ANSIBLE ASSIGNMENT 3

Name: Vikram

Assignment: Install Apache on Slave1 and NGINX on Slave2 Using Ansible Roles

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Problem Statement

You are required to:

1. Create two separate Ansible roles

    o   One for installing Apache2

    o   One for installing NGINX

2. Apply:

    o   Apache2 role → Slave1

    o   NGINX role → Slave2

3. Complete everything using the Ansible Roles structure.

Environment Used

Ansible Master: Ubuntu EC2 instance

- Slave1 & Slave2: Ubuntu EC2 instances

- SSH authentication using: /home/ubuntu/.ssh/mykey.pem

- Ansible inventory file: /etc/ansible/hosts

Inventory Example:

[slave1]

10.0.11.55 ansible_user=ubuntu ansible_ssh_private_key_file=/home/ubuntu/.ssh/mykey.pem

[slave2]

10.0.15.253 ansible_user=ubuntu ansible_ssh_private_key_file=/home/ubuntu/.ssh/mykey.pem

---

Tasks Performed

Task 1: Create Two Ansible Roles

Moved into roles directory:

mkdir roles

cd roles

Created Apache role:

ansible-galaxy init role_apache

Created Nginx role:

ansible-galaxy init role_nginx

```
ubuntu@ip-10-0-6-254:~$ mkdir roles
cd roles
ubuntu@ip-10-0-6-254:~/roles$
```

```
ubuntu@ip-10-0-6-254:~/roles$ ansible-galaxy init role_apache
- Role role_apache was created successfully
ubuntu@ip-10-0-6-254:~/roles$
```

```
ubuntu@ip-10-0-6-254:~/roles$ ansible-galaxy init role_nginx
- Role role_nginx was created successfully
ubuntu@ip-10-0-6-254:~/roles$
```

```
ubuntu@ip-10-0-6-254:~/roles$ ls
role_apache   role_nginx
ubuntu@ip-10-0-6-254:~/roles$
```

Task 2: Configure Apache Role

Edited task file:

nano role_apache/tasks/main.yml

Added:

- name: Install Apache2

  apt:

    name: apache2

    state: present

    update_cache: yes

- name: Start Apache2 service

  service:

    name: apache2

    state: started

    enabled: yes

```
ubuntu@ip-10-0-6-254:~/roles$ nano role_apache/tasks/main.yml
```

```
  GNU nano 7.2
---
- name: Install Apache2
  apt:
    name: apache2
    state: present
    update_cache: yes

- name: Start Apache2 service
  service:
    name: apache2
    state: started
    enabled: yes

# tasks file for role_apache
```

Task 3: Configure NGINX Role

Edited task file:

nano role_nginx/tasks/main.yml

Added:

- name: Install Nginx

  apt:

    name: nginx

    state: present

    update_cache: yes

- name: Start Nginx service

  service:

    name: nginx

    state: started

    enabled: yes

```
ubuntu@ip-10-0-6-254:~/roles$ nano role_nginx/tasks/main.yml
```

```
  GNU nano 7.2
---
- name: Install Nginx
  apt:
    name: nginx
    state: present
    update_cache: yes

- name: Start Nginx service
  service:
    name: nginx
    state: started
    enabled: yes

# tasks file for role_nginx
```

Task 4: Create Main Playbook to Use Roles

Created:

cd ~

nano roles-playbook.yml

Added:

- name: Install Apache on Slave1

  hosts: slave1

  become: yes

  roles:

    - role_apache

- name: Install Nginx on Slave2

  hosts: slave2

  become: yes

  roles:

    - role_nginx

```
ubuntu@ip-10-0-6-254:~$ nano roles-playbook.yml
```

```
GNU nano 7.2
---
- name: Install Apache on Slave1
  hosts: slave1
  become: yes
  roles:
    - role_apache

- name: Install Nginx on Slave2
  hosts: slave2
  become: yes
  roles:
    - role_nginx
```

Task 5: Execute the Playbook

Command:

ansible-playbook roles-playbook.yml

Expected tasks executed:

Apache2 installed on Slave1

Apache2 service started

Nginx installed on Slave2

Nginx service started

Verification

On Slave1:

curl localhost

Shows default Apache2 HTML page.

On Slave2:

curl localhost

Shows default NGINX HTML page.

Both web servers installed successfully.

```
ubuntu@ip-10-0-15-253:~$ curl localhost
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <!--
    Modified from the Debian original for Ubuntu
    Last updated: 2022-03-22
    See: https://launchpad.net/bugs/1966004
  -->
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <title>Apache2 Ubuntu Default Page: It works</title>
    <style type="text/css" media="screen">
  * {
    margin: 0px 0px 0px 0px;
    padding: 0px 0px 0px 0px;
  }

  body, html {
    padding: 3px 3px 3px 3px;

    background-color: #D8DBE2;

    font-family: Ubuntu, Verdana, sans-serif;
    font-size: 11pt;
    text-align: center;
  }
```

i-02539f23426097cd2 (slave1)

PublicIPs: 3.91.224.29   PrivateIPs: 10.0.15.253

```
ubuntu@ip-10-0-11-55:~$ curl localhost
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
ubuntu@ip-10-0-11-55:~$
```

i-0dde7c0f6be97fe6f (slave2)

PublicIPs: 3.80.238.215   PrivateIPs: 10.0.11.55

Conclusion

Successfully created and executed two separate Ansible roles:

- **role_apache** → installed and enabled Apache2 on Slave1
- **role_nginx** → installed and enabled NGINX on Slave2