

ASSIGNMENT 1

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BATCH : B-2

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Write Terraform script to do perform following tasks on AWS cloud Platform

Step 1: Create two T2 Micro EC2 Instances.

```
main.tf ×
main.tf
1 terraform {
2   required_providers {
3     aws = {
4       source = "hashicorp/aws"
5       version = "~> 5.0"
6     }
7   }
8 }
9
10 provider "aws" {
11   region = "ap-southeast-2"
12 }
13
14 resource "aws_instance" "ec2_instance_1" {
15   ami           = "ami-09e143e99e8fa74f9"
16   instance_type = "t2.micro"
17   tags = {
18     Name = "Terraform-EC2-1"
19   }
20 }
21
22 resource "aws_instance" "ec2_instance_2" {
23   ami           = "ami-09e143e99e8fa74f9"
24   instance_type = "t2.micro"
25   tags = {
26     Name = "Terraform-EC2-2"
27   }
28 }
```





Step2: Create a VPN on AWS

```
30 resource "aws_vpc" "main" {
31   cidr_block = "10.0.0.0/16"
32   tags = {
33     Name = "Terraform-VPC"
34   }
35 }
36
37 resource "aws_subnet" "public_subnet" {
38   vpc_id      = aws_vpc.main.id
39   cidr_block   = "10.0.1.0/24"
40   availability_zone = "${data.aws_availability_zones.available.names[0]}"
41   map_public_ip_on_launch = true
42   tags = {
43     Name = "Terraform-Public-Subnet"
44   }
45 }
46
47 resource "aws_internet_gateway" "gw" {
48   vpc_id = aws_vpc.main.id
49   tags = {
50     Name = "Terraform-Internet-Gateway"
51   }
52 }
53
54 resource "aws_route_table" "public_rt" {
55   vpc_id = aws_vpc.main.id
56   route {
57     cidr_block = "0.0.0.0/0"
58     gateway_id = aws_internet_gateway.gw.id
59   }
60   tags = {
61     Name = "Terraform-Public-RouteTable"
62   }
63 }
```

Step 3: Create a S3 Bucket

```
65 resource "aws_s3_bucket" "my_bucket" {
66     bucket = "terraform-ass1-${random_id.bucket_id.hex}"
67     tags = {
68         Name          = "TerraformExampleBucket"
69         Environment    = "Dev"
70     }
71 }
72
73 resource "aws_s3_bucket_acl" "my_bucket_acl" {
74     bucket = aws_s3_bucket.my_bucket.id
75     acl    = "private"
76 }
77
78 resource "random_id" "bucket_id" {
79     byte_length = 8
80 }
81
82 data "aws_availability_zones" "available" {}
```

Step 4: Write the code for step 1,2 and 3 in a IaC terraform file and run terraform commands to execute these steps.

```
~/terraform-aws-projec  Pair  auto  Attach context  
✦ terraform init           # Initialize the directory
terraform plan             # Preview changes
terraform apply            # Apply and provision resources|
```

```
● (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.
```

```
# 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.

aws_vpn_connection.example: Still creating... [5m0s elapsed]

aws_vpn_connection.example: Creation complete after 5m7s [id=vpn-029da44f6ca1c9be9]

Warning: Argument is deprecated

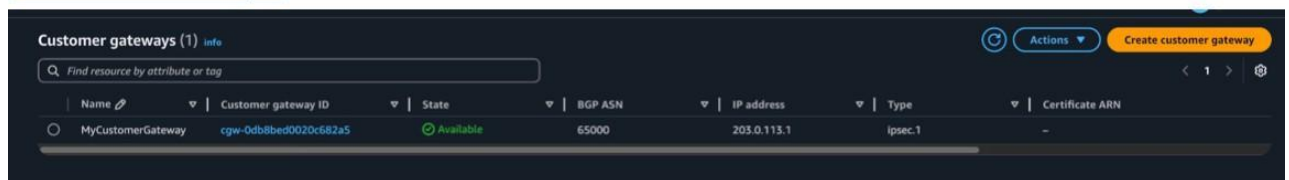
```
with aws_s3_bucket.example,
on s3.tf line 4, in resource "aws_s3_bucket" "example":
4:     acl    = "private"
```

Use the aws_s3_bucket_acl resource instead

Apply complete! Resources: 7 added, 0 changed, 0 destroyed.

Step 5: Create a PDF file using all screenshots. A small description need to be added with each screenshot.

Customer Gateway

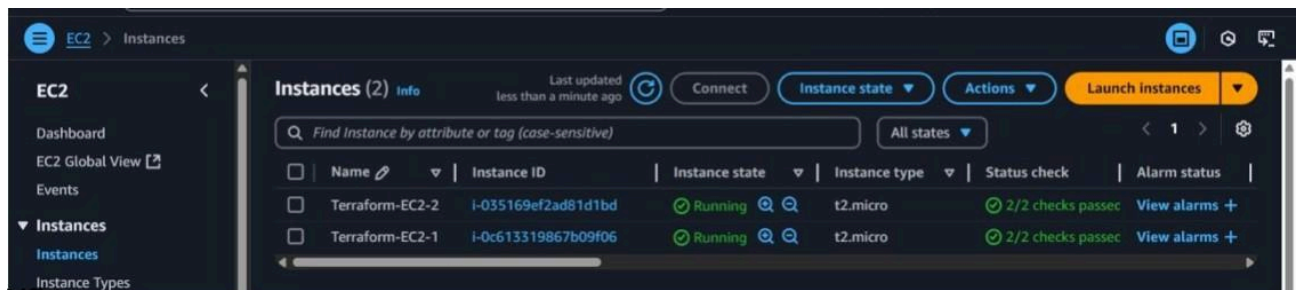


1. EC2 Instances

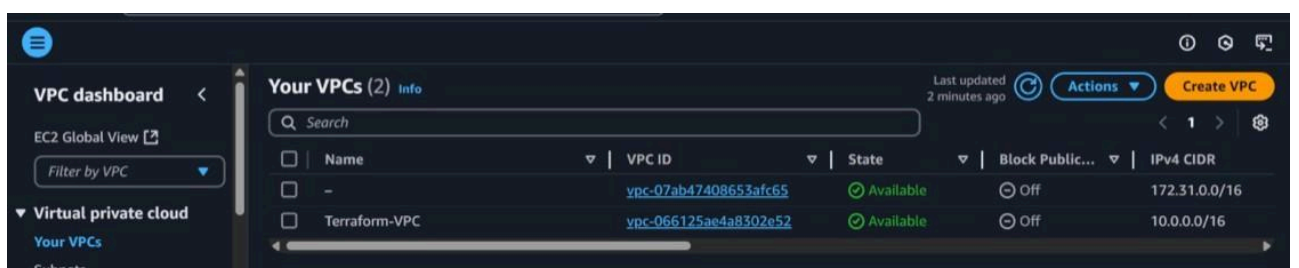
Dashboard Location: EC2 > Instances

What to check:

- Two instances named **EC2-Instance-1** and **EC2-Instance-2**
- State should be **running**
- Instance type should be **t2.micro**



2. Vpc



VPCs ▶ See all regions	Asia Pacific 2	NAT Gateways ▶ See all regions	Asia Pacific 0
Subnets ▶ See all regions	Asia Pacific 4	VPC Peering Connections ▶ See all regions	Asia Pacific 0
Route Tables ▶ See all regions	Asia Pacific 3	Network ACLs ▶ See all regions	Asia Pacific 2
Internet Gateways ▶ See all regions	Asia Pacific 2	Security Groups ▶ See all regions	Asia Pacific 13
Egress-only Internet Gateways ▶ See all regions	Asia Pacific 0	Customer Gateways ▶ See all regions	Asia Pacific 0
DHCP option sets ▶ See all regions	Asia Pacific 1	Virtual Private Gateways ▶ See all regions	Asia Pacific 0

VPC dashboard

EC2 Global View

Filter by VPC

Virtual private cloud

Your VPCs

Subnets

Your VPCs (2)

Info

Last updated 2 minutes ago

Actions

Create VPC

Search

<input type="checkbox"/>	Name	VPC ID	State	Block Public...	IPv4 CIDR
<input type="checkbox"/>	-	vpc-07ab47408653afc65	Available	Off	172.31.0.0/16
<input type="checkbox"/>	Terraform-VPC	vpc-066125ae4a8302e52	Available	Off	10.0.0.0/16

VPC dashboard

EC2 Global View

Filter by VPC

Virtual private cloud

Your VPCs

Subnets

Route tables

Subnets (4)

Info

Last updated less than a minute ago

Actions

Create subnet

Find resources by attribute or tag

<input type="checkbox"/>	Name	Subnet ID	State	VPC
<input type="checkbox"/>	-	subnet-0aa9f8f7d7b0abe72	Available	vpc-07ab47408653afc65
<input type="checkbox"/>	Terraform-Public-Subnet	subnet-05ffef25f915b4a02	Available	vpc-066125ae4a8302e52 Terr...
<input type="checkbox"/>	-	subnet-038da8992db8c8ca4	Available	vpc-07ab47408653afc65
<input type="checkbox"/>	-	subnet-0d9eb62e57a2af053	Available	vpc-07ab47408653afc65

VPC dashboard

EC2 Global View

Filter by VPC

Virtual private cloud

Your VPCs

Subnets

Route tables

Route tables (3)

Info

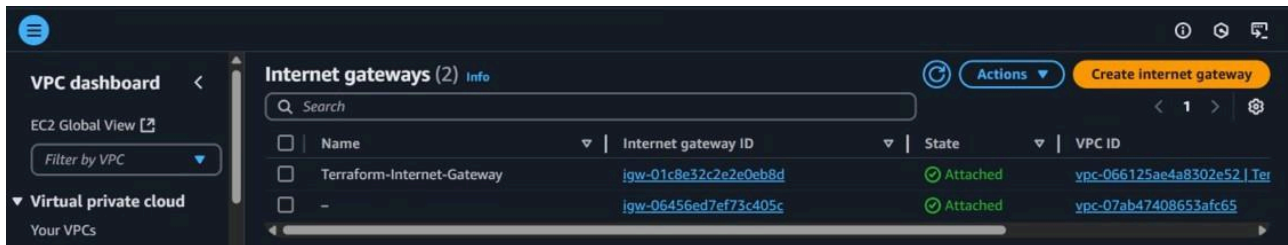
Last updated less than a minute ago

Actions

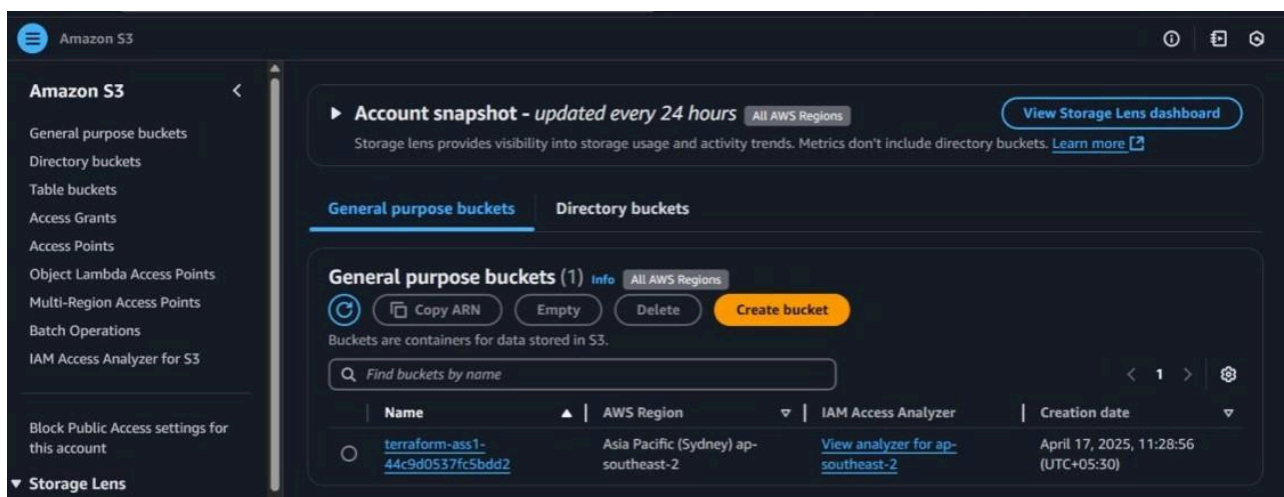
Create route table

Find resources by attribute or tag

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main
<input type="checkbox"/>	-	rtb-0dae8a0b134b79888	-	-	Yes
<input type="checkbox"/>	-	rtb-025aa626f473fb873	-	-	Yes
<input type="checkbox"/>	Terraform-Public-RouteTable	rtb-0cd6a048ea5e1feca	-	-	No



3. S3 Bucket



Step 5: Terraform Destroy

Destroy complete! Resources: 8 destroyed.

Step 6: PDF filename name should be your complete roll no.

Step 7: Push your pdf file in this GitHub Repo in your respective folder.

<https://github.com/hkshitesh/SPCM-2025-ASSIGNMENTS-SUBMISSION.git>