

Project 5: Deploy a Custom Apache Web Server on Amazon EC2

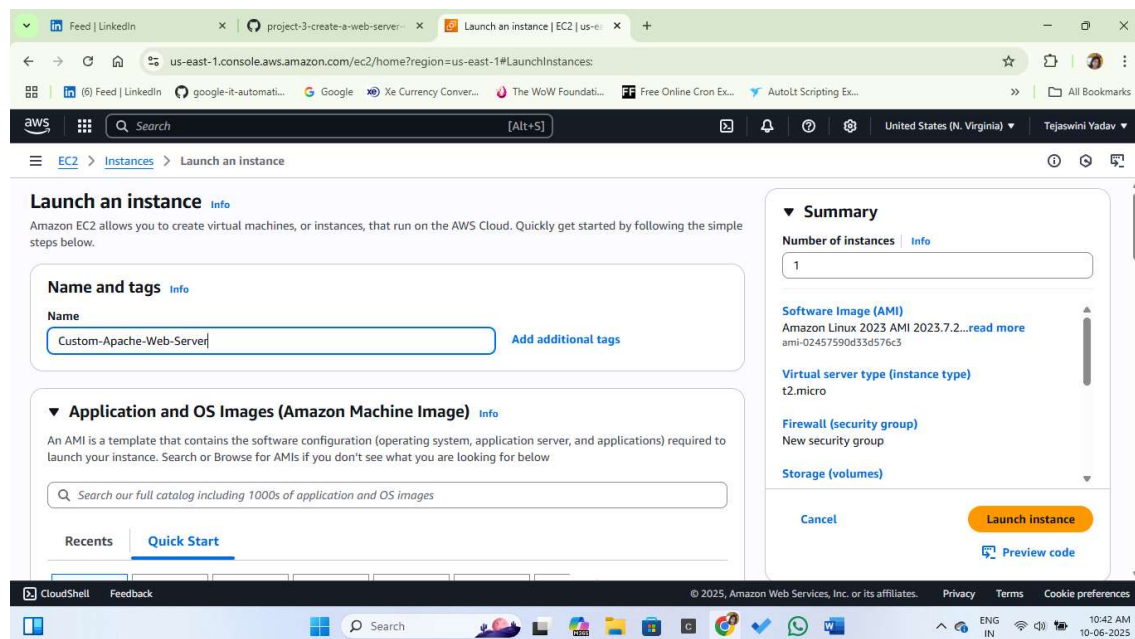
Description:

In this project, you will launch an **Amazon EC2 instance** using **Amazon Linux 2023** and configure it as a web server with **Apache (httpd)**. You will create a **customised webpage** with a visually appealing design. The setup will be automated using **User Data**, ensuring that the web server and webpage are configured automatically upon instance start-up.

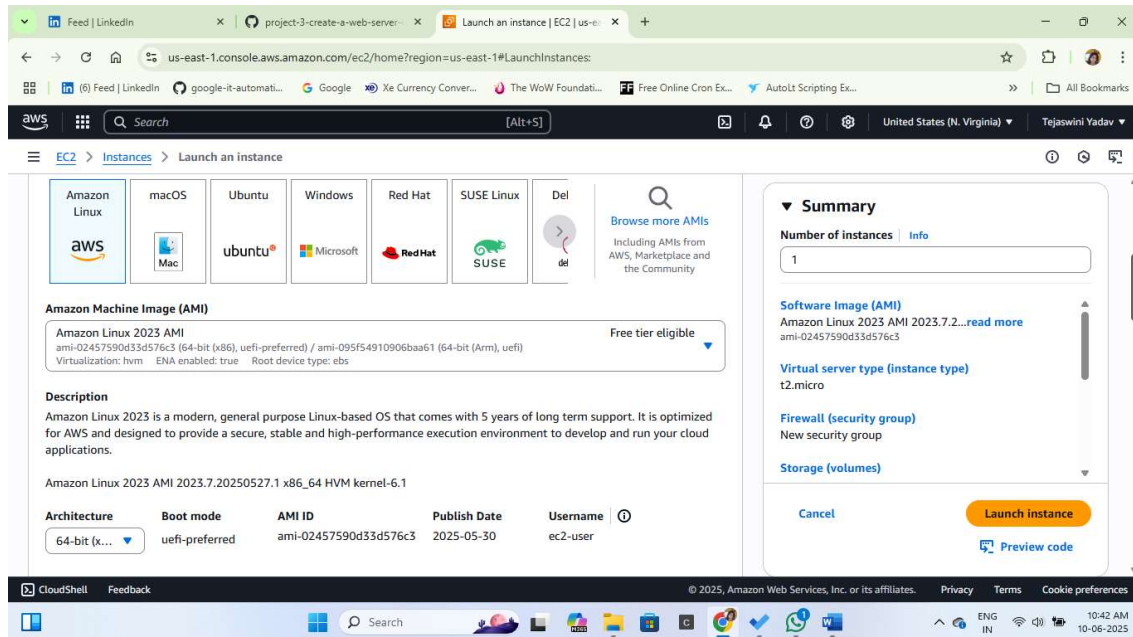
Steps to Complete the Project

Step 1: Launch an Amazon EC2 Instance

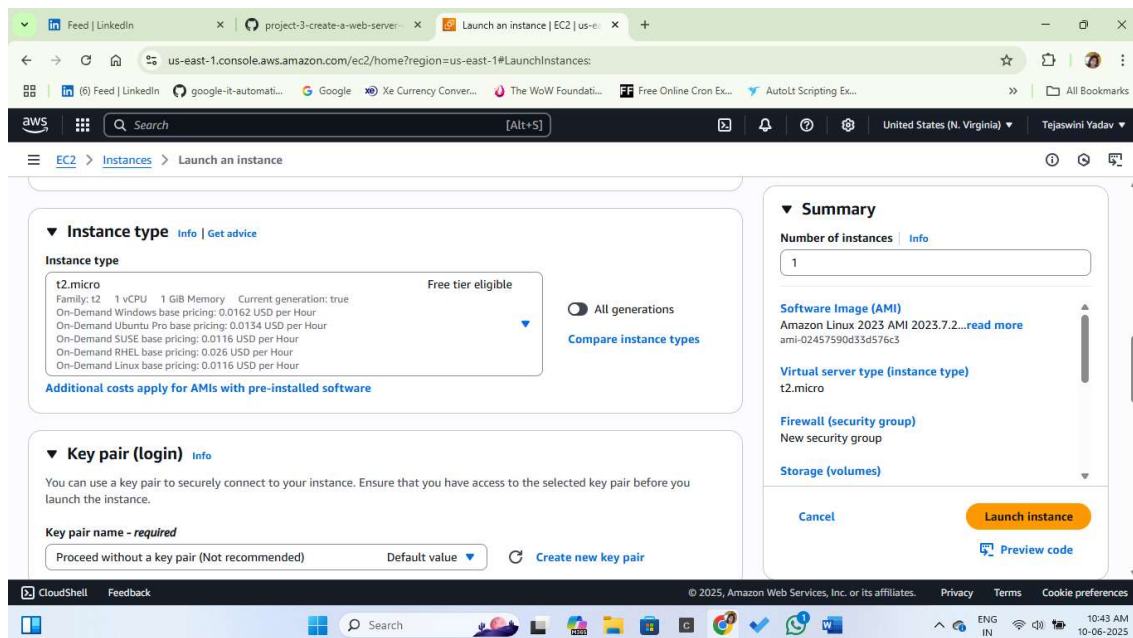
1. Sign in to your **AWS Management Console**.
2. Navigate to **EC2 Dashboard**.
3. Click on **Launch Instance**.
4. Configure the following:
 - **Name:** Custom-Apache-Web-Server



- **AMI: Amazon Linux 2023**

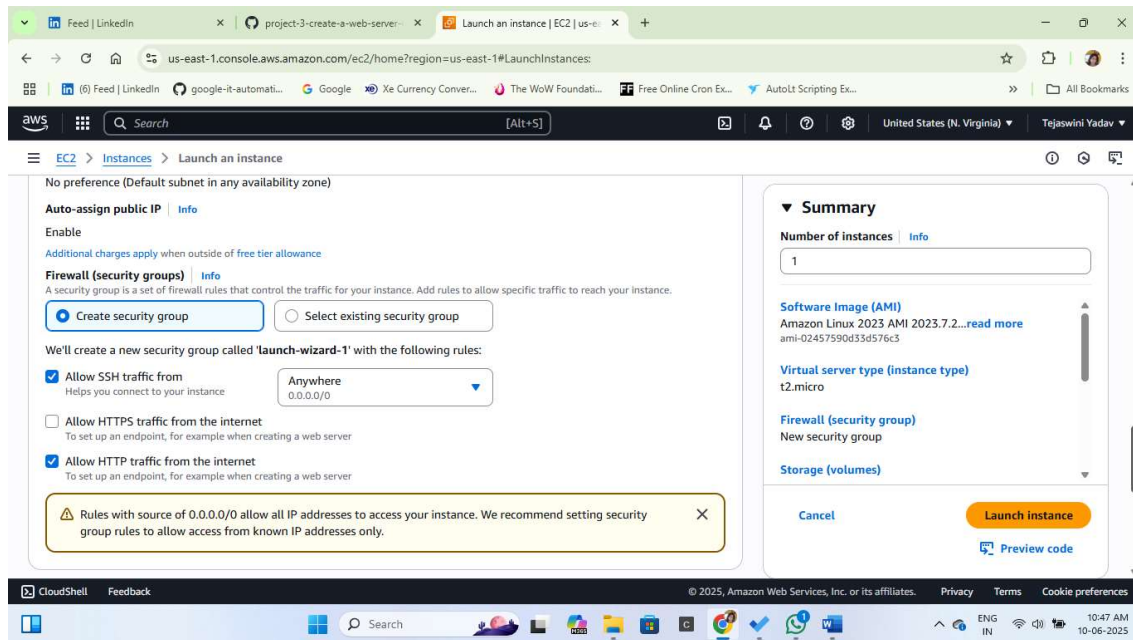


- **Instance Type:** t2.micro (Free Tier eligible)
- **Key Pair:** Proceed without a key pair



- **Network Settings:**

- Ensure **Auto-assign Public IP** is enabled
- **Create a new security group** with the following rules:
 - **Allow HTTP (80) from Anywhere (0.0.0.0/0, :::/0)**
 - **Allow SSH (22) from your IP**



- **User Data:** Copy and paste the script below (see next section).

Step 2: Configure User Data for Automatic Setup

To automate the installation of Apache and deploy a custom webpage, add the following script to **User Data** during EC2 instance launch:

```
#!/bin/bash
```

```
# Update package list and install Apache
```

```
dnf update -y
```

```
dnf install -y httpd
```

```
# Start and enable Apache service
```

```
systemctl start httpd
```

```
systemctl enable httpd
```

```
# Set permissions for Apache root directory
```

```
chown -R ec2-user:ec2-user /var/www/html
```

```
# Create a custom index.html page
```

```
cat <<EOF > /var/www/html/index.html
```

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
  <meta charset="UTF-8">
```

```
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
  <title>Welcome to My Custom Apache Server</title>
```

```
  <style>
```

```
    body {
```

```
      font-family: Arial, sans-serif;
```

```
      background-color: #f4f4f4;
```

```
      text-align: center;
```

```
      padding: 50px;
```

```
    }
```

```
    .container {
```

```
      background: white;
```

```
      padding: 20px;
```

```
      border-radius: 10px;
```

```
      box-shadow: 0px 0px 10px rgba(0, 0, 0, 0.1);
```

```
      display: inline-block;
```

```
    }
```

```
    h1 {
```

```
      color: #333;
```

```
    }
```

```
    p {
```

```
      color: #666;
```

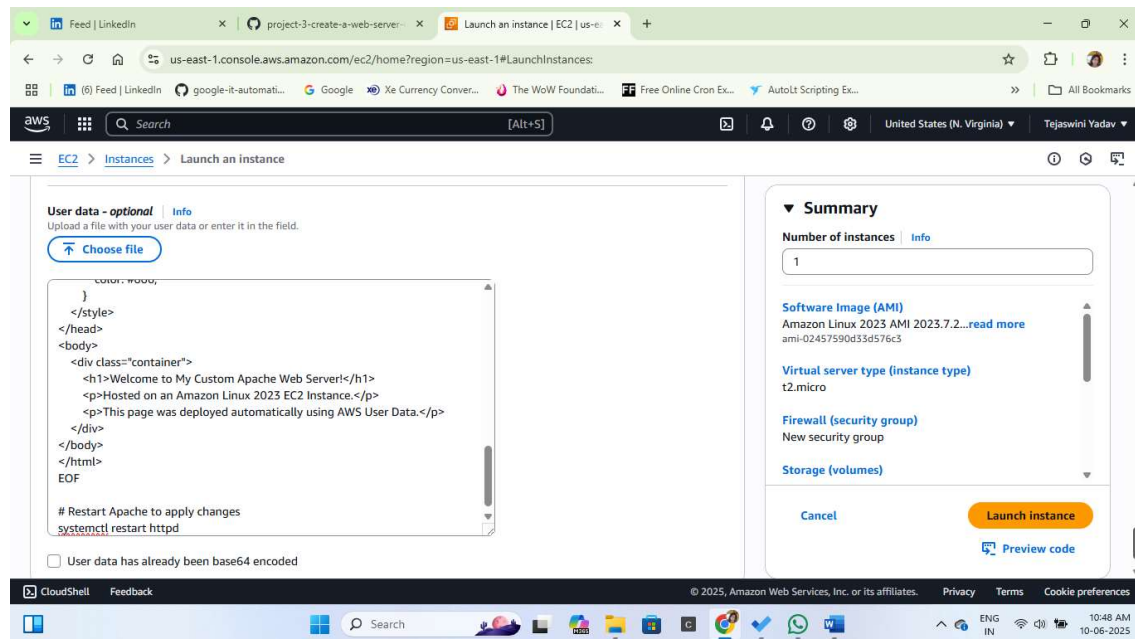
```

    }
</style>
</head>
<body>
    <div class="container">
        <h1>Welcome to My Custom Apache Web Server!</h1>
        <p>Hosted on an Amazon Linux 2023 EC2 Instance.</p>
        <p>This page was deployed automatically using AWS User Data.</p>
    </div>
</body>
</html>
EOF

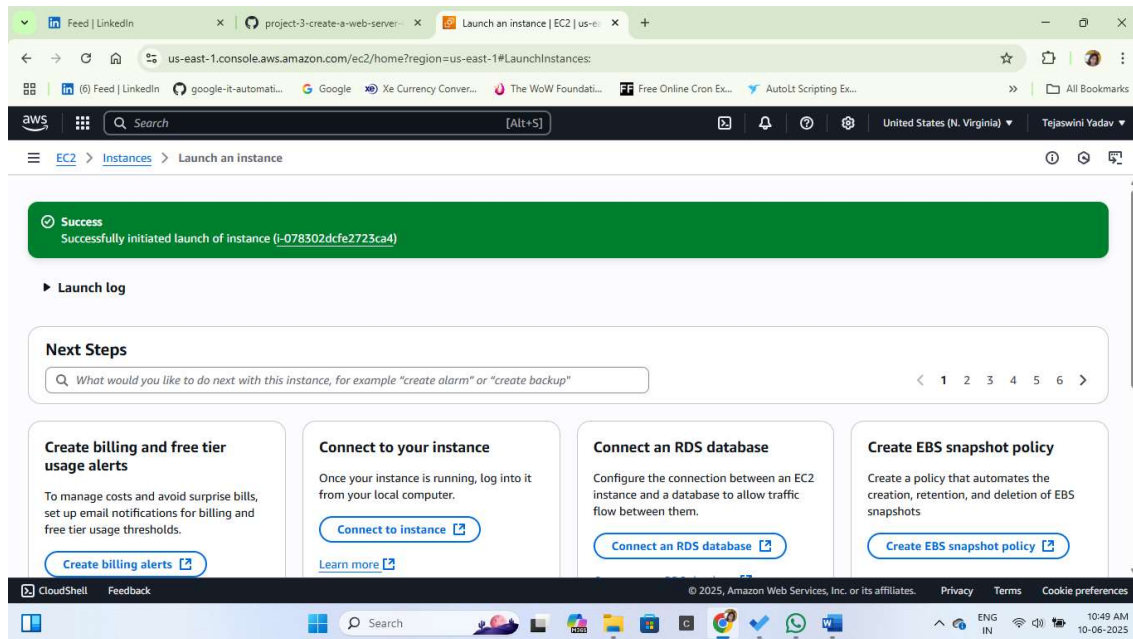
```

Restart Apache to apply changes

systemctl restart httpd



2. Click **Launch Instance**.



Output:

