

# Module 5: Ansible Assignment - 1

## Tasks To Be Performed:

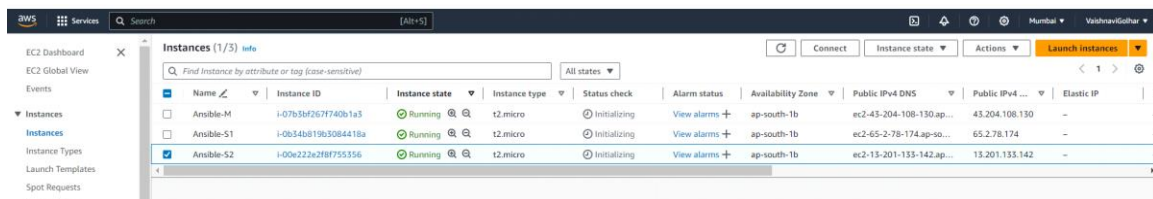
1. Setup Ansible cluster with 3 nodes
2. On slave 1 install Java
3. On slave 2 install MySQL server

Do the above tasks using Ansible Playbooks

## SOLUTION:

### step1: Provision AWS EC2 Instances

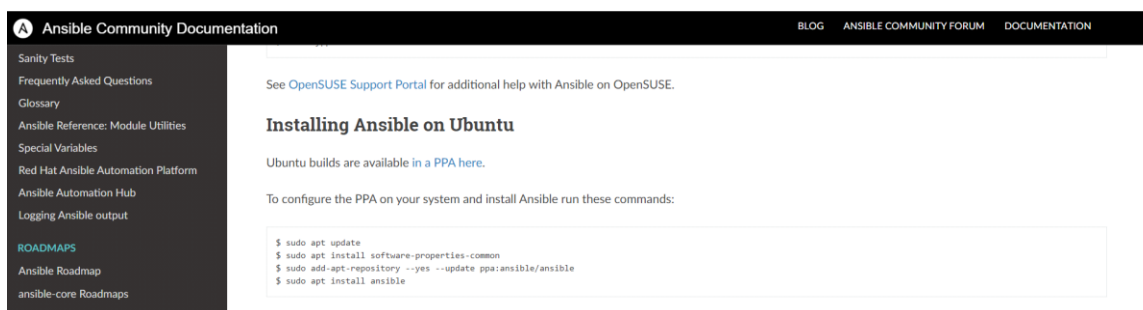
You need to create three EC2 instances (one master and two slaves) running Ubuntu. Ensure you have the necessary security group settings to allow SSH access between the instances.



The screenshot shows the AWS Management Console 'Instances' page. It lists three EC2 instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IF
Ansible-M	i-07b3bf267f740b1a3	Running	t2.micro	⊙ Initializing	View alarms +	ap-south-1b	ec2-43-204-108-130.ap...	43.204.108.130	-	-
Ansible-S1	i-0b54b819b3084418a	Running	t2.micro	⊙ Initializing	View alarms +	ap-south-1b	ec2-65-2-78-174.ap-so...	65.2.78.174	-	-
Ansible-S2	i-00e222e2f8f755356	Running	t2.micro	⊙ Initializing	View alarms +	ap-south-1b	ec2-13-201-133-142.ap...	13.201.133.142	-	-

### step2: Install Ansible on the Master Node



The screenshot shows the 'Installing Ansible on Ubuntu' page from the Ansible Community Documentation. It includes the following text:

See [OpenSUSE Support Portal](#) for additional help with Ansible on OpenSUSE.

### Installing Ansible on Ubuntu

Ubuntu builds are available in a [PPA](#) [here](#).

To configure the PPA on your system and install Ansible run these commands:

```
$ sudo apt update
$ sudo apt install software-properties-common
$ sudo add-apt-repository --yes --update ppa:ansible/ansible
$ sudo apt install ansible
```

```
ubuntu@ip-172-31-8-31:~$ history
 1  sudo apt update
 2  sudo apt install software-properties-common
 3  sudo add-apt-repository --yes --update ppa:ansible/ansible
 4  history
ubuntu@ip-172-31-8-31:~$
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31

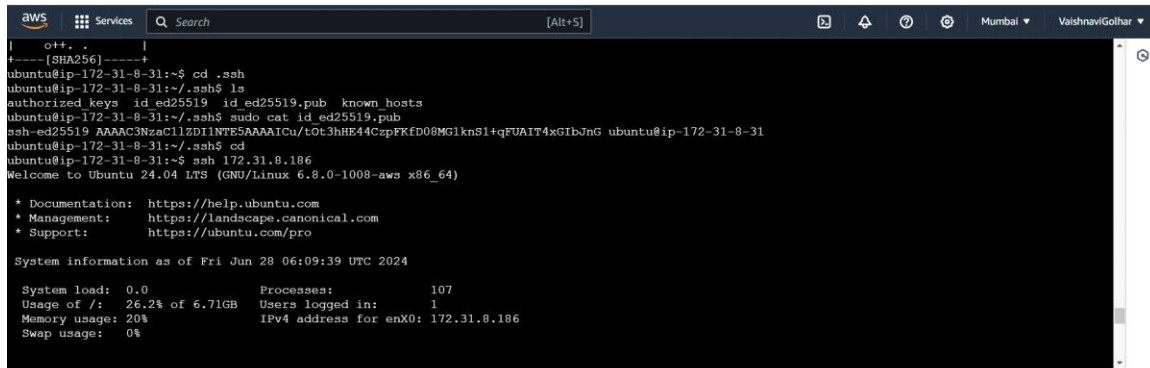
### step 3: Set Up SSH Keys

```
ubuntu@ip-172-31-8-31:~$ ssh 172.31.8.186
The authenticity of host '172.31.8.186 (172.31.8.186)' can't be established.
ED25519 key fingerprint is SHA256:ypKYhGleWqos+8pB5dS6rJyzWSWMufoy7JaXrdA/MSo.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.31.8.186' (ED25519) to the list of known hosts.
ubuntu@172.31.8.186: Permission denied (publickey).
ubuntu@ip-172-31-8-31:~$ cd .ssh
```

```
aws Services Search [Alt+S] Mumbai VaishnavGothar
ubuntu@172.31.8.186: Permission denied (publickey).
ubuntu@ip-172-31-8-31:~$ cd .ssh
ubuntu@ip-172-31-8-31:~/.ssh$ ls
authorized_keys  known_hosts
ubuntu@ip-172-31-8-31:~/.ssh$ cd
ubuntu@ip-172-31-8-31:~$ ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_ed25519):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_ed25519
Your public key has been saved in /home/ubuntu/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:CLReOGf8KbH0H2IW2KrtGKftF12OcxTM9qu0IkYXtKw ubuntu@ip-172-31-8-31
The key's randomart image is:
+--[ED25519 256]--+
|  .  o             |
|  . + o =         |
|  = Oooo o        |
|  . B B+oo .      |
|  . =oS* . .       |
|  oE+=o+..         |
|  o.OO f-o         |
```

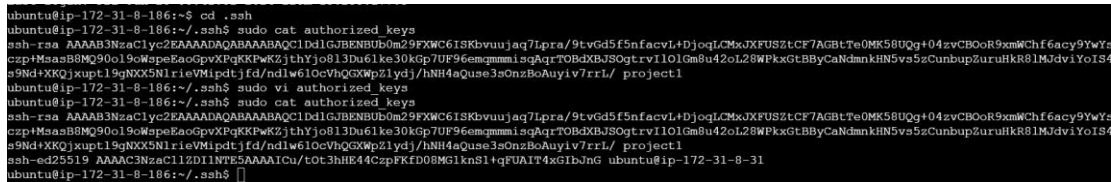
i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31



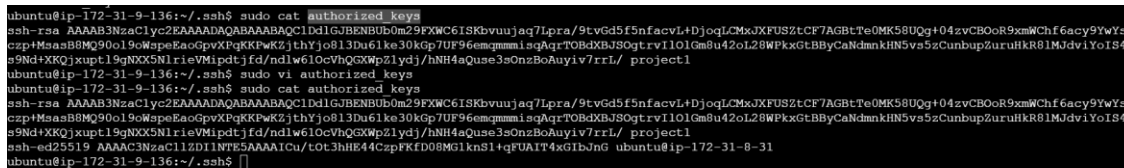
i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31



i-0b34b819b3084418a (Ansible-S1)

PublicIPs: 65.2.78.174 PrivateIPs: 172.31.8.186



i-00e222e2f8f755356 (Ansible-S2)

PublicIPs: 13.201.133.142 PrivateIPs: 172.31.9.136

### step 4: Create the Inventory File

```
ubuntu@ip-172-31-8-31:~$ cd/etc/ansible
-bash: cd/etc/ansible: No such file or directory
ubuntu@ip-172-31-8-31:~$ cd /etc/ansible
ubuntu@ip-172-31-8-31:/etc/ansible$ ls
ansible.cfg  hosts  roles
ubuntu@ip-172-31-8-31:/etc/ansible$ sudo nano hosts
ubuntu@ip-172-31-8-31:/etc/ansible$
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31

aws | Services | Search

GNU nano 7.2

**[group]**  
Slave1 ansible\_host=172.31.8.186  
Slave2 ansible\_host=172.31.9.136

^G Help

^X Exit

^O Write Out

^R Read File

^W Where

^\_ Replac

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31

```
ubuntu@ip-172-31-8-31:/etc/ansible$ ansible -m ping all
Slave2 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
Slave1 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
ubuntu@ip-172-31-8-31:/etc/ansible$
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31

**step5: Create playbook play1.yaml**

aws

Services

Search

GNU nano 7.2

```
---
- name: executing task on Slave1
  become: yes
  hosts: Slave1
  tasks:
    - name: installing java on slavel
      apt: name=openjdk-11-jdk state=latest
- name: executing task on Slave2
  become: yes
  hosts: Slave2
  tasks:
    - name: installing mysql-server on Slave2
      apt: name=mysql-server state=latest
```

^G Help

^O Write Out

^W Where Is

^K Cut

^X Exit

^R Read File

^\_ Replace

^U Paste

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31

```
ubuntu@ip-172-31-8-31:/etc/ansible$ sudo nano play.yaml
ubuntu@ip-172-31-8-31:/etc/ansible$ ansible-playbook play.yaml --syntax-check

playbook: play.yaml
ubuntu@ip-172-31-8-31:/etc/ansible$
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31

## step6: Running the Playbooks

```

ubuntu@ip-172-31-8-31:/etc/ansible$ ansible-playbook play.yaml --check

PLAY [executing task on Slave1] *****
TASK [Gathering Facts] *****
ok: [Slave1]

TASK [installing java on slave1] *****
changed: [Slave1]

PLAY [executing task on Slave2] *****
TASK [Gathering Facts] *****
ok: [Slave2]

TASK [installing mysql-server on Slave2] *****
changed: [Slave2]

PLAY RECAP *****
Slave1      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
Slave2      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
ubuntu@ip-172-31-8-31:/etc/ansible$

```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31

```

aws
Services
Search [Alt+S]
Mumbai VaishnaviGolhar

ubuntu@ip-172-31-8-31:/etc/ansible$ ansible-playbook play.yaml

PLAY [executing task on Slave1] *****
TASK [Gathering Facts] *****
ok: [Slave1]

TASK [installing java on slave1] *****
changed: [Slave1]

PLAY [executing task on Slave2] *****
TASK [Gathering Facts] *****
ok: [Slave2]

TASK [installing mysql-server on Slave2] *****
changed: [Slave2]

PLAY RECAP *****
Slave1      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
Slave2      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
ubuntu@ip-172-31-8-31:/etc/ansible$

```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130 PrivateIPs: 172.31.8.31

## step7: Verify the Slave1 and Slave2

```

ubuntu@ip-172-31-8-186:~/.ssh$ cd
ubuntu@ip-172-31-8-186:~$ java --version
openjdk 11.0.23 2024-04-16
OpenJDK Runtime Environment (build 11.0.23+9-post-Ubuntu-1ubuntu1)
OpenJDK 64-Bit Server VM (build 11.0.23+9-post-Ubuntu-1ubuntu1, mixed mode, sharing)
ubuntu@ip-172-31-8-186:~$

```

i-0b34b819b3084418a (Ansible-S1)

PublicIPs: 65.2.78.174 PrivateIPs: 172.31.8.186

```
ubuntu@ip-172-31-9-136:~/.ssh$ cd
ubuntu@ip-172-31-9-136:~$ mysql-server --version
mysql-server: command not found
ubuntu@ip-172-31-9-136:~$ mysql -V
mysql Ver 8.0.37-0ubuntu0.24.04.1 for Linux on x86_64 ((Ubuntu))
ubuntu@ip-172-31-9-136:~$
```

i-00e222e2f8f755356 (Ansible-S2)

PublicIPs: 13.201.133.142 PrivateIPs: 172.31.9.136