# Module 5: Ansible Assignment - 3

**Tasks To Be Performed:**

1. Create 2 Ansible roles

2. Install Apache2 on slave1 using one role and NGINX on slave2 using the

other role

3. Above should be implemented using different Ansible roles

**SOLUTION:**

**Step1: We'll use ansible-galaxy to create the roles for Apache2 and NGINX.**
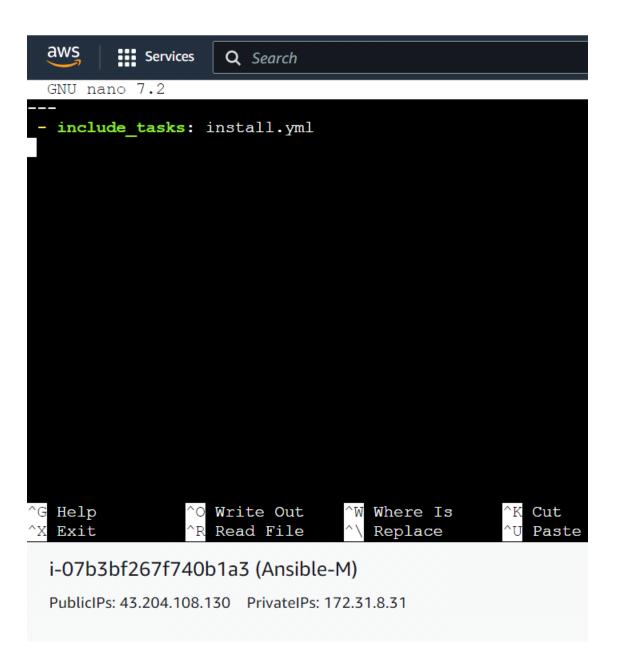
```
ubuntu@ip-172-31-8-31:/etc/ansible$ ls
ansible.cfg  assignment2.sh  hosts  play.yaml  play2.yaml  roles
ubuntu@ip-172-31-8-31:/etc/ansible$ cd roles
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ sudo ansible-galaxy init apache2
- Role apache2 was created successfully
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ l
apache2/
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ cd
ubuntu@ip-172-31-8-31:~$ cd /etc/ansible/roles
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ ls
apache2
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ sudo ansible-galaxy init nginx
- Role nginx was created successfully
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ ls
apache2  nginx
ubuntu@ip-172-31-8-31:/etc/ansible/roles$
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130   PrivateIPs: 172.31.8.31

**For role Apache2:**

```
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2$ cd tasks
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$ la
main.yml
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$ sudo cat main.yml
---
# tasks file for apache2
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$ sudo nano install.yaml
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130    PrivateIPs: 172.31.8.31

```
  GNU nano 7.2                                                  install.yaml
---
- name: installing apache2 on Slave1
  apt: name=apache2 state=latest
```

```
                                                          [ Wrote 3 lines ]
^G Help        ^O Write Out   ^W Where Is    ^K Cut         ^T Execute     ^C Loca
^X Exit        ^R Read File   ^\ Replace     ^U Paste       ^J Justify     ^/ Go T
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130    PrivateIPs: 172.31.8.31

```
GNU nano 7.2
---
 - include_tasks: install.yml
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130   PrivateIPs: 172.31.8.31

```
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ ls
apache2  nginx
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ cd apache2
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2$ ls
README.md  defaults  files  handlers  meta  tasks  templates  tests  vars
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2$ cd tasks
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$ la
main.yml
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$ sudo cat main.yml
---
# tasks file for apache2
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$ sudo nano install.yaml
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$ sudo nano main.yml
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130    PrivateIPs: 172.31.8.31

---

aws    ::: Services    Q Search                                    [Alt+S]

```
 GNU nano 7.2                                          install.yaml
---
- name: installing nginx on Slave2
  apt: name=nginx state=latest
```

```
                                                              [ Read 4 lines ]
^G Help       ^O Write Out   ^W Where Is   ^K Cut      ^T Execute   ^C Location
^X Exit       ^R Read File   ^\ Replace    ^U Paste    ^J Justify   ^/ Go To Line
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130    PrivateIPs: 172.31.8.31

```
GNU nano 7.2
---
- include_tasks: install.yaml
```

```
^G Help      ^O Write Out    ^W Where Is    ^K Cut
^X Exit      ^R Read File     ^\ Replace     ^U Paste
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130    PrivateIPs: 172.31.8.31

## For nginx Role

```
ubuntu@ip-172-31-8-31:/etc/ansible/roles/apache2/tasks$ cd ../..
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ ls
apache2  nginx
ubuntu@ip-172-31-8-31:/etc/ansible/roles$ cd nginx
ubuntu@ip-172-31-8-31:/etc/ansible/roles/nginx$ ls
README.md  defaults  files  handlers  meta  tasks  templates  tests  vars
ubuntu@ip-172-31-8-31:/etc/ansible/roles/nginx$ cd tasks
ubuntu@ip-172-31-8-31:/etc/ansible/roles/nginx/tasks$ ls
main.yml
ubuntu@ip-172-31-8-31:/etc/ansible/roles/nginx/tasks$ sudo nano install.yaml
ubuntu@ip-172-31-8-31:/etc/ansible/roles/nginx/tasks$ sudo nano main.yml
ubuntu@ip-172-31-8-31:/etc/ansible/roles/nginx/tasks$
```
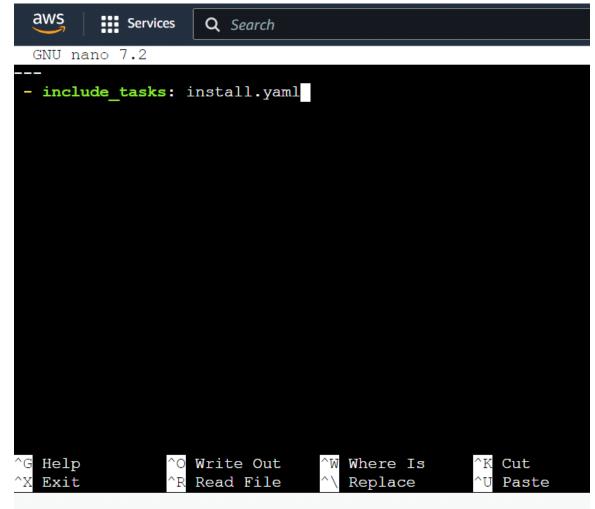
i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130    PrivateIPs: 172.31.8.31

```
GNU nano 7.2
---
- name: executing roles on Slave1
  become: yes
  hosts: Slave1
  roles:█
    - apache2
- name: executing role on Slave2
  become: yes
  hosts: Slave2
  roles:█
    - nginx
```

```
^G Help        ^O Write Out    ^W Where Is    ^K Cut      ^
^X Exit        ^R Read File    ^\ Replace     ^U Paste    ^
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130   PrivateIPs: 172.31.8.31

**Step 2: Create the Playbook**

```
GNU nano 7.2
---
- name: executing roles on Slave1
  become: yes
  hosts: Slave1
  roles:█
    - apache2
- name: executing role on Slave2
  become: yes
  hosts: Slave2
  roles:█
    - nginx
```

```
^G Help       ^O Write Out   ^W Where Is   ^K Cut       ^
^X Exit       ^R Read File   ^\ Replace    ^U Paste     ^
```
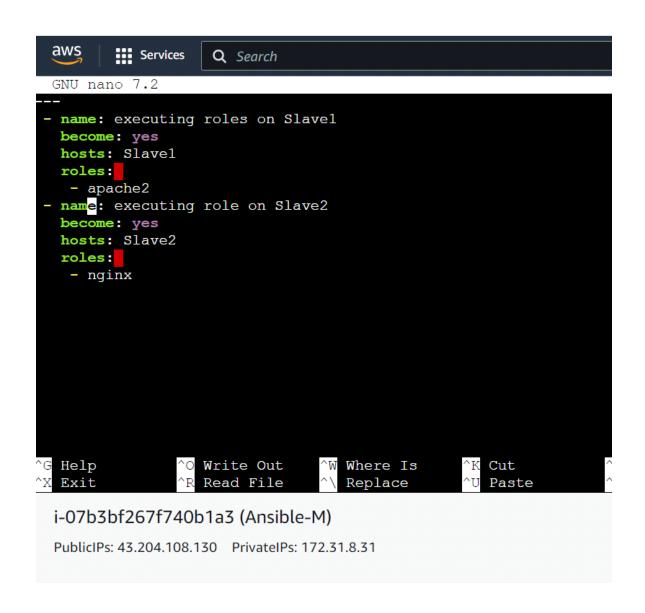
i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130   PrivateIPs: 172.31.8.31

```
ubuntu@ip-172-31-8-31:/etc/ansible/roles/nginx/tasks$ cd ../../..
ubuntu@ip-172-31-8-31:/etc/ansible$ sudo nano play3.yaml
ubuntu@ip-172-31-8-31:/etc/ansible$ ansible-playbook play3.yaml --syntax-check

playbook: play3.yaml
ubuntu@ip-172-31-8-31:/etc/ansible$ █
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130   PrivateIPs: 172.31.8.31

**Step 3: Run the Playbook**

```
ubuntu@ip-172-31-8-31:/etc/ansible$ ansible-playbook play3.yaml --check

PLAY [executing roles on Slave1] ************************************************************

TASK [Gathering Facts] **********************************************************************
ok: [Slave1]

TASK [apache2 : include_tasks] ************************************************************
included: /etc/ansible/roles/apache2/tasks/install.yaml for Slave1

TASK [apache2 : installing apache2 on Slave1] *********************************************
changed: [Slave1]

PLAY [executing role on Slave2] ************************************************************

TASK [Gathering Facts] **********************************************************************
ok: [Slave2]

TASK [nginx : include_tasks] **************************************************************
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130   PrivateIPs: 172.31.8.31

```
TASK [apache2 : include_tasks] ************************************************************
included: /etc/ansible/roles/apache2/tasks/install.yaml for Slave1

TASK [apache2 : installing apache2 on Slave1] *********************************************
changed: [Slave1]

PLAY [executing role on Slave2] ************************************************************

TASK [Gathering Facts] **********************************************************************
ok: [Slave2]

TASK [nginx : include_tasks] **************************************************************
included: /etc/ansible/roles/nginx/tasks/install.yaml for Slave2

TASK [nginx : installing nginx on Slave2] ************************************************
changed: [Slave2]

PLAY RECAP *****************************************************************************
Slave1                     : ok=3    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
Slave2                     : ok=3    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
ubuntu@ip-172-31-8-31:/etc/ansible$
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130   PrivateIPs: 172.31.8.31

```
ubuntu@ip-172-31-8-31:/etc/ansible$ ansible-playbook play3.yaml

PLAY [executing roles on Slave1] ********************************************************
```

i-07b3bf267f740b1a3 (Ansible-M)

PublicIPs: 43.204.108.130   PrivateIPs: 172.31.8.31

## Step 4: Check on both the Slaves

```
ubuntu@ip-172-31-8-186:~$ 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 Fri 2024-06-28 08:11:09 UTC; 3min 57s ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 22515 (apache2)
      Tasks: 55 (limit: 1130)
     Memory: 5.3M (peak: 5.4M)
        CPU: 58ms
     CGroup: /system.slice/apache2.service
             ├─22515 /usr/sbin/apache2 -k start
             ├─22517 /usr/sbin/apache2 -k start
             └─22518 /usr/sbin/apache2 -k start

Jun 28 08:11:09 ip-172-31-8-186 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Jun 28 08:11:09 ip-172-31-8-186 systemd[1]: Started apache2.service - The Apache HTTP Server.
ubuntu@ip-172-31-8-186:~$
```

i-0b34b819b3084418a (Ansible-S1)

PublicIPs: 65.2.78.174   PrivateIPs: 172.31.8.186

```
ubuntu@ip-172-31-9-136:~$ sudo systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Fri 2024-06-28 08:11:20 UTC; 4min 42s ago
       Docs: man:nginx(8)
    Process: 21703 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
    Process: 21705 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Main PID: 21706 (nginx)
      Tasks: 2 (limit: 1130)
     Memory: 1.7M (peak: 1.9M)
        CPU: 12ms
     CGroup: /system.slice/nginx.service
             ├─21706 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"
             └─21707 "nginx: worker process"

Jun 28 08:11:20 ip-172-31-9-136 systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Jun 28 08:11:20 ip-172-31-9-136 systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.
ubuntu@ip-172-31-9-136:~$
```

i-00e222e2f8f755356 (Ansible-S2)

PublicIPs: 13.201.133.142   PrivateIPs: 172.31.9.136