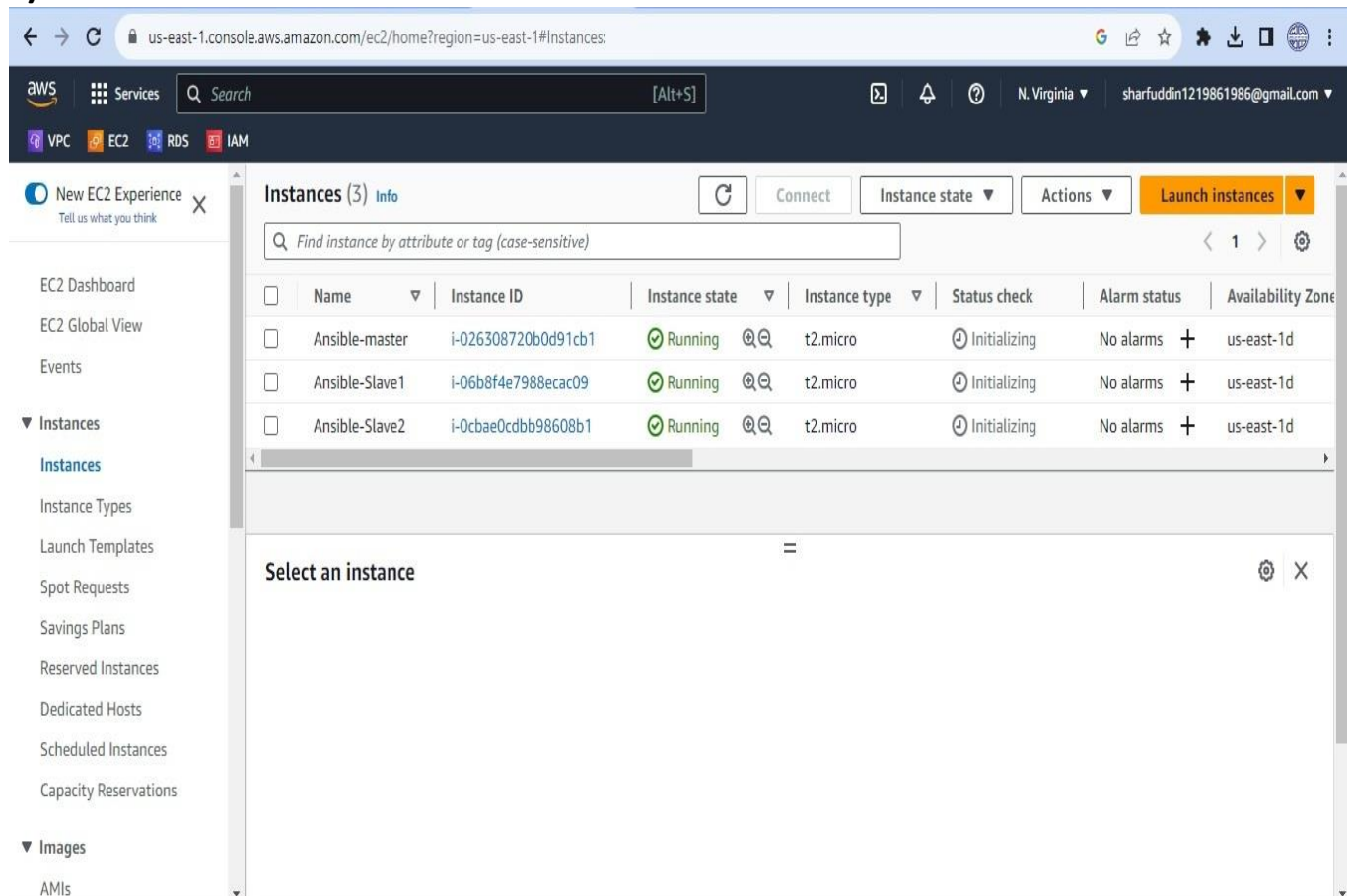


## Tasks To Be Performed:

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

## 1) Create a Ansible cluster.

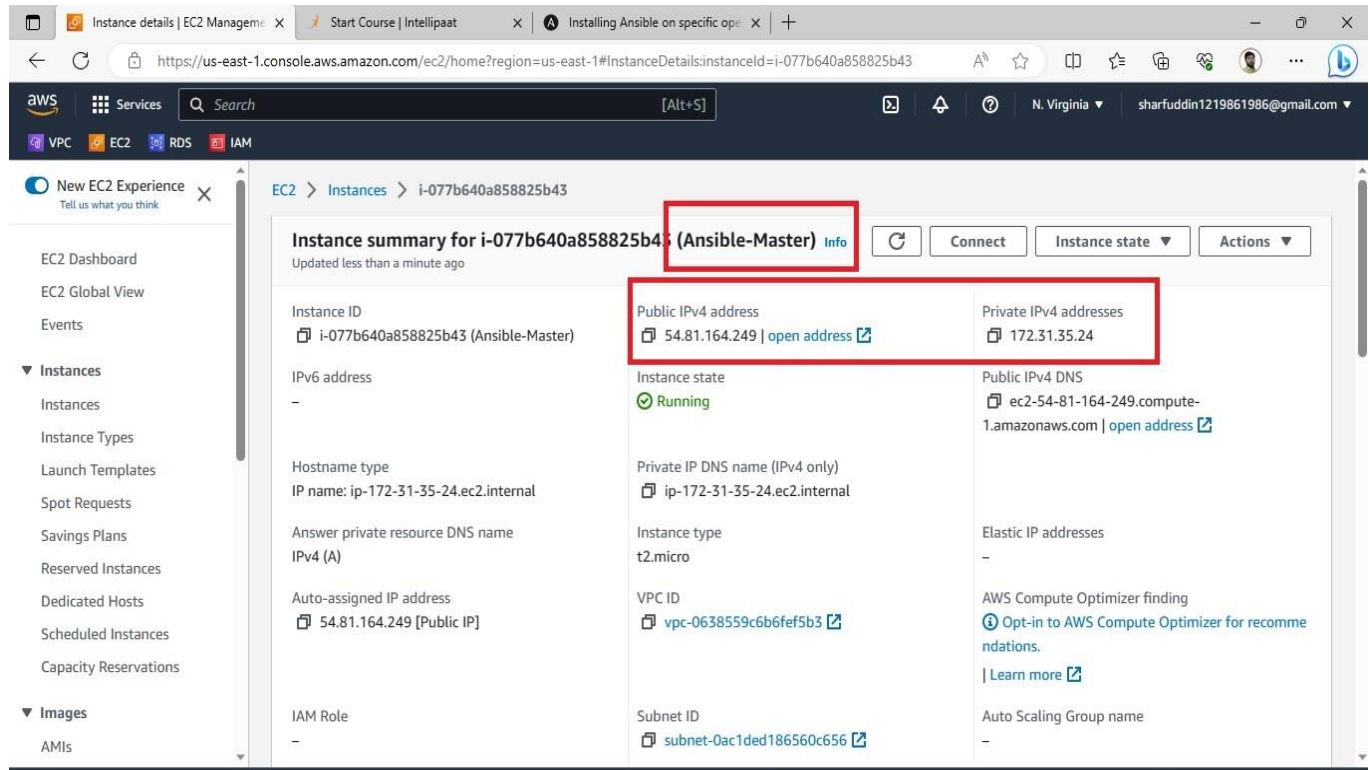


The screenshot shows the AWS Management Console interface for the 'Instances' page. The browser address bar indicates the URL: `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:`. The console header shows the AWS logo, a search bar, and the user's profile (sharfuddin1219861986@gmail.com) in the N. Virginia region.

The left sidebar contains navigation links for various AWS services, including VPC, EC2, RDS, and IAM. The main content area displays a table of instances, with a search bar at the top. The table lists three instances: 'Ansible-master', 'Ansible-Slave1', and 'Ansible-Slave2'. All three instances are in the 'Running' state and are of type 't2.micro'. The 'Status check' column shows 'Initializing' for all instances. The 'Alarm status' column shows 'No alarms' for all instances. The 'Availability Zone' column shows 'us-east-1d' for all instances.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
Ansible-master	i-026308720b0d91cb1	Running	t2.micro	Initializing	No alarms	us-east-1d
Ansible-Slave1	i-06b8f4e7988ecac09	Running	t2.micro	Initializing	No alarms	us-east-1d
Ansible-Slave2	i-0cbae0cdbb98608b1	Running	t2.micro	Initializing	No alarms	us-east-1d

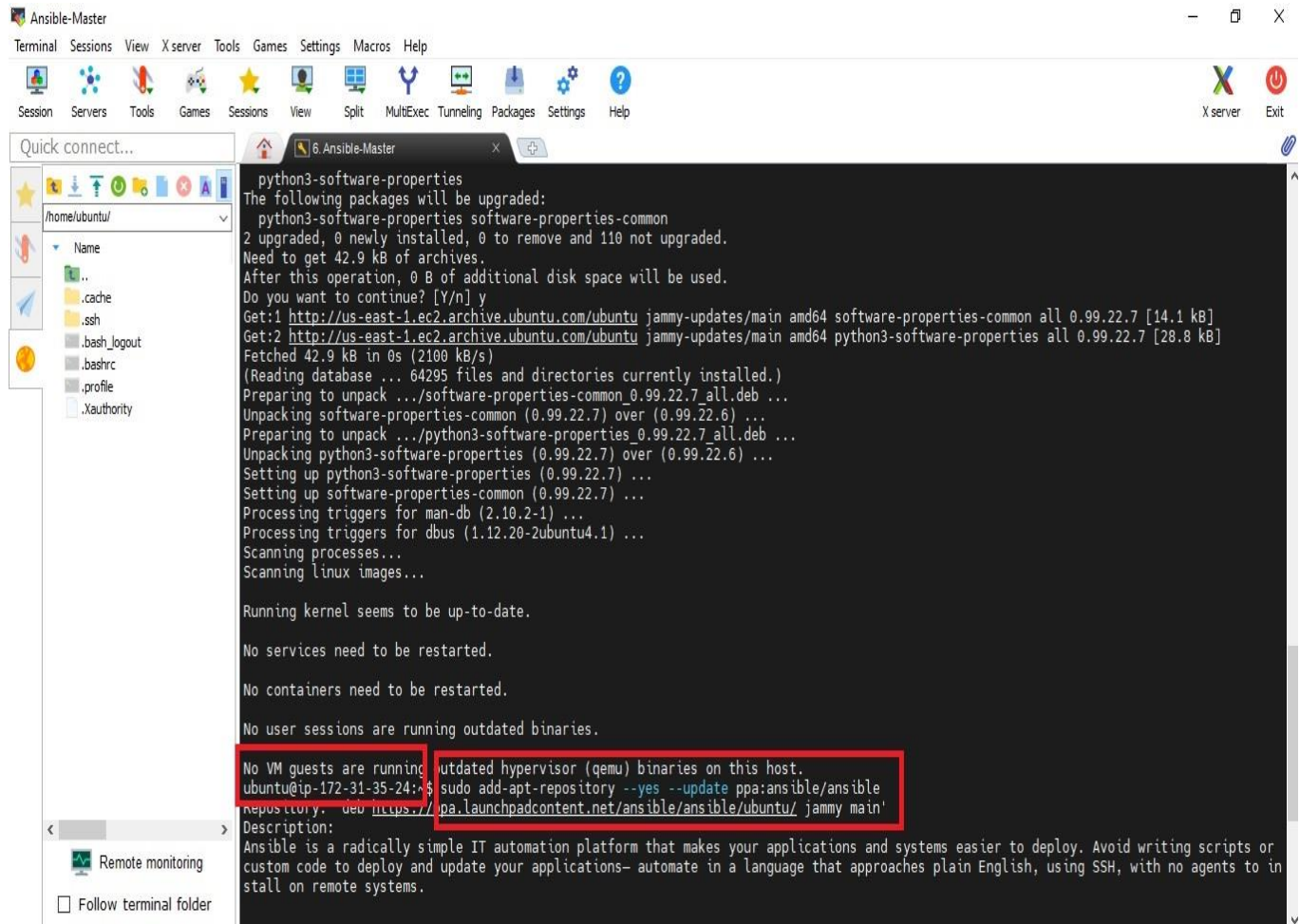
Below the table, there is a section titled 'Select an instance' with a search bar and a list of instance types.



**Instance summary for i-077b640a858825b43 (Ansible-Master)** Info

Updated less than a minute ago

Instance ID i-077b640a858825b43 (Ansible-Master)	Public IPv4 address 54.81.164.249   <a href="#">open address</a>	Private IPv4 addresses 172.31.35.24
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-54-81-164-249.compute-1.amazonaws.com   <a href="#">open address</a>
Hostname type IP name: ip-172-31-35-24.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-35-24.ec2.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A) 54.81.164.249 [Public IP]	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations.   <a href="#">Learn more</a>
Auto-assigned IP address 54.81.164.249 [Public IP]	VPC ID vpc-0638559c6b6fef5b3	Auto Scaling Group name -
IAM Role -	Subnet ID subnet-0ac1ded186560c656	



```
python3-software-properties
The following packages will be upgraded:
  python3-software-properties software-properties-common
2 upgraded, 0 newly installed, 0 to remove and 110 not upgraded.
Need to get 42.9 kB of archives.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 software-properties-common all 0.99.22.7 [14.1 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-software-properties all 0.99.22.7 [28.8 kB]
Fetched 42.9 kB in 0s (2100 kB/s)
(Reading database ... 64295 files and directories currently installed.)
Preparing to unpack .../software-properties-common_0.99.22.7_all.deb ...
Unpacking software-properties-common (0.99.22.7) over (0.99.22.6) ...
Preparing to unpack .../python3-software-properties_0.99.22.7_all.deb ...
Unpacking python3-software-properties (0.99.22.7) over (0.99.22.6) ...
Setting up python3-software-properties (0.99.22.7) ...
Setting up software-properties-common (0.99.22.7) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for dbus (1.12.20-2ubuntu4.1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-35-24:~$ sudo add-apt-repository --yes --update ppa:ansible/ansible
Repository: 'deb https://ppa.launchpadcontent.net/ansible/ansible/ubuntu/ jammy main'
Description:
Ansible is a radically simple IT automation platform that makes your applications and systems easier to deploy. Avoid writing scripts or
custom code to deploy and update your applications- automate in a language that approaches plain English, using SSH, with no agents to
install on remote systems.
```

Ansible-Master

Terminal Sessions View X server Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...

/home/ubuntu/

Name

- ..
- cache
- ssh
- ssh\_logout
- sshrc
- profile
- authority

Remote monitoring

☐ Follow terminal folder

```

If you face any issues while installing Ansible PPA, file an issue here:
https://github.com/ansible-community/ppa/issues
More info: https://launchpad.net/~ansible/+archive/ubuntu/ansible
Adding repository.
Adding deb entry to /etc/apt/sources.list.d/ansible-ubuntu-ansible-jammy.list
Adding disabled deb-src entry to /etc/apt/sources.list.d/ansible-ubuntu-ansible-jammy.list
Adding key to /etc/apt/trusted.gpg.d/ansible-ubuntu-ansible.gpg with fingerprint 6125E2A8C77F2818FB7BD15B93C4A3FD7BB9C367
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Get:5 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu jammy InRelease [18.0 kB]
Get:6 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu jammy/main amd64 Packages [1144 B]
Get:7 https://ppa.launchpadcontent.net/ansible/ansible/ubuntu jammy/main Translation-en [752 B]
Fetched 19.9 kB in 1s (14.3 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-35-24:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_rsa
Your public key has been saved in /home/ubuntu/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:MA3cv+L1L719dovDc8UYTDzr1GSo0/PF3x9+MrZ4KTQ ubuntu@ip-172-31-35-24
The key's randomart image is:
+--[RSA 3072]--+
..o. . = o
o.. + *
o . . =
S . + =
. E o =
+ . . = ++
+ . . = *
..o ..oB=B=
+--[SHA256]-----+
ubuntu@ip-172-31-35-24:~$ sudo apt install ansible
  
```

Instance details | EC2 Management | Start Course | IntelliPaat | Installing Ansible on specific op...

https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#InstanceDetails:instanceId=i-01ab50b518ef01d23

aws Services Search [Alt+S] N. Virginia sharfuddin1219861986@gmail.com

VPC EC2 EBS RDS IAM

New EC2 Experience Tell us what you think

EC2 Dashboard

EC2 Global View

Events

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

Images

AMIs

EC2 > Instances > i-01ab50b518ef01d23

Instance summary for i-01ab50b518ef01d23 (Ansible-slave1) Info

Updated less than a minute ago

Public IPv4 address 54.83.161.177 | open address

Private IPv4 addresses 172.31.41.221

IPv6 address -

Instance state Running

Public IPv4 DNS ec2-54-83-161-177.compute-1.amazonaws.com | open address

Hostname type

IP name: ip-172-31-41-221.ec2.internal

Private IP DNS name (IPv4 only) ip-172-31-41-221.ec2.internal

Answer private resource DNS name

IPv4 (A)

Auto-assigned IP address 54.83.161.177 [Public IP]

VPC ID vpc-0638559c6b6fef5b3

IAM Role -

Subnet ID subnet-0ac1ded186560c656

Instance type t2.micro

Elastic IP addresses -

AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Auto Scaling Group name -



slave1

Terminal Sessions View X server Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...

/home/ubuntu/

Name

- ...
- .cache
- .ssh
- .bash\_logout
- .bashrc
- .profile
- .xauthority

Remote monitoring

☐ Follow terminal folder

```

Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [10.2 kB]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [22.3 kB]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [15.4 kB]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [576 B]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:31 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [680 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [155 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [11.2 kB]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [694 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [110 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [536 B]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [770 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [140 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [16.4 kB]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [36.5 kB]
Get:41 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [7060 B]
Get:42 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [260 B]
Fetched 26.6 MB in 5s (5628 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-41-221:~$ ls
ubuntu@ip-172-31-41-221:~$ ls -al
total 32
drwxr-xr-x 4 ubuntu ubuntu 4096 Aug 18 12:17 .
drwxr-xr-x 3 root root 4096 Aug 18 12:04 ..
-rw-r--r-- 1 ubuntu ubuntu 62 Aug 18 12:17 .xauthority
-rw-r--r-- 1 ubuntu ubuntu 229 Jan 6 2022 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3771 Jan 6 2022 .bashrc
drwx----- 2 ubuntu ubuntu 4096 Aug 18 12:17 .cache
-rw-r--r-- 1 ubuntu ubuntu 807 Jan 6 2022 .profile
drwx----- 2 ubuntu ubuntu 4096 Aug 18 12:04 .ssh
-rw-r--r-- 1 ubuntu ubuntu 0 Aug 18 12:17 .sudo_as_admin_successful
ubuntu@ip-172-31-41-221:~$ cd .ssh
ubuntu@ip-172-31-41-221:~/.ssh$ ls
authorized_keys
ubuntu@ip-172-31-41-221:~/.ssh$ sudo nano authorized_keys
  
```

Instance details | EC2 Management Console | Start Course | IntelliPaat | Installing Ansible on specific operating system

https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#InstanceDetails:instanceId=i-091fa61e9bffd3e6

Services Search [Alt+S] N. Virginia sharfuddin1219861986@gmail.com

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Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

Images

AMIs

EC2 > Instances > i-091fa61e9bffd3e6

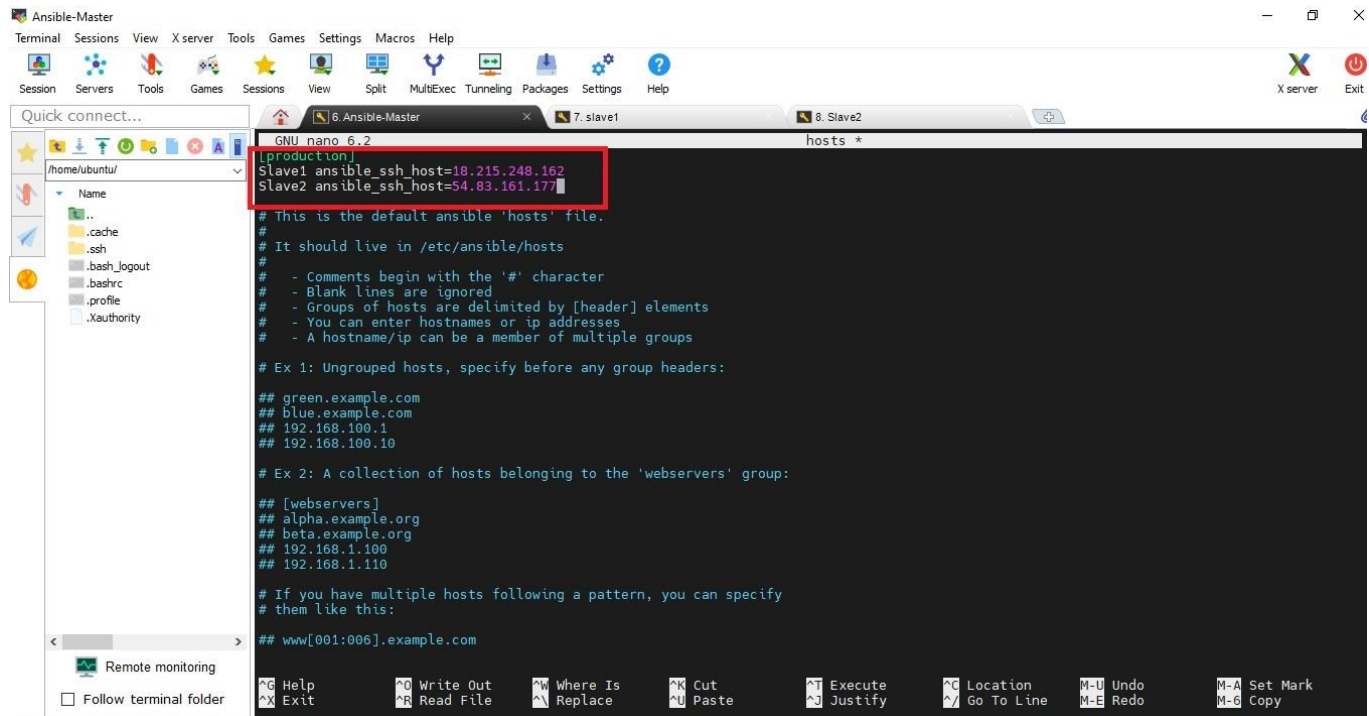
Instance summary for i-091fa61e9bffd3e6 (Ansible-Slave2) Info

Updated less than a minute ago

Connect Instance state Actions

Instance ID	Public IPv4 address	Private IPv4 addresses
i-091fa61e9bffd3e6 (Ansible-Slave2)	18.215.248.162   open address	172.31.47.78
IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-18-215-248-162.compute-1.amazonaws.com   open address
Hostname type	Private IP DNS name (IPv4 only)	
IP name: ip-172-31-47-78.ec2.internal	ip-172-31-47-78.ec2.internal	
Answer private resource DNS name	Instance type	Elastic IP addresses
IPv4 (A)	t2.micro	-
Auto-assigned IP address	VPC ID	AWS Compute Optimizer finding
18.215.248.162 [Public IP]	vpc-0638559c6b6fef5b3	Opt-in to AWS Compute Optimizer for recommendations.   Learn more
IAM Role	Subnet ID	Auto Scaling Group name
-	subnet-0ac1ded186560c656	-

## 2) Host file entry.

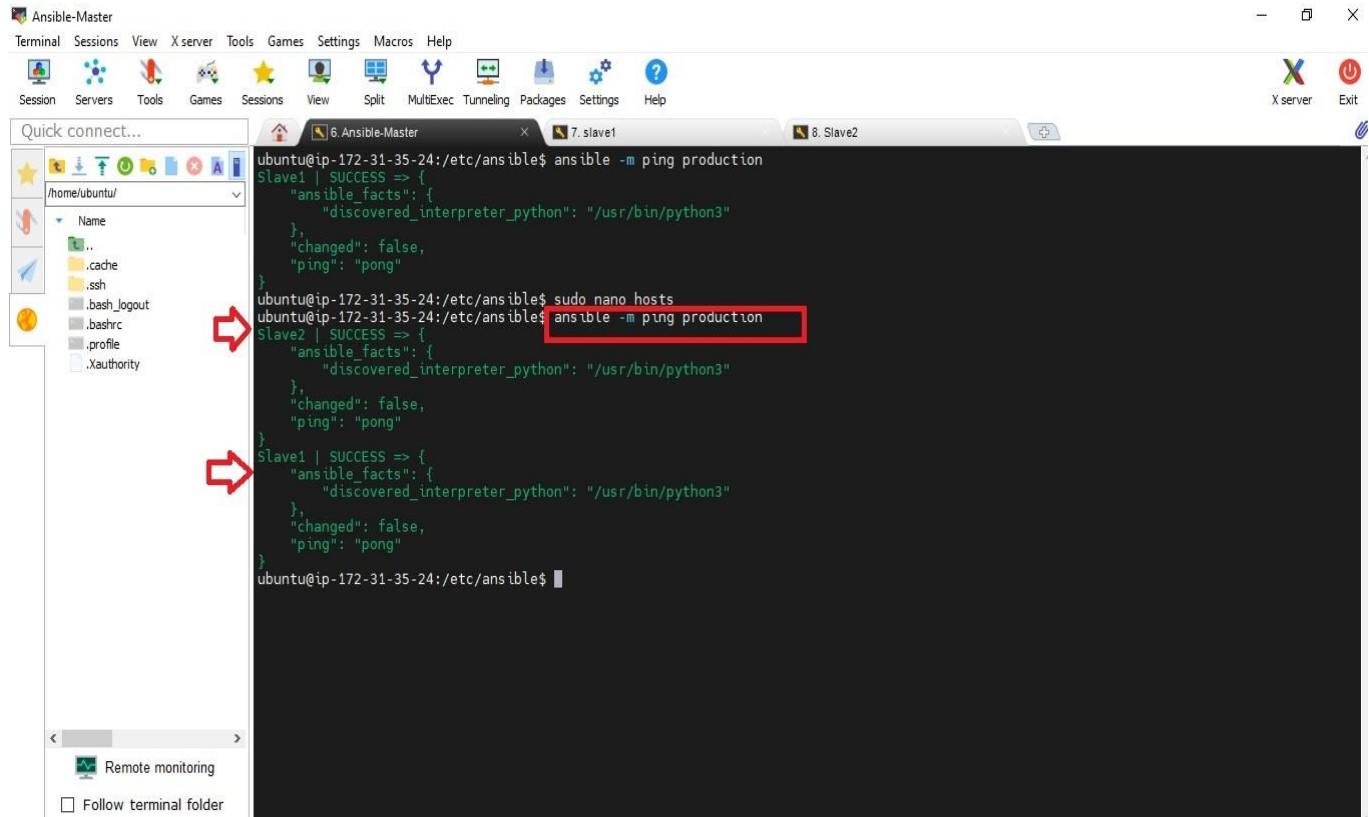


```

GNU nano 6.2
[production]
Slave1 ansible_ssh_host=18.215.248.162
Slave2 ansible_ssh_host=54.83.161.177

# This is the default ansible 'hosts' file.
#
# It should live in /etc/ansible/hosts
#
# - Comments begin with the '#' character
# - Blank lines are ignored
# - Groups of hosts are delimited by [header] elements
# - You can enter hostnames or ip addresses
# - A hostname/ip can be a member of multiple groups
#
# Ex 1: Ungrouped hosts, specify before any group headers:
## green.example.com
## blue.example.com
## 192.168.100.1
## 192.168.100.10
#
# Ex 2: A collection of hosts belonging to the 'webservers' group:
## [webservers]
## alpha.example.org
## 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
  
```

## 3) Slave is connected with Ansible master.

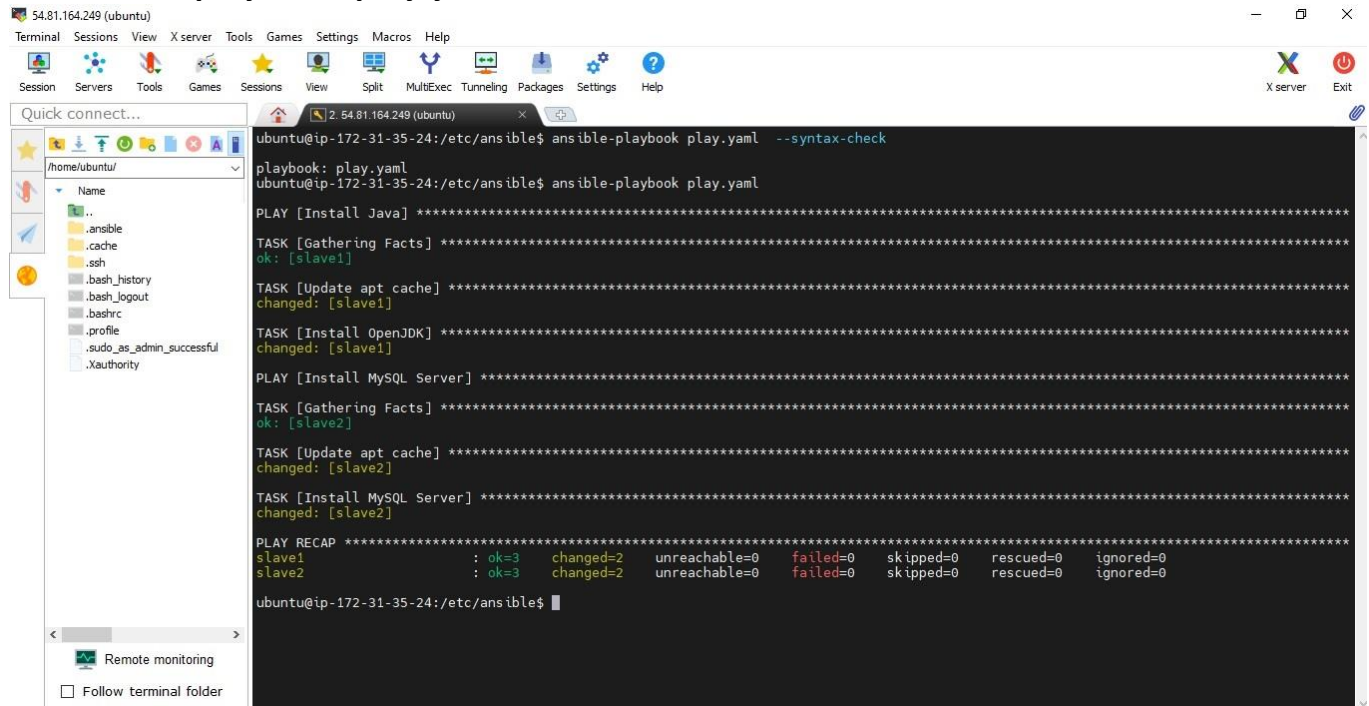


```

ubuntu@ip-172-31-35-24:/etc/ansible$ ansible -m ping production
Slave1 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
ubuntu@ip-172-31-35-24:/etc/ansible$ sudo nano hosts
ubuntu@ip-172-31-35-24:/etc/ansible$ ansible -m ping production
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-172-31-35-24:/etc/ansible$
  
```

4)first Write the playbook and check syntax after that run playbook (seprate playbook file is attach ).

### ansible-playbook play.yml



```

ubuntu@ip-172-31-35-24:/etc/ansible$ ansible-playbook play.yml --syntax-check
playbook: play.yml
ubuntu@ip-172-31-35-24:/etc/ansible$ ansible-playbook play.yml

PLAY [Install Java] *************************************************************************************************************************************
TASK [Gathering Facts] *************************************************************************************************************************************
ok: [slave1]

TASK [Update apt cache] *************************************************************************************************************************************
changed: [slave1]

TASK [Install OpenJDK] *************************************************************************************************************************************
changed: [slave1]

PLAY [Install MySQL Server] *************************************************************************************************************************************
TASK [Gathering Facts] *************************************************************************************************************************************
ok: [slave2]

TASK [Update apt cache] *************************************************************************************************************************************
changed: [slave2]

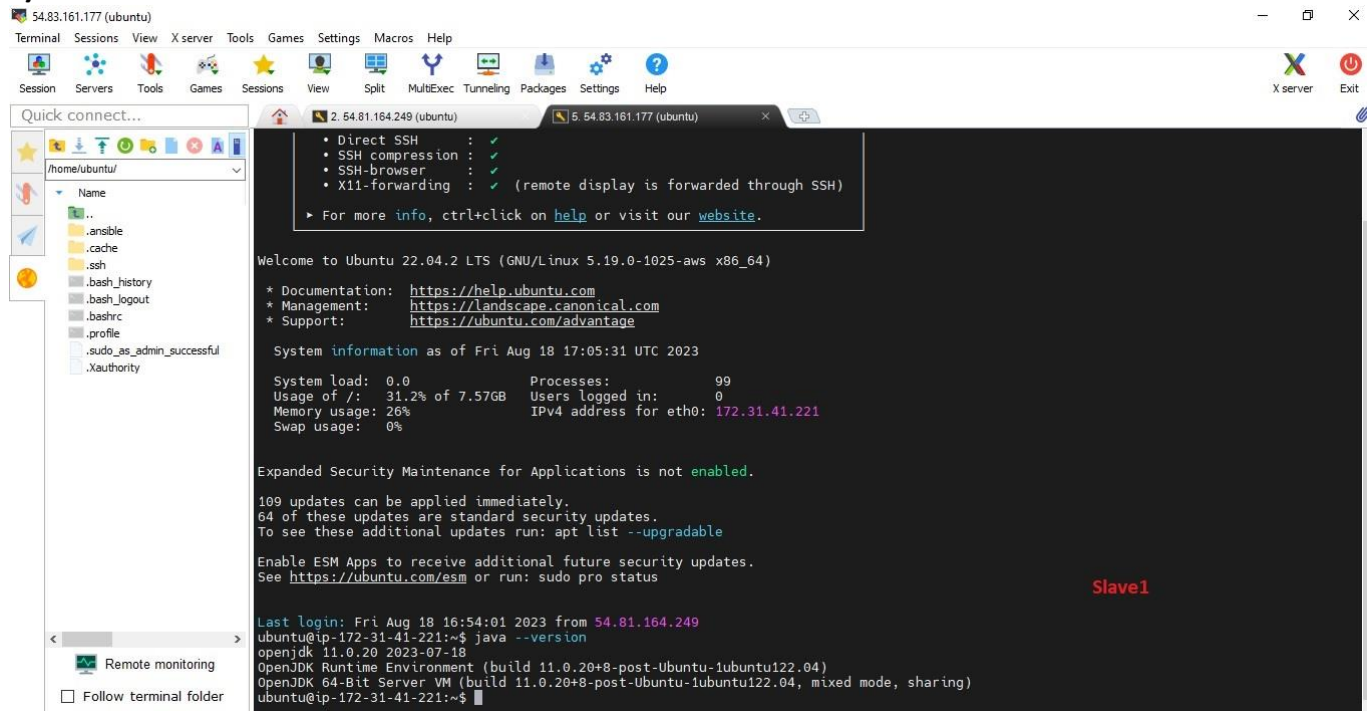
TASK [Install MySQL Server] *************************************************************************************************************************************
changed: [slave2]

PLAY RECAP *************************************************************************************************************************************
slave1                : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
slave2                : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

ubuntu@ip-172-31-35-24:/etc/ansible$

```

5) Check the slave for verification



```

• Direct SSH      : ✓
• SSH compression : ✓
• SSH-browser     : ✓
• X11-forwarding  : ✓ (remote display is forwarded through SSH)

► For more info, ctrl+click on help or visit our website.

Welcome to Ubuntu 22.04.2 LTS (GNU/Linux 5.19.0-1025-aws x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:        https://ubuntu.com/advantage

System information as of Fri Aug 18 17:05:31 UTC 2023

System load:  0.0          Processes:    99
Usage of /:   31.2% of 7.57GB Users logged in: 0
Memory usage: 26%          IPv4 address for eth0: 172.31.41.221
Swap usage:   0%

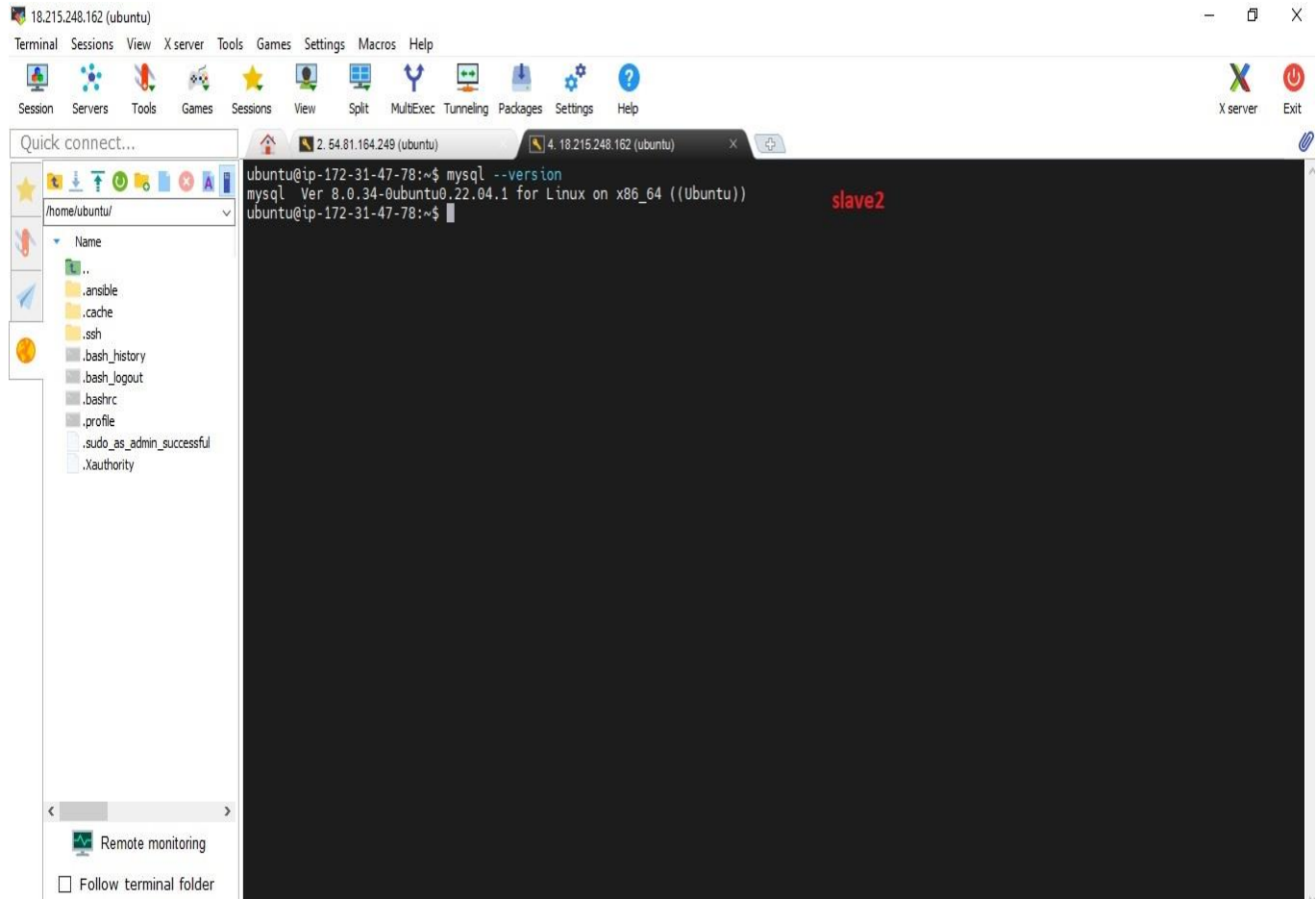
Expanded Security Maintenance for Applications is not enabled.

109 updates can be applied immediately.
64 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Fri Aug 18 16:54:01 2023 from 54.81.164.249
ubuntu@ip-172-31-41-221:~$ java --version
openjdk 11.0.20 2023-07-18
OpenJDK Runtime Environment (build 11.0.20+8-post-Ubuntu-1ubuntu122.04)
OpenJDK 64-Bit Server VM (build 11.0.20+8-post-Ubuntu-1ubuntu122.04, mixed mode, sharing)
ubuntu@ip-172-31-41-221:~$

```



All the steps completed and screenshot also attached, still if any thing requires, please email me or call me on my registered number and please share the obtained marks on my email.