

Assignment - 1

SYSTEM PROVISIONING AND CONFIGURATION SYSTEM

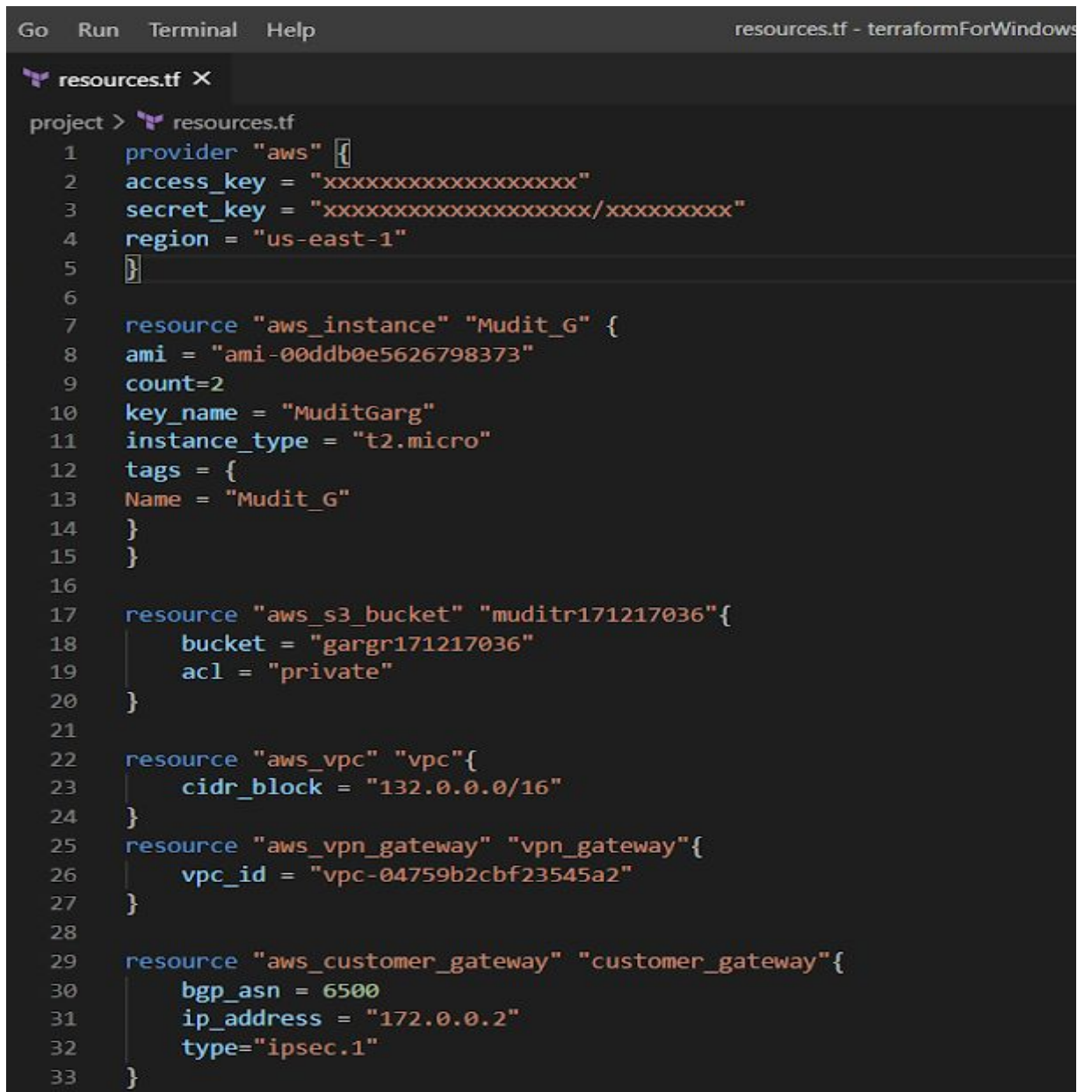
Name: Mudit Garg

Roll No: R171217036

Sap ID: 500062539

Steps:

- Get aws security credentials i.e. access key and secret key and specify the region.
- Specify provider and these keys in provider
- Specify resources for ec2 instance, ami, instance type = t2.micro
- Specify resources for s3 bucket, follow naming convention for bucket name
- Specify resources for vpc and vpc gateway



The screenshot shows a code editor window titled "resources.tf - terraformForWindows". The editor contains a Terraform configuration file named "resources.tf". The configuration defines an AWS provider and several resources: an EC2 instance, an S3 bucket, a VPC, a VPN gateway, and a customer gateway. The code is as follows:

```
project > resources.tf
1  provider "aws" {
2    access_key = "xxxxxxxxxxxxxxxxxxxxxxxx"
3    secret_key = "xxxxxxxxxxxxxxxxxxxxxxxx/xxxxxxxxxx"
4    region = "us-east-1"
5  }
6
7  resource "aws_instance" "Mudit_G" {
8    ami = "ami-00ddb0e5626798373"
9    count=2
10   key_name = "MuditGarg"
11   instance_type = "t2.micro"
12   tags = {
13     Name = "Mudit_G"
14   }
15 }
16
17 resource "aws_s3_bucket" "muditr171217036"{
18   bucket = "gargr171217036"
19   acl = "private"
20 }
21
22 resource "aws_vpc" "vpc"{
23   cidr_block = "132.0.0.0/16"
24 }
25 resource "aws_vpn_gateway" "vpn_gateway"{
26   vpc_id = "vpc-04759b2cbf23545a2"
27 }
28
29 resource "aws_customer_gateway" "customer_gateway"{
30   bgp_asn = 6500
31   ip_address = "172.0.0.2"
32   type="ipsec.1"
33 }
```

```

34
35 resource "aws_vpn_connection" "main"{
36     vpn_gateway_id=aws_vpn_gateway.vpn_gateway.id
37     customer_gateway_id = aws_customer_gateway.customer_gateway.id
38     type = "ipsec.1"
39     static_routes_only = true
40 }
41

```

Console output:

- Terraform init

```
PS C:\terraformForWindows\project> terraform init
```

Initializing the backend...

Initializing provider plugins...

- Finding latest version of hashicorp/aws...
- Installing hashicorp/aws v3.16.0...
- Installed hashicorp/aws v3.16.0 (signed by HashiCorp)

The following providers do not have any version constraints in configuration, so the latest version was installed.

To prevent automatic upgrades to new major versions that may contain breaking changes, we recommend adding version constraints in a `required_providers` block in your configuration, with the constraint strings suggested below.

```
* hashicorp/aws: version = "~> 3.16.0"
```

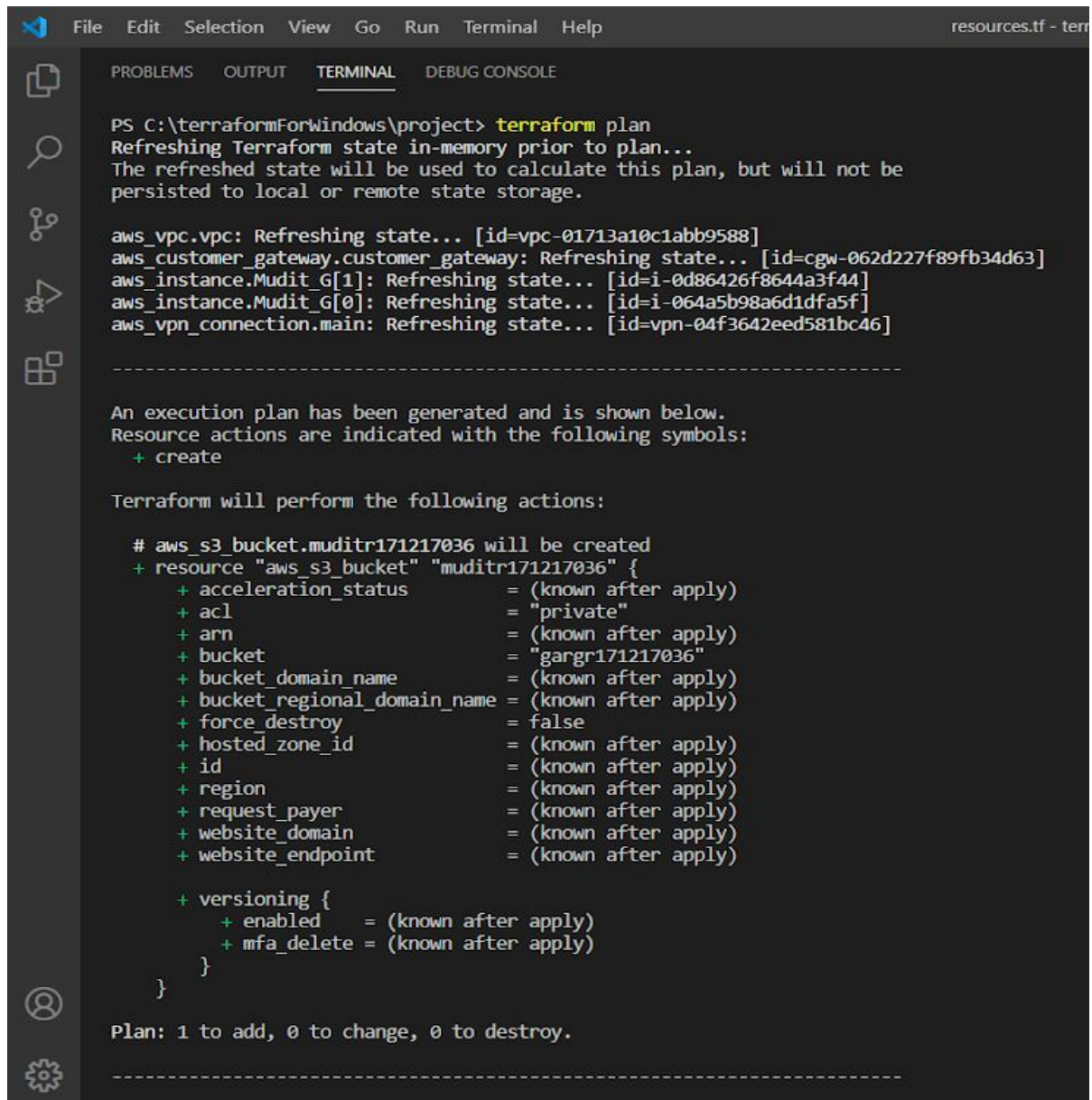
Terraform has been successfully initialized!

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.

```
PS C:\terraformForWindows\project> █
```

- Terraform plan



```
File Edit Selection View Go Run Terminal Help resources.tf - terr

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

PS C:\terraformForWindows\project> terraform plan
Refreshing Terraform state in-memory prior to plan...
The refreshed state will be used to calculate this plan, but will not be
persisted to local or remote state storage.

aws_vpc.vpc: Refreshing state... [id=vpc-01713a10c1abb9588]
aws_customer_gateway.customer_gateway: Refreshing state... [id=cgw-062d227f89fb34d63]
aws_instance.Mudit_G[1]: Refreshing state... [id=i-0d86426f8644a3f44]
aws_instance.Mudit_G[0]: Refreshing state... [id=i-064a5b98a6d1dfa5f]
aws_vpn_connection.main: Refreshing state... [id=vpn-04f3642eed581bc46]

-----

An execution plan has been generated and is shown below.
Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

# aws_s3_bucket.mudit171217036 will be created
+ resource "aws_s3_bucket" "mudit171217036" {
  + acceleration_status = (known after apply)
  + acl                 = "private"
  + arn                = (known after apply)
  + bucket              = "gargr171217036"
  + bucket_domain_name = (known after apply)
  + bucket_regional_domain_name = (known after apply)
  + force_destroy      = false
  + hosted_zone_id     = (known after apply)
  + id                 = (known after apply)
  + region             = (known after apply)
  + request_payer      = (known after apply)
  + website_domain     = (known after apply)
  + website_endpoint   = (known after apply)

  + versioning {
    + enabled = (known after apply)
    + mfa_delete = (known after apply)
  }
}

Plan: 1 to add, 0 to change, 0 to destroy.

-----
```

- Terraform apply

```
File Edit Selection View Go Run Terminal Help resources.tf - terraformForWindows - Visual Studio Code

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE 1: powershell

PS C:\terraformForWindows\project> terraform apply
aws_vpc.vpc: Refreshing state... [id=vpc-01713a10c1abb9588]
aws_customer_gateway.customer_gateway: Refreshing state... [id=cgw-062d227f89fb34d63]
aws_instance.Mudit_G[0]: Refreshing state... [id=i-064a5b98a6d1dfa5f]
aws_instance.Mudit_G[1]: Refreshing state... [id=i-0d86426f8644a3f44]
aws_vpn_gateway.vpn_gateway: Refreshing state... [id=vgw-093bc57499a71e30c]
aws_vpn_connection.main: Refreshing state... [id=vpn-04f3642eed581bc46]

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  + bucket_domain_name      = (known after apply)
  + bucket_regional_domain_name = (known after apply)
  + force_destroy           = false
  + hosted_zone_id          = (known after apply)
  + id                      = (known after apply)
  + region                  = (known after apply)
  + request_payer            = (known after apply)
  + website_domain          = (known after apply)
  + website_endpoint        = (known after apply)

  + versioning {
    + enabled = (known after apply)
    + mfa_delete = (known after apply)
  }
}

Plan: 1 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.

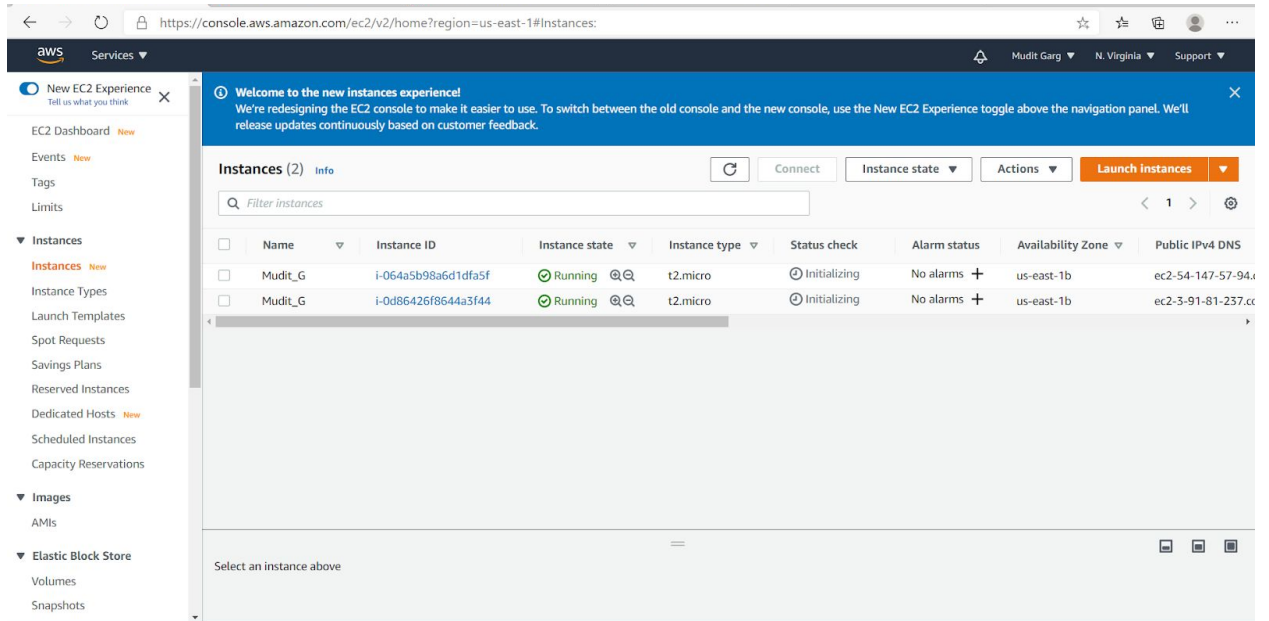
Enter a value: yes
```

```
aws_s3_bucket.muditr171217036: Creating...
aws_s3_bucket.muditr171217036: Still creating... [10s elapsed]
aws_s3_bucket.muditr171217036: Creation complete after 17s [id=gargr171217036]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
PS C:\terraformForWindows\project> █
```


AWS output:

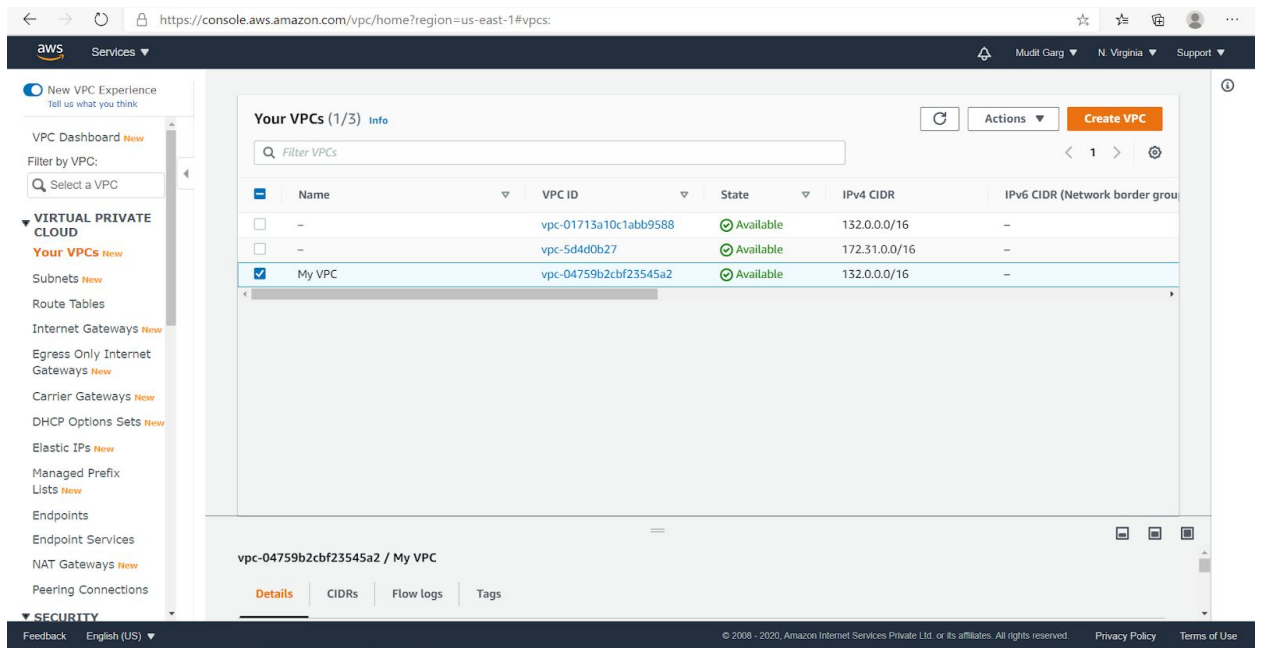
Ec2 instance



Instances (2) Info

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input type="checkbox"/>	Mudit_G	i-064a5b98a6d1dfa5f	Running	t2.micro	Initializing	No alarms	us-east-1b	ec2-54-147-57-94...
<input type="checkbox"/>	Mudit_G	i-0d86426f8644a3f44	Running	t2.micro	Initializing	No alarms	us-east-1b	ec2-3-91-81-237...

VPC



Your VPCs (1/3) Info

	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR (Network border group)
<input type="checkbox"/>	-	vpc-01713a10c1abb9588	Available	132.0.0.0/16	-
<input type="checkbox"/>	-	vpc-5d4d0b27	Available	172.31.0.0/16	-
<input checked="" type="checkbox"/>	My VPC	vpc-04759b2cbf23545a2	Available	132.0.0.0/16	-

vpc-04759b2cbf23545a2 / My VPC

Details | CIDRs | Flow logs | Tags

S3 bucket

← → ↺ 🔒 https://s3.console.aws.amazon.com/s3/home?region=us-east-1

aws Services ▾

🔔 Mudrit Garg ▾ Global ▾ Support ▾

Amazon S3 ×

Buckets

Access points

Batch Operations

Access analyzer for S3

Account settings for Block Public Access

▼ Storage Lens

Dashboards

AWS Organizations settings

Feature spotlight 2

Amazon S3

Buckets (1)

🔄 Copy ARN Empty Delete Create bucket

Find buckets by name

< 1 > ⚙

	Name ▲	Region ▼	Access ▼	Creation date ▼
<input type="radio"/>	gargr171217036	US East (N. Virginia) us-east-1	Objects can be public	November 21, 2020, 14:15 (UTC+05:30)

Feedback English (US) ▾

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