

**AIM-** Create VPC- Virtual Private Cloud with Subnet.

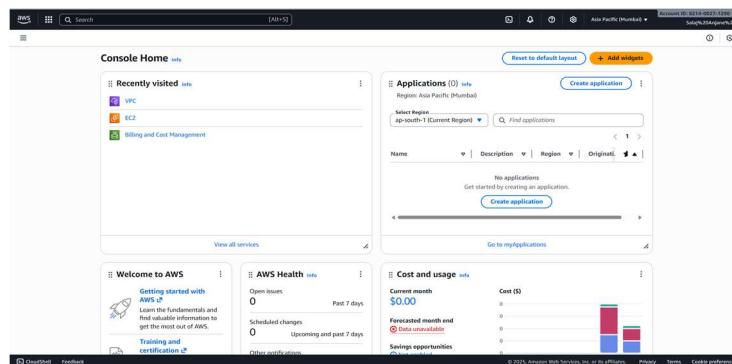
**Theory:** ChatGPT said:

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.

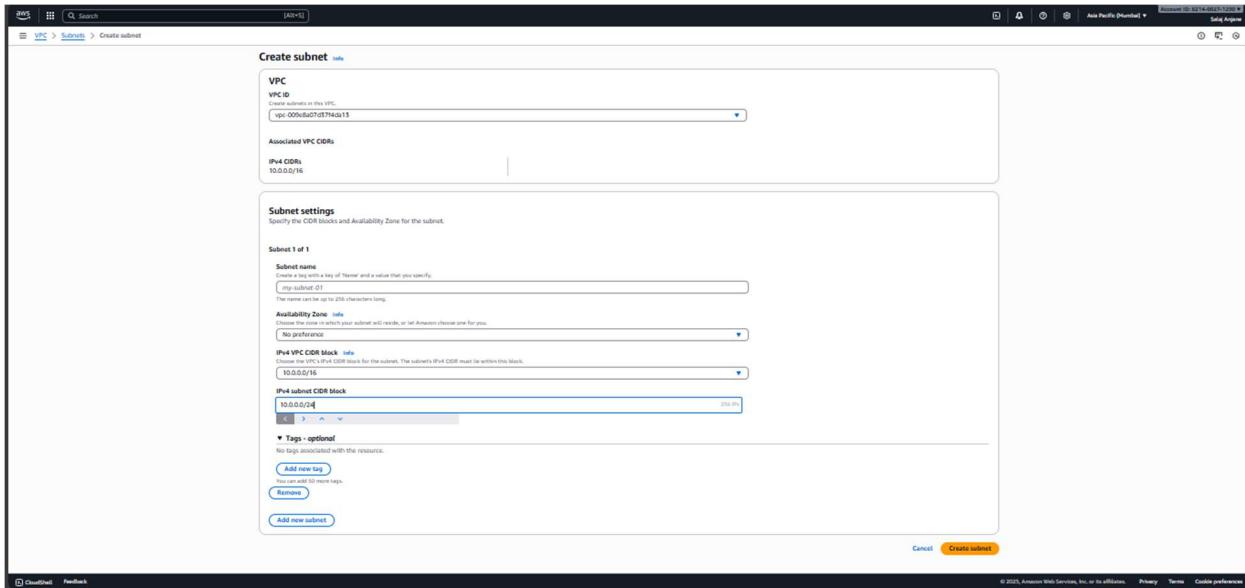
The screenshot shows the AWS VPC Dashboard. On the left, there's a sidebar with options like 'Virtual private cloud' (selected), 'Your VPCs', 'Subnets', 'Route tables', etc. The main area displays 'Resources by Region' for the 'Mumbai' region. It lists 'VPCs' (1), 'NAT Gateways' (0), 'Subnets' (3), 'VPC Peering Connections' (0), 'Route Tables' (1), 'Network ACLs' (1), and 'Internet Gateways' (1). On the right, there are sections for 'Service Health', 'Settings' (with 'Block Public Access' and 'Zones' options), and 'Additional Information' (with links to 'VPC Documentation', 'All VPC Resources', 'Forums', and 'Report an Issue').

- 3 Create a New VPC - Click the “Create VPC” button.

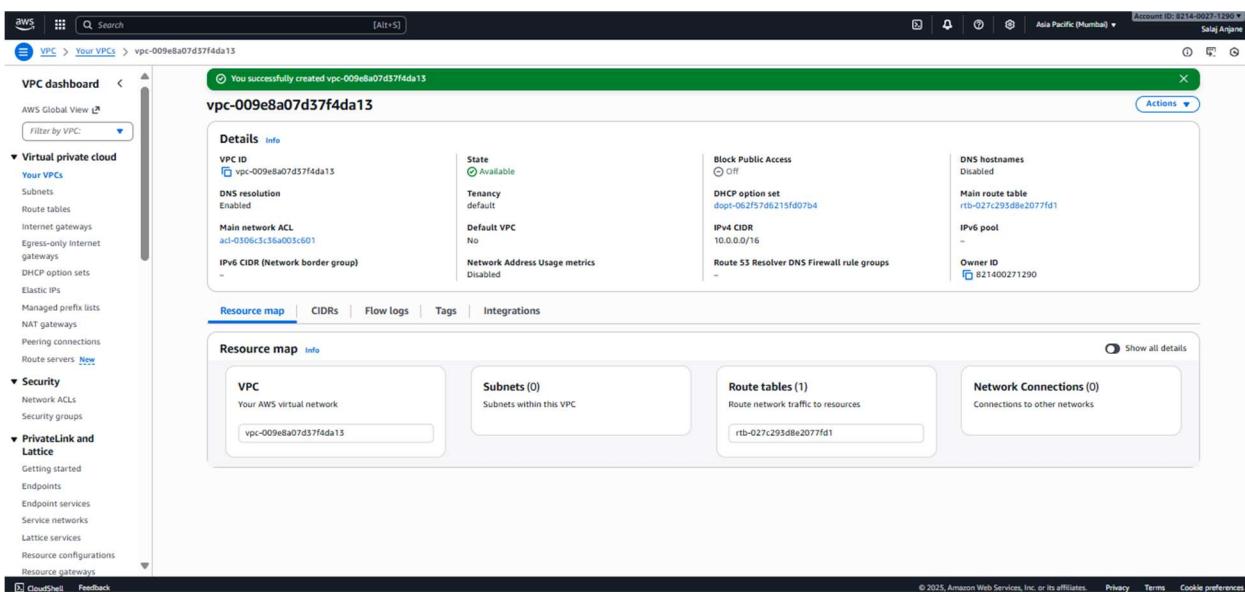
The screenshot shows the 'Create VPC' configuration page. It has several sections: 'VPC settings' (with 'VPC only' selected), 'Name tag - optional' (containing 'my-vpc-01'), 'IPv4 CIDR block' (containing '10.0.0.0/16'), 'IPv6 CIDR block' (with 'No IPv6 CIDR block' selected), and 'Tenancy' (set to 'Default'). Below these is a 'Tags' section with an 'Add tag' button. At the bottom, there are buttons for 'CloudShell', 'Feedback', and copyright information.

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.

## Experiment : Create VPC- Virtual Private Cloud with Subnet

Subnets (3) Info

Name	Subnet ID	VPC	Block Public...	IPv4 CIDR	IPv6 CIDR	IPv6 CIDR association ID
subnet-02b3a715432066223	vpc-082102c30b8a9a80f	Off	172.31.0.0/20	-	-	
subnet-00ab315047be3b48b	vpc-082102c30b8a9a80f	Off	172.31.32.0/20	-	-	
subnet-0b45a35c2c9f14489	vpc-082102c30b8a9a80f	Off	172.31.16.0/20	-	-	

Select a subnet

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

Create subnet

**VPC**

**VPC ID**  
Create subnets in this VPC:  
vpc-009e8a07d37f4da13

**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 1**

**Subnet name**  
Create a tag with a key of 'Name' and a value that you specify.  
my-subnet-01

The name can be up to 256 characters long.

**Availability Zone**  
Choose the zone in which your subnet will reside, or let Amazon choose one for you.  
No preference

**IPv4 VPC CIDR block**  
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.  
10.0.0.0/16

**IPv4 subnet CIDR block**  
10.0.0.0/20

3. Create the Subnet - Click “Create subnet.”

The screenshot shows the AWS VPC Subnets page. A green banner at the top indicates "You have successfully created 1 subnet: subnet-094c009fc5af96f82". The main table displays one subnet entry:

Subnet ID	Name	State	VPC	Block Public...	IPv4 CIDR	IPv6 CIDR	IPv6 CIDR association ID	Available IPv4 addresses	Availability Zone	Network border group
subnet-094c009fc5af96f82		Available	vpc-009fa07d3774a113	Off	10.0.0.0/24	-	-	251	ap-s2-az1 (ap-south-1)	ap-south-1

The left sidebar shows the VPC dashboard with various sub-sections like Virtual private cloud, Security, PrivateLink and Lambda, DNS Firewall, and Network Firewall.

## Result:

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