

## **AWS Solutions Architect Certification Training**

[support@intellipaat.com](mailto:support@intellipaat.com) - +91-7022374614 - US: 1-800-216-8930 (Toll Free)

### **DevOps-Module5-Ansible-Assignment-5 COMPLETED by Nagesha KS**

**Please check the following screenshots for each question.**

#### **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.

Instances | EC2 | us-east-2

EC2 Instance Connect

EC2 Instance Connect

EC2 Instance Connect

EC2 Instance Connect

EC2 Instance Connect

EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#instances:v=3;\$case=tags:true%5C,client:false;\$regex=tags:false%5C,client:false

aws Services Search [Alt+S]

Ohio Nagesha KS

EC2 Dashboard

EC2 Global View

Events

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity

Reservations

New

Images

AMIs

AMI Catalog

Elastic Block Store

Instances (1/5) Info

Last updated 23 minutes ago

Connect

Instance state

Actions

Launch instances

Find instance by attribute or tag (case-sensitive)

All states

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
<input type="checkbox"/>	Nagesha-Ansible-Master	i-08c60b2325e38641a	Running	t2.micro	2/2 checks passed	View alarms +
<input type="checkbox"/>	Nagesha-Ansible-Slave-1	i-014948f2bac8a3c3d	Running	t2.micro	2/2 checks passed	View alarms +
<input type="checkbox"/>	Nagesha-Ansible-Slave-2	i-0e027fafbc5baf654	Running	t2.micro	2/2 checks passed	View alarms +
<input checked="" type="checkbox"/>	Nagesha-Ansible-Slave-3	i-05b951c9340ce25c0	Running	t2.micro	Initializing	View alarms +
<input type="checkbox"/>	Nagesha-Ansible-Slave-4	i-055158ba5e4e5823c	Running	t2.micro	Initializing	View alarms +

i-05b951c9340ce25c0 (Nagesha-Ansible-Slave-3)

Details Status and alarms Monitoring Security Networking Storage Tags

Instance summary Info

Instance ID

i-05b951c9340ce25c0 (Nagesha-Ansible-Slave-3)

Public IPv4 address

18.116.199.47 | open address

Private IPv4 addresses

172.31.44.132

IPv6 address

Instance state

Activate Windows

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15:15 06-09-2024

Instances [EC2] | us-east-2

EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#instances:v=3;\$case=tags:true%5C,client:false;\$regex=tags:false%5C,client:false

aws Services Search [Alt+S]

Ohio Nagesha K5

EC2 Dashboard

EC2 Global View

Events

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity

Reservations New

Images

AMIs

AMI Catalog

Elastic Block Store

Instances (1/5) Info

Last updated 23 minutes ago

Connect

Instance state

Actions

Launch Instances

Find Instance by attribute or tag (case-sensitive)

All states

< 1 >

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
<input type="checkbox"/>	Nagesha-Ansible-Master	i-08c60b2325e38641a	Running	t2.micro	2/2 checks passed	View alarms +
<input type="checkbox"/>	Nagesha-Ansible-Slave-1	i-014948f2bac8a3c3d	Running	t2.micro	2/2 checks passed	View alarms +
<input type="checkbox"/>	Nagesha-Ansible-Slave-2	i-0e027fafbc5baf654	Running	t2.micro	2/2 checks passed	View alarms +
<input type="checkbox"/>	Nagesha-Ansible-Slave-3	i-05b951c9340ce25c0	Running	t2.micro	Initializing	View alarms +
<input checked="" type="checkbox"/>	Nagesha-Ansible-Slave-4	i-055158ba5e4e5823c	Running	t2.micro	Initializing	View alarms +

i-055158ba5e4e5823c (Nagesha-Ansible-Slave-4)

Details Status and alarms Monitoring Security Networking Storage Tags

Instance summary Info

Instance ID

i-055158ba5e4e5823c (Nagesha-Ansible-Slave-4)

Public IPv4 address

3.17.204.162 | open address

Private IPv4 addresses

172.31.34.213

IPv6 address

Instance state

Public IPv4 DNS

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Instances | EC2 | us-east-2 | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-05b951c9340ce25c0&osUser=ubuntu&sshPort=22#/

aws Services Search [Alt+5] Ohio Nagesha KS

Expanded Security Maintenance for Applications is not enabled.  
0 updates can be applied immediately.  
Enable ESM Apps to receive additional future security updates.  
See <https://ubuntu.com/esm> or run: `sudo pro status`  
  
The list of available updates is more than a week old.  
To check for new updates run: `sudo apt update`  
  
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in `/usr/share/doc/*/copyright`.  
  
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
  
To run a command as administrator (user "root"), use "`sudo <command>`".  
See "`man sudo_root`" for details.  
  
ubuntu@ip-172-31-44-132:~\$ sudo nano .ssh/authorized\_keys  
ubuntu@ip-172-31-44-132:~\$

i-05b951c9340ce25c0 (Nagesha-Ansible-Slave-3)  
PublicIPs: 18.116.199.47 PrivateIPs: 172.31.44.132

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Instances | EC2 | us-east-2 | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-055158ba5e4e5823c&osUser=ubuntu&sshPort=22#/

Services Search [Alt+S]

Ohio Nagesha KS

```
0 updates can be applied immediately.

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

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-34-213:~$ sudo nano .ssh/authorized_keys
ubuntu@ip-172-31-34-213:~$ sudo nano /etc/ansible/hosts
ubuntu@ip-172-31-34-213:~$
```

i-055158ba5e4e5823c (Nagesha-Ansible-Slave-4)

PublicIPs: 3.17.204.162 : PrivateIPs: 172.31.34.213

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06-09-2024

Instances | EC2 | us-east-2 | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | +

us-east-2:console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-08c60b2325e38641a&osUser=ubuntu&region=us-east-2&sshPort=22#/

Services Search [Alt+5] Ohio Nagesha KS

```
ubuntu@ip-172-31-38-147:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-38-147:~$ ls
play1.yaml play2.yaml play3.yaml script2.sh
ubuntu@ip-172-31-38-147:~$ od nano /etc/ansible/hosts
-bash: od: too many arguments
ubuntu@ip-172-31-38-147:~$ sudo nano /etc/ansible/hosts
ubuntu@ip-172-31-38-147:~$
```

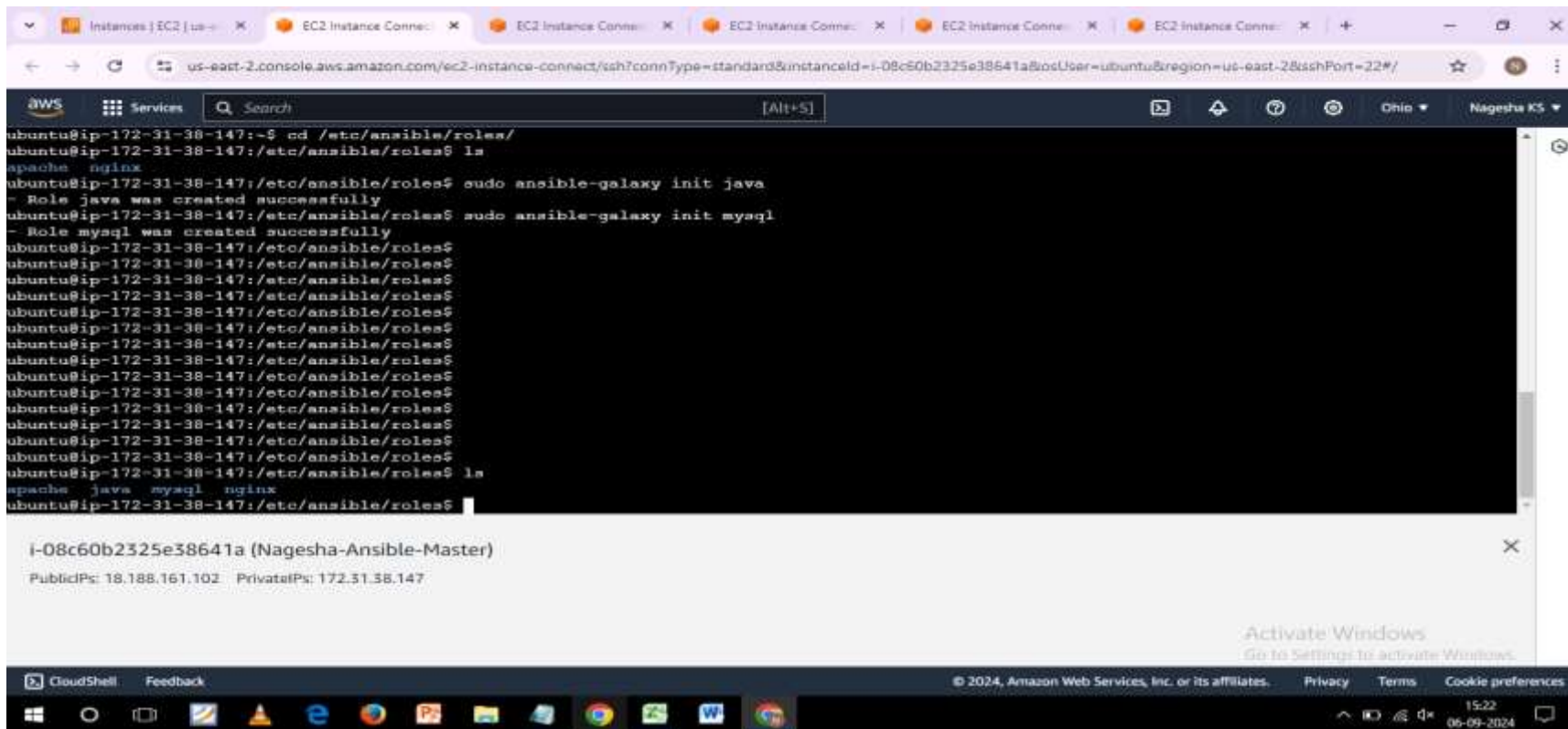
i-08c60b2325e38641a (Nagesha-Ansible-Master)  
PublicIPs: 18.188.161.102 PrivateIPs: 172.31.38.147

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15:15  
06-09-2024

```
sudo nano /etc/ansible/hosts
(test)
172.31.40.34 # slave1 private ip
172.31.39.242 # slave3 private ip
(prod)
172.31.44.132 # slave2 private ip
172.31.34.213 # slave4 private ip
```



The screenshot shows a terminal window within the AWS CloudShell interface. The terminal prompt is `ubuntu@ip-172-31-38-147:~$`. The user has navigated to the directory `/etc/ansible/roles/` and listed the contents, showing `apache` and `nginx`. They then executed `sudo ansible-galaxy init java`, which resulted in the message `- Role java was created successfully`. Next, they executed `sudo ansible-galaxy init mysql`, resulting in `- Role mysql was created successfully`. The terminal shows multiple subsequent prompts where the user entered `ls` but no output was displayed. Finally, the user entered `ls` again, and the output showed `apache java mysql nginx`. Below the terminal window, a metadata box for the instance `i-08c60b2325e38641a (Nagesha-Ansible-Master)` is visible, showing `PublicIPs: 18.188.161.102` and `PrivateIPs: 172.31.38.147`. The bottom of the screen shows the Windows taskbar with various application icons and the system clock indicating `15:22 06-09-2024`.

```
ubuntu@ip-172-31-38-147:~$ cd /etc/ansible/roles/
ubuntu@ip-172-31-38-147:/etc/ansible/roles$ ls
apache  nginx
ubuntu@ip-172-31-38-147:/etc/ansible/roles$ sudo ansible-galaxy init java
- Role java was created successfully
ubuntu@ip-172-31-38-147:/etc/ansible/roles$ sudo ansible-galaxy init mysql
- Role mysql was created successfully
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
ubuntu@ip-172-31-38-147:/etc/ansible/roles$ ls
apache  java  mysql  nginx
ubuntu@ip-172-31-38-147:/etc/ansible/roles$
```

i-08c60b2325e38641a (Nagesha-Ansible-Master)  
PublicIPs: 18.188.161.102 PrivateIPs: 172.31.38.147

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Instances | EC2 | us-east-2 | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-05b951c9340ce25c0&osUser=ubuntu&sshPort=22#/

aws Services Search [Alt+S] Ohio Nagesha KS

```
Get:25 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:26 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:27 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [28.8 kB]
Get:28 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Get:29 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [672 B]
Get:30 http://us-east-2.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 [1771 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [291 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [13.3 kB]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [2327 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [400 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [584 B]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [901 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [176 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [19.2 kB]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [37.2 kB]
Get:41 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [7588 B]
Get:42 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [228 B]
Fetched 33.4 MB in 5s (7340 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
56 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-44-132:~$
```

i-05b951c9340ce25c0 (Nagesha-Ansible-Slave-3)

PublicIPs: 18.116.199.47 PrivateIPs: 172.31.44.132

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15:30 06-09-2024



Instances | EC2 | us-east-2 | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-055158ba5e4e5823c&osUser=ubuntu&sshPort=22#

aws Services Search [Alt+S] Ohio Nagesha KS

```
Get:25 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:26 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:27 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [28.8 kB]
Get:28 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Get:29 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [672 B]
Get:30 http://us-east-2.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 [1771 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [291 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [13.3 kB]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [2327 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [400 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [584 B]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [901 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [176 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [19.2 kB]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [37.2 kB]
Get:41 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [7588 B]
Get:42 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [228 B]
Fetched 33.4 MB in 6s (5364 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
56 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-34-213:~$
```

i-055158ba5e4e5823c (Nagesha-Ansible-Slave-4)

PublicIPs: 3.17.204.162 | PrivateIPs: 172.31.34.213

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Instances | EC2 | us-east-2 | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | EC2 Instance Connect | +

us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-08c60b2325e38641a&osUser=ubuntu&region=us-east-2&sshPort=22#/?

aws Services Search [Alt+S]

Ohio Nagesha KS

```
ubuntu@ip-172-31-38-147:~$ ls
apache  java  mysql  nginx
ubuntu@ip-172-31-38-147:/etc/ansible/roles$ cd java/
ubuntu@ip-172-31-38-147:/etc/ansible/roles/java$ ls
README.md  defaults  files  handlers  meta  tasks  templates  tests  vars
ubuntu@ip-172-31-38-147:/etc/ansible/roles/java$ cd tasks/
ubuntu@ip-172-31-38-147:/etc/ansible/roles/java/tasks$ ls
main.yml
ubuntu@ip-172-31-38-147:/etc/ansible/roles/java/tasks$
sudo nano install.yml
ubuntu@ip-172-31-38-147:/etc/ansible/roles/java/tasks$ ls
install.yml  main.yml
ubuntu@ip-172-31-38-147:/etc/ansible/roles/java/tasks$ sudo nano main.yml
ubuntu@ip-172-31-38-147:/etc/ansible/roles/java/tasks$ cd ..
ubuntu@ip-172-31-38-147:/etc/ansible/roles/java$ cd ..
ubuntu@ip-172-31-38-147:/etc/ansible/roles$ ls
apache  java  mysql  nginx
ubuntu@ip-172-31-38-147:/etc/ansible/roles$ cd mysql
ubuntu@ip-172-31-38-147:/etc/ansible/roles/mysql$ cd tasks
ubuntu@ip-172-31-38-147:/etc/ansible/roles/mysql/tasks$ sudo nano main.yml
ubuntu@ip-172-31-38-147:/etc/ansible/roles/mysql/tasks$ sudo nano install.yml
ubuntu@ip-172-31-38-147:/etc/ansible/roles/mysql/tasks$ sudo nano main.yml
ubuntu@ip-172-31-38-147:/etc/ansible/roles/mysql/tasks$ cd
ubuntu@ip-172-31-38-147:~$ sudo nano play5.yml
ubuntu@ip-172-31-38-147:~$
```

i-08c60b2325e38641a (Nagesha-Ansible-Master)

PublicIPs: 18.188.161.102 PrivateIPs: 172.31.38.147

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## Ansible Commands

goto AWS console

create 2 more ec2 instances

Nagesha-Ansible-Slave-3

Nagesha-Ansible-Slave-5

go to Slave-3

sudo nano .ssh/authorized\_keys

go to Slave-4

sudo nano .ssh/authorized\_keys

goto master ec2 server

sudo nano /etc/ansible/hosts

(test)

172.31.40.34 # slave1 private ip

172.31.39.242 # slave3 private ip

(prod)

172.31.44.132 # slave2 private ip

172.31.34.213 # slave4 private ip

ansible -m ping all

# create roles

# test and prod groups

# role contains to insntal

# role contains to mysql

cd /etc/ansible/roles/

ls

sudo ansible-galaxy init java

sudo ansible-galaxy init mysql

```
ls
ensure you are in  ubuntu@ip-172-31-38-147:/etc/ansible/roles$
cd java/
ls
cd tasks/
ls
```

```
sudo nano install.yaml
```

```
---
```

```
- name: install java
  apt: name=openjdk-11-jdk state=latest
```

```
go to slave3
sudo apt update
```

```
goto slave4
sudo apt update
```

```
goto master ec2 instance
sudo nano main.yml
== include_tasks: install.yaml
```

```
cd ..
cd ..
ls
cd mysql
cd tasks
ls
sudo nano install.yaml
---
```

```
- name: installing mysql
  apt: name=mysql-server state=latest
```

```
sudo nano main.yml
== include_tasks: install.yml
```

```
cd
sudo nano play5.yml
```

```
---
== main: running java role for test group
  hosts: test
  become: true
  roles:
    - java
== main: running mysql role for prod group
  hosts: prod
  become: true
  roles:
    - mysql
```

#next is checking the syntax

```
ansible-playbook play3.yml --syntax-check
```

# next is dry run

```
ansible-playbook play3.yml --check
```

# execute this ansible playbook without flags ie., -- check or --syntax-check etc

```
ansible-playbook play3.yml
```