Deploy Application using Ansible + CICD pipeline via Github Actions

Create project folder: ansible-cicd

Move to the folder and create folder ansible

Create 2 files under ansible folder

Inventory.yml

```yaml
all:
  hosts:
    target_host:
      ansible_host: "{{ host_placeholder }}"
      ansible_user: "{{ user_placeholder }}"
      ansible_ssh_private_key_file: ~/.ssh/id_rsa
```

create playbook.yml

```yaml
---
- name: Test Connection with instance and install NgInx
  hosts: all
  become: yes
  tasks:
    - name: Ensure Nginx is installed
      apt:
        name: nginx
        state: present
        update_cache: yes

    - name: Start and Enable Nginx
      service:
        name: nginx
        state: started
        enabled: yes
```

Create .github/workflows/deploy.yml

```yaml
name: Deploy with Ansible
on:
    push:
```

```yaml
        branches:
            - main

jobs:
    deploy:
        runs-on: ubuntu-latest

        steps:
            - name: Checkout Repo
              uses: actions/checkout@v4

            - name: Set up Python and
Ansiblec:\Users\NEW\Downloads\testsonam.pem
              run: |
                sudo apt update
                sudo apt install -y python3-pip
                pip3 install ansible

            - name: Add SSh key and set permission
              run: |
                mkdir -p ~/.ssh
                echo "${{ secrets.ANSIBLE_PRIVATE_KEY }}" >
~/.ssh/id_rsa
                chmod 600 ~/.ssh/id_rsa
                ssh-keyscan -H ${{ secrets.HOST }} >>
~/.ssh/known_hosts

            - name: Replace Placeholders in my inventory
              run: |
                sed -i "s/{{ host_placeholder }}/${{
secrets.HOST }}/" ansible/inventory.yml
                sed -i "s/{{ user_placeholder }}/${{
secrets.REMOTE_USER }}/" ansible/inventory.yml

            - name: Run Ansible Playbook
              run: |
                ansible-playbook ansible/playbook.yml -i
ansible/inventory.yml
```
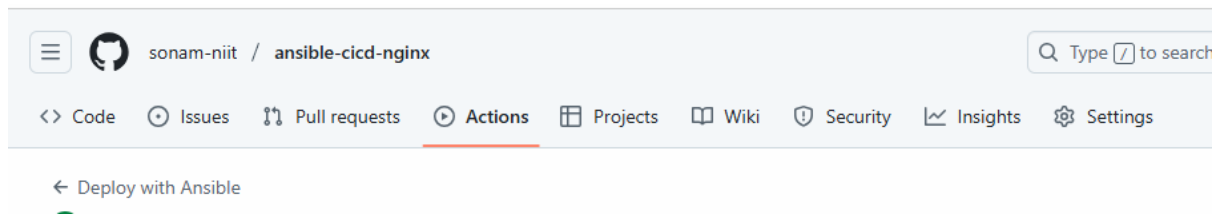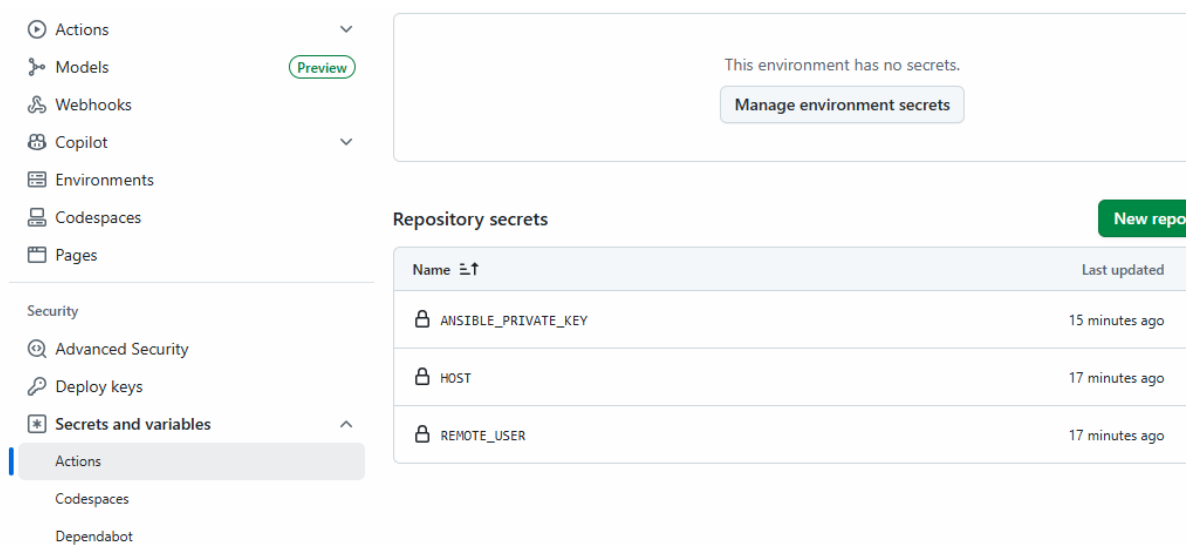
Now Very important setup your github Repository

Go to your repo settings

Click on settings

Click on secrets and variables

Actions → create new Repository secret

https://github.com/sonam-niit/Devops-Sept-2025-Ansible-CICD

Actions secrets / New secret

Name *

HOST

Secret *

3.80.33.201

Add secret

Repository secrets

New repository secret

Name ≡↑	Last updated		
🔒 ANSIBLE_PRIVATE_KEY	17 minutes ago	✏️	🗑️
🔒 HOST	now	✏️	🗑️
🔒 REMOTE_USER	19 minutes ago	✏️	🗑️

For Key you can copy paste the content of your .pem file

Actions secrets / Update secret

ANSIBLE_PRIVATE_KEY

Value

XNZOQgoRLVTIZ/eTc7sunLA2BT7VVroTKQngJIoCgTLAmWeVZbphZVbhOLJT78aJ
28JmkhHnvnL1bygJZc2KQMp0UEUydLneEDeSa9TqkKP+vMsTXduvaBHT3jpd82nl
EeNz2zJo/UZjTEZnDMkRJh4DuE45ODRG3wIJZ6n9uIC0GNWMkv6ILqXX+TC05PKI
U0KRIbQytnoAJfsYLUamLuUCgYBFcqD8EbfWnTACASLAugNbm53xnSmLMgUCEv
+gBZedPykI5qITPfJiA7FyswsoWcP44136tsD2bXCgJXzt/g5I8yjJaVwQWzbuKJ
sZr/1Cn1WLhecS3NtgHejbhILHV/N6OxiYSTfs3iXMAorSx3QGgelA4VSA0DiqPf
zrwpDQKBgQDIIX3r887vmGawSMRYO3TAyXM6okIMIw8aqrgt+1xGucPfmEe/74Lv
vmY2I8VvF8XsCJs/ONbxCREPAIZXPBc3zm7V+1rfC2o6FO/dnCirzplge/kdIdY4
Bu3wRCXVPUA4QWiYIHZIYxx5r6wmmCMISJrO8yr60W6V5sSnaBZejg==
-----END RSA PRIVATE KEY-----

Update secret

Then just do git push.

Check Actions

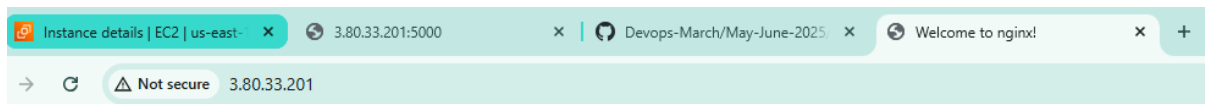For entire project structure and output you can check below repo link

deploy
succeeded 10 minutes ago in 1m 53s

Q Search

∨ ✔ Run Ansible Playbook

```
 4
 5   PLAY [Test Connection with instance and install NgInx] **************************
 6
 7   TASK [Gathering Facts] ***********************************************************
 8   Warning: : Platform linux on host target_host is using the discovered Python
 9   interpreter at /usr/bin/python3.12, but future installation of another Python
10   interpreter could change the meaning of that path. See
11   https://docs.ansible.com/ansible-
12   core/2.18/reference_appendices/interpreter_discovery.html for more information.
13   ok: [target_host]
14
15   TASK [Ensure Nginx is installed] ************************************************
16   changed: [target_host]
17
18   TASK [Start and Enable Nginx] **************************************************
19   ok: [target_host]
20
21   PLAY RECAP *********************************************************************
22   target_host                  : ok=3    changed=1    unreachable=0    failed=0    skipped=0
23
```

If all executed successfully then you can see the default page of NgInx with public IP (make sure port 80 is open in your security group)

Instance details | EC2 | us-east- ×   3.80.33.201:5000   ×   Devops-March/May-June-2025 ×   Welcome to nginx!   ×   +

→   C   ⚠ Not secure   3.80.33.201

Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.