**HPCSA**

Cloud Computing and Security

Lab Assignment 1

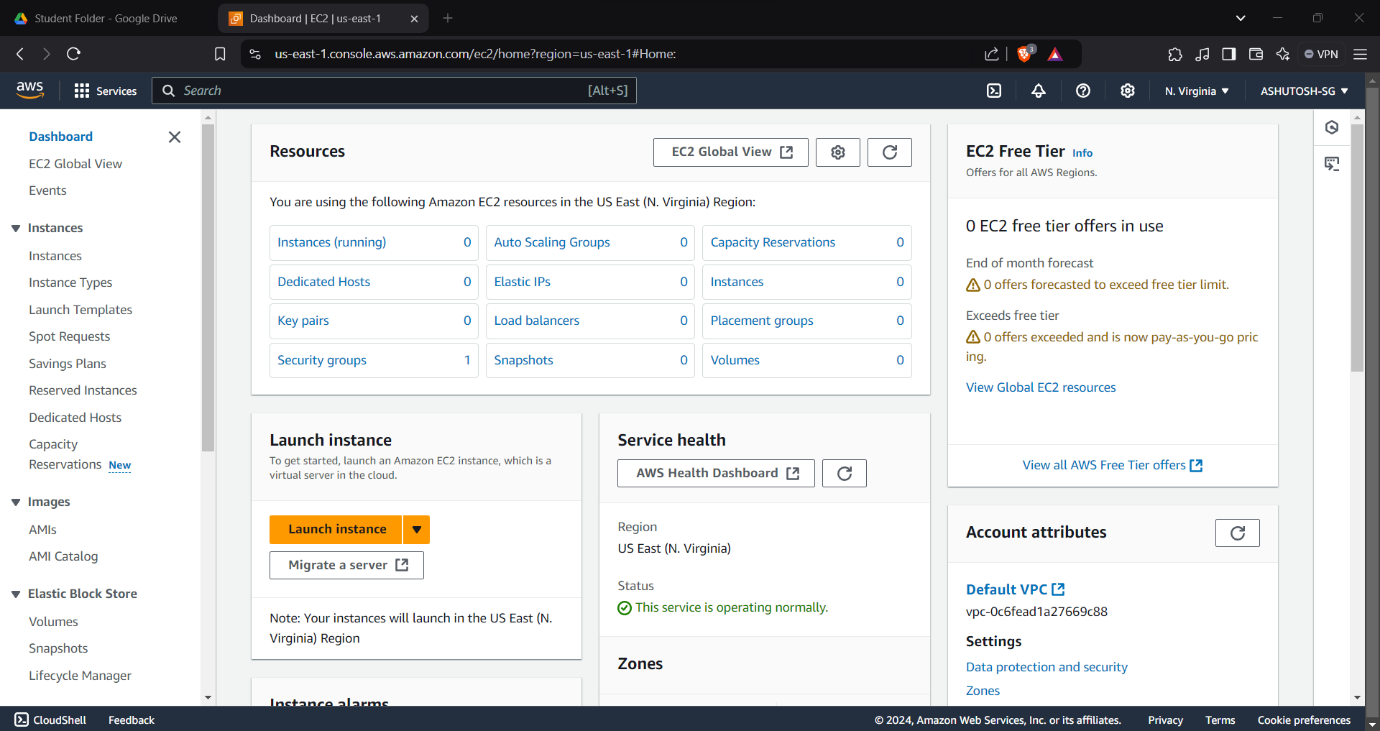
Name : **Ashutosh Gangurde**  
PRN : **240840127031**

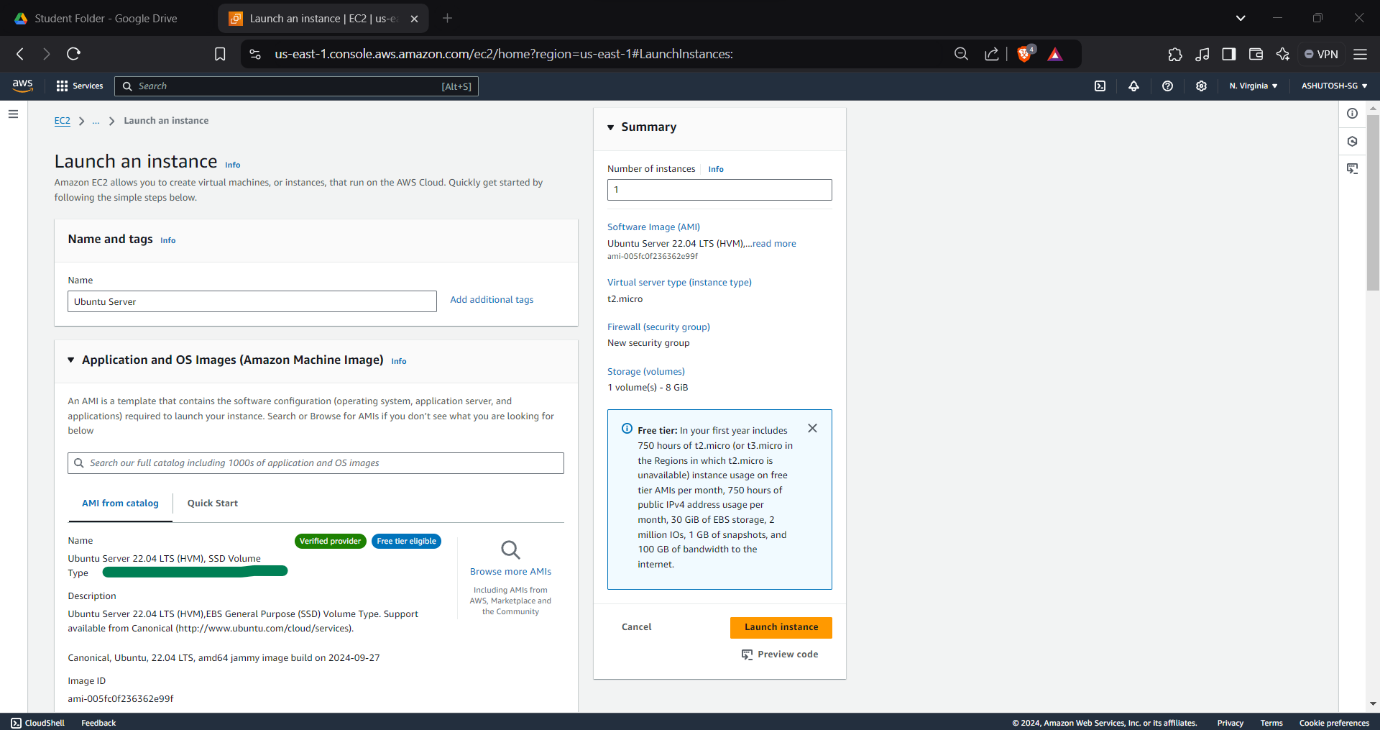
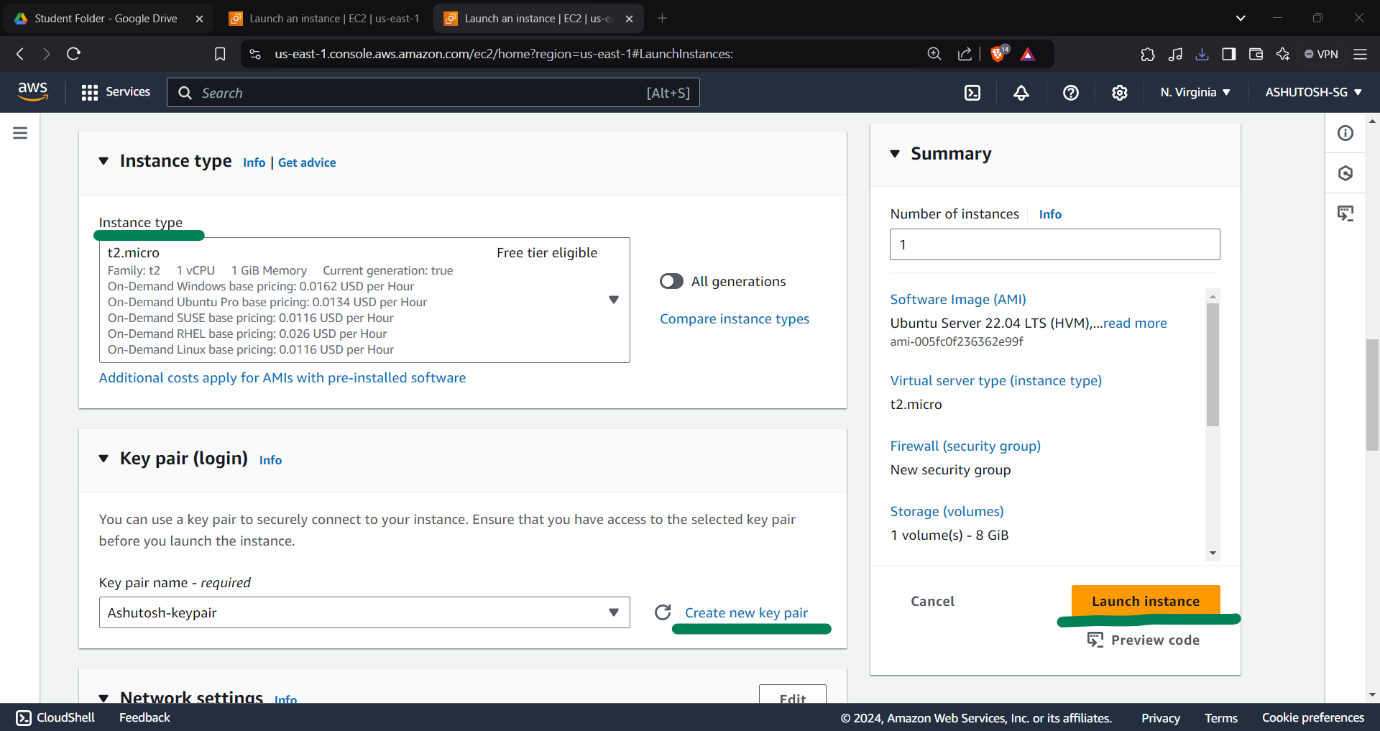
1. Create an Ubuntu EC2 instance and host a website on it which will display “Welcome to Cloud computing” message.

Also copy some files from your machine to this instance using Winscp

**Step 1: Launch an Ubuntu EC2 Instance**

1. Navigate to **EC2** service and click **Launch Instance**.



1. Choose **Ubuntu Server 22.04 LTS** (or the latest LTS version) under the **Amazon Machine Image (AMI)**.  
     
   
2. Select **t2.micro** instance type (eligible for the Free Tier) and click **Next**.
3. Configure the instance as needed and click **Review and Launch**.
4. On the **Key Pair** page, choose an existing key pair or create a new one (download the .pem file as it’s required to access your instance).
5. Click **Launch Instances** and wait until the instance status changes to “running.”  
     
   

**Step 2: Connect to Your EC2 Instance Using PuTTY**

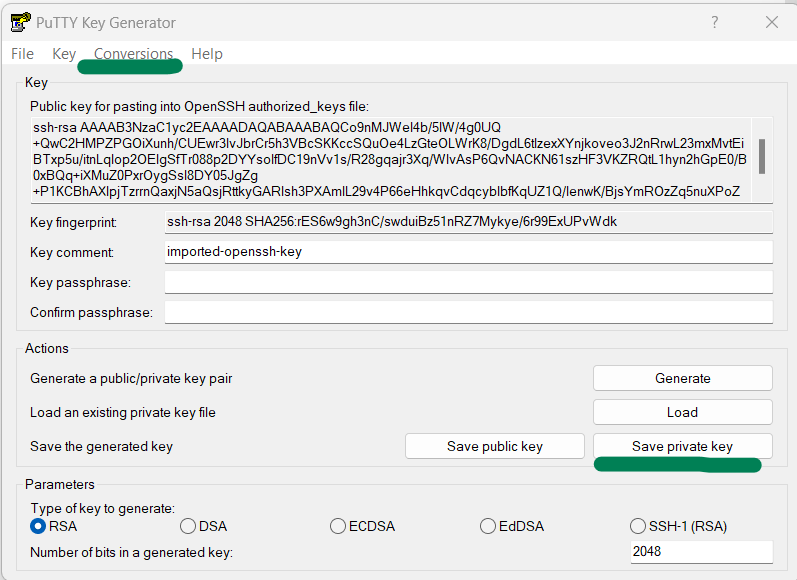
1. Since PuTTY doesn’t accept .pem & Pkt files directly, you’ll first need to convert it to a .ppk format:  
     
   **Convert the .pem Key to .ppk Using PuTTYgen**

Open **PuTTYgen** (part of the PuTTY installation package).

Click **Load** and select your .pem file.

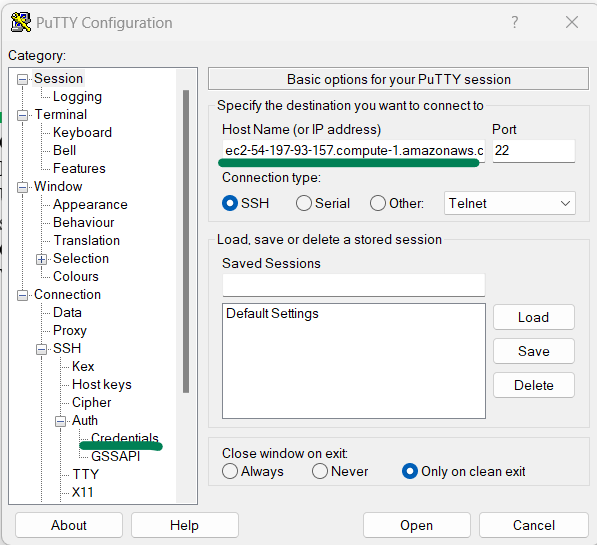
PuTTYgen will load and convert the file. Once it’s done, click **Save private key** (you may get a warning about saving without a passphrase; click **Yes** to proceed).

Save the converted file as a .ppk file.



**Connect to the Instance**

1. Open **PuTTY** and enter your **EC2 instance’s public DNS or IP** in the **Host Name (or IP address)** field.
2. Under **Connection > SSH > Auth**, browse and select the .ppk file you saved.
3. Go back to the **Session** tab and click **Open** to connect.
4. When prompted for the username, enter ubuntu.



**Step 3: Install Apache Web Server**  
  
sudo apt update  
sudo apt install apache2 -y  
sudo systemctl start apache2

sudo systemctl enable apache2

**Step 4: Create a Simple HTML Page**

sudo nano /var/www/html/index.html   
  
<!DOCTYPE html>

<html>

<head>

<title>Welcome Page</title>

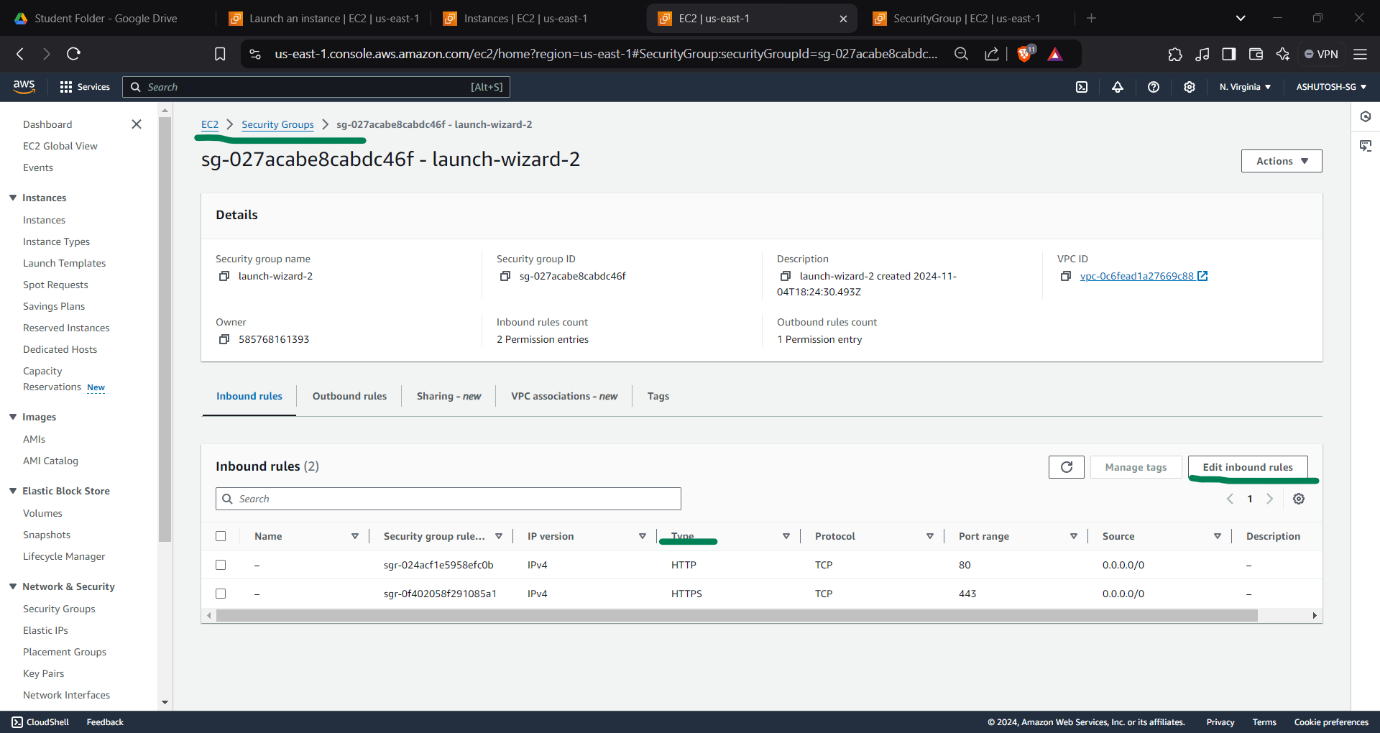
</head>

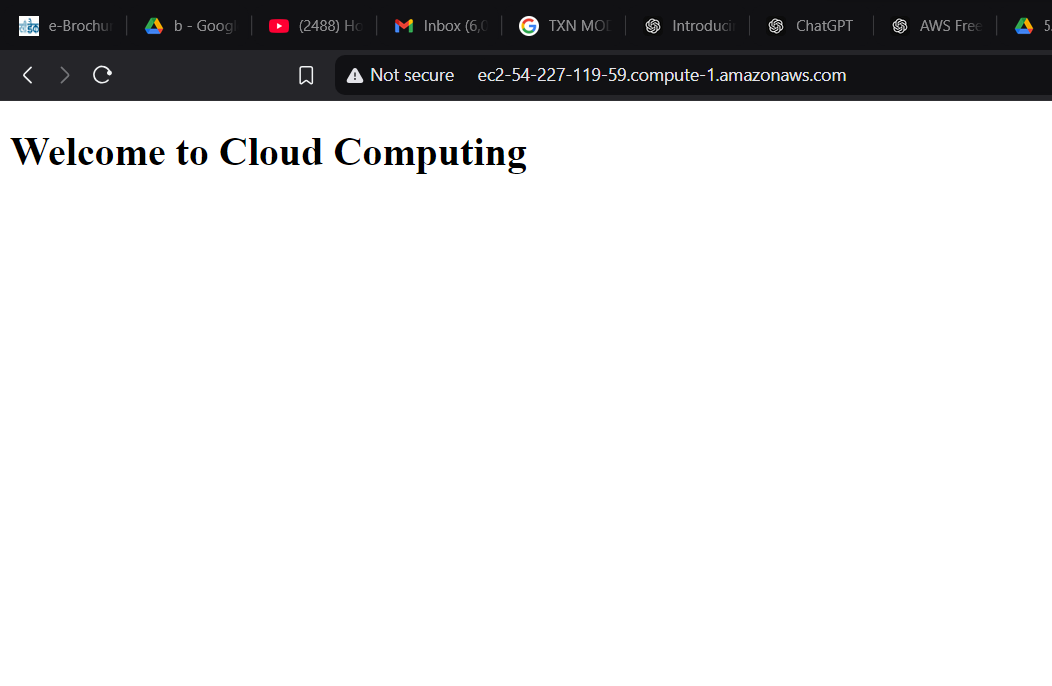
<body>

<h1>Welcome to Cloud Computing</h1>

</body>

</html>  
  
  
**Step 5: Configure Security Group for HTTP Access**

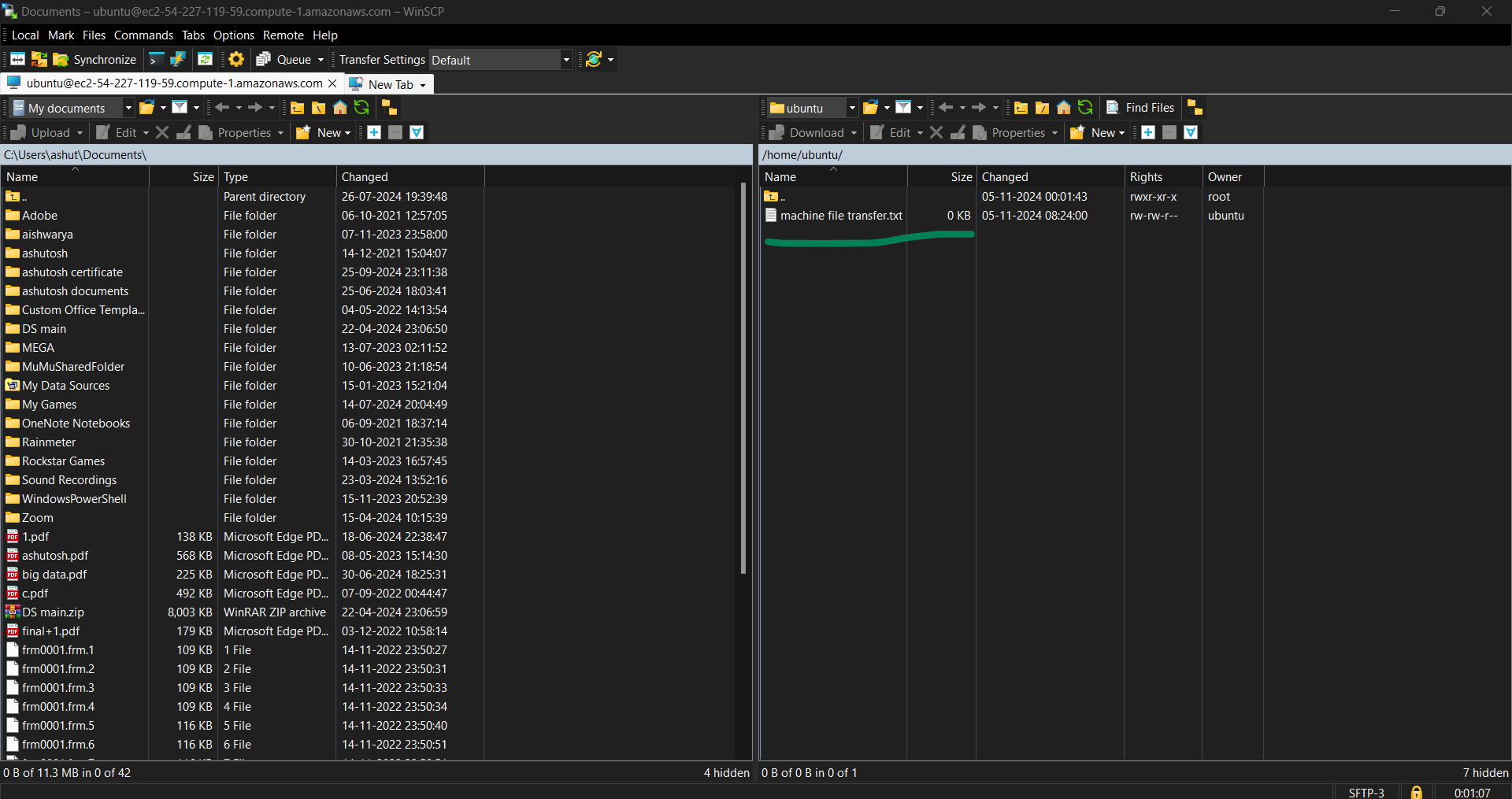
1. In the **EC2 Dashboard**, select your instance.
2. Under **Security**, click the **Security Group** link.
3. Edit inbound rules, adding:
   * **Type**: HTTP
   * **Protocol**: TCP
   * **Port**: 80
   * **Source**: Anywhere (0.0.0.0/0)
4. Save the rule  
     
     
   

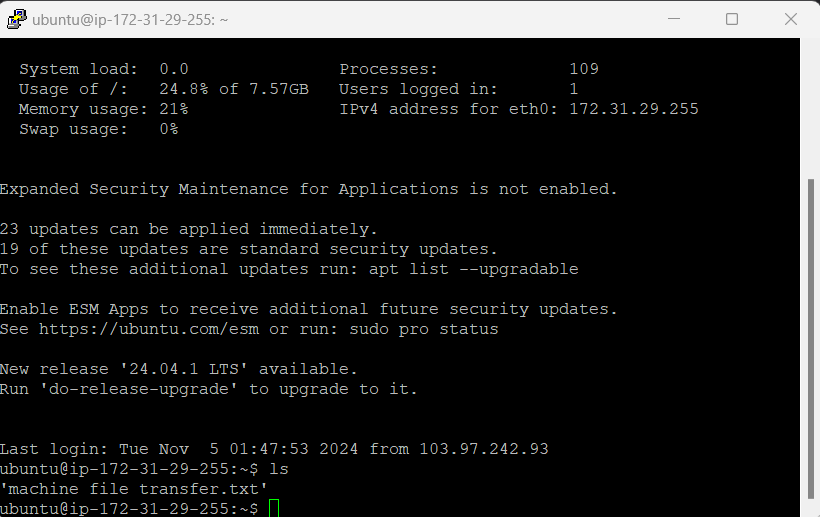
Open your instance’s public IP or DNS in a browser to see your message.  
  
  
**Step 7: Transfer Files with WinSCP**

1. Open **WinSCP** and create a new session.
2. Configure the session with:
   * **File Protocol**: SFTP
   * **Host Name**: Your instance’s public IP/DNS
   * **Port Number**: 22
   * **User Name**: ubuntu
   * **Private Key File**: Select your .ppk file.  
       
     **Configure the Private Key File**:
   * Click on **Advanced…** in the bottom left corner of the WinSCP Login window.
   * In the **Advanced Site Settings** dialog, go to **SSH** > **Authentication** on the left sidebar.
   * Under **Authentication parameters**, find **Private key file** and click **Browse…**.
   * Navigate to the location where you saved your **.ppk** file (the converted key from your .pem file).
   * Select the **.ppk** file and click **Open**.
   *  **Save and Connect**:
   * Click **OK** to close the Advanced Site Settings.
   * Optionally, click **Save** on the main WinSCP Login screen to save your settings for future connections.
   * Finally, click **Login** to connect to your EC2 instance
3. Click **Login** and **Yes** if prompted about the host key.

**Verify Security Group Inbound Rules**

Ensure that your EC2 instance’s **Security Group** allows inbound SSH traffic:

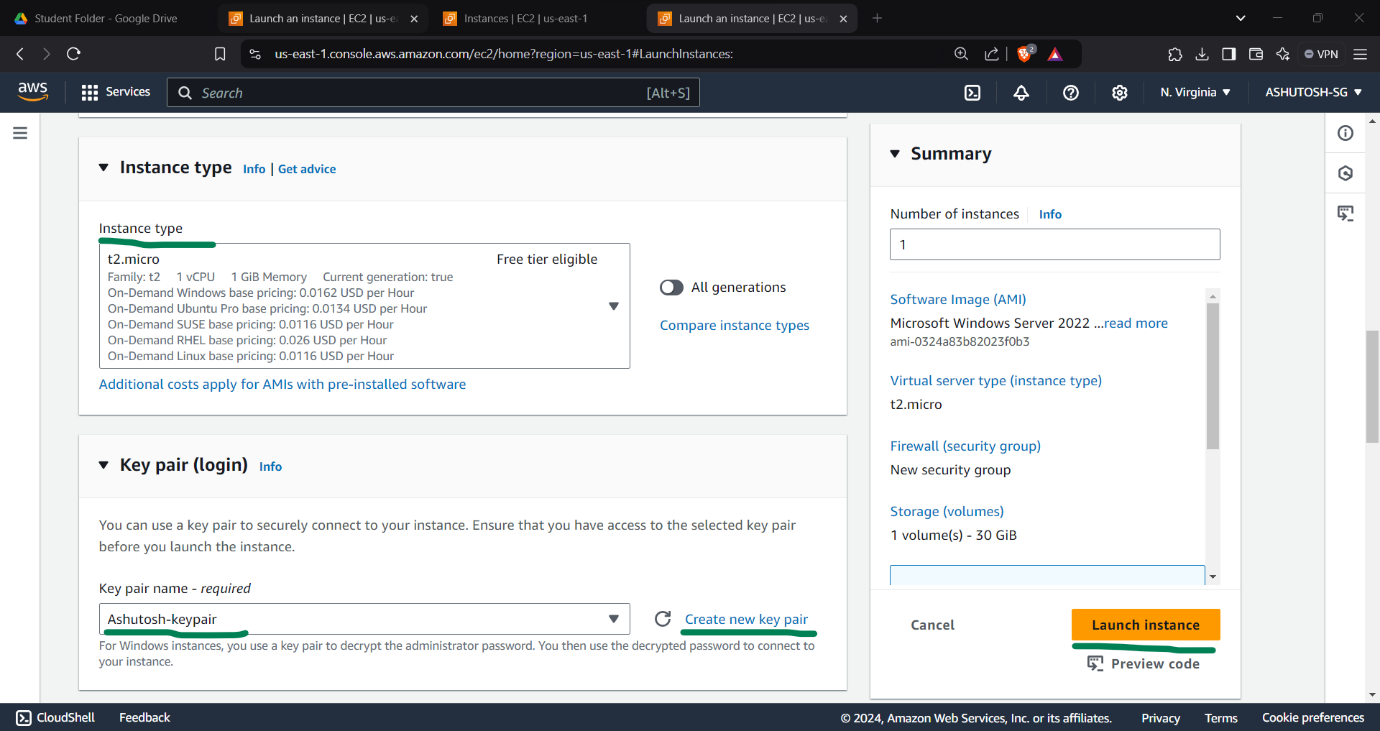
* Go to the **EC2 Dashboard** in AWS, select **Instances**, and click on your instance.
* Under **Description**, locate the **Security groups** and click the Security Group ID.
* In **Inbound rules**, make sure there’s an entry for **SSH** with **Port 22** open to **My IP** or **Anywhere (0.0.0.0/0)** (for unrestricted access).
* Save the changes if you added or modified the rule.  
    
  

  
  
  
Q2-----------------------------------------------------------------------------------------  
Create a Windows EC2 instance and host a website on it which will display “ welcome to HPCSA…. You name!!!” Message. Copy some files from local machine to Windows server using copy and paste.  
  
**Step 1: Launch a Windows EC2 Instance**

1. **Log in to the AWS Console**:
   * Go to the **AWS Management Console** and log in with your credentials.
2. **Navigate to EC2**:
   * In the AWS Management Console, search for **EC2** and select it from the services.
3. **Launch an Instance**:
   * Click **Launch Instance**.
   * Choose **Microsoft Windows Server** as the AMI (Amazon Machine Image). You can select **Windows Server 2019** or **Windows Server 2022**.
   * Select an **Instance Type** like t2.micro (free tier eligible).
4. **Key Pair Configuration**:
   * Choose an existing key pair or create a new one to securely access the instance. Make sure to download the .pem file if you create a new key pair, as it will be required later.
5. **Configure Security Group**:
   * Under **Security Group settings**, add rules to allow **RDP (Remote Desktop Protocol)** on port **anywhere** Add a rule for **HTTP** on port **80** to allow web traffic, so the website is accessible.

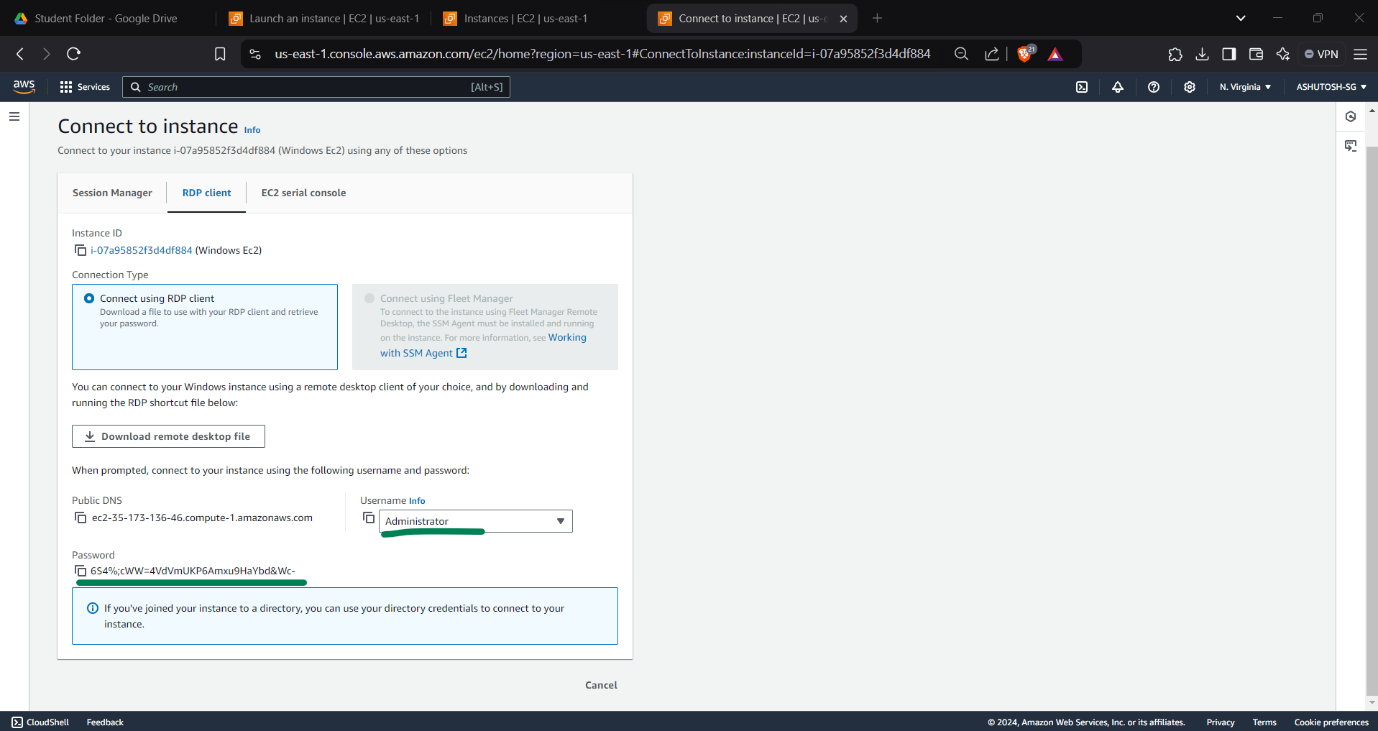
6 **Launch the Instance**:

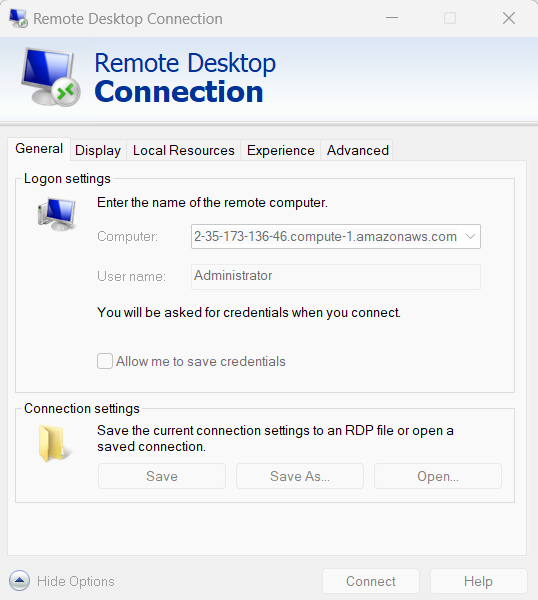
* + Review the settings, then click **Launch Instance**.
  + Wait until the instance status shows as **running** (this may take a few minutes)



**Step 2: Connect to the Windows EC2 Instance**

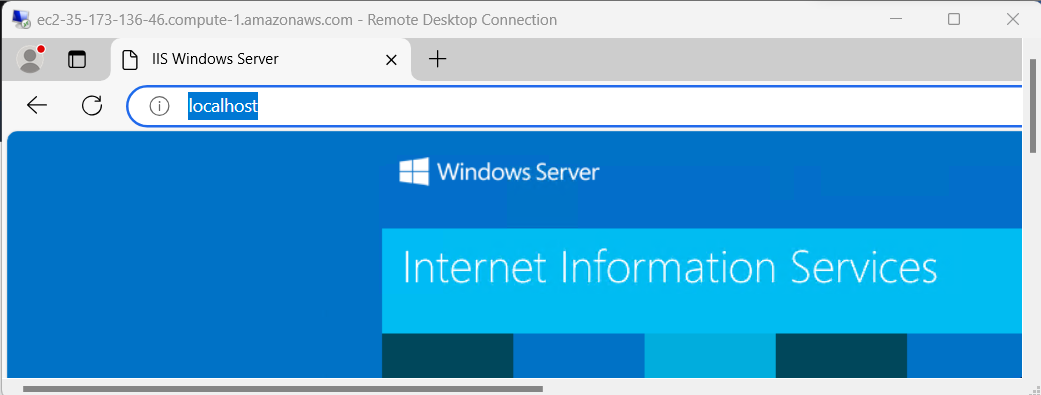
1. **Get the RDP Password**:
   * In the EC2 Dashboard, select your instance, then click **Connect** > **RDP Client**.
   * Click on **Get Password**. Upload your .pem file and click **Decrypt Password** to get the instance password.



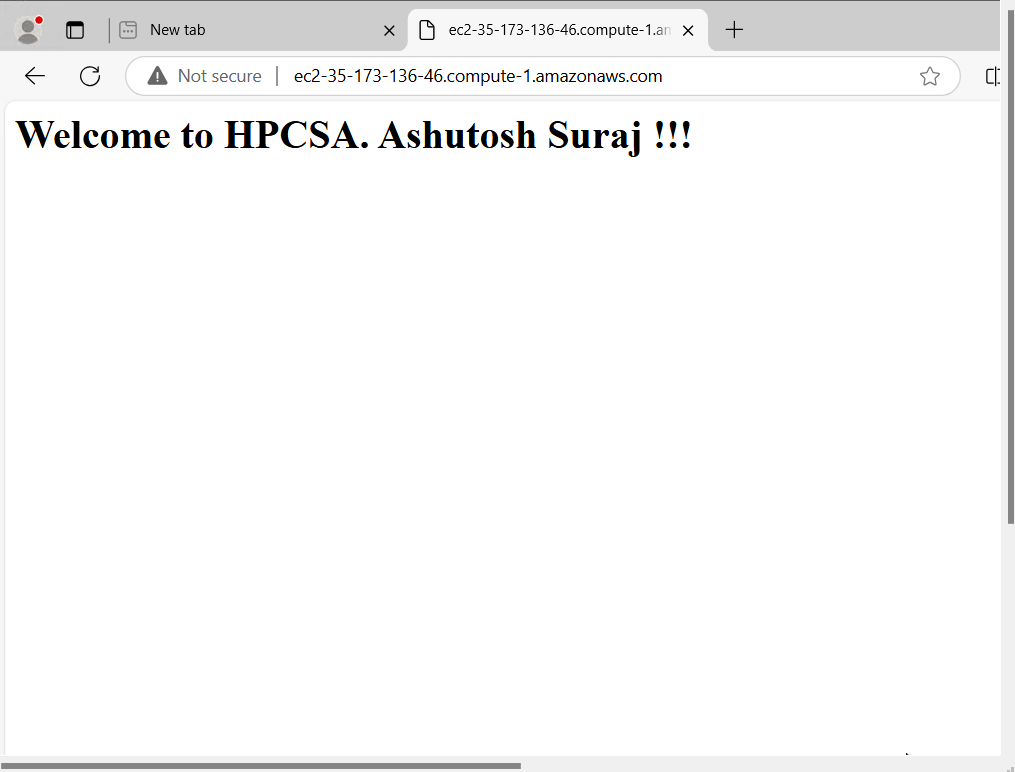
1. **Connect Using RDP**:
   * Open **Remote Desktop Connection** on your computer.
   * Enter the **Public IP** or **Public DNS** of your EC2 instance.
   * Use the username (usually Administrator) and the decrypted password.
   * 6S4%;cWW=4VdVmUKP6Amxu9HaYbd&Wc-  
     

**Step 3: Install IIS (Web Server) on the Windows Instance**

**dism /online /enable-feature /featurename:IIS-WebServer /all**

This command uses **DISM (Deployment Image Servicing and Management)** to enable the IIS feature.  
check   
<http://localhost>  
  


If IIS is not already running, you can start the IIS  
  
net start w3svc -------------------------  
This will start the **World Wide Web Publishing Service**, which is responsible for handling HTTP requests.

step 4  
  
cd C:\inetpub\wwwroot  
  
echo ^<html^>^<body^>^<h1^>Welcome to HPCSA… [Ashutosh Suraj]!!!^</h1^>^</body^>^</html^> > index.html  
  
  


**Step 5: Copy Files from Local Machine to Windows Server**

1. **Enable Clipboard Copy/Paste in RDP**:
   * Before connecting, open **Remote Desktop Connection** on your local computer.
   * Click on **Show Options** > **Local Resources** tab.
   * Under **Local devices and resources**, make sure **Clipboard** is checked. This enables copy-pasting between your local machine and the EC2 instance.  
       
       
       
     **file transfered**