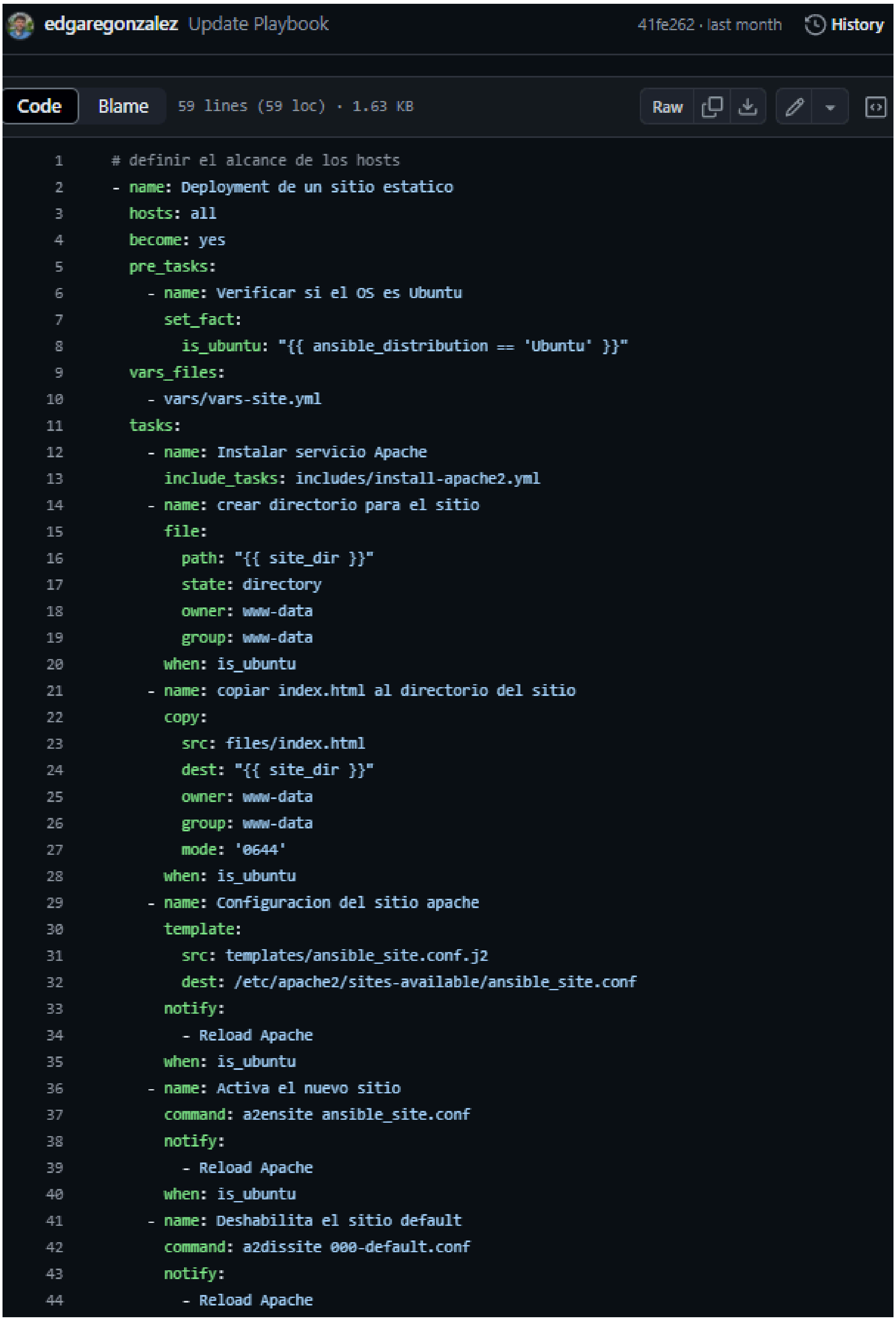
Desafío 6

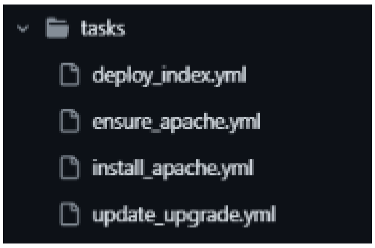
1- Para comenzar este desafío debemos descargar el proyecto del siguiente repositorio
https://github.com/edgaregonzalez/devops-bootcamp/tree/main/Clase35

2- Una vez descargado el proyecto movemos las taks de hacia modulos más chicos de la siguiente manera



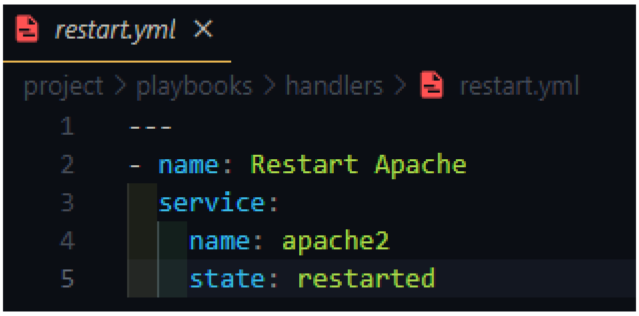
```yaml
# definir el alcance de los hosts
- name: Deployment de un sitio estatico
  hosts: all
  become: yes
  pre_tasks:
    - name: Verificar si el OS es Ubuntu
      set_fact:
        is_ubuntu: "{{ ansible_distribution == 'Ubuntu' }}"
  vars_files:
    - vars/vars-site.yml
  tasks:
    - name: Instalar servicio Apache
      include_tasks: includes/install-apache2.yml
    - name: crear directorio para el sitio
      file:
        path: "{{ site_dir }}"
        state: directory
        owner: www-data
        group: www-data
      when: is_ubuntu
    - name: copiar index.html al directorio del sitio
      copy:
        src: files/index.html
        dest: "{{ site_dir }}"
        owner: www-data
        group: www-data
        mode: '0644'
      when: is_ubuntu
    - name: Configuracion del sitio apache
      template:
        src: templates/ansible_site.conf.j2
        dest: /etc/apache2/sites-available/ansible_site.conf
      notify:
        - Reload Apache
      when: is_ubuntu
    - name: Activa el nuevo sitio
      command: a2ensite ansible_site.conf
      notify:
        - Reload Apache
      when: is_ubuntu
    - name: Deshabilita el sitio default
      command: a2dissite 000-default.conf
      notify:
        - Reload Apache
```

3- separamos las tareas de deploy, ensure, install y update.



```
tasks
    deploy_index.yml
    ensure_apache.yml
    install_apache.yml
    update_upgrade.yml
```

4- creamos carpeta handlers con un archivo de formato .yml donde se indica lo siguiente.

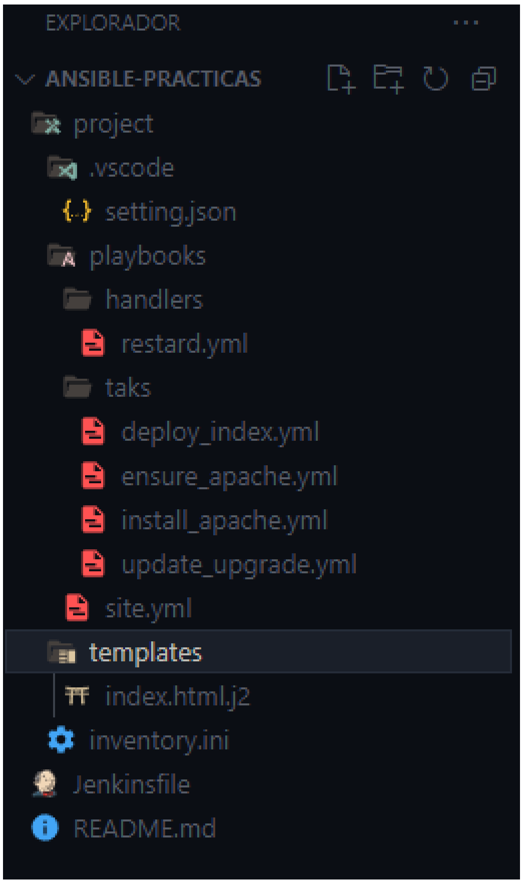


restart.yml

project > playbooks > handlers > restart.yml

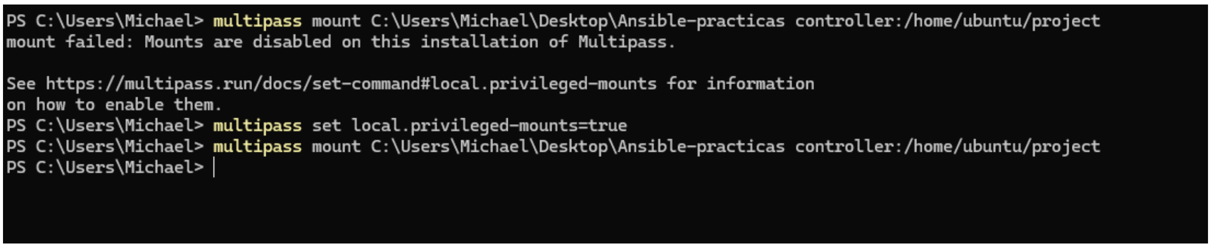
```yaml
---
- name: Restart Apache
  service:
    name: apache2
    state: restarted
```

5- al desglosar el archivo del proyecto nos debería quedar de la siguiente manera.

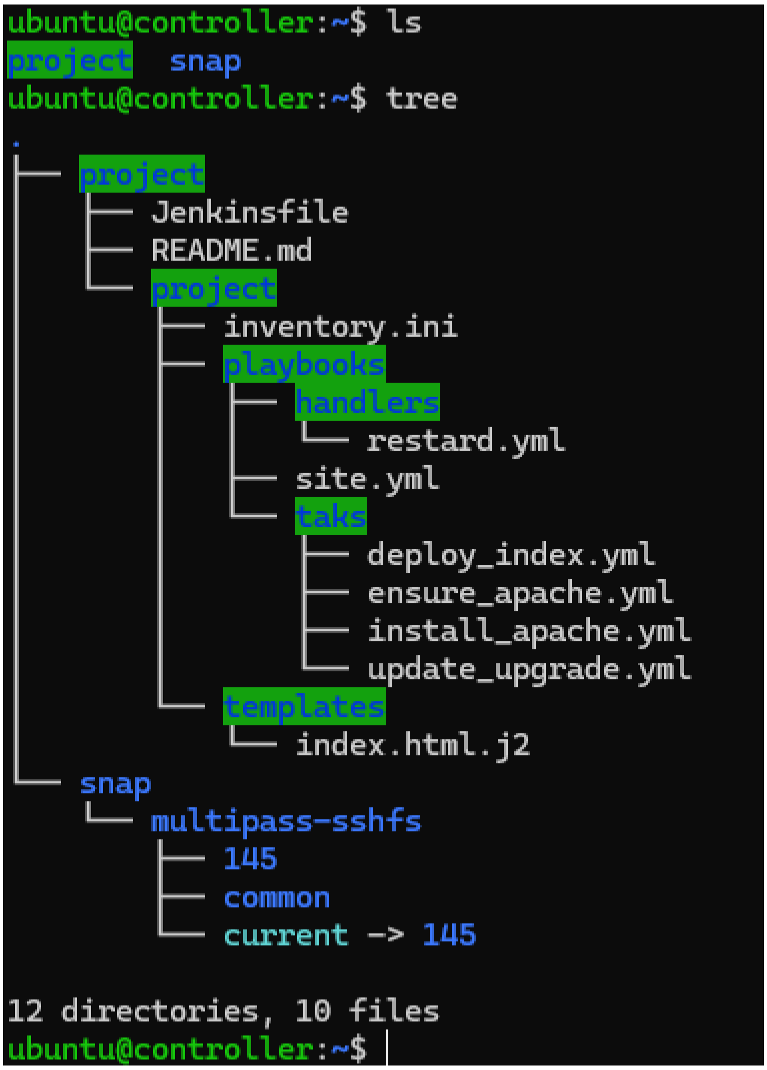


```
ANSIBLE-PRACTICAS
  project
    .vscode
      setting.json
    playbooks
      handlers
        restard.yml
      taks
        deploy_index.yml
        ensure_apache.yml
        install_apache.yml
        update_upgrade.yml
      site.yml
    templates
      index.html.j2
    inventory.ini
  Jenkinsfile
  README.md
```

6- Con el comando mount montamos el proyecto en nuestro Controller

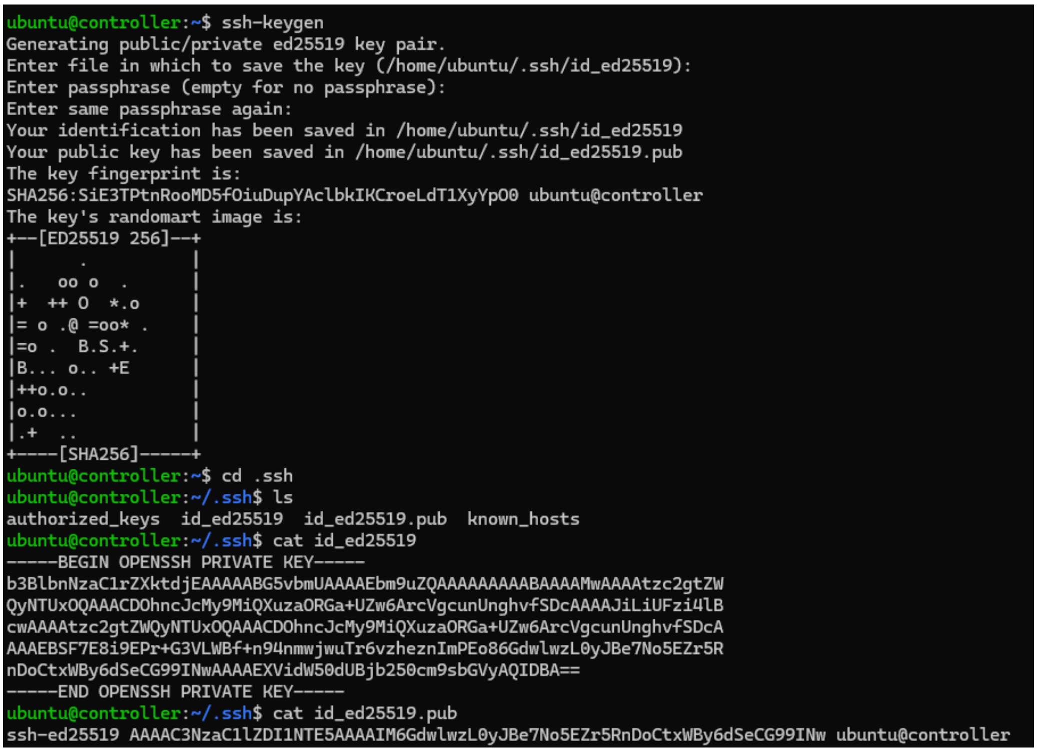


```
PS C:\Users\Michael> multipass mount C:\Users\Michael\Desktop\Ansible-practicas controller:/home/ubuntu/project
mount failed: Mounts are disabled on this installation of Multipass.

See https://multipass.run/docs/set-command#local.privileged-mounts for information
on how to enable them.
PS C:\Users\Michael> multipass set local.privileged-mounts=true
PS C:\Users\Michael> multipass mount C:\Users\Michael\Desktop\Ansible-practicas controller:/home/ubuntu/project
PS C:\Users\Michael> |
```

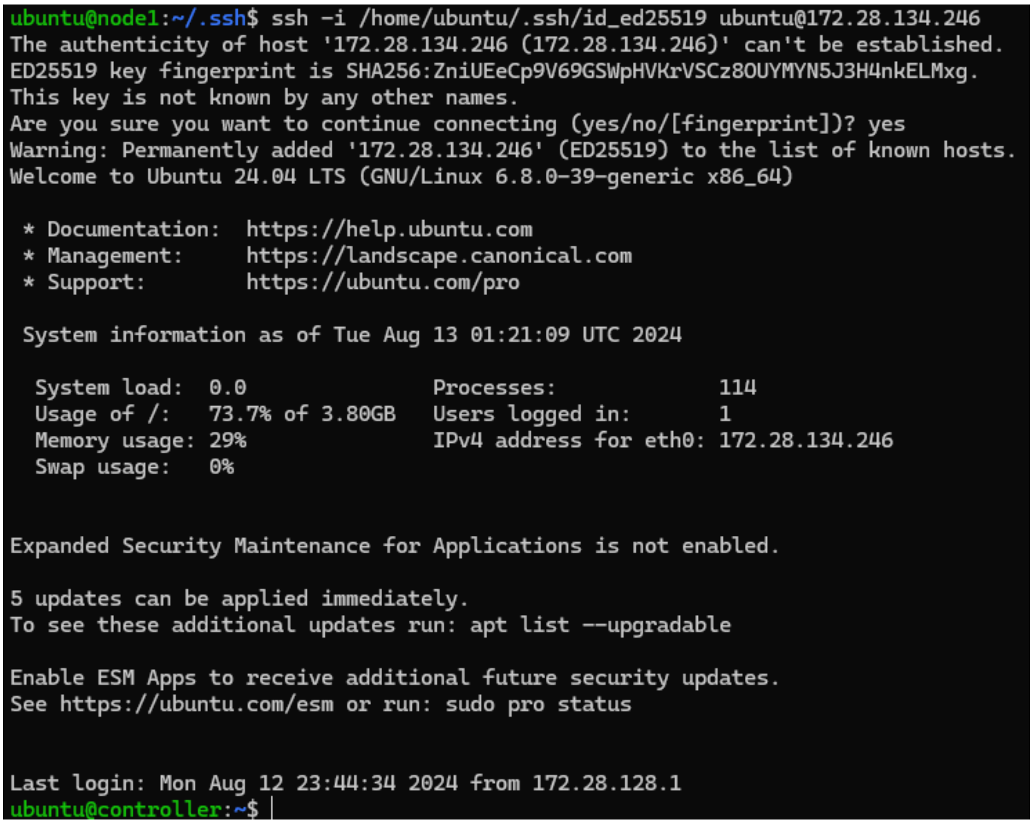


```
ubuntu@controller:~$ ls
project  snap
ubuntu@controller:~$ tree
.
├── project
│   ├── Jenkinsfile
│   ├── README.md
│   └── project
│       ├── inventory.ini
│       ├── playbooks
│       │   ├── handlers
│       │   │   └── restard.yml
│       │   ├── site.yml
│       │   └── taks
│       │       ├── deploy_index.yml
│       │       ├── ensure_apache.yml
│       │       ├── install_apache.yml
│       │       └── update_upgrade.yml
│       └── templates
│           └── index.html.j2
└── snap
    └── multipass-sshfs
        ├── 145
        ├── common
        └── current -> 145

12 directories, 10 files
ubuntu@controller:~$ |
```

7- instalamos y configuramos nuestras credenciales con el comando ssh-keygen para conectar nuestro controller y el servidor a administrar.

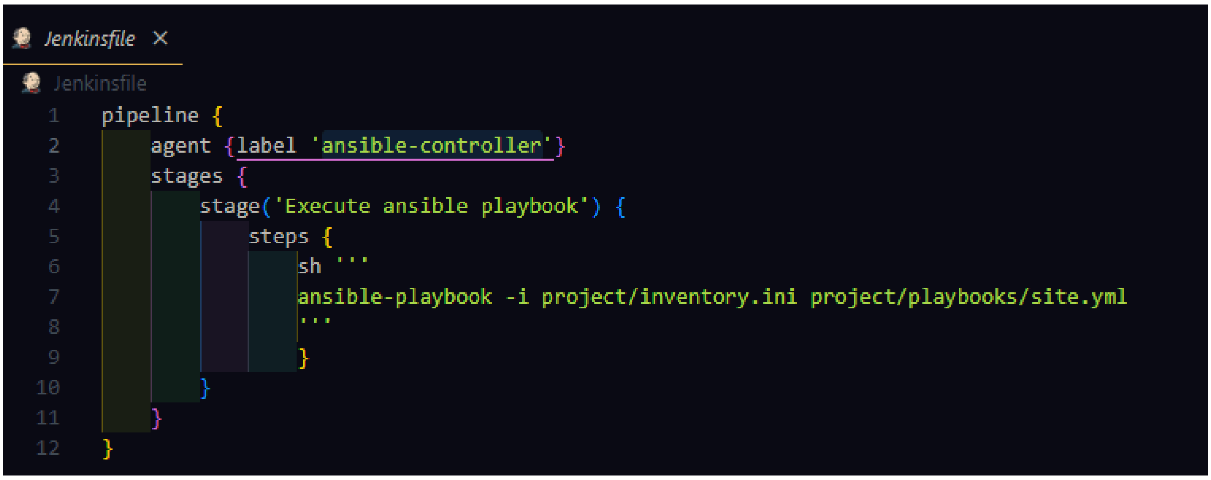


```
ubuntu@controller:~$ ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_ed25519):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_ed25519
Your public key has been saved in /home/ubuntu/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:SiE3TPtnRooMD5fOiuDupYAclbkIKCroeLdT1XyYpO0 ubuntu@controller
The key's randomart image is:
+--[ED25519 256]--+
|      .          |
|.   oo o  .      |
|+  ++ O  *.o     |
|= o .@ =oo* .    |
|=o .  B.S.+.     |
|B... o.. +E      |
|++o.o..          |
|o.o...           |
|.+  ..           |
+----[SHA256]-----+
ubuntu@controller:~$ cd .ssh
ubuntu@controller:~/.ssh$ ls
authorized_keys  id_ed25519  id_ed25519.pub  known_hosts
ubuntu@controller:~/.ssh$ cat id_ed25519
-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXktdjEAAAAABG5vbmUAAAAEbm9uZQAAAAAAAAABAAAAMwAAAAtzc2gtZW
QyNTUxOQAAACDOhncJcMy9MiQXuzaORGa+UZw6ArcVgcunUnghvfSDcAAAAJiLiUFzi4lB
cwAAAAtzc2gtZWQyNTUxOQAAACDOhncJcMy9MiQXuzaORGa+UZw6ArcVgcunUnghvfSDcA
AAAEBSF7E8i9EPr+G3VLWBf+n94nmwjwuTr6vzheznImPEo86GdwlwzL0yJBe7No5EZr5R
nDoCtxWBy6dSeCG99INwAAAAEXVidW50dUBjb250cm9sbGVyAQIDBA==
-----END OPENSSH PRIVATE KEY-----
ubuntu@controller:~/.ssh$ cat id_ed25519.pub
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIM6GdwlwzL0yJBe7No5EZr5RnDoCtxWBy6dSeCG99INw ubuntu@controller
```



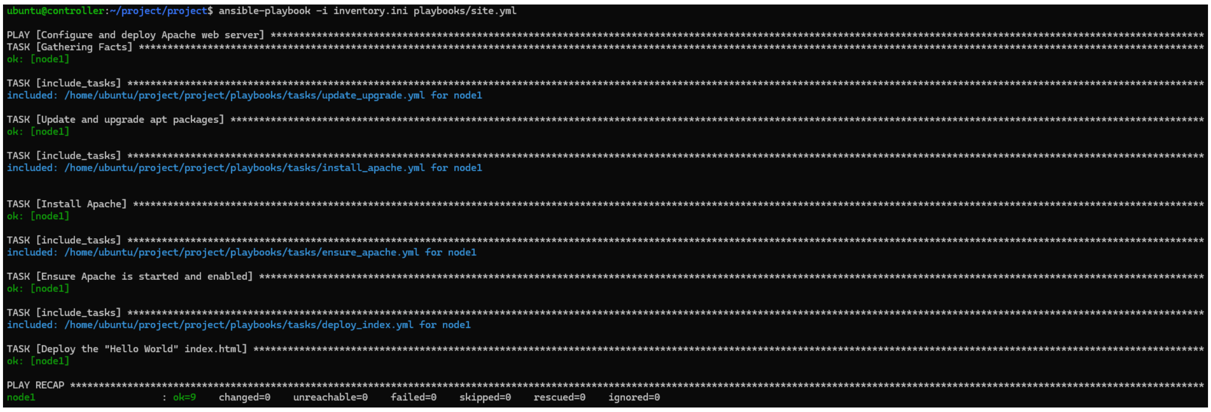
```
ubuntu@node1:~/.ssh$ ssh -i /home/ubuntu/.ssh/id_ed25519 ubuntu@172.28.134.246
The authenticity of host '172.28.134.246 (172.28.134.246)' can't be established.
ED25519 key fingerprint is SHA256:ZniUEeCp9V69GSWpHVKrVSCz8OUYMYN5J3H4nkELMxg.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.28.134.246' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-39-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Tue Aug 13 01:21:09 UTC 2024

  System load:  0.0               Processes:             114
  Usage of /:   73.7% of 3.80GB   Users logged in:       1
  Memory usage: 29%               IPv4 address for eth0: 172.28.134.246
  Swap usage:   0%


Expanded Security Maintenance for Applications is not enabled.

5 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


Last login: Mon Aug 12 23:44:34 2024 from 172.28.128.1
ubuntu@controller:~$ 
```

8- Ya por último configuramos nuestra configuración de Jenkins en el cual haremos uso de nuestro agente para poder verificar “CI/CD” que nuestro proyecto está corriendo correctamente.



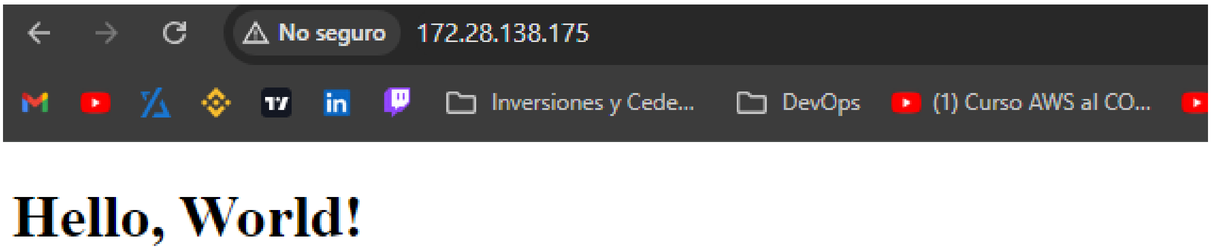
```
pipeline {
    agent {label 'ansible-controller'}
    stages {
        stage('Execute ansible playbook') {
            steps {
                sh '''
                ansible-playbook -i project/inventory.ini project/playbooks/site.yml
                '''
            }
        }
    }
}
```

9- con el comando ansible-playbook -i inventory.ini playbooks/site.yml corremos el proyecto y vemos que nuestras Taks corrieron correctamentes



```
ubuntu@controller:~/project/project$ ansible-playbook -i inventory.ini playbooks/site.yml

PLAY [Configure and deploy Apache web server] *****************************************************************************************************************************
TASK [Gathering Facts] ****************************************************************************************************************************************************
ok: [node1]

TASK [include_tasks] ******************************************************************************************************************************************************
included: /home/ubuntu/project/project/playbooks/tasks/update_upgrade.yml for node1

TASK [Update and upgrade apt packages] ************************************************************************************************************************************
ok: [node1]

TASK [include_tasks] ******************************************************************************************************************************************************
included: /home/ubuntu/project/project/playbooks/tasks/install_apache.yml for node1


TASK [Install Apache] *****************************************************************************************************************************************************
ok: [node1]

TASK [include_tasks] ******************************************************************************************************************************************************
included: /home/ubuntu/project/project/playbooks/tasks/ensure_apache.yml for node1

TASK [Ensure Apache is started and enabled] *******************************************************************************************************************************
ok: [node1]

TASK [include_tasks] ******************************************************************************************************************************************************
included: /home/ubuntu/project/project/playbooks/tasks/deploy_index.yml for node1

TASK [Deploy the "Hello World" index.html] ********************************************************************************************************************************
ok: [node1]

PLAY RECAP ****************************************************************************************************************************************************************
node1                      : ok=9    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

ingresando a la direccion ip de nuestro Nodo1 podemos ver el resultado



Hello, World!