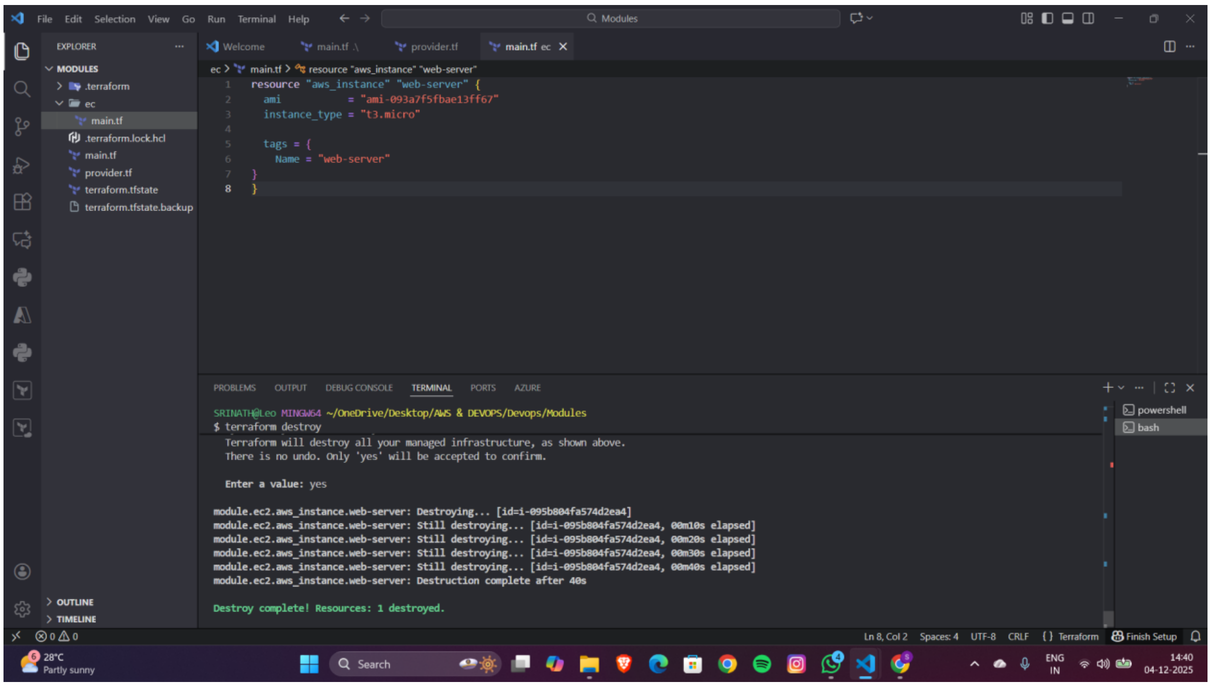
Task 10

Terraform module:

A **Terraform module** is a reusable block of Terraform code that groups related resources into a single logical unit. Instead of writing the same configuration repeatedly, you place it inside a module and simply call it whenever needed. This helps keep your infrastructure clean, organized, and scalable. Modules improve reusability, reduce duplication, and allow teams to standardize deployments across different environments such as dev, test, and production. In simple terms, a module acts like a template that lets you deploy the same set of resources multiple times with different inputs.

Screenshots of Terraform code:

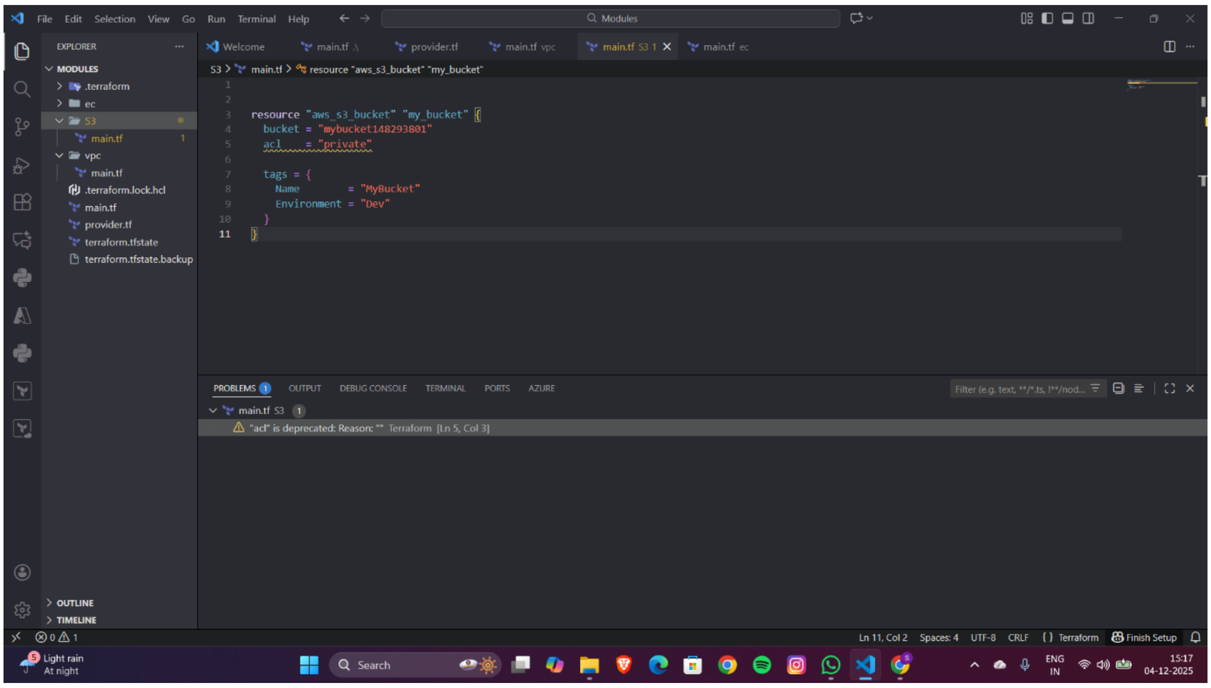
Ec2:



```
resource "aws_instance" "web-server" {
  ami           = "ami-093a7f5fbae13ff67"
  instance_type = "t3.micro"

  tags = {
    Name = "web-server"
  }
}
```

```
SRINATH@Leo MINGW64 ~/OneDrive/Desktop/AWS & DEVOPS/Devops/Modules
$ terraform destroy
  Terraform will destroy all your managed infrastructure, as shown above.
  There is no undo. Only 'yes' will be accepted to confirm.

  Enter a value: yes

module.ec2.aws_instance.web-server: Destroying... [id=i-095b804fa574d2ea4]
module.ec2.aws_instance.web-server: Still destroying... [id=i-095b804fa574d2ea4, 00m10s elapsed]
module.ec2.aws_instance.web-server: Still destroying... [id=i-095b804fa574d2ea4, 00m20s elapsed]
module.ec2.aws_instance.web-server: Still destroying... [id=i-095b804fa574d2ea4, 00m30s elapsed]
module.ec2.aws_instance.web-server: Still destroying... [id=i-095b804fa574d2ea4, 00m40s elapsed]
module.ec2.aws_instance.web-server: Destruction complete after 40s

Destroy complete! Resources: 1 destroyed.
```

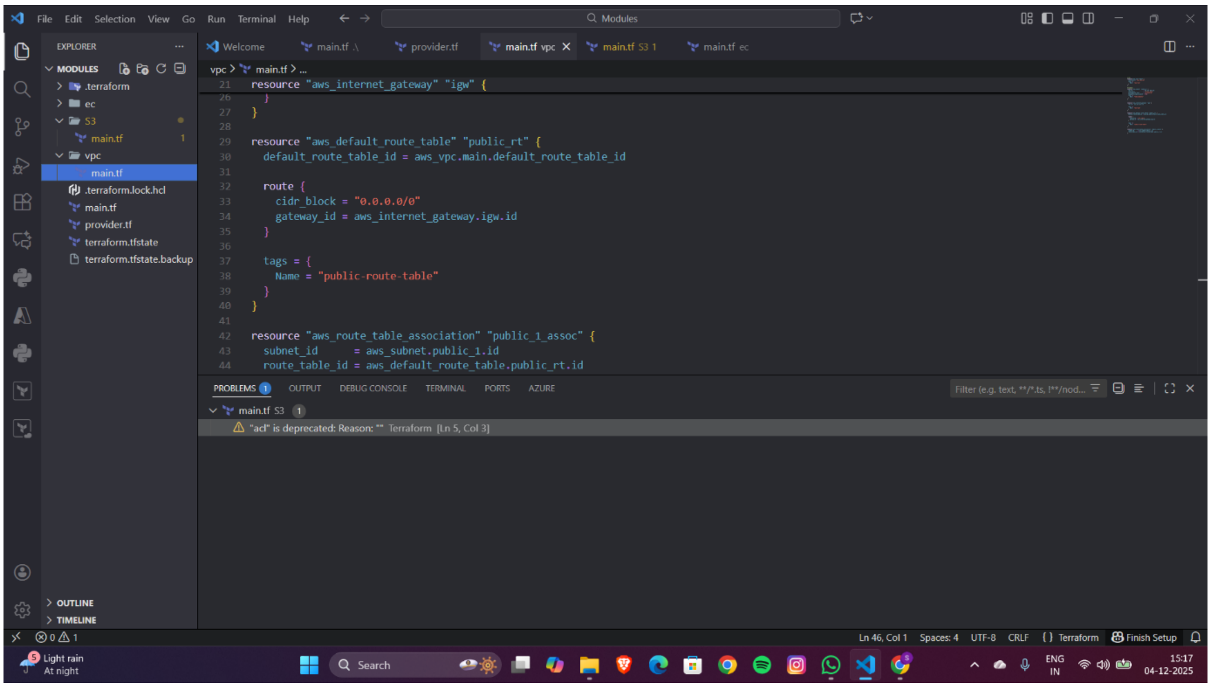
S3:



```
resource "aws_s3_bucket" "my_bucket" {
  bucket = "mybucket148293801"
  acl    = "private"

  tags = {
    Name        = "MyBucket"
    Environment = "Dev"
  }
}
```

```
⚠ "acl" is deprecated: Reason: "" Terraform [Ln 5, Col 3]
```

Vpc:

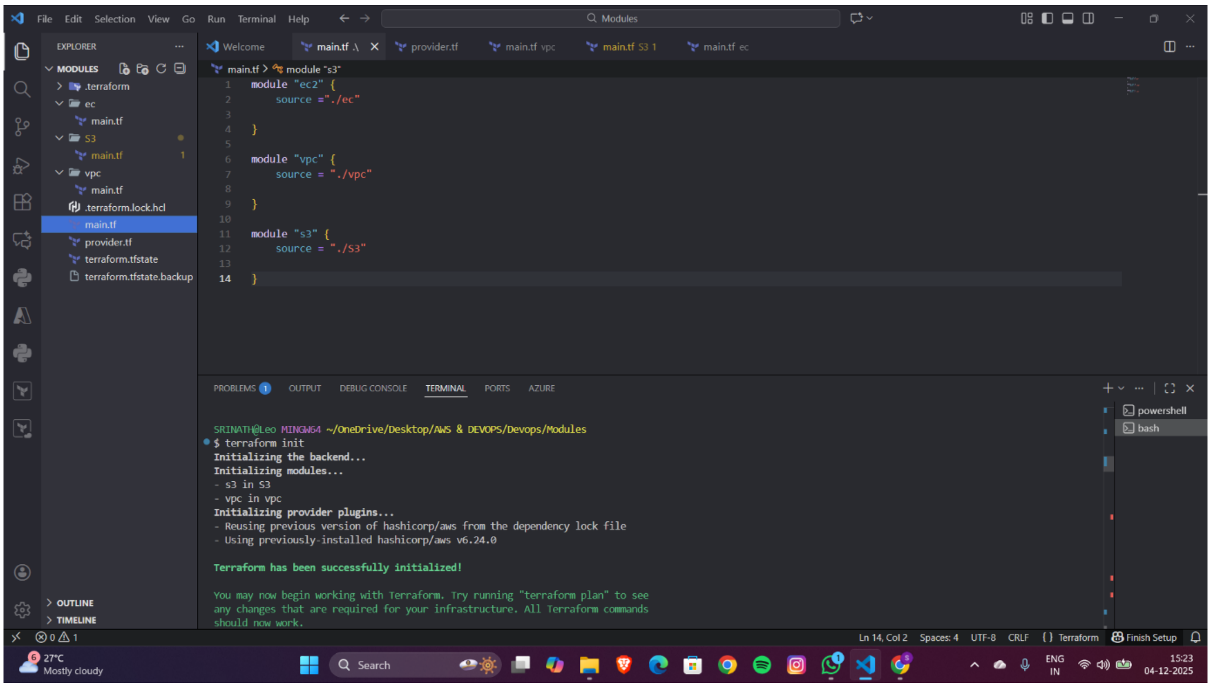


```
resource "aws_internet_gateway" "igw" {
  }
}

resource "aws_default_route_table" "public_rt" {
  default_route_table_id = aws_vpc.main.default_route_table_id

  route {
    cidr_block = "0.0.0.0/0"
    gateway_id = aws_internet_gateway.igw.id
  }

  tags = {
    Name = "public-route-table"
  }
}

resource "aws_route_table_association" "public_1_assoc" {
  subnet_id      = aws_subnet.public_1.id
  route_table_id = aws_default_route_table.public_rt.id
```

```
⚠ "acl" is deprecated: Reason: "" Terraform [Ln 5, Col 3]
```

Commands:

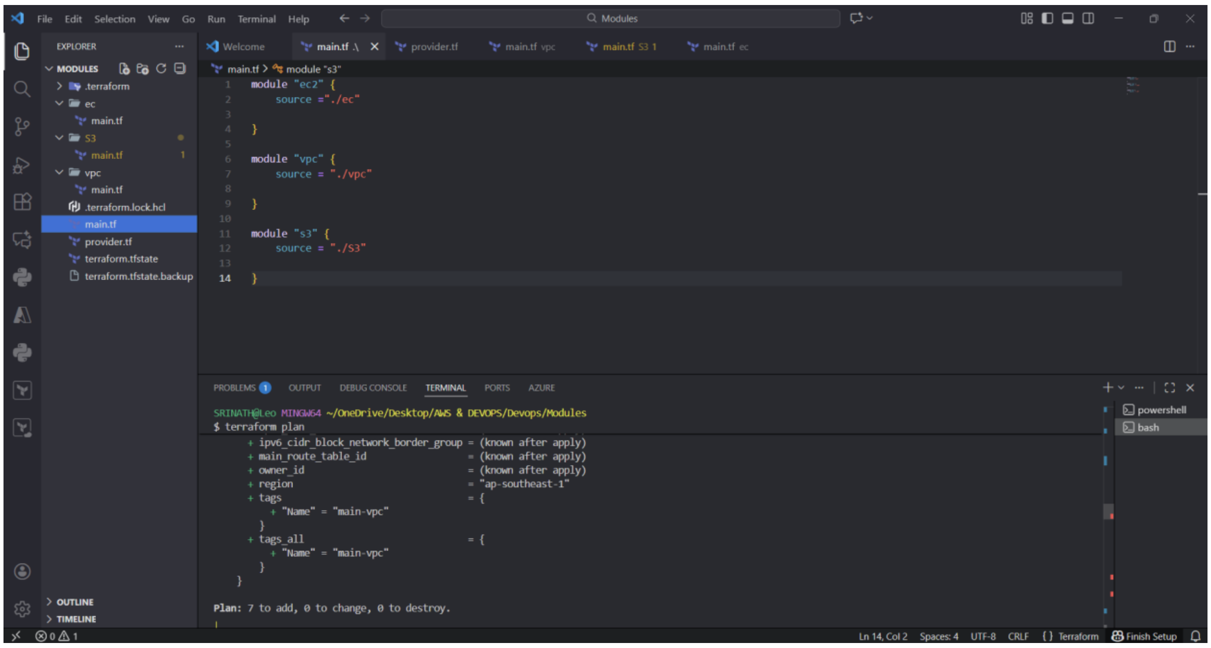
Terraform init:



```
module "ec2" {
    source ="./ec"

}

module "vpc" {
    source = "./vpc"

}

module "s3" {
    source = "./S3"

}
```

```
SRINATH@Leo MINGW64 ~/OneDrive/Desktop/AWS & DEVOPS/Devops/Modules
$ terraform init
Initializing the backend...
Initializing modules...
- s3 in S3
- vpc in vpc
Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v6.24.0

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.
```

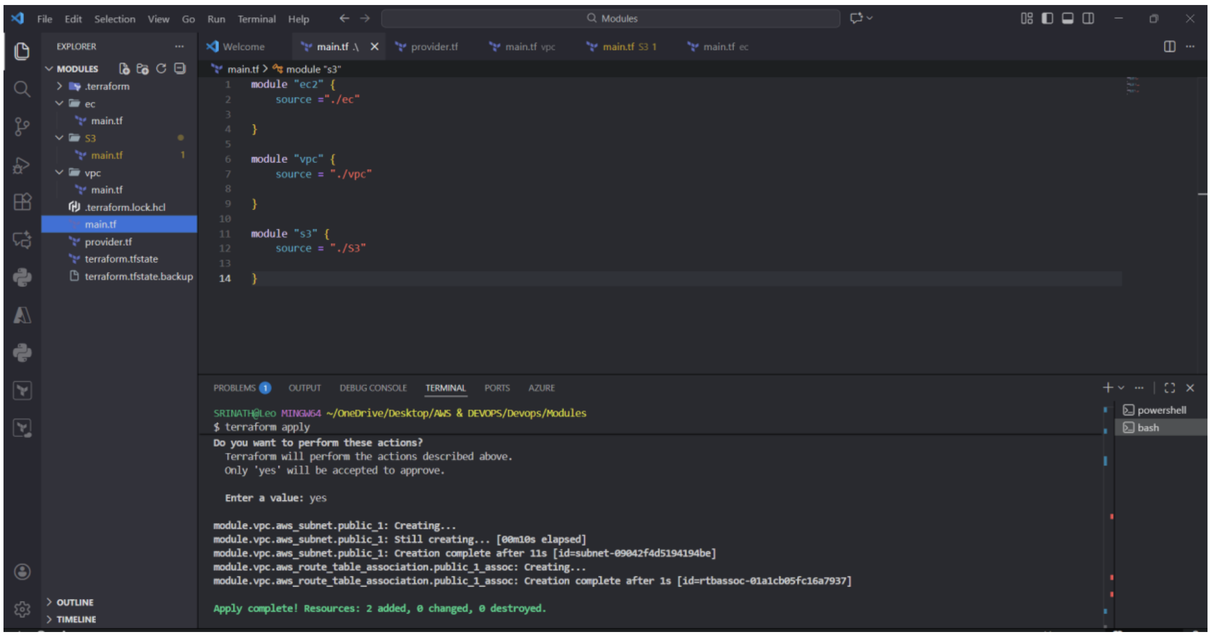
Terraform plan:



```
module "ec2" {
    source ="./ec"

}

module "vpc" {
    source = "./vpc"

}

module "s3" {
    source = "./S3"

}
```

```
SRINATH@Leo MINGW64 ~/OneDrive/Desktop/AWS & DEVOPS/Devops/Modules
$ terraform plan
      + ipv6_cidr_block_network_border_group = (known after apply)
      + main_route_table_id                  = (known after apply)
      + owner_id                             = (known after apply)
      + region                               = "ap-southeast-1"
      + tags                                 = {
          + "Name" = "main-vpc"
        }
      + tags_all                             = {
          + "Name" = "main-vpc"
        }
    }

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

Terraform apply:

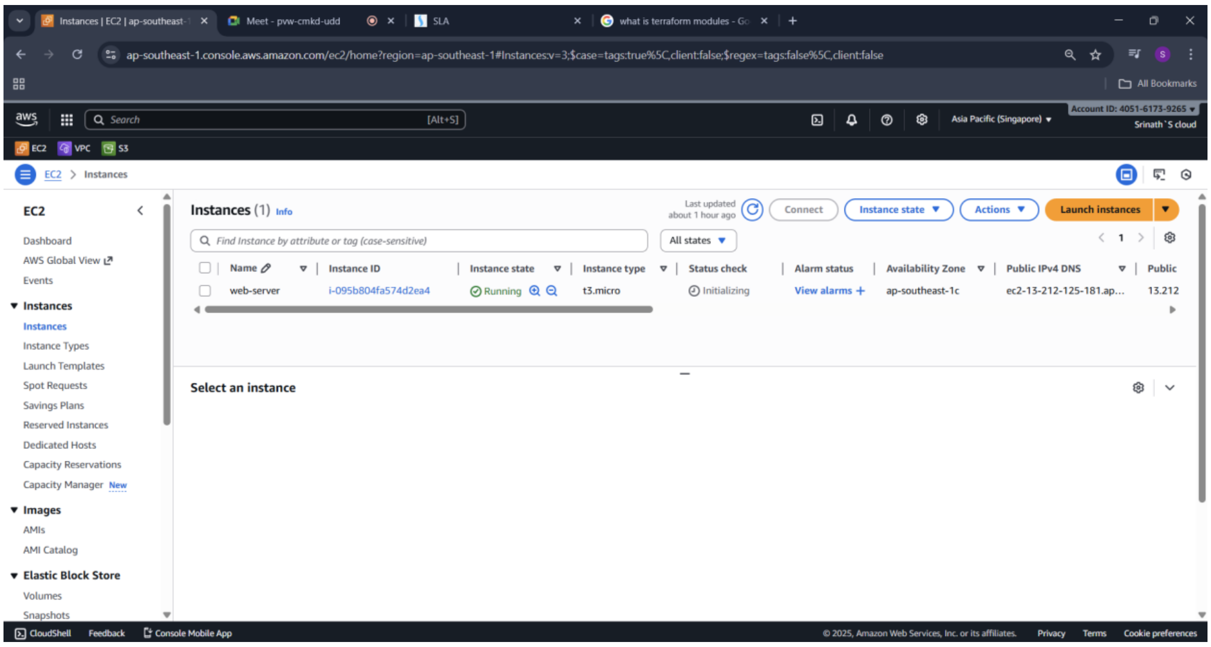


```
module "ec2" {
    source ="./ec"

}

module "vpc" {
    source = "./vpc"

}

module "s3" {
    source = "./S3"

}
```

```
SRINATH@Leo MINGW64 ~/OneDrive/Desktop/AWS & DEVOPS/Devops/Modules
$ terraform apply
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

module.vpc.aws_subnet.public_1: Creating...
module.vpc.aws_subnet.public_1: Still creating... [00m10s elapsed]
module.vpc.aws_subnet.public_1: Creation complete after 11s [id=subnet-09042f4d5194194be]
module.vpc.aws_route_table_association.public_1_assoc: Creating...
module.vpc.aws_route_table_association.public_1_assoc: Creation complete after 1s [id=rtbassoc-01a1cb05fc16a7937]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
```

OUTPUT:

Ec2:



ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#Instances:v=3;$case=tags:true%5C,client:false;$regex=tags:false%5C,client:false

Account ID: 4051-6173-9265

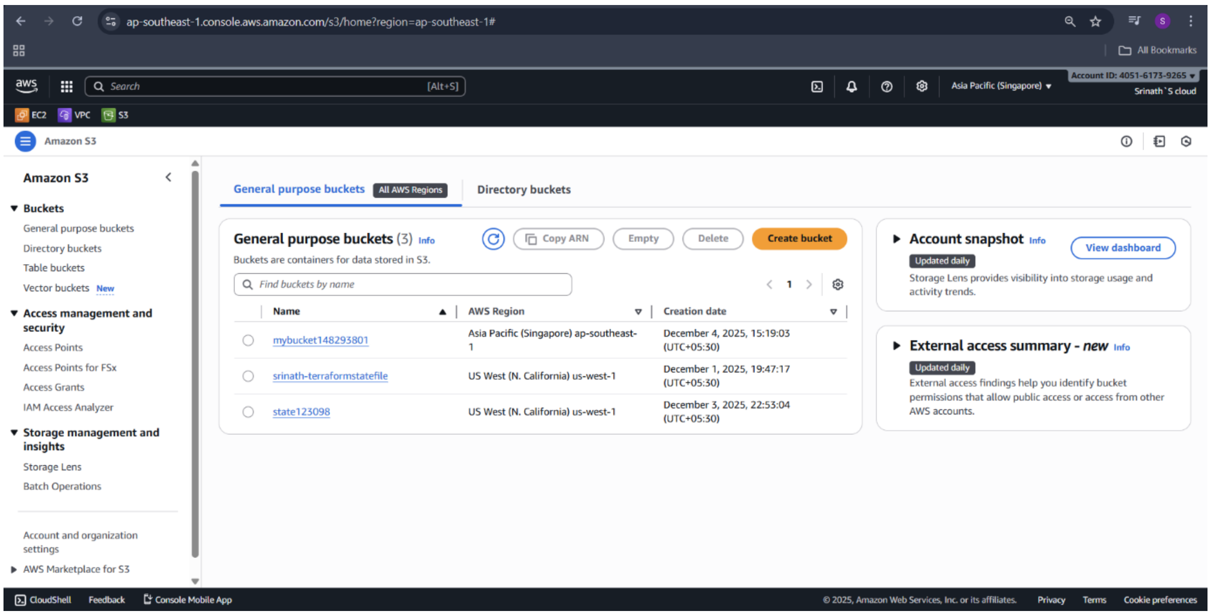
Asia Pacific (Singapore)

Instances (1)

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public
☐	web-server	i-095b804fa574d2ea4	Running	t3.micro	Initializing	View alarms +	ap-southeast-1c	ec2-13-212-125-181.ap...	13.212

Select an instance

S3:



ap-southeast-1.console.aws.amazon.com/s3/home?region=ap-southeast-1#

Account ID: 4051-6173-9265
Asia Pacific (Singapore)
Srinath`S cloud

Amazon S3

General purpose buckets All AWS Regions | Directory buckets

General purpose buckets (3) Info

Buckets are containers for data stored in S3.

Name	AWS Region	Creation date
mybucket148293801	Asia Pacific (Singapore) ap-southeast-1	December 4, 2025, 15:19:03 (UTC+05:30)
srinath-terraformstatefile	US West (N. California) us-west-1	December 1, 2025, 19:47:17 (UTC+05:30)
state123098	US West (N. California) us-west-1	December 3, 2025, 22:53:04 (UTC+05:30)

Account snapshot Info

Updated daily

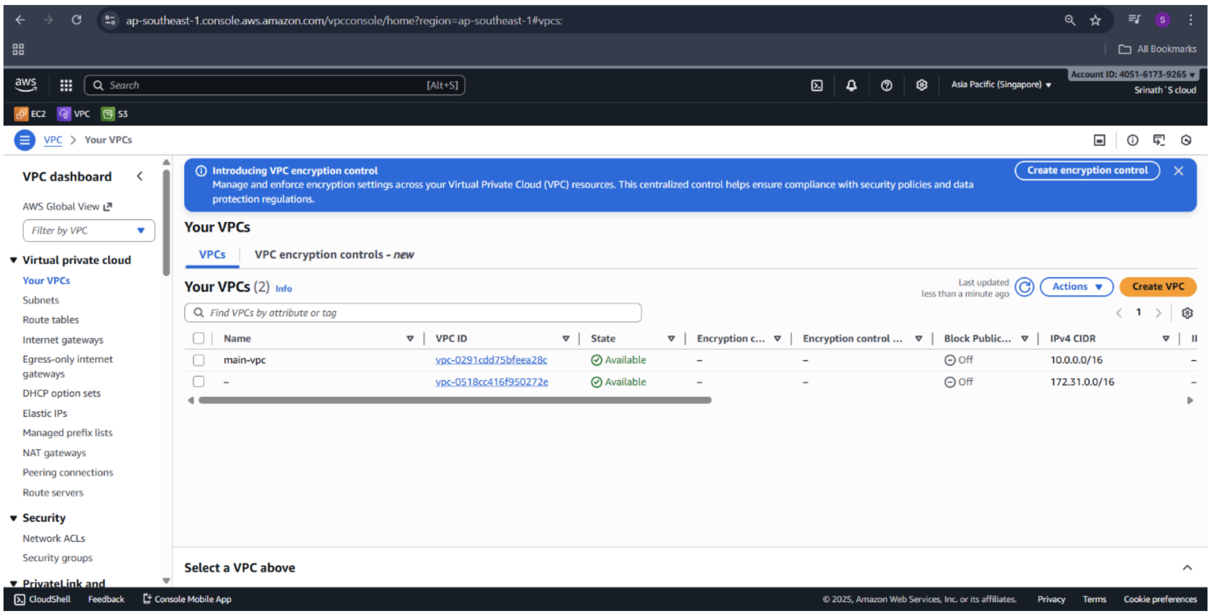
Storage Lens provides visibility into storage usage and activity trends.

External access summary - *new* Info

Updated daily

External access findings help you identify bucket permissions that allow public access or access from other AWS accounts.

VPC:



ap-southeast-1.console.aws.amazon.com/vpcconsole/home?region=ap-southeast-1#vpcs:

Account ID: 4051-6173-9265
Asia Pacific (Singapore)
Srinath`S cloud

VPC > Your VPCs

Introducing VPC encryption control
Manage and enforce encryption settings across your Virtual Private Cloud (VPC) resources. This centralized control helps ensure compliance with security policies and data protection regulations.

Your VPCs

VPCs | VPC encryption controls - *new*

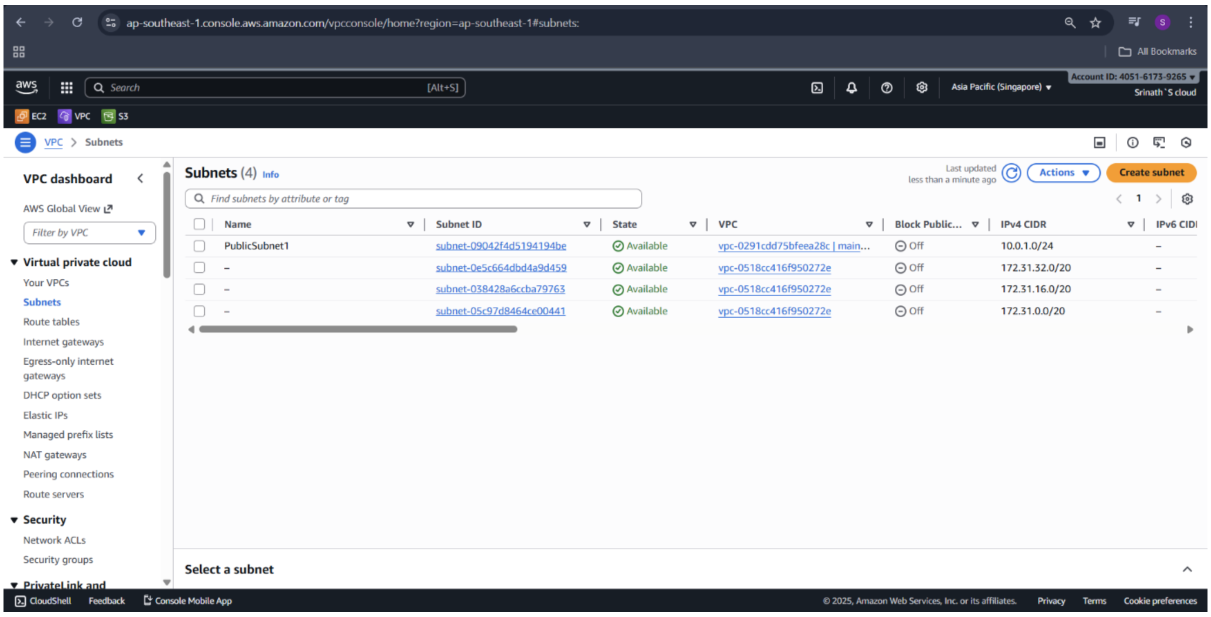
Your VPCs (2) Info

Last updated less than a minute ago

Name	VPC ID	State	Encryption c...	Encryption control ...	Block Public...	IPv4 CIDR
main-vpc	vpc-0291cdd75bfeea28c	Available	–	–	Off	10.0.0.0/16
–	vpc-0518cc416f950272e	Available	–	–	Off	172.31.0.0/16

Select a VPC above

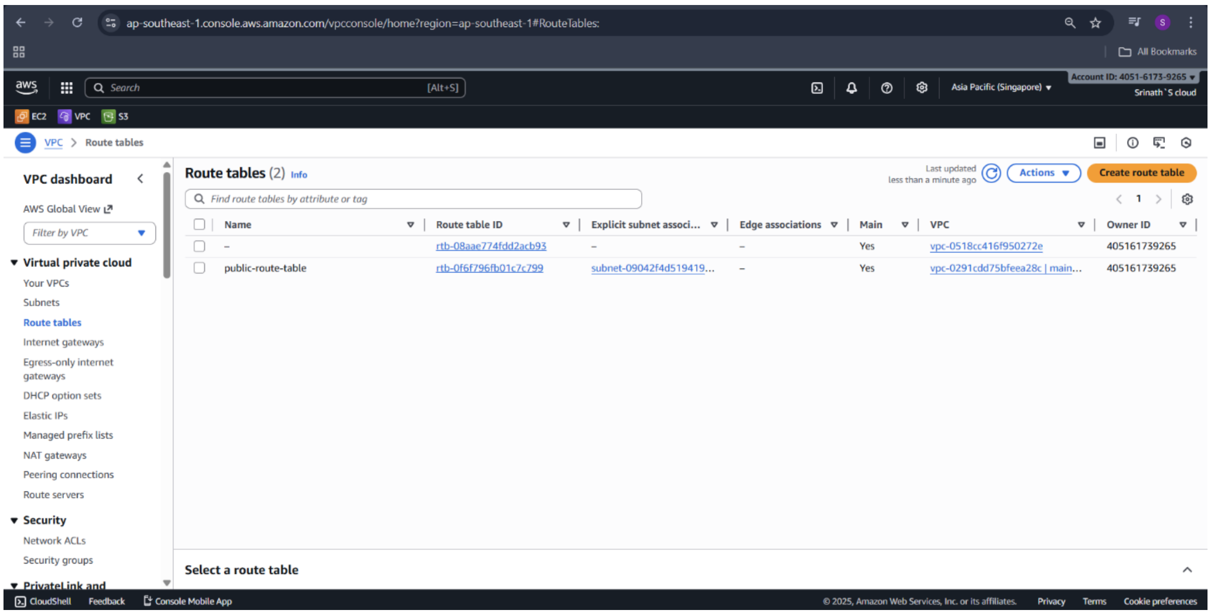
Subnet:



Subnets (4)

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR	IPv6 CIDI
PublicSubnet1	subnet-09042f4d5194194be	Available	vpc-0291cdd75bfeea28c | main...	Off	10.0.1.0/24	–
–	subnet-0e5c664dbd4a9d459	Available	vpc-0518cc416f950272e	Off	172.31.32.0/20	–
–	subnet-038428a6ccba79763	Available	vpc-0518cc416f950272e	Off	172.31.16.0/20	–
–	subnet-05c97d8464ce00441	Available	vpc-0518cc416f950272e	Off	172.31.0.0/20	–

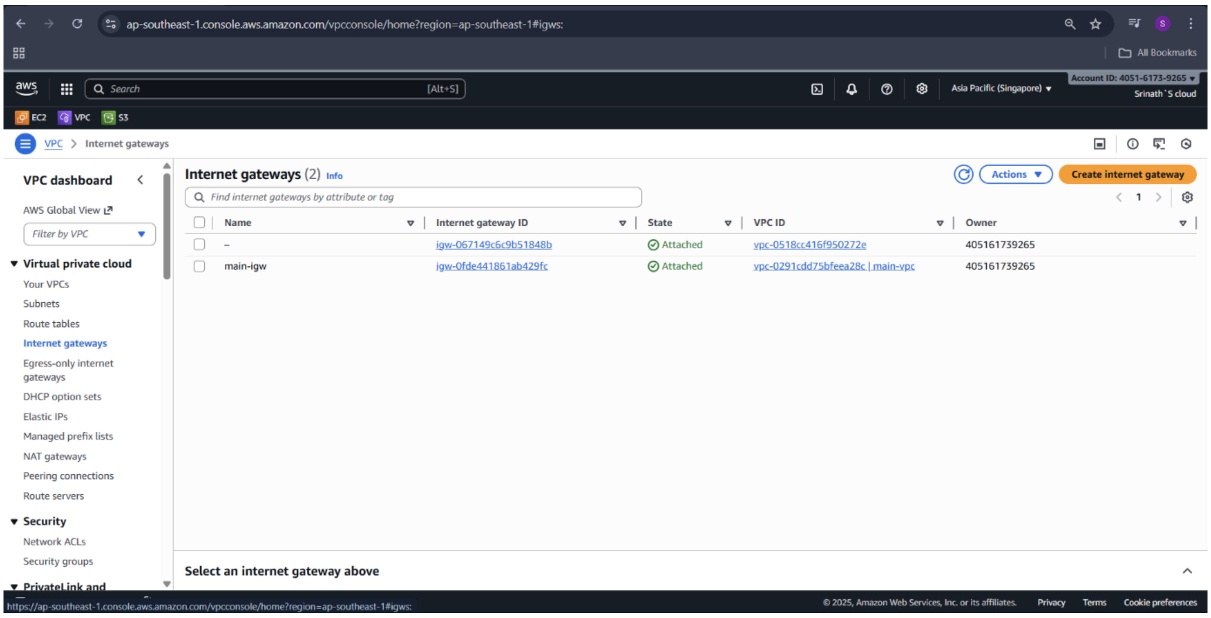
Route table:



Route tables (2)

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC	Owner ID
–	rtb-08aae774fdd2acb93	–	–	Yes	vpc-0518cc416f950272e	405161739265
public-route-table	rtb-0f6f796fb01c7c799	subnet-09042f4d519419...	–	Yes	vpc-0291cdd75bfeea28c | main...	405161739265

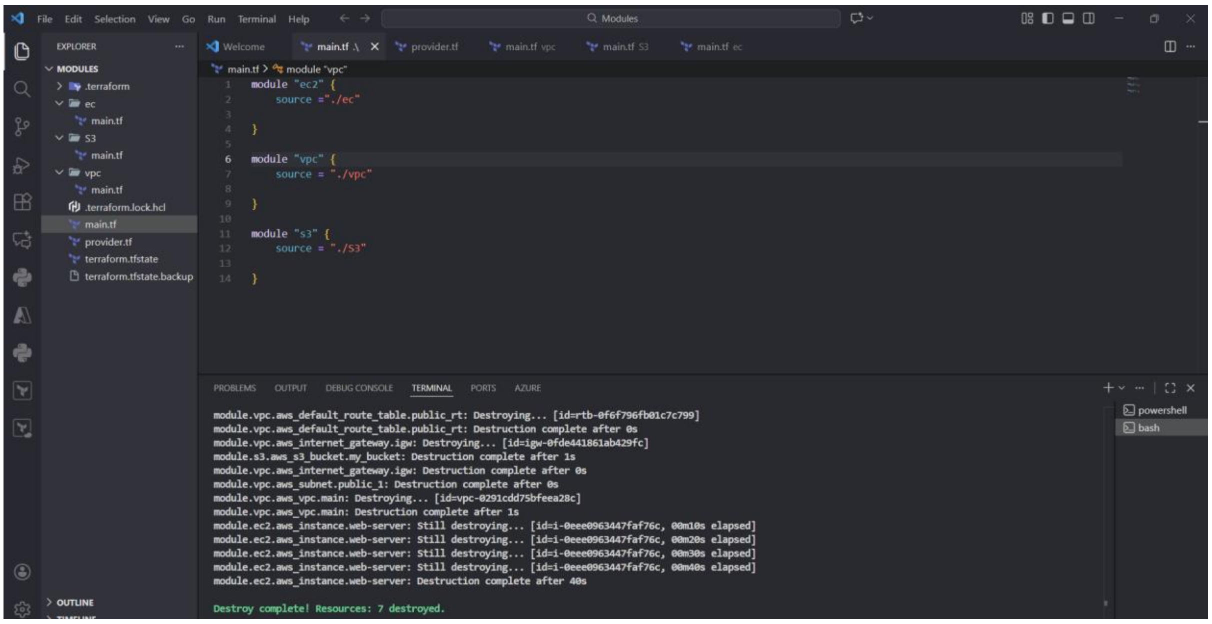
Internet gateway:



Internet gateways (2)

Name	Internet gateway ID	State	VPC ID	Owner
–	igw-067149c6c9b51848b	Attached	vpc-0518cc416f950272e	405161739265
main-igw	igw-0fde441861ab429fc	Attached	vpc-0291cdd75bfeea28c | main-vpc	405161739265

Terraform destroy:



```
module "ec2" {
    source ="./ec"

}

module "vpc" {
    source = "./vpc"

}

module "s3" {
    source = "./S3"

}
```

```
module.vpc.aws_default_route_table.public_rt: Destroying... [id=rtb-0f6f796fb01c7c799]
module.vpc.aws_default_route_table.public_rt: Destruction complete after 0s
module.vpc.aws_internet_gateway.igw: Destroying... [id=igw-0fde441861ab429fc]
module.s3.aws_s3_bucket.my_bucket: Destruction complete after 1s
module.vpc.aws_internet_gateway.igw: Destruction complete after 0s
module.vpc.aws_subnet.public_1: Destruction complete after 0s
module.vpc.aws_vpc.main: Destroying... [id=vpc-0291cdd75bfeea28c]
module.vpc.aws_vpc.main: Destruction complete after 1s
module.ec2.aws_instance.web-server: Still destroying... [id=i-0eee0963447faf76c, 00m10s elapsed]
module.ec2.aws_instance.web-server: Still destroying... [id=i-0eee0963447faf76c, 00m20s elapsed]
module.ec2.aws_instance.web-server: Still destroying... [id=i-0eee0963447faf76c, 00m30s elapsed]
module.ec2.aws_instance.web-server: Still destroying... [id=i-0eee0963447faf76c, 00m40s elapsed]
module.ec2.aws_instance.web-server: Destruction complete after 40s

Destroy complete! Resources: 7 destroyed.
```