Project 2-

==========

Step1:-

Create 1 instance named "Jenkins_Terraform_Ansible >

Install terraform

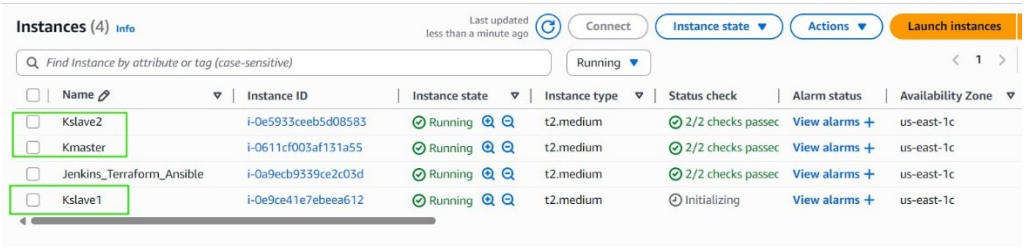
wget -O- https://apt.releases.hashicorp.com/gpg | sudo gpg --dearmor -o /usr/share/keyrings/hashicorp-archive-keyring.gpg
echo "deb [signed-by=/usr/share/keyrings/hashicorp-archive-keyring.gpg] https://apt.releases.hashicorp.com $(lsb_release -cs) main" | sudo tee /etc/apt/sources.list.d/hashicorp.list
sudo apt update && sudo apt install terraform -y

sudo nano main.tf

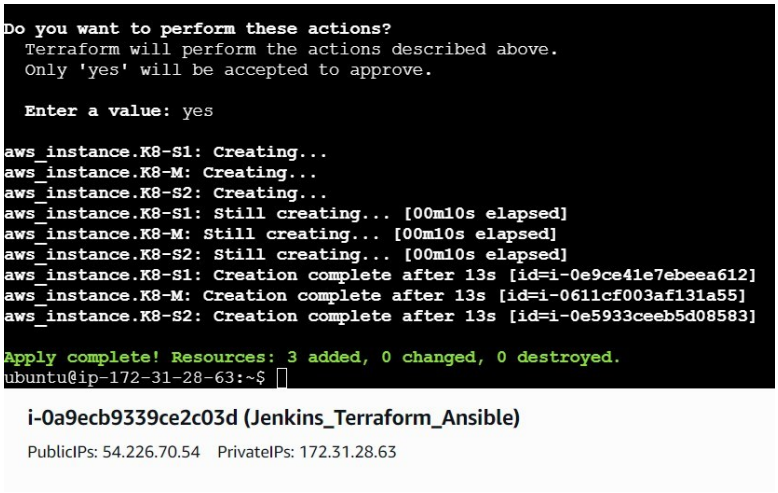
```
provider "aws" {
  secret_key = ""
  access_key = ""
  region = "us-west-1"
}

resource "aws_instance" "K8-M" {
  ami = ""
  instance_type = "t2.medium"
  key_name = ""
  tags = {
    Name = "Kmaster"
  }
}

resource "aws_instance" "K8-S1" {
  ami = ""
  instance_type = "t2.medium"
  key_name = ""
  tags = {
    Name = "Kslave1"
  }
```

```
}

resource "aws_instance" "K8-S2" {
  ami = ""
  instance_type = "t2.medium"
  key_name = ""
  tags = {
    Name = "Kslave2"
  }
}
```

Terraform init
Terraform plan
Terraform apply



You will get to see 3 ec2 instances running.



Step 2 :-

Install Ansible on the Jenkins_Terraform_Ansible

sudo apt update
sudo apt install software-properties-common
sudo add-apt-repository --yes --update ppa:ansible/ansible
sudo apt install ansible -y

Step 3:-

Now create a cluster for KMaster
On Master:
Ssh-keygen
Sudo cat id_rsa.pub
Copy ssh key

Go on Kmaster

Cd .ssh
Sudo nano authorized_keys
Paste ssh key

Go on Master:
Cd /etc/ansible
Ls
Sudo nano hosts
[test]
Private Ip of Kmaster
Ansible -m ping all

Step 4:-

Playbook Syntax:

Sudo nano playbook.yaml

-name: Installations on Master

hosts: localhost

become: true

tasks:

-name: Executing script on master

script: Jenkins_terraform_ansible.sh

-name: Installations on test

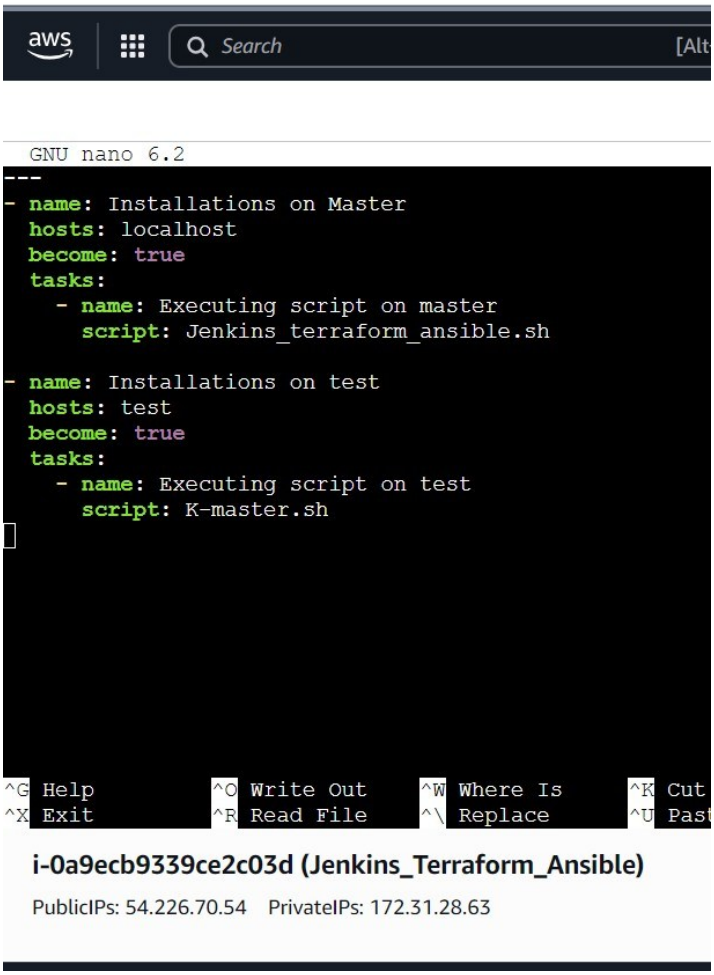
hosts: test

become: true

tasks:

-name: Executing script on test

script: K-master.sh



Step 5:-

Jenkins_terraform_ansible.sh

sudo apt update

sudo apt install openjdk-17-jre -y

sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \

https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key

echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \

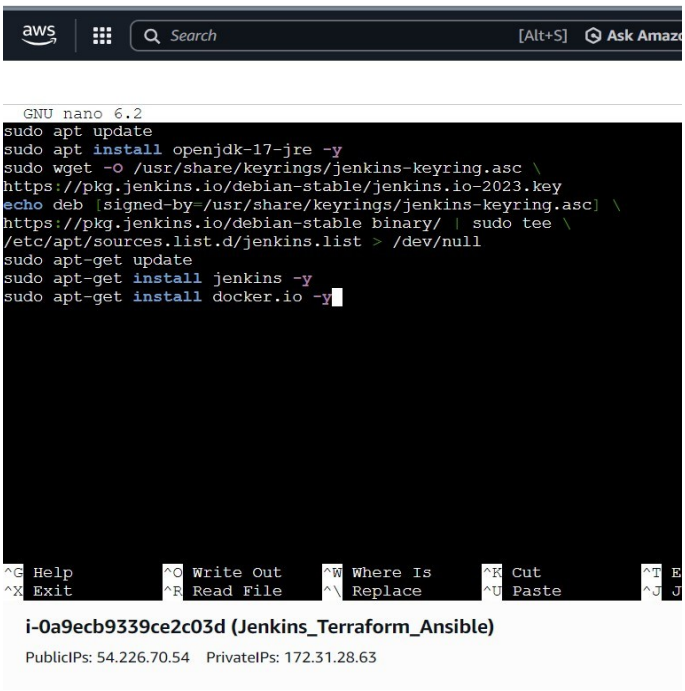
https://pkg.jenkins.io/debian-stable binary/ | sudo tee \

/etc/apt/sources.list.d/jenkins.list > /dev/null sudo

apt-get update

sudo apt-get install jenkins -y

sudo apt-get install docker.io -y



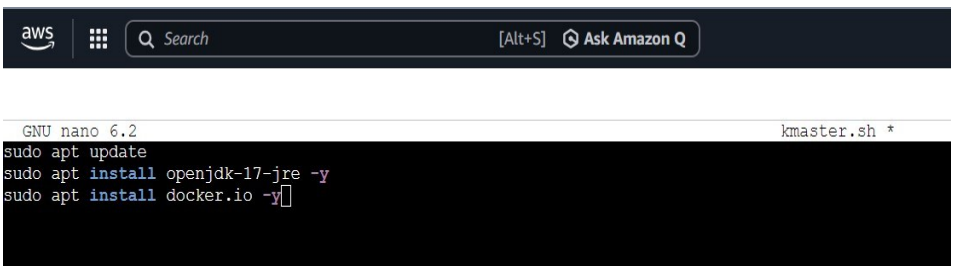
Step 6:-

Kmaster.sh

sudo apt update

sudo apt install openjdk-17-jre -y

sudo apt install docker.io -y



Step 7:-

RUN PLAYBOOK :

ansible-playbook play.yaml –synatax-check

ansible-playbook play.yaml --check

ansible-playbook play.yaml

```
ubuntu@ip-172-31-20-201:/etc/ansible$ sudo nano play.yaml
ubuntu@ip-172-31-20-201:/etc/ansible$ ansible-playbook play.yaml

PLAY [Installations on Master] ************************************************************

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

TASK [Executing script on master] *********************************************************
changed: [localhost]

PLAY RECAP ********************************************************************************
localhost                  : ok=2    changed=1    unreachable=0    failed=0    skipped=0

ubuntu@ip-172-31-20-201:/etc/ansible$
```

i-006ec4ade90e24b2a (jenkins-terra-ansible)

PublicIPs: 54.164.117.172 PrivateIPs: 172.31.20.201

Step 8 :-

Open the Github repository and fork it.

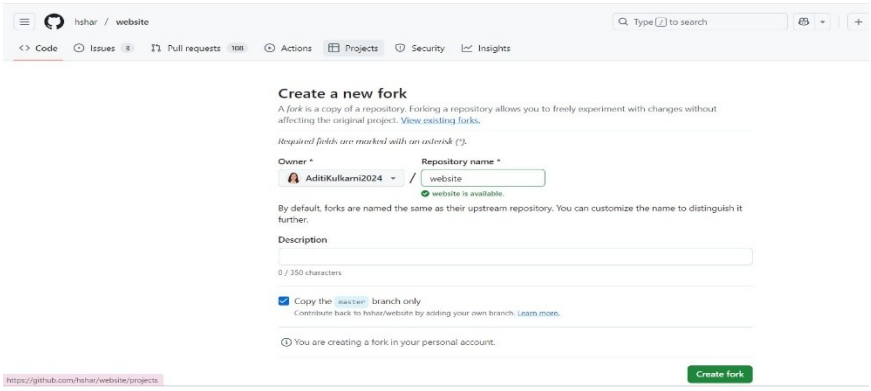
Clone this new repository > Go to folder > Create a Dockerfile

Dockerfile syntax

FROM ubuntu

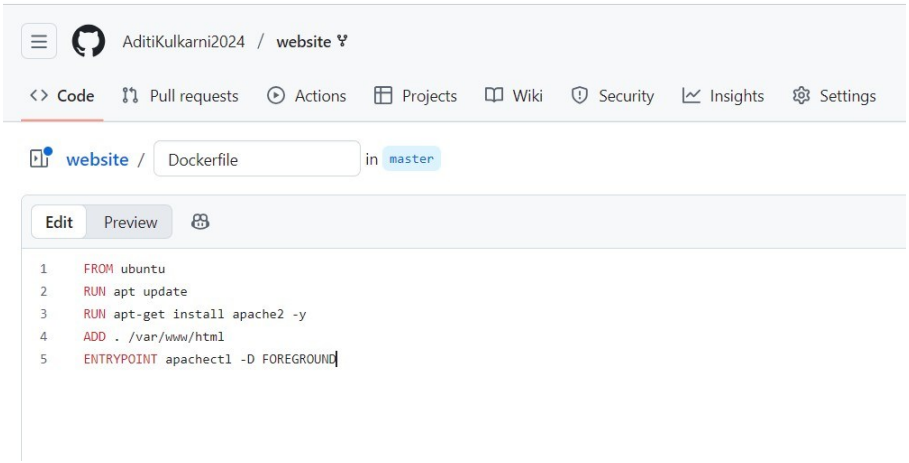
RUN apt update

RUN apt-get install apache2 -y



ADD . /var/www/html

ENTRYPOINT apachectl -D FOREGROUND



Step 9:-
Create deploy.yml file

apiVersion: apps/v1

kind: Deployment

metadata:

 name: custom-deployment

 labels:

  app: custom

spec:

 replicas: 2

 selector:

 matchLabels:

  app: custom

 template:

 metadata:

  labels:

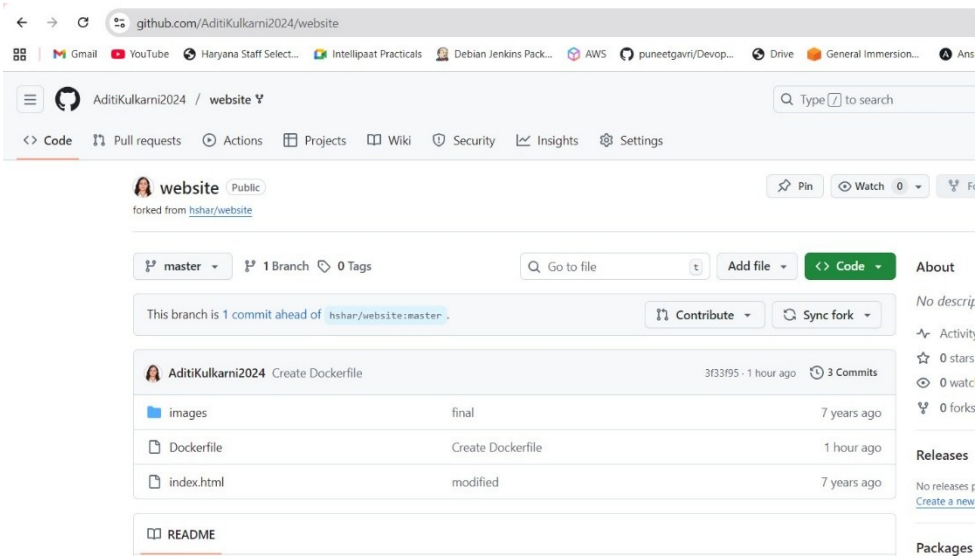
   app: custom

 spec:

```
containers:
  - name: custom
    image: docker6767/image
    ports:
    - containerPort: 80
```

Create SVC.yml

```
apiVersion: v1

kind: Service

metadata:

  name: my-custom-deployment

spec:

  type: NodePort

  ports:

    - targetPort: 80

      port: 80

      nodePort: 30008

  selector:

    app: custom
```

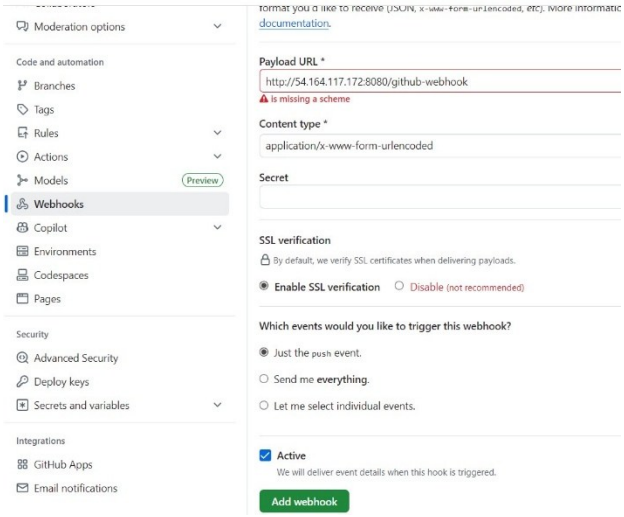


Git status

Git add .

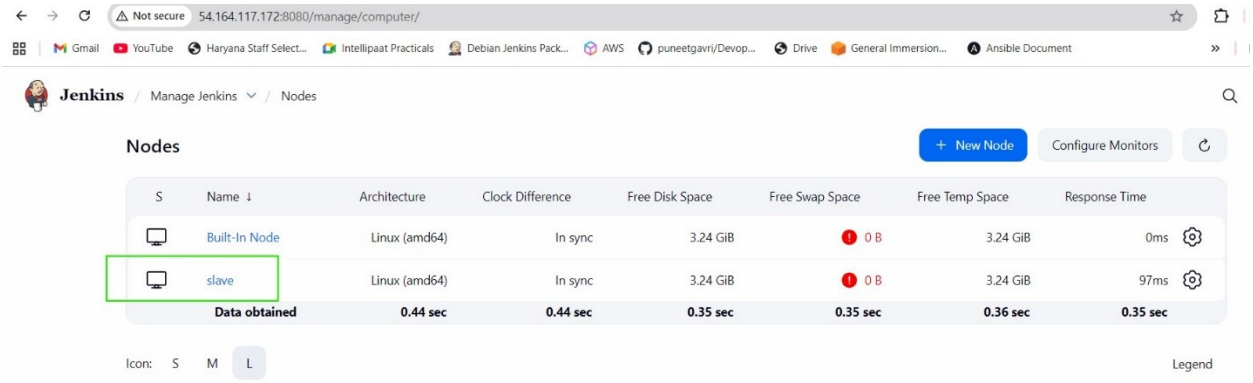
Git commit -m “add dockerfile”

Git branch > you will get a master branch

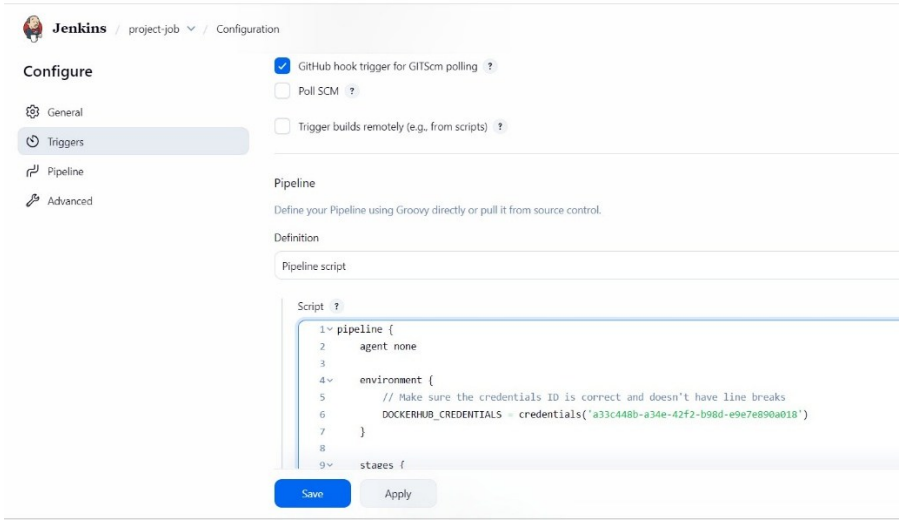


Step 10:-

Create Nodes-

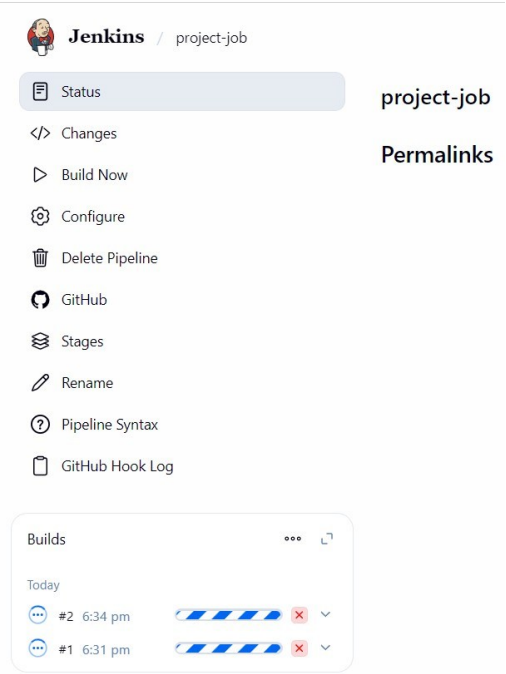


Create a Pipeine job



```
pipeline{
   agent none
   environment {

DOCKERHUB_CREDENTIALS=credentials(')

   }

   stages{
      stage('Hello'){
         agent{

            label 'KMaster'

         }

         steps{

            echo 'Hello World'

         }

      }

      stage('git'){
         agent{
            label 'KMaster'

         }

         steps{



            git'URL’
```

```
    }

  }

  stage('docker') {
    agent {
      label 'KMaster'
    }
    steps {


      sh 'sudo docker build /home/ubuntu/jenkins/workspace/FinalProject -t docker6767/image'

      sh 'sudo echo $DOCKERHUB_CREDENTIALS_PSW | sudo docker login -u $DOCKERHUB_CREDENTIALS_USR --password-stdin'

      sh 'sudo docker push docker6767/image'


    }

  }

  stage('Kubernetes') {

    agent {

      label 'KMaster'

    }


    steps {


      sh 'kubectl create -f deploy.yml'
```



```
            sh 'kubectl create -f svc.yml'
        }
    }
}
```