



SPCM - LAB  
6th Sem

**Submitted To:**

**Dr. Hitesh Kumar Sharma**  
**School of Computer Science**

**Submitted By:**

**Bhavesh Sanjiv Kapur**  
**R2142220057**  
**500105635**  
**Batch 1-NH**

Writing Terraform Scripts to perform the following task 2 ec2 Instances, VPN and S3 main.tf

```
assignment1 > main.tf > terraform > required_providers > aws
1 terraform {
2   required_providers {
3     aws = {
4       source = "hashicorp/aws"
5       version = "5.31.0"
6     }
7   }
8 }
9
10
11 provider "aws" {
12   region = "ap-south-1" # Replace with your preferred region
13   access_key = "AKIA4ZZIDPTHCMH23BLX" # Replace with your Access Key
14   secret_key = "co0vWKRv+kzN+VTm+06lxwsbba3P+09FHkcoRKww" # Replace with your Secret Key
15 }
16
```

Running terraform init

```
● (base) → assignment1 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)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

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.
○ (base) → assignment1
```

Terraform init to initialize the terraform folder which will have the aws provider plugin installed

instance.tf

```
assignment1 > instance.tf > resource "aws_instance" "ins2"
1  resource "aws_instance" "ins1" {
2      ami          = "ami-0e35ddab05955cf57"
3      instance_type = "t2.micro"
4
5      tags = {
6          Name = "Instance1"
7      }
8  }
9
10 resource "aws_instance" "ins2" {
11     ami          = "ami-0e35ddab05955cf57"
12     instance_type = "t2.micro"
13
14     tags = {
15         Name = "Instance2"
16     }
17 }
```

This file holds the iac code to make 2 instances - t2-micro ec2 machines

resource.tf

```
assignment1 > resource.tf
1  resource "aws_vpc" "main"{
2    cidr_block = "10.0.0.0/16"
3
4    tags = {
5      Name ="BhaveshVPC"
6    }
7  }
8
9
10 resource "aws_vpn_gateway" "example" {
11   vpc_id = aws_vpc.main.id
12
13   tags = {
14     Name = "MyVPNGateway"
15   }
16 }
17
```

```
19 resource "aws_customer_gateway" "example" {
20   bgp_asn      = 65000
21   ip_address   = "203.0.113.1" # Replace with actual IP
22   type         = "ipsec.1"
23
24   tags = {
25     Name = "MyCustomerGateway"
26   }
27 }
28
29
30
31 resource "aws_vpn_connection" "example" {
32   customer_gateway_id = aws_customer_gateway.example.id
33   vpn_gateway_id      = aws_vpn_gateway.example.id
34   type                = "ipsec.1"
35   static_routes_only  = true
36 }
```

This resource.tf hold the iac code to create vpc , the customer gateway and the vpn connection.

s3.tf

```
1
2 resource "aws_s3_bucket" "example" {
3     bucket = "bhavesh-kapur-upes-s3"
4     acl    = "private"
5 }
```

The s3.tf hold the code to create a s3 bucket which has a unique name

Outputs:

terraform plan

```
# aws_vpn_gateway.example will be created
+ resource "aws_vpn_gateway" "example" {
+   amazon_side_asn = (known after apply)
+   arn             = (known after apply)
+   id             = (known after apply)
+   tags            = {
+     + "Name" = "MyVPNGateway"
+   }
+   tags_all        = {
+     + "Name" = "MyVPNGateway"
+   }
+   vpc_id          = (known after apply)
+ }
```

**Plan:** 7 to add, 0 to change, 0 to destroy.

Terraform apply

```
aws_vpn_connection.example: Still creating... [5m0s elapsed]
aws_vpn_connection.example: Creation complete after 5m7s [id=vpn-029da44f6ca1c9be9]

Warning: Argument is deprecated

  with aws_s3_bucket.example,
  on s3.tf line 4, in resource "aws_s3_bucket" "example":
    4:     acl     = "private"

Use the aws_s3_bucket_acl resource instead

Apply complete! Resources: 7 added, 0 changed, 0 destroyed.
(base) → assignment1
```

Customer Gateway

Customer gateways (1) <small>info</small>							
<div>Find resource by attribute or tag</div>							
<input type="checkbox"/>	Name	Customer gateway ID	State	BGP ASN	IP address	Type	Certificate ARN
<input type="radio"/>	MyCustomerGateway	cgw-0db8bed0020c682a5	Available	65000	203.0.113.1	Ipsec.1	-

Vpc

Your VPCs (2) <small>info</small>							
<div>Search</div>							
<input type="checkbox"/>	Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR	DHCP option set
<input type="checkbox"/>	-	vpc-0aa7c2c88a69a7678	Available	Off	172.31.0.0/16	-	dopt-0b00b9b8f9deec8...
<input type="checkbox"/>	BhaveshVPC	vpc-0b134c3ef1cafeb5d	Available	Off	10.0.0.0/16	-	dopt-0b00b9b8f9deec8...

S3

▶ Account snapshot - updated every 24 hours

All AWS Regions

View Storage Lens dashboard

Storage lens provides visibility into storage usage and activity trends. Metrics don't include directory buckets. [Learn more](#)

General purpose buckets

Directory buckets

General purpose buckets (1)

Info

All AWS Regions

🔄

📄 Copy ARN

Empty

Delete

Create bucket

Buckets are containers for data stored in S3.

🔍 Find buckets by name

< 1 > ⚙️

	Name	AWS Region	IAM Access Analyzer	Creation date
<input type="radio"/>	<a href="#">bhavesh-kapur-upes-s3</a>	Asia Pacific (Mumbai) ap-south-1	<a href="#">View analyzer for ap-south-1</a>	April 11, 2025, 08:59:55 (UTC+05:30)

Instances

Instances (2) <small>info</small>							
<div>Find instance by attribute or tag (case-sensitive)</div>							
<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	Instance1	i-0d47a9f307d7ccc3b	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a>	ap-south-1b
<input type="checkbox"/>	Instance2	i-081605682eca104d5	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a>	ap-south-1b