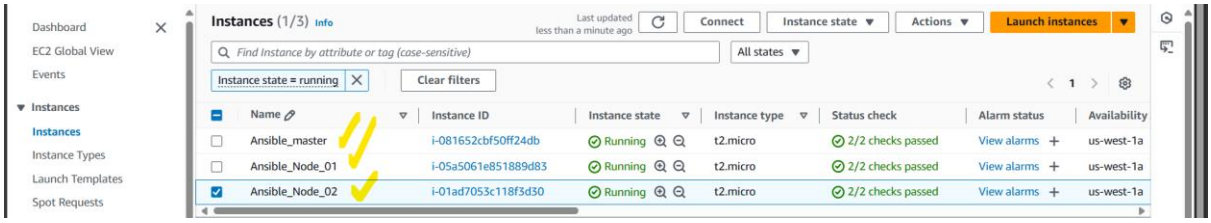
1) Setup one master and two worker nodes in ansible.

Based on the task first I want to launch three instances.

so here see three instance's with name's.



Now we have to connect the Ansible_master server and there we need to install Ansible.

- Before installing the ansible I am checking the prerequisite python is available or not.
- If in case python is not available we need to install python.
- We need to update the server.

```
ubuntu@ip-172-31-20-181:~$ python3 --version
Python 3.12.3
ubuntu@ip-172-31-20-181:~$ sudo apt-get update
Hit:1 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:6 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:9 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:10 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:11 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:12 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:13 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [615 kB]
Get:14 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [148 kB]
Get:15 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [114 kB]
Get:16 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [10.4 kB]
Get:17 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [710 kB]
Get:18 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [211 kB]
Get:19 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [305 kB]
Get:20 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [19.9 kB]
Get:21 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [413 kB]
Get:22 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [79.1 kB]
```

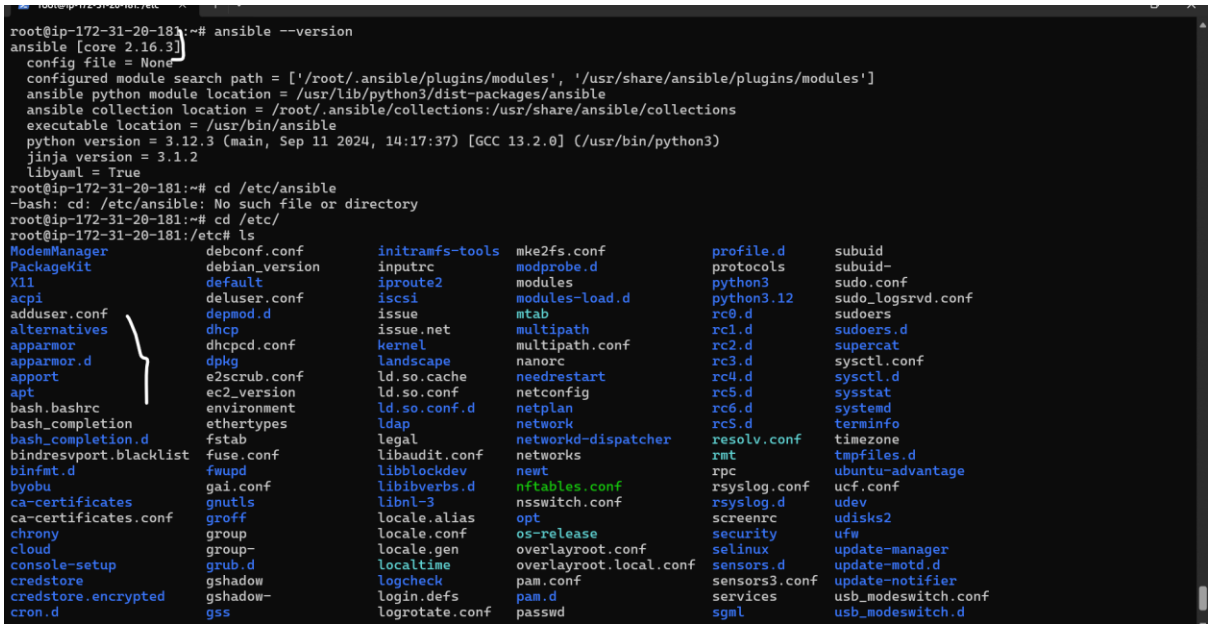
Now we are good to install the ansible.

CMD: sudo apt install ansible ---- to install ansible

```
ubuntu@ip-172-31-20-181:~$ sudo apt install ansible
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ansible-core python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile python3-ntlm-auth
  python3-packaging python3-passlib python3-requests-ntlm python3-resolvelib python3-selinux python3-simplejson python3-winrm
  python3-xmltodict
Suggested packages:
  cowsay sshpass python3-trio python3-aioquic python3-h2 python3-httpx python3-httpcore python-lockfile-doc
The following NEW packages will be installed:
  ansible ansible-core python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile
  python3-ntlm-auth python3-packaging python3-passlib python3-requests-ntlm python3-resolvelib python3-selinux python3-simplejson
  python3-winrm python3-xmltodict
0 upgraded, 17 newly installed, 0 to remove and 29 not upgraded.
Need to get 19.6 MB of archives.
After this operation, 315 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 python3-packaging all 24.0-1 [41.1 kB]
Get:2 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-resolvelib all 1.0.1-1 [25.7 kB]
Get:3 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 python3-dnspython all 2.6.1-1ubuntu1 [163 kB]
Get:4 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 ansible-core all 2.16.3-0ubuntu2 [1280 kB]
Get:5 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 ansible all 9.2.0+dfsg-0ubuntu5 [16.4 MB]
Get:6 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 python3-argcomplete all 3.1.4-1ubuntu0.1 [33.8 kB]
Get:7 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 python3-jmespath all 1.0.1-1 [21.3 kB]
Get:8 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-kerberos amd64 1.1.14-3.1build9 [21.2 kB]
Get:9 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-lockfile all 1:0.12.2-3 [13.7 kB]
Get:10 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 python3-simplejson amd64 3.19.2-1build2 [54.5 kB]
Get:11 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-libcloud all 3.4.1-5 [751 kB]
Get:12 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-ntlm-auth all 1.5.0-1 [21.3 kB]
Get:13 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-requests-ntlm all 1.1.0-3 [6308 B]
Get:14 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-selinux amd64 3.5-2ubuntu2 [165 kB]
Get:15 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 python3-xmltodict all 0.13.0-1 [13.4 kB]
Get:16 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-winrm all 0.4.3-2 [31.9 kB]
Get:17 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 python3-passlib all 1.7.4-4 [476 kB]
Fetched 19.6 MB in 3s (7420 kB/s)
Selecting previously unselected package python3-packaging.
(Reading database ... 67836 files and directories currently installed.)
```

While checking the version I am not able see the configuration file .

So I went to etc dir I check is there any directory.

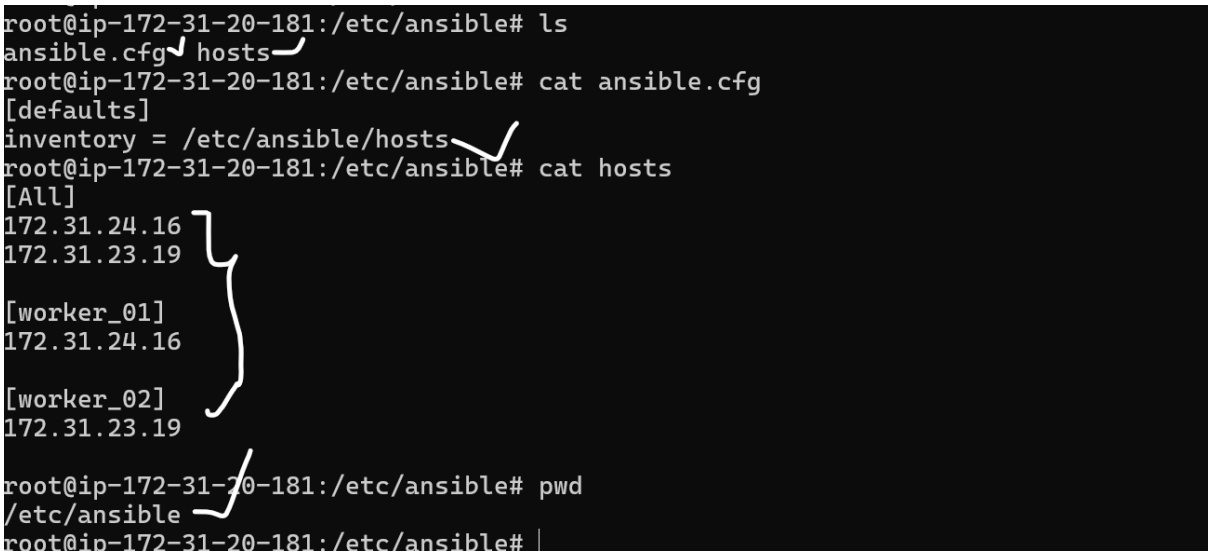


```
root@ip-172-31-20-181:~# ansible --version
ansible [core 2.16.3]
  config file = None
  configured module search path = ['/root/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  ansible collection location = /root/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/bin/ansible
  python version = 3.12.3 (main, Sep 11 2024, 14:17:37) [GCC 13.2.0] (/usr/bin/python3)
  jinja version = 3.1.2
  libyaml = True
root@ip-172-31-20-181:~# cd /etc/ansible
-bash: cd: /etc/ansible: No such file or directory
root@ip-172-31-20-181:~# cd /etc/
root@ip-172-31-20-181:/etc# ls
ModemManager            debconf.conf         initramfs-tools  mke2fs.conf            profile.d      subuid
PackageKit              debian_version       inputrc          modprobe.d             protocols      subuid-
X11                     default              iproute2         modules                python3        sudo.conf
acpi                    deluser.conf         iscsi            modules-load.d         python3.12     sudo_logsrvd.conf
adduser.conf            depmod.d             issue            mtab                   rc0.d          sudoers
alternatives            dhcp                 issue.net        multipath              rc1.d          sudoers.d
apparmor                dhcpcd.conf          kernel           multipath.conf         rc2.d          supercat
apparmor.d              dpkg                 landscape        nanorc                 rc3.d          sysctl.conf
apport                  e2scrub.conf         ld.so.cache      needrestart            rc4.d          sysctl.d
apt                     ec2_version          ld.so.conf       netconfig              rc5.d          sysstat
bash.bashrc             environment          ld.so.conf.d     netplan                rc6.d          systemd
bash_completion         ethertypes           ldap             network                rcS.d          terminfo
bash_completion.d       fstab                legal            networkd-dispatcher    resolv.conf    timezone
bindresvport.blacklist  fuse.conf            libaudit.conf    networks               rmt            tmpfiles.d
binfmt.d                fwupd                libblockdev      newt                   rpc            ubuntu-advantage
byobu                   gai.conf             libibverbs.d     nftables.conf          rsyslog.conf   ucf.conf
ca-certificates         gnutls               libnl-3          nsswitch.conf          rsyslog.d      udev
ca-certificates.conf    groff                locale.alias     opt                    screenrc       udisks2
chrony                  group                locale.conf      os-release             security       ufw
cloud                   group-               locale.gen       overlayroot.conf       selinux        update-manager
console-setup           grub.d               localtime        overlayroot.local.conf sensors.d      update-motd.d
credstore               gshadow              logcheck         pam.conf               sensors3.conf  update-notifier
credstore.encrypted     gshadow-             login.defs       pam.d                  services       usb_modeswitch.conf
cron.d                  gss                  logrotate.conf   passwd                 sgml           usb_modeswitch.d
```

But I am not any dir file related the ansible so I am creating new dir called ansible.

Under the /etc directory I am created ansible dir.

There I am created the hosts and ansible.cfg files.



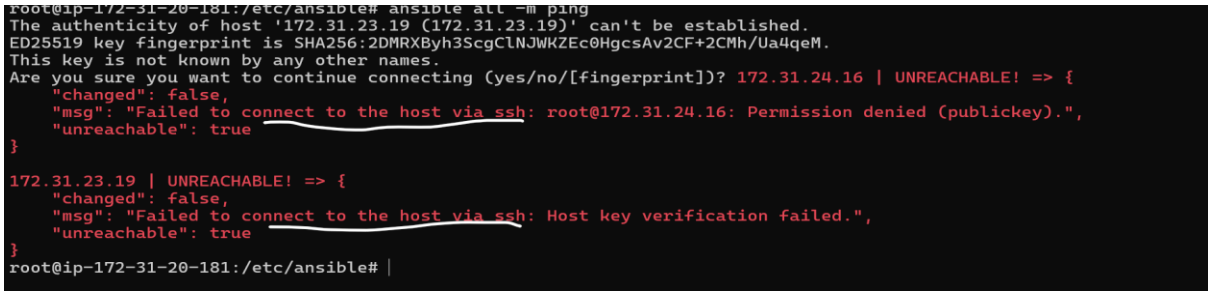
```
root@ip-172-31-20-181:/etc/ansible# ls
ansible.cfg  hosts
root@ip-172-31-20-181:/etc/ansible# cat ansible.cfg
[defaults]
inventory = /etc/ansible/hosts
root@ip-172-31-20-181:/etc/ansible# cat hosts
[All]
172.31.24.16
172.31.23.19

[worker_01]
172.31.24.16

[worker_02]
172.31.23.19

root@ip-172-31-20-181:/etc/ansible# pwd
/etc/ansible
root@ip-172-31-20-181:/etc/ansible#
```

Here the configuration is Done.

once we check using the ping command. To check the connectivity.

Here I am facing with error.

Generally to connect any server we need password to connect. For AWS instance have pem.key for authentication Purpose.



So we have give the passwordless authentication.

ssh-authentication-less for ansible you need to follow below steps:

1) Login to ansible master

2) create a ssh keygen ----- ssh-keygen -t rsa

3)copy public key ---- cat id_rsa.pub

4) Login to ansible worker node

5) create .ssh directory

mkdir .ssh

6) Chnage the ownership to user which is used to login

chmod ec2-user:ec2-user .ssh

7) Change permission to 600

chmod 600 .ssh

8) create a authorized_keys files

touch authorized_keys

9) edit the file and paste the ansible master public key

vi authorized_keys

10) change permissions

chmod 600 authorized_keys

11) DOne !!

Here I am generated the ssh-keygen. Now I want to copy the id_rsa.pub key this key I want to copy and this key transfer to worker node copy the authorised keys.

```
root@AnsibleMaster:~# ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:LzcC82HuWXVYGdZCjzCgwjPPgGeQCy75jF0w1H+Av7Y root@AnsibleMaster
The key's randomart image is:
+---[RSA 3072]----+
| ....o    ..o.+. |
|  + ++.  .   +.=.|
| o +.+O..     +..|
|o . oooB.    o   |
| * .  ooS   o .  |
|. +   o* o . .   |
|     . .= =      |
|      E. * .     |
|        o        |
+----[SHA256]-----+
root@AnsibleMaster:~# cd .ssh
root@AnsibleMaster:~/.ssh# ls
authorized_keys  id_rsa  id_rsa.pub  known_hosts
root@AnsibleMaster:~/.ssh# cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDL/LaAcIU6bjipl92RTkG1zPBMUN5c5QL+6beJWAwLliNLTwuja6V7LYnA05Cqxsxi/0Xz6se/Y7jOx
M82/V21AKutPVJnhP/a1RIwxtJVxxr+dh8DUva8o0Sz7LueF4VWFCU3371nlbD59Kw3yAcg3X4BSBKzVRhjtan+JhT5EGL4K7izZWBKkyxPu3yJq46LZi
cKS0ipSvl7rZ5+ON3O/yRBc+CICjnas/uS4NeHUlcjRfYhmRrXX/WPTSvUtAU8i3lxi2GBrZ4OXlX57MtOaQ3pX7k7LXrhBhlFHpL6ne6Idhb/69htMeD
b7Zw3SDc0gM9lA+YSLAMKKejzQjBMfsNTJmvUdSjBN97KMi5udhOorraktvIFskEJ72zjFmbKieljljuEuUuKOoF0KHYGVXMfXAHyYJ9XmIgxNpfN+qvn
dmL6Igx+z355AmUkeAFDSWxd2ZC3TUXirgJG5aNtPZTpMzE++RsT+QjpYAR+yu7VW9UohAdhMAdWi445Y7c= root@AnsibleMaster
root@AnsibleMaster:~/.ssh#
```

Now I want to login in worker node copy.

Here I am login Ansiblenode01 there I am copied the our key.

```
ubuntu@AnsibleNode01:~$ sudo su -
root@AnsibleNode01:~# cd .ssh
root@AnsibleNode01:~/.ssh# ls
authorized_keys
root@AnsibleNode01:~/.ssh# vi authorized_keys
root@AnsibleNode01:~/.ssh#
```

Like this we want to give.

```
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDL/LaAcIU6bjipl92RTkG1zPBMUN5c5QL+6beJWAwLliNLTwuja6V7LYnA05Cqxsxi/0Xz6se/Y7jOxM82/V21A
KutPVJnhP/a1RIwxtJVxxr+dh8DUva8o0Sz7LueF4VWFCU3371nlbD59Kw3yAcg3X4BSBKzVRhjtan+JhT5EGL4K7izZWBKkyxPu3yJq46LZicKS0ipSvl7rZ5+ON
3O/yRBc+CICjnas/uS4NeHUlcjRfYhmRrXX/WPTSvUtAU8i3lxi2GBrZ4OXlX57MtOaQ3pX7k7LXrhBhlFHpL6ne6Idhb/69htMeDb7Zw3SDc0gM9lA+YSLAMKKej
zQjBMfsNTJmvUdSjBN97KMi5udhOorraktvIFskEJ72zjFmbKieljljuEuUuKOoF0KHYGVXMfXAHyYJ9XmIgxNpfN+qvndmL6Igx+z355AmUkeAFDSWxd2ZC3TUXi
rgJG5aNtPZTpMzE++RsT+QjpYAR+yu7VW9UohAdhMAdWi445Y7c= root@AnsibleMaster

no-port-forwarding,no-agent-forwarding,no-X11-forwarding,command="echo 'Please login as the user \"ubuntu\" rather than the u
ser \"root\".';echo;sleep 10;exit 142" ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCENOYuir88tBNp8oA3DlqmrUDfLIzaCR9KhFyXVkzQoUUXVR
jvhQoZDA+eAcTZ7xml/C6qcaVrt72jdGo9g8G3RGPU7bc2hTwm04bfxcqJAPbul8sZy9dF6JxSoN2oyDCtIPvHiVce3wHIXrEriXlMyOoHzM3/ko3XAKaJCRLDjs1
umDIsqjb+1hiCmNwmzOOjrpfa5oFU0VnPvDKa+QjEaK1FSqHKivpsnh7SLbNcnvCiEEUSDwt195D3KMa6M4FhOG66IsBaFDpLsr05rhOfho4c4+C7bJK0stJMlaRw
nLdHuxZHQcoumgY0MulcwW8AnGwuDh59ogfo1EToVuEZ Ncalifornia
~
~
~
~
~
~
~
~
~
```

Do same thing in Ansiblenode02

```
ubuntu@AnsibleNode02:~$ sudo su -
root@AnsibleNode02:~# cd .ssh
root@AnsibleNode02:~/.ssh# ls
authorized_keys
root@AnsibleNode02:~/.ssh# vi authorized_keys
root@AnsibleNode02:~/.ssh# cat authorized_keys
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDL/LaAcIU6bjipl92RTkG1zPBMUN5c5QL+6beJWAwLliNLTwuja6V7LYnA05Cqxsxi/0Xz6se/Y7jOxM82/V21AKutPVJnhP/a1RIwxtJV
xxr+dh8DUva8o0Sz7LueF4VWFCU3371nlbD59Kw3yAcg3X4BSBKzVRhjtan+JhT5EGL4K7izZWBKkyxPu3yJq46LZicKS0ipSvl7rZ5+ON3O/yRBc+CICjnas/uS4NeHUlcjRfYhmRrXX/WP
TSvUtAU8i3lxi2GBrZ4OXlX57MtOaQ3pX7k7LXrhBhlFHpL6ne6Idhb/69htMeDb7Zw3SDc0gM9lA+YSLAMKKejzQjBMfsNTJmvUdSjBN97KMi5udhOorraktvIFskEJ72zjFmbKieljljuE
uUuKOoF0KHYGVXMfXAHyYJ9XmIgxNpfN+qvndmL6Igx+z355AmUkeAFDSWxd2ZC3TUXirgJG5aNtPZTpMzE++RsT+QjpYAR+yu7VW9UohAdhMAdWi445Y7c= root@AnsibleMaster

no-port-forwarding,no-agent-forwarding,no-X11-forwarding,command="echo 'Please login as the user \"ubuntu\" rather than the user \"root\".';echo
;sleep 10;exit 142" ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCENOYuir88tBNp8oA3DlqmrUDfLIzaCR9KhFyXVkzQoUUXVRjvhQoZDA+eAcTZ7xml/C6qcaVrt72jdGo9g8G3
RGPU7bc2hTwm04bfxcqJAPbul8sZy9dF6JxSoN2oyDCtIPvHiVce3wHIXrEriXlMyOoHzM3/ko3XAKaJCRLDjs1umDIsqjb+1hiCmNwmzOOjrpfa5oFU0VnPvDKa+QjEaK1FSqHKivpsnh7S
LbNcnvCiEEUSDwt195D3KMa6M4FhOG66IsBaFDpLsr05rhOfho4c4+C7bJK0stJMlaRwnLdHuxZHQcoumgY0MulcwW8AnGwuDh59ogfo1EToVuEZ Ncalifornia
root@AnsibleNode02:~/.ssh#
```

Now pass wordless authentication is Done.

Now we able to connect two worker nodes from ansibleMaster server.

```
root@AnsibleMaster:~# ansible all -m ping
The authenticity of host '172.31.23.19 (172.31.23.19)' can't be established.
ED25519 key fingerprint is SHA256:2DMRXByh3ScgClNJWKZEc0HgcsAv2CF+2CMh/Ua4qeM.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? 172.31.24.16 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
yes
172.31.23.19 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
root@AnsibleMaster:~#
```

Now the configuration is Done.

2) Execute the adhoc command shared in #dvps-cloud-documents Channel.

CMD: **ansible all -m setup**

The `ansible all -m setup` command gathers detailed system facts from all hosts in the inventory, including both master and worker nodes. It provides information like OS, memory, CPU, network interfaces, and more for each host.

CMD: ansible all -a uptime ---- The command `ansible all -a uptime` runs the `uptime` command on all hosts in the inventory, displaying the system's uptime (how long the system has been running).

```
root@AnsibleMaster:~# ansible all -a uptime
172.31.24.16 | CHANGED | rc=0 >>
 12:16:59 up 4 min,  1 user,  load average: 0.01, 0.07, 0.04
172.31.23.19 | CHANGED | rc=0 >>
 12:16:59 up 4 min,  1 user,  load average: 0.01, 0.04, 0.01
root@AnsibleMaster:~#
```

CMD: ansible all -a "free -m" ---- runs the `free -m` command on all hosts in the inventory, displaying memory usage in megabytes on each host.

```
root@AnsibleMaster:~# ansible all -a "free -m"
172.31.24.16 | CHANGED | rc=0 >>
               total        used        free      shared  buff/cache   available
Mem:             957         333         298           0         479         623
Swap:              0           0           0
172.31.23.19 | CHANGED | rc=0 >>
               total        used        free      shared  buff/cache   available
Mem:             957         325         424           0         359         632
Swap:              0           0           0
root@AnsibleMaster:~#
```

Here installed option not working so this given some option to use.

```
root@AnsibleMaster:~# ansible all -m apt -a "name=apache2 state=installed"
172.31.23.19 | FAILED! => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "msg": "value of state must be one of: absent, build-dep, fixed, latest, present, got: installed"
}
172.31.24.16 | FAILED! => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "msg": "value of state must be one of: absent, build-dep, fixed, latest, present, got: installed"
}
```

CMD: **ansible all -m apt -a "name=apache2 state=latest"** --- installs the apache2 package to the latest version on all hosts in the inventory using the apt package manager.

```
root@AnsibleMaster:~# ansible all -m apt -a "name=apache2 state=latest"
172.31.24.16 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "cache_update_time": 1727426509,
    "cache_updated": false,
    "changed": true,
    "stderr": "",
    "stderr_lines": [],
    "stdout": "Reading package lists...\nBuilding dependency tree...\nReading state information...\nThe follow
ing additional packages will be installed:\n  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-db
d-sqlite3\n  libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert\nSuggested packages:\n  apache2-doc apache2-
suexec-pristine | apache2-suexec-custom www-browser\nThe following NEW packages will be installed:\n  apache2
apache2-bin apache2-data apache2-utils libapr1t64\n  libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 l
iblua5.4-0 ssl-cert\n0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.\nNeed to get 2084 kB of a
rchives.\nAfter this operation, 8094 kB of additional disk space will be used.\nGet:1 http://us-west-1.ec2.arc
hive.ubuntu.com/ubuntu noble-updates/main amd64 libapr1t64 amd64 1.7.2-3.1ubuntu0.1 [108 kB]\nGet:2 http://us-
west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1t64 amd64 1.6.3-1.1ubuntu7 [91.9 kB]\nGet:3 h
ttp://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.3-1.1ubuntu7
[11.2 kB]\nGet:4 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-ldap amd64 1.6.3-
1.1ubuntu7 [9116 B]\nGet:5 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 liblua5.4-0 amd64 5
.4.6-3build2 [166 kB]\nGet:6 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-b
in amd64 2.4.58-1ubuntu8.4 [1329 kB]\nGet:7 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main
amd64 apache2-data all 2.4.58-1ubuntu8.4 [163 kB]\nGet:8 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-
updates/main amd64 apache2-utils amd64 2.4.58-1ubuntu8.4 [97.1 kB]\nGet:9 http://us-west-1.ec2.archive.ubuntu.
com/ubuntu noble-updates/main amd64 apache2 amd64 2.4.58-1ubuntu8.4 [90.2 kB]\nGet:10 http://us-west-1.ec2.arc
hive.ubuntu.com/ubuntu noble/main amd64 ssl-cert all 1.1.2ubuntu1 [17.8 kB]\nPreconfiguring packages ...\nFetc
hed 2084 kB in 0s (14.5 MB/s)\nSelecting previously unselected package libapr1t64:amd64.\r\n(Reading database
```

Now we have to check the server apache2 is installed or not and check the status manually.

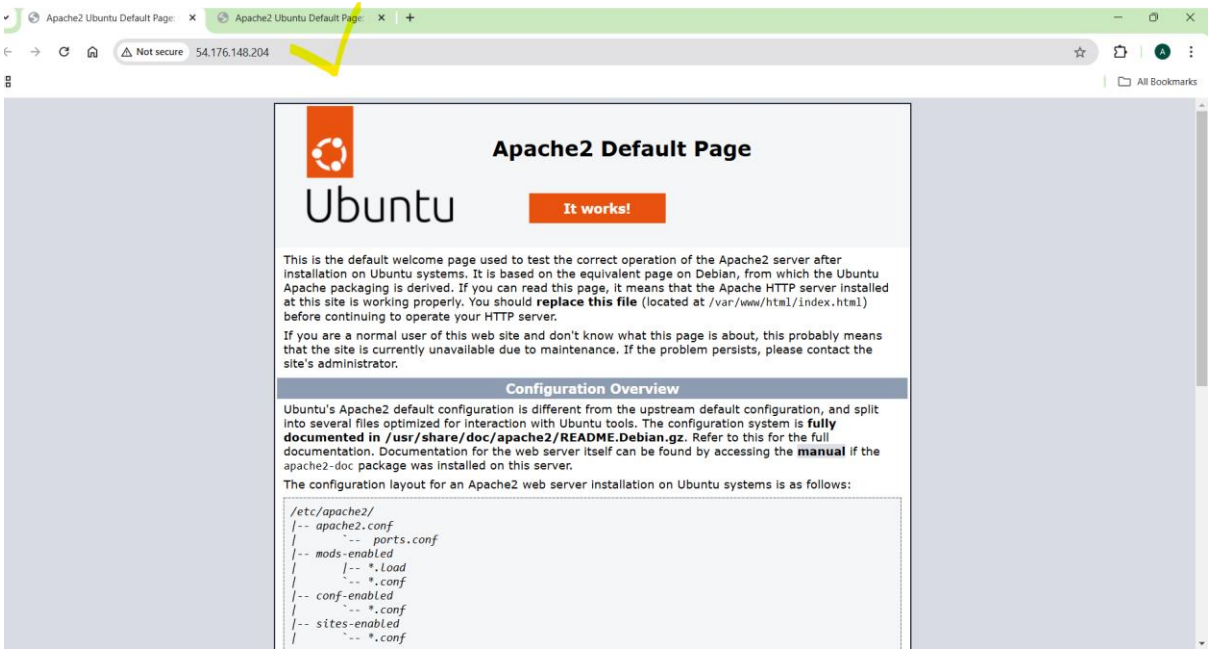
This is node01 here our apache2 status running.

```
ubuntu@AnsibleNode01:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
     Active: active (running) since Tue 2024-11-05 12:59:35 UTC; 13min ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 2615 (apache2)
      Tasks: 55 (limit: 1130)
     Memory: 5.3M (peak: 5.5M)
        CPU: 70ms
     CGroup: /system.slice/apache2.service
             ├─2615 /usr/sbin/apache2 -k start
             ├─2618 /usr/sbin/apache2 -k start
             └─2619 /usr/sbin/apache2 -k start

Nov 05 12:59:35 AnsibleNode01 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Nov 05 12:59:35 AnsibleNode01 systemd[1]: Started apache2.service - The Apache HTTP Server.
ubuntu@AnsibleNode01:~$
```

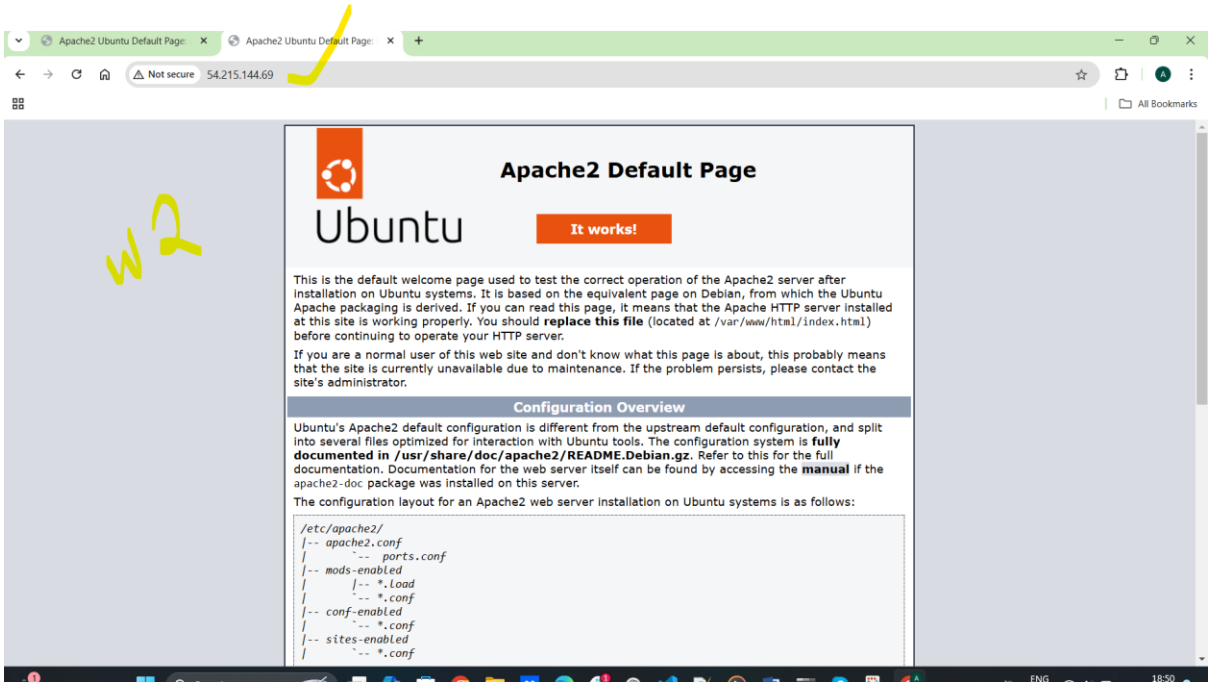
This is node02 here our apache2 status running.

```
ubuntu@AnsibleNode02:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
     Active: active (running) since Tue 2024-11-05 12:59:35 UTC; 13min ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 2258 (apache2)
      Tasks: 55 (limit: 1130)
     Memory: 5.3M (peak: 5.5M)
        CPU: 70ms
     CGroup: /system.slice/apache2.service
             ├─2258 /usr/sbin/apache2 -k start
             ├─2261 /usr/sbin/apache2 -k start
             └─2262 /usr/sbin/apache2 -k start

Nov 05 12:59:35 AnsibleNode02 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Nov 05 12:59:35 AnsibleNode02 systemd[1]: Started apache2.service - The Apache HTTP Server.
ubuntu@AnsibleNode02:~$
```

This is node01 ip.



This is node02 ip.



CMD: ansible all -m shell -a "cat /etc/passwd | grep -i ubuntu" -b -u ubuntu --private-key /home/ubuntu/Ncalifornia.pem

The command uses Ansible to run a shell command that searches for "ubuntu" in the `/etc/passwd` file on all servers as the `ubuntu` user with elevated privileges using a specified private key.

```
root@AnsibleMaster:~# ansible all -m shell -a "cat /etc/passwd | grep -i ubuntu" -b -u ubuntu --private-key /h
ome/ubuntu/Ncalifornia.pem
172.31.24.16 | CHANGED | rc=0 >>
ubuntu:x:1000:1000:Ubuntu:/home/ubuntu:/bin/bash
172.31.23.19 | CHANGED | rc=0 >>
ubuntu:x:1000:1000:Ubuntu:/home/ubuntu:/bin/bash
root@AnsibleMaster:~#
```

To connect to AWS instances as the ubuntu user, we use a PEM key instead of a password since AWS automatically sets up this user without a password. The command runs an Ansible shell module to check if the ubuntu user exists by searching /etc/passwd. We specify the PEM key (Ncalifornia.pem) for secure login and include the necessary options for the Ansible command to execute on all targeted instances.

To transfer pemkey local to Ansible master.

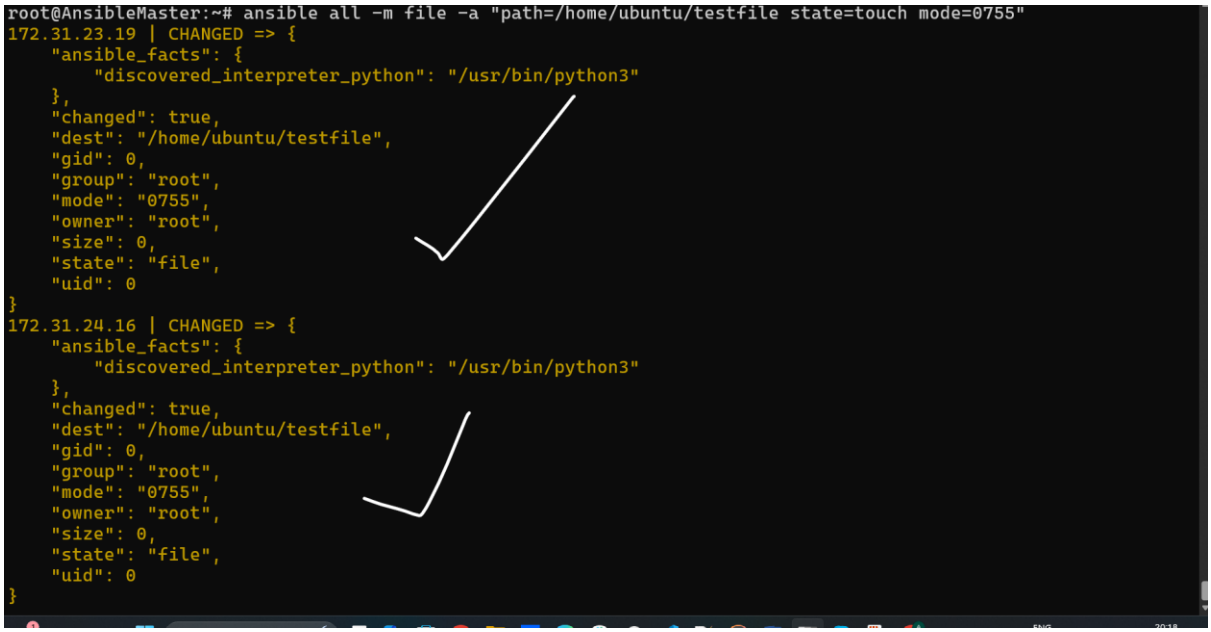
```
PS C:\Users\ramee\downloads> scp -i .\Ncalifornia.pem .\Ncalifornia.pem ubuntu@13.57.194.72:~
Ncalifornia.pem                                                    100% 1674     7.0KB/s   00:00
PS C:\Users\ramee\downloads>
```

Now we need to change the permissions of file.

```
ubuntu@AnsibleMaster:~$ ls
Ncalifornia.pem
ubuntu@AnsibleMaster:~$ pwd
/home/ubuntu
ubuntu@AnsibleMaster:~$ chmod 600 Ncalifornia.pem
```

CMD: ansible all -m file -a "path=/home/ubuntu/testfile state=touch mode=0755"

This Ansible command creates an empty file called `testfile` at `/home/ubuntu/` on all targeted hosts if it doesn't already exist. It also sets the file's permissions to `0755`, allowing the owner full access and read/execute permissions for others.



Now we have to check two worker node's.

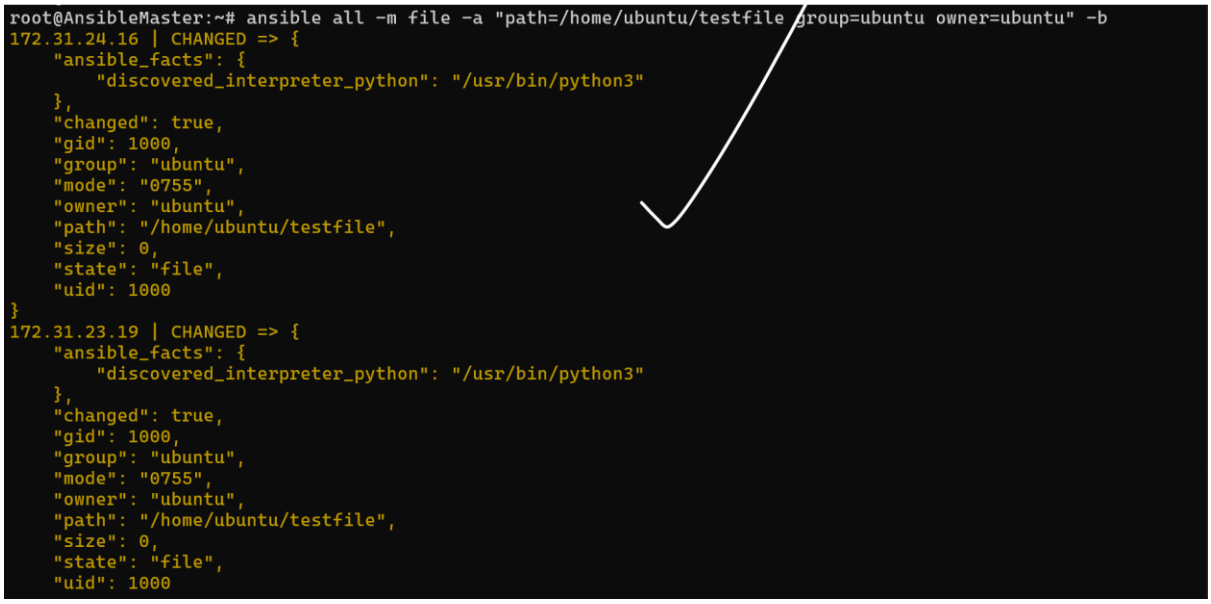
File created with whatever we given permission.

Done.

Now I am changing the file permissions of testfile.

CMD: ansible all -m file -a "path=/home/ubuntu/testfile group=ubuntu owner=ubuntu" -b

This command uses Ansible to set both the owner and group of the file `/home/ubuntu/testfile` to `ubuntu` on all targeted nodes. The `-b` option is used to run this command with sudo privileges, ensuring the permissions are modified successfully.



Done.