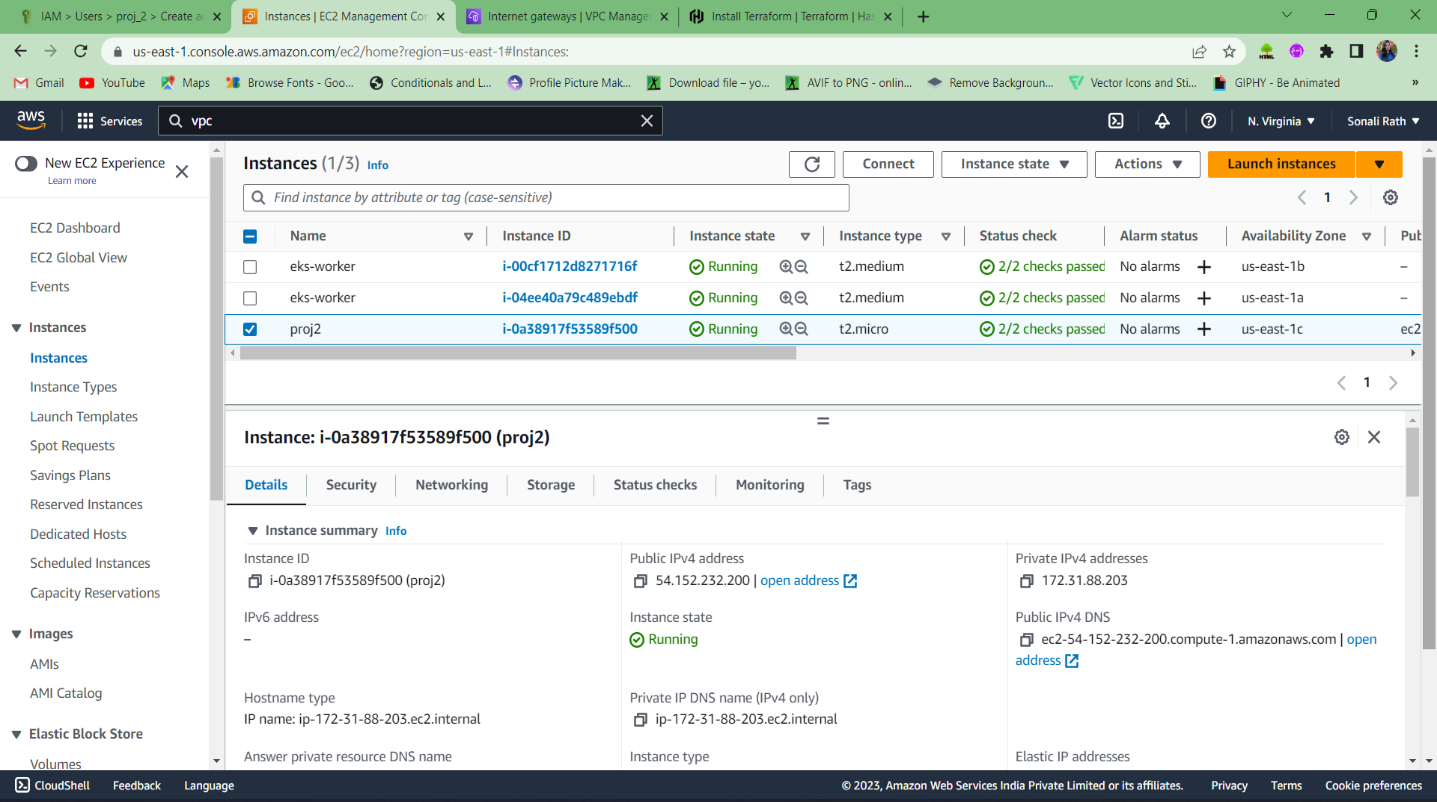
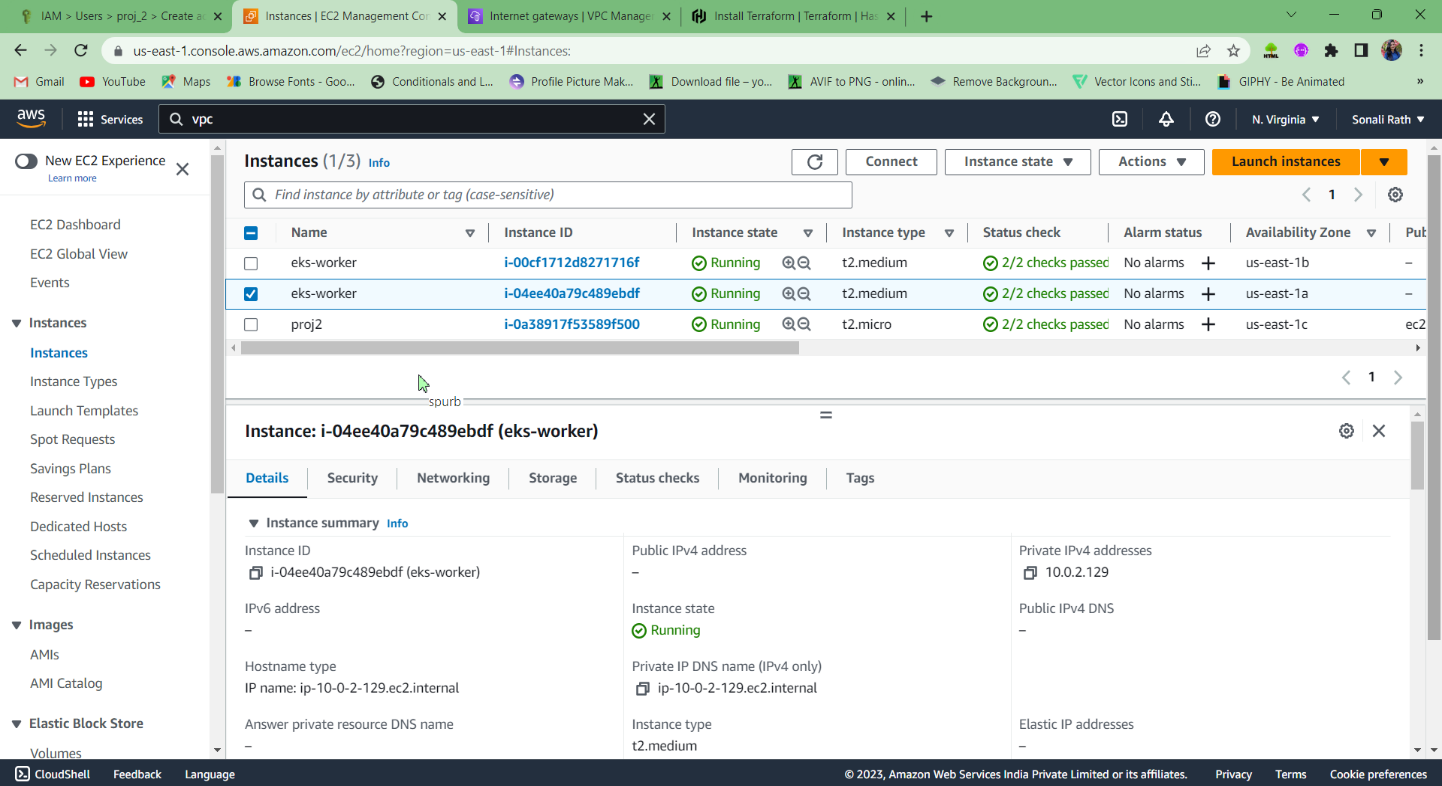
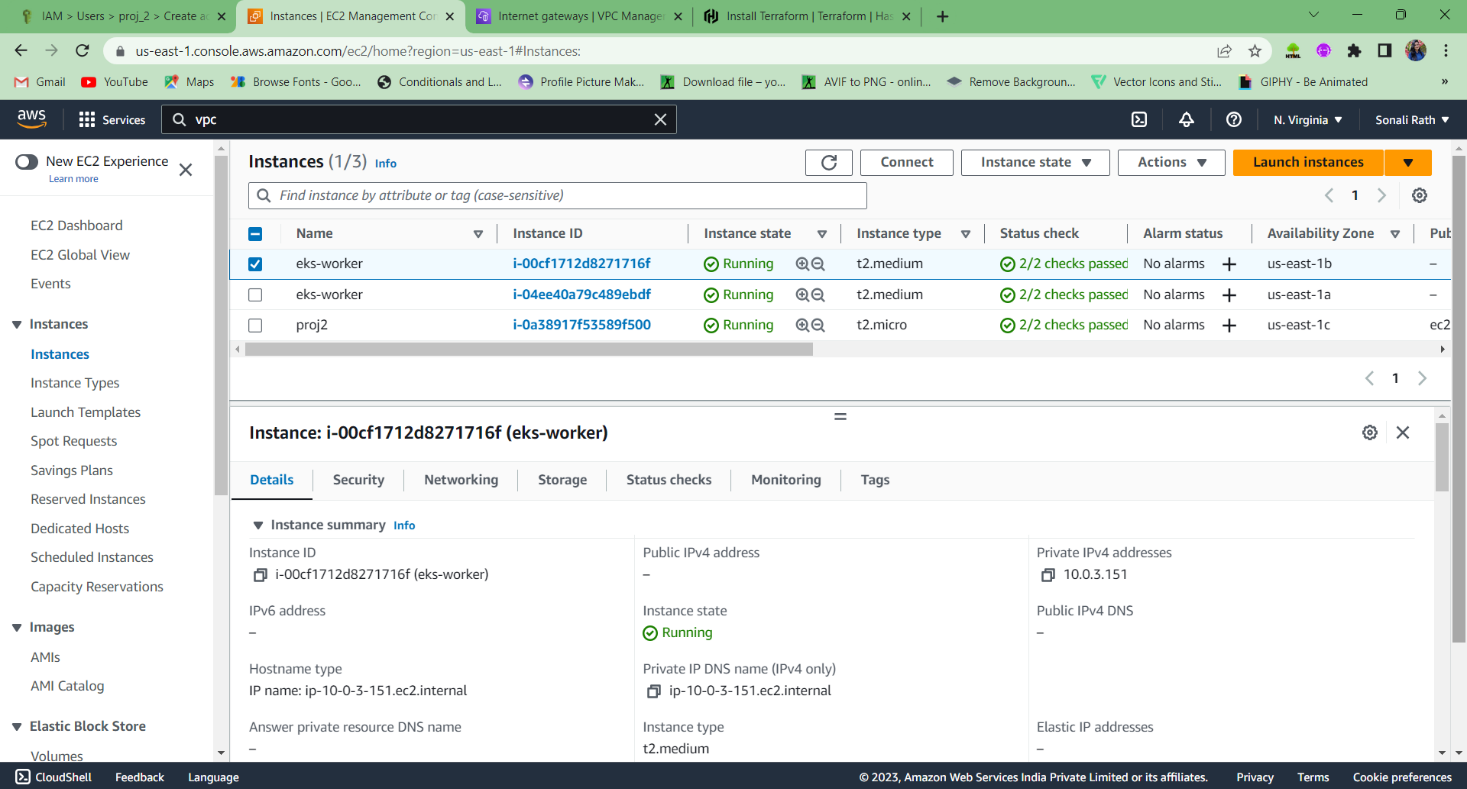
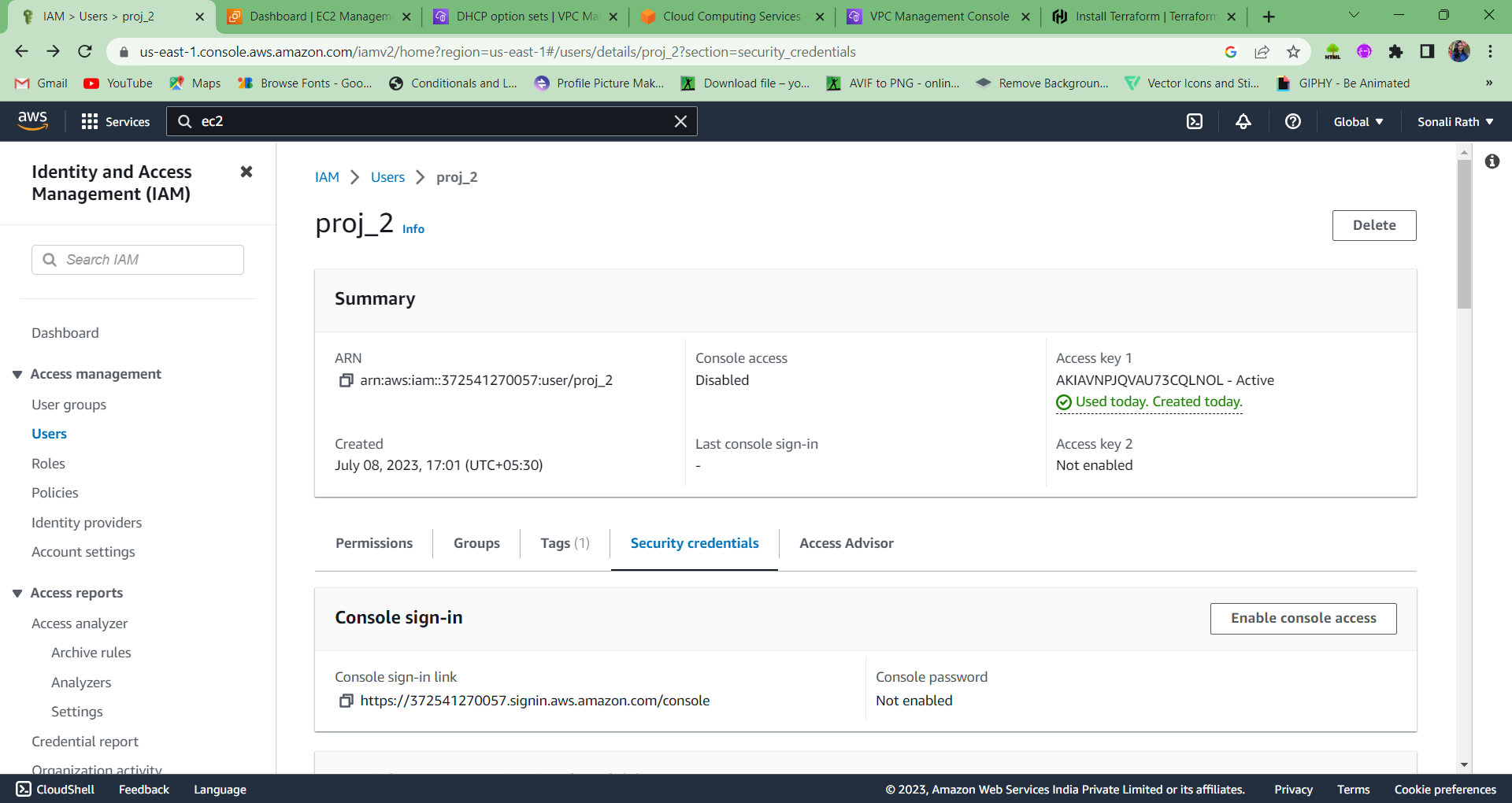
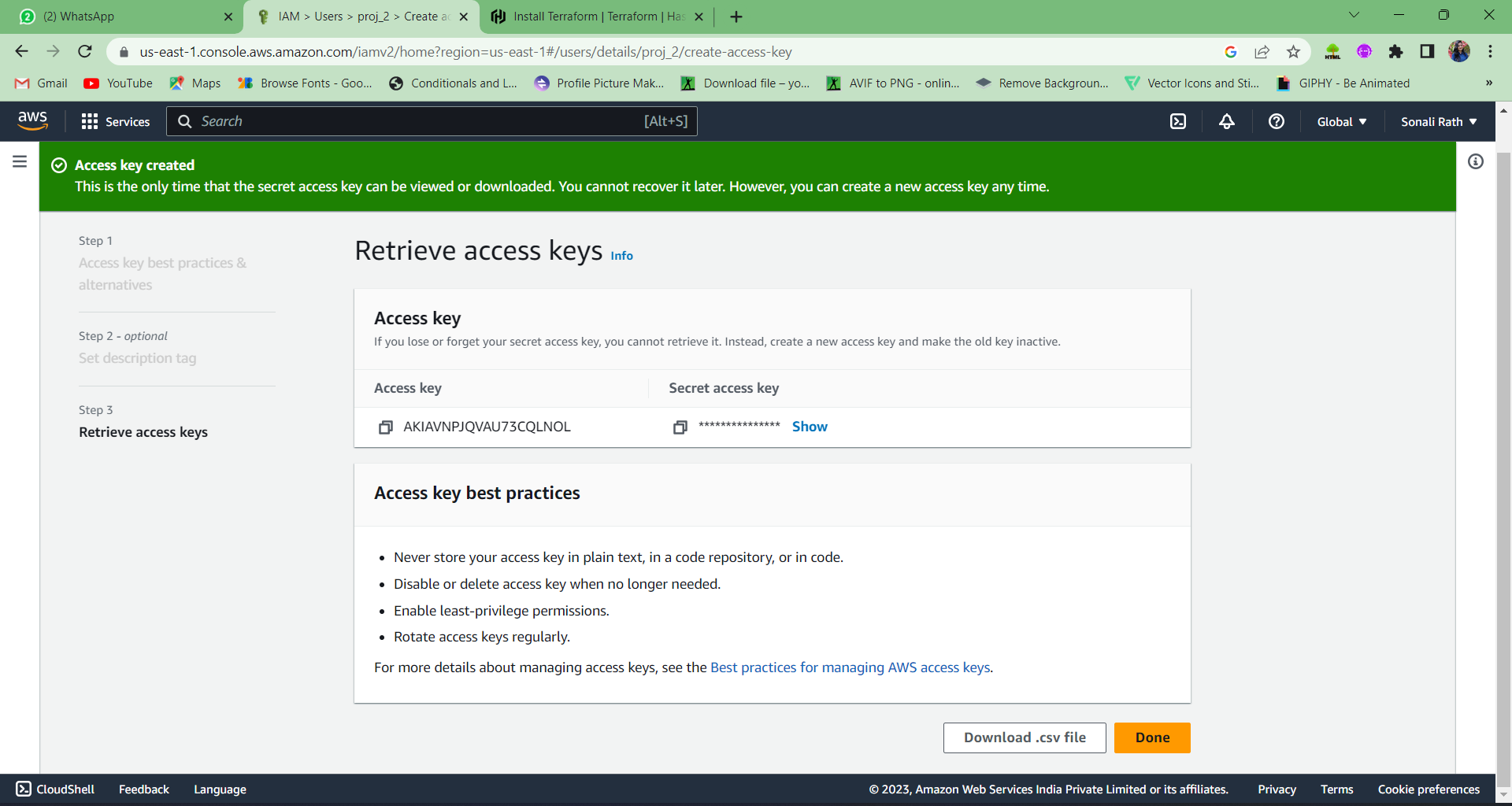
Q2. USING TERRAFORM CREATEAN AWS EKS CLUSTER CREATE FOLLOWING COMPONENTS  
 I.VPC-2 PUBLIC SHEET AND 2 PRIVATE SUBNETS.  
 II.IAM ROLE – FOR MASTER AND WORKER.  
 III.WORKER NODE FOR CLUSTER USING AMAZON LINUX.

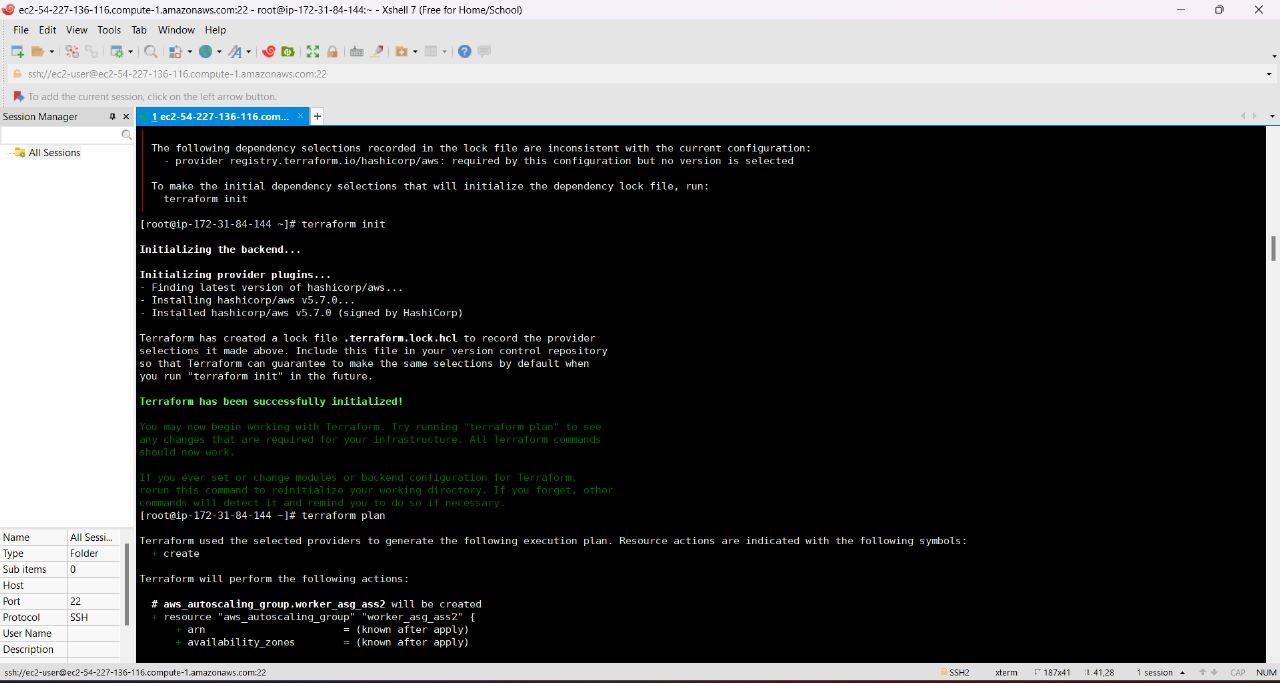
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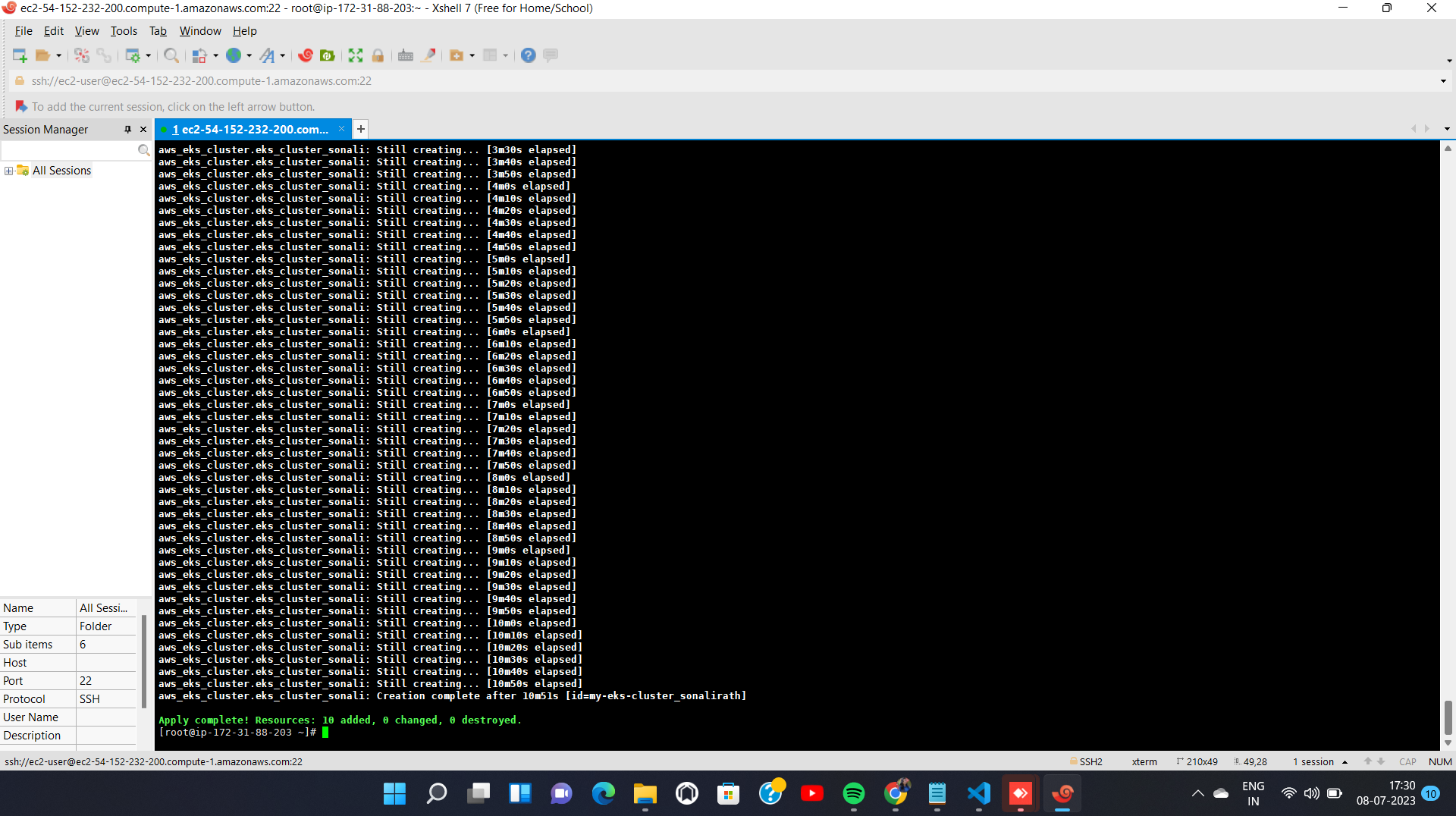
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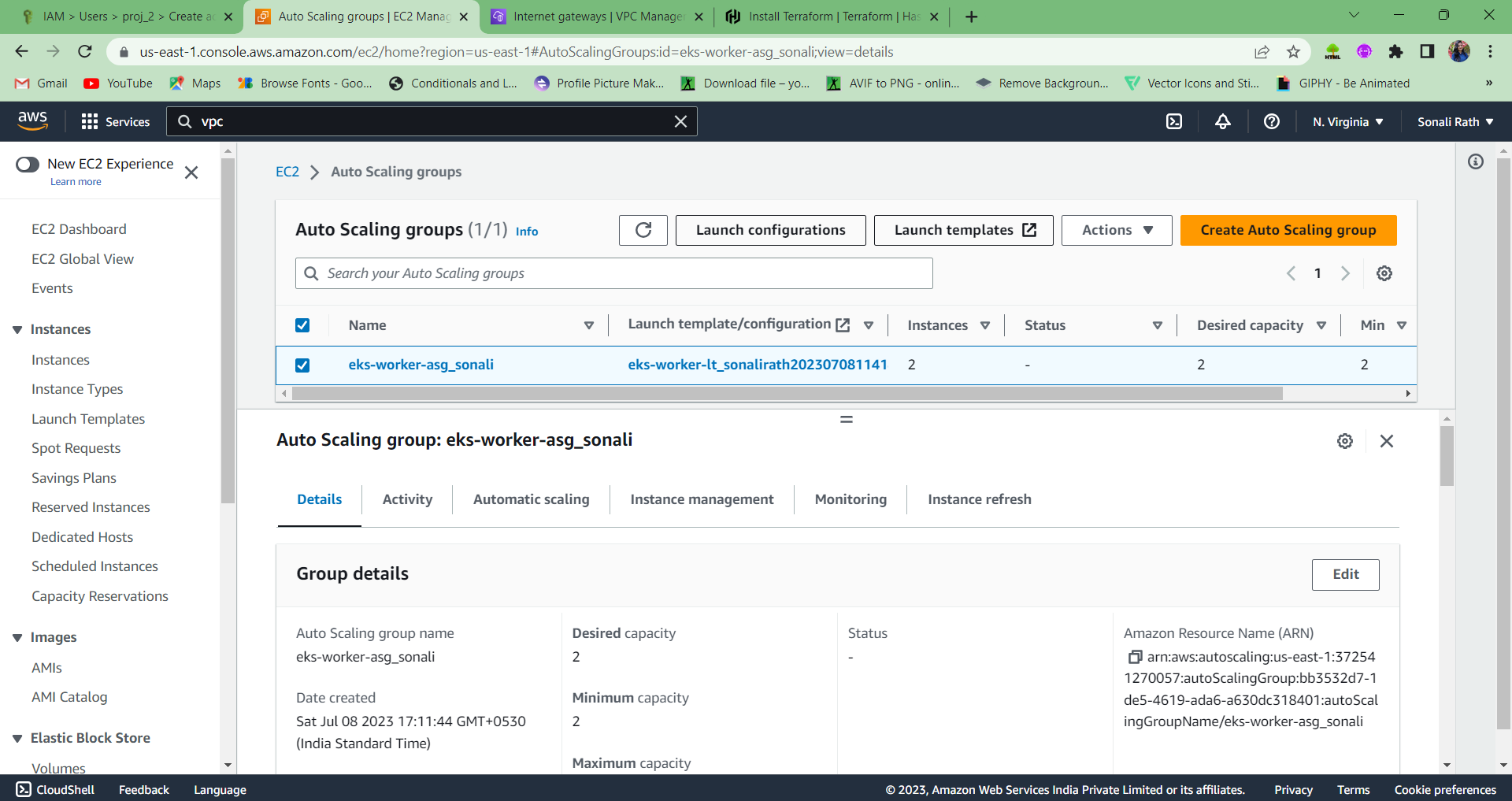
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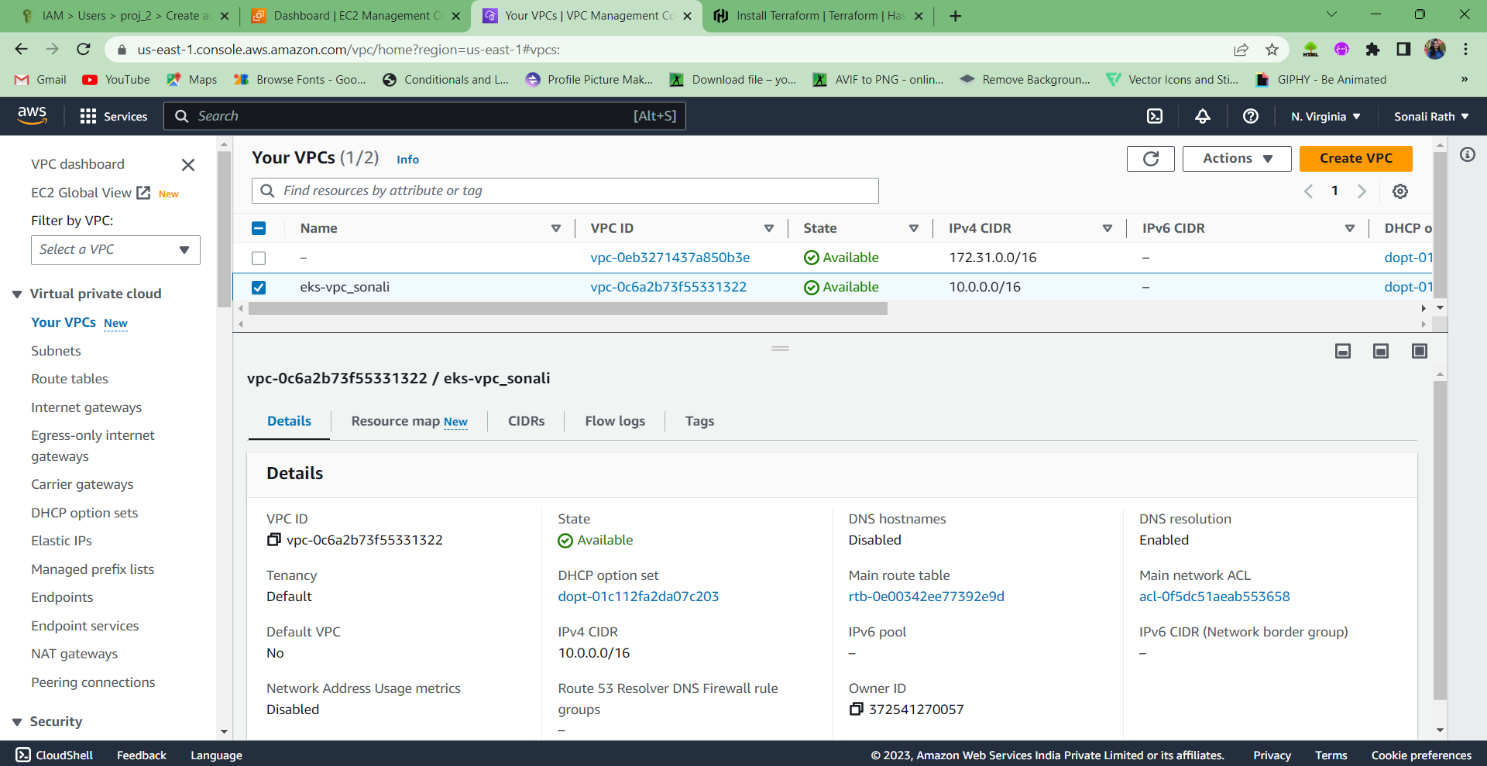
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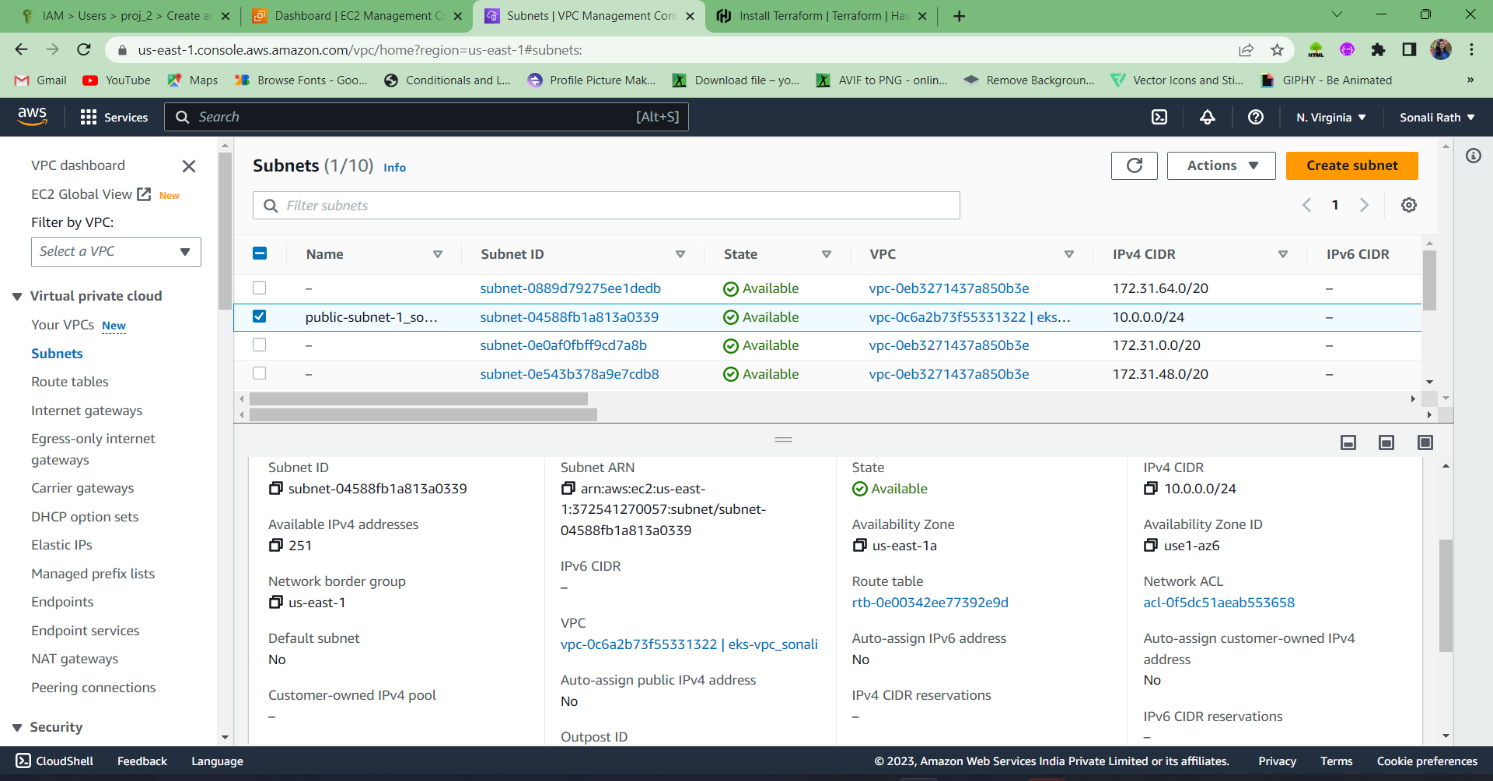
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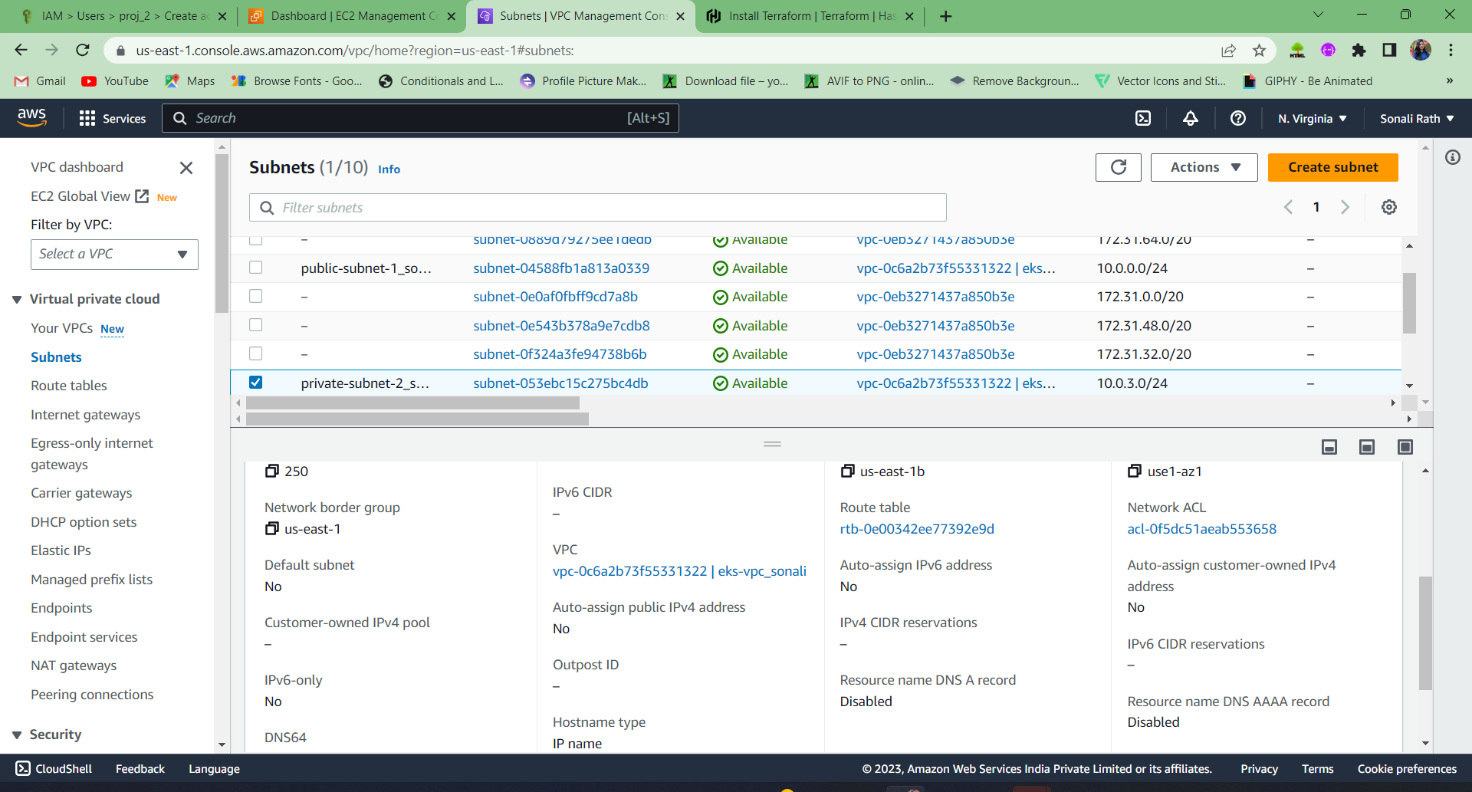
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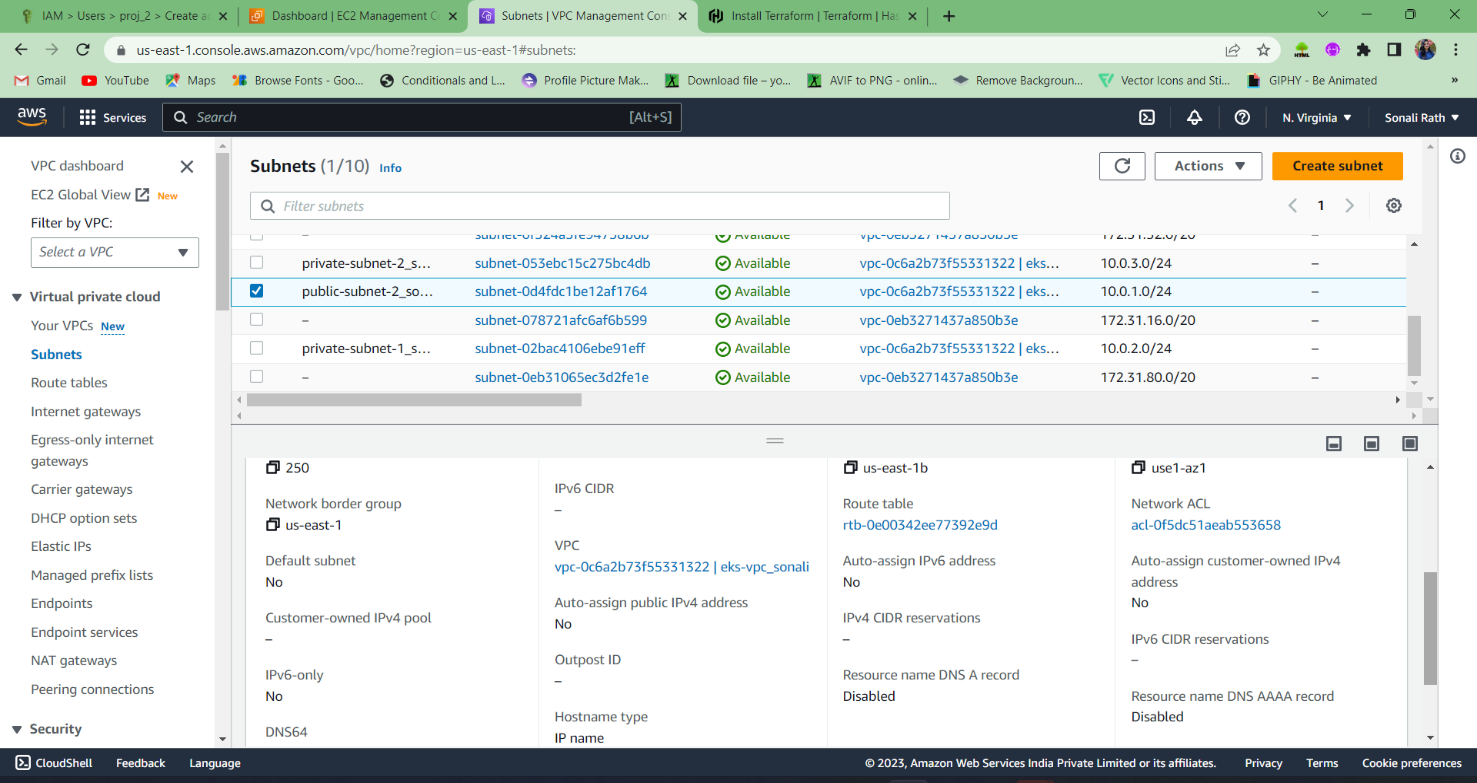
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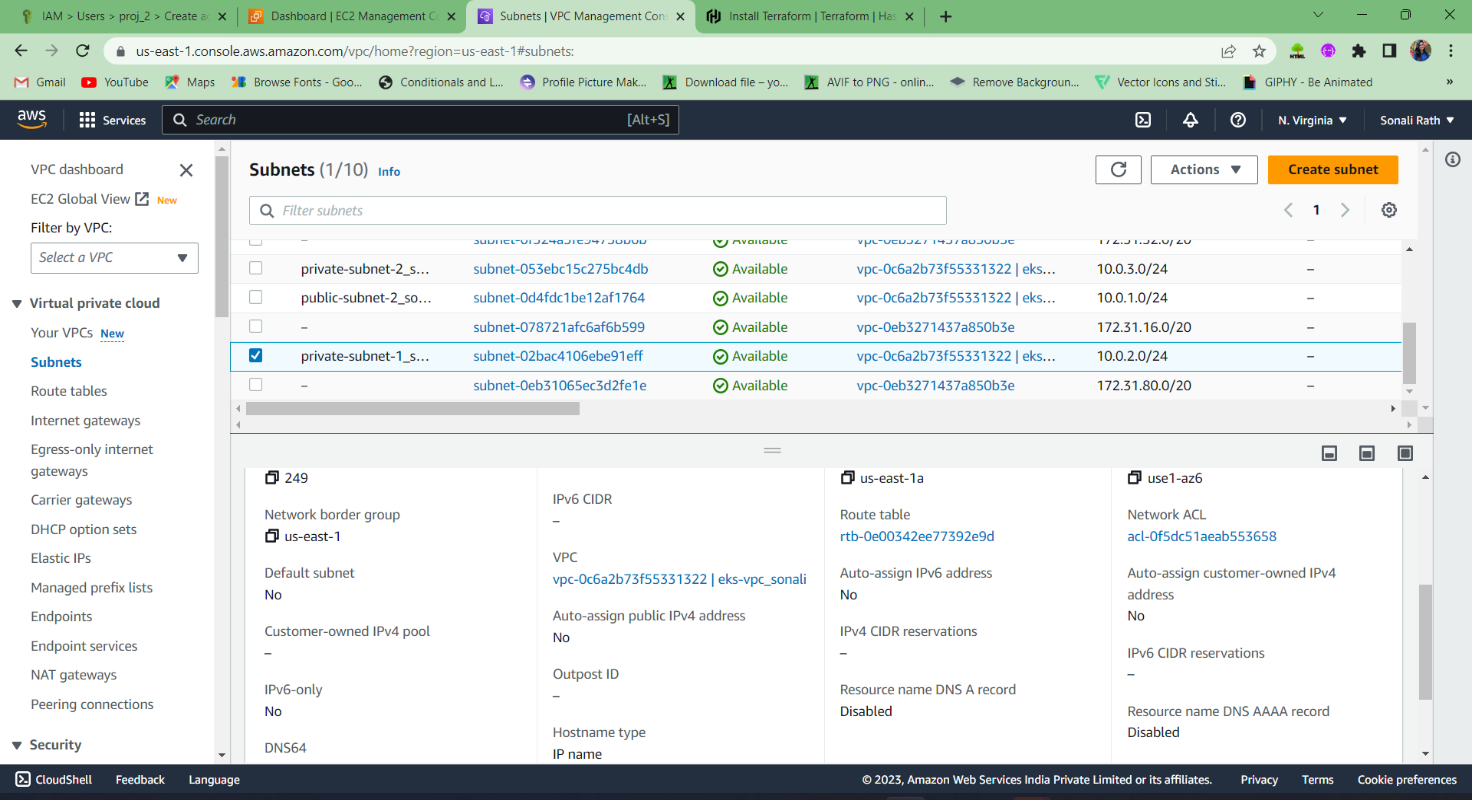
****

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****

**Main.tf(terraform file)**

# Define the provider

provider "aws" {

region = "us-east-1" # Replace with your desired region

}

# Create VPC for the EKS cluster

resource "aws\_vpc" "rath\_eks\_vpc\_sonali" {

cidr\_block = "10.0.0.0/16" # Replace with your desired CIDR block

tags = {

Name = "eks-vpc\_sonali"

}

}

# Create public subnets for the EKS cluster

resource "aws\_subnet" "rath\_public\_subnet\_1\_sonali" {

vpc\_id = aws\_vpc.rath\_eks\_vpc\_sonali.id

cidr\_block = "10.0.0.0/24" # Replace with your desired CIDR block

availability\_zone = "us-east-1a" # Replace with your desired availability zone

tags = {

Name = "public-subnet-1\_sonalirath"

}

}

resource "aws\_subnet" "rath\_public\_subnet\_2\_sonali" {

vpc\_id = aws\_vpc.rath\_eks\_vpc\_sonali.id

cidr\_block = "10.0.1.0/24" # Replace with your desired CIDR block

availability\_zone = "us-east-1b" # Replace with your desired availability zone

tags = {

Name = "public-subnet-2\_sonalirath"

}

}

# Create private subnets for the EKS cluster

resource "aws\_subnet" "rath\_private\_subnet\_1\_sonali" {

vpc\_id = aws\_vpc.rath\_eks\_vpc\_sonali.id

cidr\_block = "10.0.2.0/24" # Replace with your desired CIDR block

availability\_zone = "us-east-1a" # Replace with your desired availability zone

tags = {

Name = "private-subnet-1\_sonalirath"

}

}

resource "aws\_subnet" "rath\_private\_subnet\_2\_sonali" {

vpc\_id = aws\_vpc.rath\_eks\_vpc\_sonali.id

cidr\_block = "10.0.3.0/24" # Replace with your desired CIDR block

availability\_zone = "us-east-1b" # Replace with your desired availability zone

tags = {

Name = "private-subnet-2\_sonalirath"

}

}

# Create IAM roles for the EKS cluster

resource "aws\_iam\_role" "rathsonali\_eks\_worker\_role" {

name = "eks-worker-role\_sonalirath"

assume\_role\_policy = jsonencode({

Version = "2012-10-17"

Statement = [

{

Action = "sts:AssumeRole"

Effect = "Allow"

Principal = {

Service = "ec2.amazonaws.com"

}

}

]

})

managed\_policy\_arns = [

"arn:aws:iam::aws:policy/AmazonEKSClusterPolicy"

]

}

resource "aws\_iam\_role" "rathsonali\_eks\_master\_role" {

name = "eks-master-role\_sonalirath"

assume\_role\_policy = jsonencode({

Version = "2012-10-17"

Statement = [

{

Action = "sts:AssumeRole"

Effect = "Allow"

Principal = {

Service = "eks.amazonaws.com"

}

}

]

})

managed\_policy\_arns = [

"arn:aws:iam::aws:policy/AmazonEKSClusterPolicy"

]

}

# Create the EKS cluster

resource "aws\_eks\_cluster" "eks\_cluster\_sonali" {

name = "my-eks-cluster\_sonalirath"

role\_arn = aws\_iam\_role.rathsonali\_eks\_master\_role.arn

version = "1.27" # Replace with a supported Kubernetes version

vpc\_config {

subnet\_ids = [

aws\_subnet.rath\_public\_subnet\_1\_sonali.id,

aws\_subnet.rath\_public\_subnet\_2\_sonali.id,

aws\_subnet.rath\_private\_subnet\_1\_sonali.id,

aws\_subnet.rath\_private\_subnet\_2\_sonali.id,

]

}

}

# Create the launch template for worker nodes

resource "aws\_launch\_template" "worker\_lt\_sonali" {

name\_prefix = "eks-worker-lt\_sonalirath"

image\_id = "ami-04823729c75214919" # Replace with the desired Amazon Linux AMI ID

instance\_type = "t2.medium" # Replace with your desired instance type

block\_device\_mappings {

device\_name = "/dev/xvda"

ebs {

volume\_size = 8 # Replace with your desired root volume size in GB

}

}

}

# Create the autoscaling group for worker nodes

resource "aws\_autoscaling\_group" "worker\_asg\_sonali" {

name = "eks-worker-asg\_sonali"

launch\_template {

id = aws\_launch\_template.worker\_lt\_sonali.id

version = "$Latest"

}

min\_size = 2 # Replace with your desired minimum number of worker nodes

max\_size = 5 # Replace with your desired maximum number of worker nodes

desired\_capacity = 2 # Replace with your desired initial number of worker nodes

vpc\_zone\_identifier = [

aws\_subnet.rath\_private\_subnet\_1\_sonali.id,

aws\_subnet.rath\_private\_subnet\_2\_sonali.id,

]

tag {

key = "Name"

value = "eks-worker"

propagate\_at\_launch = true

}

**NAME: SONALI RATH**

**SIC NUMBER : 20BCEE70**