ANSIBLE CASE STUDY

You are a Devops Engineer and the organization you are working on needs to set up two configuration management server groups. One for Apache another for Nginx. Being a Devops Engineer it is your task to deal with this configuration management issue.

Let us see the tasks that you need to perform using Ansible.

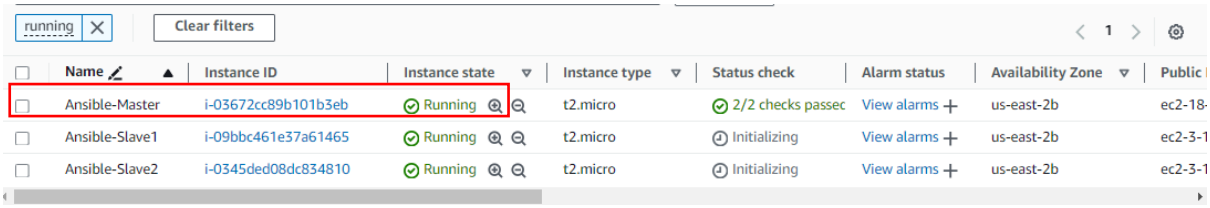
1. Create two Server Groups. One for Apache and another for Nginx.
2. Push two html files with their server information.

Make sure that you don't forget to start the services once the installation is done. Also send post installation messages for both the server groups.

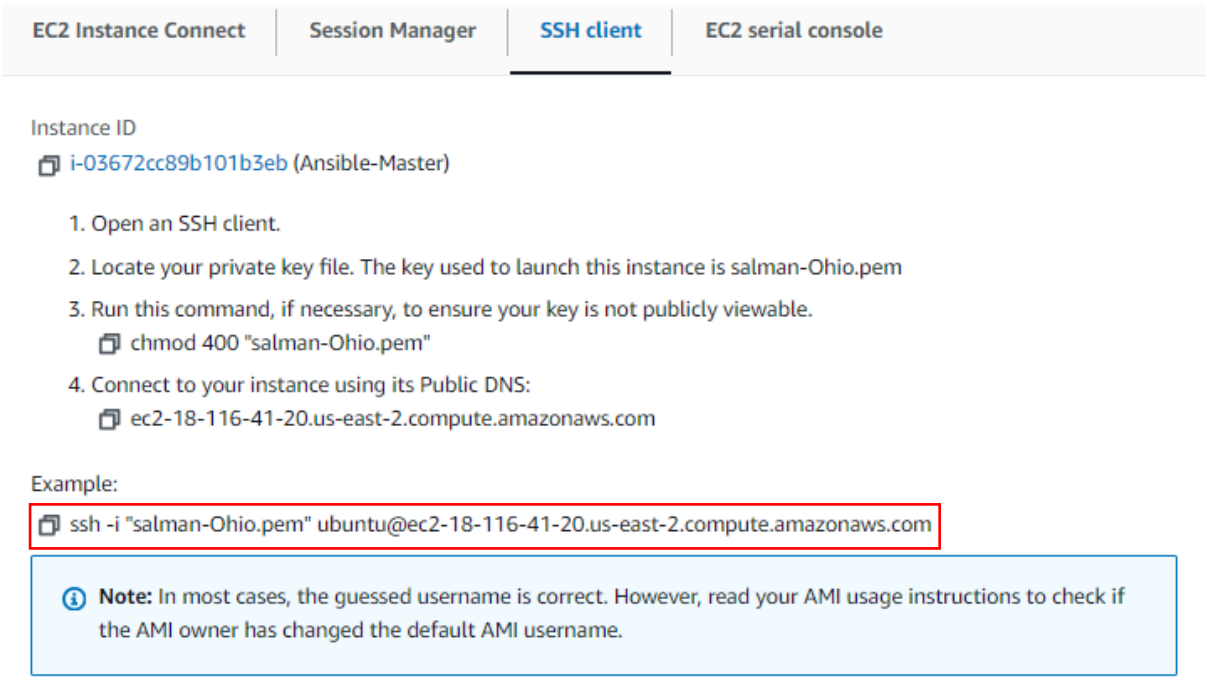
Using Ansible Roles accomplish the above the tasks.

Also, once the Apache server configuration is done you need to install Java on that server group using ansible role in a playbook.

Create 3 Instances and named it as Master, slave1 and slave2, Go to the **"Master" machine** & **click** on **"Connect"** in **"EC2 Instances".**



Copy SSH



Using Command Prompt to connect instances, I save keypair at Download Path

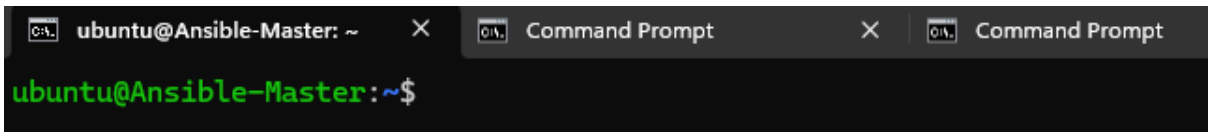
```
C:\Users\shaik\Downloads>ssh -i "salman-Ohio.pem" ubuntu@ec2-18-116-41-20.us-east-2.compute.amazonaws.com
The authenticity of host 'ec2-18-116-41-20.us-east-2.compute.amazonaws.com (18.116.41.20)' can't be established.
ED25519 key fingerprint is SHA256:d8nhBzuypsOmCax3DwL/+31/iD6H0s6HLCsvlleAN2I.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-18-116-41-20.us-east-2.compute.amazonaws.com' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.4 LTS (GNU/Linux 6.5.0-1022-aws x86_64)
```

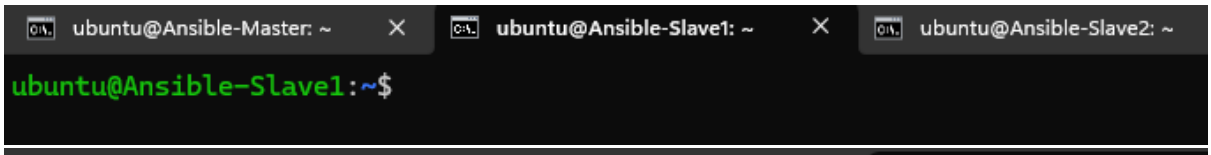
Changing Hostname

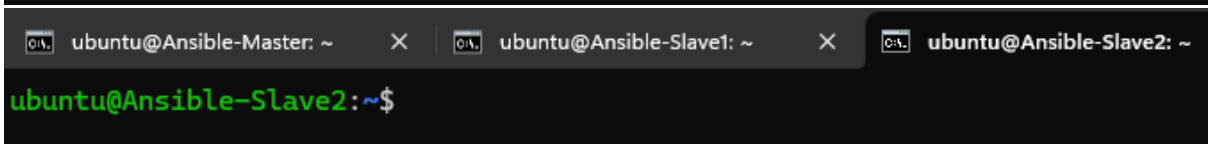
```
ubuntu@ip-172-31-22-155:~$ sudo hostnamectl set-hostname Ansible-Master
ubuntu@ip-172-31-22-155:~$ exit
logout
Connection to ec2-18-116-41-20.us-east-2.compute.amazonaws.com closed.

C:\Users\shaik\Downloads>ssh -i "salman-Ohio.pem" ubuntu@ec2-18-116-41-20.us-east-2.compute.amazonaws.com
Welcome to Ubuntu 22.04.4 LTS (GNU/Linux 6.5.0-1022-aws x86_64)
```

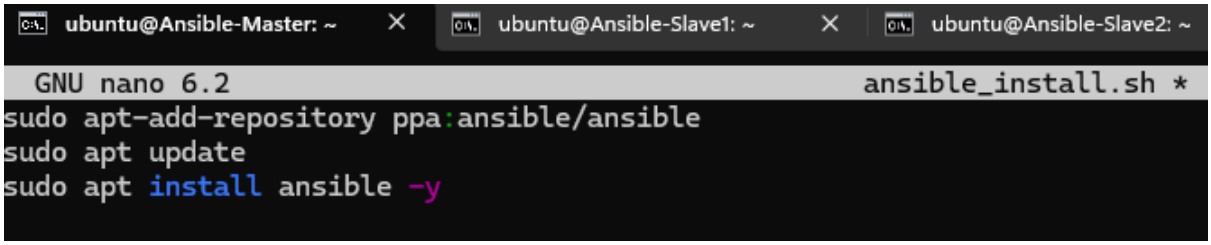
Changed Hostname for 3 instances

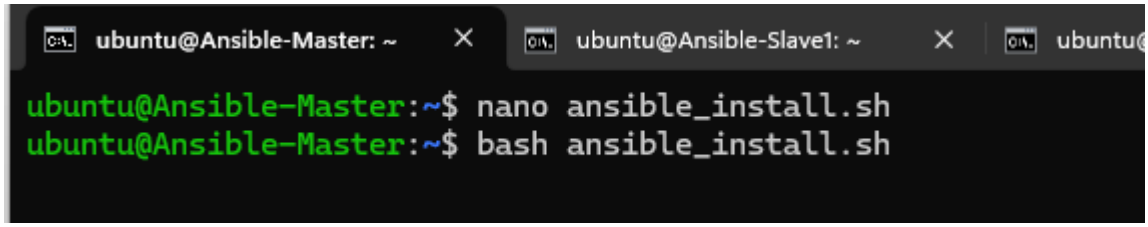




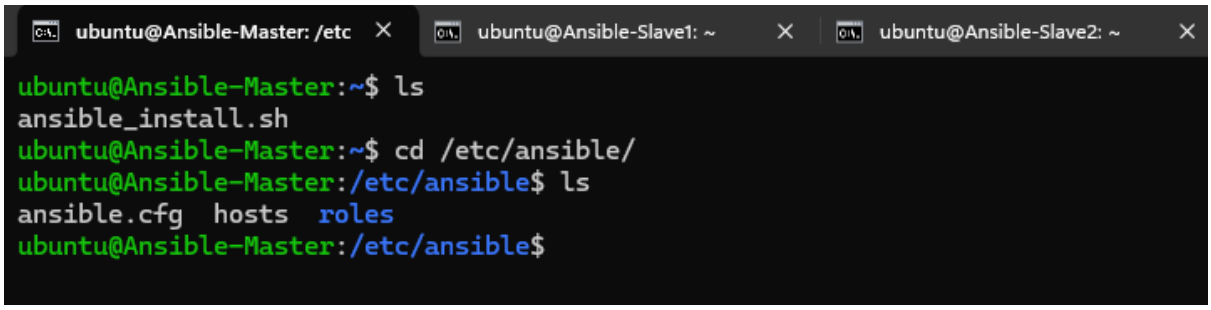


Installing Ansible in Master

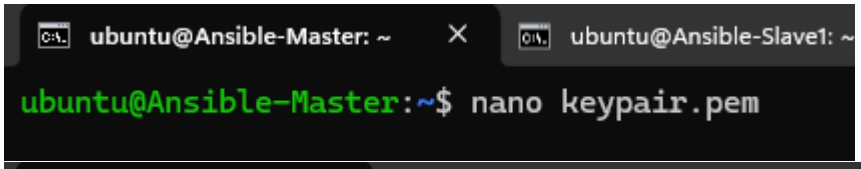


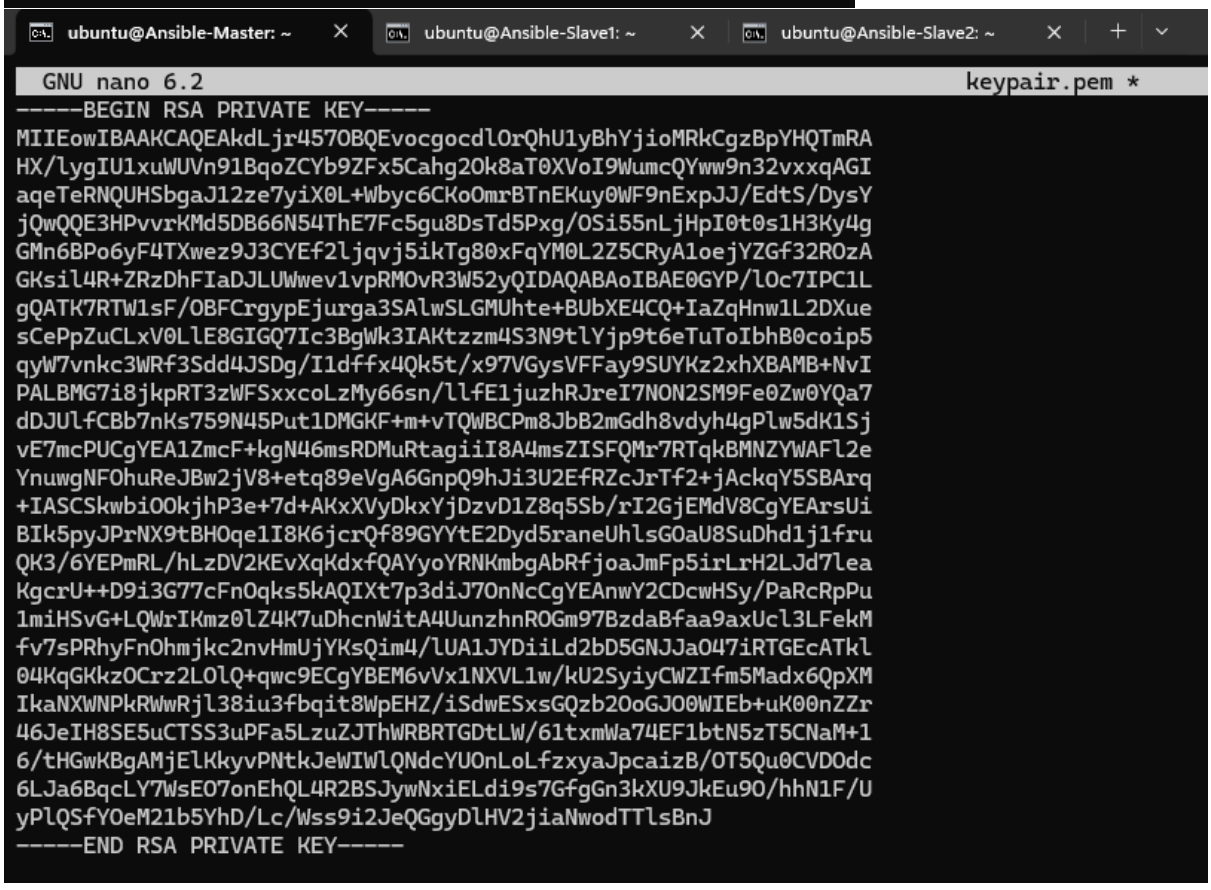


This is Path was ansible located

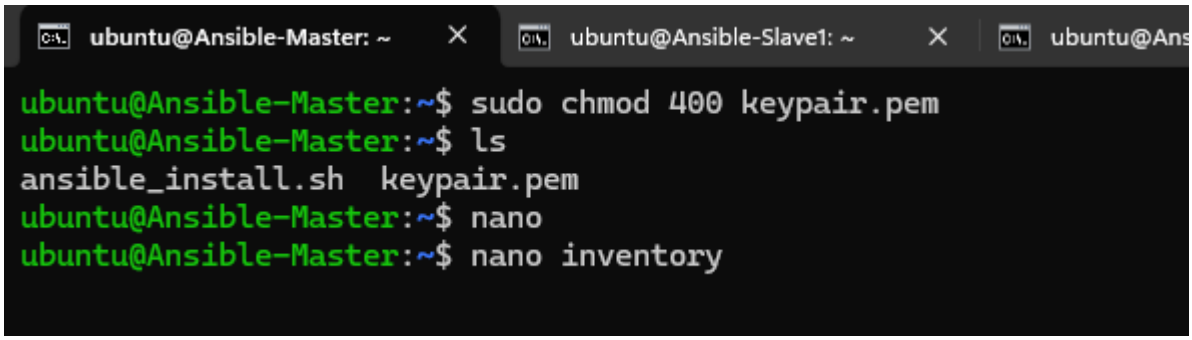


I came to home Creating a Keypair.pem file for connecting slave instances, and I used same keypairs for 3 instances

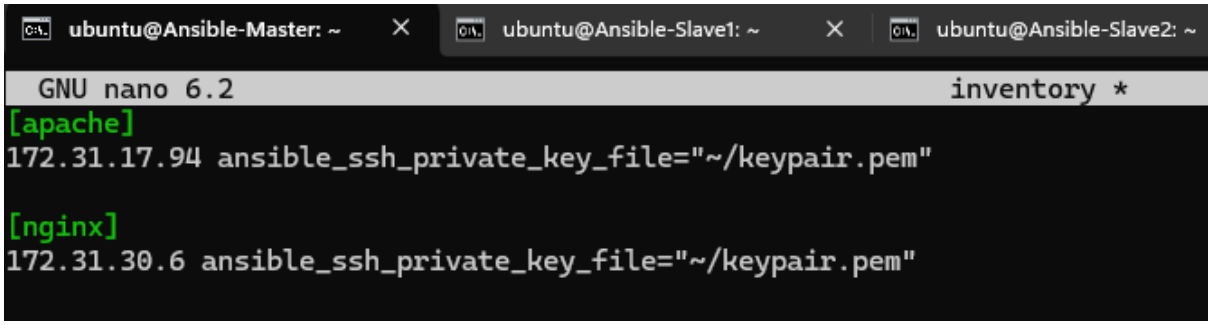




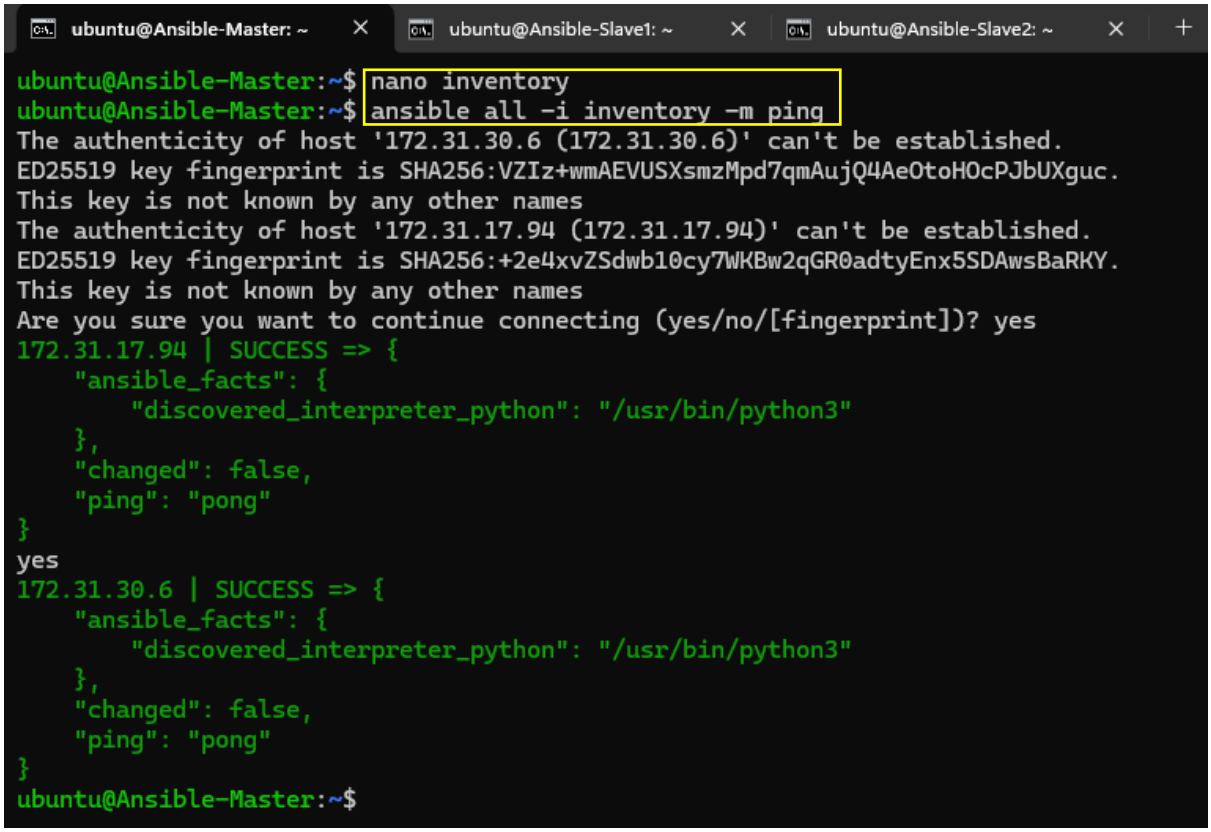
Providing read credentials to keypair, and created inventory file/Host file



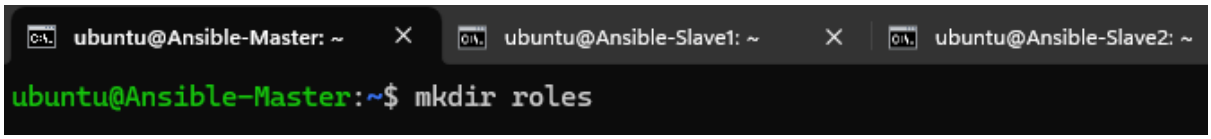
Slave private Ip's pasted to connect



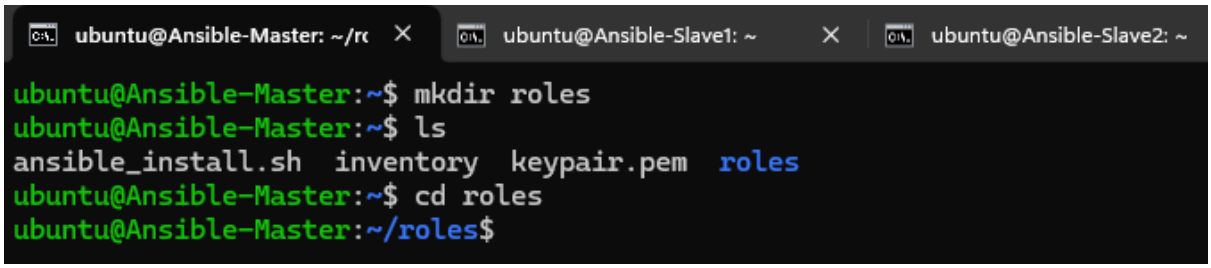
Connected successfully



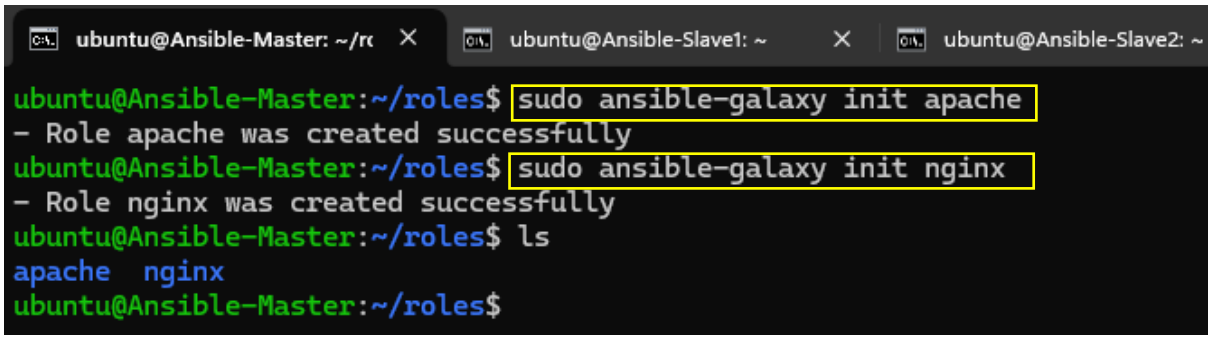
Creating a roles folder



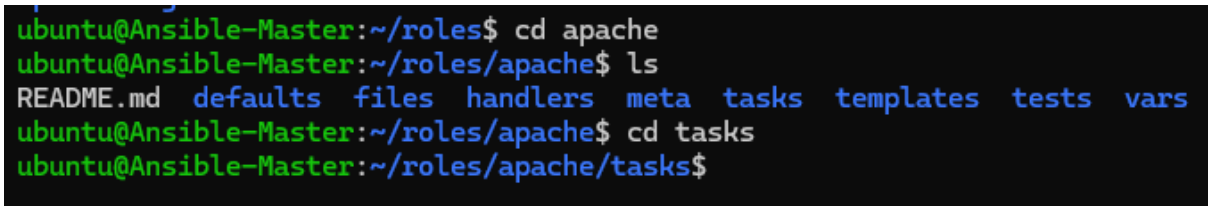
Go to inside of roles folder



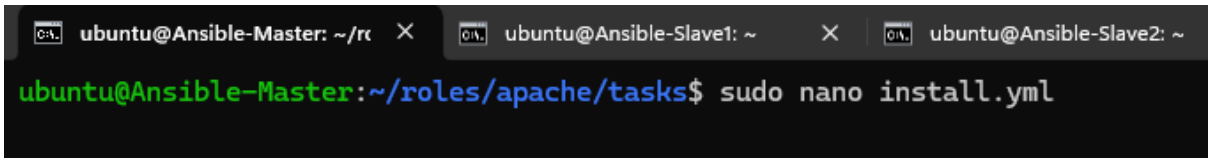
Initializing the apche and nginx roles



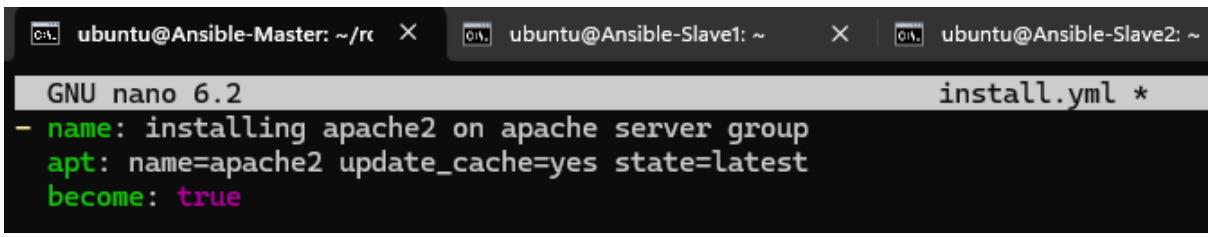
Now go to inside of apache > tasks



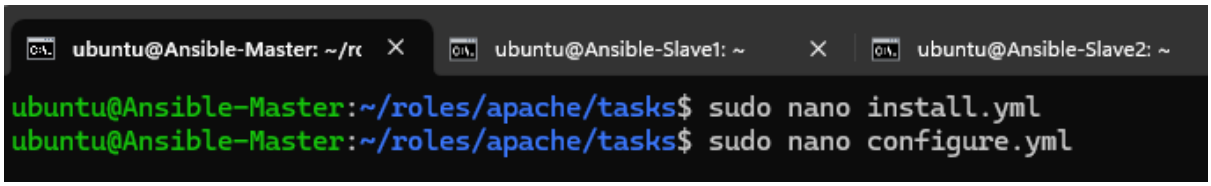
Creating installing file



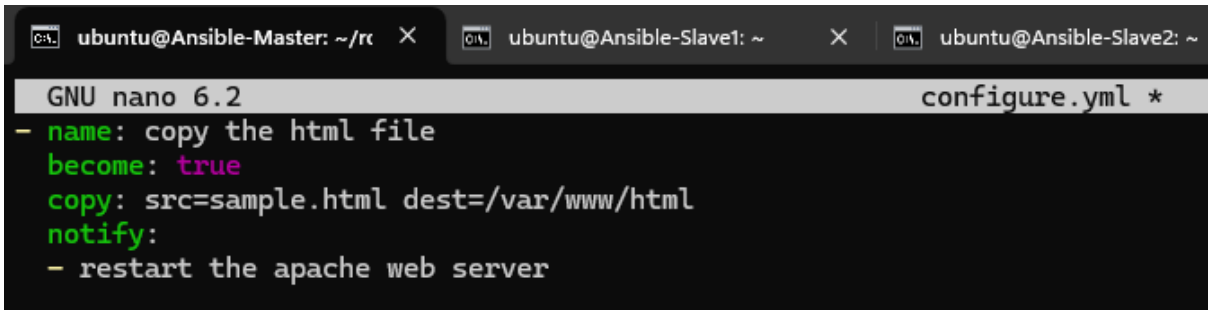
Now here I written the command to installation of apache2 and update the cache and latest one



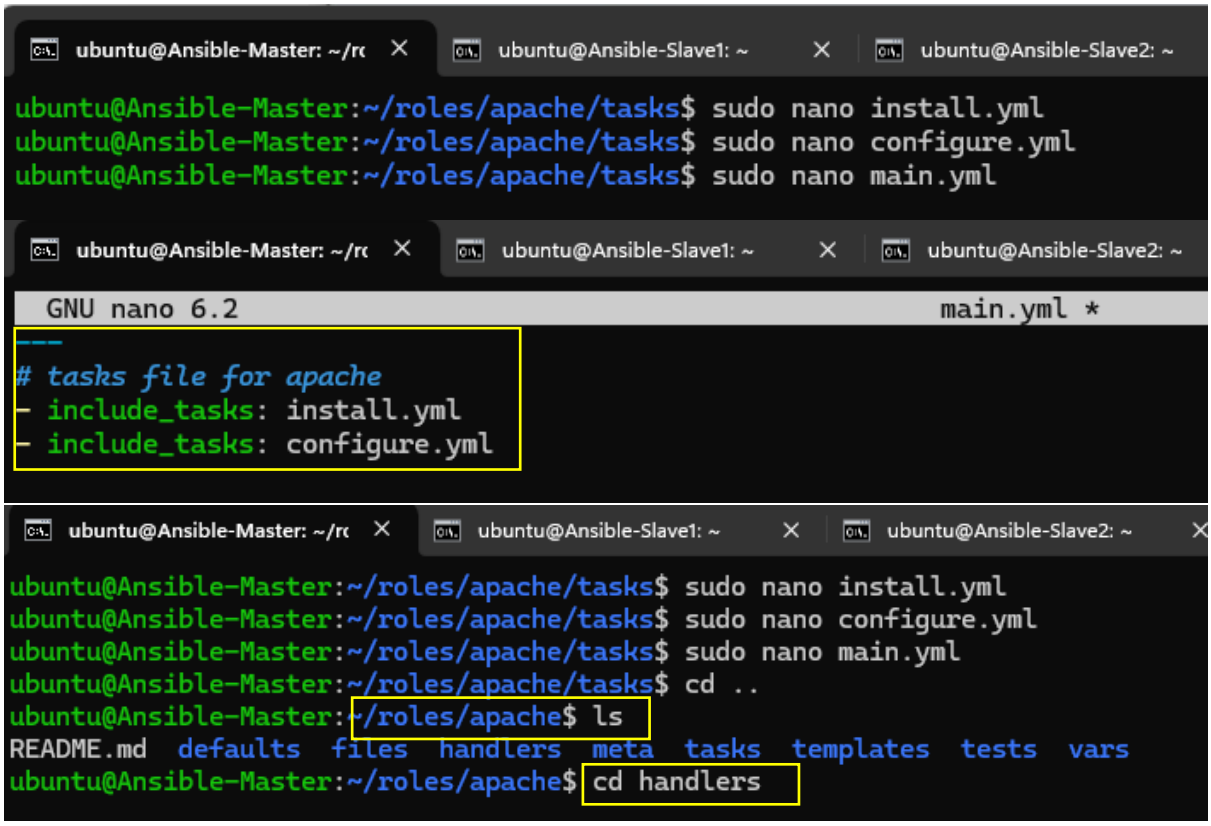
Now Creating a configure file



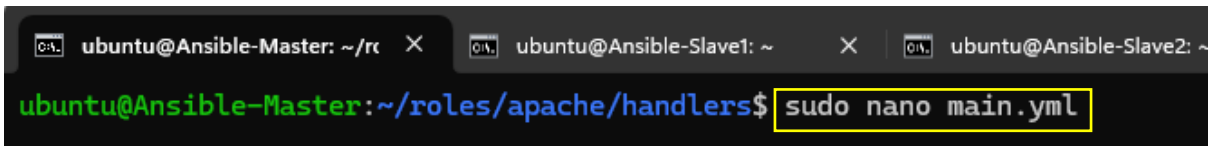
Now here copying the html file, copy source and destination details and notify the restart the apache

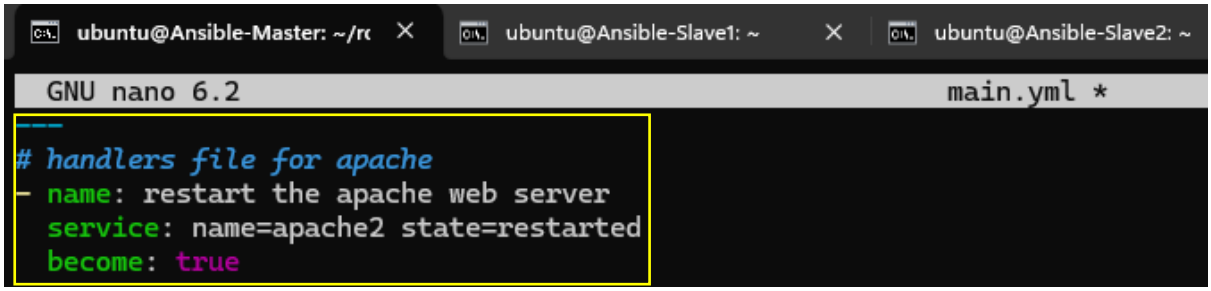


Now Creating a main.yml

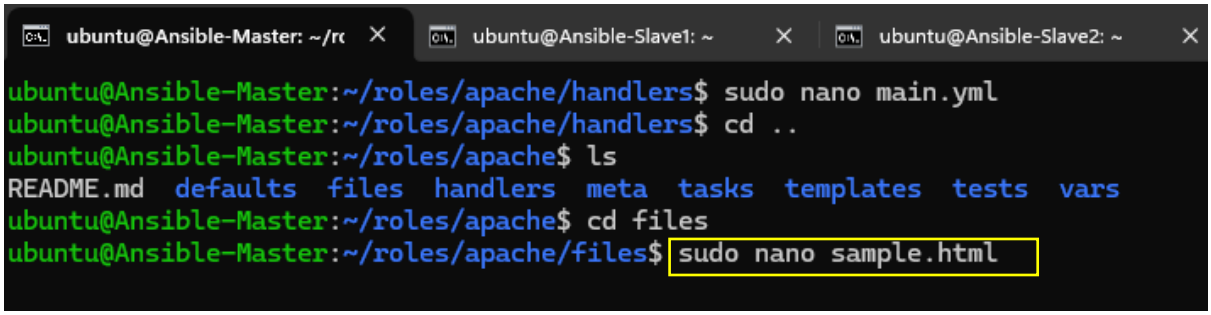


Creating a handler file



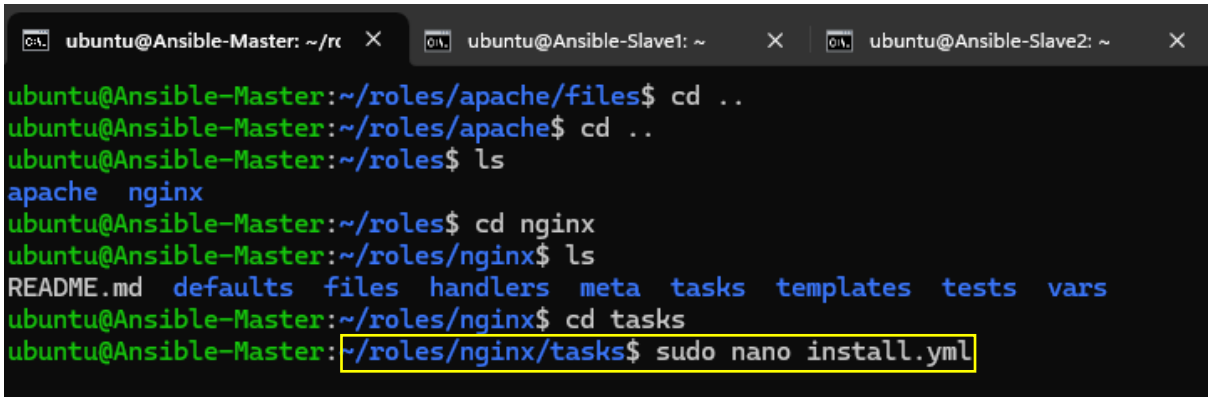


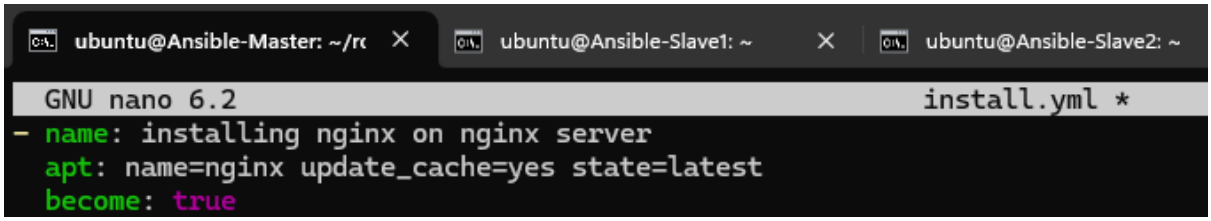
Now come to files folder now create the sample.html file

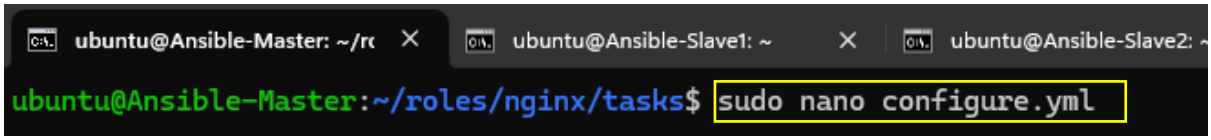


Welcome page details for apache server, For Apache server configuration finished

Now Do samething for nginx server







```
ubuntu@Ansible-Master: ~/r  ubuntu@Ansible-Slave1: ~  ubuntu@Ansible-Slave2: ~
 GNU nano 6.2                                  configure.yml *
- name: copy the html file
  become: true
  copy: src=sample.html dest=/var/www/html
  notify:
  - restart the nginx web server
```

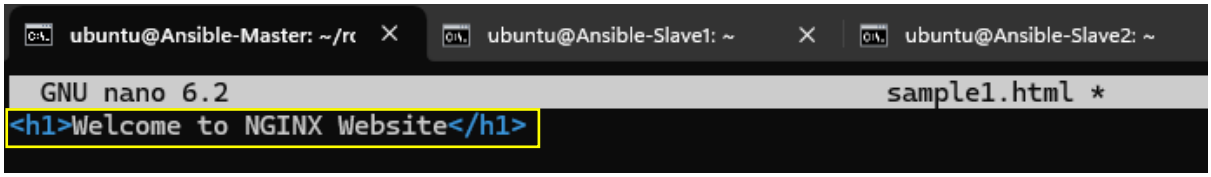
```
ubuntu@Ansible-Master: ~/r  ubuntu@Ansible-Slave1: ~  ubuntu@Ansible-Slave2: ~
ubuntu@Ansible-Master:~/roles/nginx/tasks$ sudo nano configure.yml
ubuntu@Ansible-Master:~/roles/nginx/tasks$ sudo nano main.yml
```

```
ubuntu@Ansible-Master: ~/r  ubuntu@Ansible-Slave1: ~  ubuntu@Ansible-Slave2: ~
 GNU nano 6.2                                  main.yml *
---
# tasks file for nginx
- include_tasks: install.yml
- include_tasks: configure.yml
```

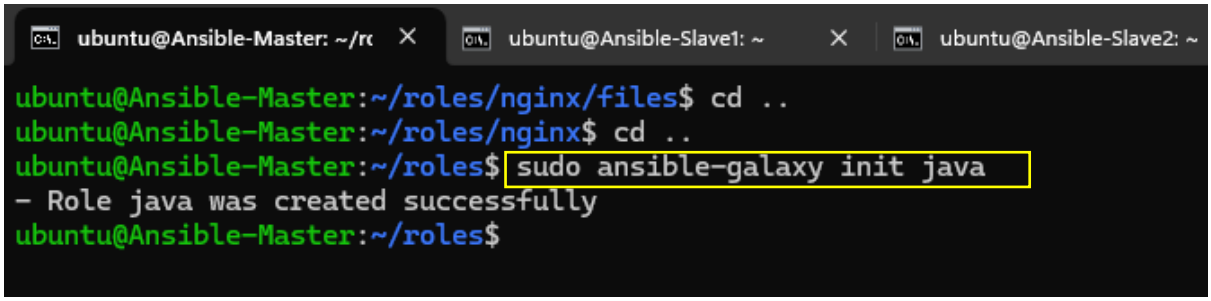
```
ubuntu@Ansible-Master: ~/r  ubuntu@Ansible-Slave1: ~  ubuntu@Ansible-Slave2: ~
ubuntu@Ansible-Master:~/roles/nginx/tasks$ sudo nano configure.yml
ubuntu@Ansible-Master:~/roles/nginx/tasks$ sudo nano main.yml
ubuntu@Ansible-Master:~/roles/nginx/tasks$ cd ..
ubuntu@Ansible-Master:~/roles/nginx$ ls
README.md  defaults  files  handlers  meta  tasks  templates  tests  vars
ubuntu@Ansible-Master:~/roles/nginx$ cd handlers
ubuntu@Ansible-Master:~/roles/nginx/handlers$ sudo nano main.yml
```

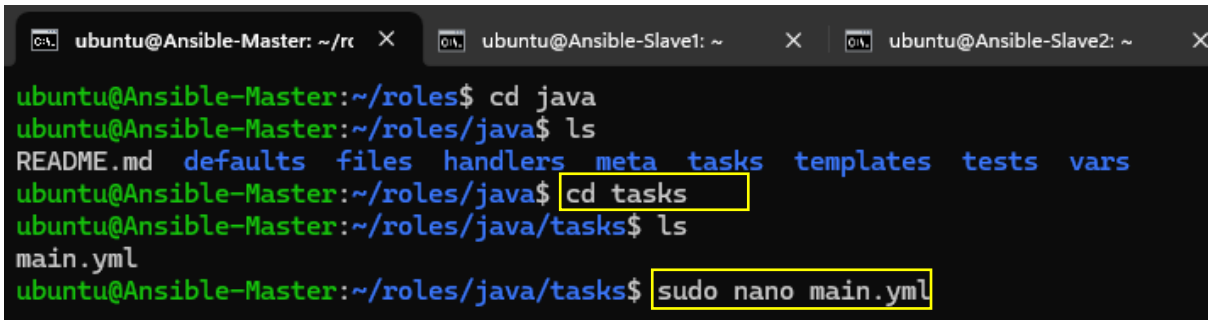
```
ubuntu@Ansible-Master: ~/r  ubuntu@Ansible-Slave1: ~  ubuntu@Ansible-Slave2:
 GNU nano 6.2                                  main.yml *
---
# handlers file for nginx
- name: restart the nginx web server
  service: name=nginx state=restarted
  become: true
```

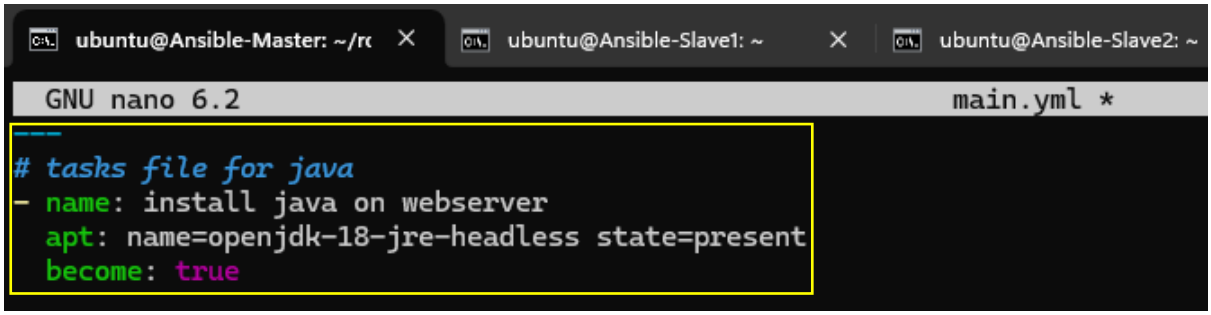
```
ubuntu@Ansible-Master: ~/r  ubuntu@Ansible-Slave1: ~  ubuntu@Ansible-Slave2: ~
ubuntu@Ansible-Master:~/roles/nginx/handlers$ sudo nano main.yml
ubuntu@Ansible-Master:~/roles/nginx/handlers$ cd ..
ubuntu@Ansible-Master:~/roles/nginx$ ls
README.md  defaults  files  handlers  meta  tasks  templates  tests  vars
ubuntu@Ansible-Master:~/roles/nginx$ cd files
ubuntu@Ansible-Master:~/roles/nginx/files$ sudo nano sample1.html
```



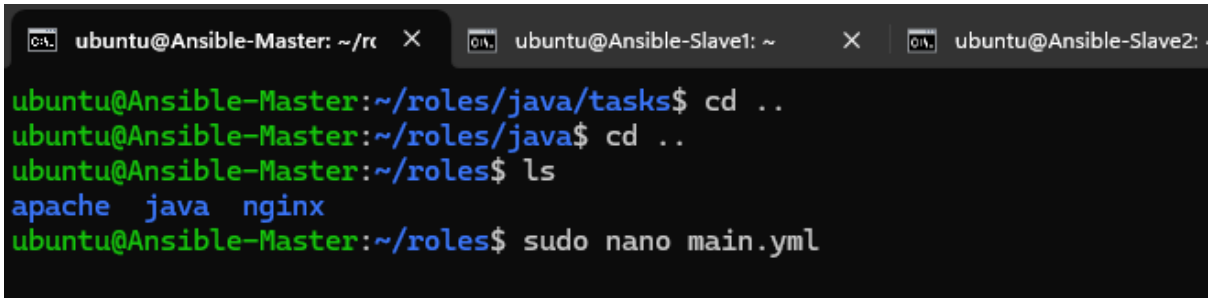
Now Creating initializing Java Role







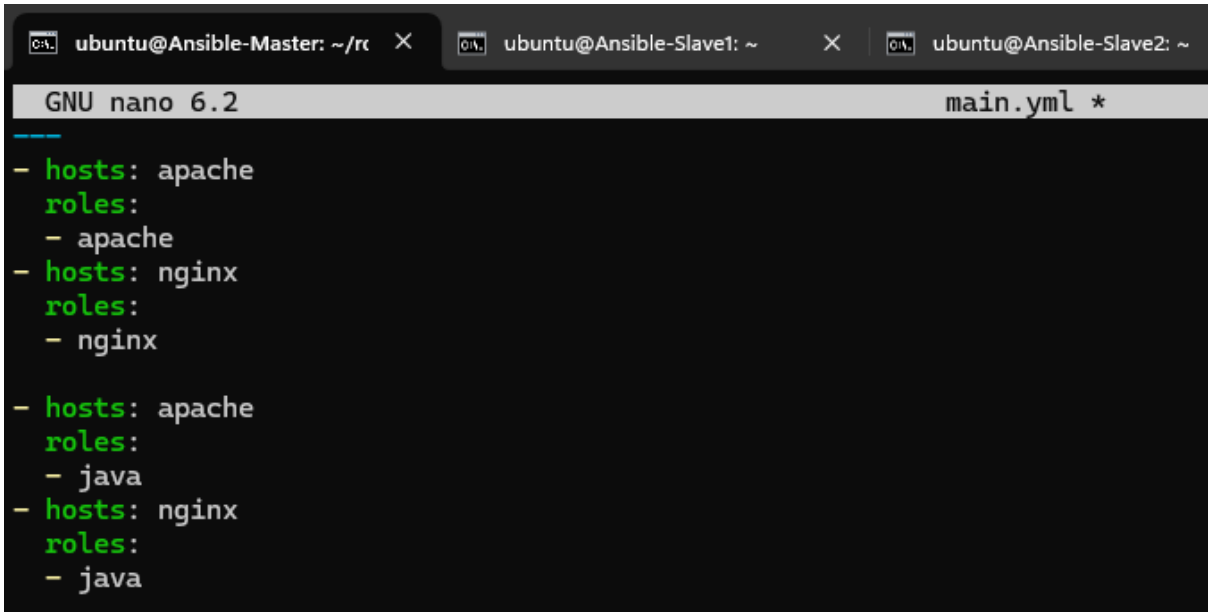
Creating a Playbook in roles path



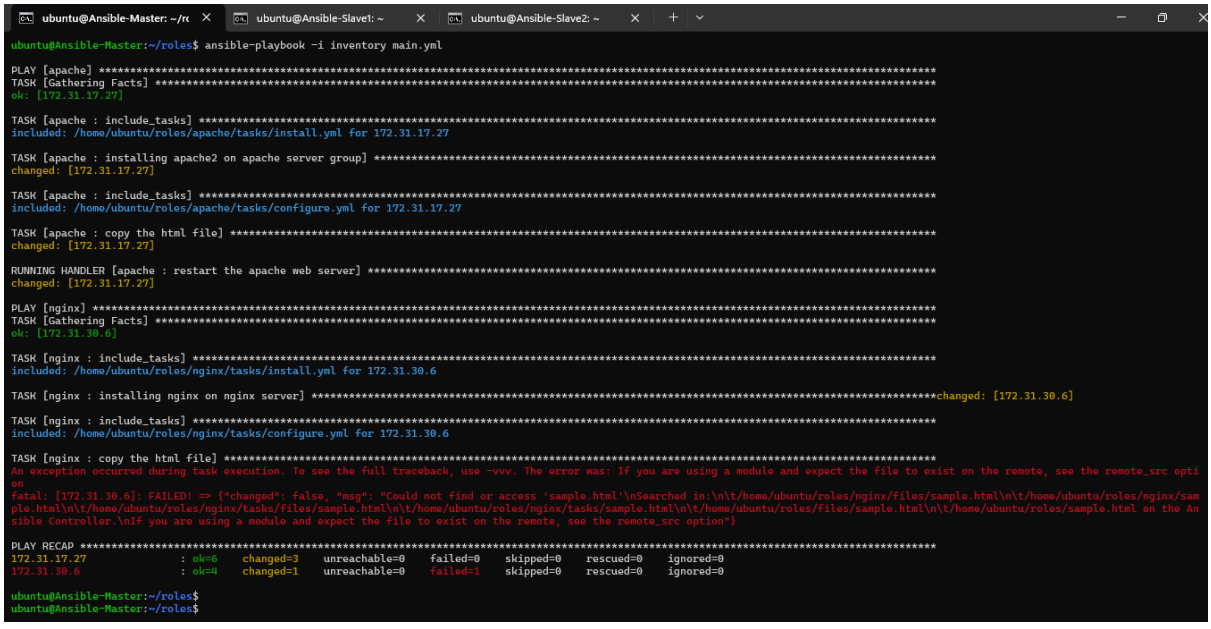
hosts apache, roles apache

And nginx host, nginx roles

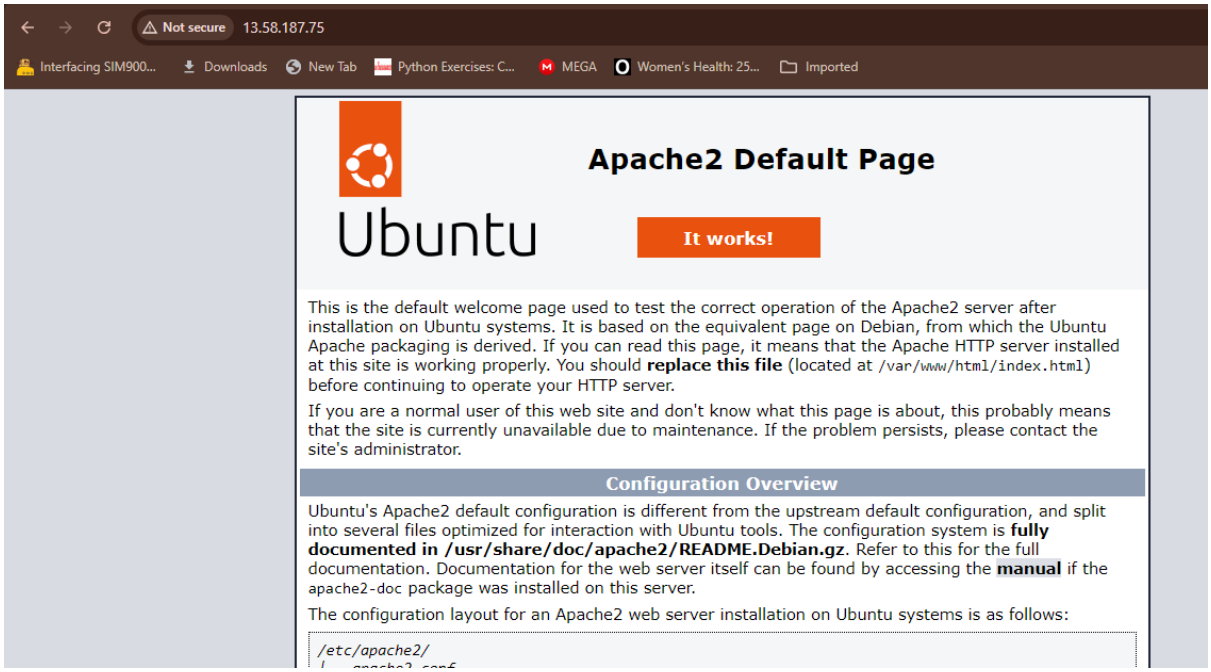
But installation java for both hosts apache, nginx



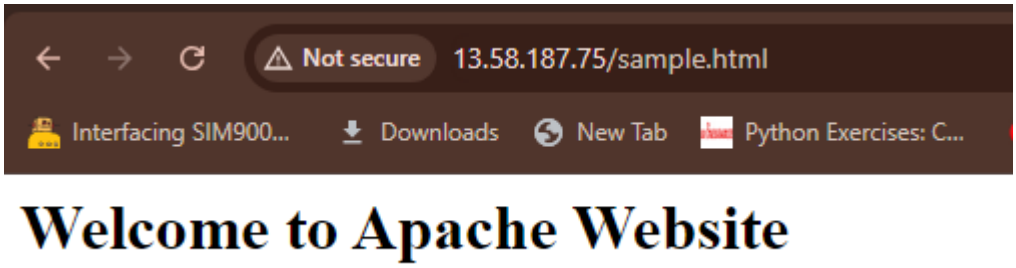
Installed somepart and after that I got an error, and the error is sample1.html is not found



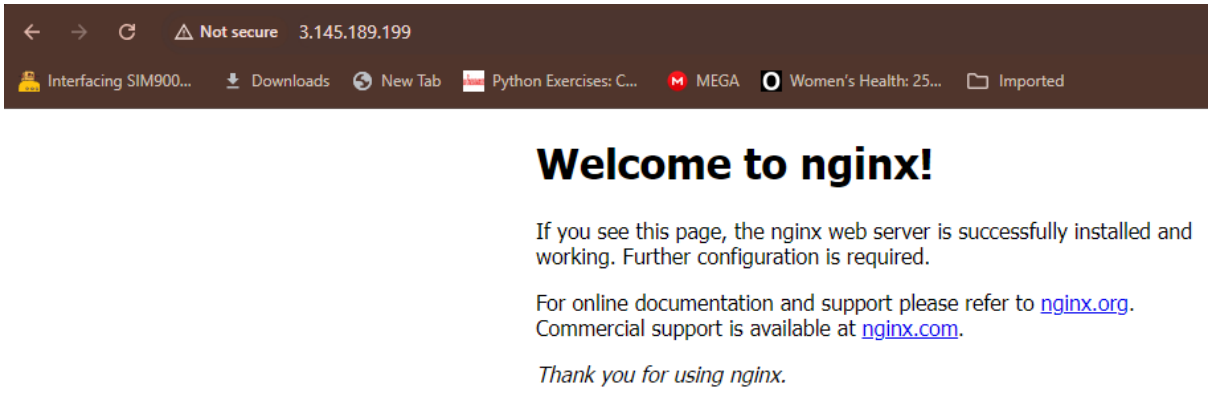
Page was opened, successfully



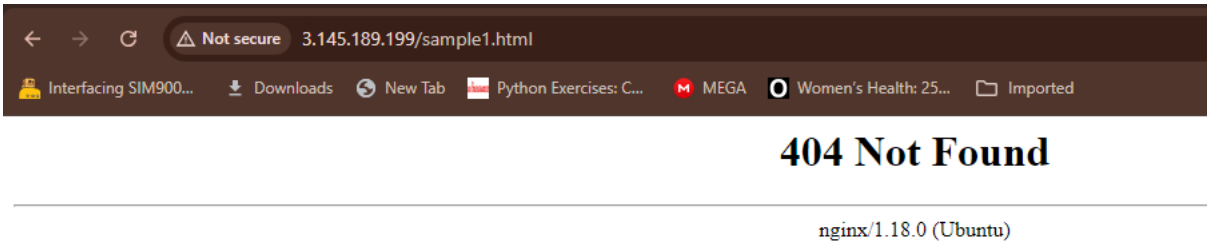
Sample.html is working fine for apache



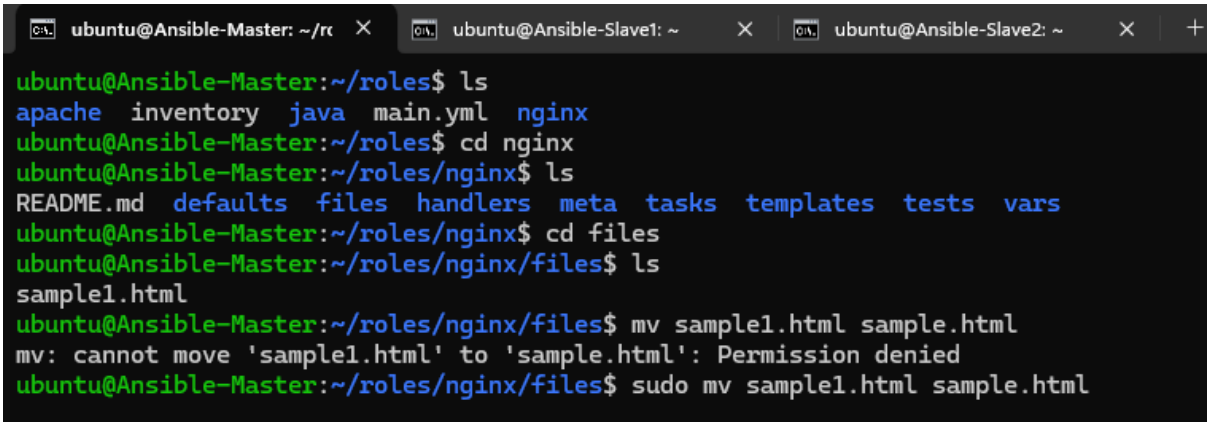
Nginx welcome page opened



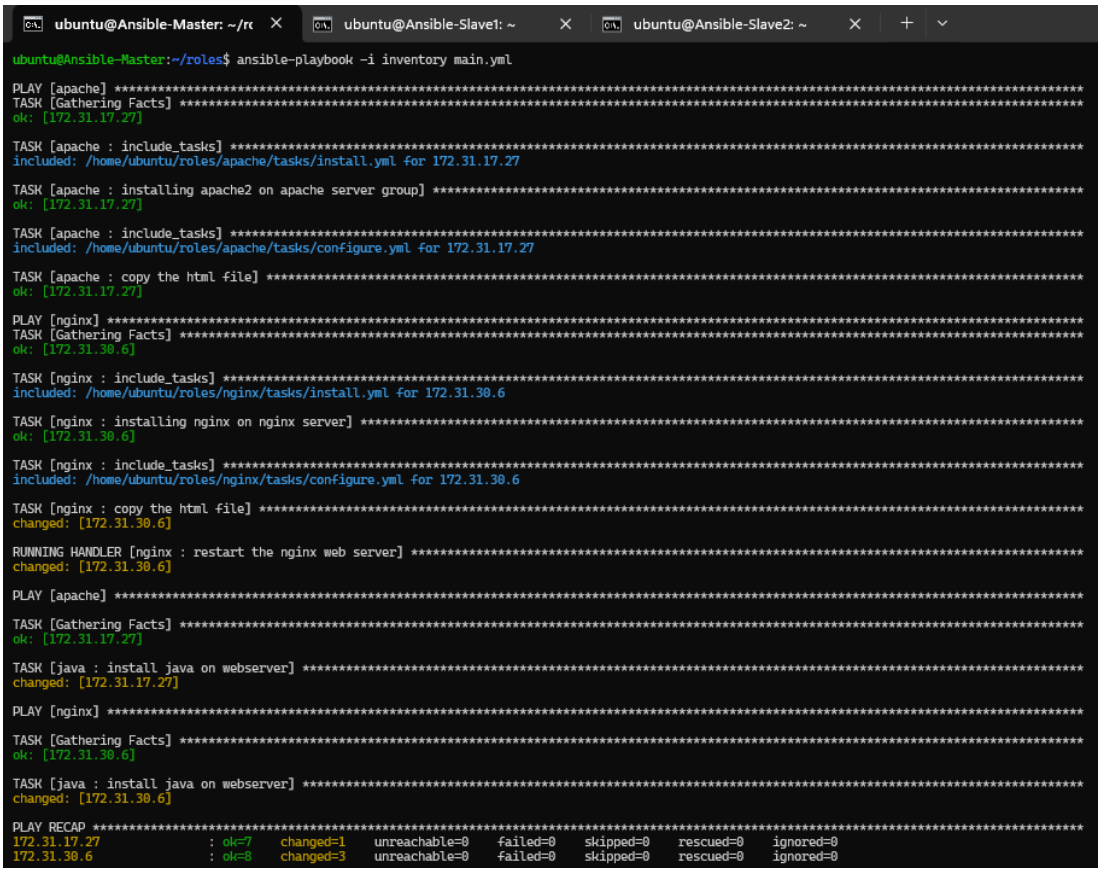
But sample1.html got an error



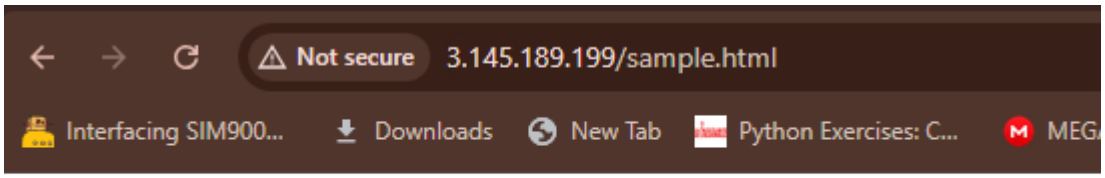
Because I named it as sample1.html in files section, but in source I mentioned sample.html, so I changed the name



Now installed everyting fine



Now its working



Welcome to NGINX Website

And installed java on both slave machines