

## 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".**



running	Clear filters	< 1 >						
<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public
<input type="checkbox"/>	Ansible-Master	i-03672cc89b101b3eb	Running	t2.micro	2/2 checks passed	View alarms	us-east-2b	ec2-18-
<input type="checkbox"/>	Ansible-Slave1	i-09bbc461e37a61465	Running	t2.micro	Initializing	View alarms	us-east-2b	ec2-3-1
<input type="checkbox"/>	Ansible-Slave2	i-0345ded08dc834810	Running	t2.micro	Initializing	View alarms	us-east-2b	ec2-3-1

Copy SSH


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

 i-03672cc89b101b3eb (Ansible-Master)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is salman-Ohio.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
  -  `chmod 400 "salman-Ohio.pem"`
4. Connect to your instance using its Public DNS:
  -  `ec2-18-116-41-20.us-east-2.compute.amazonaws.com`

Example:

 `ssh -i "salman-Ohio.pem" ubuntu@ec2-18-116-41-20.us-east-2.compute.amazonaws.com`

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

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:d8nhBzuyyps0mCax3DwL/+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

```
ubuntu@Ansible-Master: ~
ubuntu@Ansible-Master:~$

ubuntu@Ansible-Slave1: ~
ubuntu@Ansible-Slave1:~$

ubuntu@Ansible-Slave2: ~
ubuntu@Ansible-Slave2:~$
```

Installing Ansible in Master

```
ubuntu@Ansible-Master:~$ nano ansible_install.sh

GNU nano 6.2 ansible_install.sh *
sudo apt-add-repository ppa:ansible/ansible
sudo apt update
sudo apt install ansible -y

ubuntu@Ansible-Master:~$ nano ansible_install.sh
ubuntu@Ansible-Master:~$ bash ansible_install.sh
```

This is Path was ansible located

```
ubuntu@Ansible-Master: /etc  X  ubuntu@Ansible-Slave1: ~  X  ubuntu@Ansible-Slave2: ~  X

ubuntu@Ansible-Master:~$ ls
ansible_install.sh
ubuntu@Ansible-Master:~$ cd /etc/ansible/
ubuntu@Ansible-Master:/etc/ansible$ ls
ansible.cfg  hosts  roles
ubuntu@Ansible-Master:/etc/ansible$
```

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

```
ubuntu@Ansible-Master: ~  X  ubuntu@Ansible-Slave1: ~

ubuntu@Ansible-Master:~$ nano keypair.pem

GNU nano 6.2 keypair.pem *
-----BEGIN RSA PRIVATE KEY-----
MIIEowIBAAKCAQEAKdLjr4570BQEvocgocdL0rQhU1yBhYjioMRkCgzBpYHQmRA
HX/LygIU1xuWUVn91BqoZCYb9ZF5Cahg20k8aT0XVoI9WumcQYww9n32vxxqAGI
aqeTeRNQUHSbgaJ12ze7yiX0L+Wbyc6CKo0mrBTnEKuy0WF9nExpJJ/EdtS/DysY
jQwQQE3HPvvrKmd5DB66N54ThE7Fc5gu8DsTd5Pvg/OSi55nLjHpI0t0s1H3Ky4g
GMn6BPo6yF4TXwez9J3CYEf2Ljqvj5ikTg80xFqYM0L2Z5CRyA1oejYZGf32R0zA
GKs1L4R+ZRzDhFIaDjLUWwev1vPRM0vR3W52yQIDAQABAoIBAEE0GYP/L0c7IPC1L
gQATK7RTW1sF/0BFCrgypEjurga3SA1wSLGMUhte+BubXE4CQ+IaZqHnw1L2DXue
sCePpZuCLxV0LLE8GIGQ7Ic3BgWk3IAKtzzm4S3N9tlyjp9t6eTuToIbhB0coip5
qyW7vnkc3WRf3Sdd4JSDg/Ildffx4Qk5t/x97VGysVFFay9SUYKz2xhXBAMB+NvI
PALBMG7i8jkpRT3zWFSxxcoLzMy66sn/llfE1juzhRjreI7NON2SM9Fe0Zw0YQa7
dDJULfCBb7nKs759N45Put1DMGKF+m+vTQWBCPm8JbB2mGdh8vdyh4gPlw5dK1Sj
vE7mcPCuCYEA1ZmcF+kgN46msRDMuRtagiiI8A4msZISFQMr7RTqkBMNZYWAF12e
YnuwngNFOhuReJBw2jV8+etq89eVgA6GnpQ9hJi3U2EfrZcJrTf2+jAckqY5SBArq
+IASCSkwb100kjhp3e+7d+AKxXVyDkxYjDzvD1Z8q5Sb/rI2GjEMdV8CgYEArSUi
BIk5pyJPrNX9tBH0qe1I8K6jcrQf89GYYtE2Dyd5raneUhlSg0aU8SuDhd1j1fru
QK3/6YEPmRL/hLzDV2KEvXqKdxQAYyoYRNKmbgAbRfjoaJmFp5irLrH2LJd7lea
KgcrU++D9i3G77cFn0qks5kAQIXt7p3diJ70nNcCgYEAnwY2CDcwHSy/ParcRpPu
1miHSvG+LQWRIKz0LZ4K7uDhcnWitA4UunzhnROGm97BzdaBfaa9axUcl3LFekM
fv7sPRhyFn0hmjkc2nvHmUjYKsQim4/LUA1JYDi1Ld2bD5GNJJJa047iRTGEcAtkl
04KqGKkzOCrz2L0LQ+qwc9ECgYBEM6vVx1NXVL1w/kU2SyiyCWZIfm5Madx6QpXM
IkaNXWNPKrWwRjL38iu3fbqit8WpEHZ/iSdwESxsGQzb20oGJO0WIEb+uK00nZZr
46JeIH8SE5uCTSS3uPFa5LzuZJThWRBRTGdtLW/61txmWa74EF1btN5zT5CNaM+1
6/tHGwKBgAMjElKkyvPNTkJeWIWlQNdcYUOnLoLfzxyaJpcaizB/OT5Qu0CVD0dc
6LJa6BqcLY7WsE07onEhQL4R2BSJywNxiELdi9s7GfgGn3kXU9JkEu90/hhN1F/U
yPLQsfY0eM21b5YhD/Lc/Wss9i2JeQGgyDlHV2jiaNwodTTlsBnJ
-----END RSA PRIVATE KEY-----
```

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

```
ubuntu@Ansible-Master: ~  
ubuntu@Ansible-Master:~$ sudo chmod 400 keypair.pem  
ubuntu@Ansible-Master:~$ ls  
ansible_install.sh  keypair.pem  
ubuntu@Ansible-Master:~$ nano  
ubuntu@Ansible-Master:~$ nano inventory
```

Slave private Ip's pasted to connect

```
GNU nano 6.2 inventory *  
[apache]  
172.31.17.94 ansible_ssh_private_key_file=~/.keypair.pem  
  
[nginx]  
172.31.30.6 ansible_ssh_private_key_file=~/.keypair.pem
```

Connected successfully

```
ubuntu@Ansible-Master:~$ nano inventory  
ubuntu@Ansible-Master:~$ ansible all -i inventory -m ping  
The authenticity of host '172.31.30.6 (172.31.30.6)' can't be established.  
ED25519 key fingerprint is SHA256:VZIz+wmAEVUSXsmzMpd7qmAuJQ4Ae0toH0cPJbUXguc.  
This key is not known by any other names  
The authenticity of host '172.31.17.94 (172.31.17.94)' can't be established.  
ED25519 key fingerprint is SHA256:+2e4xvZSdwb10cy7WKBw2qGR0adtyEnx5SDAwsBaRKY.  
This key is not known by any other names  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
172.31.17.94 | SUCCESS => {  
  "ansible_facts": {  
    "discovered_interpreter_python": "/usr/bin/python3"  
  },  
  "changed": false,  
  "ping": "pong"  
}  
yes  
172.31.30.6 | SUCCESS => {  
  "ansible_facts": {  
    "discovered_interpreter_python": "/usr/bin/python3"  
  },  
  "changed": false,  
  "ping": "pong"  
}  
ubuntu@Ansible-Master:~$
```

Creating a roles folder

```
ubuntu@Ansible-Master: ~  
ubuntu@Ansible-Master:~$ mkdir roles
```

Go to inside of roles folder

```
ubuntu@Ansible-Master: ~/  
ubuntu@Ansible-Master:~$ mkdir roles  
ubuntu@Ansible-Master:~$ ls  
ansible_install.sh  inventory  keypair.pem  roles  
ubuntu@Ansible-Master:~$ cd roles  
ubuntu@Ansible-Master:~/roles$
```

Initializing the apache and nginx roles

```
ubuntu@Ansible-Master: ~/  
ubuntu@Ansible-Master:~/roles$ sudo ansible-galaxy init apache  
- Role apache was created successfully  
ubuntu@Ansible-Master:~/roles$ sudo ansible-galaxy init nginx  
- Role nginx was created successfully  
ubuntu@Ansible-Master:~/roles$ ls  
apache  nginx  
ubuntu@Ansible-Master:~/roles$
```

Now go to inside of apache > tasks

```
ubuntu@Ansible-Master:~/roles$ cd apache  
ubuntu@Ansible-Master:~/roles/apache$ ls  
README.md  defaults  files  handlers  meta  tasks  templates  tests  vars  
ubuntu@Ansible-Master:~/roles/apache$ cd tasks  
ubuntu@Ansible-Master:~/roles/apache/tasks$
```

Creating installing file

```
ubuntu@Ansible-Master: ~/  
ubuntu@Ansible-Master:~/roles/apache/tasks$ sudo nano install.yml
```

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

```
GNU nano 6.2 install.yml *  
- name: installing apache2 on apache server group  
  apt: name=apache2 update_cache=yes state=latest  
  become: true
```

Now Creating a configure file

```
ubuntu@Ansible-Master: ~/roles X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
ubuntu@Ansible-Master:~/roles/apache/tasks$ sudo nano install.yml
ubuntu@Ansible-Master:~/roles/apache/tasks$ sudo nano configure.yml
```

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

```
ubuntu@Ansible-Master: ~/roles X ubuntu@Ansible-Slave1: ~ X 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 apache web server
```

Now Creating a main.yml

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

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

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

Creating a handler file

```
ubuntu@Ansible-Master: ~/roles X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
ubuntu@Ansible-Master:~/roles/apache/handlers$ sudo nano main.yml
```



```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
GNU nano 6.2 main.yml *
# handlers file for apache
- name: restart the apache web server
  service: name=apache2 state=restarted
  become: true
```

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

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

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

```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
GNU nano 6.2 sample.html *
<h1>Welcome to Apache Website</h1>
```

Now Do something for nginx server

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

```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
GNU nano 6.2 install.yml *
- name: installing nginx on nginx server
  apt: name=nginx update_cache=yes state=latest
  become: true
```

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

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

```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X 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: ~/rc X ubuntu@Ansible-Slave1: ~ X 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: ~/rc X ubuntu@Ansible-Slave1: ~ X 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
```



```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
GNU nano 6.2 sample1.html *
<h1>Welcome to NGINX Website</h1>
```

Now Creating initializing Java Role

```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
ubuntu@Ansible-Master:~/roles/nginx/files$ cd ..
ubuntu@Ansible-Master:~/roles/nginx$ cd ..
ubuntu@Ansible-Master:~/roles$ sudo ansible-galaxy init java
- Role java was created successfully
ubuntu@Ansible-Master:~/roles$
```

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

```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
GNU nano 6.2 main.yml *
# tasks file for java
- name: install java on webserver
  apt: name=openjdk-18-jre-headless state=present
  become: true
```

Creating a Playbook in roles path

```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
ubuntu@Ansible-Master:~/roles/java/tasks$ cd ..
ubuntu@Ansible-Master:~/roles/java$ cd ..
ubuntu@Ansible-Master:~/roles$ ls
apache java nginx
ubuntu@Ansible-Master:~/roles$ sudo nano main.yml
```

hosts apache, roles apache

And nginx host, nginx roles

But installation java for both hosts apache, nginx

```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~
GNU nano 6.2 main.yml *
-----
- hosts: apache
  roles:
    - apache
- hosts: nginx
  roles:
    - nginx

- hosts: apache
  roles:
    - java
- hosts: nginx
  roles:
    - java
```

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

```
ubuntu@Ansible-Master: ~/roles$ ansible-playbook -i inventory main.yml

PLAY [apache] *****
TASK [Gathering Facts] *****
ok: [172.31.17.27]

TASK [apache : include_tasks] *****
included: /home/ubuntu/roles/apache/tasks/install.yml for 172.31.17.27

TASK [apache : installing apache2 on apache server group] *****
changed: [172.31.17.27]

TASK [apache : include_tasks] *****
included: /home/ubuntu/roles/apache/tasks/configure.yml for 172.31.17.27

TASK [apache : copy the html file] *****
changed: [172.31.17.27]

RUNNING HANDLER [apache : restart the apache web server] *****
changed: [172.31.17.27]

PLAY [nginx] *****
TASK [Gathering Facts] *****
ok: [172.31.30.6]

TASK [nginx : include_tasks] *****
included: /home/ubuntu/roles/nginx/tasks/install.yml for 172.31.30.6

TASK [nginx : installing nginx on nginx server] *****changed: [172.31.30.6]

TASK [nginx : include_tasks] *****
included: /home/ubuntu/roles/nginx/tasks/configure.yml for 172.31.30.6

TASK [nginx : copy the html file] *****
An exception occurred during task execution. To see the full traceback, use -vvv. The error was: If you are using a module and expect the file to exist on the remote, see the remote_src option
fatal: [172.31.30.6]: FAILED! => {"changed": false, "msg": "Could not find or access 'sample.html'\nSearched in:\n\t/home/ubuntu/roles/nginx/files/sample.html\n\t/home/ubuntu/roles/nginx/sample.html\n\t/home/ubuntu/roles/nginx/tasks/sample.html\n\t/home/ubuntu/roles/nginx/tasks/sample.html\n\t/home/ubuntu/roles/files/sample.html\n\t/home/ubuntu/roles/sample.html on the Ansible Controller\n\tIf you are using a module and expect the file to exist on the remote, see the remote_src option*"}

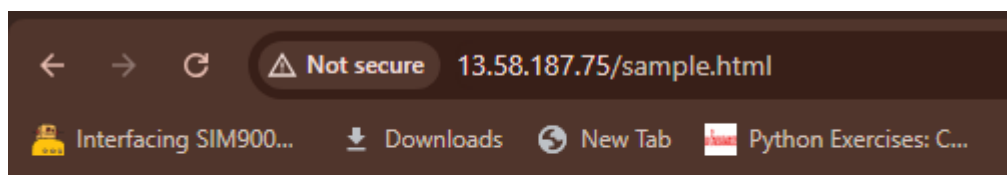
PLAY RECAP *****
172.31.17.27 : ok=6 changed=3 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
172.31.30.6 : ok=4 changed=1 unreachable=0 failed=1 skipped=0 rescued=0 ignored=0

ubuntu@Ansible-Master:~/roles$
ubuntu@Ansible-Master:~/roles$
```

Page was opened, successfully

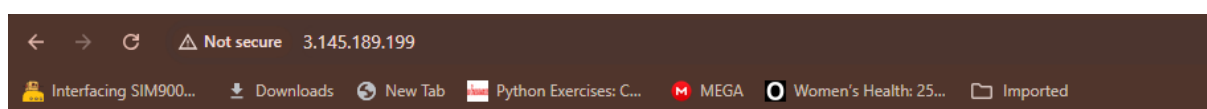


Sample.html is working fine for apache



# Welcome to Apache Website

Nginx welcome page opened



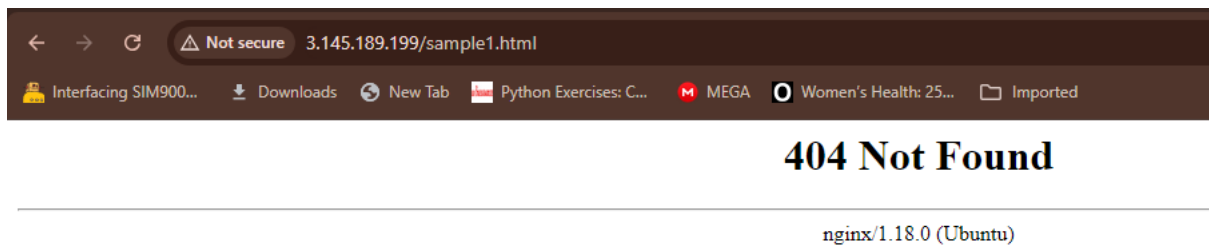
## Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to [nginx.org](http://nginx.org).  
Commercial support is available at [nginx.com](http://nginx.com).

*Thank you for using nginx.*

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

```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~ X +
ubuntu@Ansible-Master:~/roles$ ls
apache inventory java main.yml nginx
ubuntu@Ansible-Master:~/roles$ cd nginx
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$ ls
sample1.html
ubuntu@Ansible-Master:~/roles/nginx/files$ mv sample1.html sample.html
mv: cannot move 'sample1.html' to 'sample.html': Permission denied
ubuntu@Ansible-Master:~/roles/nginx/files$ sudo mv sample1.html sample.html
```

Now installed everything fine

```
ubuntu@Ansible-Master: ~/rc X ubuntu@Ansible-Slave1: ~ X ubuntu@Ansible-Slave2: ~ X + v
ubuntu@Ansible-Master:~/roles$ ansible-playbook -i inventory main.yml
PLAY [apache] *****
TASK [Gathering Facts] *****
ok: [172.31.17.27]

TASK [apache : include_tasks] *****
included: /home/ubuntu/roles/apache/tasks/install.yml for 172.31.17.27

TASK [apache : installing apache2 on apache server group] *****
ok: [172.31.17.27]

TASK [apache : include_tasks] *****
included: /home/ubuntu/roles/apache/tasks/configure.yml for 172.31.17.27

TASK [apache : copy the html file] *****
ok: [172.31.17.27]

PLAY [nginx] *****
TASK [Gathering Facts] *****
ok: [172.31.30.6]

TASK [nginx : include_tasks] *****
included: /home/ubuntu/roles/nginx/tasks/install.yml for 172.31.30.6

TASK [nginx : installing nginx on nginx server] *****
ok: [172.31.30.6]

TASK [nginx : include_tasks] *****
included: /home/ubuntu/roles/nginx/tasks/configure.yml for 172.31.30.6

TASK [nginx : copy the html file] *****
changed: [172.31.30.6]

RUNNING HANDLER [nginx : restart the nginx web server] *****
changed: [172.31.30.6]

PLAY [apache] *****
TASK [Gathering Facts] *****
ok: [172.31.17.27]

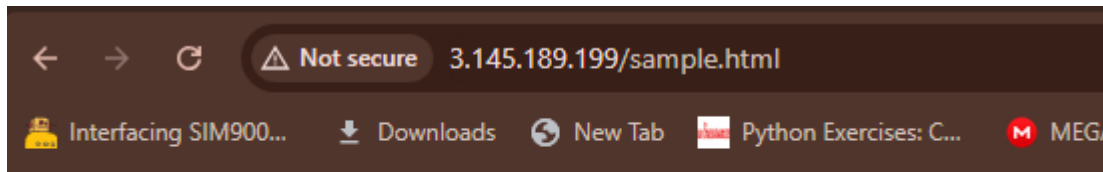
TASK [java : install java on webserver] *****
changed: [172.31.17.27]

PLAY [nginx] *****
TASK [Gathering Facts] *****
ok: [172.31.30.6]

TASK [java : install java on webserver] *****
changed: [172.31.30.6]

PLAY RECAP *****
172.31.17.27 : ok=7 changed=1 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
172.31.30.6 : ok=8 changed=3 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
```

Now its working



And installed java on both slave machines

```
ubuntu@Ansible-Master: ~/ro X  ubuntu@Ansible-Slave1: ~ X  ubuntu@Ansible-Slave2: ~ X
ubuntu@Ansible-Slave1:~$ java --version
openjdk 18.0.2-ea 2022-07-19
OpenJDK Runtime Environment (build 18.0.2-ea+9-Ubuntu-222.04)
OpenJDK 64-Bit Server VM (build 18.0.2-ea+9-Ubuntu-222.04, mixed mode, sharing)
ubuntu@Ansible-Slave1:~$

ubuntu@Ansible-Slave2:~$ java --version
openjdk 18.0.2-ea 2022-07-19
OpenJDK Runtime Environment (build 18.0.2-ea+9-Ubuntu-222.04)
OpenJDK 64-Bit Server VM (build 18.0.2-ea+9-Ubuntu-222.04, mixed mode, sharing)
ubuntu@Ansible-Slave2:~$
```