# EXPERIMENT 8

# CREATING A VPC IN TERRAFORM

## Aim

Learn how to use Terraform to create a basic Virtual Private Cloud (VPC) in AWS.

**Steps1:-**

1.Create a main.tf file.

Exp8 > main.tf

```
terraform {
  required_providers {
      aws = {
      source = "hashicorp/aws"
      version = "5.31.0"
    }
  }
}

provider "aws" {
  region = var.region
  access_key = var.access_key
  secret_key = var.secret_key
}
```

1. Create vpc.tf file

Exp8 > vpc.tf

```
resource "aws_vpc" "ayroid" {
  cidr_block = "10.0.0.0/16"
}

resource "aws_subnet" "ayroid-subnet" {
  vpc_id     = aws_vpc.ayroid.id
  cidr_block = "10.0.1.0/24"

  tags = {
    Name = "ayroid-subnet"
  }
}

resource "aws_internet_gateway" "ayroid-gw" {
  vpc_id = aws_vpc.ayroid.id

  tags = {
    Name = "ayroid-IG"
  }
}
```

```
resource "aws_route_table" "ayroid-rt" {
  vpc_id = aws_vpc.ayroid.id

  route {
    cidr_block = "0.0.0.0/0"
    gateway_id = aws_internet_gateway.ayroid-gw.id
  }

    tags = {
    Name = "ayroid-Route-Table"
  }
}

resource "aws_route_table_association" "ayroid-rta" {
  subnet_id      = aws_subnet.ayroid-subnet.id
  route_table_id = aws_route_table.ayroid-rt.id
}

resource "aws_security_group" "ayroid-sg" {
  name        = "my-ayroid-sg"
  vpc_id      = aws_vpc.ayroid.id

  ingress {
    description      = "TLS from VPC"
    from_port        = 20
    to_port          = 20
    protocol         = "tcp"
    cidr_blocks      = ["0.0.0.0/0"]
    ipv6_cidr_blocks = ["::/0"]
  }

  egress {
    from_port        = 0
    to_port          = 0
    protocol         = "-1"
    cidr_blocks      = ["0.0.0.0/0"]
    ipv6_cidr_blocks = ["::/0"]
  }

  tags = {
    Name = "my-ayroid-sg"
  }
}
```

2. Run Terraform init and apply commands.

```
Exp8  terraform init

Initializing the backend...

Initializing provider plugins...
- Finding hashicorp/aws versions matching "5.31.0"...
- Installing hashicorp/aws v5.31.0...
- Installed hashicorp/aws v5.31.0 (signed by HashiCorp)
```

```
Plan: 6 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes

aws_vpc.ayroid: Creating...
aws_vpc.ayroid: Creation complete after 1s [id=vpc-09386b7a9c5369e7e]
aws_internet_gateway.ayroid-gw: Creating...
aws_subnet.ayroid-subnet: Creating...
aws_security_group.ayroid-sg: Creating...
aws_internet_gateway.ayroid-gw: Creation complete after 1s [id=igw-0b26c2f61998874d4]
aws_route_table.ayroid-rt: Creating...
aws_subnet.ayroid-subnet: Creation complete after 1s [id=subnet-09ba485855e0da2d4]
aws_route_table.ayroid-rt: Creation complete after 1s [id=rtb-06c0a2bbe2cbacda8]
aws_route_table_association.ayroid-rta: Creating...
aws_route_table_association.ayroid-rta: Creation complete after 0s [id=rtbassoc-09ab9a5e87f9be379]
aws_security_group.ayroid-sg: Creation complete after 2s [id=sg-0d55c5bc5f51ba0b9]

Apply complete! Resources: 6 added, 0 changed, 0 destroyed.
```

3. Verify Resources on AWS

a. VPC

| | | | | |
|---|---|---|---|---|
| ☐ | – | vpc-06a6d2f68c04e7ecf | Available | 10.0.0.0/16 |

b. Subnet

| | | | | |
|---|---|---|---|---|
| ☐ | ayroid-subnet | subnet-010c7aa4835e8b4f0 | Available | vpc-06a6d2f68c04e7ecf |

c. Route table

| | | | | | |
|---|---|---|---|---|---|
| ☐ | ayroid-Route-Table | rtb-0c7a93722671efd9f | subnet-010c7aa4835e8b... | – | No |

d. Internet Gateway

| | | | | |
|---|---|---|---|---|
| ☐ | ayroid-IG | igw-0ee28d334c38b7999 | Attached | vpc-06a6d2f68c04e7ecf |

4. Clean up resources

```
aws_route_table_association.ayroid-rta: Destroying... [id=rtbassoc-06b27f63a6b7f489f]
aws_security_group.ayroid-sg: Destroying... [id=sg-0a13530fa8a50ee8e]
aws_route_table_association.ayroid-rta: Destruction complete after 1s
aws_subnet.ayroid-subnet: Destroying... [id=subnet-010c7aa4835e8b4f0]
aws_route_table.ayroid-rt: Destroying... [id=rtb-0c7a93722671efd9f]
aws_security_group.ayroid-sg: Destruction complete after 1s
aws_subnet.ayroid-subnet: Destruction complete after 0s
aws_route_table.ayroid-rt: Destruction complete after 0s
aws_internet_gateway.ayroid-gw: Destroying... [id=igw-0ee28d334c38b7999]
aws_internet_gateway.ayroid-gw: Destruction complete after 1s
aws_vpc.ayroid: Destroying... [id=vpc-06a6d2f68c04e7ecf]
aws_vpc.ayroid: Destruction complete after 0s

Destroy complete! Resources: 6 destroyed.
```

*******END OF EXPERIMENT-08*******