Module 5: Ansible Assignment - 5

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Course Offered: -Advanced Cloud Computing and Devops
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Date Of Submission: -12/03/2025

Tasks To Be Performed:

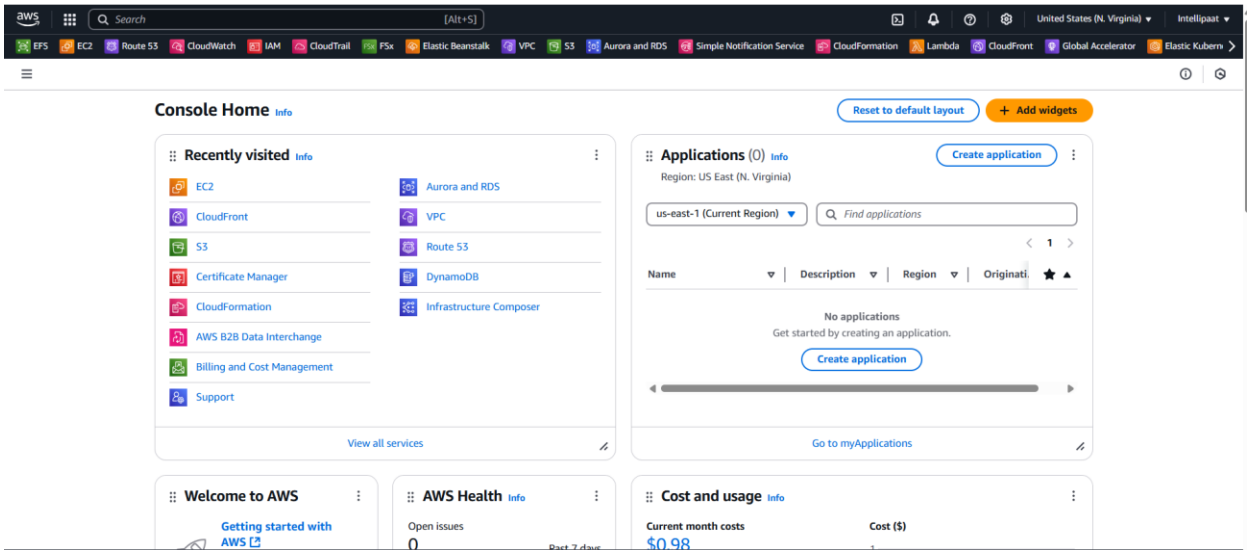
1. Create a new deployment of Ansible cluster of 5 nodes
2. Label 2 nodes as test and other 2 as prod
3. Install Java on test nodes
4. Install MySQL server on prod nodes

Use Ansible roles for the above and group the hosts under test and prod.

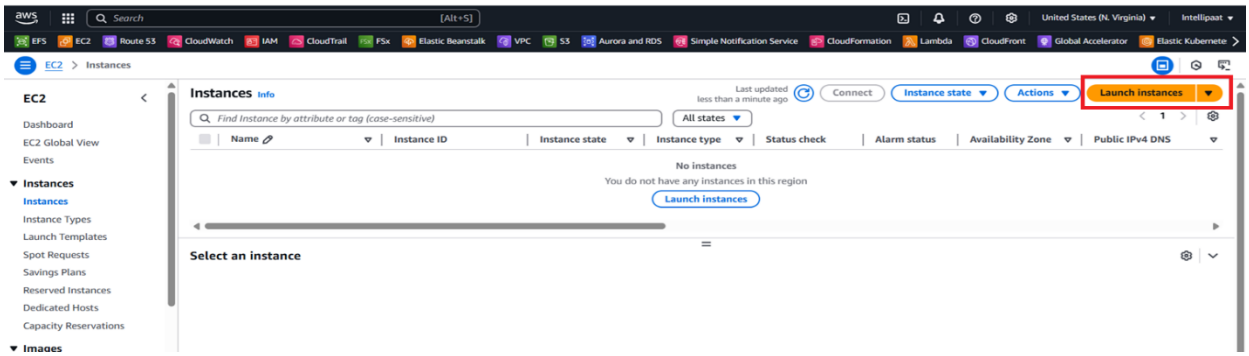
SOLUTION

Go To AWS Management Comsole And create 5 ec2 instances 1 is master node and 4 is slave node.

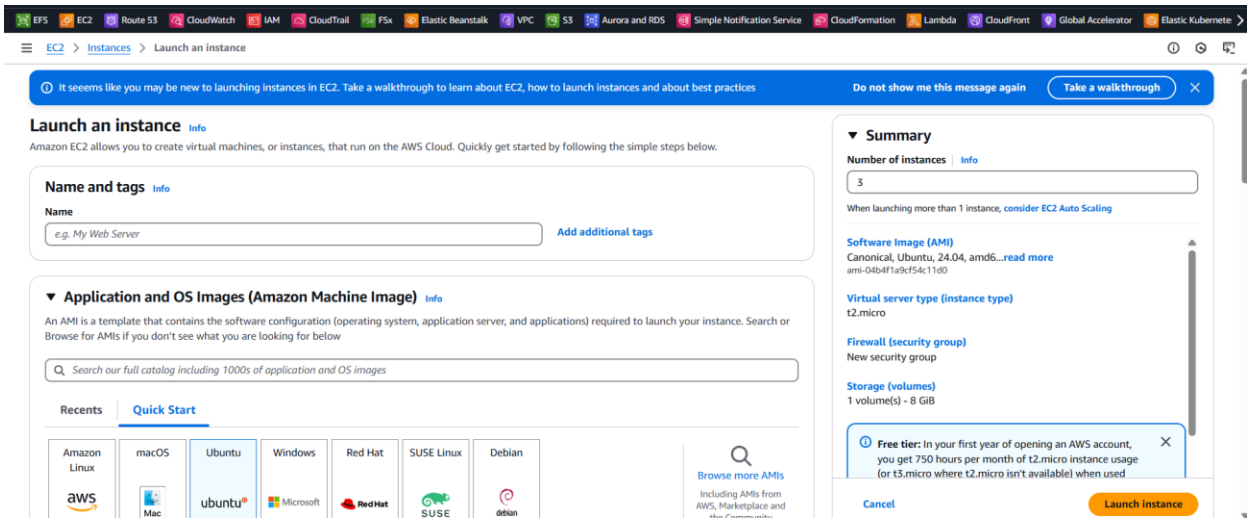
After Login the aws console you will see like this screen.



Then Click EC2 then click the instances and click the launch instance



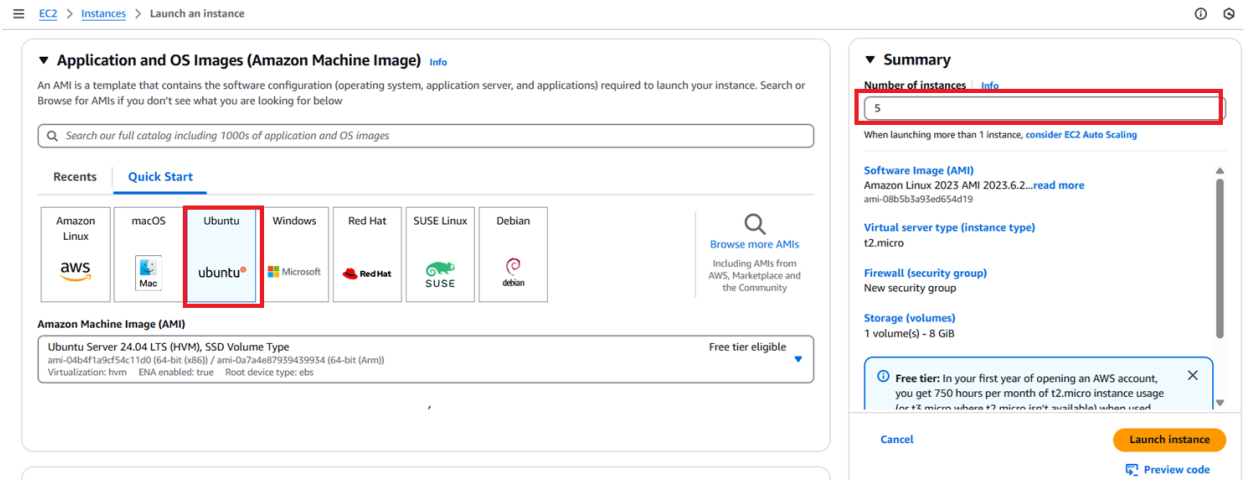
After Click the launch instance you will see like this page.



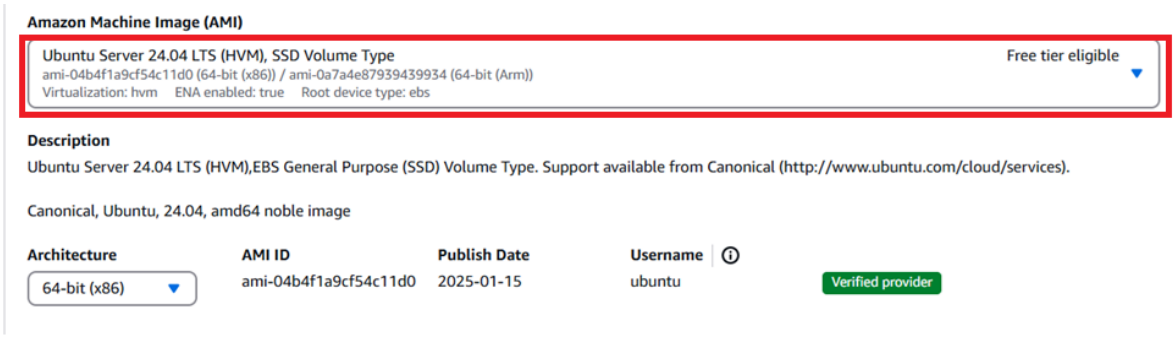
Assign the name of instance

Select AMI is ubuntu

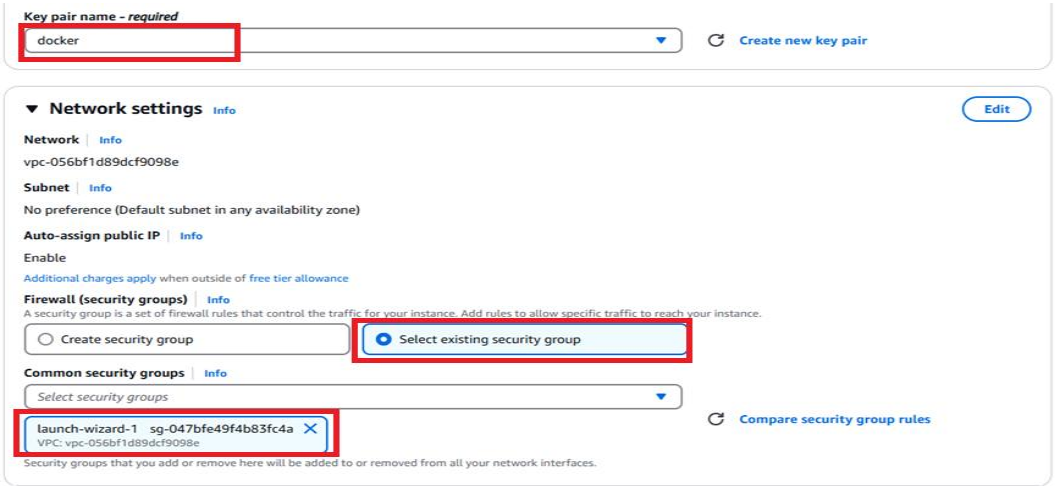
1. Create a new deployment of Ansible cluster of 5 nodes



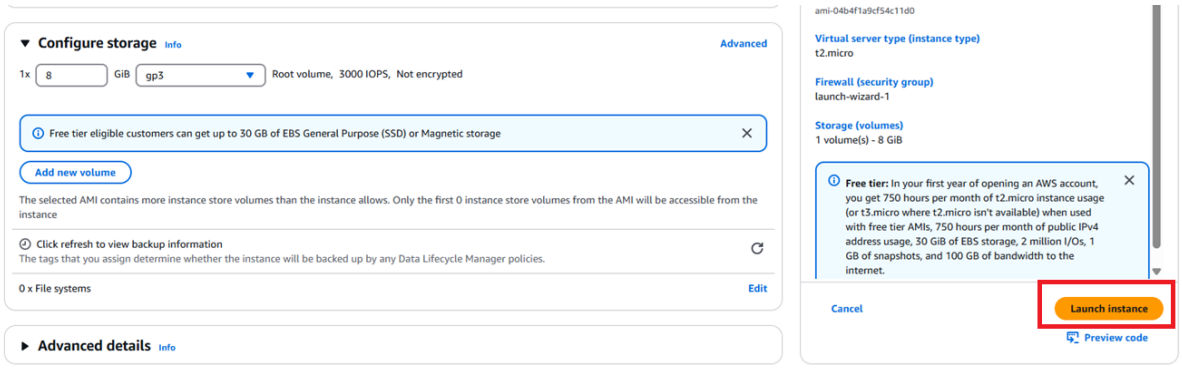
Select the Amazon Machine Image(AMI) as a ubuntu with free tier.



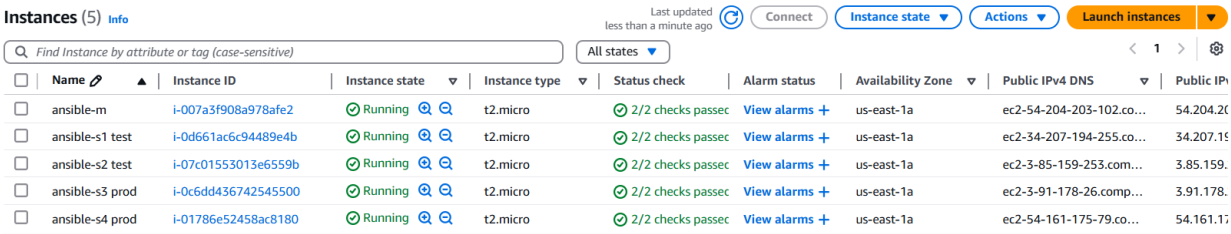
Now We need choose keypair and then select firewall I choose to select existing security group I have already created.



Now Click Launch the instance.



2. Label 2 nodes as test and other 2 as prod




```
## beta.example.org
## 192.168.1.100
## 192.168.1.110

# If you have multiple hosts following a pattern, you can specify
# them like this:

## www[001:006].example.com

# You can also use ranges for multiple hosts:

## db-[99:101]-node.example.com

# Ex 3: A collection of database servers in the 'dbservers' group:

## [dbservers]
##
## db01.intranet.mydomain.net
## db02.intranet.mydomain.net
## 10.25.1.56
## 10.25.1.57


# Ex4: Multiple hosts arranged into groups such as 'Debian' and 'openSUSE':

## [Debian]
## alpha.example.org
## beta.example.org

## [openSUSE]
## green.example.com
## blue.example.com

[test]
172.31.93.75
172.31.83.178

[prod]
172.31.90.55
172.31.95.78
ubuntu@ip-172-31-81-146:/etc/ansible$
```

check whether the instances are connected or not

```
ubuntu@ip-172-31-81-146:~/.ssh$ ansible -m ping all
[WARNING]: Platform linux on host 172.31.95.78 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another
Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
172.31.95.78 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.12"
    },
    "changed": false,
    "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.90.55 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another
Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
172.31.90.55 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.12"
    },
    "changed": false,
    "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.93.75 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another
Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
172.31.93.75 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.12"
    },
    "changed": false,
    "ping": "pong"
}
[WARNING]: Platform linux on host 172.31.83.178 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another
Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
172.31.83.178 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3.12"
    },
    "changed": false,
    "ping": "pong"
```

3. Install Java on test nodes

4. Install MySQL server on prod nodes

```
ubuntu@ip-172-31-81-146:/etc/ansible/roles$ sudo ansible-galaxy init java
- Role java was created successfully
ubuntu@ip-172-31-81-146:/etc/ansible/roles$ sudo ansible-galaxy init mysql
- Role mysql was created successfully
ubuntu@ip-172-31-81-146:/etc/ansible/roles$
```

write a play5.yaml file to install java in prod and Mysql in test

```
  GNU nano 7.2                                                    play5.yaml
---
- name: installing java
  hosts: test
  become: true
  roles:
  - java

- name: installing mysql
  hosts: prod
  become: true
  roles:
  - mysql
```

- name: installing java

  hosts: test

  become: true

  roles:

- java

- name: installing mysql
  hosts: prod
  become: true
  roles:
  - mysql

Cd /etc/ansible/roles/java/tasks

Edit the main.yaml and add this line

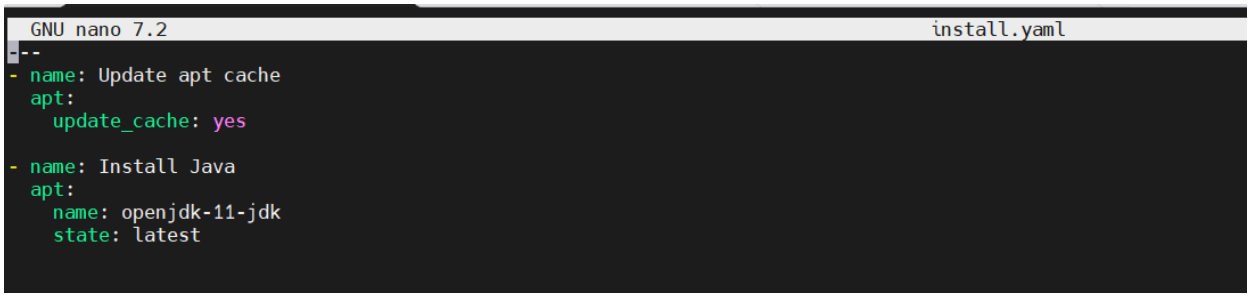
main.yml

---

tasks file for java

- include_tasks: install.yaml

create an install.yaml file in /etc/ansible/roles/java/tasks



- name: Update apt cache
  apt:
    update_cache: yes

- name: Install Java
  apt:

name: openjdk-11-jdk

state: latest

cd /etc/ansible/roles/mysql/tasks

create an install.yaml file in /etc/ansible/roles/mysql/tasks

- name: Update apt cache

apt:

update_cache: yes

- name: Install MySQL Server

apt:

name: mysql-server

state: latest

cd /etc/ansible/roles/mysql/tasks

Edit the main.yaml and add this line

Save it

Now Run the ansible playbook.

```
ubuntu@ip-172-31-81-146:/etc/ansible/roles/java$ ansible-playbook play5.yaml

PLAY [installing java] *********************************************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************************************
[WARNING]: Platform linux on host 172.31.93.75 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python interpreter
could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.93.75]
[WARNING]: Platform linux on host 172.31.83.178 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python interpreter
could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.83.178]

TASK [java : include_tasks] ****************************************************************************************************************************************************
included: /etc/ansible/roles/java/tasks/install.yaml for 172.31.93.75, 172.31.83.178

TASK [java : Update apt cache] *************************************************************************************************************************************************
changed: [172.31.93.75]
changed: [172.31.83.178]

TASK [java : Install Java] *****************************************************************************************************************************************************
ok: [172.31.93.75]
ok: [172.31.83.178]

PLAY [installing mysql] ********************************************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************************************
[WARNING]: Platform linux on host 172.31.90.55 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python interpreter
could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.90.55]
[WARNING]: Platform linux on host 172.31.95.78 is using the discovered Python interpreter at /usr/bin/python3.12, but future installation of another Python interpreter
could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.95.78]

TASK [mysql : include_tasks] ***************************************************************************************************************************************************
included: /etc/ansible/roles/mysql/tasks/install.yaml for 172.31.90.55, 172.31.95.78

TASK [mysql : Update apt cache] ************************************************************************************************************************************************
changed: [172.31.95.78]
changed: [172.31.90.55]
```

```
TASK [mysql : include_tasks] ***************************************************************************************************************************************************
included: /etc/ansible/roles/mysql/tasks/install.yaml for 172.31.90.55, 172.31.95.78

TASK [mysql : Update apt cache] ************************************************************************************************************************************************
changed: [172.31.95.78]
changed: [172.31.90.55]

TASK [mysql : Install MySQL Server] ********************************************************************************************************************************************
changed: [172.31.95.78]
changed: [172.31.90.55]

PLAY RECAP *********************************************************************************************************************************************************************
172.31.83.178              : ok=4    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.90.55               : ok=4    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.93.75               : ok=4    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.95.78               : ok=4    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Now check the application in test machine

```
ubuntu@ip-172-31-93-75:~/.ssh$ java --version
openjdk 11.0.26 2025-01-21
OpenJDK Runtime Environment (build 11.0.26+4-post-Ubuntu-1ubuntu124.04)
OpenJDK 64-Bit Server VM (build 11.0.26+4-post-Ubuntu-1ubuntu124.04, mixed mode, sharing)
ubuntu@ip-172-31-93-75:~/.ssh$
```

```
ubuntu@ip-172-31-83-178:~/.ssh$ java --version
openjdk 11.0.26 2025-01-21
OpenJDK Runtime Environment (build 11.0.26+4-post-Ubuntu-1ubuntu124.04)
OpenJDK 64-Bit Server VM (build 11.0.26+4-post-Ubuntu-1ubuntu124.04, mixed mode, sharing)
ubuntu@ip-172-31-83-178:~/.ssh$
```

Now check the application in test machine

```
ubuntu@ip-172-31-90-55:~/.ssh$ mysql --version
mysql  Ver 8.0.41-0ubuntu0.24.04.1 for Linux on x86_64 ((Ubuntu))
ubuntu@ip-172-31-90-55:~/.ssh$
```

```
ubuntu@ip-172-31-95-78:~/.ssh$ mysql --version
mysql  Ver 8.0.41-0ubuntu0.24.04.1 for Linux on x86_64 ((Ubuntu))
ubuntu@ip-172-31-95-78:~/.ssh$
```

CODES

For java installation

```
---
- name: Update apt cache
  apt:
    update_cache: yes

- name: Install Java
  apt:
    name: openjdk-11-jdk
    state: latest
```

For Mysql

```
---
- name: Update apt cache
  apt:
    update_cache: yes

- name: Install MySQL Server
  apt:
    name: mysql-server
    state: latest
```