Assignment - AWS July 27 2025 Batch

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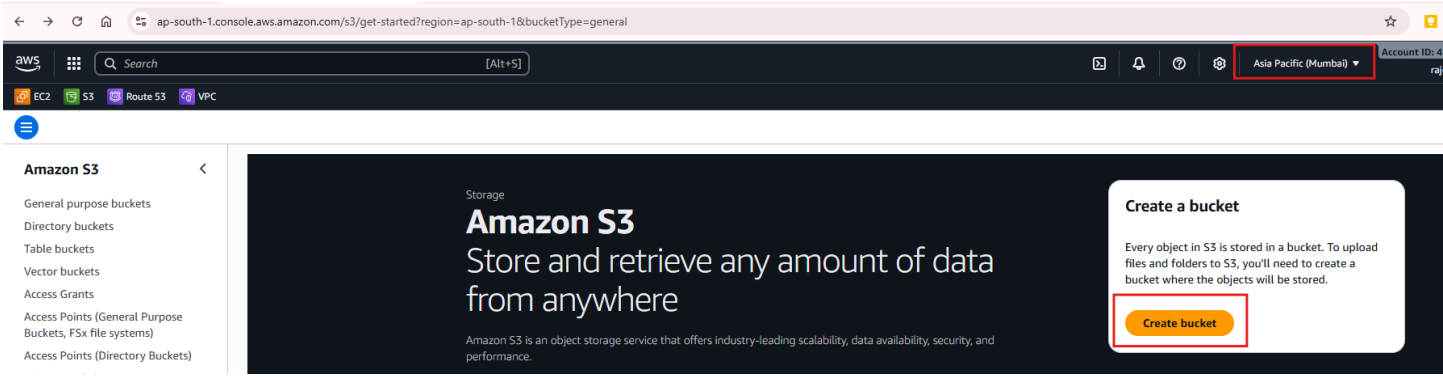
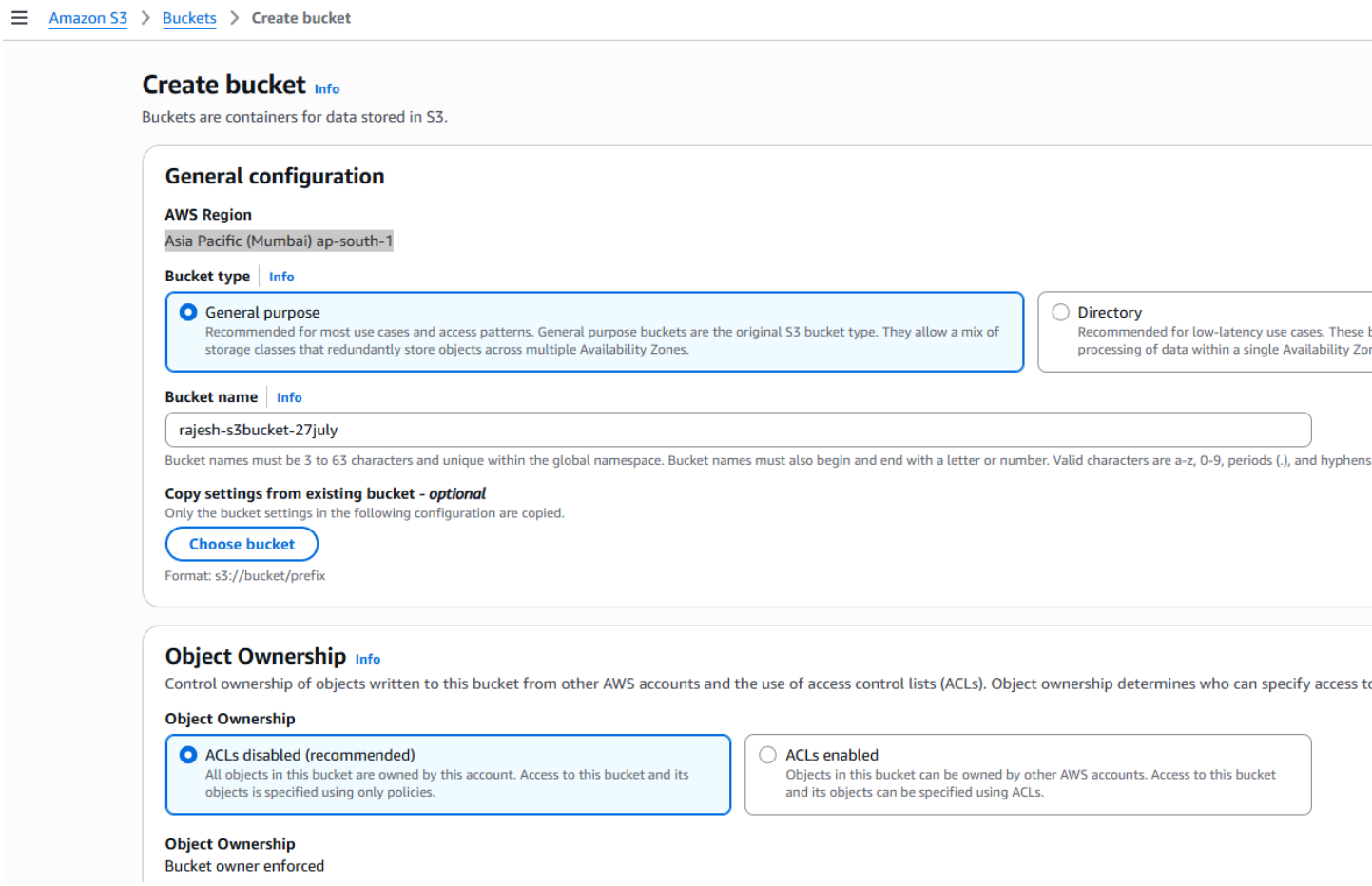
Question 1 : VPC Endpoint lab --> Need to connect EC2 instance with S3 bucket

1. Create S3 Bucket

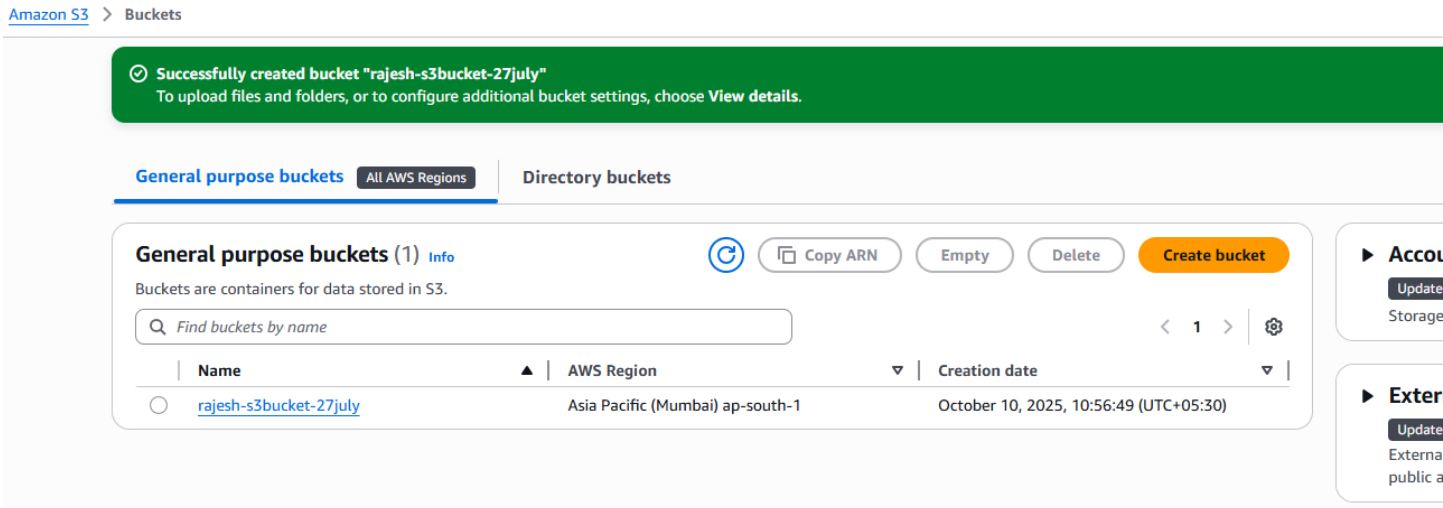
1. **Open S3 Console**
    - Go to AWS Management Console → Services → S3
    - Click **"Create bucket"**



1. **Configure Bucket**
    - **Bucket name**: rajesh-s3bucket-27july
    - **AWS Region**: Asia Pacific (Mumbai) ap-south-1
    - **Block All Public Access**: Tick check



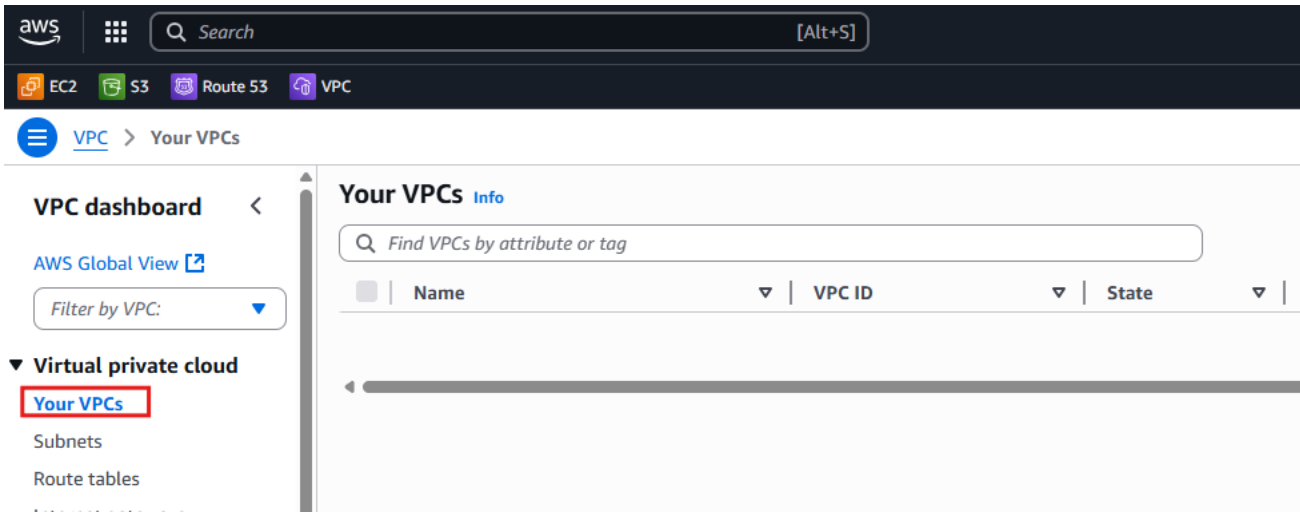
- Click **"Create bucket"**



2. Create VPC (if you don't have one)

1. **Open VPC Console**

- Services → VPC
- Click **"Your VPCs"** in left sidebar
- Click **"Create VPC"**



2. **Configure VPC**
   - **Resources to create**: VPC only
   - **Name tag**: rajesh-s3-vpc
   - **IPv4 CIDR**: 10.0.0.0/16 → VPC CIDR: 10.0.0.0/16 || Public Subnet: 10.0.1.0/24 || Private Subnet: 10.0.2.0/24
   - **Tenancy** "Default" - Instances run on shared hardware ,Multiple AWS customers share the same physical server, Cost-effective.
   - Click **"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*

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

rajesh-s3-vpc

IPv4 CIDR block Info

- (•) IPv4 CIDR manual input
- ( ) IPAM-allocated IPv4 CIDR block

IPv4 CIDR

10.0.0.0/16

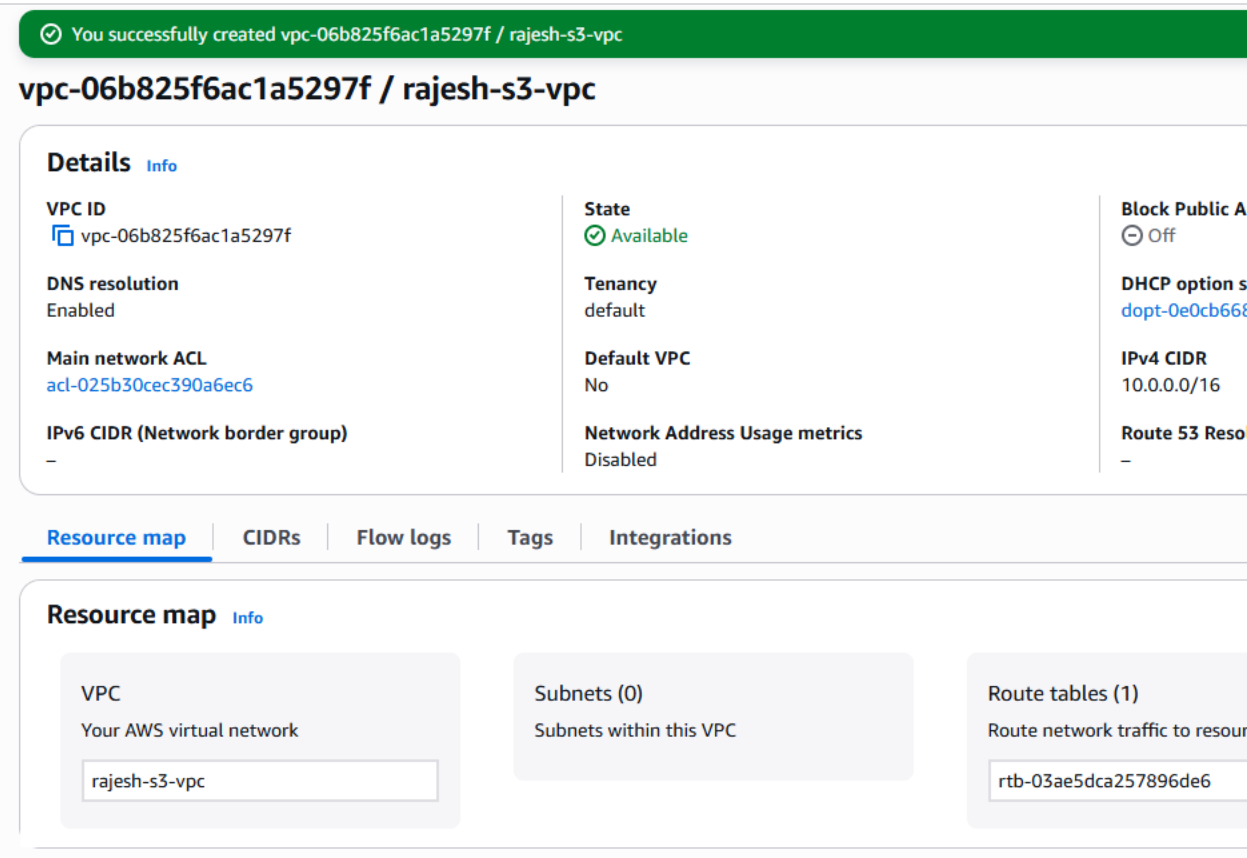
CIDR block size must be between /16 and /28.

IPv6 CIDR block Info

- (•) No IPv6 CIDR block
- ( ) IPAM-allocated IPv6 CIDR block
- ( ) Amazon-provided IPv6 CIDR block
- ( ) IPv6 CIDR owned by me

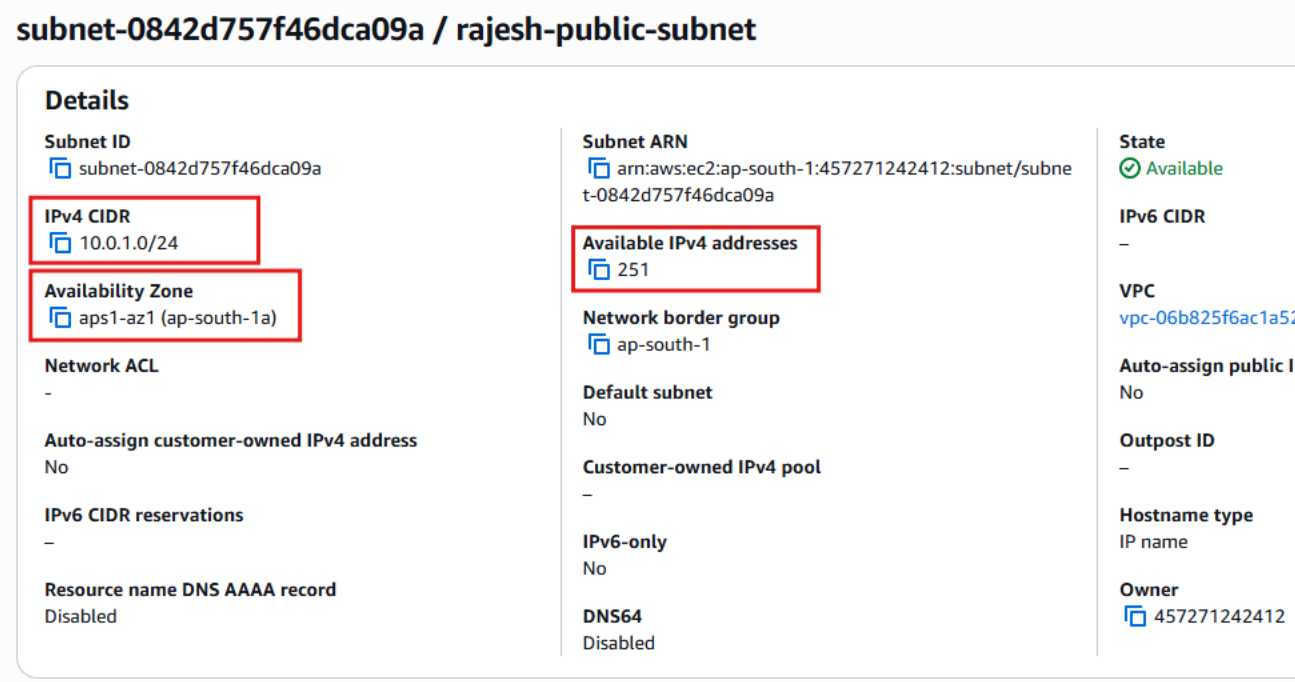
Tenancy Info

Default

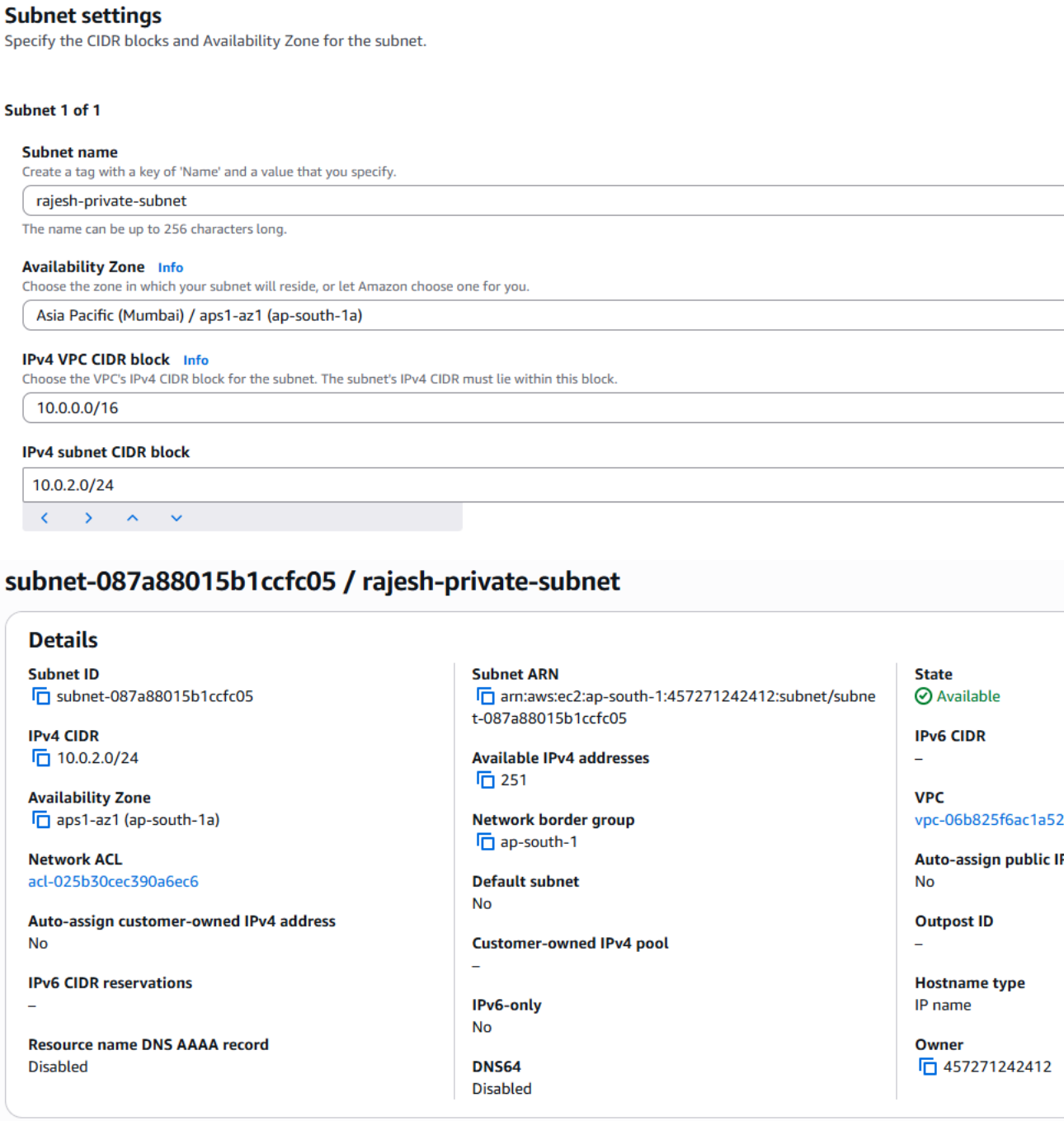


3. Create Subnets

1. **Create Public Subnet**
    - In VPC Console → **Subnets** → **Create subnet**
    - **VPC ID**: Select your VPC
    - **Subnet name**: rajesh-public-subnet
    - **Availability Zone**: Select any AZ
    - **IPv4 CIDR**: 10.0.1.0/24 || Available IPv4 addresses – 2^8 – 5
    - Click **"Create subnet"**

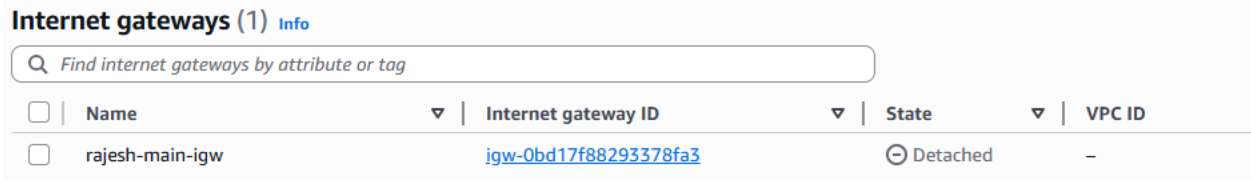


2. **Create Private Subnet**
    - **Create subnet** again
    - **VPC ID**: Select your VPC
    - **Subnet name**: rajesh-private-subnet
    - **Availability Zone**: Select same AZ as public subnet
    - **IPv4 CIDR**: 10.0.2.0/24
    - Click **"Create subnet"**



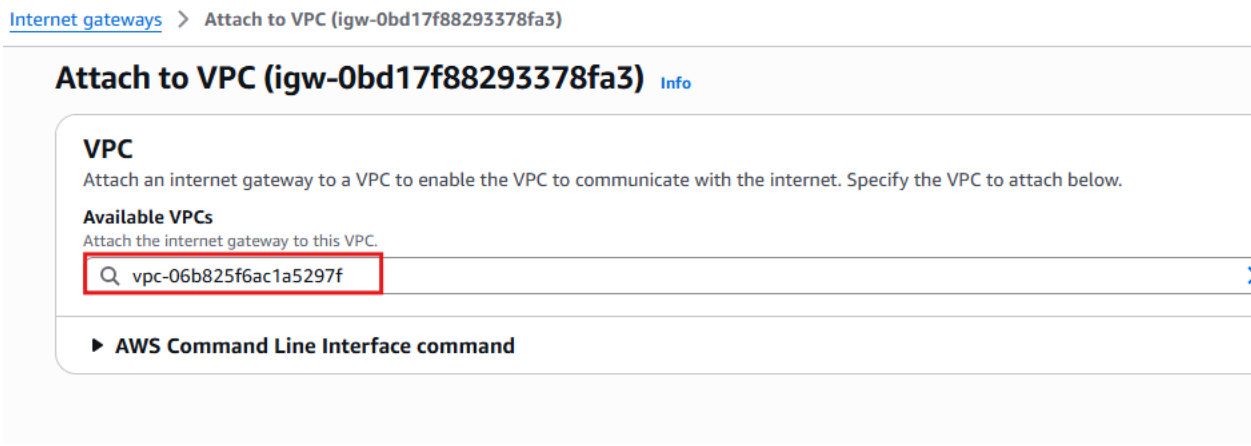
4. Create Internet Gateway

1. **VPC Console → Internet Gateways → Create internet gateway**
    - **Name tag**: rajesh-main-igw
    - Click **"Create internet gateway"**



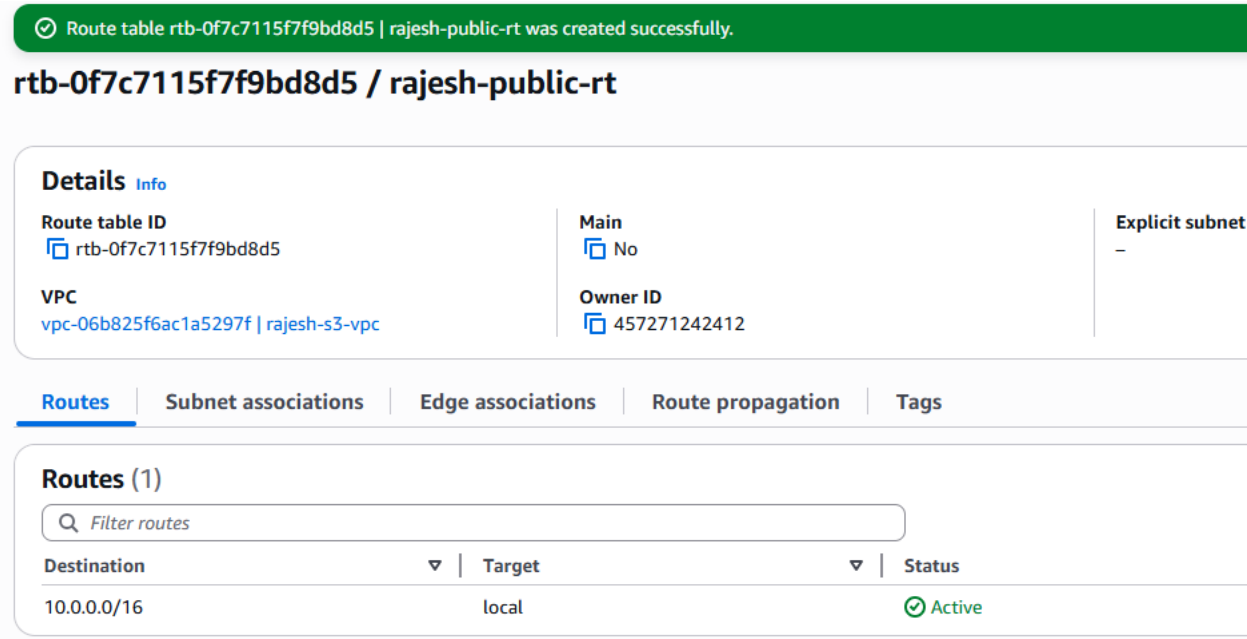
2. **Attach to VPC**
   - Select the IGW → **Actions** → **Attach to VPC**

   - Select your VPC → **Attach internet gateway**

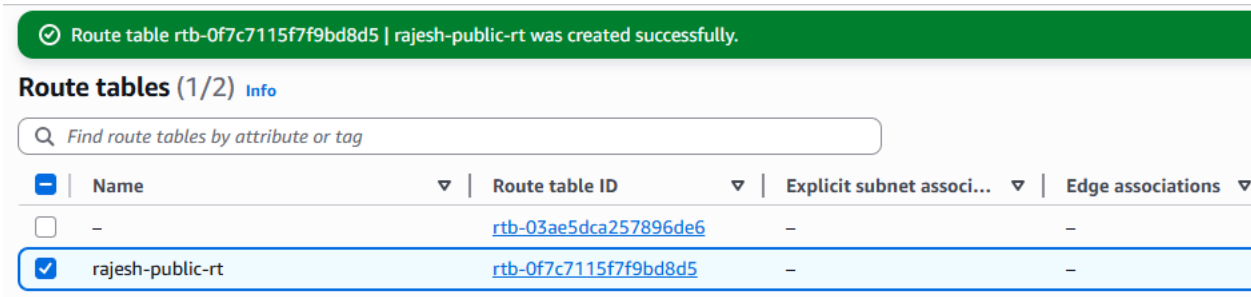


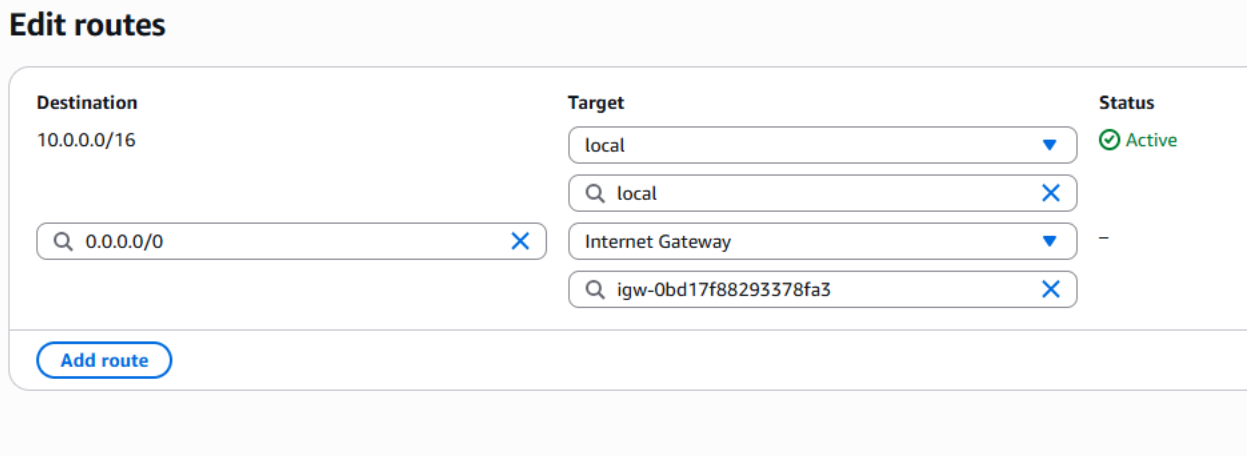
5. Create Route Tables

1. **Public Route Table**
   - **Route Tables** → **Create route table**
   - **Name**: rajesh-public-rt
   - **VPC**: Select your VPC
   - Click **"Create route table"**

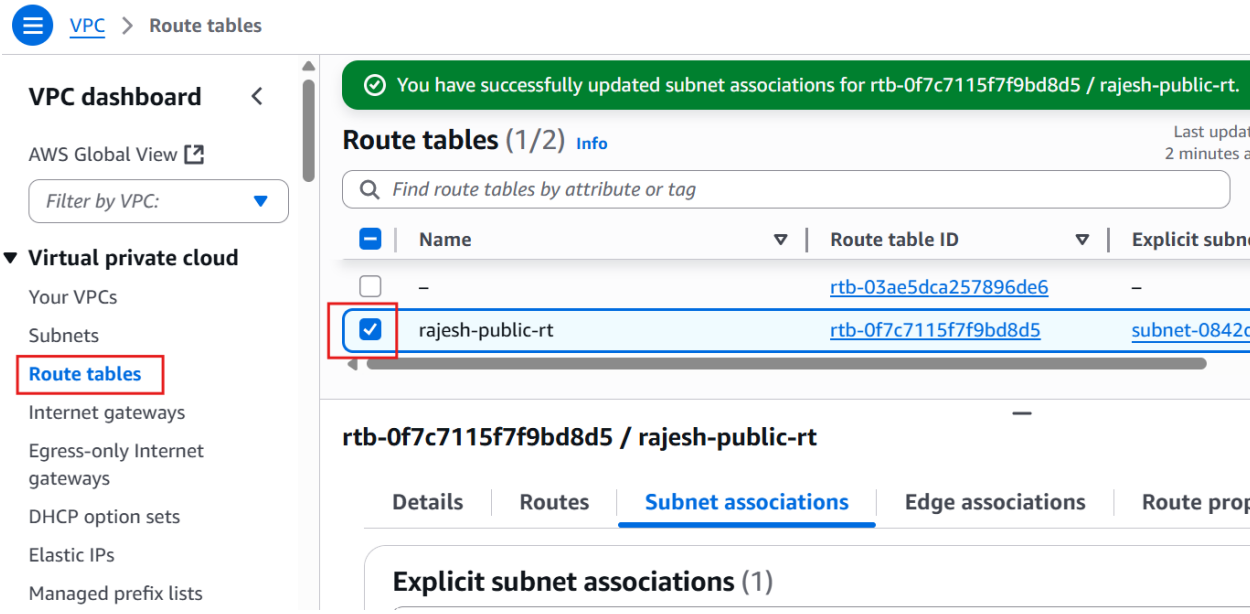


2. **Add Internet Route**
   - Select rajesh-public-rt route table → **Routes tab** → **Edit routes**
   - **Add route**:
     - **Destination**: 0.0.0.0/0
     - **Target**: Internet Gateway (select your IGW)
   - Click **"Save changes"**



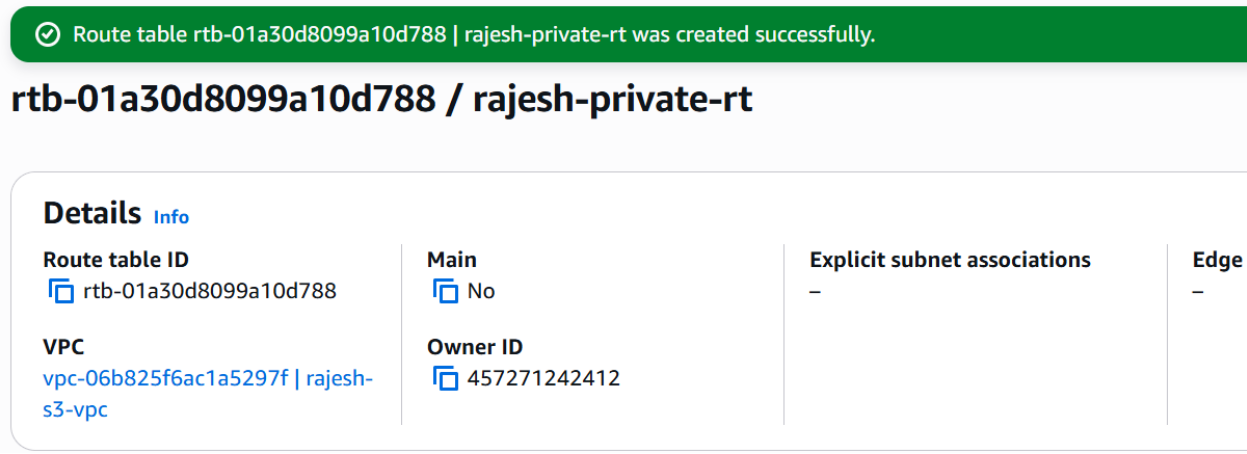


3. **Associate Public Subnet with Route Table**
    - Select your public route table
    - Go to the Subnet associations tab below
    - Click Edit subnet associations
    - In the popup, check the box next to your public-subnet
    - Click Save associations

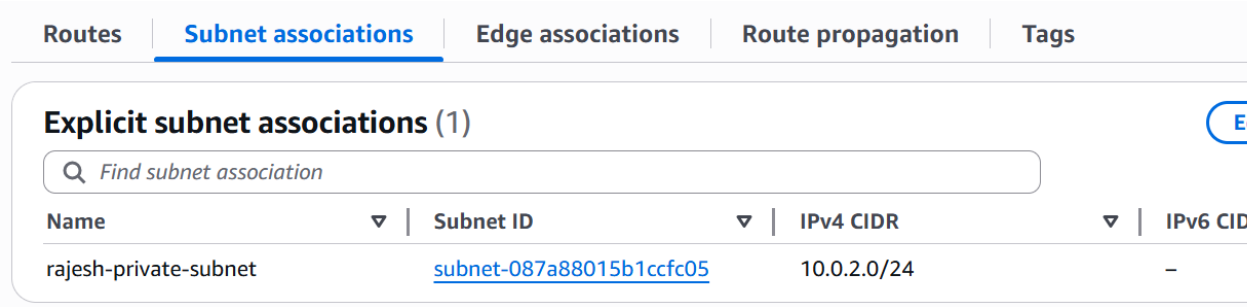


4. **Private Route Table**
    - **Create route table**
    - **Name**: rajesh-private-rt

- **VPC**: Select your VPC
- Click **"Create route table"**

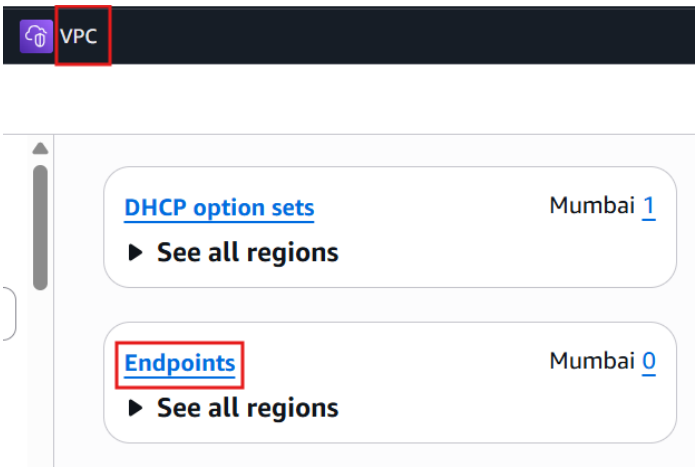


5. **Associate Private Subnet**
   - Select private route table → **Subnet associations** → **Edit subnet associations**
   - Check private-subnet → **Save associations**

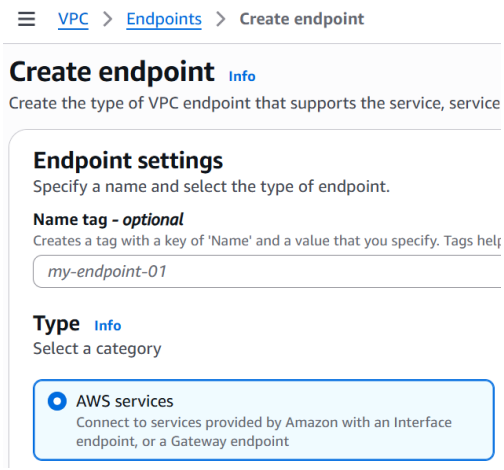


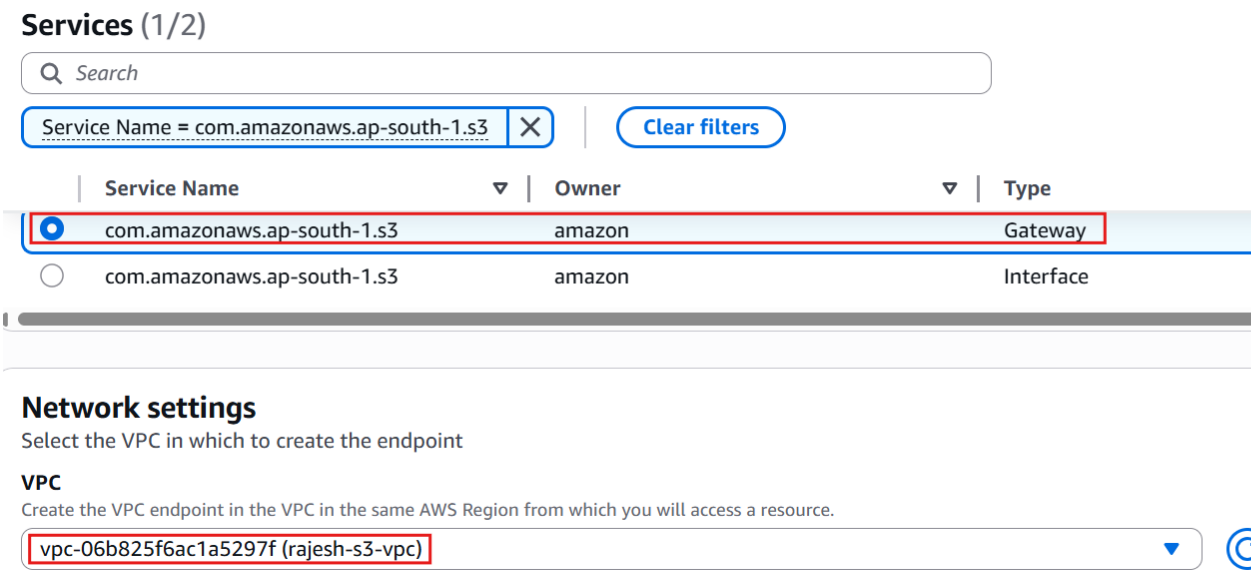
6. Create VPC Endpoint for S3

1. **VPC Console** → **Endpoints** → **Create Endpoint**



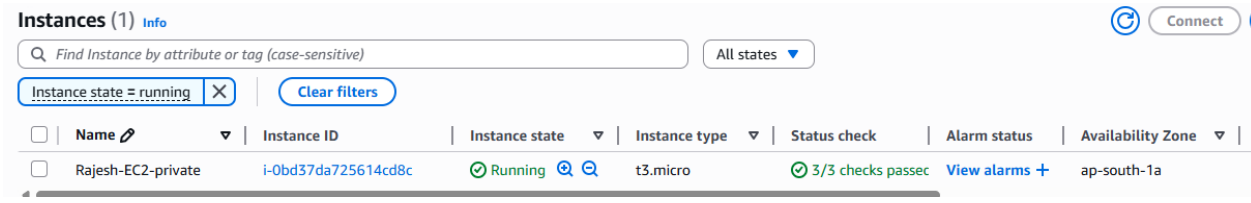
2. **Configure Endpoint**
    - **Service category**: AWS services
    - **Service name**: Find com.amazonaws.region.s3 (Gateway type)
    - **VPC**: Select your VPC
    - **Route tables**: Select private-rt (your private route table)
    - **Policy**: Full access (default)
    - Click **"Create endpoint"**



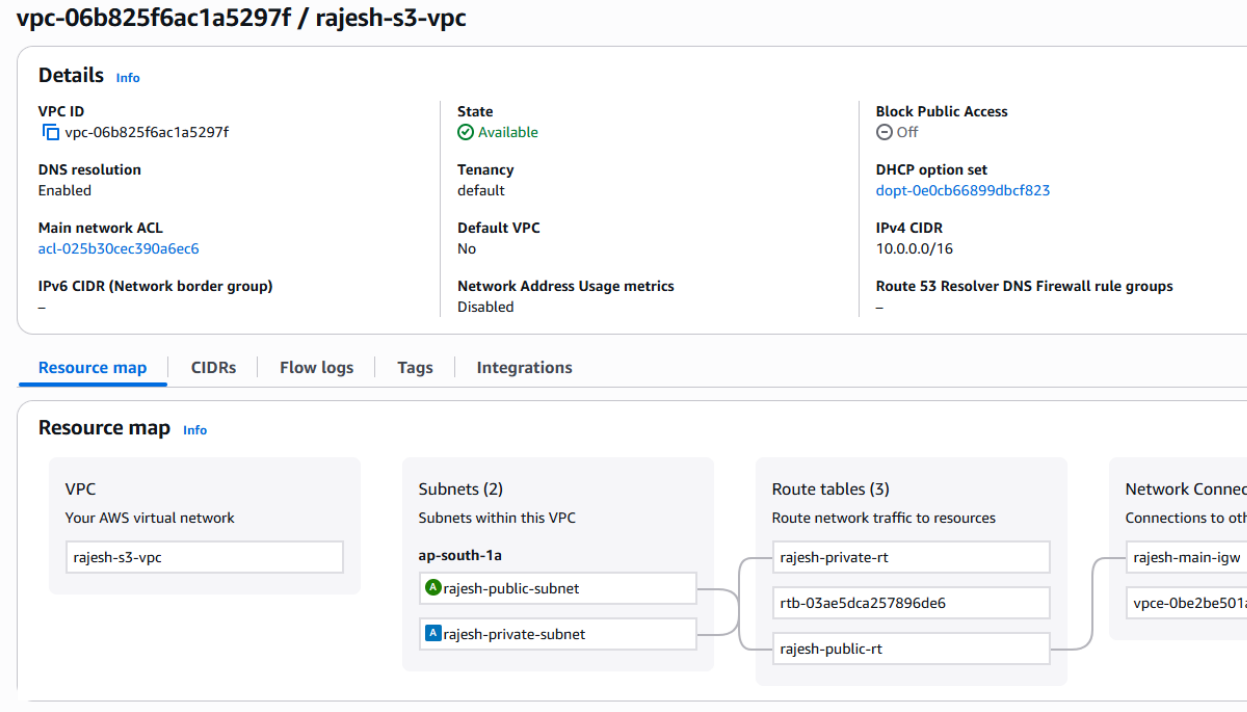


7. Create EC2 Instance in Private Subnet

1. **EC2 Console → Instances → Launch instances**
2. **Configure Instance**
    - **Name**: Rajesh-EC2-private
    - **AMI**: Amazon Linux 2023 AMI Kernel 6.1
    - **Instance type**: t3.micro
    - **Key pair**: Create new



3. **Network Settings**
    - **VPC**: Select your VPC
    - **Subnet**: Select private-subnet
    - **Auto-assign Public IP**: Disable



Issue : Unable to connect to the EC2 instance console. (private subnet)

Question 2 : NAT instance --> How to give internet access to my private subnet EC2 instance using NAT instance.