

Lab Exercise 8– Creating a VPC in Terraform

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1. Create Terraform Configuration Files

```
TERRAFORM-VPC > main.tf > terraform
1 terraform {
2     required_providers {
3         aws = {
4             source = "hashicorp/aws"
5             version = "5.31.0"
6         }
7     }
8 }
9
10 provider "aws" {
11     region = "ap-south-1"
12     access_key = "AKIATQMU37PQBDMOBLE2"
13     secret_key = "y8PzVNRyYzhxM0XyLmoGlr4/8Em7rvpXk19zCCy"
14 }
```

```
TERRAFORM-VPC > var.tf > variable "instance_type"
1 variable "ami" {
2     type = string
3     default = "ami-03f4878755434977f"
4 }
5
6 variable "instance_type" {
7     type = string
8     default = "t2.micro"
9 }
```

2. Define a VPC with a specified CIDR block, and two subnets within the VPC

```

TERRAFORM-VPC > resources.tf > resource "aws_subnet" "my_subnet"
1  resource "aws_instance" "UPES" {
2      ami = var.ami
3      instance_type = var.instance_type
4
5      tags = {
6          Name = "EC2-Instnace"
7      }
8  }
9
10 resource "aws_vpc" "my_vpc" {
11     cidr_block = "10.0.0.0/16"
12     enable_dns_support = true
13     enable_dns_hostnames = true
14     tags = {
15         Name = "MyVPC"
16     }
17 }
18
19 resource "aws_subnet" "my_subnet" {
20     count = 2
21
22     vpc_id            = aws_vpc.my_vpc.id
23     cidr_block        = "10.0.${count.index + 1}.0/24"
24     availability_zone  = "ap-south-1a"
25     map_public_ip_on_launch = true
26
27     tags = {
28         Name = "MySubnet-${count.index + 1}"
29     }
30 }

```

3. Initialize & Apply

```

+ public_dns                = (known after apply)
+ public_ip                 = (known after apply)
+ secondary_private_ips     = (known after apply)
+ security_groups            = (known after apply)
+ source_dest_check         = true
+ spot_instance_request_id   = (known after apply)
+ subnet_id                 = (known after apply)
+ tags                      = {
+   "Name" = "My-EC2-Instance"
+ }
+ tags_all                  = {
+   "Name" = "My-EC2-Instance"
+ }
+ tenancy                   = (known after apply)
+ user_data                 = (known after apply)
+ user_data_base64          = (known after apply)
+ user_data_replace_on_change = false
+ vpc_security_group_ids    = (known after apply)
}

Plan: 4 to add, 0 to change, 0 to destroy.
aws_iam_user.iam_users[1]: Creating...
aws_iam_user.iam_users[0]: Creating...
aws_iam_user.iam_users[2]: Creating...
aws_instance.UPES: Creating...
aws_iam_user.iam_users[1]: Creation complete after 1s [id=user2]
aws_iam_user.iam_users[2]: Creation complete after 1s [id=user3]
aws_iam_user.iam_users[0]: Creation complete after 1s [id=user1]
aws_instance.UPES: Still creating... [10s elapsed]
aws_instance.UPES: Still creating... [20s elapsed]
aws_instance.UPES: Still creating... [30s elapsed]
aws_instance.UPES: Creation complete after 32s [id=i-0378e8cdaa8cc8659]

Apply complete! Resources: 4 added, 0 changed, 0 destroyed.
© PS D:\DevOps\LAB\SPCM\TERRAFORM-SCRIPTS\TERRAFORM- IAM-USER>

```

4. Check the AWS Console

Instances (1) Info

Find Instance by attribute or tag (case-sensitive) Any state

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
EC2-Instance	i-0b14b9fca0aeb7652	Running	t2.micro	Initializing	View alarms	ap-south-1a	ec2-3-111-170-102.ap-...	3.111.170.102	-

Your VPCs (2) Info

Search

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP option set	Main route table
-	vpc-059cab9c617b7e089	Available	172.31.0.0/16	-	dopt-0ccc2846ab45aaf4	rtb-09d8d032c714499cd
MyVPC	vpc-0f181e2067f63a0a8	Available	10.0.0.0/16	-	dopt-0ccc2846ab45aaf4	rtb-0a8527aabef868322

Subnets (5) Info

Find resources by attribute or tag

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 address
-	subnet-0c703c24d705f87ad	Available	vpc-059cab9c617b7e089	172.31.16.0/20	-	4091
MySubnet-1	subnet-080170d747a12d5d7	Available	vpc-0f181e2067f63a0a8 MyVPC	10.0.1.0/24	-	251
-	subnet-00776076103a714ba	Available	vpc-059cab9c617b7e089	172.31.0.0/20	-	4091
MySubnet-2	subnet-00b19db13eb480177	Available	vpc-0f181e2067f63a0a8 MyVPC	10.0.2.0/24	-	251
-	subnet-01411df003d3830d6	Available	vpc-059cab9c617b7e089	172.31.32.0/20	-	4090

5. Clean Up

```
PS D:\DevOps\LAB\SPCM\TERRAFORM-SCRIPTS\TERRAFORM-VPC> terraform destroy -auto-approve
aws_vpc.my_vpc: Refreshing state... [id=vpc-0f181e2067f63a0a8]
aws_instance.UPES: Refreshing state... [id=i-0b14b9fca0aeb7652]
aws_subnet.my_subnet[1]: Refreshing state... [id=subnet-00b19db13eb480177]
aws_subnet.my_subnet[0]: Refreshing state... [id=subnet-080170d747a12d5d7]

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

Terraform will perform the following actions:

# aws_instance.UPES will be destroyed
- resource "aws_instance" "UPES" {
  - ami                  = "ami-03f4878755434977f" -> null
  - arn                  = "arn:aws:ec2:ap-south-1:241367251936:instance/i-0b14b9fca0aeb7652" -> null
  - associate_public_ip_address = true -> null
  - availability_zone      = "ap-south-1a" -> null
  - cpu_core_count         = 1 -> null
  - cpu_threads_per_core   = 1 -> null
  - disable_api_stop       = false -> null
  - disable_api_termination = false -> null
  - ebs_optimized          = false -> null
}

Plan: 0 to add, 0 to change, 4 to destroy.
aws_subnet.my_subnet[1]: Destroying... [id=subnet-00b19db13eb480177]
aws_subnet.my_subnet[0]: Destroying... [id=subnet-080170d747a12d5d7]
aws_instance.UPES: Destroying... [id=i-0b14b9fca0aeb7652]
aws_subnet.my_subnet[1]: Destruction complete after 1s
aws_subnet.my_subnet[0]: Destruction complete after 1s
aws_vpc.my_vpc: Destroying... [id=vpc-0f181e2067f63a0a8]
aws_vpc.my_vpc: Destruction complete after 1s
aws_instance.UPES: Still destroying... [id=i-0b14b9fca0aeb7652, 10s elapsed]
aws_instance.UPES: Still destroying... [id=i-0b14b9fca0aeb7652, 21s elapsed]
aws_instance.UPES: Still destroying... [id=i-0b14b9fca0aeb7652, 31s elapsed]
aws_instance.UPES: Destruction complete after 31s

Destroy complete! Resources: 4 destroyed.
PS D:\DevOps\LAB\SPCM\TERRAFORM-SCRIPTS\TERRAFORM-VPC>
```