

Module 5: Ansible Assignment - 5

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Course Offered: -Advanced Cloud Computing and Devops

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Tasks To Be Performed:

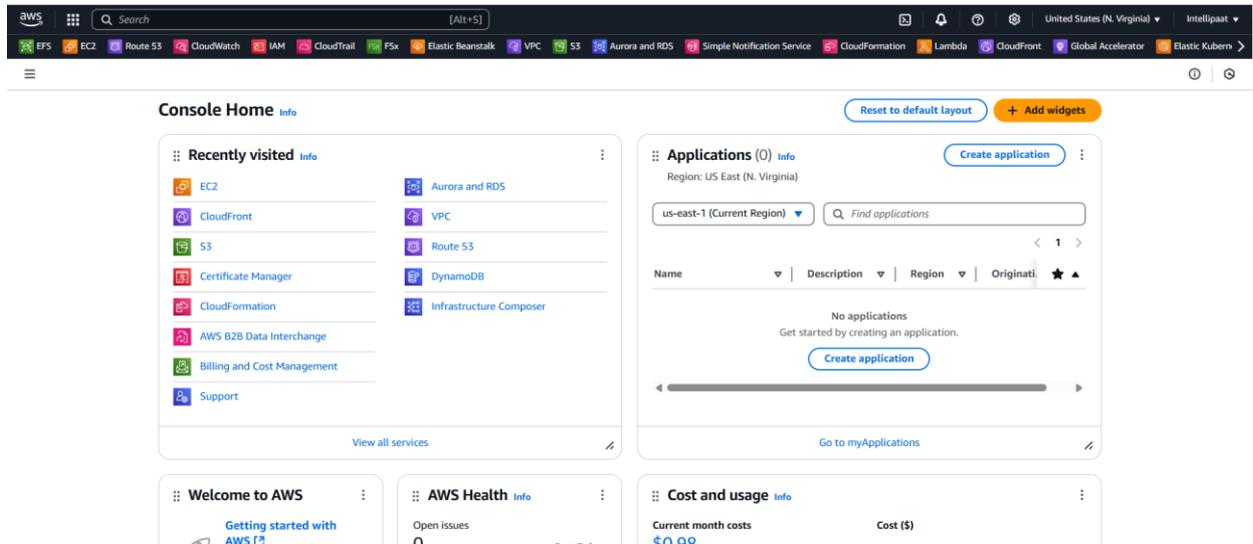
1. Create a new deployment of Ansible cluster of 5 nodes
2. Label 2 nodes as test and other 2 as prod
3. Install Java on test nodes
4. Install MySQL server on prod nodes

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

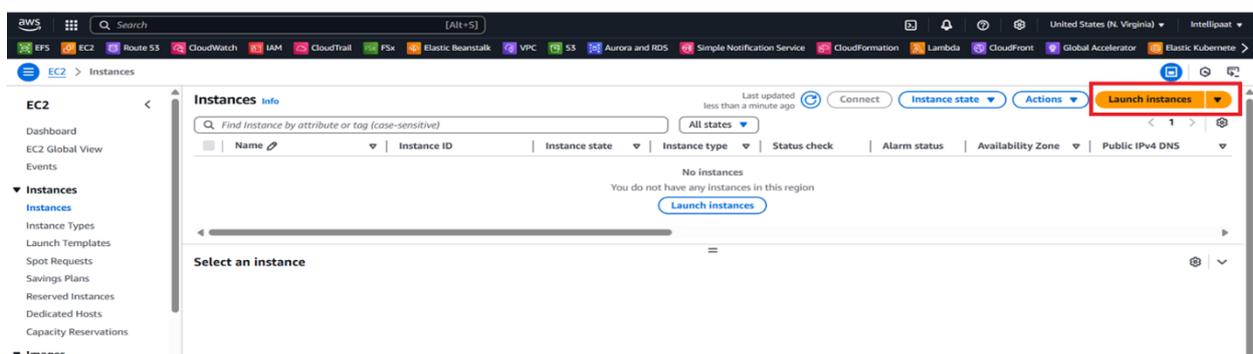
SOLUTION

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

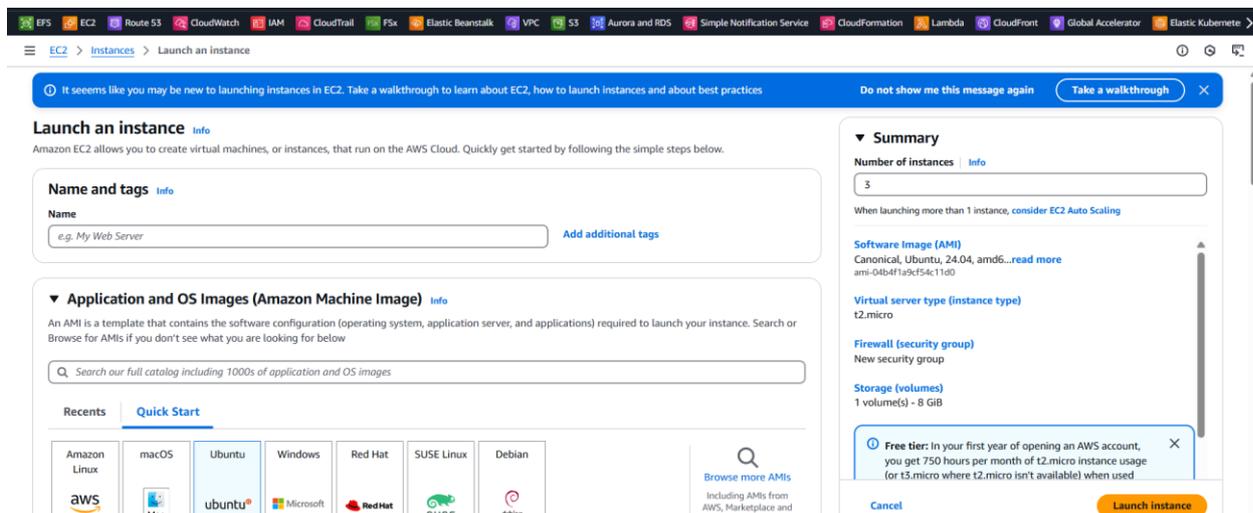
After Login the aws console you will see like this screen.



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

The screenshot shows the AWS Management Console interface for launching an instance. In the 'Application and OS Images (Amazon Machine Image)' section, the 'ubuntu' AMI is selected. The 'Summary' section on the right shows 'Number of instances' set to 5. The 'Launch instance' button is visible at the bottom right.

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

The screenshot shows the details for the 'Ubuntu Server 24.04 LTS (HVM), SSD Volume Type' AMI. The AMI ID is 'ami-04b4f1a9cf54c11d0' and the username is 'ubuntu'. The 'Free tier eligible' label is visible in the top right corner.

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

The screenshot shows the 'Network settings' section. The 'Key pair name' is set to 'docker'. In the 'Firewall (security groups)' section, 'Select existing security group' is selected, and 'launch-wizard-1 sg-047bfe49f4b83fc4a' is selected in the dropdown menu.

Now Click Launch the instance.

The screenshot shows the AWS console configuration for a new instance. On the left, the 'Configure storage' section is expanded, showing a root volume of 8 GiB gp3. A notification states: 'Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage'. Below this, there are options to 'Add new volume', 'Click refresh to view backup information', and '0 x File Systems'. On the right, the instance details are shown: 'ami-04b4f1a9cf54c11d0', 'Virtual server type (instance type) t2.micro', 'Firewall (security group) launch-wizard-1', and 'Storage (volumes) 1 volume(s) - 8 GiB'. A 'Free tier' notification is also present. At the bottom right, the 'Launch instance' button is highlighted with a red box, with a 'Cancel' button to its left and a 'Preview code' link below it.

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

Instances (5) Info Last updated less than a minute ago [Refresh](#) [Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

All states [Filter](#)

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
<input type="checkbox"/>	ansible-m	i-007a3f908a978afe2	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	ec2-54-204-203-102.co...	54.204.203.102
<input type="checkbox"/>	ansible-s1 test	i-0d661ac6c94489e4b	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	ec2-34-207-194-255.co...	34.207.194.255
<input type="checkbox"/>	ansible-s2 test	i-07c01553013e6559b	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	ec2-3-85-159-253.com...	3.85.159.253
<input type="checkbox"/>	ansible-s3 prod	i-0c6dd436742545500	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	ec2-3-91-178-26.comp...	3.91.178.26
<input type="checkbox"/>	ansible-s4 prod	i-01786e52458ac8180	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	ec2-54-161-175-79.co...	54.161.175.79

```
## 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.yml and add this line

```
GNU nano 7.2 main.yml
---
# tasks file for java
- include_tasks: install.yml
```

main.yml

tasks file for java

- include_tasks: install.yml

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

```
GNU nano 7.2 install.yml
---
- name: Update apt cache
  apt:
    update_cache: yes

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

- name: Update apt cache

apt:

update_cache: yes

- name: Install Java

apt:

name: openjdk-11-jdk

state: latest

cd /etc/ansible/roles/mysql/tasks

```
GNU nano 7.2 main.yml
--
# tasks file for java
- include_tasks: install.yaml
```

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

```
GNU nano 7.2 install.yaml
--
- name: Update apt cache
  apt:
    update_cache: yes
- name: Install MySQL Server
  apt:
    name: mysql-server
    state: latest
```

- 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

```
GNU nano 7.2 main.yml
--
# tasks file for java
- include_tasks: install.yaml
```

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