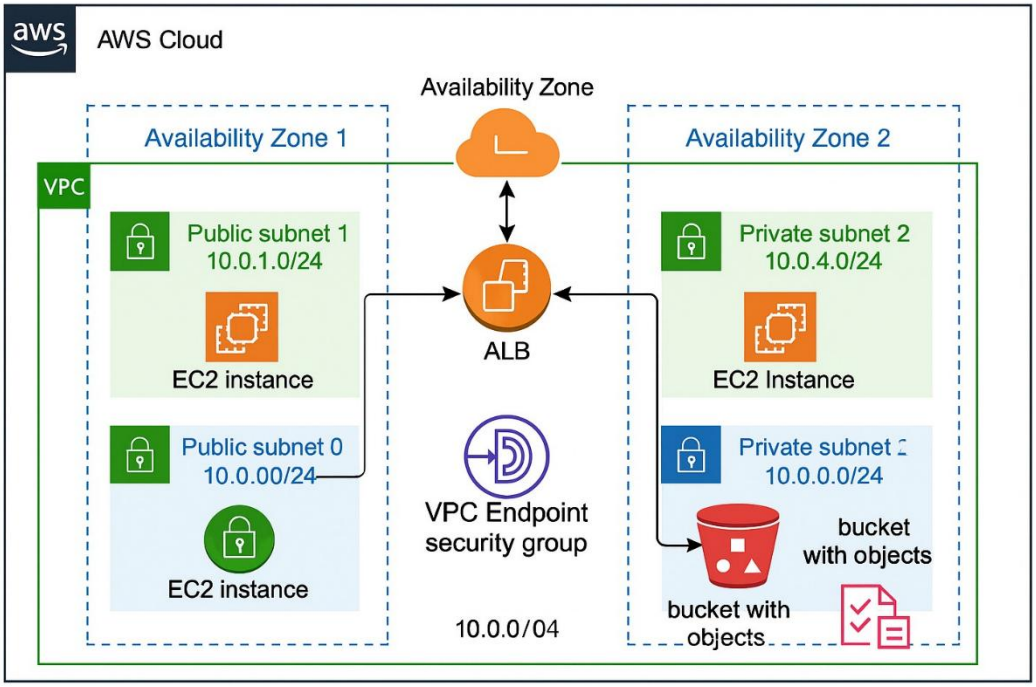


1)VPC CREATION:

Step 1: Go to the VPC Dashboard

- In the AWS Console, go to VPC.
- Click “Your VPCs” in the left-hand menu.
- Click the “Create VPC” button.

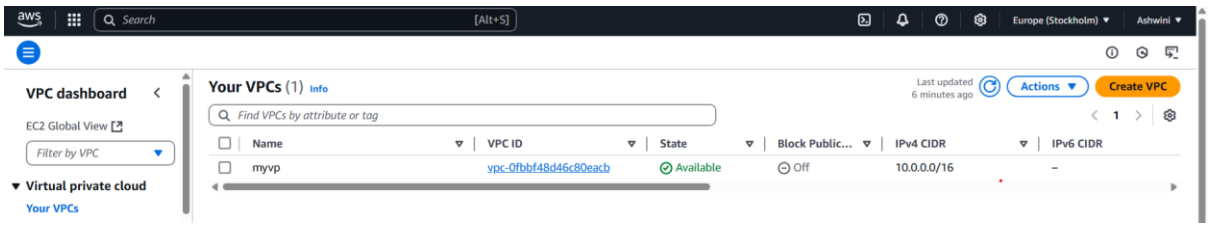
Step 2: Choose VPC Creation Method

- Choose “VPC only”

Step 3: Configure VPC Settings

- Name tag: (e.g., myvp)
- IPv4 CIDR block: (e.g., 10.0.0.0/16)

Click Create VPC.

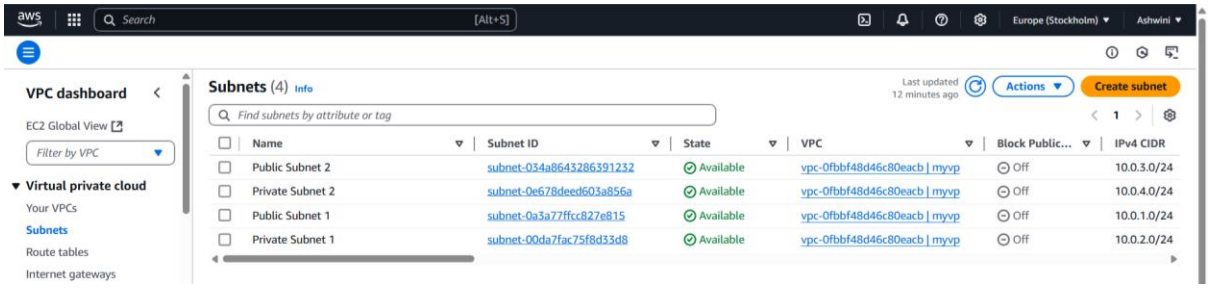


2)SUBNET CREATION:

Step 1: go to **Subnets** → Click **Create Subnet**.

Step 2: In the Create Subnet page:

- **Select your VPC**.
- Create your **first subnet**:
    - **Name**: (e.g., Public Subnet 1)
    - **AZ**: Choose (eu-north-1a)
    - **CIDR block**: e.g., 10.0.1.0/24
- Click **Add another subnet** (on same page):
    - **Name**: (e.g., Private Subnet 1)
    - **AZ**: Choose (eu-north-1a)
    - **CIDR block**: e.g., 10.0.2.0/24
- Click **Add another subnet** (on same page):
    - **Name**: (e.g., Public Subnet 2)
    - **AZ**: Choose (eu-north-1b)
    - **CIDR block**: e.g., 10.0.3.0/24
- Click **Add another subnet** (on same page):
    - **Name**: (e.g., Private Subnet 2)
    - **AZ**: Choose (eu-north-1b)
    - **CIDR block**: e.g., 10.0.4.0/24



3)EC2 INSTANCE CREATION:

Step 1: Go to the EC2 Dashboard

- In the AWS Console, go to **EC2**.
- Click **"Instances"** in the left menu.
- Click the **"Launch Instance"** button.

Step 2: Configure Basic Settings

1. Name:

- Give your instance a name (e.g., myec2)

2. Application and OS Image (AMI):

- Choose Ubuntu

3. Instance Type:

- Select t3.micro (free tier eligible)

4. Key Pair (Login):

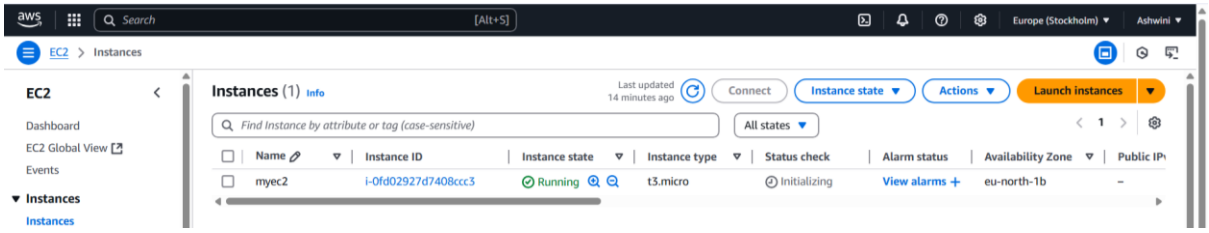
- Create or choose an existing key pair(e.g, webserver)

5.Network Settings:

- **VPC**: Choose the VPC you created (myvp)
- **Subnet**: Pick a subnet within that VPC
- **Auto-assign Public IP**: Set to **Disable** if you don't want internet access
- **Firewall (security group)**:
    - Select an existing group(e.g, default)

Step 3: Launch

- Click **"Launch Instance"**



4) VPC ENDPOINT FOR S3:

Step 1:**Go to the VPC Dashboard:**

- In the AWS Console, go to **VPC**.
- Click on **Endpoints** in the left menu.
- Click **Create Endpoint**.

2:name tag(e.g, myendpoint)

3:**Choose Service Category:**

- Select **AWS services**.

4:**Find the S3 Service:**

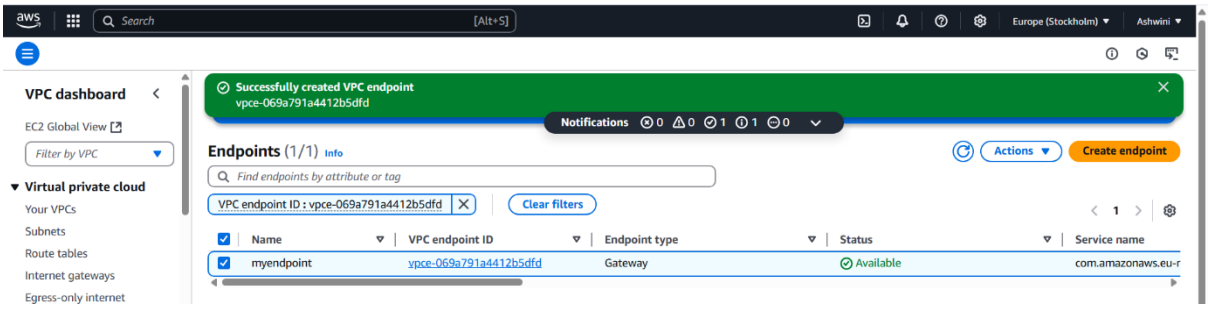
- In the **Service Name** section, search for the **S3 service** specific to your region.
- In the **Service Name** list, it should look like:
  com.amazonaws.<region>.s3
  (Example: com.amazonaws.eu-north-1.s3)

5: **Configure the Endpoint:**

- **VPC**: Choose the VPC that your EC2 instance resides in.
- **Route Tables**: Choose the route tables for the subnets that need access to S3.
- **Policy**: Either choose the default full access or create a custom policy.

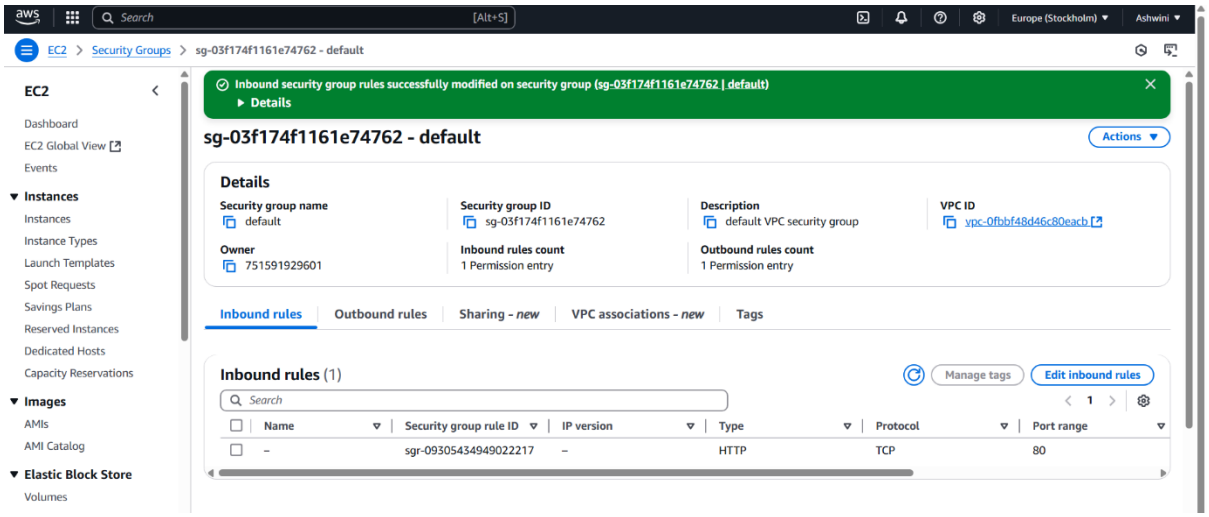
6: Create the Endpoint:

- Click **Create Endpoint**.
- The VPC endpoint will now be available and route traffic from EC2 to S3 without leaving the AWS network.



Step 2: Configure Security Groups for EC2

1. **Go to EC2 Dashboard:**
   - Navigate to **EC2 > Instances**.
   - Select your EC2 instance.
2. **Modify Security Group:**
   - In the **Security** tab, click on the **Security Group ID**.
   - Go to **Inbound Rules** and ensure that **Port 80** (HTTP) or **Port 443** (HTTPS) is open for communication.



3. **Outbound Rules**:
   - Outbound traffic is allowed by default, but verify that the EC2 instance can communicate with the VPC endpoint.

Step 3: Configure S3 Bucket Policy

1. **Go to S3 Dashboard**:
   - In the AWS Console, navigate to **S3**.
   - Select the **S3 bucket** you want your EC2 instance to access.
2. **Edit Bucket Policy**:
   - Click on the **Permissions** tab.
   - Scroll down to **Bucket Policy** and click **Edit**.
3. **Add a Bucket Policy for VPC Endpoint Access**: To ensure that only traffic from your VPC and VPC endpoint can access the S3 bucket, you need to create a policy restricting access.

Example bucket policy:

```
{

 "Version": "2012-10-17",

 "Statement": [

  {

   "Effect": "Allow",
```

```
    "Principal": "*",
    "Action": "s3:GetObject",
    "Resource": "arn:aws:s3:::buck.my/*",# REPLACE
    "Condition": {
      "StringEquals": {
        "aws:SourceVpc": " vpc-0fbbf48d46c80eacb"# REPLACE
      }
    }
  }
 ]
}
```

4. **Save the Policy**:

- Click **Save** to apply the policy.

5) Set up ALB (Application Load Balancer)

1.Go to **EC2 Dashboard → Load Balancers → Create Load Balancer → Application Load Balancer**.

Fill details:

- **Name**: myalb.
- **Scheme**: **Internet-facing**
- **IP address type**: IPv4.
- **Listeners**: Create listener for HTTP on port 80.

2.Configure Availability Zones

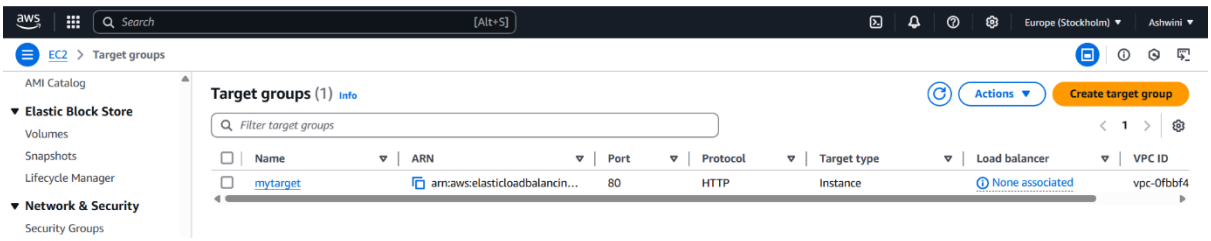
- **Select your VPC**(myvp)
- **Tick both Public Subnets**:
  - Public Subnet 1 (AZ1)
  - Public Subnet 2 (AZ2)

3.Configure Security Group for ALB

- Allow **inbound HTTP (80)**
- Outbound can stay default (allow all).

4. Attach Target Group

- In "Listeners" section:
  - Forward traffic to your **Target Group** you created earlier.



5. Review and Create

- Review all settings.
- Click **Create Load Balancer**.