Project:

I - Set up Ansible Controller (Ubuntu) and Four clients (2 Linux Amazon & 2 Ubuntu).

II - Verify the setup by using ad-hoc cmd PING module.

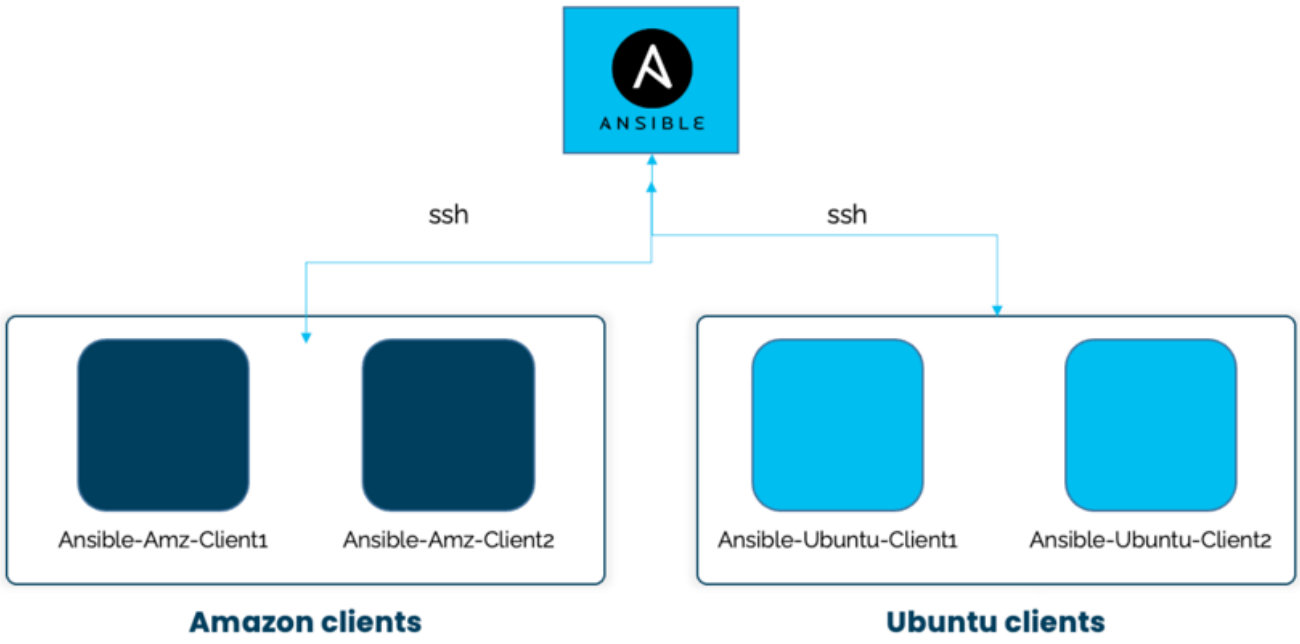
III -Write a playbook with 3 plays :

Play1 : deploy an Apache webserver with a message of your choice on the Ubuntu Clients.

Play2 : Install Git on all Ubuntu Client

Play3 : Write a task using DEBUG module to display my name on All hosts

Diagram



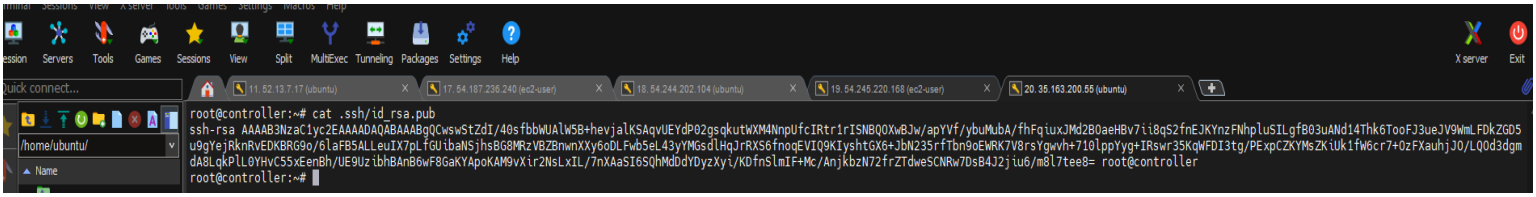
Prerequisites

- AWS Account
- **Ansible Controller**: This EC2 instance(Ubuntu 24.04)
- **Ansible Worker**: Four EC2 instances (2 Amazon Linux 2023 and 2 Ubuntu24.04).
- **2 keys pairs** : Ansible_controller_kp ; Ansible_worker_kp

I - Set up Ansible Controller (Ubuntu) and Four clients (2 Linux Amazon & 2 Ubuntu).

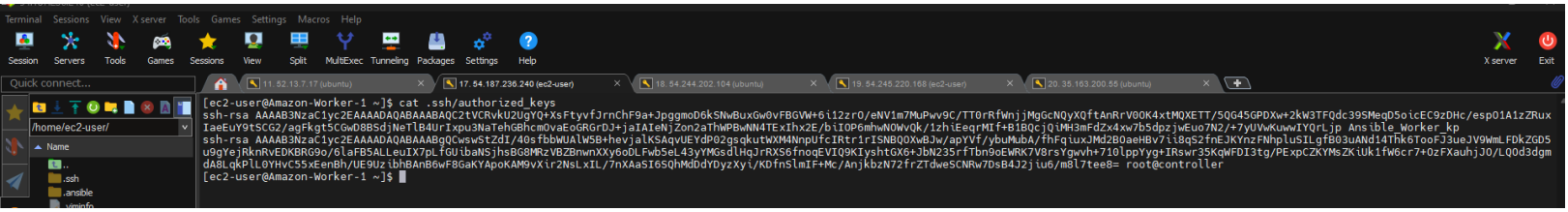
1-Screnshoots of the kep pair generate (pub key) on the controller account

***This key will be shared with all the workers**

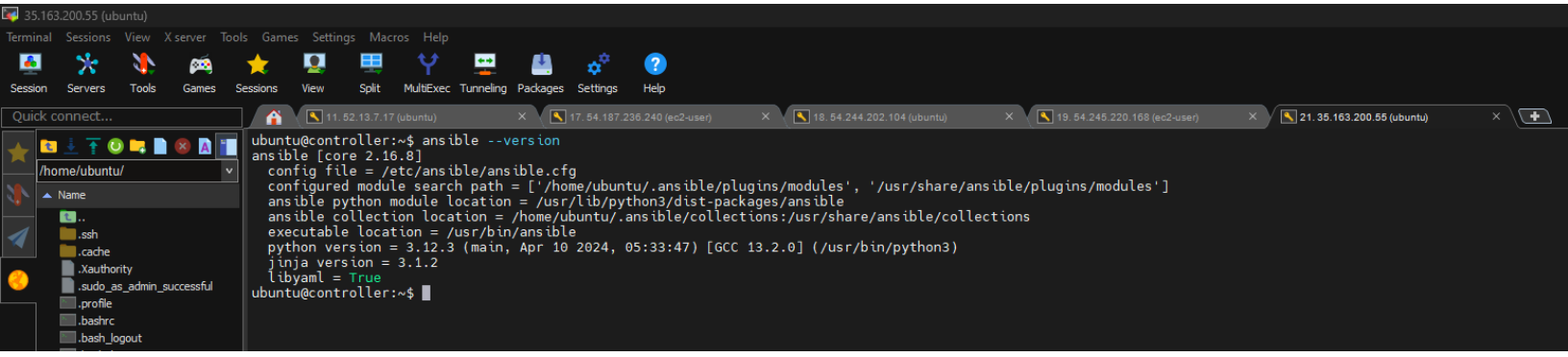


2-Screenshot of the worker's file .ssh/authorized_key showing the controller keypair

***All the workers .ssh/authorized_key file should have the controller pub key**

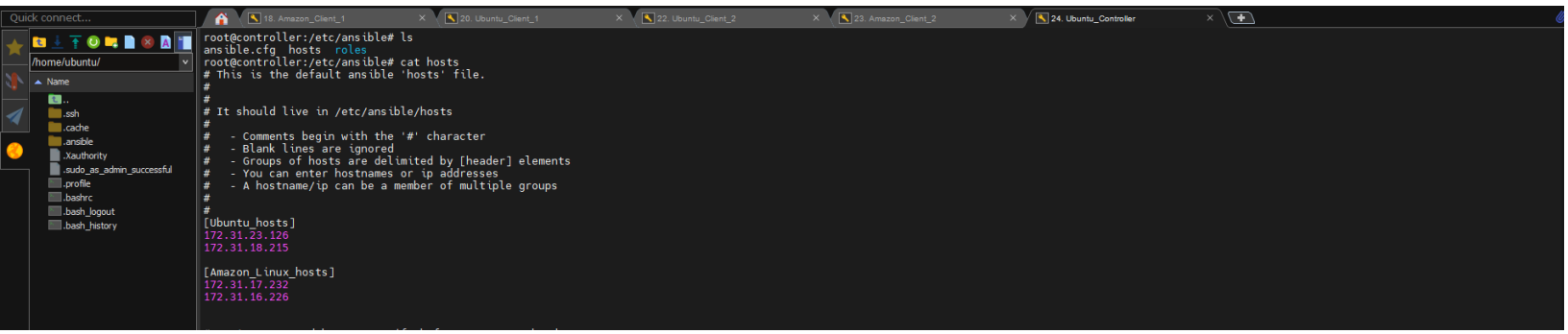


3-Screenshot showing Ansible installed on the controller



4- screenshot showing the inventory file on the controller.

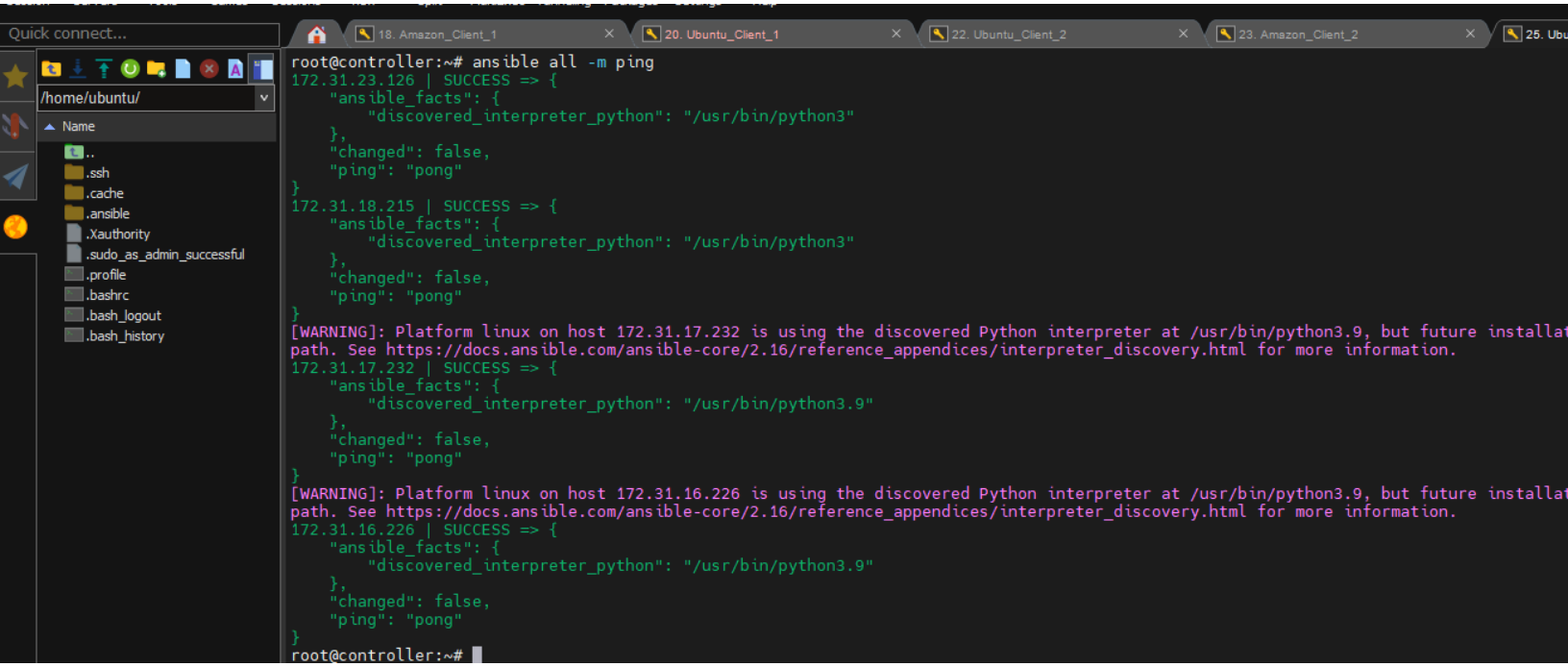
***You can either create the inventory file in INI or YAML format. Here we use INI**



***The inventory file is named hosts and located under the ansible configuration directory : etc/ansible**

II - Verify the setup by using ad-hoc cmd PING.

Screenshot of the ping showing all the clients successfully ping by Controller

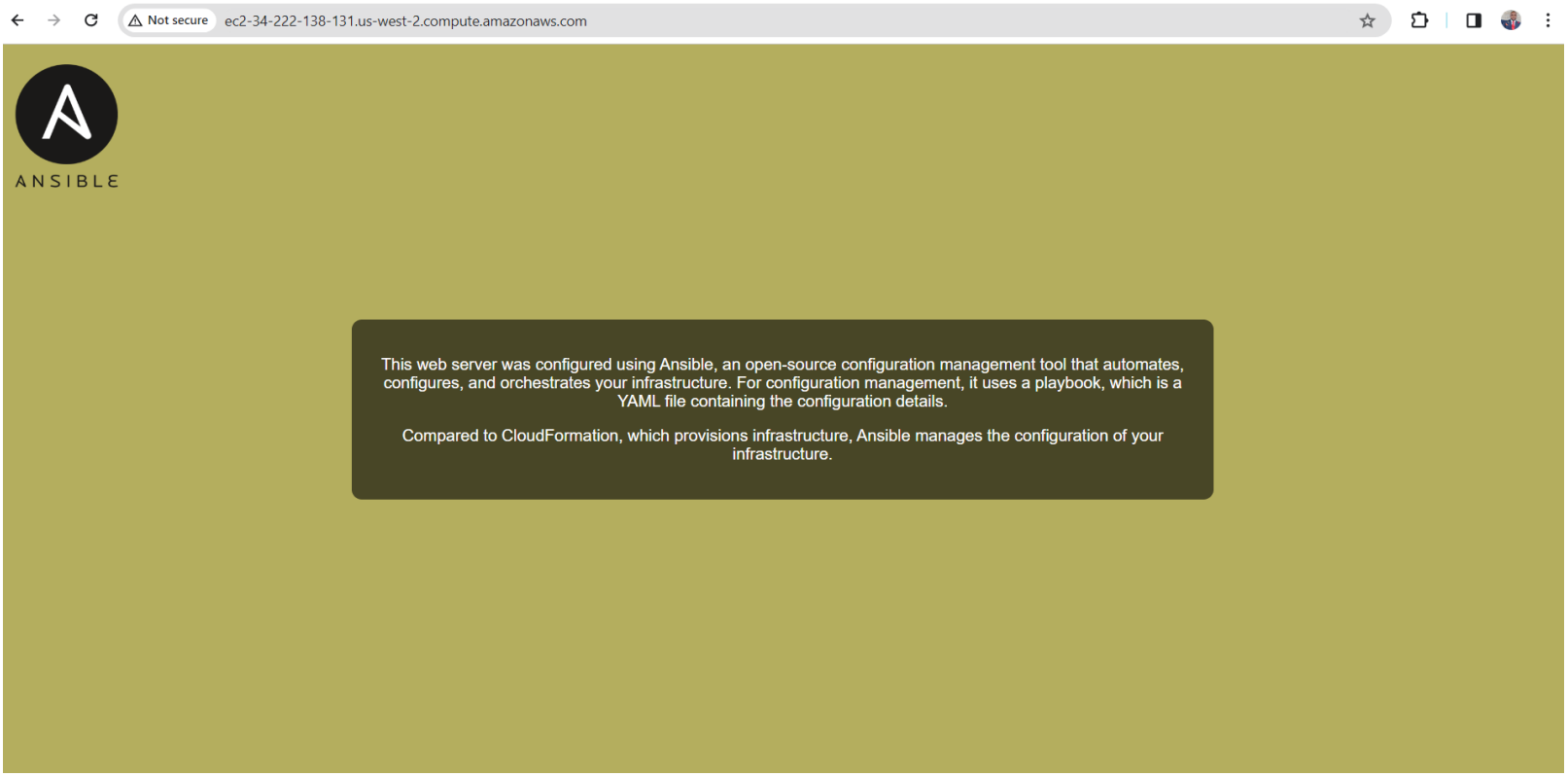


III -Screenshot of both the controller & clients the playbook with the 3 plays :

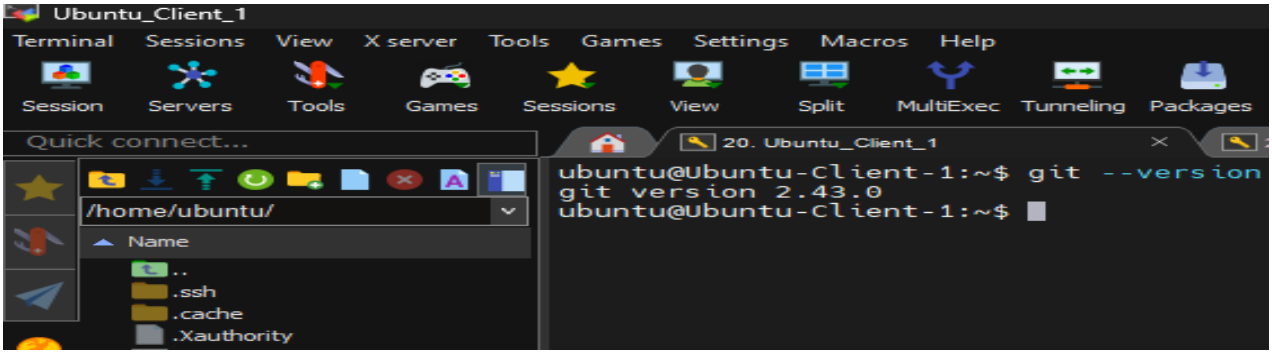
- **Controller running the playbook**

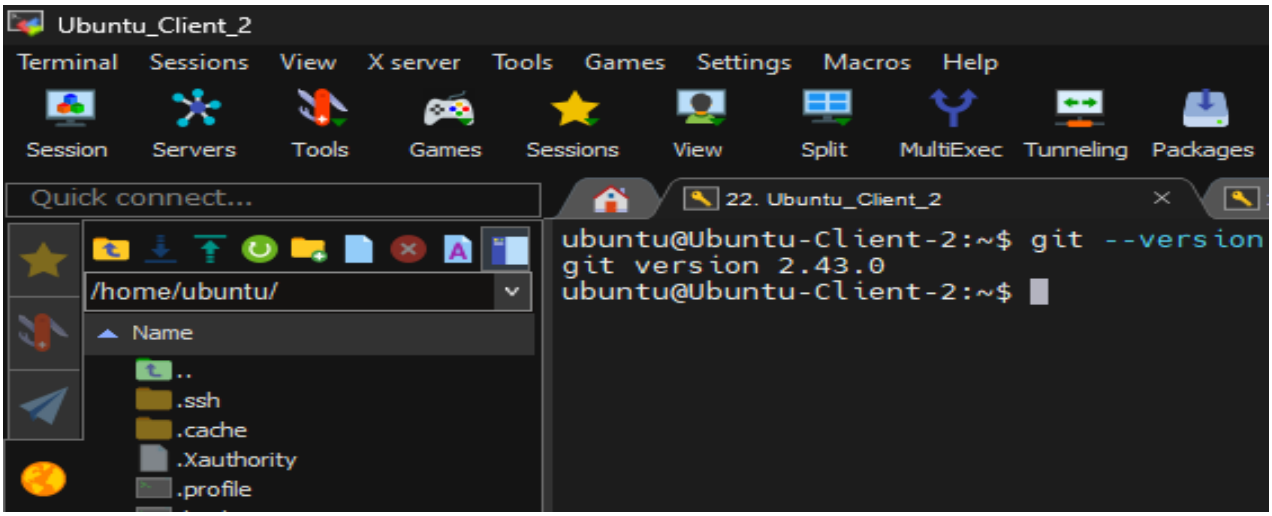
```
ubuntu@controller:~$ sudo -i
root@controller:~# cd web/
root@controller:~/web# ls
Ansible_Apache_playbook.yml  index.html  variables.yml
root@controller:~/web# vi Ansible_Apache_playbook.yml
root@controller:~/web# rm Ansible_Apache_playbook.yml
root@controller:~/web# vi Ansible_Apache_playbook.yml
root@controller:~/web# ansible-playbook Ansible_Apache_playbook.yml

PLAY [Deploy Apache to Ubuntu Webserver] ***************************************************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************************************************************
ok: [172.31.23.126]
ok: [172.31.18.215]

TASK [Update the apt package list] *********************************************************************************************************************************************************************
changed: [172.31.23.126]
changed: [172.31.18.215]

TASK [Update all packages to their latest version] *****************************************************************************************************************************************************
changed: [172.31.23.126]
changed: [172.31.18.215]

TASK [Install Apache HTTP Server] **********************************************************************************************************************************************************************
changed: [172.31.23.126]
changed: [172.31.18.215]

TASK [Start Apache service if not started] *************************************************************************************************************************************************************
ok: [172.31.23.126]
ok: [172.31.18.215]

TASK [Enable Apache to start on boot] ******************************************************************************************************************************************************************
ok: [172.31.23.126]
ok: [172.31.18.215]

TASK [Copy index file to the clients] ******************************************************************************************************************************************************************
changed: [172.31.23.126]
changed: [172.31.18.215]

PLAY [Install Git on all Ubuntu webservers] ************************************************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************************************************************
ok: [172.31.23.126]
ok: [172.31.18.215]

TASK [Update the apt package list] *********************************************************************************************************************************************************************
changed: [172.31.23.126]
changed: [172.31.18.215]

TASK [Install Git] *************************************************************************************************************************************************************************************
ok: [172.31.18.215]
ok: [172.31.23.126]

PLAY [Display my name on all hosts] ********************************************************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************************************************************
ok: [172.31.23.126]
ok: [172.31.18.215]

[WARNING]: Platform linux on host 172.31.16.226 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another Python interpreter could change the meaning of that
path. See https://docs.ansible.com/ansible-core/2.16/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.16.226]
[WARNING]: Platform linux on host 172.31.17.232 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another Python interpreter could change the meaning of that
path. See https://docs.ansible.com/ansible-core/2.16/reference_appendices/interpreter_discovery.html for more information.
ok: [172.31.17.232]

TASK [Print user name on each server] ******************************************************************************************************************************************************************
ok: [172.31.23.126] => {
    "msg": [
        "Christian Logotse",
        "Nothing is impossible!",
        "Trust the process!"
    ]
}
ok: [172.31.18.215] => {
    "msg": [
        "Christian Logotse",
        "Nothing is impossible!",
        "Trust the process!"
    ]
}
ok: [172.31.17.232] => {
    "msg": [
        "Christian Logotse",
        "Nothing is impossible!",
        "Trust the process!"
    ]
}
ok: [172.31.16.226] => {
    "msg": [
        "Christian Logotse",
        "Nothing is impossible!",
        "Trust the process!"
    ]
}

PLAY RECAP *********************************************************************************************************************************************************************************************
172.31.16.226              : ok=2    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.17.232              : ok=2    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.18.215              : ok=12   changed=5    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
172.31.23.126              : ok=12   changed=5    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

- **Screenshot of the output of Play1 on all the Ubuntu-Clients**



Screenshot of the outcome of Play2 on all the ubuntu Server





Screenshot of the outcome of Play3

```
PLAY [Display my name on all hosts] ********************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************************
ok: [172.31.23.126]
ok: [172.31.18.215]
[WARNING]: Platform linux on host 172.31.16.226 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.16/reference_appendices/interpreter_discovery.html for more
information.
ok: [172.31.16.226]
[WARNING]: Platform linux on host 172.31.17.232 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.16/reference_appendices/interpreter_discovery.html for more
information.
ok: [172.31.17.232]

TASK [Print user name on each server] ******************************************************************************************************************************
ok: [172.31.23.126] => {
    "msg": [
        "Christian Logotse",
        "Nothing is impossible!",
        "Trust the process!"
    ]
}
ok: [172.31.18.215] => {
    "msg": [
        "Christian Logotse",
        "Nothing is impossible!",
        "Trust the process!"
    ]
}
ok: [172.31.17.232] => {
    "msg": [
        "Christian Logotse",
        "Nothing is impossible!",
        "Trust the process!"
    ]
}
ok: [172.31.16.226] => {
    "msg": [
        "Christian Logotse",
        "Nothing is impossible!",
        "Trust the process!"
```