

Step1: Create Directory of all required files of Configuration file, Inventory file, Role structure.

```
admin@master:~$ ls
ansible  ansible-webserver  inventory.ini  prashanth  snap
admin@master:~$ tree ansible-webserver/
ansible-webserver/
├── ansible.cfg
├── group_vars
│   └── all
│       └── vault.yml
├── inventory
│   └── hosts
├── roles
│   └── webserver
│       ├── defaults
│       │   └── main.yml
│       ├── files
│       ├── handlers
│       │   └── main.yml
│       ├── meta
│       │   └── main.yml
│       ├── README.md
│       ├── tasks
│       │   └── main.yml
│       ├── templates
│       │   └── index.html.j2
│       ├── tests
│       │   ├── inventory
│       │   └── test.yml
│       └── vars
│           └── main.yml
└── site.yml

13 directories, 13 files
admin@master:~$
```

Step2: Created and Configure ansible.cfg [./inventory/hosts & ./roles]

```
admin@master:~/ansible-webserver$ cat ansible.cfg
[defaults]
inventory = ./inventory/hosts
roles_path = ./roles
admin@master:~/ansible-webserver$
```

Step3: Created static inventory under inventory/hosts for two target nodes under the group [webservers] and also defined group variable env=staging

```
admin@master:~/ansible-webserver/inventory$ cat hosts
[webservers]
web1 ansible_host=192.168.153.128 ansible_user=admin
web2 ansible_host=192.168.153.131 ansible_user=admin

[webservers:vars]
env=staging
```

Step4: Created an ansible role named webserver using ansible-galaxy init.

```
admin@master:~/ansible-webserver$ ansible-galaxy init roles/webserver
- Role roles/webserver was created successfully
admin@master:~/ansible-webserver$ ls
```

Step5: added task to Install Apache and Copying dynamic homepage using a jinja2 template and start & enable Apache service In roles/webserver/tasks/main.yml.

```
admin@master:~/ansible-webserver/roles/webserver/tasks$ cat main.yml
---
- name: Install Apache
  apt:
    name: apache2
    state: present
    update_cache: yes
    tags: apache

- name: Copy custom index.html
  template:
    src: index.html.j2
    dest: /var/www/html/index.html
    notify: Restart Apache
    when: env == "staging"
    tags: apache

- name: Start and enable Apache
  service:
    name: apache2
    state: started
    enabled: yes
    tags: apache
```

Adding Handler to roles/webserver/handlers/main.yml

```
admin@master:~/ansible-webserver/roles/webserver/handlers$ cat main.yml
---
- name: Restart Apache
  service:
    name: apache2
    state: restarted
```

Step6: Created a Jinja2 template file named index.html.j2

```
admin@master:~/ansible-webserver/roles/webserver/templates$ cat index.html.j2
<html>
  <body>
    <h1>Welcome to {{ inventory_hostname }} in {{ env }} environment!</h1>
  </body>
</html>
```

Step7: created a site.yml

```
admin@master:~/ansible-webserver$ cat site.yml
---
- name: Configure Webservers
  hosts: webservers
  become: yes
  vars_files:
    - group_vars/all/vault.yml

  tasks:
    - name: Ping servers
      ping:

    - name: Install curl
      apt:
        name: curl
        state: present
        update_cache: yes

  roles:
    - webserver
```

```

admin@master:~/ansible-webserver]$ ansible-playbook site.yml --ask-vault-pass --ask-become-pass
BECOME password:
Vault password:

PLAY [Configure Webservers] *****

TASK [Gathering Facts] *****
[WARNING]: Platform linux on host web1 is using the discovered Python interpreter at /usr/bin/python3.10, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/interpreter_discovery.html for
more information.
ok: [web1]
[WARNING]: Platform linux on host web2 is using the discovered Python interpreter at /usr/bin/python3.10, but future installation of another Python
interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-core/2.17/reference_appendices/interpreter_discovery.html for
more information.
ok: [web2]

TASK [webserver : Install Apache] *****
changed: [web2]
changed: [web1]

TASK [webserver : Copy custom index.html] *****
changed: [web2]
changed: [web1]

TASK [webserver : Start and enable Apache] *****
ok: [web2]
ok: [web1]

TASK [Ping servers] *****
ok: [web2]
ok: [web1]

TASK [Install curl] *****
changed: [web2]
changed: [web1]

RUNNING HANDLER [webserver : Restart Apache] *****
changed: [web2]
changed: [web1]

PLAY RECAP *****
web1                : ok=7    changed=4    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
web2                : ok=7    changed=4    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

```

Activate Window

```

admin@master:~/ansible-webserver$ curl http://192.168.153.128
<html>
  <body>
    <h1>Welcome to web1 in staging environment!</h1>
  </body>
</html>
admin@master:~/ansible-webserver$ curl http://192.168.153.131
<html>
  <body>
    <h1>Welcome to web2 in staging environment!</h1>
  </body>
</html>

```

Git hub link Reference:

<https://github.com/vinayz7/-Automating-webserver-Deployment-and-Configuration-Using-Ansible-Playbooks-and-Roles>.