SYSTEM PROVISIONING AND CONFIGURATION MANAGEMENT

LAB FILE

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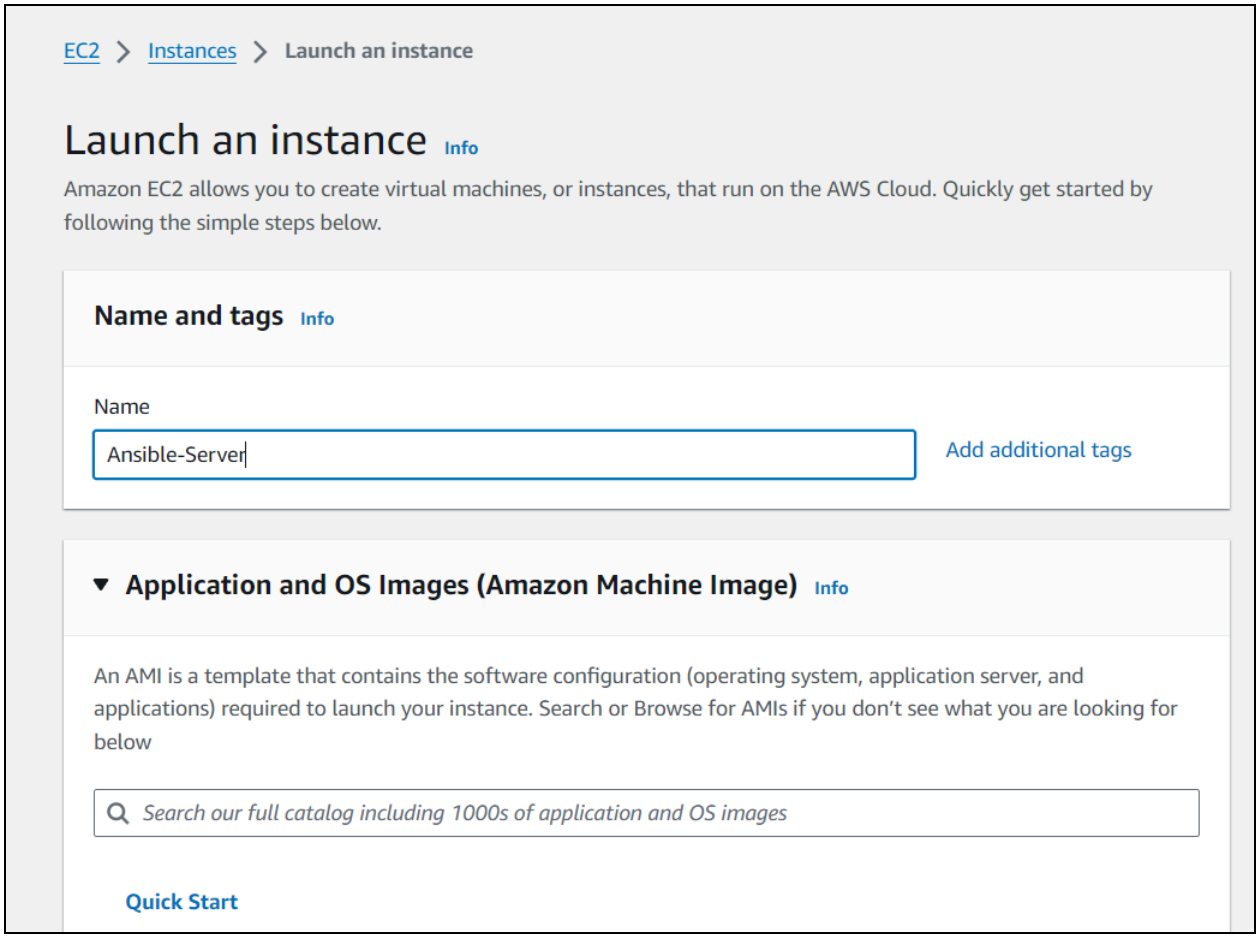
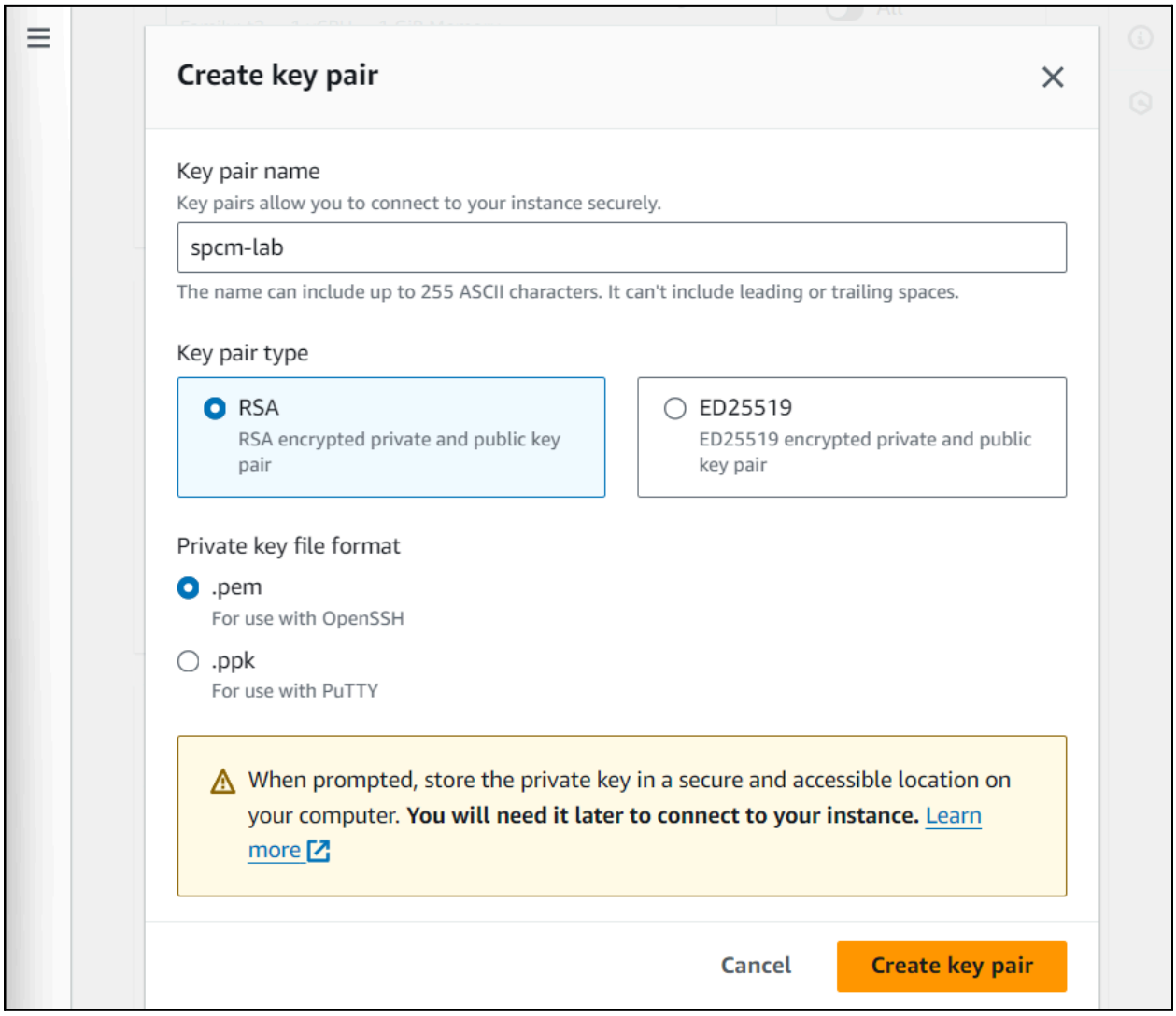
EXPERIMENT 11:

CONFIGURE ANSIBLE SETUP

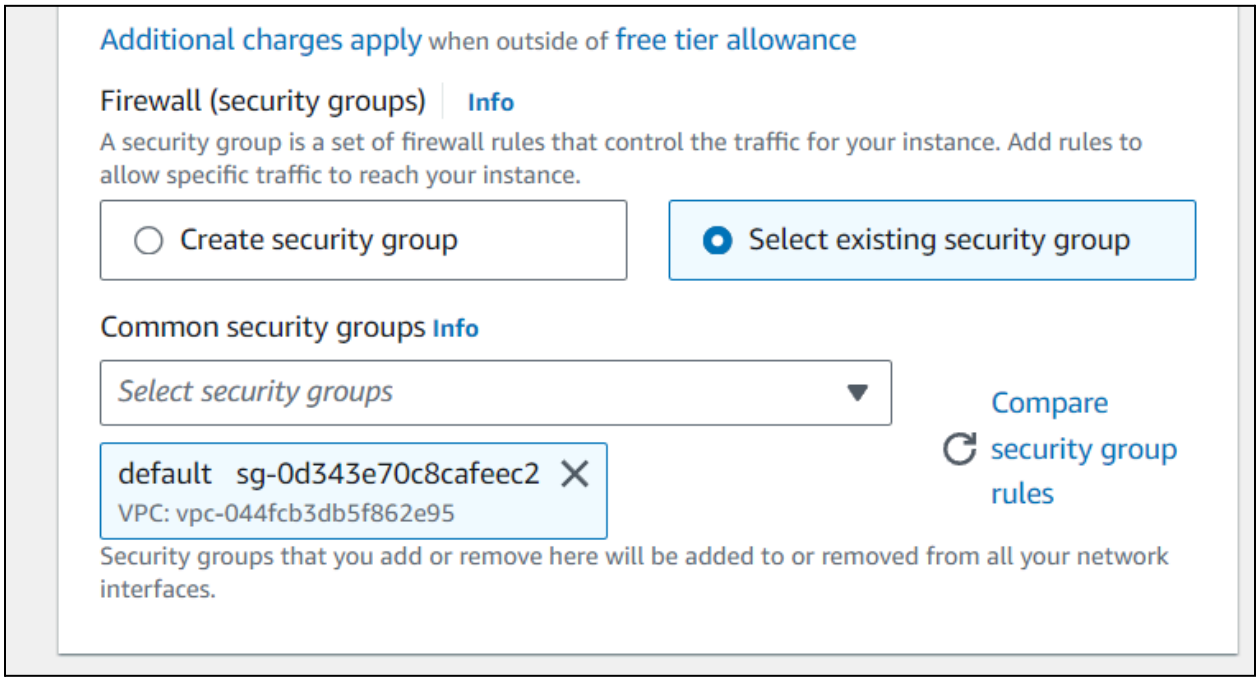
1. Login to your AWS account and launch an EC2 instance of Linux named - Ansible Server.



2. Create a new key during the creation of the instance.

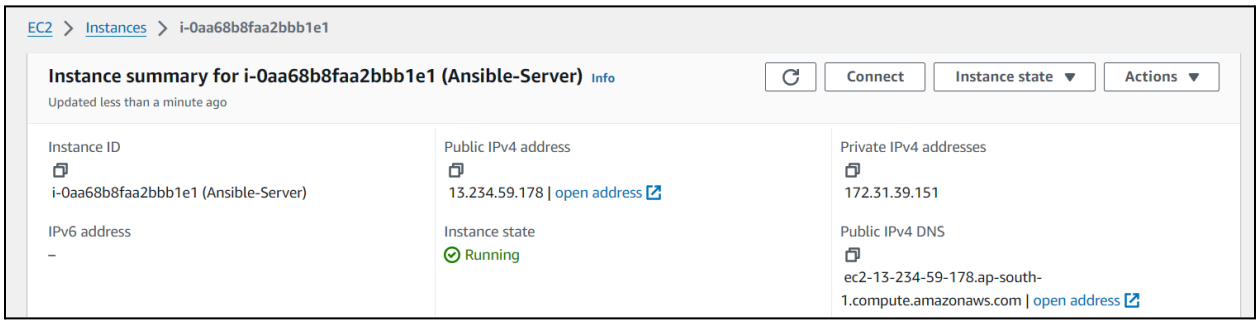


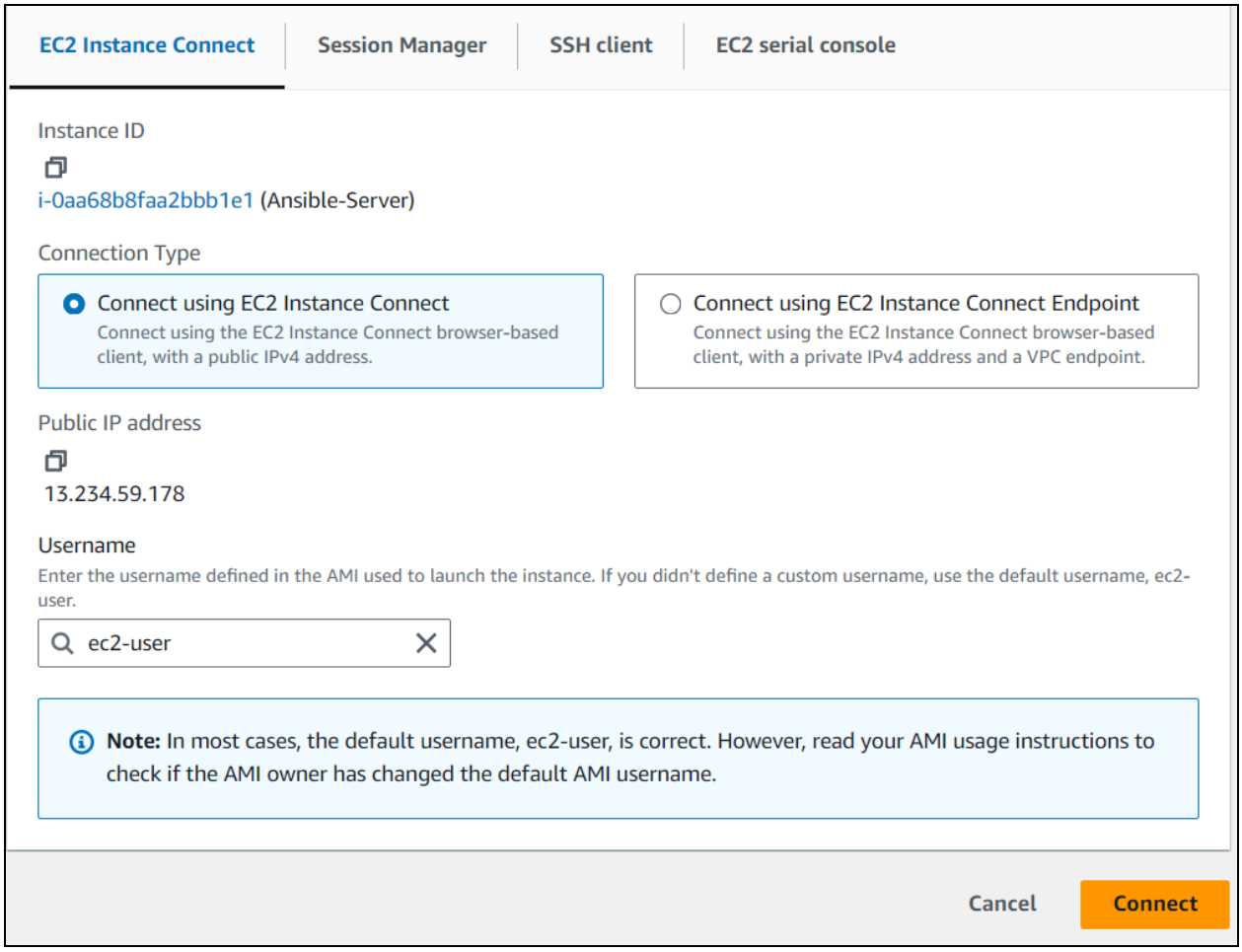
3. Select the security group and create 2 instances of this type.



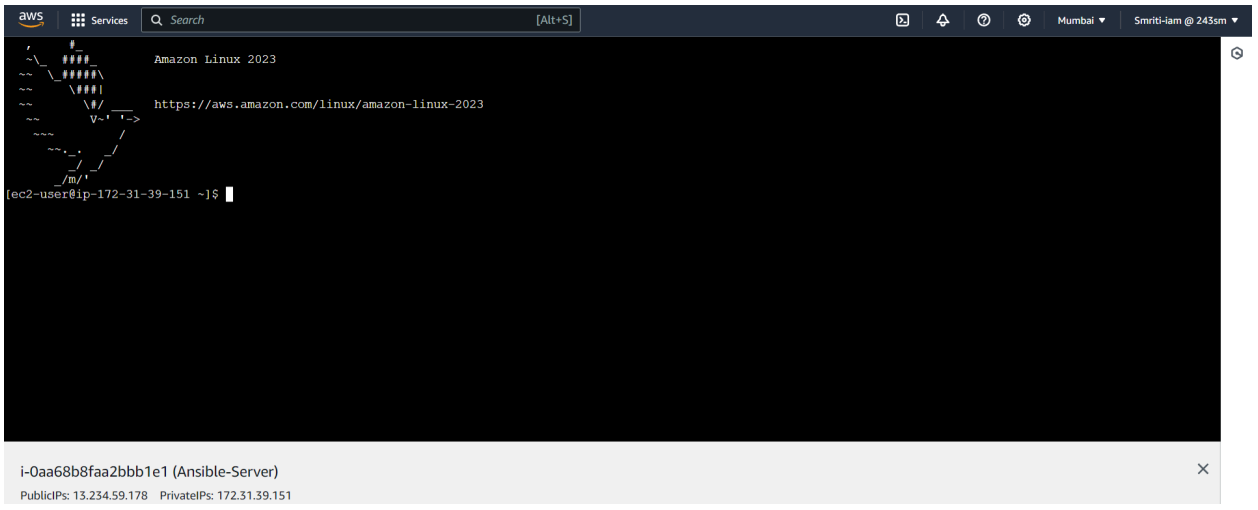
4. Rename one of the instances as - Ansible Node.

5. Connect to your AnsibleoServer Ec2 instance.





6. Now you have been connected to the server.



7. Then install Ansible in it.

8. To install Ansible, run the following command

```
wget https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm

yum install  epel-release-latest-7.noarch.rpm

yum update -y

yum install git python python-pip openssl -y

yum install ansible
```

```
  The other application is: yum
    Memory : 112 M RSS (406 MB VSZ)
    Started: Wed Apr 24 06:25:12 2024 - 00:21 ago
    State  : Sleeping, pid: 3810


Another app is currently holding the yum lock; waiting for it to exit...
  The other application is: yum
    Memory : 112 M RSS (406 MB VSZ)
    Started: Wed Apr 24 06:25:12 2024 - 00:23 ago
    State  : Sleeping, pid: 3810
Another app is currently holding the yum lock; waiting for it to exit...
  The other application is: yum
    Memory : 112 M RSS (406 MB VSZ)
    Started: Wed Apr 24 06:25:12 2024 - 00:25 ago
    State  : Sleeping, pid: 3810
Another app is currently holding the yum lock; waiting for it to exit...
  The other application is: yum
    Memory : 112 M RSS (406 MB VSZ)
    Started: Wed Apr 24 06:25:12 2024 - 00:27 ago
    State  : Sleeping, pid: 3810
Another app is currently holding the yum lock; waiting for it to exit...
  The other application is: yum
    Memory : 112 M RSS (406 MB VSZ)
    Started: Wed Apr 24 06:25:12 2024 - 00:29 ago
    State  : Sleeping, pid: 3810
epel/x86_64/primary_db                                        16% [=========
```

```
--> Processing Dependency: python-paramiko for package: ansible-2.9.27-1.el7.noarch
--> Processing Dependency: sshpass for package: ansible-2.9.27-1.el7.noarch
--> Running transaction check
---> Package python-paramiko.noarch 0:2.1.1-0.10.el7 will be installed
---> Package python2-httplib2.noarch 0:0.18.1-3.el7 will be installed
---> Package sshpass.x86_64 0:1.06-1.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================================================================================
 Package                                Arch                            Version                                 Repository                  Size
================================================================================================================================================
Installing:
 ansible                                noarch                          2.9.27-1.el7                            epel                        17 M
Installing for dependencies:
 python-paramiko                        noarch                          2.1.1-0.10.el7                          epel                       269 k
 python2-httplib2                       noarch                          0.18.1-3.el7                            epel                       125 k
 sshpass                                x86_64                          1.06-1.el7                              epel                        21 k

Transaction Summary
================================================================================================================================================
Install  1 Package (+3 Dependent packages)

Total download size: 17 M
Installed size: 105 M
Is this ok [y/d/N]: y
```

9. Check if Ansible was properly installed.

```
[root@ip-172-31-38-16 ec2-user]# ansible --version
ansible 2.9.27
  config file = /etc/ansible/ansible.cfg
  configured module search path = [u'/root/.ansible/plugins/modules', u'/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/site-packages/ansible
  executable location = /bin/ansible
  python version = 2.7.18 (default, Dec 18 2023, 22:08:43) [GCC 7.3.1 20180712 (Red Hat 7.3.1-17)]
[root@ip-172-31-38-16 ec2-user]#
```

10. Make a host file in ansible server.

```
[ec2-user@ip-172-31-38-16 ~]$ vi /etc/ansible/hosts
```

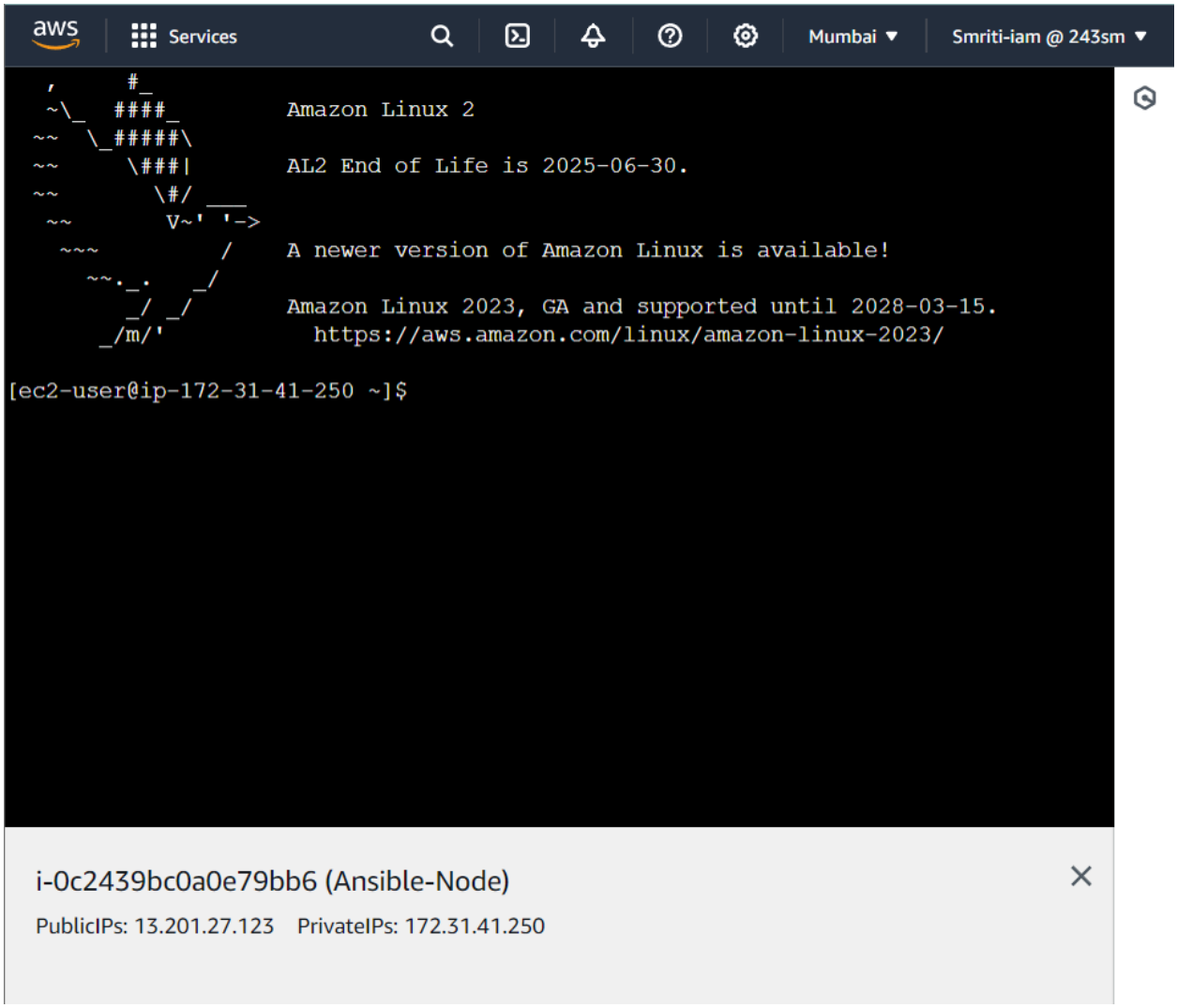
11. Specify the group name and IP address of node

```
[upes]
172.31.41.250
```

12. Make user in ansible-server

```
[root@ip-172-31-38-16 ec2-user]# adduser ansible
[root@ip-172-31-38-16 ec2-user]# passwd ansible
Changing password for user ansible.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/s
ystematic
Retype new password:
passwd: all authentication tokens updated successfully.
[root@ip-172-31-38-16 ec2-user]#
```

13. Open Ansible Node Console.



14. Make a user in ansible-node

```
[root@ip-172-31-41-250 ec2-user]# adduser ansible
[root@ip-172-31-41-250 ec2-user]# passwd ansible
Changing password for user ansible.
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/s
ystematic
Retype new password:
passwd: all authentication tokens updated successfully.
[root@ip-172-31-41-250 ec2-user]#
```

15. Go to visudo file

```
root    ALL=(ALL)       ALL
ansible ALL=(ALL)       NOPASSWD
```

16. Do the same in ansible-server

17. Connect to ansible user in ansible-server

```
[root@ip-172-31-38-16 ec2-user]# exit
exit
[ec2-user@ip-172-31-38-16 ~]$ su - ansible
Password:
[ansible@ip-172-31-38-16 ~]$
```

18. Create SSH key

```
[ansible@ip-172-31-38-16 ~]$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ansible/.ssh/id_rsa):
Created directory '/home/ansible/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ansible/.ssh/id_rsa.
Your public key has been saved in /home/ansible/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:0r3Hd9kxkC0iTvuBzjnfRe9DyRvL0RJ/hG/OHGa6UrA ansible@ip-172-31-38-16.ap-
south-1.compute.internal
The key's randomart image is:
+---[RSA 2048]----+
|                 |
|              o  |
|         o . + o |
|       .o.+.. = .|
|      . S+..o .Oo|
|       .o oE..oX%|
|         =..+ BO@|
|          oo.o.B+|
|           ..o. o|
+----[SHA256]-----+
[ansible@ip-172-31-38-16 ~]$ ls -a
.  ..  .bash_logout  .bash_profile  .bashrc  .ssh
[ansible@ip-172-31-38-16 ~]$ cd .ssh
```

19. Copy the key to ansible-node

```
        -h|-?: print this help
[ansible@ip-172-31-38-16 .ssh]$ ssh-copy-id ansible@172.31.41.250
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ansible/.
ssh/id_rsa.pub"
```

20. Change permission in ansible node

21. Restart service

```
Press ENTER or type command to continue
[No write since last change]
/bin/bash: wq: command not found

shell returned 127

Press ENTER or type command to continue
[ansible@ip-172-31-45-217 home]$ service ssh restart
Redirecting to /bin/systemctl restart ssh.service
Failed to restart ssh.service: The name org.freedesktop.PolicyKit1 was not provided by any .service files
See system logs and 'systemctl status ssh.service' for details.
[ansible@ip-172-31-45-217 home]$ vi /etc/ssh/sshd_config
[ansible@ip-172-31-45-217 home]$ sudo su
[root@ip-172-31-45-217 home]# ^C
[root@ip-172-31-45-217 home]# vi /etc/ssh/sshd_config
[root@ip-172-31-45-217 home]# ssh service restart
ssh: Could not resolve hostname service: Name or service not known
[root@ip-172-31-45-217 home]# service sshd restart
Redirecting to /bin/systemctl restart sshd.service
[root@ip-172-31-45-217 home]#
```

22. Key has been added

```
Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'ansible@172.31.41.250'"
and check to make sure that only the key(s) you wanted were added.

[ansible@ip-172-31-38-16 .ssh]$
```

23. You are connected

```
[ansible@ip-172-31-38-16 .ssh]$ ssh ansible@172.31.41.250
   ,     #_
   ~\_  ####_        Amazon Linux 2
  ~~  \_#####\
  ~~     \###|       AL2 End of Life is 2025-06-30.
  ~~       \#/ ___
   ~~       V~' '->
    ~~~         /    A newer version of Amazon Linux is available!
      ~~._.   _/
         _/ _/       Amazon Linux 2023, GA and supported until 2028-03-15.
       _/m/'           https://aws.amazon.com/linux/amazon-linux-2023/

[ansible@ip-172-31-41-250 ~]$
```

EXPERIMENT 12:

CREATE AND RUN ANSIBLE PLAYBOOK

1. Create a playbook

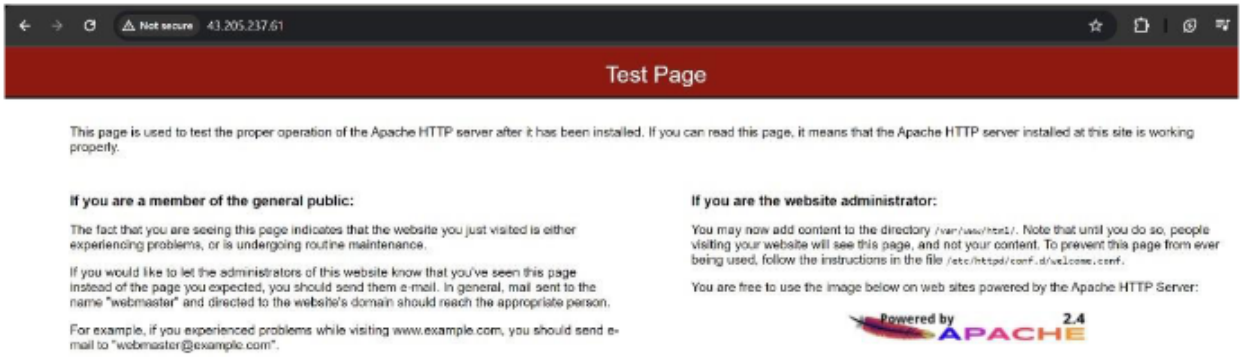
```
Traget4.yml
---
- hosts: upes
  user: ansible
  become: yes
  connection: ssh
  tasks:
    - name: Debian Family
      command: apt-get install apache2 -y
      when: ansible_os_family == "Debian"
    - name: RedHat Family
      command: yum install httpd -y
      when: ansible_os_family == "RedHat"
```

```
ssh: Could not resolve hostname service: Name or servic
[root@ip-172-31-45-217 home]# service sshd restart
Redirecting to /bin/systemctl restart sshd.service
[root@ip-172-31-45-217 home]# history
    1  adduser ansible
    2  passwd ansible
    3  visudo
    4  vi /etc/ssh/sshd_config
    5  ssh service restart
    6  service sshd restart
    7  history
[root@ip-172-31-45-217 home]# which httpd
/usr/bin/which: no httpd in (/sbin:/bin:/usr/sbin:/usr/
[root@ip-172-31-45-217 home]# which httpd
/sbin/httpd
[root@ip-172-31-45-217 home]#
```

```
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
   Active: inactive (dead)
     Docs: man:httpd.service(8)
[root@ip-172-31-45-217 home]# sudo systemctl start httpd
[root@ip-172-31-45-217 home]# sudo service httpd status
Redirecting to /bin/systemctl status httpd.service
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Wed 2024-04-17 06:48:12 UTC; 2s ago
     Docs: man:httpd.service(8)
 Main PID: 2685 (httpd)
   Status: "Processing requests..."
   CGroup: /system.slice/httpd.service
           ├─2685 /usr/sbin/httpd -DFOREGROUND
           ├─2686 /usr/sbin/httpd -DFOREGROUND
           ├─2687 /usr/sbin/httpd -DFOREGROUND
           ├─2688 /usr/sbin/httpd -DFOREGROUND
           ├─2689 /usr/sbin/httpd -DFOREGROUND
           └─2690 /usr/sbin/httpd -DFOREGROUND

Apr 17 06:48:12 ip-172-31-45-217.ap-south-1.compute.internal systemd[1]: Starting The Apache HTTP Server...
Apr 17 06:48:12 ip-172-31-45-217.ap-south-1.compute.internal systemd[1]: Started The Apache HTTP Server.
[root@ip-172-31-45-217 home]#
```

2. Check if service started



3. Run the playbook

```
[ec2-user@ip-172-31-36-190 ~]$ su - ansible
Password:
Last login: Wed Apr 17 06:03:20 UTC 2024 on pts/0
[ansible@ip-172-31-36-190 ~]$ vi playbook1.yml
[ansible@ip-172-31-36-190 ~]$ ansible-playbook playbook1.yml

PLAY [upes] ********************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************
[WARNING]: Platform linux on host 172.31.45.217 is using the discovered Python interpreter at /usr/bin/python, but future installa
interpreter could change this. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more i
ok: [172.31.45.217]

TASK [Un-Install HTTPD] ********************************************************************************************************
```

```
[ec2-user@ip-172-31-45-217 ~]$ su - ansible
Password:
Last login: Wed Apr 17 06:56:52 UTC 2024 from ip-172-31-36-190.ap-south-1.compute.internal on pts/0
[ansible@ip-172-31-45-217 ~]$ cd ..
[ansible@ip-172-31-45-217 home]$ su - ansible
Password:
Last login: Wed Apr 17 06:58:32 UTC 2024 on pts/0
[ansible@ip-172-31-45-217 ~]$ which httpd
/usr/sbin/httpd
[ansible@ip-172-31-45-217 ~]$
```