**Automating Infrastructure using Terraform .**

Course-end Project 1

1. Set up terraform on the Simplilearn lab:

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

2. Set up AWS User and its security credentials

Create an IAM user and create access-key and secret key

In search box give IAM --> select IAM service

On left side click on User and then click on ADD users

Give user name = tf --> press next

Select Add existing permission --> select Administrator access --> press next --> click on Create User

Add credentials to the USER in AWS

Click on the user name tf --> click on Security credentials --> scroll down to Access Key --> click on Create Access key

Select Command Line Interface (CLI) --> scroll down and check the box for I understand the above recommendation and want to proceed to create an access key.

Press next and click on create access key

Copy the access key and secret key

Accesskey : access-key

Secret key : secret-key

3. Create Key Pairs in AWS

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In search box --> give key pairs --> click on keypairs under features

Click on create key pair --> give name as project1

Key pair type ---> ED25519

Private key file format --> .pem

Click on Create key pair

**Expected Deliverables:**

* Launch an EC2 instance using Terraform
* Connect to the instance
* Install Jenkins, Java and Python in the instance

# mkdir project\_terraform

# cd project\_terraform

# vim project-terraform.tf

root@ip-172-31-19-61:~/project\_terraform# cat project-terraform.tf

provider "aws" {

region = "us-east-1"

access\_key = "AKIA4PNAZOGARQKXTGLJ"

secret\_key = "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"

}

resource "aws\_security\_group" "test1" {

name = "test1"

description = "Allow inbound SSH"

ingress {

from\_port = 22

to\_port = 22

protocol = "tcp"

cidr\_blocks = ["0.0.0.0/0"]

ipv6\_cidr\_blocks = ["::/0"]

}

ingress {

description = "HTTP"

from\_port = 8080

to\_port = 8080

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" "web1" {

ami = "ami-0f844a9675b22ea32"

instance\_type = "t2.micro"

key\_name = "web-key"

tags = {

Name = "terraform-instance"

}

user\_data = <<-EOF

#!/bin/bash

sudo yum install git -y

sudo amazon-linux-extras install java-openjdk11 -y

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 install jenkins -y

sudo systemctl start jenkins

sudo apt-get install python3.7

EOF

}

resource "aws\_network\_interface\_sg\_attachment" "sg\_attachment1" {

security\_group\_id = aws\_security\_group.test1.id

network\_interface\_id = aws\_instance.web1.primary\_network\_interface\_id

}

# done

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root@ip-172-31-19-61:~/project\_terraform# vim 1.txt

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Execute command

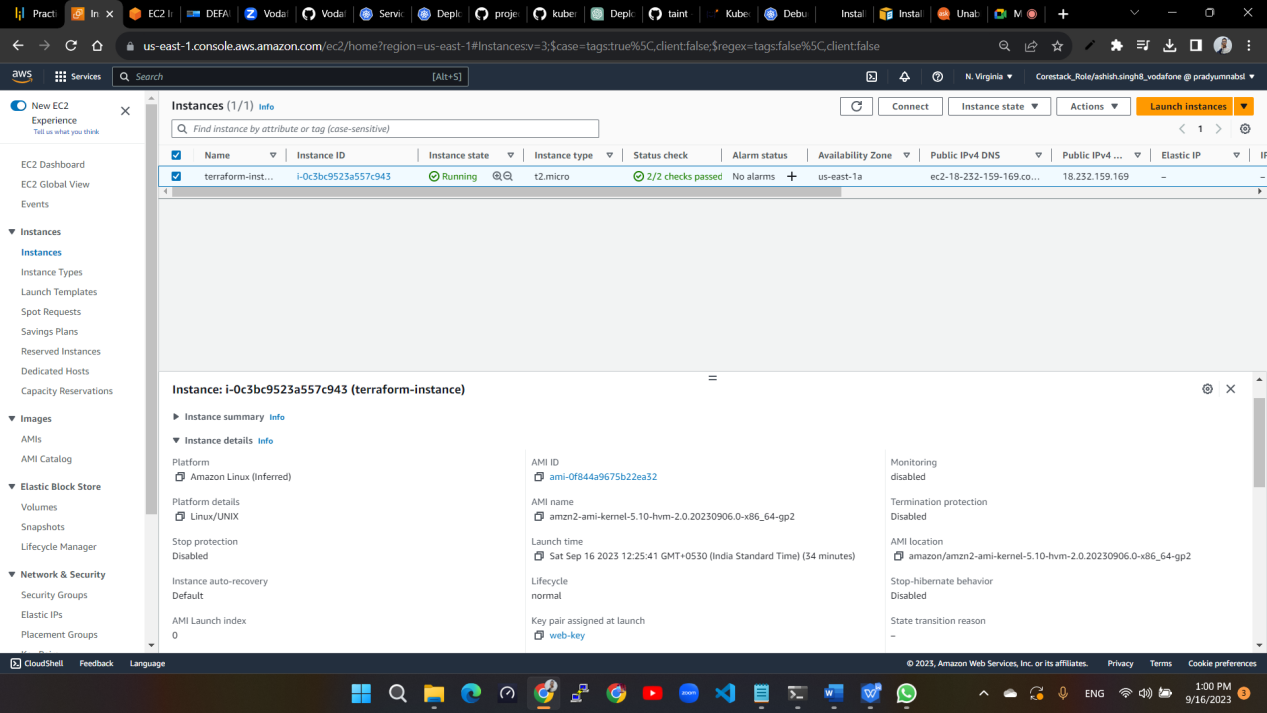
# terraform init

#terraform plan

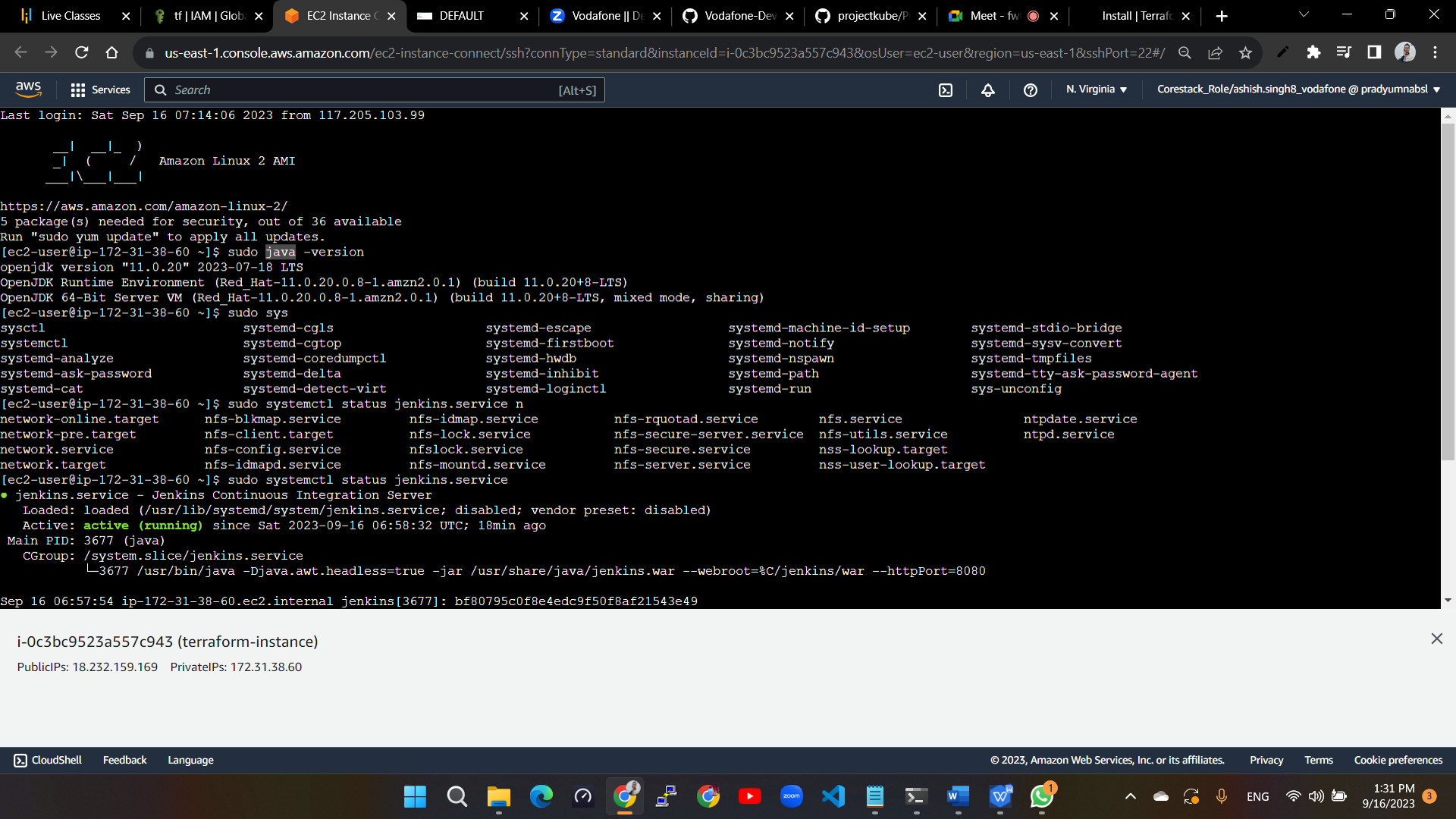
# terrafrom apply

Enter yes

AWS Dashboard



Java and Jenkins on EC2



Python on EC2

