St. JOSEPH'S GROUP OF INSTITUTIONS
OMR, CHENNAI - 119

Placement Empowerment Program

Cloud Computing and DevOps Centre

SET UP A PRIVATE NETWORK IN THE CLOUD.

(Create a Virtual Private Cloud (VPC) with subnets for your instances. Configure routing for internal communication between subnets.)

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INRODUCTION:

A Virtual Private Cloud (VPC) is a logically isolated network within a public cloud that allows users to define and control a virtual networking environment. It provides the flexibility to create and manage private networks while still leveraging cloud computing resources.

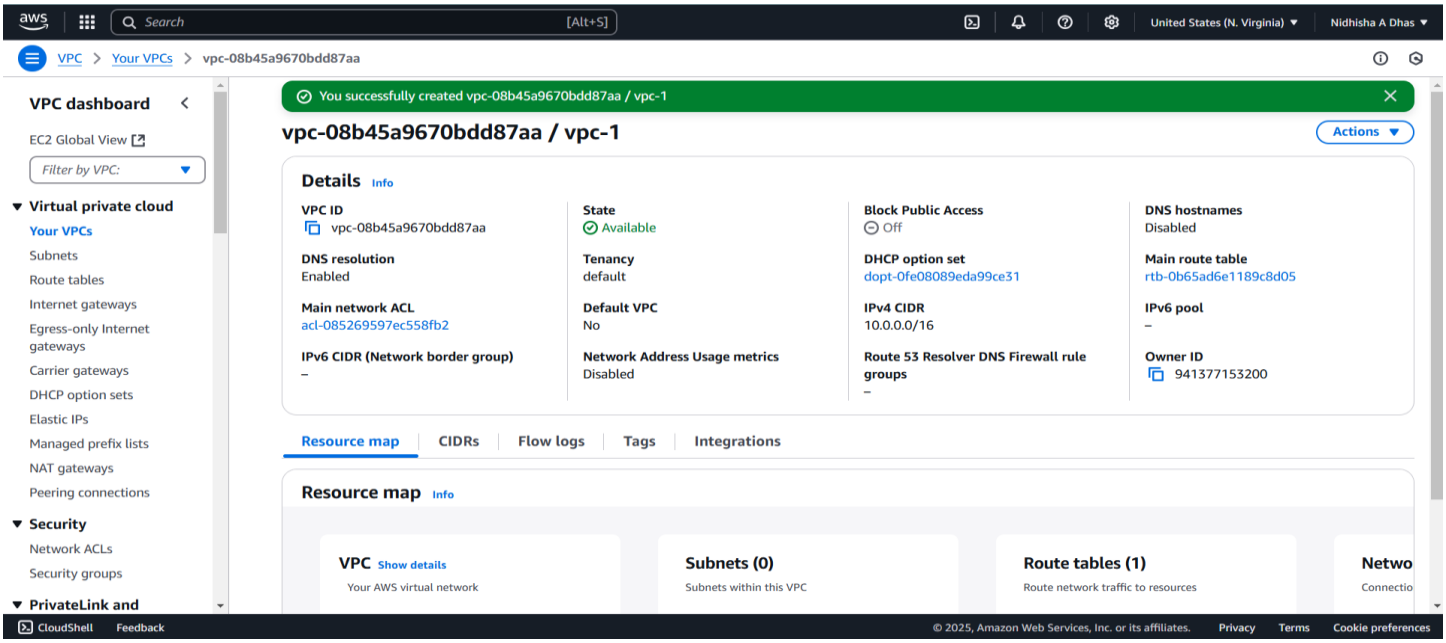
IMPORTANCE:

- Isolation & Security - A VPC provides network isolation from other cloud users.
- Subnetting - Users can divide the VPC into multiple subnets to organize resources efficiently.
- Customizable IP Addressing - Users define their own IP address ranges using CIDR (Classless Inter-Domain Routing) notation.
- Internet Gateway & NAT Gateway - Internet Gateway (IGW) enables internet access for public subnets.

STEP BY STEP OVERVIEW:

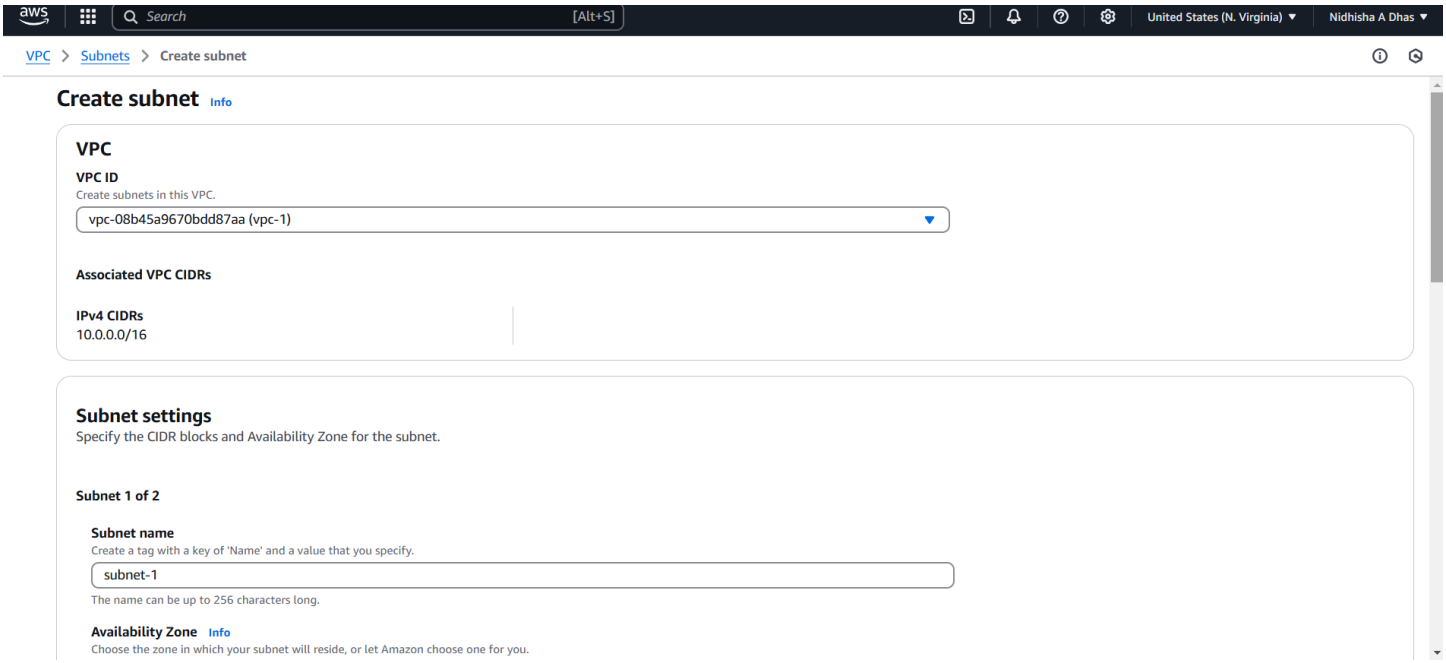
Step 1: CREATE VPC

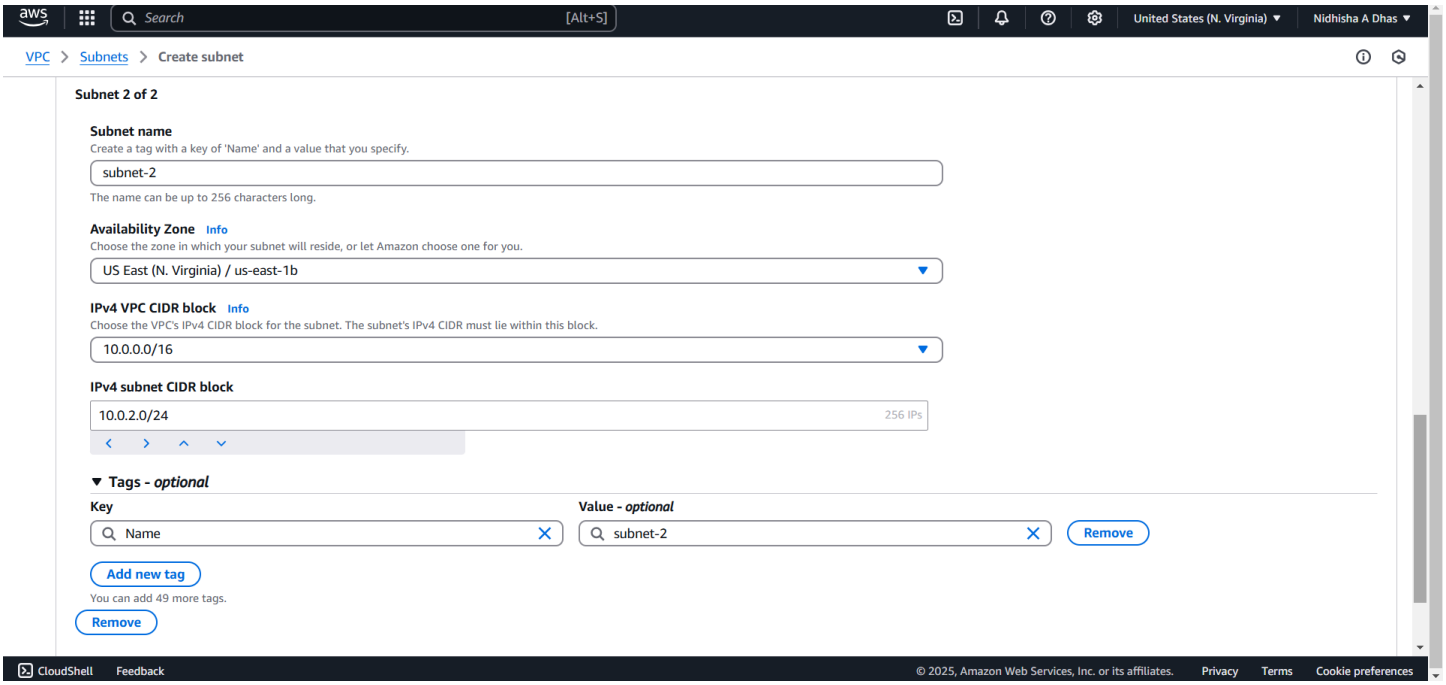
- Login into your AWS console and navigate to VPC dashboard and create your own VPC.
- Specify the name tag, IPv4 CIDR block (10.0.0.0/16), IPv6 CIDR (optional)
- Then click create.

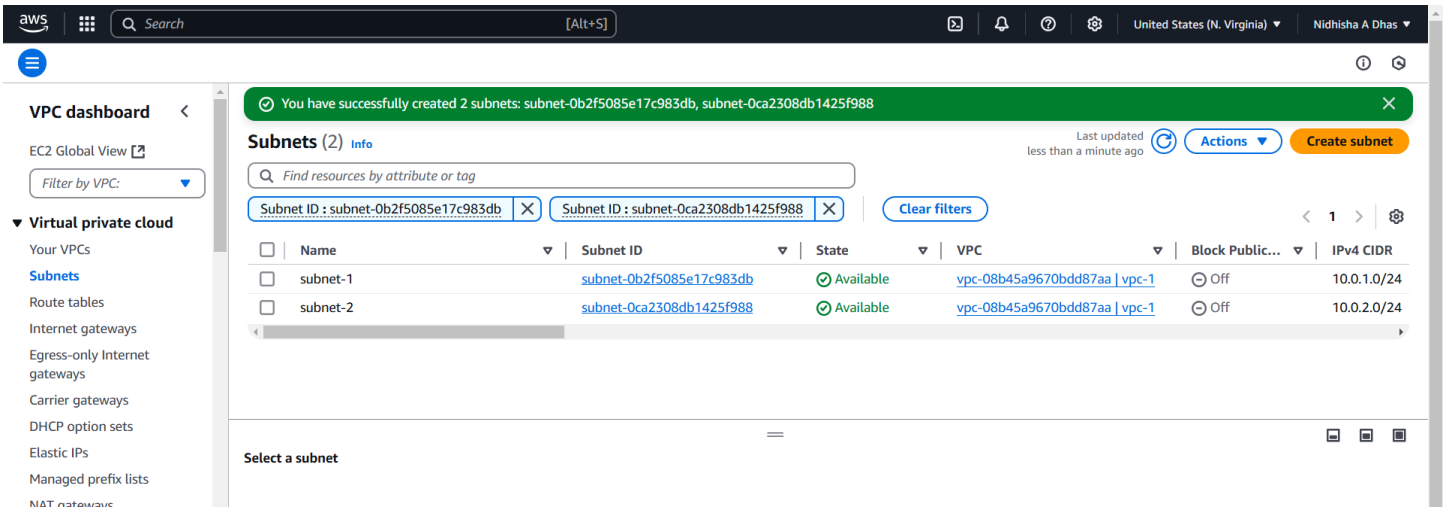


Step 2: CREATE SUBNETS

- Click on create subnets and select the VPC you have just created.
- Create two subnets and specify the CIDR for both subnets 10.0.1.0/24 and 10.0.2.0/24 respectively.
- Give two different availability zone.

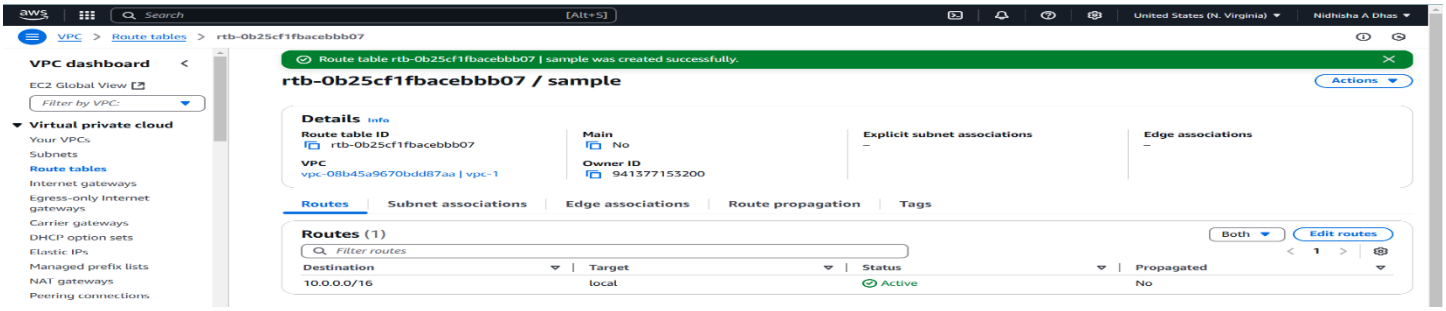






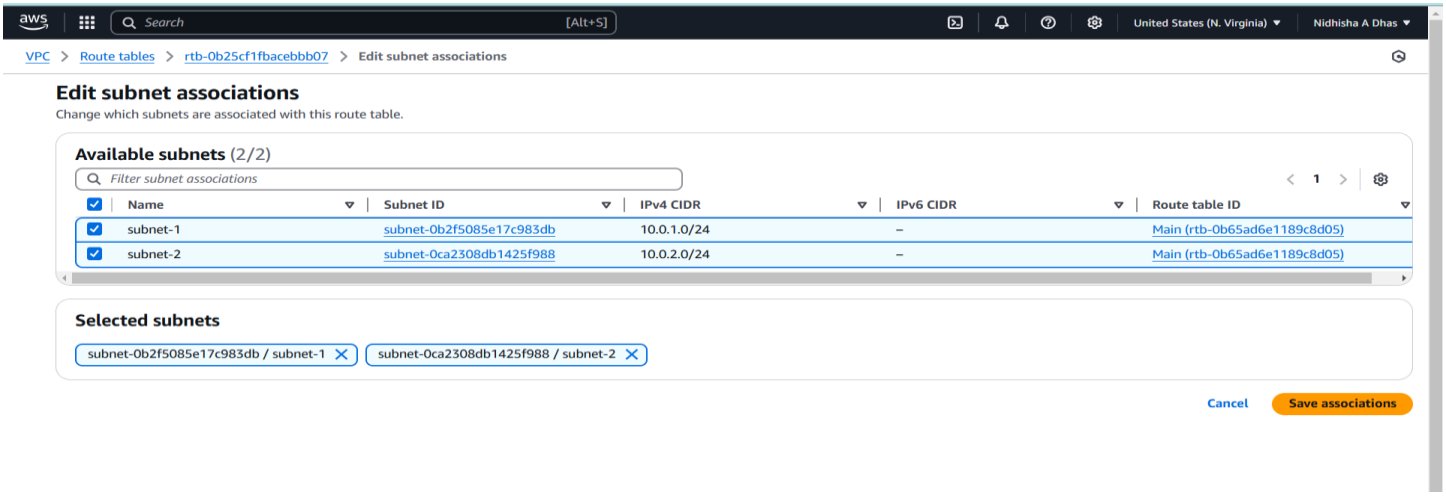
Step 3: CREATE ROUTE TABLE

- Go to route table- click on ‘create route table’.
- Specify the name and select your VPC.
- Click create.

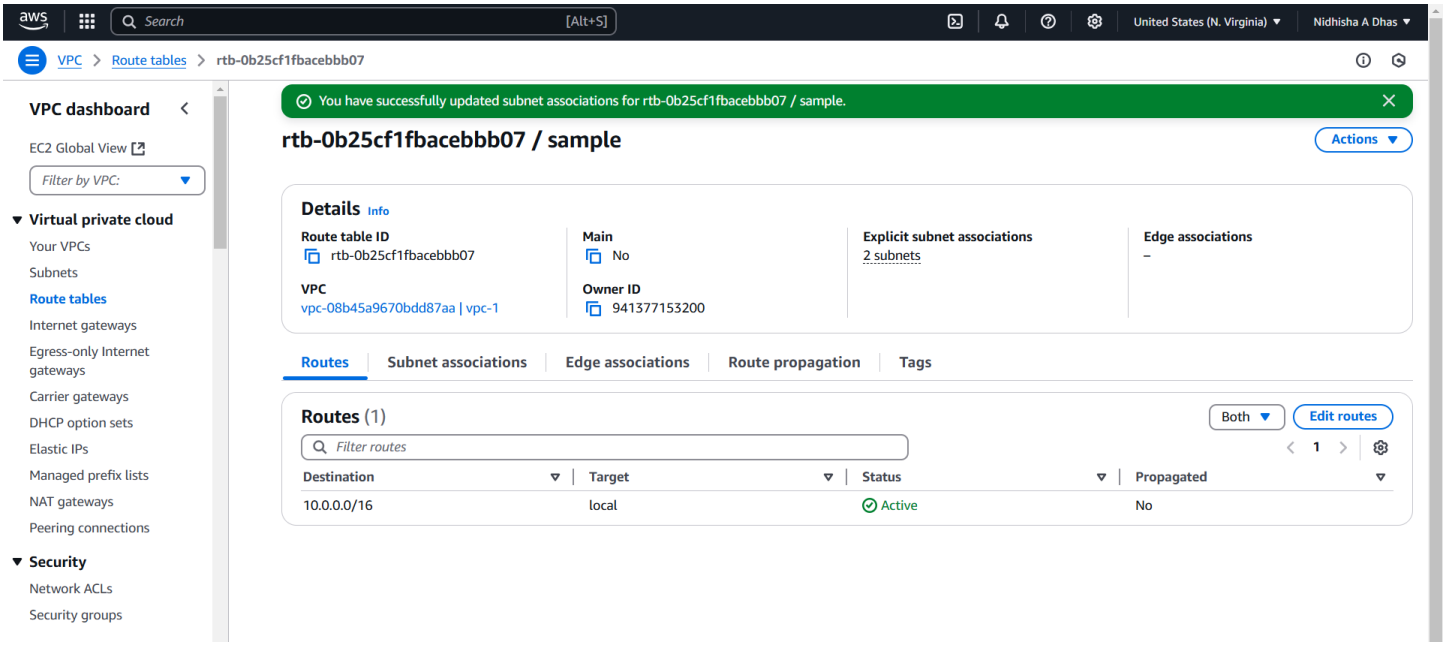


Step 4: ASSOCIATE THE SUBNETS

- Edit the association by selecting both the subnets and save it.

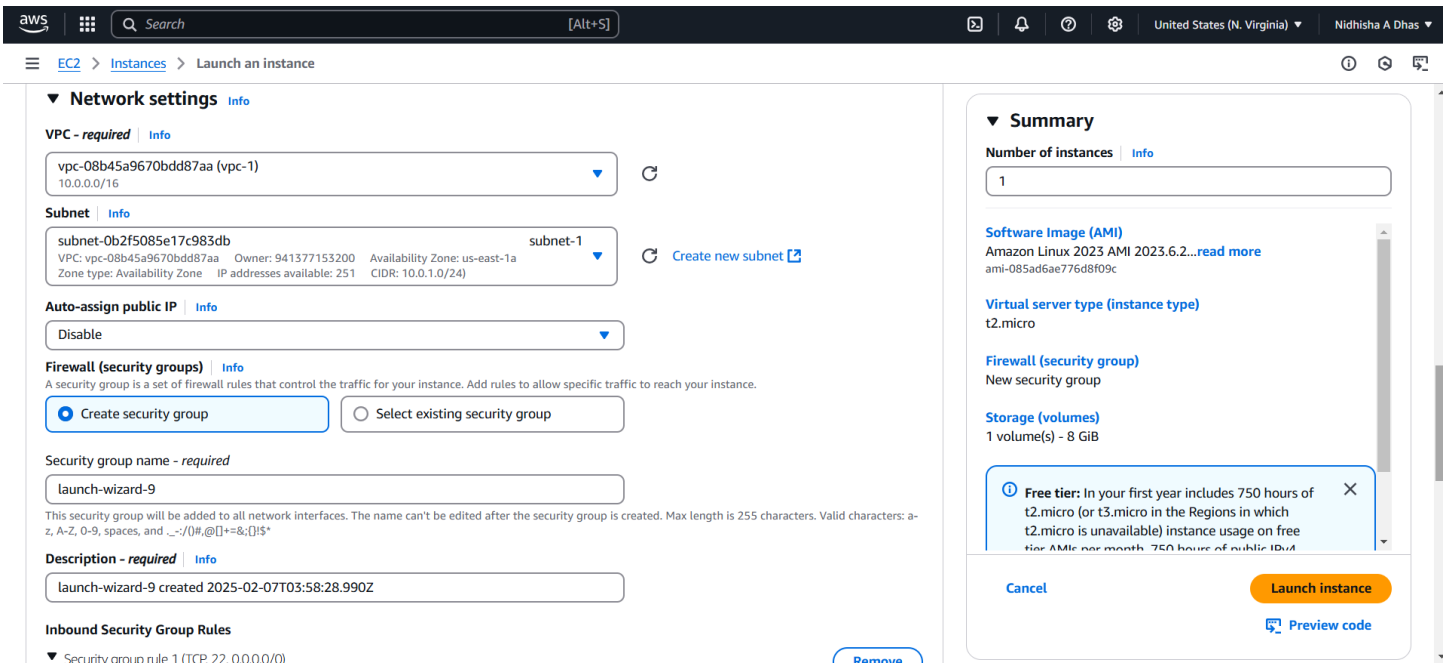


- The default route will be automatically added.

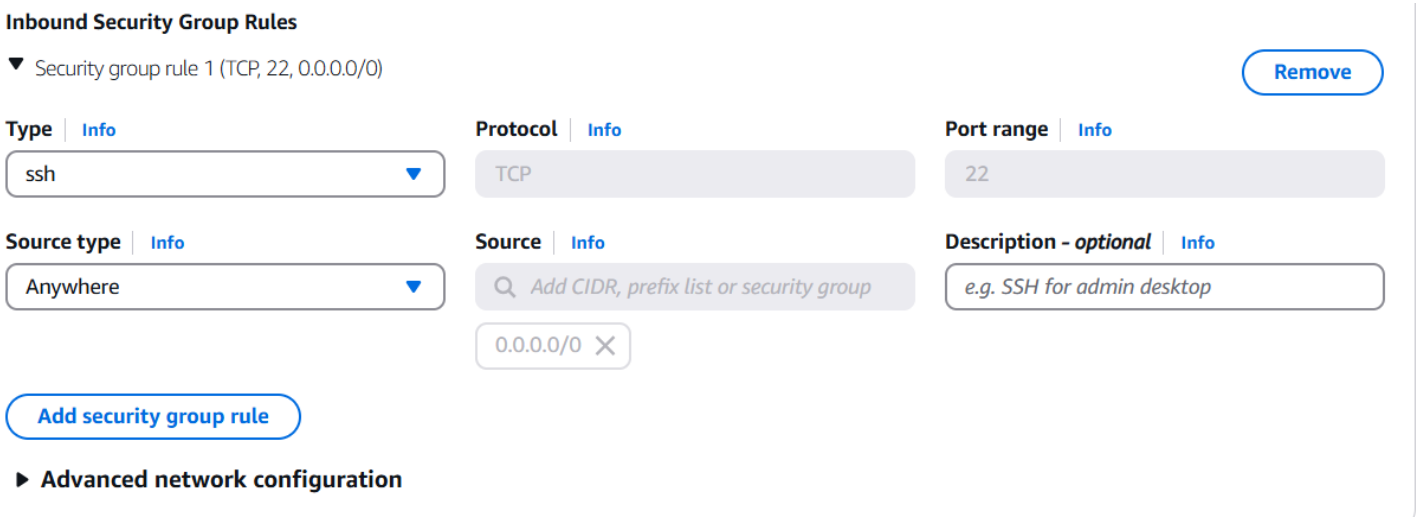


Step 4: LAUNCH EC2 INSTANCE

- Go to the EC2 dashboard and lunch an EC2 instance by specifying the instance name, AMI and Instance Type.
- Under the ‘network settings’, select your VPC and select any subnet. Disable the auto=-assign Public IP.



- To enable the internal communication, use security groups to allow inbound traffic only from internal sources.



Now, your private network is set up and the instance inside can communicate secretly.

CONCLUSION:

By completing this PoC, you will have an idea about:

- Setting up a private network.
- Creating a VPC that is isolated from other networks.
- Creating one or more subnets and with atleast one public subnet that communicate with the Internet.
- Setting up proper routing for the internal communication between the subnets.