**Automating Infrastructure using Terraform.**

**Folder structure:**

**Ec2-jenkins (Dir)**

Creds.tf

Resource.tf

Jenkins.sh

Output.tf

**Creds.tf**

**#AWS provider details**

provider "aws"{

access\_key = "\*\*\*\*\*\*"

secret\_key = "\*\*\*\*\*\*\*"

region = "us-east-1"

}

**Resource.tf**

**#creating security group and EC2 Instance**

resource "aws\_security\_group" "jenkins\_sg" {

name = "jenkins\_sg"

description = "allow ssh and HTTP traffic"

vpc\_id ="vpc-000da8a890b8d7e18"

ingress{

from\_port ="22"

to\_port = "22"

protocol ="tcp"

cidr\_blocks = ["0.0.0.0/0"]

}

ingress{

from\_port ="8080"

to\_port = "8080"

protocol ="tcp"

cidr\_blocks = ["0.0.0.0/0"]

}

ingress{

from\_port ="443"

to\_port = "443"

protocol ="tcp"

cidr\_blocks = ["0.0.0.0/0"]

}

egress{

from\_port ="0"

to\_port = "0"

protocol ="-1"

cidr\_blocks = ["0.0.0.0/0"]

}

}

resource "aws\_instance" "ec2\_jenkins"{

ami="ami-0f34c5ae932e6f0e4"

instance\_type ="t2.micro"

key\_name="Jkey1"

user\_data = "${file("jenkins.sh")}"

vpc\_security\_group\_ids = [aws\_security\_group.jenkins\_sg.id]

}

**Output.tf**

**#display public IP address of the created instance in console. It collect it from terraform.tfstate**

output "jenkins\_url"{

value = "${aws\_instance.ec2\_jenkins.public\_ip}:8080"

}

**Jenkins.sh**

**#shell script to install python, java and Jenkins**

#!/bin/bash

sudo wget -O /etc/yum.repos.d/jenkins.repo \

https://pkg.jenkins.io/redhat-stable/jenkins.repo

sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key

sudo yum upgrade

sudo yum install python3.9

# Add required dependencies for the jenkins package

sudo yum -y install java

sudo yum -y install jenkins

sudo systemctl daemon-reload

sudo systemctl start jenkins

sudo systemctl enable Jenkins

terraform init

terraform plan

terraform apply