

## Module-3: Cloud Testing Hands-on

### Hands-on Assignments : (any 3 mandatory)

1. Create a VM and install docker and test the images inside the container with the commands
2. Install ansible and connect the nodes to master and execute the adhoc commands on ansible masternode vm and test the packages installed or not
3. Launch minikube cluster and execute the commands to test the pod, container with the kubectl commands
4. Create the poc on open shift architecture and its components and commands used on cluster

### SOLUTION:

2. Install ansible and connect the nodes to master and execute the adhoc commands on ansible masternode vm and test the packages installed or not

Create 2 instances Ansible Master Node & Ansible Slave Node

**Ansible Master Node** – Public IP = 18.183.152.100, Private IP= 172.31.10.114

**Ansible Slave Node** - Public IP = 52.194.236.177, Private IP= 172.31.4.114

epel - extra package of enterprise linux

### Start Ansible Master Node instance & connect to it

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with options like EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, and Elastic Block Store. The main area displays a table of instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
Docker	i-0fb0962d76922cc87	Stopped	t2.micro	-	No alarms	+ ap-northeast-1c	-	-
M3_Docker	i-0543f77588b9566c7	Stopped	t2.micro	-	No alarms	+ ap-northeast-1c	-	-
<b>Ansible Master...</b>	<b>i-033b073de698903cc</b>	<b>Running</b>	<b>t2.micro</b>	<b>2/2 checks passed</b>	<b>No alarms</b>	<b>+ ap-northeast-1c</b>	<b>ec2-18-183-152-100.ap...</b>	<b>18.183.152.100</b>
Ansible Slave ...	i-081afe65027b89d8e	Running	t2.micro	2/2 checks passed	No alarms	+ ap-northeast-1c	ec2-52-194-236-177.ap...	52.194.236.177

Below the table, the details for the selected instance (i-033b073de698903cc) are shown:

**Instance: i-033b073de698903cc (Ansible Master Node)**

**Details** | Security | Networking | Storage | Status checks | Monitoring | Tags

**Instance summary**

Instance ID i-033b073de698903cc (Ansible Master Node)	Public IPv4 address 18.183.152.100   <a href="#">open address</a>	Private IPv4 addresses 172.31.10.114
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-18-183-152-100.ap-northeast-1.compute.amazonaws.com   <a href="#">open address</a>
Hostname type IP name: ip-172-31-10-114.ap-northeast-1.compute.internal	Private IP DNS name (IPv4 only) ip-172-31-10-114.ap-northeast-1.compute.internal	Elastic IP addresses
Answer private resource DNS name	Instance type t2.micro	

Connect to instance info

Connect to your instance i-033b073de698903cc (Ansible Master Node) using any of these options

**EC2 Instance Connect** | Session Manager | SSH client | EC2 serial console

Instance ID  
i-033b073de698903cc (Ansible Master Node)

Public IP address  
18.183.152.100

User name  
Enter the user name defined in the AMI used to launch the instance. If you didn't define a custom user name, use the default user name, ec2-user.

ec2-user

**Note:** In most cases, the default user name, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

Cancel | Connect

```
$ sudo amazon-linux-extras install epel
```

```
[...]
```

```
Amazon Linux 2 AMI
```

```
https://aws.amazon.com/amazon-linux-2/
```

```
19 package(s) needed for security, out of 38 available
```

```
Run "sudo yum update" to apply all updates.
```

```
[ec2-user@ip-172-31-10-114 ~]$ sudo amazon-linux-extras install epel
```

```
Installing epel-release
```

```
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
```

```
Resolving dependencies
```

```
amzn2-core amzn2extra-docker amzn2extra-epel amzn2extra-kernel-5.10
```

```
amzn2extra-epel
```

```
6 sqlite files removed
```

```
0 metadata files removed
```

```
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
```

```
amzn2-core
```

```
amzn2extra-docker
```

```
amzn2extra-epel
```

```
amzn2extra-kernel-5.10
```

```
(1/9): amzn2-core/2/x86_64/group.gz
```

```
(2/9): amzn2-core/2/x86_64/updateinfo
```

```
(3/9): amzn2extra-epel/2/x86_64/primary_db
```

```
(4/9): amzn2extra-kernel-5.10/2/x86_64/updateinfo
```

```
(5/9): amzn2extra-docker/2/x86_64/primary_db
```

```
(6/9): amzn2extra-epel/2/x86_64/primary_db
```

```
(7/9): amzn2extra-epel/2/x86_64/updateinfo
```

```
(8/9): amzn2extra-kernel-5.10/2/x86_64/primary_db
```

```
(9/9): amzn2-core/2/x86_64/primary_db
```

```
Resolving dependencies
```

```
--> Running transaction check
```

```
--> Package epel-release.noarch 0:7-11 will be installed
```

```
i-033b073de698903cc (Ansible Master Node)
```

```
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114
```

```
$ sudo yum install ansible -y
```

```

ec2-user@ip-172-31-10-114 ~]$ sudo yum install ansible
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
1:5.2.0-1.1.1 excluded due to repository priority protection
Resolving Dependencies
--> Running transaction check
--> Package ansible.noarch 0:2.9.27-1.el7 will be installed
--> Processing Dependency: python-httplib2 for package: ansible-2.9.27-1.el7.noarch
--> Processing Dependency: python-paramiko for package: ansible-2.9.27-1.el7.noarch
--> Processing Dependency: python-urllib3 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

i-033b073de698903cc (Ansible Master Node)
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

```

```

Check ansible version - $ ansible --version
[ec2-user@ip-172-31-10-114 ~]$ ansible --version
ansible 2.9.27
  config file = /etc/ansible/ansible.cfg
  configured module search path = [u'/home/ec2-user/.ansible/plugins/modules', u'/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/site-packages/ansible
  executable location = /usr/bin/ansible
  python version = 2.7.18 (default, May 25 2022, 14:30:51) [GCC 7.3.1 20180712 (Red Hat 7.3.1-15)]
[ec2-user@ip-172-31-10-114 ~]$ i-033b073de698903cc (Ansible Master Node)
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

```

Install python & check version

```

$ sudo yum install python -y
$ python --version

```

```

IBM Lp B30 - Google Sheets | Instances | EC2 Management Con... | Connect to instance | EC2 Man... | EC2 Instance Connect | + | - | X
← → C ⌘ ⌘ ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-northeast-1&connType=standard&instanceId=i-033b073de698903cc&osUs... | Search | EC2 | [Alt+S]
IBM Links Sonali Sprint Learning RPA - Aut... Student Login | Edu... T-Mobile
aws Services Search [Alt+S] Tokyo FST Training
EC2

--SSH_COMMON_ARGS
    specify common arguments to pass to ssh/scp/ssh, (e.g.
    ProxyCommand)
--SSH_EXTRA_ARGS
    specify extra arguments to pass to ssh only (e.g. -R)
-T TIMEOUT, --timeout TIMEOUT
    override the connection timeout in seconds
    (default=10)
-c CONNECTION, --connection CONNECTION
    connection type to use (default=smart)
-k, --ask-pass
    ask for connection password
-u REMOTE_USER, --user REMOTE_USER
    connect as this user (default=None)

Some modules do not make sense in Ad-Hoc (include, meta, etc)
[WARNING]: No argument passed to command module
[ec2-user@ip-172-31-10-114 ~]$ ansible --version
ansible 2.9.27
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/home/ec2-user/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/site-packages/ansible
  executable location = /usr/bin/ansible
  python version = 2.7.18 (default, May 25 2022, 14:30:51) [GCC 7.3.1 20180712 (Red Hat 7.3.1-15)]
[ec2-user@ip-172-31-10-114 ~]$ sudo yum install python -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
215 packages excluded due to repository priority protections
Package python-2.7.18-1.amzn2.0.5.x86_64 already installed and latest version
Nothing to do
[ec2-user@ip-172-31-10-114 ~]$ python --version
python 2.7.18
[ec2-user@ip-172-31-10-114 ~]$ 

i-033b073de698903cc (Ansible Master Node)
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

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Install openssl - $ sudo yum install openssl -y
IBM Lp B30 - Google Sheets | Instances | EC2 Management Con... | Connect to instance | EC2 Man... | EC2 Instance Connect | + | - | X
← → C ⌘ ⌘ ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-northeast-1&connType=standard&instanceId=i-033b073de698903cc&osUs... | Search | EC2 | [Alt+S]
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aws Services Search [Alt+S] Tokyo FST Training
EC2

-T TIMEOUT, --timeout TIMEOUT
    override the connection timeout in seconds
    (default=10)
-c CONNECTION, --connection CONNECTION
    connection type to use (default=smart)
-k, --ask-pass
    ask for connection password
-u REMOTE_USER, --user REMOTE_USER
    connect as this user (default=None)

Some modules do not make sense in Ad-Hoc (include, meta, etc)
[WARNING]: No argument passed to command module
[ec2-user@ip-172-31-10-114 ~]$ ansible --version
ansible 2.9.27
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/home/ec2-user/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/site-packages/ansible
  executable location = /usr/bin/ansible
  python version = 2.7.18 (default, May 25 2022, 14:30:51) [GCC 7.3.1 20180712 (Red Hat 7.3.1-15)]
[ec2-user@ip-172-31-10-114 ~]$ sudo yum install openssl -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
215 packages excluded due to repository priority protections
Package openssl-1.0.2k-24.amzn2.0.4.x86_64 already installed and latest version
Nothing to do
[ec2-user@ip-172-31-10-114 ~]$ python --version
python 2.7.18
[ec2-user@ip-172-31-10-114 ~]$ sudo yum install openssl -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
215 packages excluded due to repository priority protections
package openssl-1.0.2k-24.amzn2.0.4.x86_64 already installed and latest version
Nothing to do
[ec2-user@ip-172-31-10-114 ~]$ 

i-033b073de698903cc (Ansible Master Node)
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

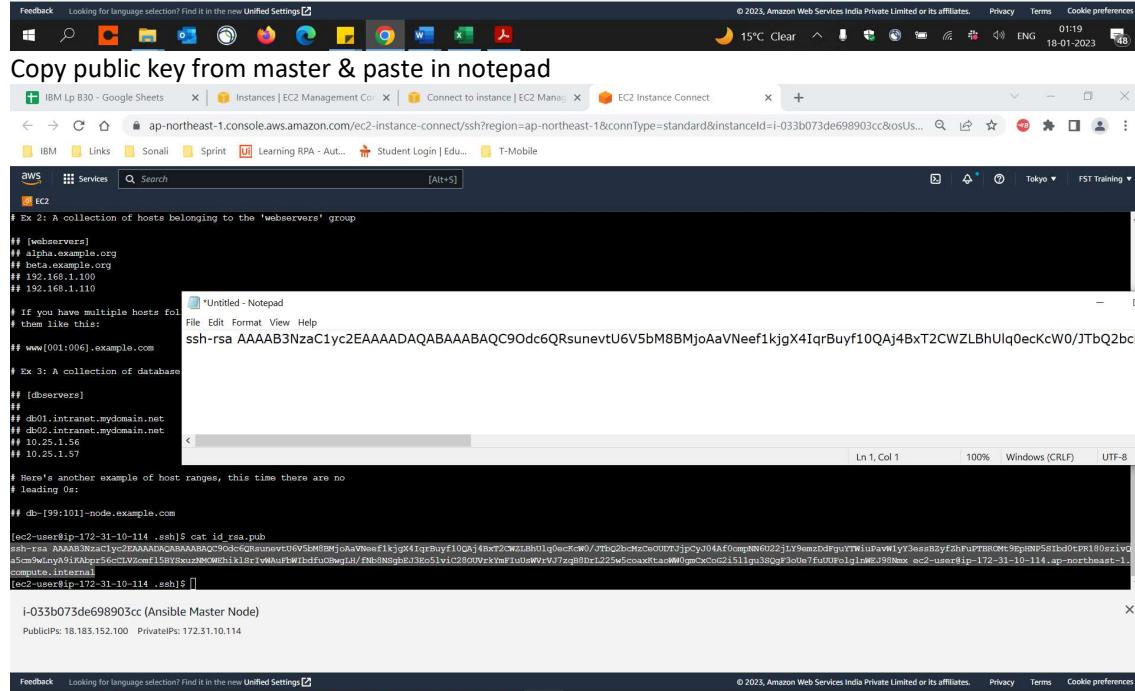
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Generate key

```

i-033b073de698903cc (Ansible Master Node)  
Public IPs: 18.183.152.100 Private IPs: 172.31.10.114

www.ijerph.org



```

[ec2-user@ip-172-31-10-114 .ssh]$ cat /etc/ansible/ansible.cfg
# nearly all parameters can be overridden in ansible-playbook
# or with command line flags. ansible will read ANSIBLE_CONFIG,
# ansible.cfg in the current working directory, .ansible.cfg in
# the home directory or /etc/ansible/ansible.cfg, whichever it
# finds first

[defaults]

# some basic default values...

[inventory]
library = /usr/share/my_modules/
module_utils = /usr/share/my_module_utils/
remote_tmp = ./ansible/tmp
local_tmp = ~/.ansible/tmp
plugin_filters_cfg = /etc/ansible/plugin_filters.yml
forks = 5
poll_interval = 15
sudo_user = root
ask_sudo_pass = True
ask_pass = True
transport = smart
remote_port = 22
module_lang = C

i-033b073de698903cc (Ansible Master Node)
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

```

```

[ec2-user@ip-172-31-10-114 .ssh]$ cat /etc/ansible/hosts
# This is the default ansible 'hosts' file.

# It should live in /etc/ansible/
# - 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

# Ex 3: A collection of database servers in the 'dbservers' group

i-033b073de698903cc (Ansible Master Node)
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

```

## Connect to Ansible Slave Node

Screenshot of the AWS EC2 Management Console showing the Instances page and the Connect to instance dialog.

**Instances (1/4) Info**

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
Docker	i-0fb0962d76922cc87	Stopped	t2.micro	-	No alarms	+ ap-northeast-1c	-	-
M3_Docker	i-0543f77588b9566c7	Stopped	t2.micro	-	No alarms	+ ap-northeast-1c	-	-
Ansible Master...	i-033b073de698903cc	Running	t2.micro	2/2 checks passed	No alarms	+ ap-northeast-1c	ec2-18-183-152-100.ap...	18.183.152.100
<b>Ansible Slave...</b>	<b>i-081afe65027b89d8e</b>	<b>Running</b>	<b>t2.micro</b>	<b>2/2 checks passed</b>	<b>No alarms</b>	<b>+ ap-northeast-1c</b>	<b>ec2-52-194-236-177.ap...</b>	<b>52.194.236.177</b>

**Instance: i-081afe65027b89d8e (Ansible Slave Node)**

**Details** | Security | Networking | Storage | Status checks | Monitoring | Tags

**Instance summary**

Instance ID i-081afe65027b89d8e (Ansible Slave Node)	Public IPv4 address 52.194.236.177   open address	Private IPv4 addresses 172.31.4.114
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-52-194-236-177.ap-northeast-1.compute.amazonaws.com   open address
Hostname type IP name: ip-172-31-4-114.ap-northeast-1.compute.internal	Private IP DNS name (IPv4 only) ip-172-31-4-114.ap-northeast-1.compute.internal	Elastic IP addresses
Answer private resource DNS name	Instance type	

**Connect to instance**

Connect to your instance i-081afe65027b89d8e (Ansible Slave Node) using any of these options

**EC2 Instance Connect** | Session Manager | SSH client | EC2 serial console

Instance ID  
i-081afe65027b89d8e (Ansible Slave Node)

Public IP address  
52.194.236.177

User name  
Enter the user name defined in the AMI used to launch the instance. If you didn't define a custom user name, use the default user name, ec2-user.  
ec2-user

Note: In most cases, the default user name, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

Cancel | Connect

https://ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap...

Check ansible in node

```

aws Services Search [Alt+S] Tokyo FST Training
EC2

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
19 package(s) needed for security, out of 38 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-4-114 ~]$ cd .ssh
[ec2-user@ip-172-31-4-114 .ssh]$ cd
[ec2-user@ip-172-31-4-114 ~]$ ansible --version
ansible: command not found
[ec2-user@ip-172-31-4-114 ~]$ ansible --version
ansible: command not found
[ec2-user@ip-172-31-4-114 ~]$ 

i-081afe65027b89d8e (Ansible Slave Node)
PublicIP: 52.194.236.177 PrivateIPs: 172.31.4.114

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Check authorized_keys file
aws Services Search [Alt+S] Tokyo FST Training
EC2

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
19 package(s) needed for security, out of 38 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-4-114 ~]$ cd .ssh
[ec2-user@ip-172-31-4-114 .ssh]$ cd
[ec2-user@ip-172-31-4-114 ~]$ ansible --version
ansible: command not found
[ec2-user@ip-172-31-4-114 ~]$ ansible --version
ansible: command not found
[ec2-user@ip-172-31-4-114 ~]$ cat authorized_keys
[ec2-user@ip-172-31-4-114 ~]$ cat authorized_keys
-----BEGIN RSA PRIVATE KEY-----[REDACTED]-----END RSA PRIVATE KEY-----[REDACTED]
[ec2-user@ip-172-31-4-114 ~]$ 

i-081afe65027b89d8e (Ansible Slave Node)
PublicIP: 52.194.236.177 PrivateIPs: 172.31.4.114

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```

**Edit it & paste public key from Master node**

\$ vi authorized\_keys

insert- manually go to place to add/edit - Esc :wq! – save & exit file

```
IBM Lp B30 - Google Sheets x Connect to instance | EC2 Man x EC2 Instance Connect x Connect to instance | EC2 Man x EC2 Instance Connect x + Tokyo FST Training
IBM Links Sonali Sprint Learning RPA - Aut... Student Login | Edu... T-Mobile
aws Services Search [Alt+S]
EC2
ssh-rsa AAAAB3NzaC1EAAQAAQABACQ3DNa9gvxVamrFkyz98KhmiJgeJFdRaL1LJxX0F1Iam78tmW16FNYeFL2tBzgflf9yyX7oKaPkefGkhfrfPlDnP3M2z0CrtTu+bvap4p/A/W1CMntoa3FHCh6FFJFtrLckC0Tp/J98673icReCuXpQfALSLRw+ViSF83uB
ssh-rsa AAAAB3NzaC1EAAQAAQABACQ3D+6QraunetV6V1M8MBjohawNef1kjx41gBuy1fQAg4bxz2CWLBBh1lqDeeCwK0/J1BzC2ccktceOUU7JpcyJ04Af0cmpNN002J1Y9smzDdfpuYWluPawly3ssasB2yf2hFuPTBRQm9pHNS5Ilbd0tFR180zziQ
aScm9pLnyA91ahbpz56cCLV2cmf15BSxuN9KwHEh1lsRiwAuFtW1bdfu0gWlh/FNB8N8gEJ3E5ivc280UvrxFluBsWV7zqB8Drl225wcoaxRtaWW0gmCc0G2151gu38Qf30e7tuUf0glg1HEJ98Nnx ec2-user@ip-172-31-10-114.ap-northeast-1.compute.internal

i-081afe65027b89d8e (Ansible Slave Node)
PublicIPs: 52.194.236.177 PrivateIPs: 172.31.4.114

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13°C Clear 01:35 18-01-2023
Check file again
IBM Lp B30 - Google Sheets x Connect to instance | EC2 Man x EC2 Instance Connect x Connect to instance | EC2 Man x EC2 Instance Connect x +
IBM Links Sonali Sprint Learning RPA - Aut... Student Login | Edu... T-Mobile
aws Services Search [Alt+S]
EC2
[1] -l . / Amazon Linux 2 AMI
https://aws.amazon.com/amazon-linux-2/
19 packages(s) needed for security, out of 38 available
Would you like to apply the updates now?
[ec2-user@ip-172-31-4-114 ~]$ ls
[ec2-user@ip-172-31-4-114 ~]$ ssh $ cd
[ec2-user@ip-172-31-4-114 ~]$ ansible --version
[ec2-user@ip-172-31-4-114 ~]$ ansible --version
[ec2-user@ip-172-31-4-114 ~]$ cat .ssh
[ec2-user@ip-172-31-4-114 ~]$ ssh1 is
authorized_keys
[ec2-user@ip-172-31-4-114 ~]$ cat authorized_keys
ssh-rsa AAAAB3NzaC1EAAQAAQABACQ3DNa9gvxVamrFkyz98KhmiJgeJFdRaL1LJxX0F1Iam78tmW16FNYeFL2tBzgflf9yyX7oKaPkefGkhfrfPlDnP3M2z0CrtTu+bvap4p/A/W1CMntoa3FHCh6FFJFtrLckC0Tp/J98673icReCuXpQfALSLRw+ViSF83uB
ssh-rsa AAAAB3NzaC1EAAQAAQABACQ3D+6QraunetV6V1M8MBjohawNef1kjx41gBuy1fQAg4bxz2CWLBBh1lqDeeCwK0/J1BzC2ccktceOUU7JpcyJ04Af0cmpNN002J1Y9smzDdfpuYWluPawly3ssasB2yf2hFuPTBRQm9pHNS5Ilbd0tFR180zziQ
aScm9pLnyA91ahbpz56cCLV2cmf15BSxuN9KwHEh1lsRiwAuFtW1bdfu0gWlh/FNB8N8gEJ3E5ivc280UvrxFluBsWV7zqB8Drl225wcoaxRtaWW0gmCc0G2151gu38Qf30e7tuUf0glg1HEJ98Nnx ec2-user@ip-172-31-10-114.ap-northeast-1.compute.internal
[ec2-user@ip-172-31-4-114 ~]$ ssh1
```

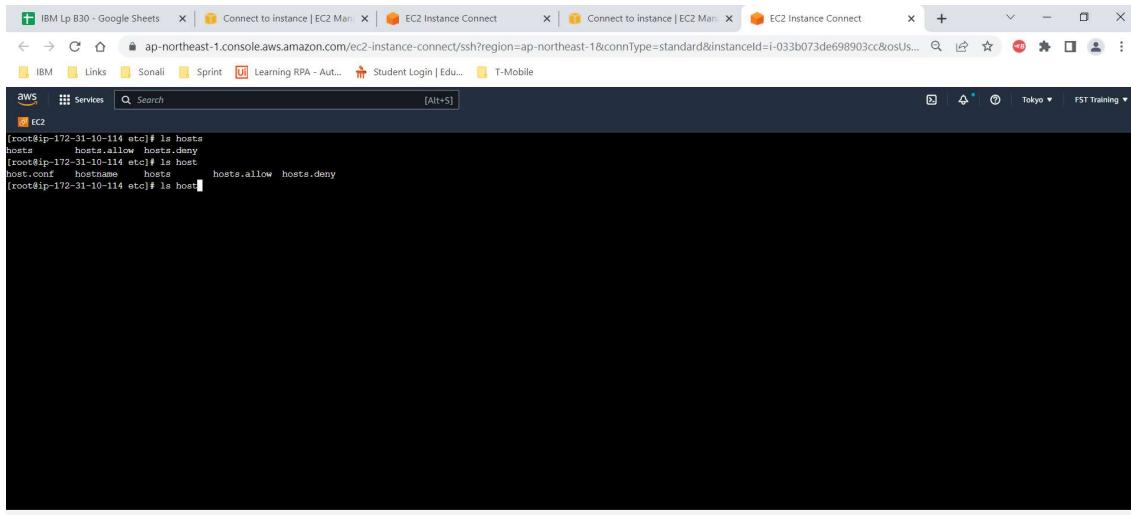
Master Node

```
$ sudo su
```

§ 54

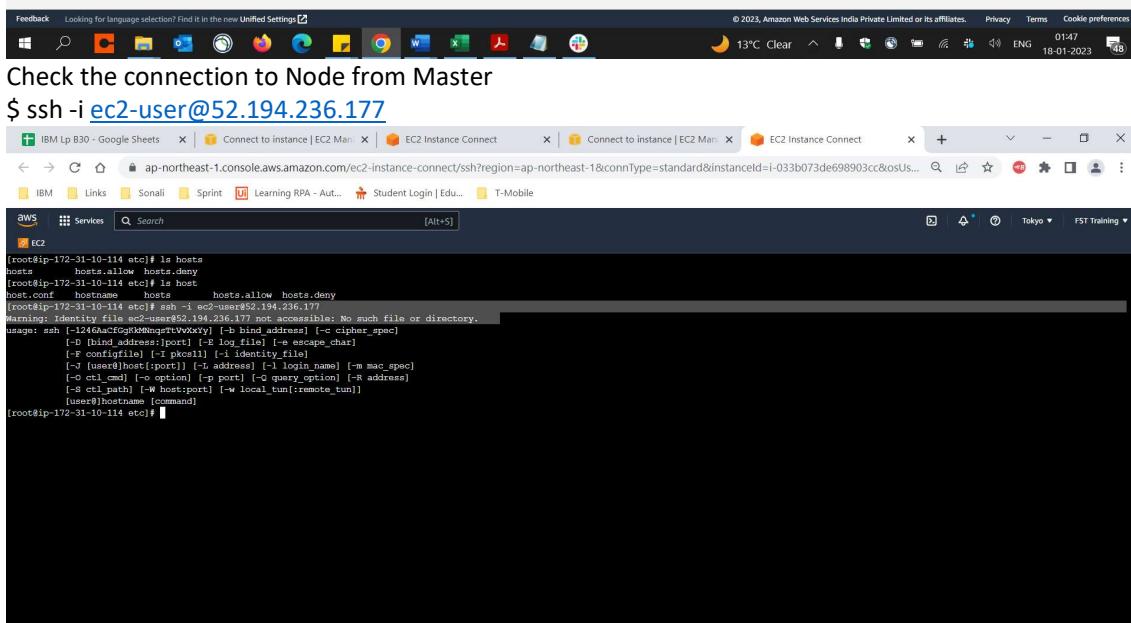
§ 15

\$ cd etc



```
[root@ip-172-31-10-114 etc]# ls hosts
hosts      hosts.allow  hosts.deny
[root@ip-172-31-10-114 etc]# ls host
host.conf  hostname   hosts      hosts.allow  hosts.deny
[root@ip-172-31-10-114 etc]# ls host
```

i-033b073de698903cc (Ansible Master Node)  
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114



```
Check the connection to Node from Master
$ ssh -i ec2-user@52.194.236.177
```

```
[root@ip-172-31-10-114 etc]# ls hosts
hosts      hosts.allow  hosts.deny
[root@ip-172-31-10-114 etc]# ls host
host.conf  hostname   hosts      hosts.allow  hosts.deny
[root@ip-172-31-10-114 etc]# ssh -i ec2-user@52.194.236.177
Warning: Identity file ec2-user@52.194.236.177 not accessible: No such file or directory.
```

i-033b073de698903cc (Ansible Master Node)  
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114



```
Edit hosts file on Master
$ cd etc
```

```
[root@ip-172-31-10-114 etc]# cd etc
```

```
$ cd ansible
```

[root@ip-172-31-10-114 etc]# cd ..  
 /bin /boot /dev /etc /home /lib64 /local /media /mnt /opt /proc /root /run /sbin /srv /sys [root@ip-172-31-10-114 etc]# ls  
 root@ip-172-31-10-114 ~# cd ..  
 root@ip-172-31-10-114 ~# cd ..  
 root@ip-172-31-10-114 ~# cd ..  
 root@ip-172-31-10-114 ~# ls  
 bin boot dev etc home lib64 local media mnt opt proc root run sbin srv sys usr var  
 root@ip-172-31-10-114 ~# cd etc/  
 [root@ip-172-31-10-114 etc]# ls  
 acpi cifs-utils dracut.conf grub2-efi.cfg iproute2 machine-id openldap python rwtab statetab.d update-motd.d  
 adjtime cloud dracut.conf.d grub.d issue magic opt rc0.d rwtab.d subgid vimrc  
 aliases cron.d e2fsck.conf gshadow issue.net man\_db.conf os-release rc1.d sasl2 subuid virc  
 aliases.db cron.daily environment krb5.conf nukeafs.conf pan.d rc2.d scl vircd  
 alternatives cron.deny exports kmod.conf passwd rc3.d seapercr sudo.conf wptrc  
 amazon cron.hourly exports gsproxy ld.so.cache modules-load.d passwd rc4.d sudoers.d sudokey xterm  
 anacrontab cron.monthly exports.d libabinet-config.cfg ld.so.com.so rc5.d security sudo-ldap.conf xinetd.d  
 ansible cronatc filesystems libinit-config.cfg ld.so.conf.d rc6.d pkis rc6.d selinux sysconfig yum  
 at.deny cron.weekly fstab host.conf libaudit.conf my.cnf plymouth rc.d services systemctl yum.conf  
 auditd csh.cshrc goryps hosts.hostname lini1 my.cnf.d pki rc7.d sestatus.conf systemctl.d yum.repos.d  
 auditc cron cronin GeopT.conf hosts.allow locale.conf netconfig postfix request-key.conf systemd  
 bash completion.d dbus-1 GeopT.conf.default hosts.deny localtime NetworkManager ppp resolv.conf request-key.d shadow  
 bashrc default gmpq hosts.deny idmapd.conf login.defs networks prelink.conf.d rpc resolv.conf shadow-  
 binstmt.d depmod.d GREP\_COLORS idmapd.conf logrotate.conf nfs.conf printcap rpm shells system-release  
 dhkconfig.d dhcp groff image-id init.d logrotate.d nfsmount.conf profile\_d rsyncd.conf ssh terminfo  
 chrony.conf DIR\_COLORS group inittab lsm newswitch.conf profile\_d rsyslog.conf ssl tmppfiles.d trusted-key.key  
 chrony.conf DIR\_COLORS\_256color group inittab lsm newswitch.conf profile\_d rsyslog.conf ssl udev  
 chrony\_keys DIR\_COLORS\_lightbicolor grep2.cfg ingatc lvm newswitch.conf.bak protocols rsyslog.d statetab updatedb.conf  
 [root@ip-172-31-10-114 etc]# cd ansible/  
 [root@ip-172-31-10-114 ansible]# ls  
 ansible.cfg hosts roles  
 [root@ip-172-31-10-114 ansible]#

i-033b073de698903cc (Ansible Master Node)  
 PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

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\$ cat hosts

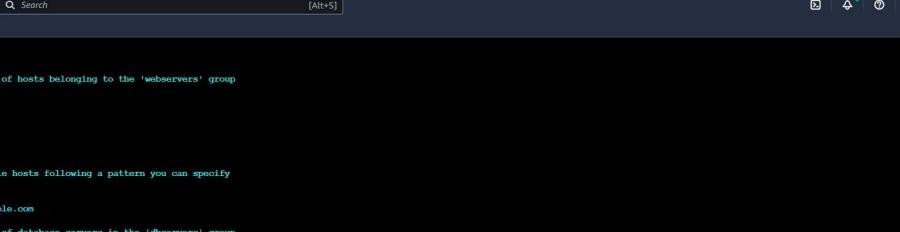
[root@ip-172-31-10-114 etc]# ls  
 /bin /boot /dev /etc /home /lib64 /local /media /mnt /opt /proc /root /run /sbin /srv /sys [root@ip-172-31-10-114 etc]# ls  
 acpi cifs-utils dracut.conf grub2-eфи.cfg iproute2 machine-id openldap python rwtab statetab.d update-motd.d  
 adjtime cloud dracut.conf.d grub.d issue magic opt rc0.d rwtab.d subgid vimrc  
 aliases cron.d e2fsck.conf gshadow issue.net man\_db.conf os-release rc1.d sasl2 subuid virc  
 aliases.db cron.daily environment krb5.conf nukeafs.conf pan.d rc2.d scl vircd  
 alternatives cron.deny exports kmod.conf passwd rc3.d seapercr sudo.conf wptrc  
 amazon cron.hourly exports gsproxy ld.so.cache modules-load.d passwd rc4.d sudoers.d sudokey xterm  
 anacrontab cron.monthly exports.d libabinet-config.cfg ld.so.com.so rc5.d security sudo-ldap.conf xinetd.d  
 ansible cronatc filesystems libinit-config.cfg ld.so.conf.d rc6.d pkis rc6.d selinux sysconfig yum  
 at.deny cron.weekly fstab host.conf libaudit.conf my.cnf plymouth rc.d services systemctl yum.conf  
 auditd csh.cshrc goryps hosts.hostname lini1 my.cnf.d pki rc7.d sestatus.conf systemctl.d yum.repos.d  
 auditc cron cronin GeopT.conf hosts.allow locale.conf netconfig postfix request-key.conf systemd  
 bash completion.d dbus-1 GeopT.conf.default hosts.deny localtime NetworkManager ppp resolv.conf request-key.d shadow  
 bashrc default gmpq hosts.deny idmapd.conf login.defs networks prelink.conf.d rpc resolv.conf shadow-  
 binstmt.d depmod.d GREP\_COLORS idmapd.conf logrotate.conf nfs.conf printcap rpm shells system-release  
 dhkconfig.d dhcp groff image-id init.d logrotate.d nfsmount.conf profile\_d rsyncd.conf ssh terminfo  
 chrony.conf DIR\_COLORS group inittab lsm newswitch.conf profile\_d rsyslog.conf ssl tmppfiles.d trusted-key.key  
 chrony.conf DIR\_COLORS\_256color group inittab lsm newswitch.conf profile\_d rsyslog.conf ssl udev  
 chrony\_keys DIR\_COLORS\_lightbicolor grep2.cfg ingatc lvm newswitch.conf.bak protocols rsyslog.d statetab updatedb.conf  
 [root@ip-172-31-10-114 etc]# cd ansible/  
 [root@ip-172-31-10-114 ansible]# ls  
 ansible.cfg hosts roles  
 [root@ip-172-31-10-114 ansible]# cat hosts  
 # 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 defined 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  
i-033b073de698903cc (Ansible Master Node)  
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

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Edit hosts = \$ vi hosts

Press Insert -> at the end add [nodeserver] -> add public ip address of node



The screenshot shows a browser window with multiple tabs open. The active tab is titled "ap-northeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-northeast-1&connType=standard&instanceId=i-033b073de698903cc&osUsr...". The page content is a terminal session within AWS CloudShell, displaying Ansible playbooks for managing EC2 instances. The terminal output includes host definitions for 'webservers' and 'dbservers' groups, as well as a range-based host definition for 'db'. It also shows a command to run 'iwq' and the final command to connect to the Ansible Master Node.

```
IBM Lp B30 - Google Sheets | Connect to instance | EC2 Main | EC2 Instance Connect | Connect to instance | EC2 Main | EC2 Instance Connect | + - ×

IBM Links Sonali Sprint Learning RPA - Aut... Student Login | Edu... T-Mobile

aWS Services Search [Alt+S]
EC2
## 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

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

Here's another example of host ranges, this time there are no
leading 0s:

## db-[99:101]-node.example.com
## (node)server1
52.194.236.177
iwq |
```

Check file = \$ cat hosts

## Check connection to node

```

# 192.168.1.110
# If you have multiple hosts following a pattern you can specify
# them like this:
## www[001:006].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

# Here's another example of host ranges, this time there are no
# leading :
## -b [99:101]-node.example.com
## (nodearray)
52.194.236.177
[root@ip-172-31-10-114 ansible]# ssh -i ec2-user@52.194.236.177
Warning: Identity file ec2-user@52.194.236.177 not accessible: No such file or directory.
usage: ssh [-i identity_file] [-b bind_address] [-c cipher_spec]
           [-D bind_address] [-F config_file] [-e escape_char]
           [-f forwarding_spec] [-L local_address] [-l login_name] [-m mac_spec]
           [-o ctrl_cmd] [-O option] [-P port] [-Q query_option] [-R address]
           [-S ctl_path] [-W host:port] [-w local_tun:remote_tun]
           [user@hostname] [command]
[root@ip-172-31-10-114 ansible]#

```

i-033b073de698903cc (Ansible Master Node)  
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

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## Disconnect & Connect to master again

IBM Lp B30 - Google Sheets | Connect to instance | EC2 Manager | EC2 Instance Connect | Connect to instance | EC2 Manager | EC2 Instance Connect | EC2 Instance Connect

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aws Services Search [Alt+S]

EC2

EC2 > Instances > i-033b073de698903cc > Connect to instance

**Connect to instance info**

Connect to your instance i-033b073de698903cc (Ansible Master Node) using any of these options

**EC2 Instance Connect** Session Manager SSH client EC2 serial console

Instance ID: i-033b073de698903cc (Ansible Master Node)

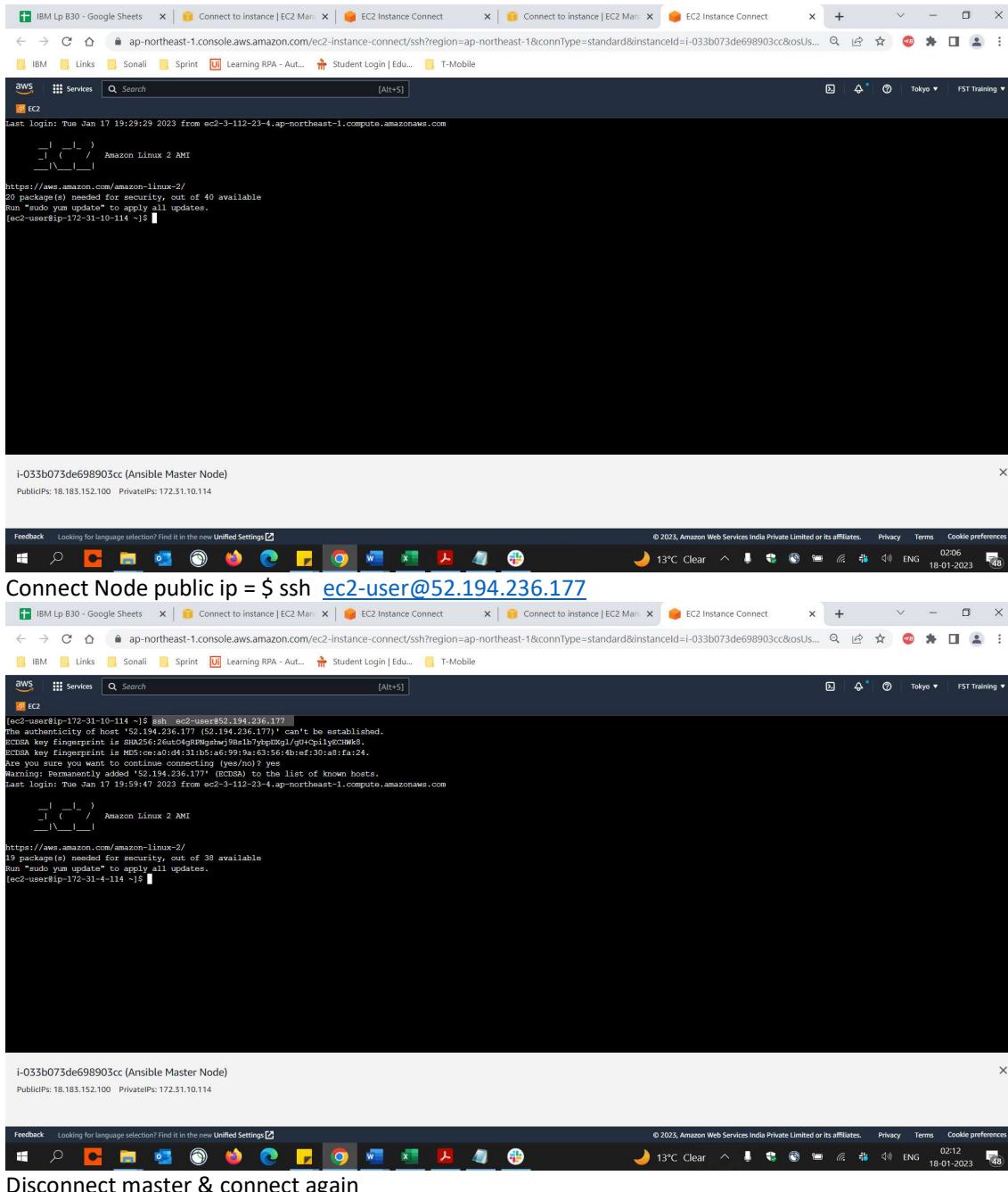
Public IP address: 18.183.152.100

User name: ec2-user

**Note:** In most cases, the default user name, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

Cancel Connect





IBM Lp B30 - Google Sheets | Connect to instance | EC2 Man... | EC2 Instance Connect | Connect to instance | EC2 Man... | EC2 Instance Connect

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aws Services Search [Alt+S]

EC2

Last login: Tue Jan 17 20:44:00 2023 from ec2-3-112-23-3.ap-northeast-1.compute.amazonaws.com

```

[ec2-user@ip-172-31-10-114 ~]$ ls
[ec2-user@ip-172-31-10-114 ~]$ cd /Amazon_Linux_2_AMI
[ec2-user@ip-172-31-10-114 ~]$ curl https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-10-114 ~]$ yum update
[ec2-user@ip-172-31-10-114 ~]$ java --version
[ec2-user@ip-172-31-10-114 ~]$ java --version
[ec2-user@ip-172-31-10-114 ~]$ java --version
[ec2-user@ip-172-31-10-114 ~]$ ping
[ec2-user@ip-172-31-10-114 ~]$ ansible all -m ping
[WARNING]: Platform linux on host 52.194.236.177 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python interpreter could change this. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
52.194.236.177 | SUCCESS => (
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": false,
    "ping": "pong"
)
[ec2-user@ip-172-31-10-114 ~]$ 
```

i-033b073de698903cc (Ansible Master Node)

PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

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IBM Lp B30 - Google Sheets | Connect to instance | EC2 Man... | EC2 Instance Connect | Connect to instance | EC2 Man... | EC2 Instance Connect

IBM Links Sonali Sprint Learning RPA - Aut... Student Login | Edu... T-Mobile

aws Services Search [Alt+S]

EC2

```

[ec2-user@ip-172-31-10-114 ~]$ git version
[ec2-user@ip-172-31-10-114 ~]$ ansible all -m yum -b -a "name=git"
[WARNING]: Platform linux on host 52.194.236.177 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python interpreter could change this. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
52.194.236.177 | CHANGED => (
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python"
    },
    "changed": true,
    "changes": {
        "installed": [
            "git"
        ]
    },
    "msg": "",
    "rc": 0,
    "results": [
        "Loaded plugins: extras_suggestions, langpacks, priorities, update-motd\nResolving Dependencies\n--> Running transaction check\n--> Package git.x86_64 0:2.38.1-1.amzn2.0.1 will be installed\n--> Process ing Dependency: perl-git = 2.38.1-1.amzn2.0.1 for package: git-2.38.1-1.amzn2.0.1.x86_64\n--> Processing dependency: perl(Git) 0:2.38.1-1.amzn2.0.1 for package: git-2.38.1-1.amzn2.0.1.x86_64\n--> Processing dependency: perl(Git::Protocol) 0:0.1.0-2.amzn2.0.1 for package: git-2.38.1-1.amzn2.0.1.x86_64\n--> Processing dependency: perl(Git::Protocol::HTTP) 0:0.1.0-2.amzn2.0.1 for package: git-2.38.1-1.amzn2.0.1.x86_64\n--> Running transaction check\n--> Package perl-Git.x86_64 0:2.38.1-1.amzn2.0.1 will be installed\n--> Package perl-Git::Protocol.x86_64 0:0.1.0-2.amzn2.0.1 will be installed\n--> Package perl-Git::Protocol::HTTP.x86_64 0:0.1.0-2.amzn2.0.1 will be installed\n--> Package perl-TermReadKey.x86_64 0:2.30-20.amzn2.0.2 will be installed\n--> Running transaction check\n--> Package perl-Error.noarch 1:0.17020-2.amzn2 will be installed\n--> Finished Dependency Resolution\nDependencies Resolved\n-----\nTransaction test\nTransaction test succeeded\nRunning transaction\n Installing : git-core-2.38.1-1.amzn2.0.1.x86_64 1/6 \n Installing : git-core-doc-2.38.1-1.amzn2.0.1.noarch 3/6 \n Installing : perl-TermReadKey-2.30-20.amzn2.0.2.x86_64 4/6 \n Installing : perl-Git-2.38.1-1.amzn2.0.1.noarch 5/6 \n Uninstalling perl-Error-1.0.17020-2.amzn2.noarch 6/6 \n
```

i-033b073de698903cc (Ansible Master Node)

PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

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```
[ec2-user@ip-172-31-4-114 ~]$ java -version  
bash: java: command not found  
[ec2-user@ip-172-31-4-114 ~]$ git version  
bash: git: command not found  
[ec2-user@ip-172-31-4-114 ~]$
```

i-081afe65027b89d8e (Ansible Slave Node)  
PublicIPs: 52.194.236.177 PrivateIPs: 172.31.4.114

```
[ec2-user@ip-172-31-4-114 ~]$ java -version  
bash: java: command not found  
[ec2-user@ip-172-31-4-114 ~]$ git version  
bash: git: command not found  
[ec2-user@ip-172-31-4-114 ~]$ git version  
git version 2.38.1  
[ec2-user@ip-172-31-4-114 ~]$
```

i-081afe65027b89d8e (Ansible Slave Node)  
PublicIPs: 52.194.236.177 PrivateIPs: 172.31.4.114

```
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```

Check java installed or not = \$ java -version

```
[ec2-user@ip-172-31-10-114 ~]$ java -version  
bash: java: command not found  
[ec2-user@ip-172-31-10-114 ~]$
```

i-033b073de698903cc (Ansible Master Node)  
PublicIPs: 18.183.152.100 PrivateIPs: 172.31.10.114

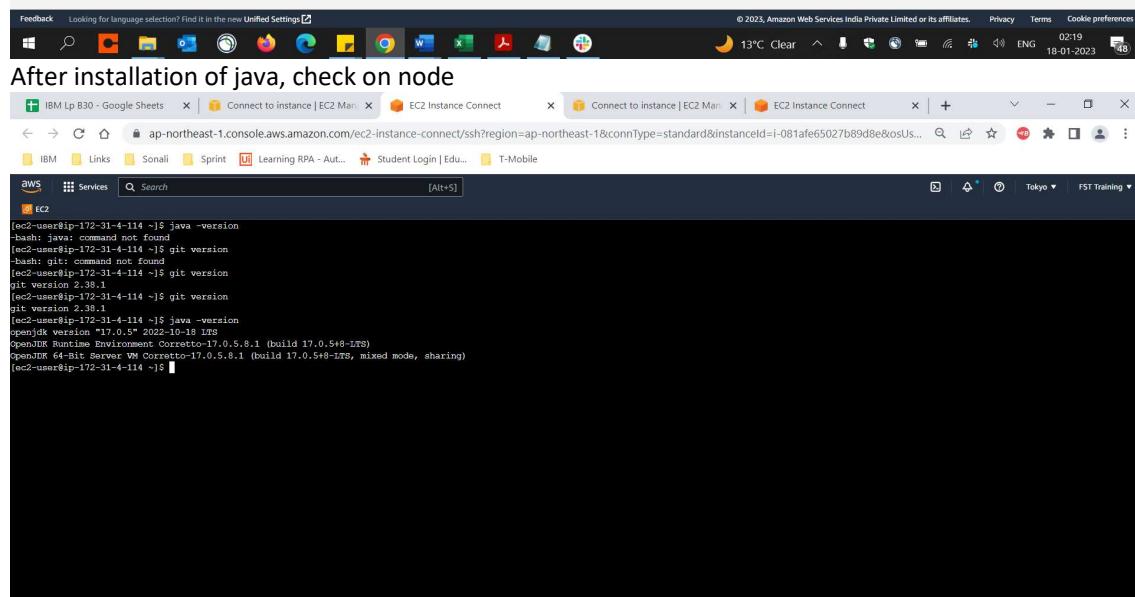
```
[ec2-user@ip-172-31-4-114 ~]$ java -version  
bash: java: command not found  
[ec2-user@ip-172-31-4-114 ~]$
```

i-081afe65027b89d8e (Ansible Slave Node)  
PublicIPs: 52.194.236.177 PrivateIPs: 172.31.4.114

```
[ec2-user@ip-172-31-4-114 ~]$ ansible all -m yum -b -a "name=java"
```

On Master install java = \$ansible all -m yum -b -a "name=java"

After installation of java, check



i-081afe65027b89d8e (Ansible Slave Node)

