

## QUESTION 3

### 3. Ansible

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Create an Ansible role that installs Python3 and deploys a custom configuration file for the application.  
Task:

- Create an Ansible Role named `python_app_deploy` with the correct directory structure.
- Ensure Python3 is installed as part of the role.
- Place a template file named `config.yml.j2` inside the `templates/` directory.

Use the template module in the role to copy `config.yml.j2` to `/etc/python_app/config.yml` on the target machine.

## SOLUTION:

### 1. CREATING ROLE

```
kaushal@master-vm:~$ ansible-galaxy init python_app_deploy
- Role python_app_deploy was created successfully
kaushal@master-vm:~$
```

### 2. Created main.yml to define tasks for installing Python3 and deploying config.

```
GNU nano 6.2 roles/python_app_deploy/tasks/main.yml
- name: Install Python3
  ansible.builtin.package:
    name: python3
    state: present

- name: Create config directory
  ansible.builtin.file:
    path: /etc/python_app
    state: directory
    mode: '0755'

- name: Deploy config file from template
  ansible.builtin.template:
    src: config.yml.j2
    dest: /etc/python_app/config.yml
    mode: '0644'
```

### 3. Created hosts file to define target machines for Ansible deployment.

```
GNU nano 6.2 hosts
[all]
192.168.153.131
192.168.153.133
192.168.153.128
```

### 4. Created .j2 file to generate config dynamically based on environment settings

```
GNU nano 6.2 roles/python_app_deploy/templates/config.yml.j2
app_name: MyPythonApp
environment: {{ env | default('production') }}
debug: {{ debug | default(false) }}
port: {{ port | default(8000) }}
```

## 5. OUTPUT

```
kaushal@master-vm:~/ansible-python-app$ ls
deploy.yml hosts roles
kaushal@master-vm:~/ansible-python-app$ ansible-playbook -i hosts deploy.yml --ask-pass --ask-become-pass
SSH password:
BECOME password[defaults to SSH password]:
[WARNING]: Found variable using reserved name: port

PLAY [Deploy Python App and Config] *****

TASK [Gathering Facts] *****
ok: [192.168.153.131]
ok: [192.168.153.133]
ok: [192.168.153.128]

TASK [python_app_deploy : Install Python3] *****
ok: [192.168.153.133]
ok: [192.168.153.131]
ok: [192.168.153.128]

TASK [python_app_deploy : Create config directory] *****
ok: [192.168.153.131]
ok: [192.168.153.133]
changed: [192.168.153.128]

TASK [python_app_deploy : Deploy config file from template] *****
changed: [192.168.153.128]
ok: [192.168.153.133]
ok: [192.168.153.131]

PLAY RECAP *****
192.168.153.128      : ok=4    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
192.168.153.131      : ok=4    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
192.168.153.133      : ok=4    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

kaushal@master-vm:~/ansible-python-app$
```

### ALL FILES :

#### - deploy.yaml file:

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- name: Deploy Python App and Config

hosts: all

become: yes

vars:

env: staging

debug: true

port: 8080

roles:

- python\_app\_deploy

#### - hosts file

[all]

192.168.153.131

192.168.153.133

192.168.153.128

- main.yml
- file inside roles/python\_app\_deploy/tasks/main.yml

---

- name: Install Python3

ansible.builtin.package:

name: python3

state: present

- name: Create config directory

ansible.builtin.file:

path: /etc/python\_app

state: directory

mode: '0755'

- name: Deploy config file from template

ansible.builtin.template:

src: config.yml.j2

dest: /etc/python\_app/config.yml

mode: '0644'