

Placement Empowerment Program

Cloud Computing and DevOps Centre

Set a private network in cloud – Create a VPC with subnets for your instances. Configure routing for internal communication between subnets

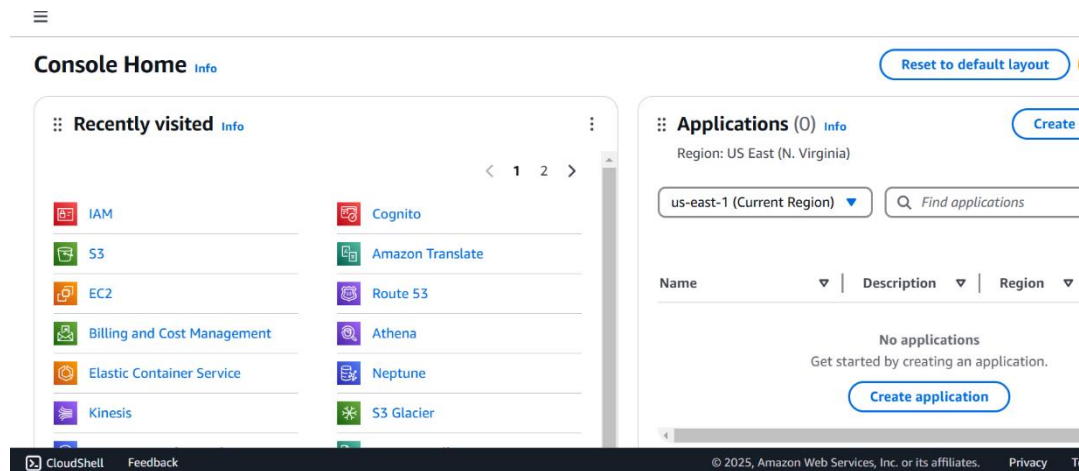
Name :Shalini D

Department: IT

Step-by-Step Overview

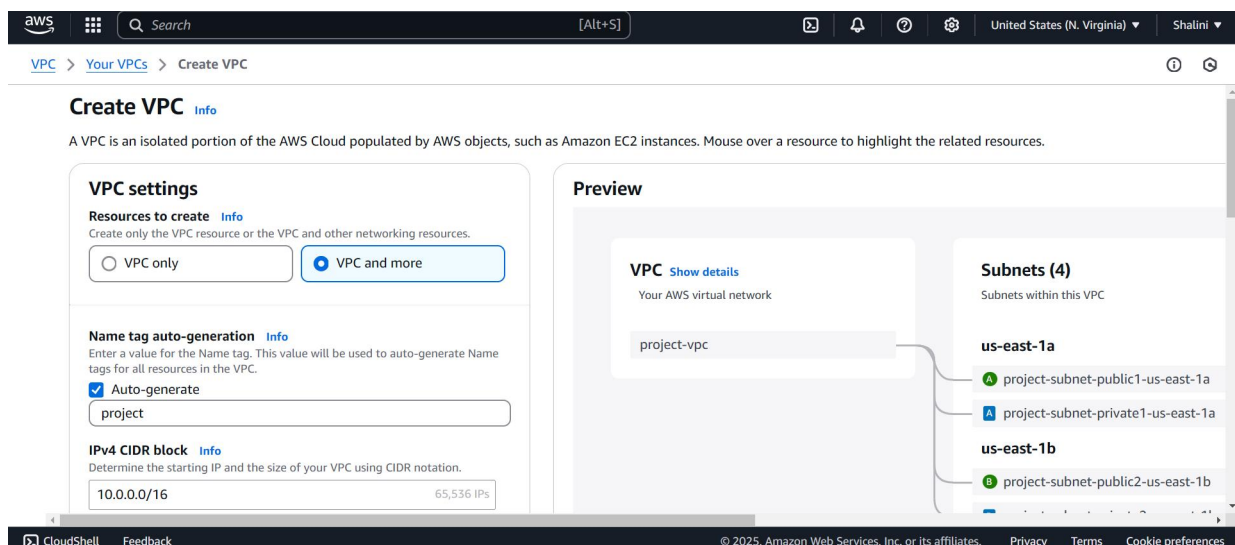
Step 1:

1. Go to [AWS Management Console](#).
2. Enter your username and password to log in



Step 2:

Create vpc



us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateVpc:createMode=vpcOnly

aws Search [Alt+S] United States (N. Virginia) Shalini

VPC > Your VPCs > Create VPC

Create VPC [Info](#)

A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.

VPC settings

Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.

☒ VPC only ☐ VPC and more

Name tag - optional [Info](#)
Creates a tag with a key of 'Name' and a value that you specify.

myvpc

IPv4 CIDR block [Info](#)
☒ IPv4 CIDR manual input ☐ IPAM-allocated IPv4 CIDR block

IPv4 CIDR
10.0.0.0/16

CIDR block size must be between /16 and /28.

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us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateSubnet:

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VPC > Subnets > Create subnet

Create subnet [Info](#)

VPC

VPC ID
Create subnets in this VPC.

vpc-08cfd2b7378d8d096 (myvpc)

Associated VPC CIDRs

IPv4 CIDRs
10.0.0.0/16

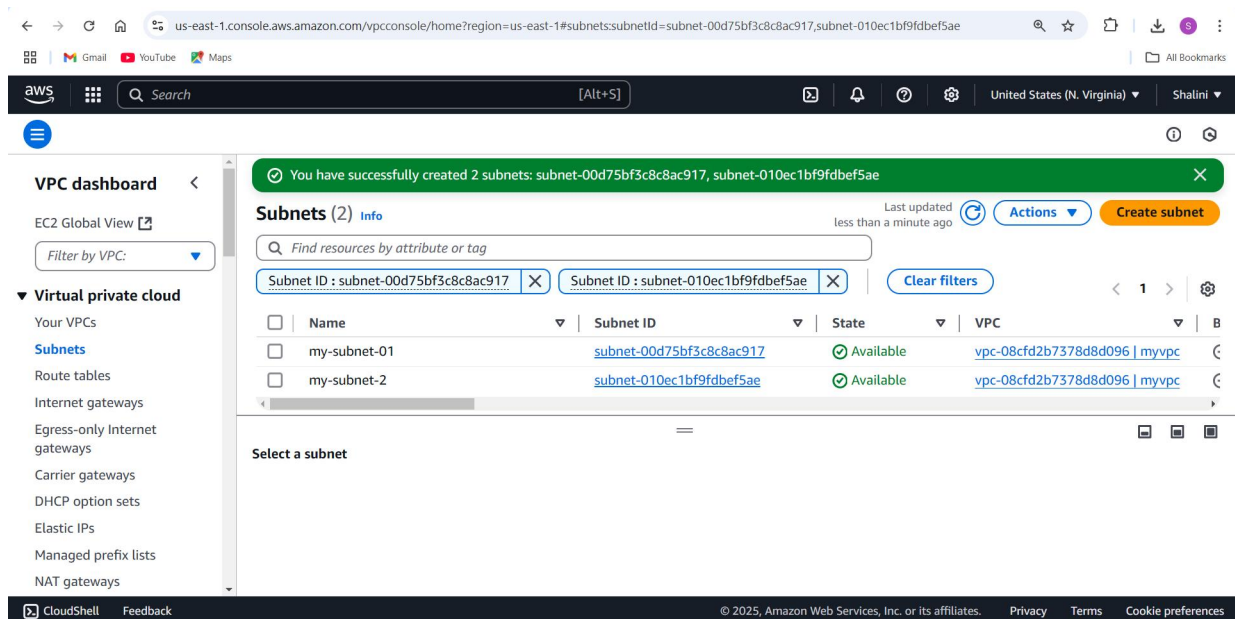
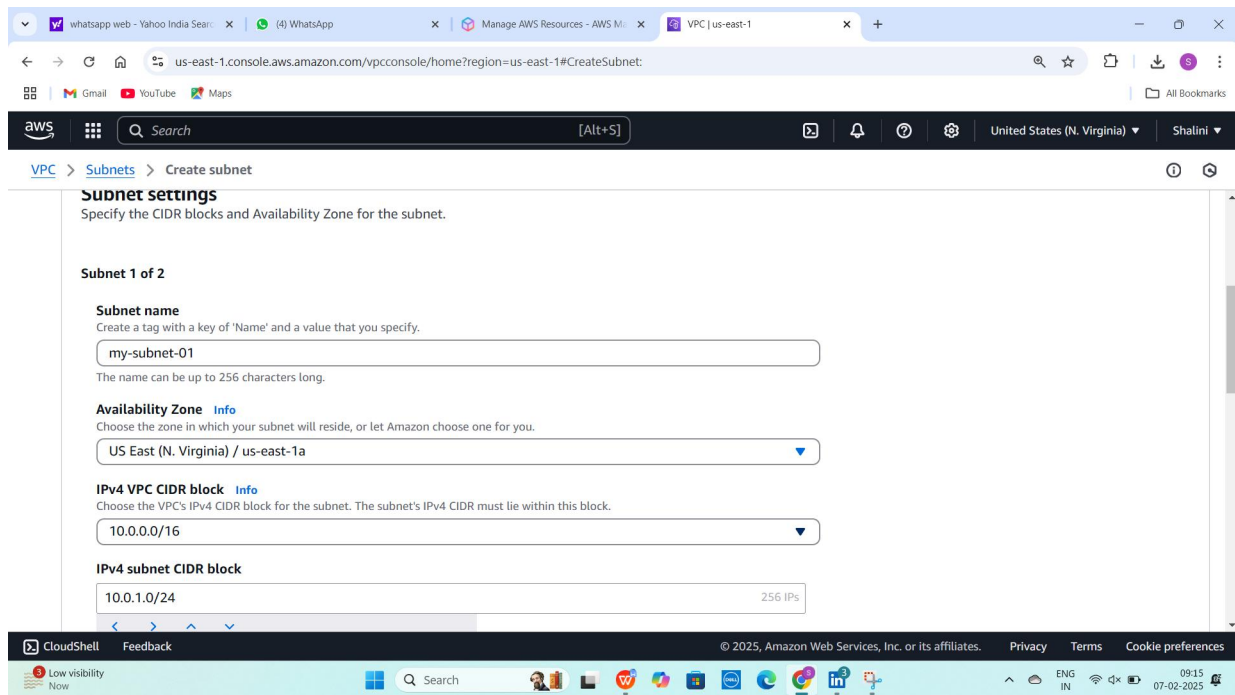
Subnet settings

Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 2

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Step 3:
Create subnets



Step 3: Create Subnets

You need at least two private subnets for internal communication:

1. Go to Subnets → Click Create Subnet.

2. Select the VPC (MyPrivateVPC) you created earlier.

3. Create two subnets:

Subnet 1 (Private-Subnet-A)

IPv4 CIDR: 10.0.1.0/24

Availability Zone: us-east-1a (example)

Subnet 2 (Private-Subnet-B)

IPv4 CIDR: 10.0.2.0/24

Subnet 2 of 2

Subnet name

Create a tag with a key of 'Name' and a value that you specify.

sub-2

The name can be up to 256 characters long.

Availability Zone

[Info](#)

Choose the zone in which your subnet will reside, or let Amazon choose one for you.

US East (N. Virginia) / us-east-1b

IPv4 VPC CIDR block

[Info](#)

Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.

10.0.0.0/24

IPv4 subnet CIDR block

10.1.0.0/16

65,536 IPs

▼ Tags - optional

Key

Q Name

Value - optional

Q sub-2

Remove

Add new tag

You can add 49 more tags.

Remove

Subnet settings

Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 2

Subnet name

Create a tag with a key of 'Name' and a value that you specify.

sub-1

The name can be up to 256 characters long.

Availability Zone

[Info](#)

Choose the zone in which your subnet will reside, or let Amazon choose one for you.

US East (N. Virginia) / us-east-1a

IPv4 VPC CIDR block

[Info](#)

Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.

10.0.0.0/24

IPv4 subnet CIDR block

10.0.0.0/16

65,536 IPs

▼ Tags - optional

Key

Q Name

Value - optional

Q sub-1

Remove

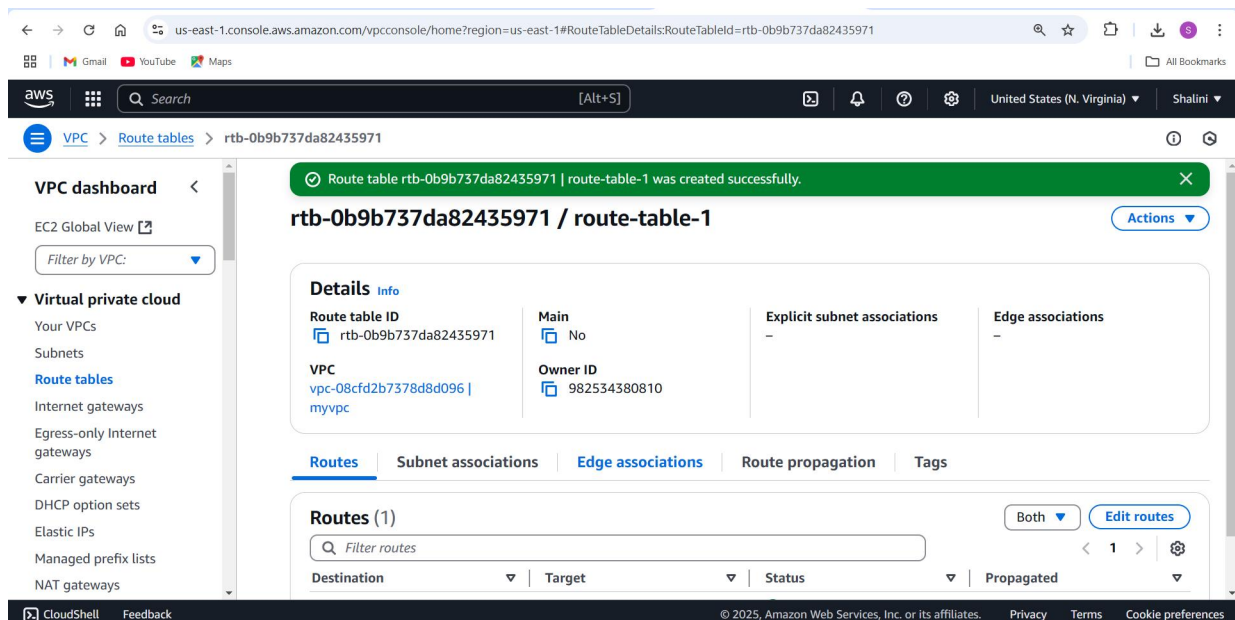
Add new tag

You can add 49 more tags.

Step 4:

Configure Route Tables for Internal Communication

1. Go to Route Tables → Click Create Route Table.
2. Name it (e.g., PrivateRouteTable).
3. Select MyPrivateVPC.
4. Click Create.



Step 5:

Associate the subnets:

- Go to Subnet Associations → Click Edit subnet associations.
- Select Private-Subnet-A and Private-Subnet-B.
- Click Save associations.

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VPC > Route tables > rtb-0b9b737da82435971 > Edit subnet associations

Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (2)
Filter subnet associations

| <input type="checkbox"/> | Name | Subnet ID | IPv4 CIDR | IPv6 CIDR | Route table ID |
|--------------------------|--------------|--------------------------|-------------|-----------|------------------------------|
| <input type="checkbox"/> | my-subnet-01 | subnet-00d75bf3c8c8ac917 | 10.0.1.0/24 | - | Main (rtb-0e25e2aca065e5cbd) |
| <input type="checkbox"/> | my-subnet-2 | subnet-010ec1bf9fdbef5ae | 10.0.2.0/24 | - | Main (rtb-0e25e2aca065e5cbd) |

Cancel Save associations

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VPC > Route tables > rtb-0b9b737da82435971 > Edit subnet associations

Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (2/2)
Filter subnet associations

| <input checked="" type="checkbox"/> | Name | Subnet ID | IPv4 CIDR | IPv6 CIDR | Route table ID |
|-------------------------------------|--------------|--------------------------|-------------|-----------|------------------------------|
| <input checked="" type="checkbox"/> | my-subnet-01 | subnet-00d75bf3c8c8ac917 | 10.0.1.0/24 | - | Main (rtb-0e25e2aca065e5cbd) |
| <input checked="" type="checkbox"/> | my-subnet-2 | subnet-010ec1bf9fdbef5ae | 10.0.2.0/24 | - | Main (rtb-0e25e2aca065e5cbd) |

Selected subnets
subnet-00d75bf3c8c8ac917 / my-subnet-01 subnet-010ec1bf9fdbef5ae / my-subnet-2

Cancel Save associations

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#RouteTableDetails:RouteTableId=rtb-0b9b737da82435971

aws [Search] [Alt+S] United States (N. Virginia) Shalini

VPC > Route tables > rtb-0b9b737da82435971

VPC dashboard
EC2 Global View
Filter by VPC: Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only Internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways

rtb-0b9b737da82435971 / route-table-1
Actions

Details
Route table ID: rtb-0b9b737da82435971
VPC: vpc-08cfd2b7378d8d096 | myvpc
Main: No
Owner ID: 982534380810
Explicit subnet associations: 2 subnets
Edge associations: -

Routes (1)
Filter routes

| Destination | Target | Status | Propagated |
|-------------|--------|--------|------------|
| 10.0.0.0/16 | local | Active | No |

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Step 6:
Default route: 10.0.0.0/16 → local (Automatically added).

rtb-09bd5c6927b161264 / private

Actions ▾

Details [Info](#)

Route table ID
[rtb-09bd5c6927b161264](#)

VPC
[vpc-0b07dbbc4d9e68588](#) | [vpc-1](#)

Main
[No](#)

Owner ID
[774305605711](#)

Explicit subnet associations
2 subnets

Edge associations
–

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (1)

Both ▾

Edit routes

< 1 > ⚙

| Destination | Target | Status | Propagated |
|-------------|--------|--------|------------|
| 10.0.0.0/16 | local | Active | No |

Step 7:

Launch Instances in Private Subnets

1. Go to EC2 Dashboard → Launch Instance.
2. Select an AMI (Amazon Linux, Ubuntu, etc.).
3. Choose an Instance Type (e.g., t2.micro).
4. Under Network settings:

Select MyPrivateVPC.

Select Private Subnet-A or Private-Subnet-B.

Disable Auto-assign Public IP (to keep it private).

The screenshot shows the AWS Management Console interface. The top navigation bar includes the AWS logo, a search bar, and the region 'United States (N. Virginia)'. The left sidebar contains a menu with 'Dashboard', 'Instances', and 'Images'. The main content area is titled 'Resources' and shows a table of EC2 resources. The table has two columns: 'Resource' and 'Count'. The resources listed are: Instances (running) - 7, Capacity Reservations - 0, Elastic IPs - 0, Key pairs - 2, Placement groups - 0, and Snapshots - 1. To the right of the table, there are two sections: 'EC2 Free Tier' and 'Offer usage (monthly)'. The 'EC2 Free Tier' section shows that 1 offer is forecasted to exceed the free tier limit. The 'Offer usage (monthly)' section shows that 587 hours remain on the free tier, with a progress bar indicating 22% usage.

| Resource | Count |
|-----------------------|-------|
| Instances (running) | 7 |
| Capacity Reservations | 0 |
| Elastic IPs | 0 |
| Key pairs | 2 |
| Placement groups | 0 |
| Snapshots | 1 |

EC2 Free Tier

Offers for all AWS Regions.

2 EC2 free tier offers in use

End of month forecast

1 offers forecasted to exceed free tier limit.

Exceeds free tier

0 offers exceeded and is now pay-as-you-go pricing.

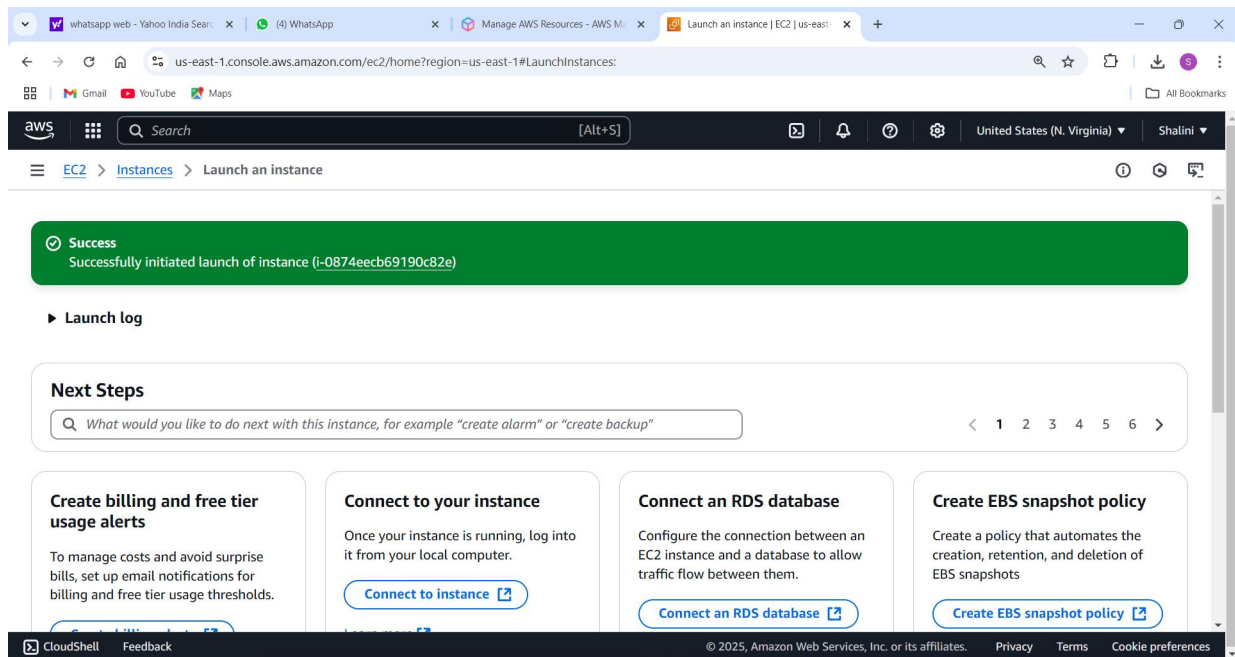
Offer usage (monthly)

Linux EC2 Instances

587 hours remaining

22%

Storage space on EBS



Outcome

After following these steps, you will have:

- A VPC that is isolated from other networks.
- One or more subnets for your instances, with at least one public subnet that can communicate with the Internet.
- Proper routing configured for internal communication between subnets.

