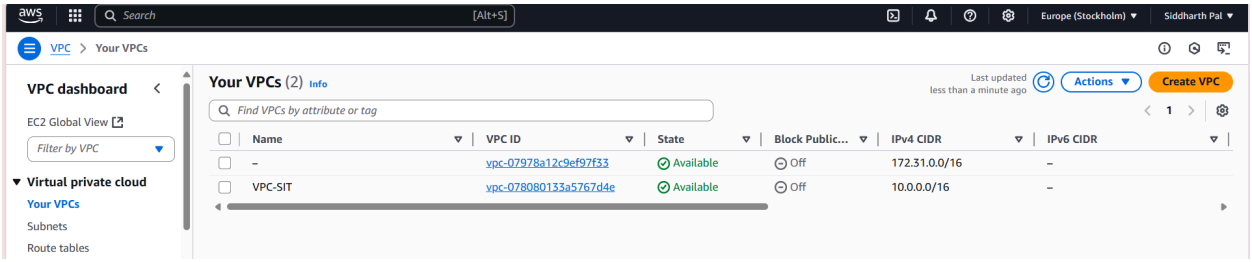
🛠️ AWC Class Notes – VPC, Subnets, EC2 Setup (18 June 2025) Siddharth Pal || 22BCSI14

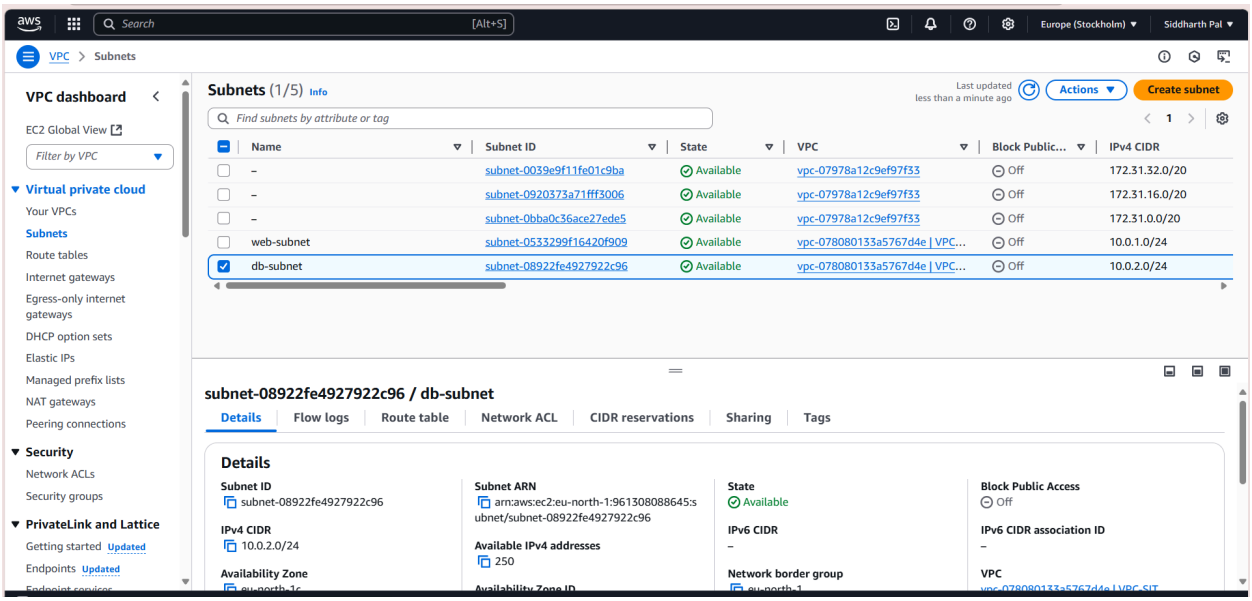
✅ Step 1: Create a VPC

- **Name**: `VPC-SIT`
- **CIDR Block**: `10.0.0.0/16`



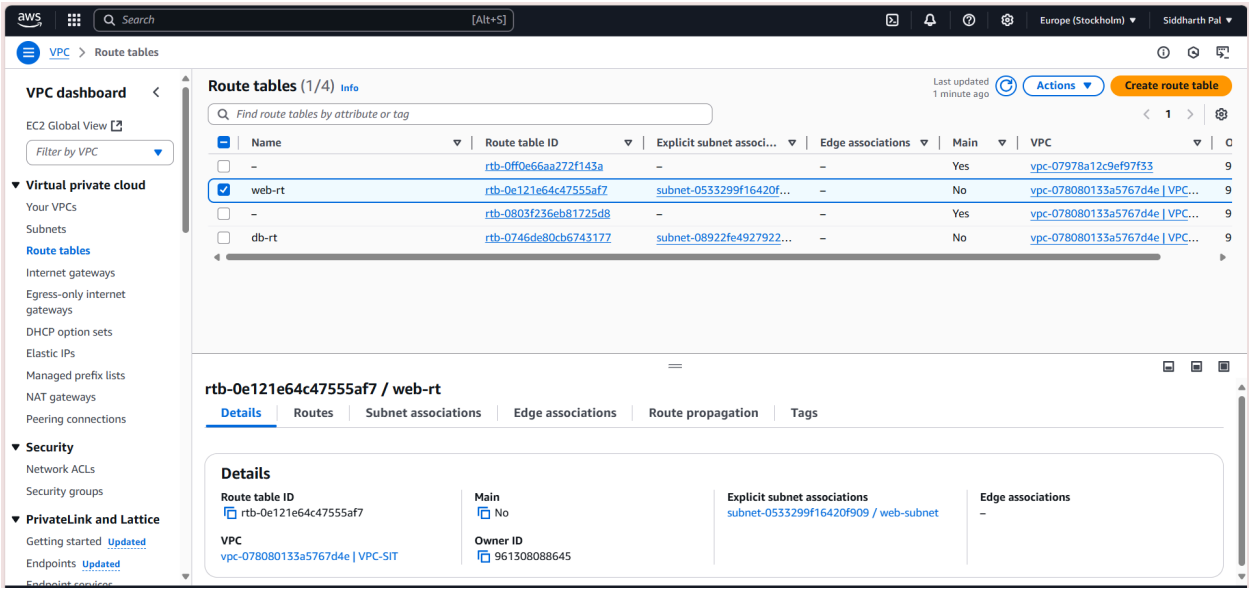
✅ Step 2: Create Subnets

- **Web Subnet**
  - Name: `web-subnet`
  - CIDR: `10.0.1.0/24`
- **DB Subnet**
  - Name: `db-subnet`
  - CIDR: `10.0.2.0/24`



✅ Step 3: Create Route Tables

- **Web Route Table**
  - Name: `web-rt`
  - Associate with: `web-subnet`
- **DB Route Table**
  - Name: `db-rt`
  - Associate with: `db-subnet`



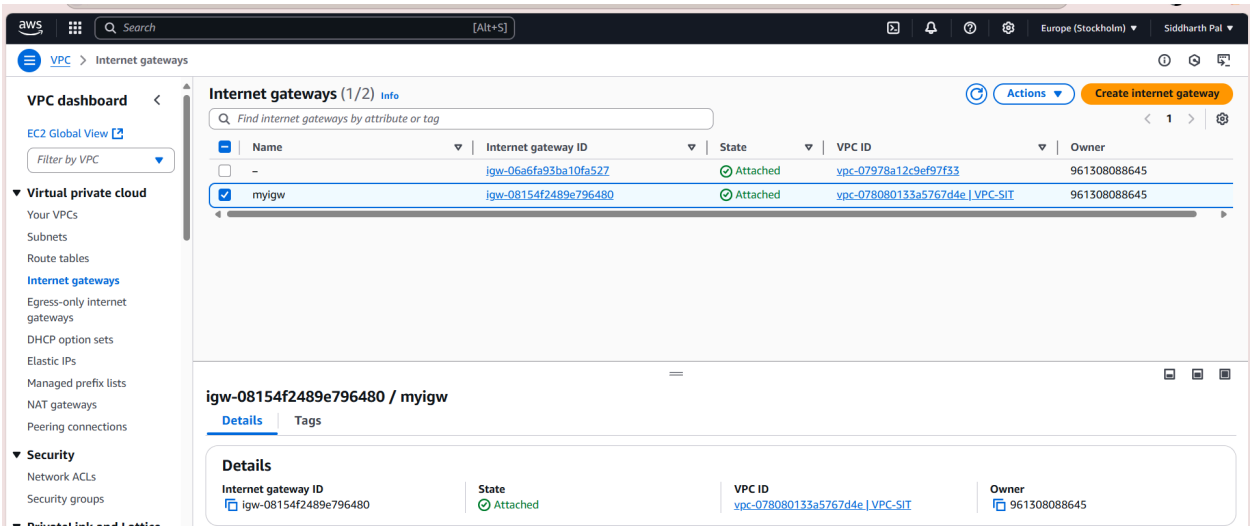
✅ Step 4: Create and Attach Internet Gateway

- **Name**: `myigw`
- **Attach** to `VPC-SIT`

✅ Step 5: Edit Routes in `web-rt`

- Add route:
  - **Destination**: `0.0.0.0/0`
  - **Target**: Internet Gateway (`myigw`)

🔓 This makes `web-subnet` a **Public Subnet**



🚀 Step 6: Deploy EC2 Instances

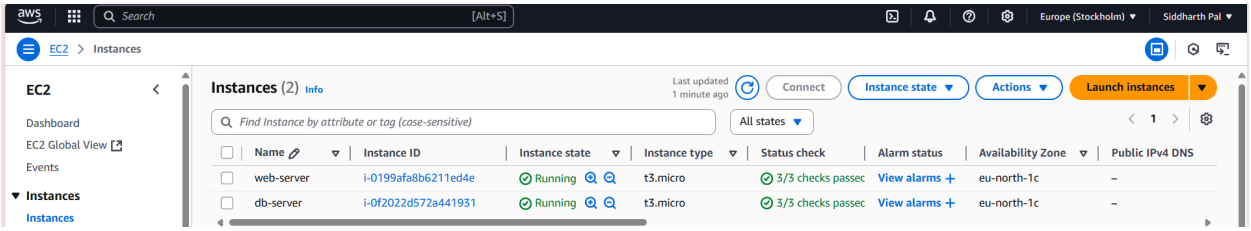
▶️ Web Server Instance (Public)

- **Key Pair**: `aws-vpn`
- **VPC**: `VPC-SIT`
- **Subnet**: `web-subnet`
- **Auto-assign Public IP**: ✅ Enabled
- **Security Group**: Allow **All Traffic**
- **Launch**

▶️ DB Server Instance (Private)

- **Key Pair**: `aws-vpn`
- **VPC**: `VPC-SIT`

- **Subnet**: `db-subnet`
- **Auto-assign Public IP**: ❌ Disabled
- **Security Group**: Allow **All Traffic**
- **Launch**



🌐 Connecting to Web Server (Jump Host)

1. Copy the **Public IP** of the **Web Server** (from `web-subnet`).

Open **MobaXterm**, and connect via SSH using:

pgsql
CopyEdit

```
ssh -i aws-vpn.pem ec2-user@<PUBLIC-IP>
```

2.

After login:

bash
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```
sudo su

cd
```

3.

To test private connection:

bash

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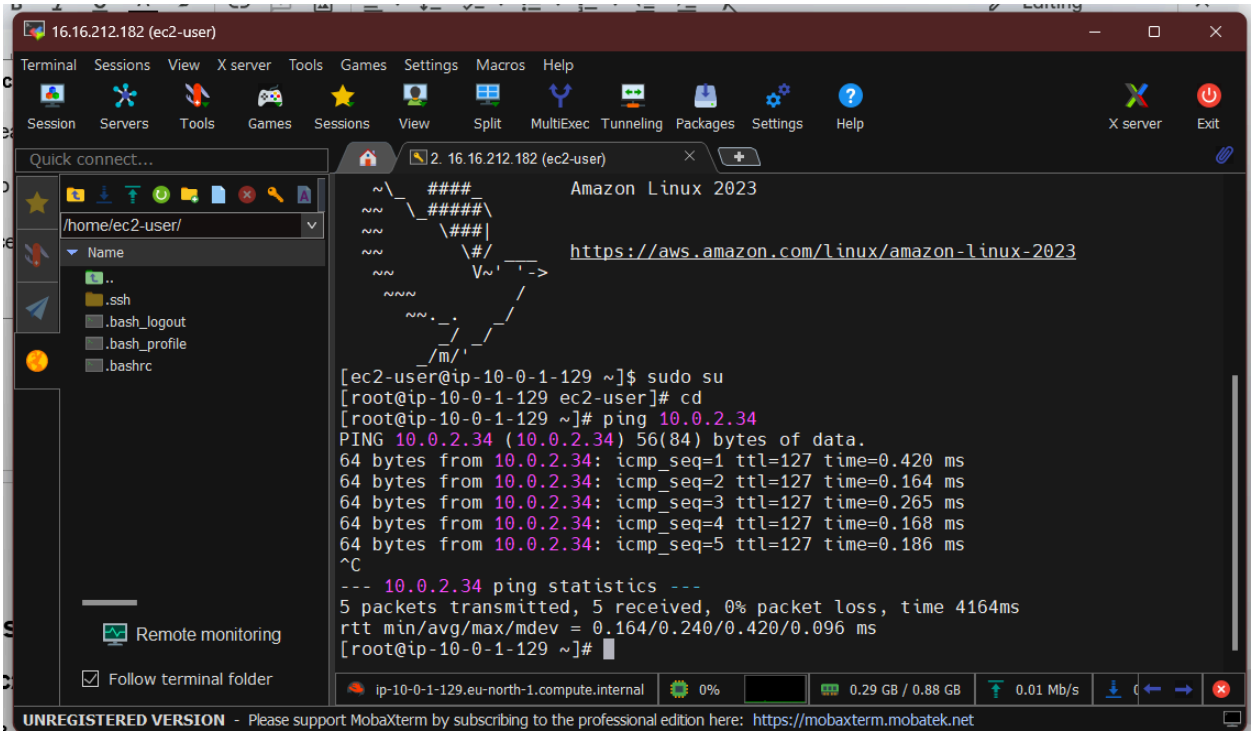
```
ping <PRIVATE-IP-OF-DB-SERVER>
```



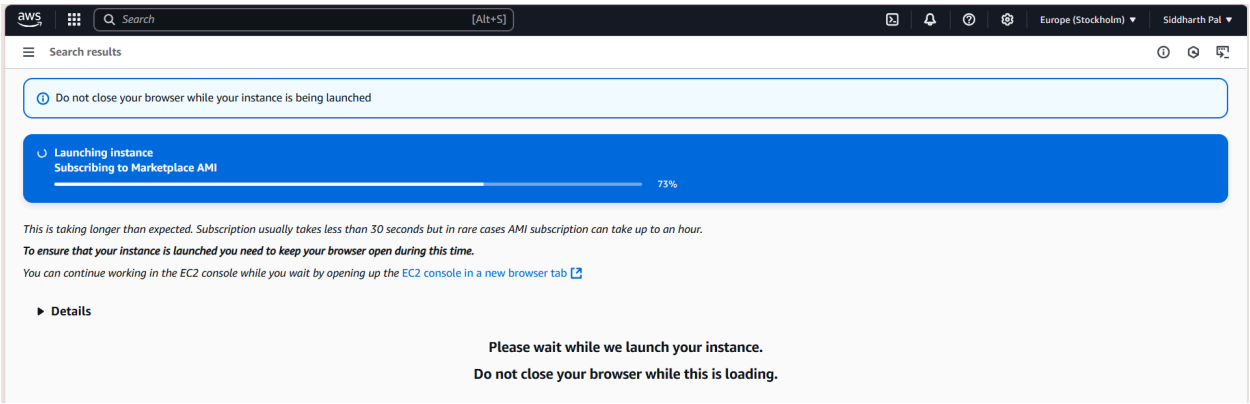
🔽 Setting Up OpenVPN Server

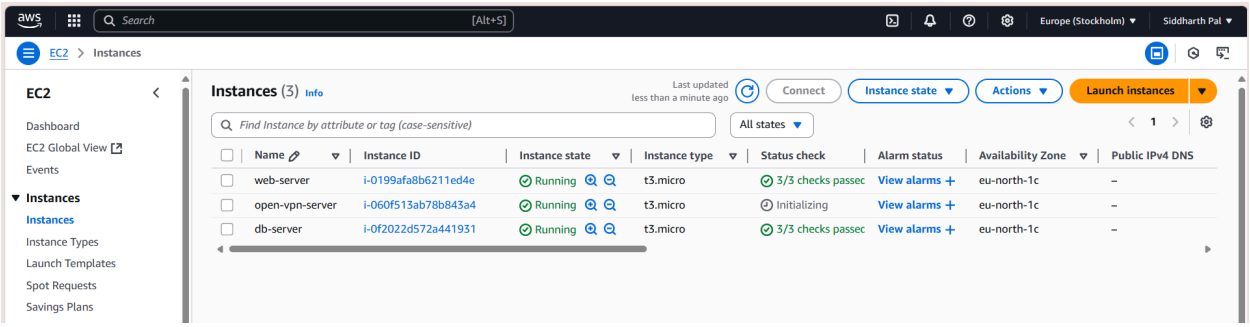
✅ Step 1: Launch OpenVPN EC2 Instance

1. Go to **EC2 > Launch Instance**
2. Click **"Browse more AMIs"**
3. Search for: `OpenVPN`
4. Select the one with **$0.025/hr** (from AWS Marketplace)
5. Click **Continue / Subscribe & Launch**

✅ Step 2: Instance Configuration

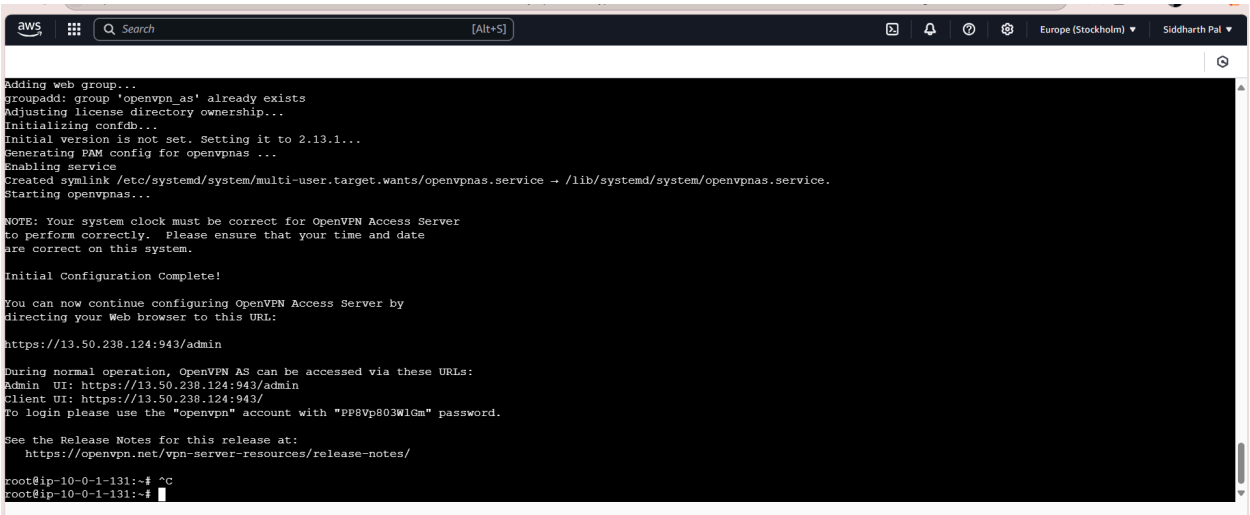
- **Instance Type**: `t2.micro`
- **Key Pair**: Use existing (`aws-vpn`)
- **VPC**: `VPC-SIT`
- **Subnet**: `web-subnet`
- **Auto-assign Public IP**: ✅ Enabled
- **Security Group**: Leave default (No changes)
- **Storage**: Change to `gp3`
- **Launch** the instance.





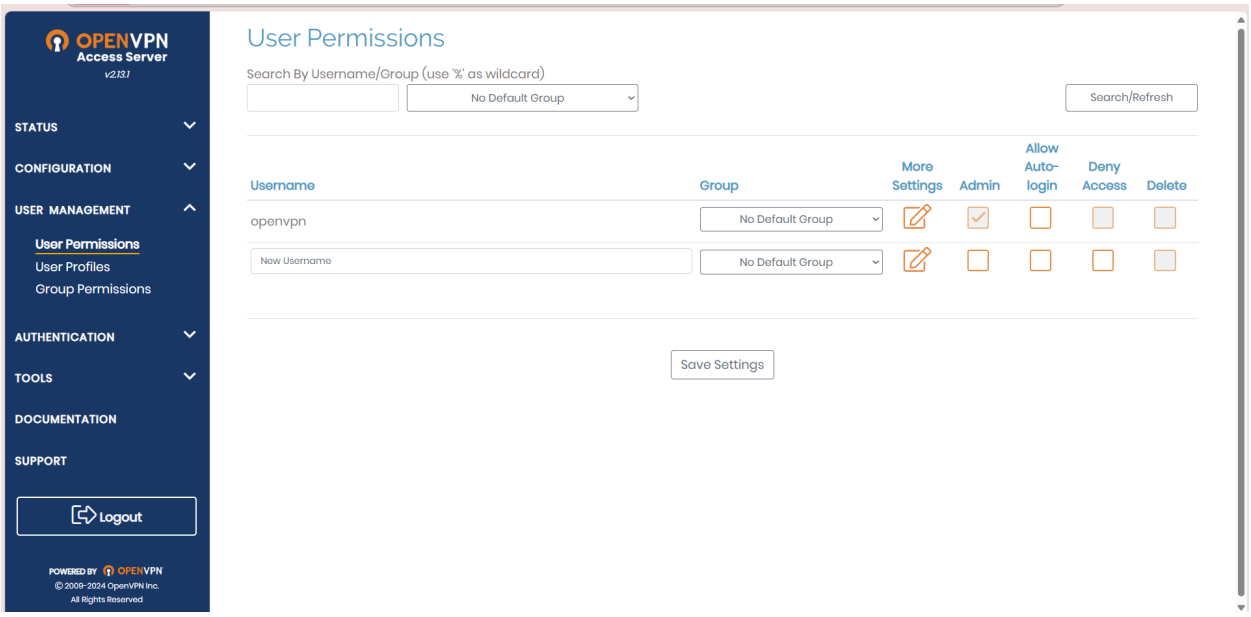
🌐 Step 3: Access the OpenVPN Admin UI

1. Click **Connect > EC2 Instance Connect**
2. Accept the **Terms & Conditions** prompt.
3. Copy the **Admin URL**, **Username**, and **Password** from the instance output/logs.
4. Paste the **Admin URL** in your browser.
5. Login using the provided **Username** and **Password**



👤 Step 4: Create VPN User

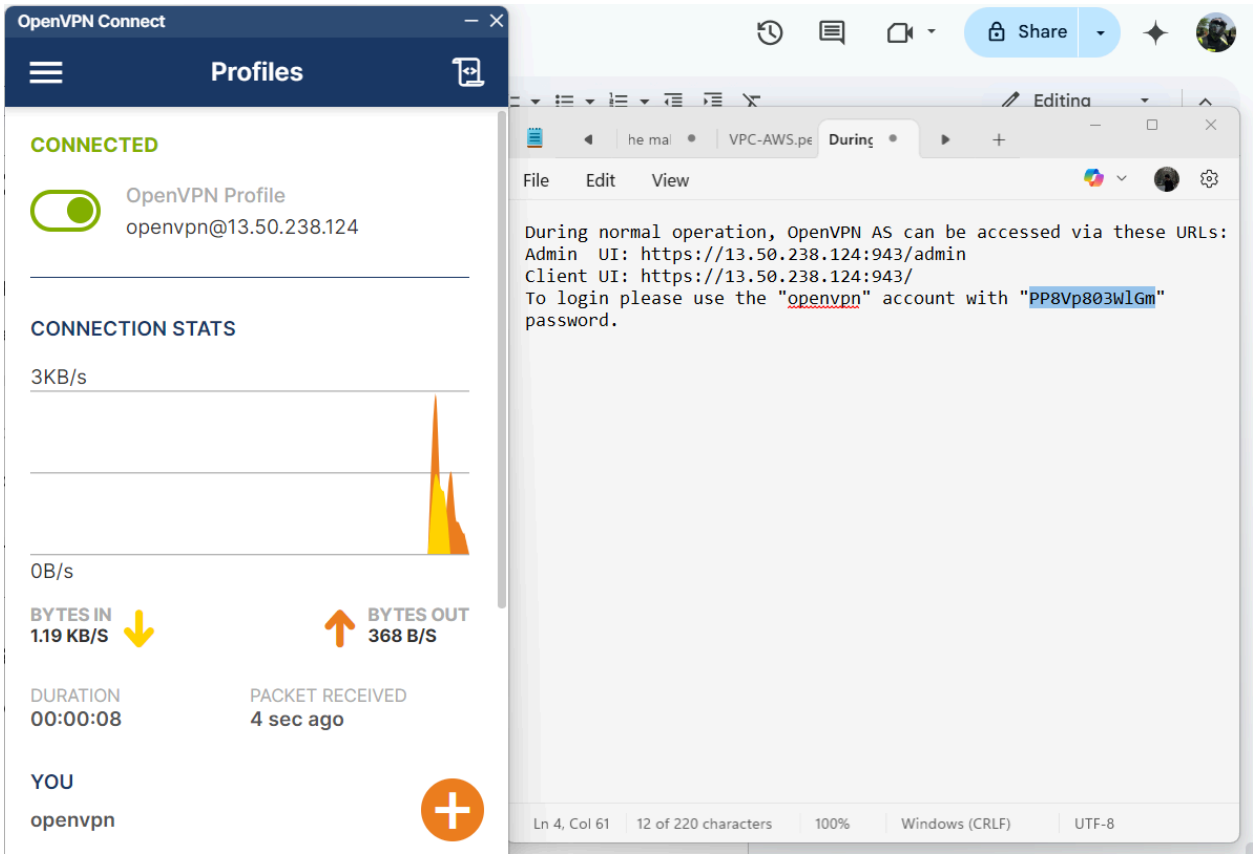
- In the OpenVPN Admin Panel:
    - Go to **User Management > User Permissions**
    - Create a new user with desired **Username & Password**
    - ✅ Save these credentials safely.



💻 Step 5: Configure OpenVPN Client on Your PC

1. Download & Install the **OpenVPN Client** on your PC.
2. Open it and paste the **Client UI URL** you got earlier.
3. Click **Next**, accept terms.
4. Enter your **Username & Password**
5. Click **Import** → then **Turn On VPN**
6. When prompted, enter the password again.

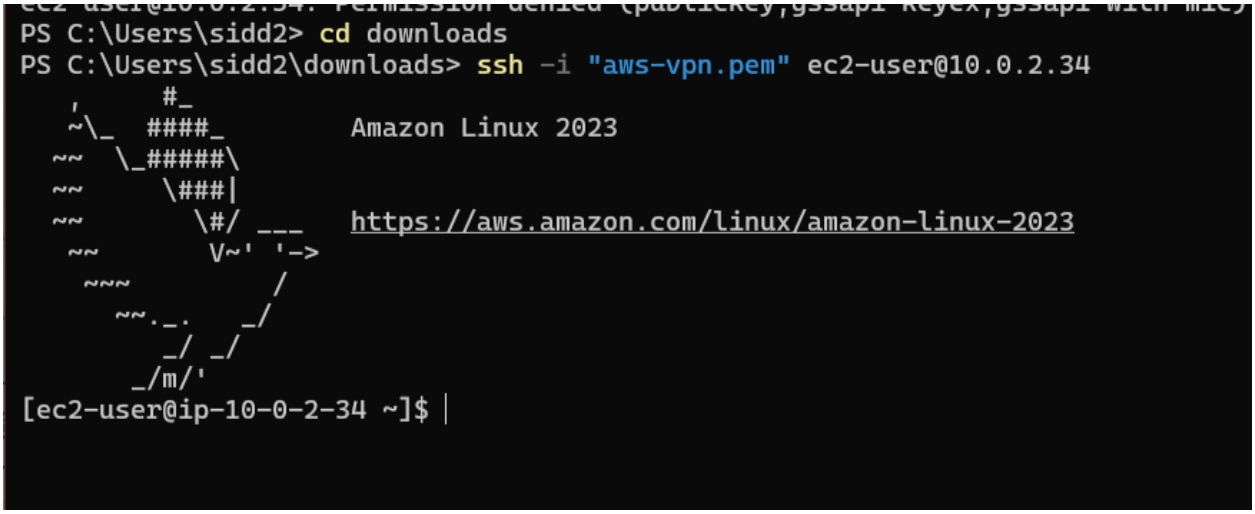
   ✅ **VPN is now connected**



🔁 Final Test: Access DB Server from Local PC

Now that you're on VPN, you can **SSH into the DB Server (private subnet)** directly from your PC terminal:

```
ssh -i aws-vpn.pem ec2-user@<PRIVATE-IP-OF-DB-SERVER>
```



🎉 **Success! You've bypassed public IPs securely using VPN + Jump Host setup.**

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