Terraform Assignment - 4

You have been asked to:

- Destroy the previous deployments
- Create a VPC with the required components using Terraform
- Deploy an EC2 instance inside the VPC

```
ubuntu@ip-172-31-34-196:~/assignment3$ terraform destroy
aws_instance.assignment3b: Refreshing state... [id=i-028ebc626775fc4d4]
aws_instance.assignment3a: Refreshing state... [id=i-036f1a094d14ce199]
```

i-0d81c556e43b0246d (Terraform-Assignment)

PublicIPs: 13.126.139.48 PrivateIPs: 172.31.34.196

```
  Enter a value: yes

aws_instance.assignment3a: Destroying... [id=i-036f1a094d14ce199]
aws_instance.assignment3b: Destroying... [id=i-028ebc626775fc4d4]
aws_instance.assignment3a: Still destroying... [id=i-036f1a094d14ce199, 10s elapsed]
aws_instance.assignment3b: Still destroying... [id=i-028ebc626775fc4d4, 10s elapsed]
aws_instance.assignment3a: Still destroying... [id=i-036f1a094d14ce199, 20s elapsed]
aws_instance.assignment3b: Still destroying... [id=i-028ebc626775fc4d4, 20s elapsed]
aws_instance.assignment3a: Still destroying... [id=i-036f1a094d14ce199, 30s elapsed]
aws_instance.assignment3b: Still destroying... [id=i-028ebc626775fc4d4, 30s elapsed]
aws_instance.assignment3a: Still destroying... [id=i-036f1a094d14ce199, 40s elapsed]
aws_instance.assignment3b: Still destroying... [id=i-028ebc626775fc4d4, 40s elapsed]
aws_instance.assignment3a: Destruction complete after 42s
aws_instance.assignment3b: Still destroying... [id=i-028ebc626775fc4d4, 50s elapsed]
aws_instance.assignment3b: Destruction complete after 52s

Destroy complete! Resources: 2 destroyed.
ubuntu@ip-172-31-34-196:~/assignment3$
```

i-0d81c556e43b0246d (Terraform-Assignment)

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Terraform Script:

```
provider "aws" {
  region = "us-east-2"
}


# Create VPC
resource "aws_vpc" "my_vpc" {
  cidr_block = "10.0.0.0/16"
  enable_dns_support = true
```

```
  enable_dns_hostnames = true
  tags = {
  Name = "assignment_VPC"
}
}

# Create Subnet
resource "aws_subnet" "my_subnet" {
  vpc_id              = aws_vpc.my_vpc.id
  cidr_block          = "10.0.1.0/24"
  availability_zone    = "us-east-2a" #Set your desired availability zone
  tags = {
  Name = "assignment_Subnet"
}
}

# Create Internet Gateway
resource "aws_internet_gateway" "my_igw" {
  vpc_id = aws_vpc.my_vpc.id
  tags = {
  Name = "assignment_IGW"
}
}

# Create Route Table
resource "aws_route_table" "my_route_table" {
  vpc_id = aws_vpc.my_vpc.id

  route {
    cidr_block = "0.0.0.0/0"
    gateway_id = aws_internet_gateway.my_igw.id
```

```
  }
}

# Associate Subnet with Route Table
resource "aws_route_table_association" "my_subnet_association" {
  subnet_id      = aws_subnet.my_subnet.id
  route_table_id = aws_route_table.my_route_table.id
}

# Create Security Group
resource "aws_security_group" "my_security_group" {
  vpc_id = aws_vpc.my_vpc.id
  tags = {
  Name = "assignment_SG"
}
}

# Create Instance inside VPC
resource "aws_instance" "my_instance" {
  ami           = "ami-09040d770ffe2224f" # Set your desired AMI ID
  instance_type   = "t2.micro"           # Set your desired instance type
  subnet_id       = aws_subnet.my_subnet.id
  security_groups = [aws_security_group.my_security_group.id]
  tags = {
  Name = "assignment_Instance"
}
}
```

```
ubuntu@ip-172-31-34-196:~/assignment4$ vi main.tf
ubuntu@ip-172-31-34-196:~/assignment4$ cat main.tf
provider "aws" {
  region = "us-east-2"
}

# Create VPC
resource "aws_vpc" "my_vpc" {
  cidr_block = "10.0.0.0/16"
  enable_dns_support = true
  enable_dns_hostnames = true
  tags = {
  Name = "assignment_VPC"
}
}
```

i-0d81c556e43b0246d (Terraform-Assignment)

PublicIPs: 13.126.139.48 PrivateIPs: 172.31.34.196

```
# Create Subnet
resource "aws_subnet" "my_subnet" {
  vpc_id                  = aws_vpc.my_vpc.id
  cidr_block              = "10.0.1.0/24"
  availability_zone       = "us-east-2a" #Set your desired availability zone
  tags = {
  Name = "assignment_Subnet"
}
}

# Create Internet Gateway
resource "aws_internet_gateway" "my_igw" {
  vpc_id = aws_vpc.my_vpc.id
  tags = {
  Name = "assignment_IGW"
}
}
```

i-0d81c556e43b0246d (Terraform-Assignment)

PublicIPs: 13.126.139.48 PrivateIPs: 172.31.34.196

```
# Create Route Table
resource "aws_route_table" "my_route_table" {
  vpc_id = aws_vpc.my_vpc.id

  route {
    cidr_block = "0.0.0.0/0"
    gateway_id = aws_internet_gateway.my_igw.id
  }
}

# Associate Subnet with Route Table
resource "aws_route_table_association" "my_subnet_association" {
  subnet_id      = aws_subnet.my_subnet.id
  route_table_id = aws_route_table.my_route_table.id
}
```

i-0d81c556e43b0246d (Terraform-Assignment)

PublicIPs: 13.126.139.48 PrivateIPs: 172.31.34.196

```
# Create Security Group
resource "aws_security_group" "my_security_group" {
  vpc_id = aws_vpc.my_vpc.id
  tags = {
  Name = "assignment_SG"
}
}

# Create Instance inside VPC
resource "aws_instance" "my_instance" {
  ami             = "ami-09040d770ffe2224f" # Set your desired AMI ID
  instance_type   = "t2.micro"             # Set your desired instance type
  subnet_id       = aws_subnet.my_subnet.id
  security_groups = [aws_security_group.my_security_group.id]
  tags = {
  Name = "assignment_Instance"
}
}
ubuntu@ip-172-31-34-196:~/assignment4$
```

i-0d81c556e43b0246d (Terraform-Assignment)

PublicIPs: 13.126.139.48 PrivateIPs: 172.31.34.196

```
ubuntu@ip-172-31-34-196:~/assignment4$ terraform init

Initializing the backend...

Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v5.52.0

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
ubuntu@ip-172-31-34-196:~/assignment4$
```

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```
ubuntu@ip-172-31-34-196:~/assignment4$ terraform plan

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # aws_instance.my_instance will be created
  + resource "aws_instance" "my_instance" {
      + ami                                  = "ami-09040d770ffe2224f"
      + arn                                  = (known after apply)
      + associate_public_ip_address          = (known after apply)
      + availability_zone                    = (known after apply)
      + cpu_core_count                       = (known after apply)
      + cpu_threads_per_core                 = (known after apply)
```

i-0d81c556e43b0246d (Terraform-Assignment)

PublicIPs: 13.126.139.48 PrivateIPs: 172.31.34.196

```
ubuntu@ip-172-31-34-196:~/assignment4$ terraform apply

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # aws_instance.my_instance will be created
  + resource "aws_instance" "my_instance" {
      + ami                                  = "ami-09040d770ffe2224f"
      + arn                                  = (known after apply)
      + associate_public_ip_address          = (known after apply)
      + availability_zone                    = (known after apply)
      + cpu_core_count                       = (known after apply)
      + cpu_threads_per_core                 = (known after apply)
      + disable_api_stop                     = (known after apply)
      + disable_api_termination              = (known after apply)
```

i-0d81c556e43b0246d (Terraform-Assignment)

PublicIPs: 13.126.139.48 PrivateIPs: 172.31.34.196

```
  Enter a value: yes

aws_vpc.my_vpc: Creating...
aws_vpc.my_vpc: Still creating... [10s elapsed]
aws_vpc.my_vpc: Creation complete after 14s [id=vpc-0e1b37b9d3e9f6267]
aws_internet_gateway.my_igw: Creating...
aws_subnet.my_subnet: Creating...
aws_security_group.my_security_group: Creating...
aws_subnet.my_subnet: Creation complete after 1s [id=subnet-0eb6cc16bd3495894]
aws_internet_gateway.my_igw: Creation complete after 1s [id=igw-0069c484e8c42eff7]
aws_route_table.my_route_table: Creating...
aws_security_group.my_security_group: Creation complete after 3s [id=sg-0ba945465c9cc26a2]
aws_instance.my_instance: Creating...
aws_route_table.my_route_table: Creation complete after 3s [id=rtb-03afbdc17a2ca346c]
aws_route_table_association.my_subnet_association: Creating...
aws_route_table_association.my_subnet_association: Creation complete after 0s [id=rtbassoc-09ee1faa729ae90fc]
aws_instance.my_instance: Still creating... [10s elapsed]
aws_instance.my_instance: Still creating... [20s elapsed]
aws_instance.my_instance: Still creating... [30s elapsed]
aws_instance.my_instance: Creation complete after 35s [id=i-00b58c1048370fec7]

Apply complete! Resources: 7 added, 0 changed, 0 destroyed.
ubuntu@ip-172-31-34-196:~/assignment4$
```

i-0d81c556e43b0246d (Terraform-Assignment)

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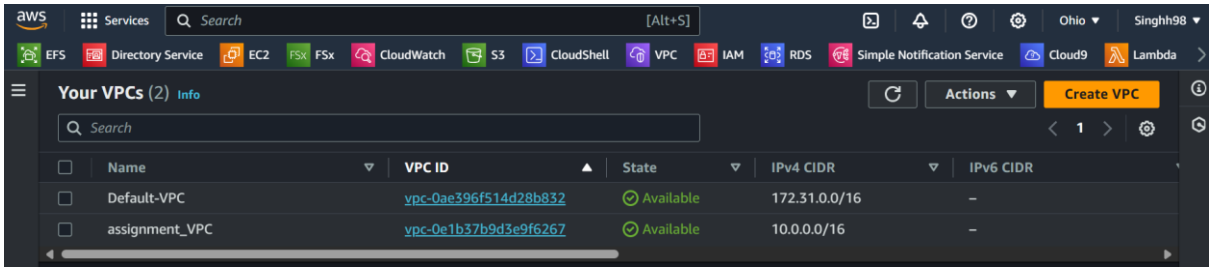
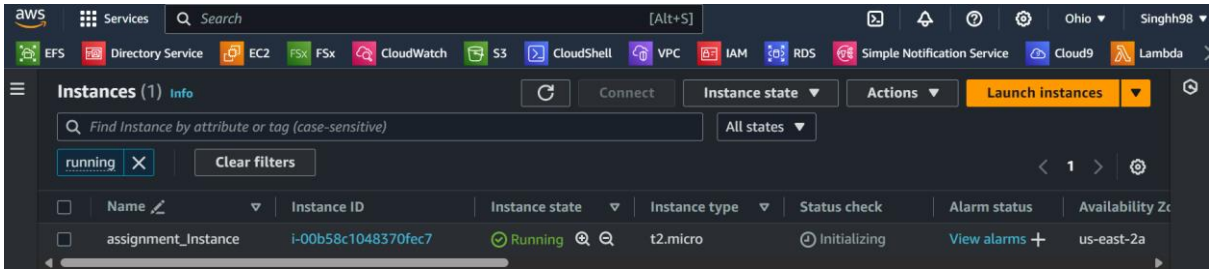
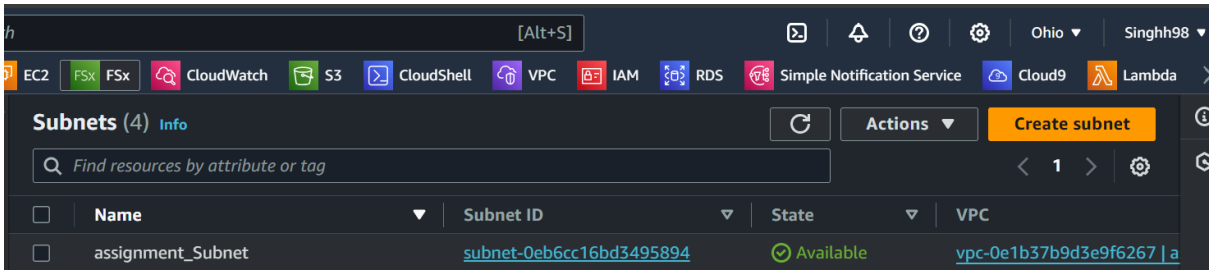
We could see in the below snip that all the VPC has been created with its required resources, and the instance has been launched in the VPC.







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