correct permissions:

chmod 400 ~/.ssh/mykey.pem

```
ubuntu@ip-10-0-11-55:~$ nano ~/.ssh/mykey.pem
ubuntu@ip-10-0-11-55:~$ chmod 400 ~/.ssh/mykey.pem
ubuntu@ip-10-0-11-55:~$
```

Step 5: Configure Inventory File

Open inventory file:

sudo nano /etc/ansible/hosts

Add:

[slave1]

10.0.1.56 ansible_user=ubuntu ansible_ssh_private_key_file=/home/ubuntu/.ssh/mykey.pem

[slave2]

10.0.0.18 ansible_user=ubuntu ansible_ssh_private_key_file=/home/ubuntu/.ssh/mykey.pem

Save and exit.

```
ubuntu@ip-10-0-11-55:~$ sudo nano /etc/ansible/hosts
ubuntu@ip-10-0-11-55:~$ sudo nano /etc/ansible/hosts
ubuntu@ip-10-0-11-55:~$
```

```
  GNU nano 7.2                                    /etc/ansible/hosts
[slave1]
10.0.11.55 ansible_user=ubuntu ansible_ssh_private_key_file=/home/ubuntu/.ssh/mykey.pem

[slave2]
10.0.15.253 ansible_user=ubuntu ansible_ssh_private_key_file=/home/ubuntu/.ssh/mykey.pem
```

Step 6: Test SSH Access to Slaves

ansible all -m ping

Expected output:

10.0.1.56 | SUCCESS => pong

10.0.0.18 | SUCCESS => pong

```
ubuntu@ip-10-0-11-55:~$ ansible all -m ping
The authenticity of host '10.0.15.253 (10.0.15.253)' can't be established.
ED25519 key fingerprint is SHA256:yrX9xqE2BpxZTuPVlShxyVFEiWH88qE1BJNDrvBtEzI.
This key is not known by any other names.
The authenticity of host '10.0.11.55 (10.0.11.55)' can't be established.
ED25519 key fingerprint is SHA256:7XiHyzXxRHCnbtUBV64o9v/CZCYvyVKwAxoogxG3t+E.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
10.0.15.253 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
```

TASK 2 — Install Java on Slave1 Using Playbook

Create Playbook:

nano java-install.yml

Paste:

```
---
- name: Install Java on Slave1
  hosts: slave1
  become: yes
  tasks:
    - name: Install default JDK
      apt:
        name: default-jdk
        state: present
        update_cache: yes
```

Run:

ansible-playbook java-install.yml

Java is now installed on Slave1.

```
ubuntu@ip-10-0-15-253:~$ nano java-install.yml
ubuntu@ip-10-0-15-253:~$
```

```
  GNU nano 7.2
---
- name: Install Java on Slave1
  hosts: slave1
  become: yes
  tasks:
    - name: Install default JDK
      apt:
        name: default-jdk
        state: present
        update_cache: yes
```

```
ubuntu@ip-10-0-11-55:~$ ansible-playbook java-install.yml

PLAY [Install Java on Slave1] ***********************************************************************************************************************************************************

TASK [Gathering Facts] ******************************************************************************************************************************************************************
The authenticity of host '10.0.11.55 (10.0.11.55)' can't be established.
ED25519 key fingerprint is SHA256:7XiHyzXxRHCnbtUBV64o9v/CZCYvyVKWAxoogxG3t+E.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
ok: [10.0.11.55]

TASK [Install default JDK] **************************************************************************************************************************************************************
changed: [10.0.11.55]

PLAY RECAP ******************************************************************************************************************************************************************************
10.0.11.55                 : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

ubuntu@ip-10-0-11-55:~$
```

TASK 3 — Install MySQL on Slave2 Using Playbook

Create Playbook:

```
nano mysql-install.yml
```

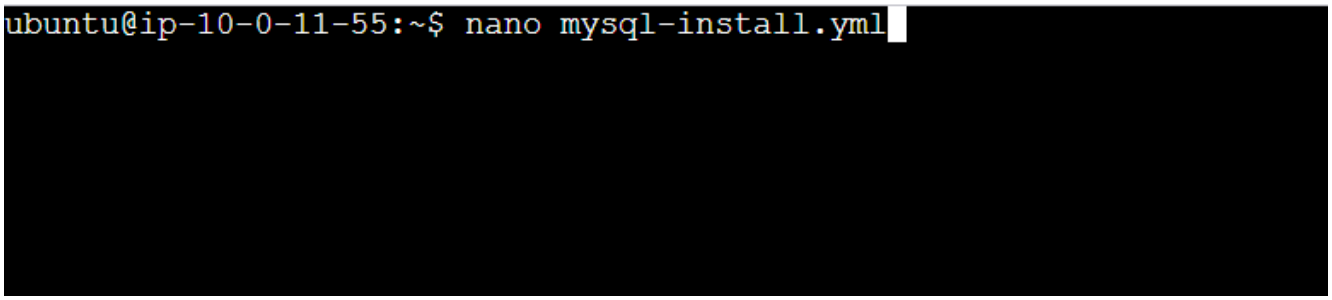
Paste:

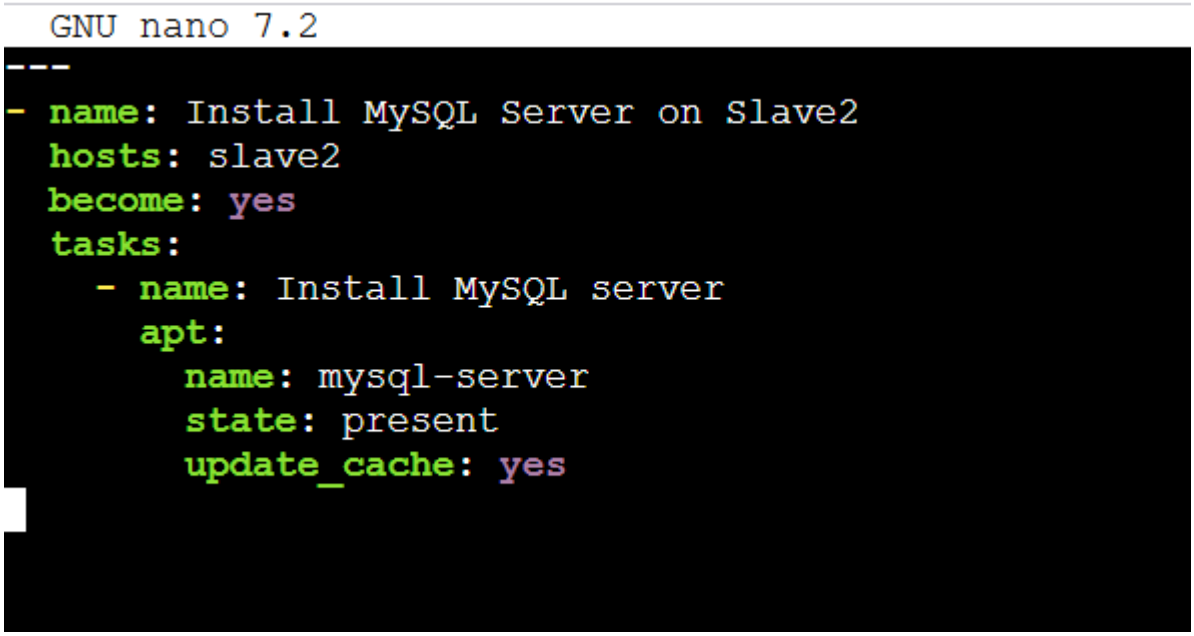
```
---
- name: Install MySQL Server on Slave2
  hosts: slave2
  become: yes
  tasks:
    - name: Install MySQL server
      apt:
        name: mysql-server
        state: present
        update_cache: yes
```

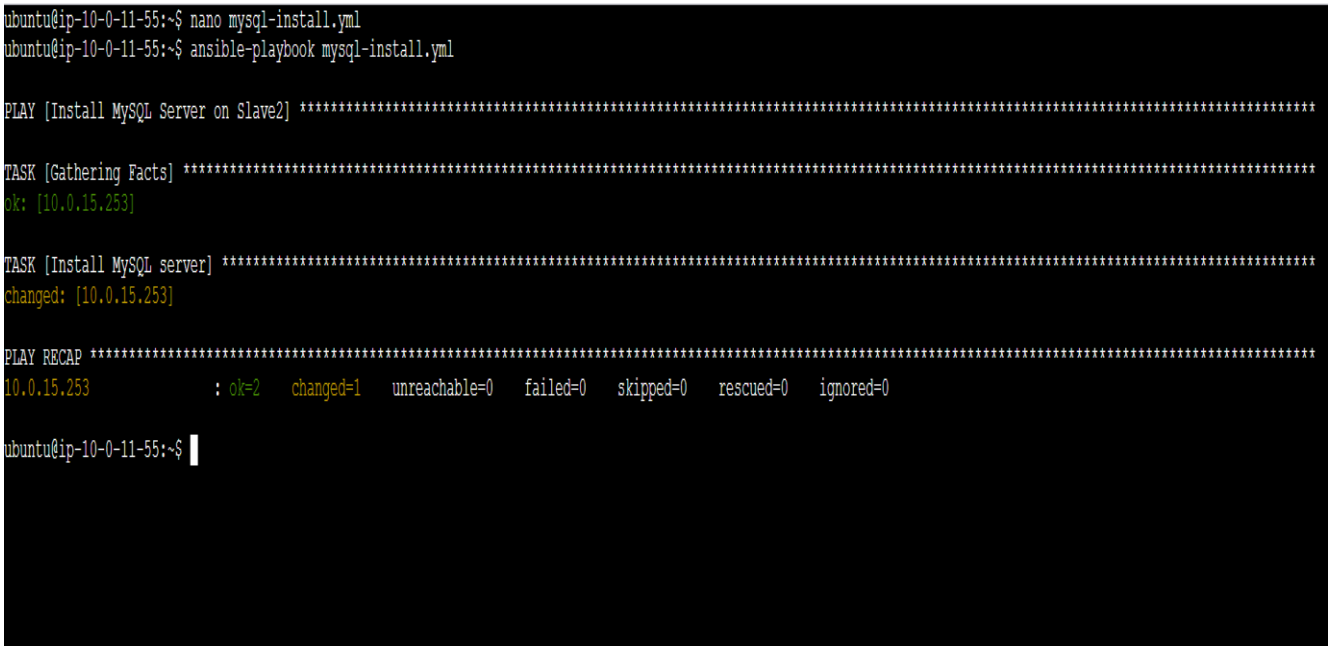
Run:

```
ansible-playbook mysql-install.yml
```

MySQL is now installed on Slave2.







Conclusion

Successfully:

- Set up an Ansible cluster with a master and two slave nodes
- Configured inventory and SSH access using a private key
- Installed **Java** on Slave1 using java-install.yml
- Installed **MySQL Server** on Slave2 using mysql-install.yml

This demonstrates a complete configuration management workflow using Ansible Playbooks.