AIM- Create VPC- Virtual Private Cloud with Subnet.

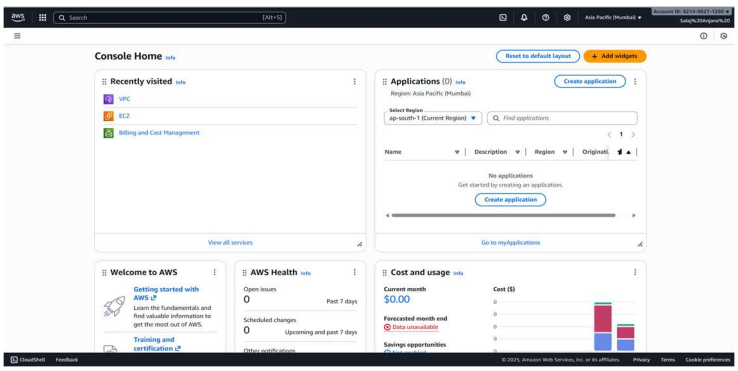
Theory: ChatGPT said:

A **Virtual Private Cloud (VPC)** in AWS is a logically isolated section of the AWS cloud where you can launch and manage your resources such as EC2 instances, databases, and other services in a secure and customizable environment. It functions like your own private data center within AWS, giving you full control over networking components such as IP address ranges, subnets, route tables, and security settings. Each AWS account comes with a default VPC, but you can also create custom VPCs to meet specific networking requirements. When creating a VPC, you define its IP address range using a CIDR block (for example, 10.0.0.0/16), which determines how many IP addresses are available. VPCs provide strong security and isolation, and you can control the flow of traffic using security groups and network access control lists (ACLs). They can be configured as public, private, or hybrid networks, allowing you to connect on-premises environments using VPN or Direct Connect for enterprise-grade setups.

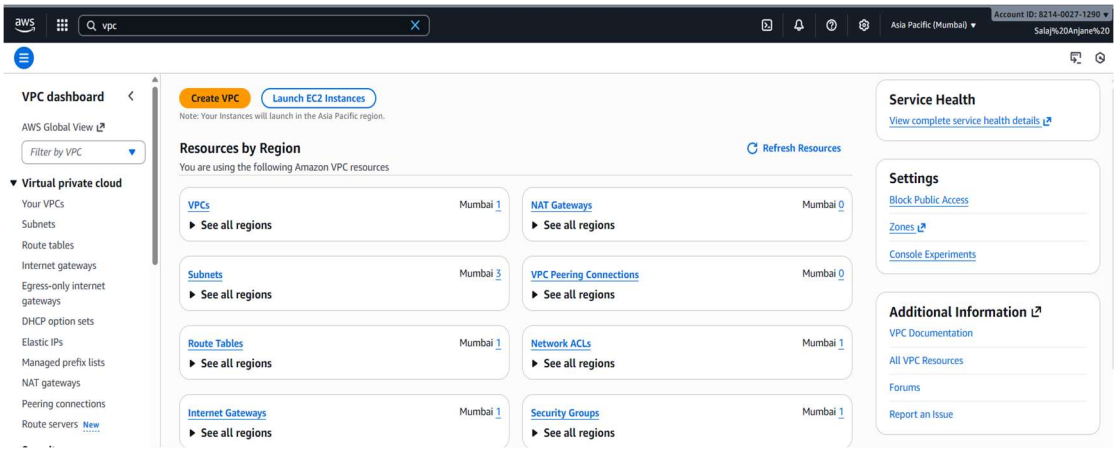
A **Subnet** is a smaller division within a VPC that allows you to organize your network and control how resources are placed and accessed. Each subnet occupies a portion of the VPC's IP address range (for example, 10.0.1.0/24) and is confined to a single Availability Zone. Subnets help separate resources based on their function and security needs. Typically, there are two types of subnets: public and private. Public subnets are connected to an Internet Gateway, allowing their resources, such as web servers, to communicate directly with the internet. Private subnets, on the other hand, have no direct internet access and are used for internal components like databases or application servers. In short, a **VPC** acts as your overall private cloud network, while **subnets** are logical sections within it, designed to organize and secure your AWS resources efficiently.

Steps to Create an S3 Bucket:

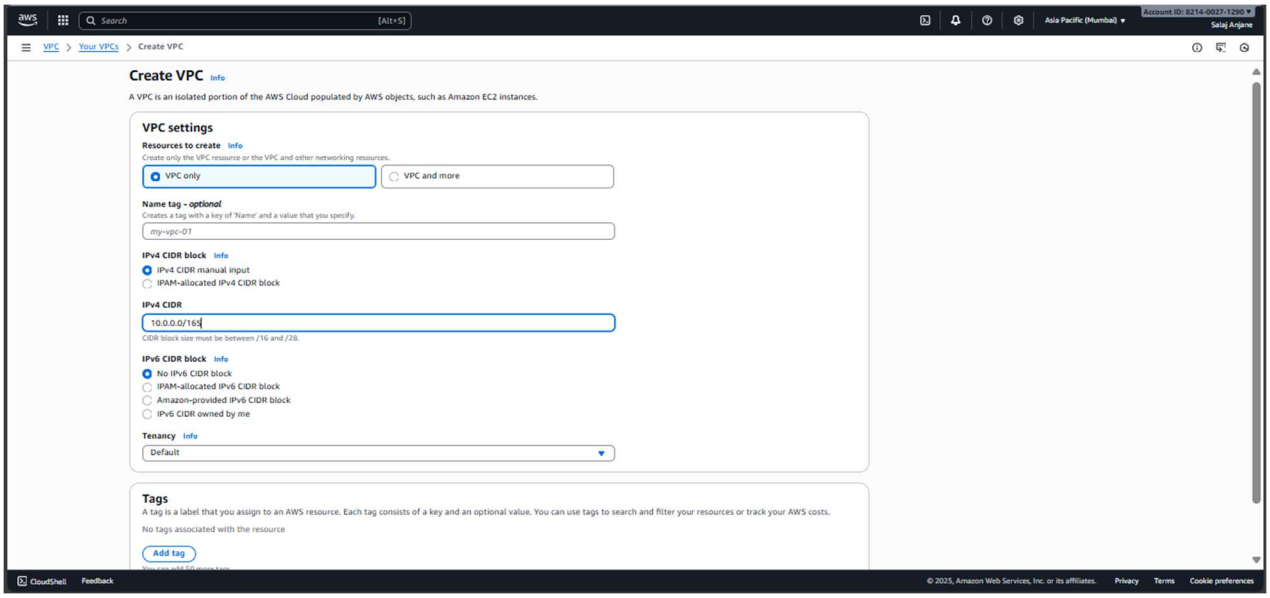
1. Log in to AWS Console - Go to the AWS Management Console at https://aws.amazon.com/console and sign in with your AWS account credentials.



2. **Open the VPC Service:** In the AWS search bar, type **"VPC"** - Select **VPC** from the list to open the **VPC Dashboard**.

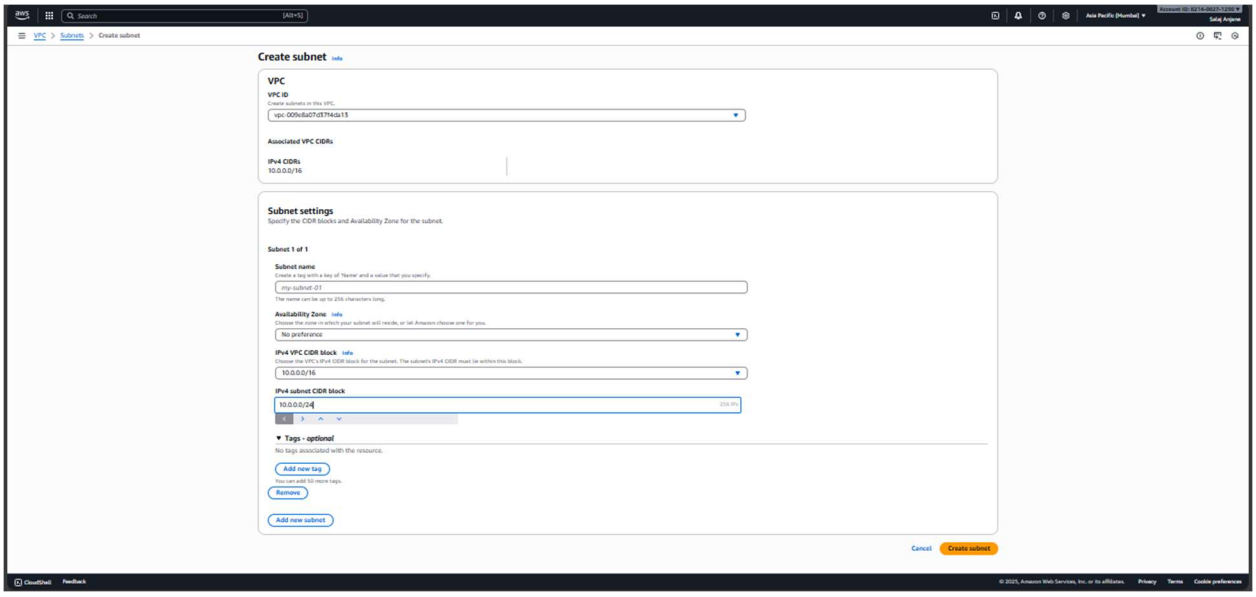


3 Create a New VPC - Click the **"Create VPC"** button.

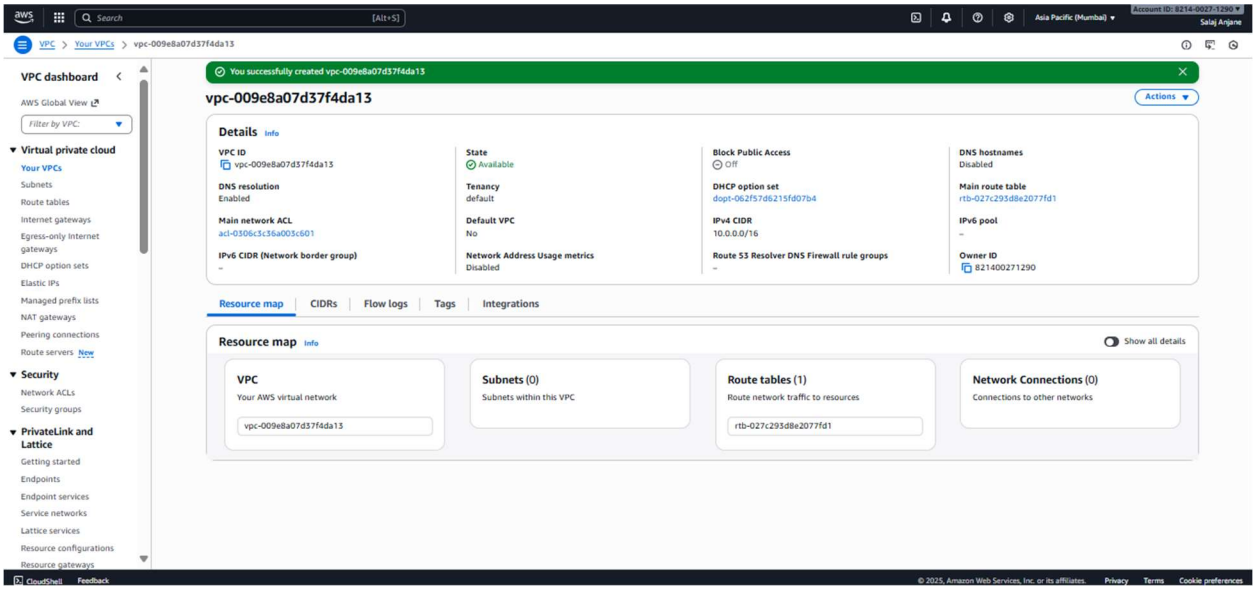


4. Configure VPC Details Enter the following details:

- **Name tag:** MyVPC
- **IPv4 CIDR block:** 10.0.0.0/16
- Leave IPv6 CIDR block empty (optional).

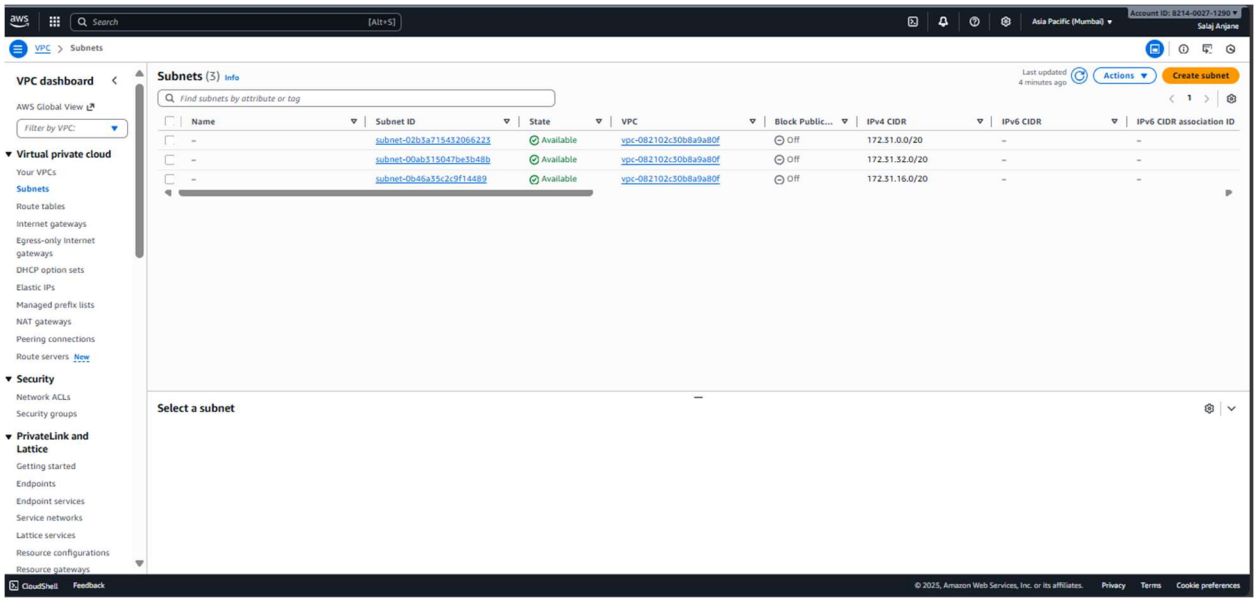


5 Create the VPC - Click **"Create VPC."**

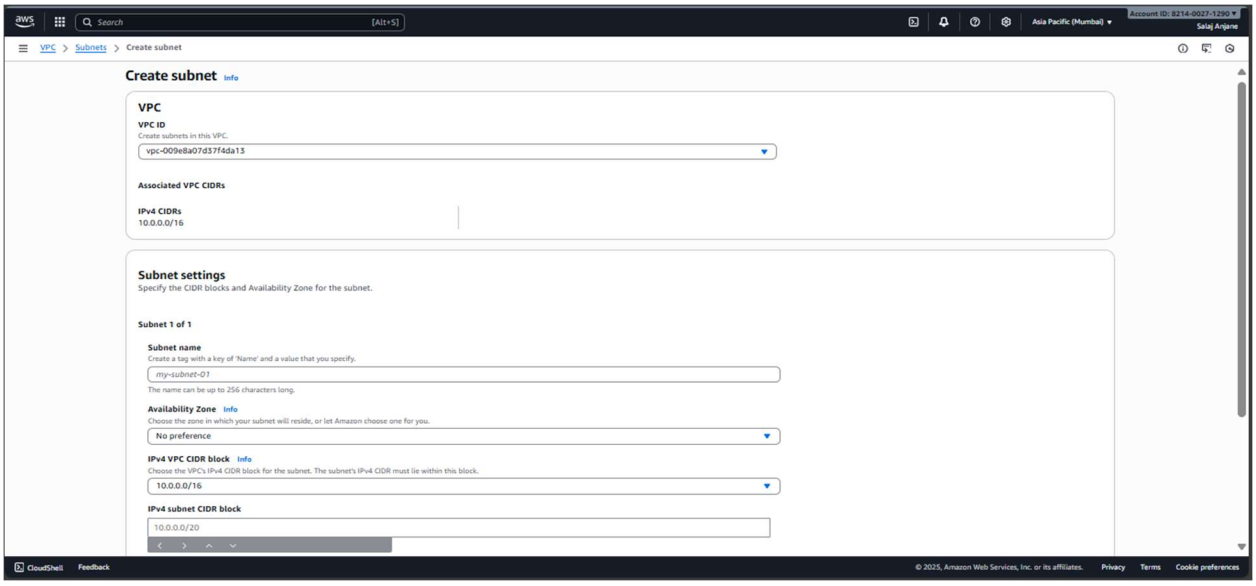


Steps to create Subnet :

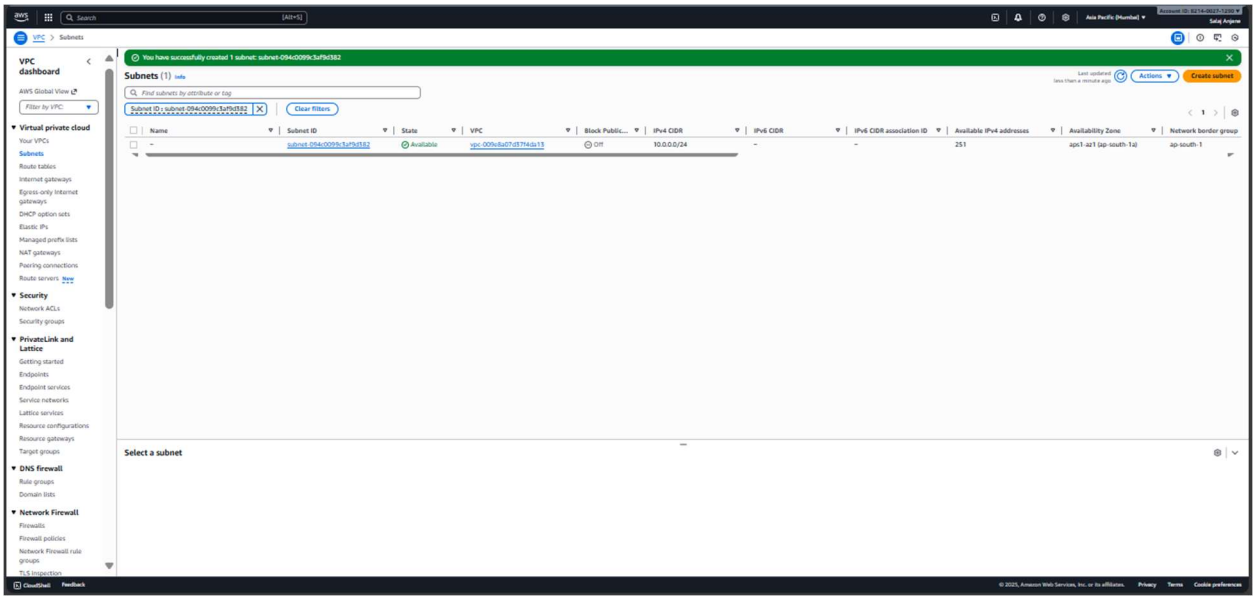
1. Create a Subnet - In the left sidebar, click **"Subnets.", Click the "Create subnet" button**.



2. Configure Subnet Details - ⊡ Select the **VPC** you created earlier (MyVPC).
   Under Subnet settings:
   ->Subnet name: MySubnet
   ->Availability Zone: Choose one (e.g., ap-south-1a).
   ->IPv4 CIDR block: 10.0.1.0/24



3. Create the Subnet - Click **"Create subnet."**



Result:

Successfully created an S3 bucket and uploaded an object to it using the AWS Management Console.