Lesson 03 Demo 07

Configuring an Application Load Balancer

Objective: To demonstrate the process of setting up and testing an Application Load Balancer in AWS

Tools required: AWS Management Console, AWS EC2, and web browser

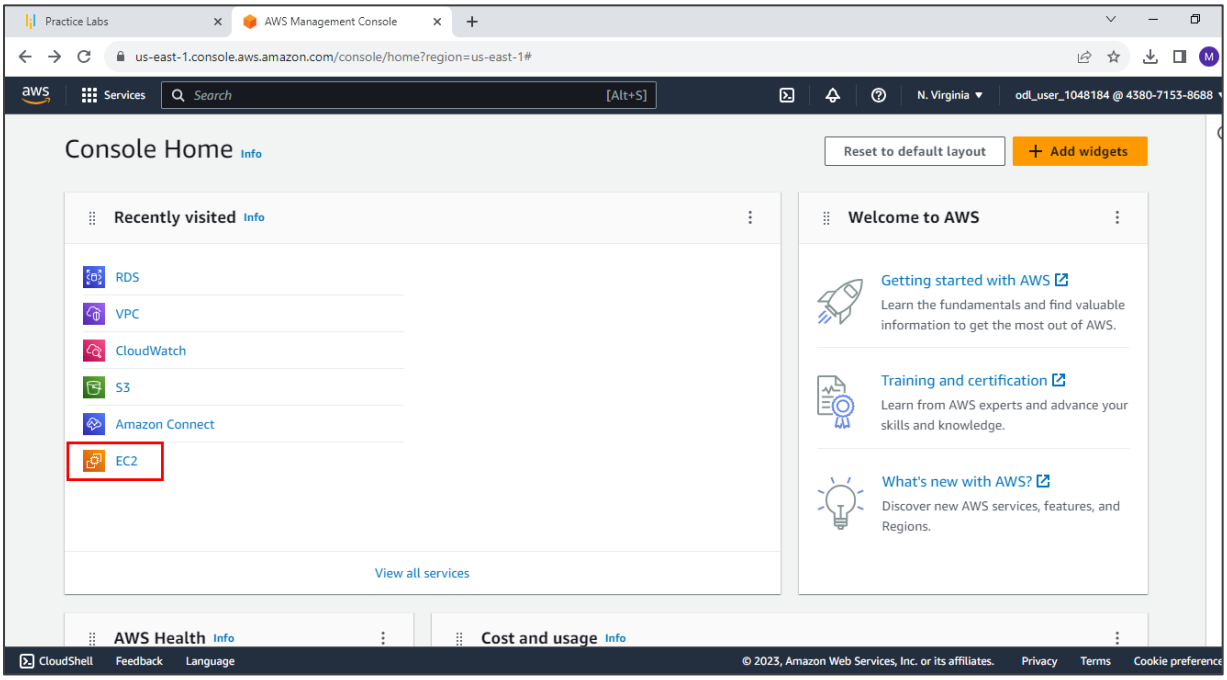
Prerequisites: None

Steps to be followed:

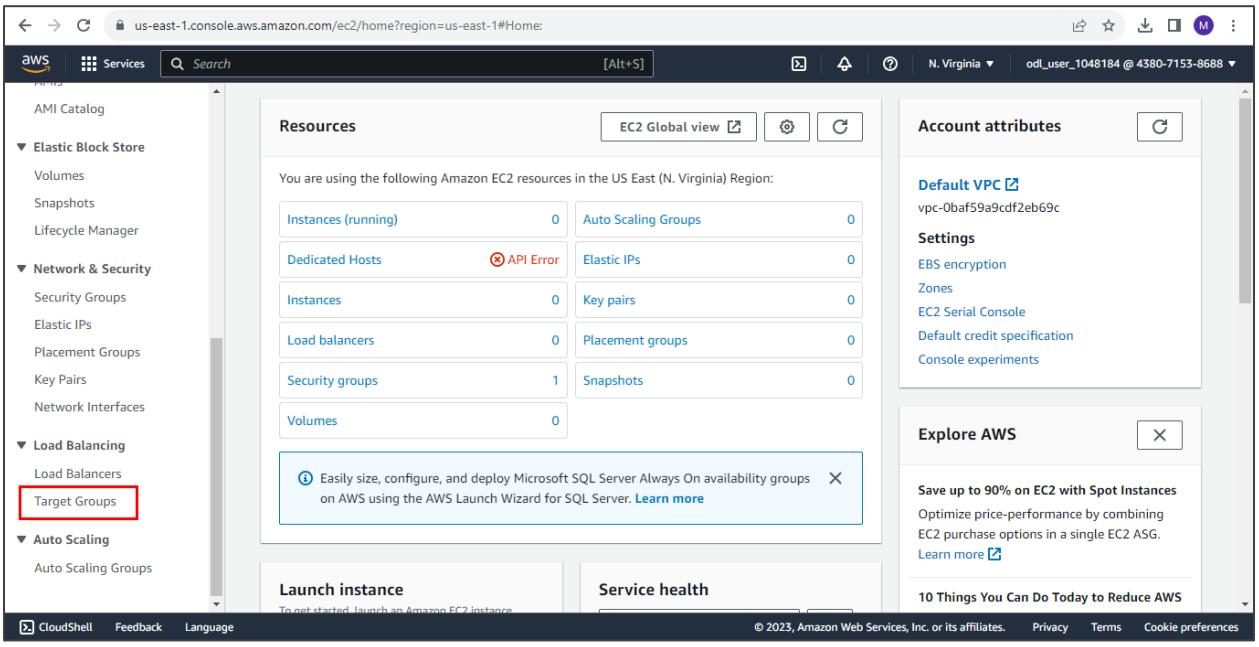
1. Create a target group
2. Launch EC2 instances
3. Configure the target group
4. Create a Load Balancer
5. Test the Load Balancer

Step 1: Create a target group

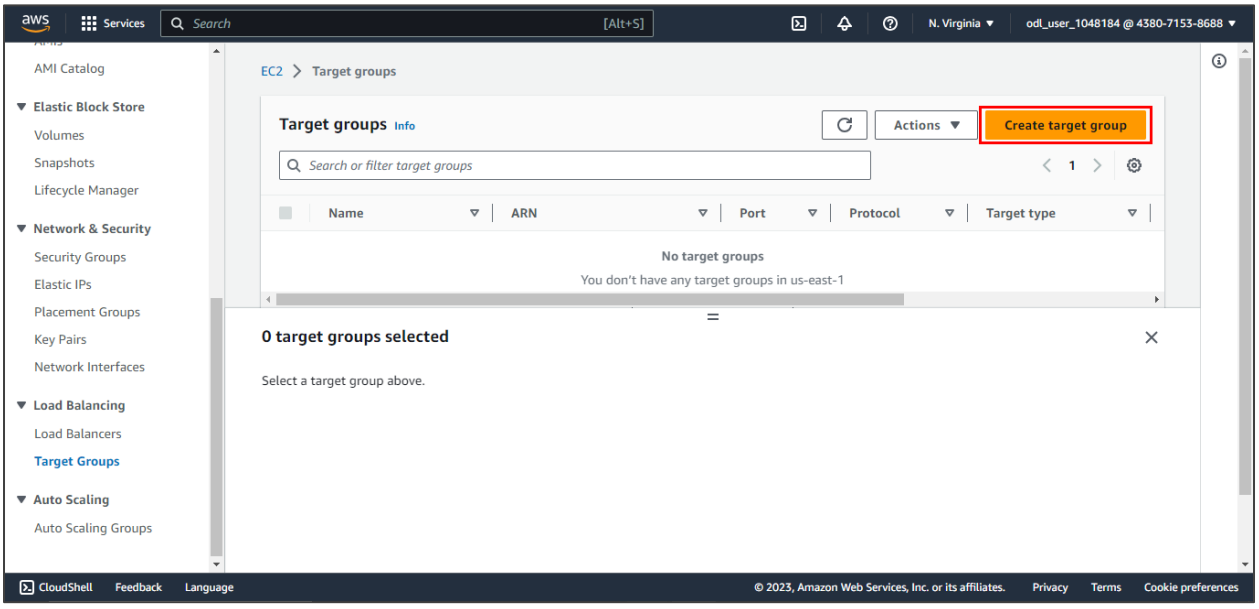
1.1 Log in to your AWS account, and open the Amazon **EC2** console



1.2 Navigate to the **Load Balancing** section and click on **Target Groups**

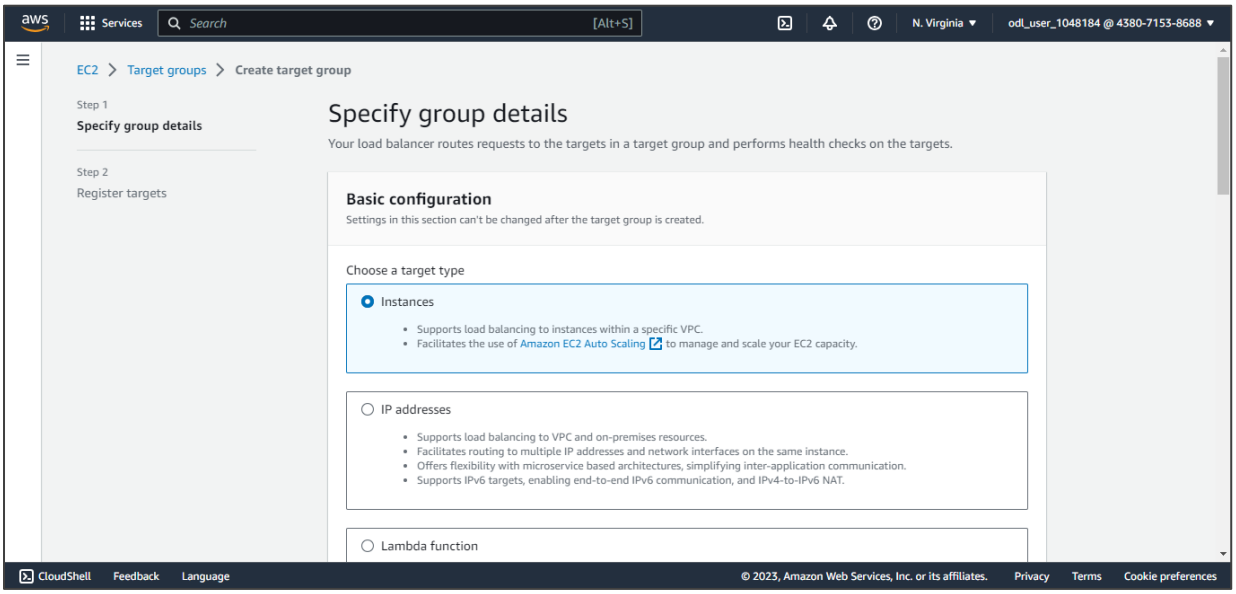


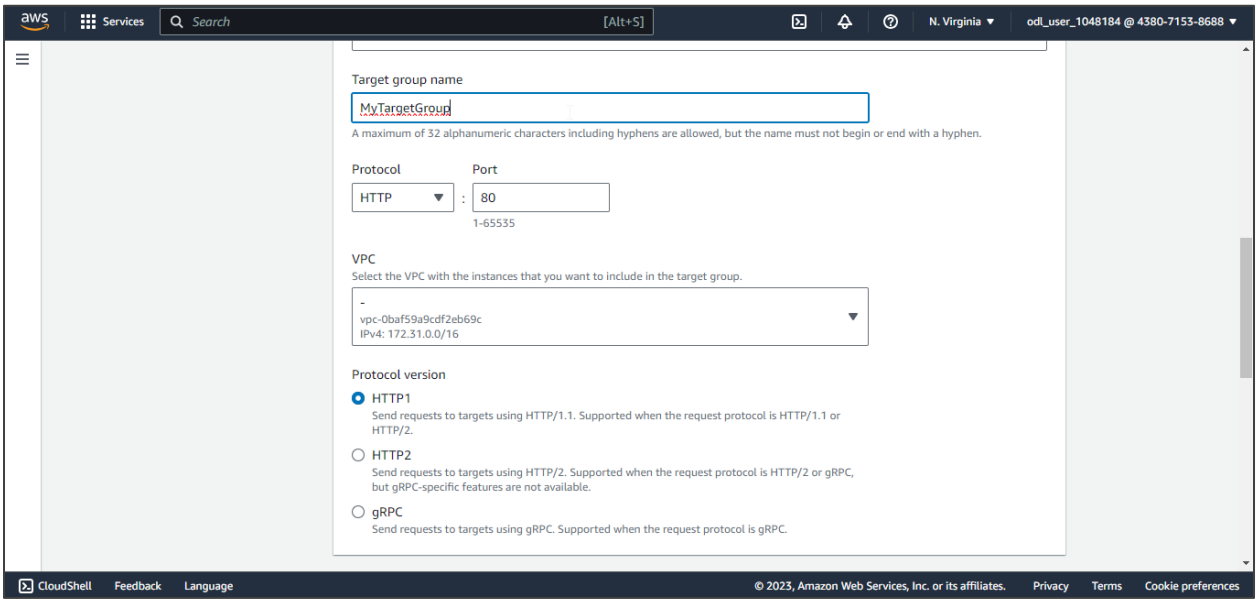
1.3 Click on **Create target group**



1.4 In the **Basic configuration** section:

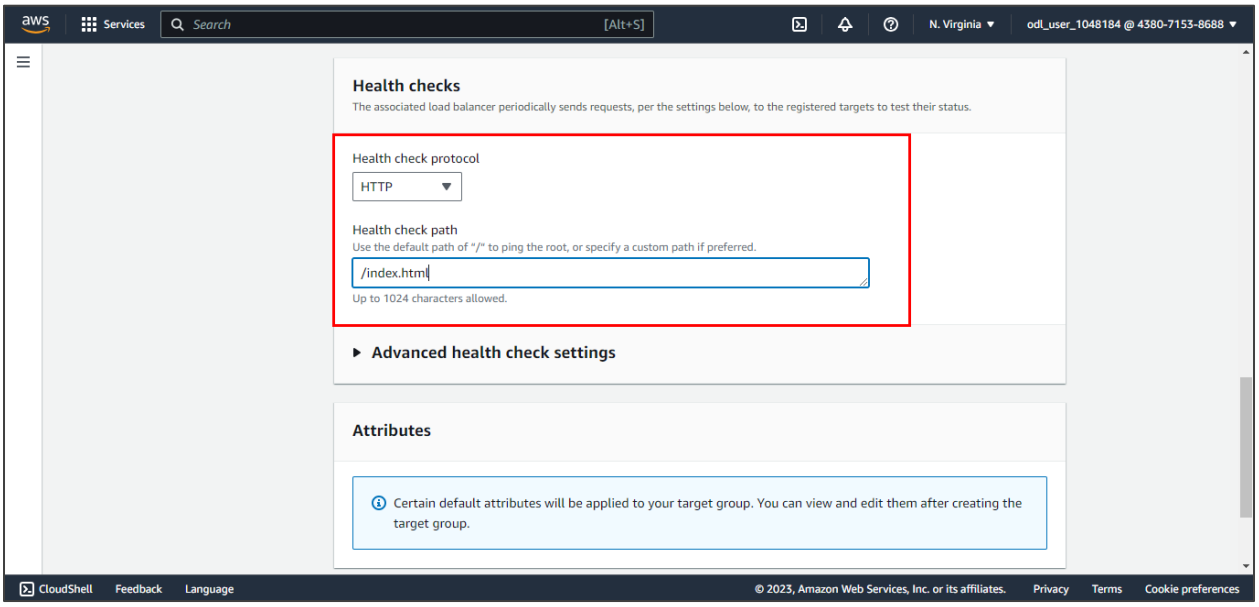
- Choose **Instances** for the target type
- Enter a name for the target group such as **MyTargetGroup**



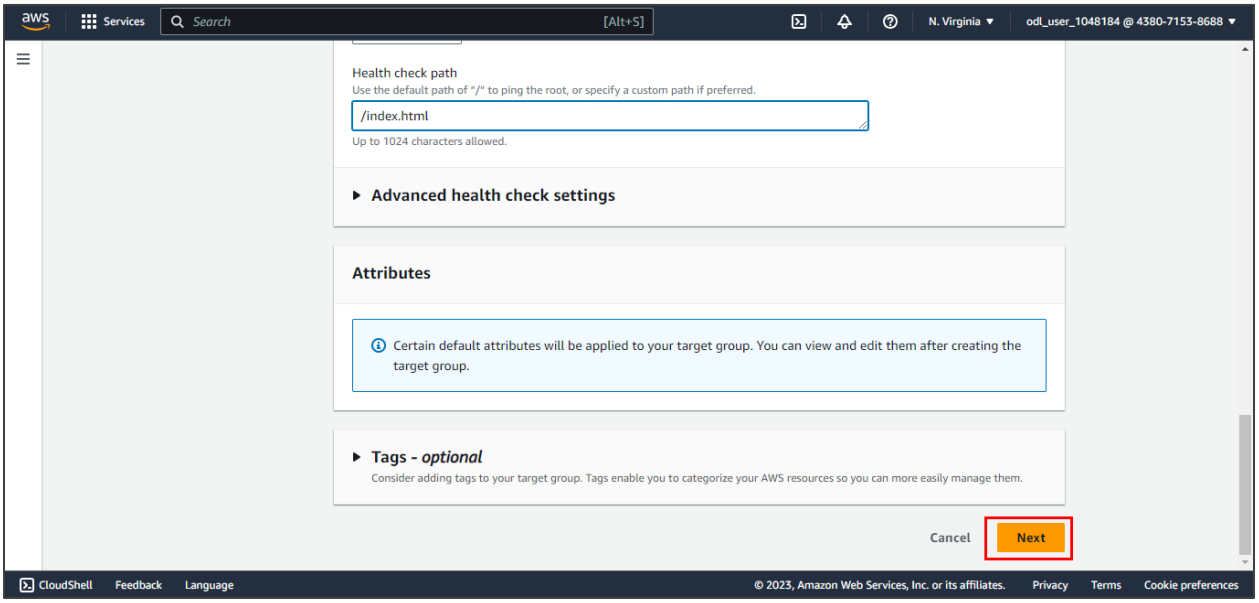


1.5 In the **Health checks** section:

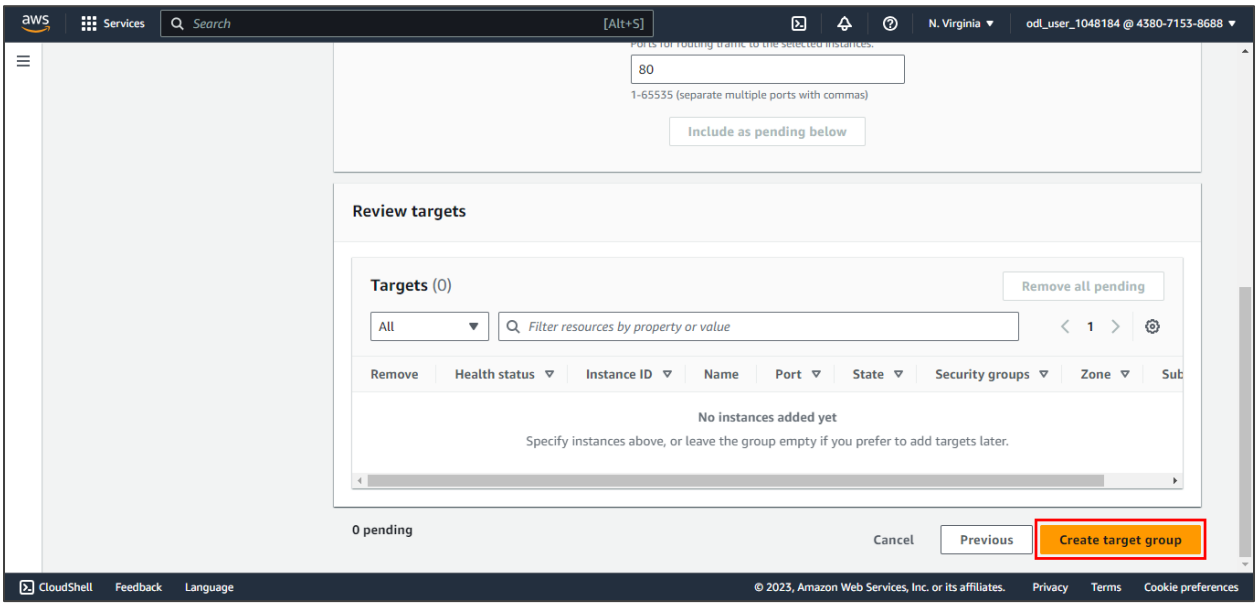
- Set the protocol to **HTTP**
- Set the path to **/index.html**

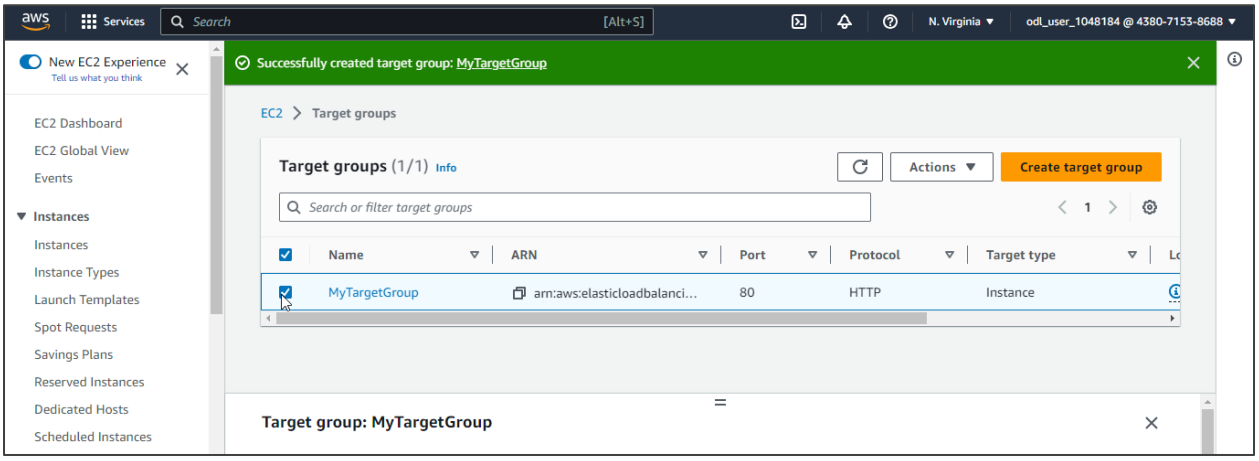


1.6 Click **Next**



1.7 Review the configurations and click **Create target group**

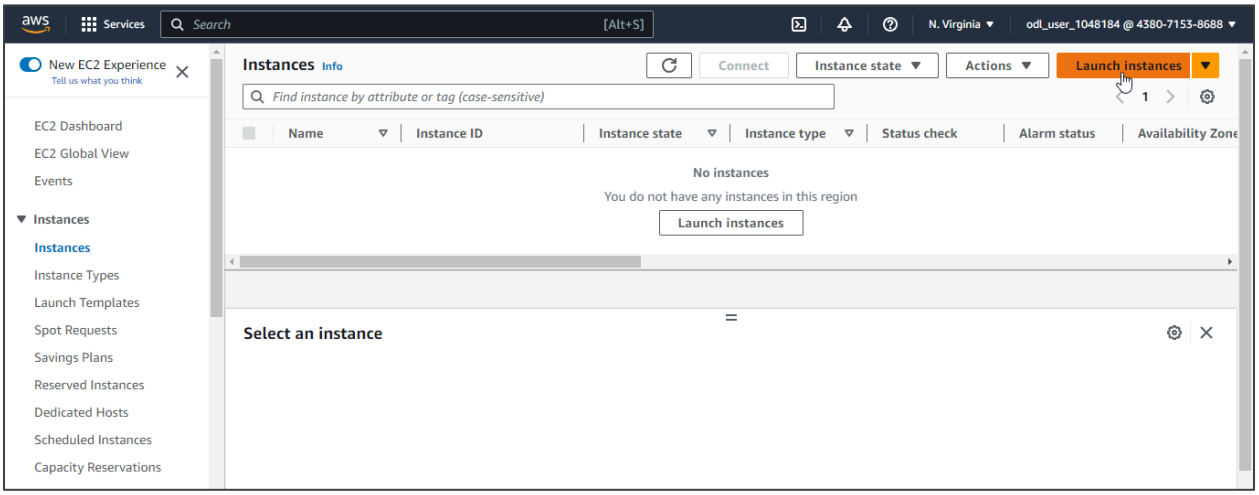




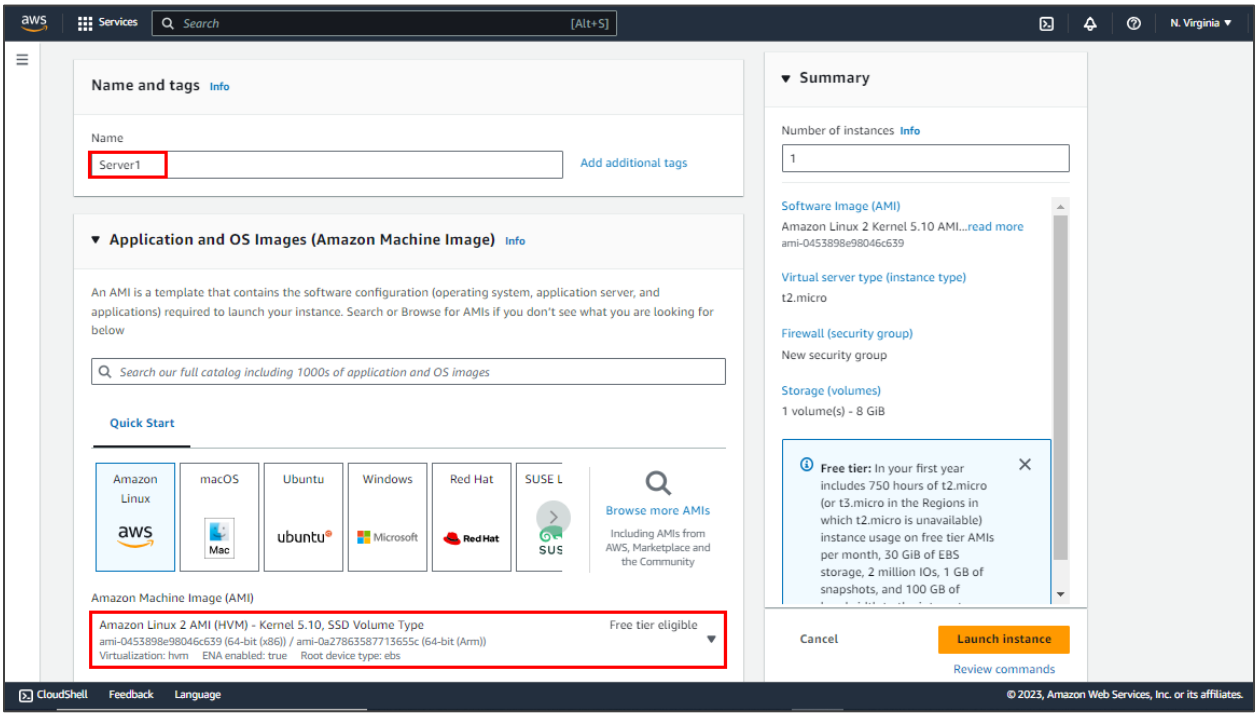
The target group has been successfully created.

Step 2: Launch EC2 instances

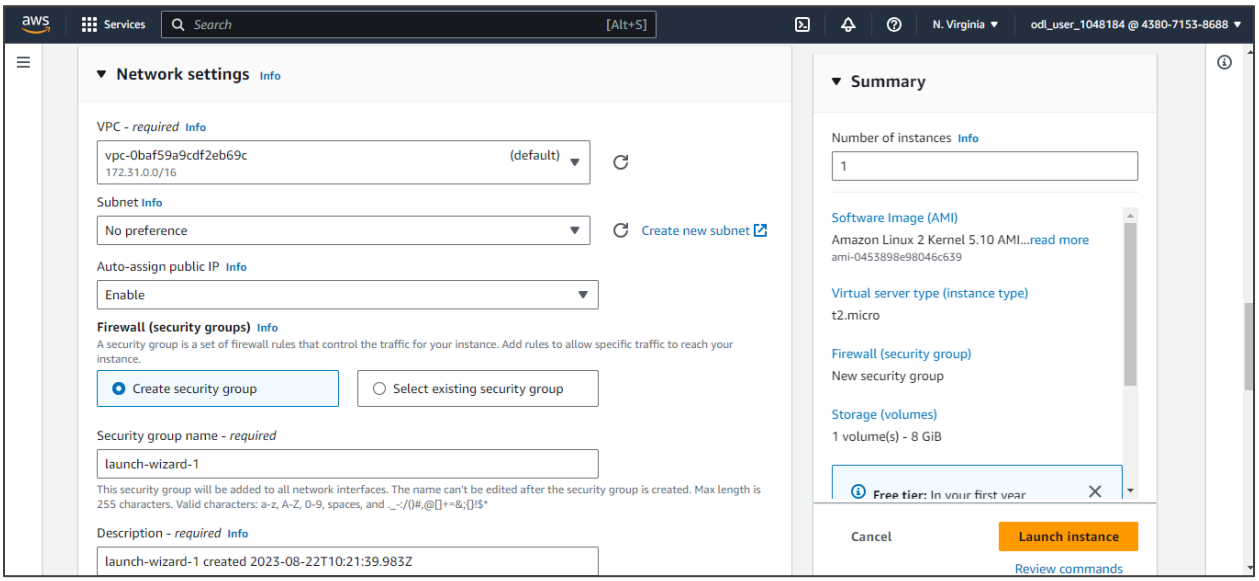
2.1 Navigate to the **Instances** section, and click on **Launch instances**

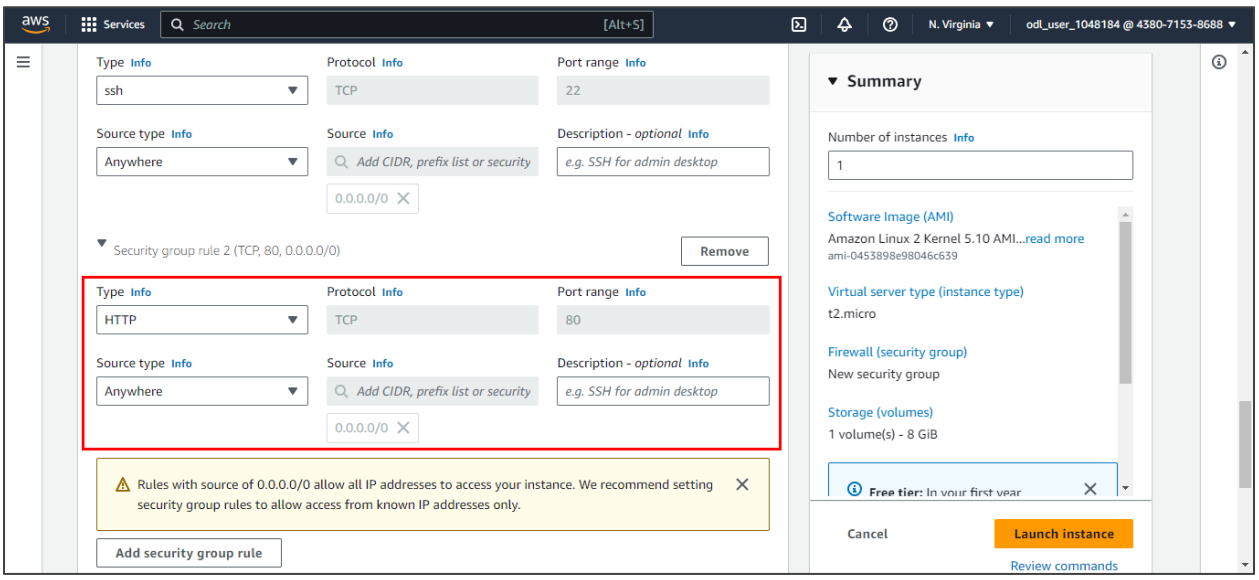


2.2 Provide a name for the instance, and choose an appropriate AMI (**Amazon Linux 2**)



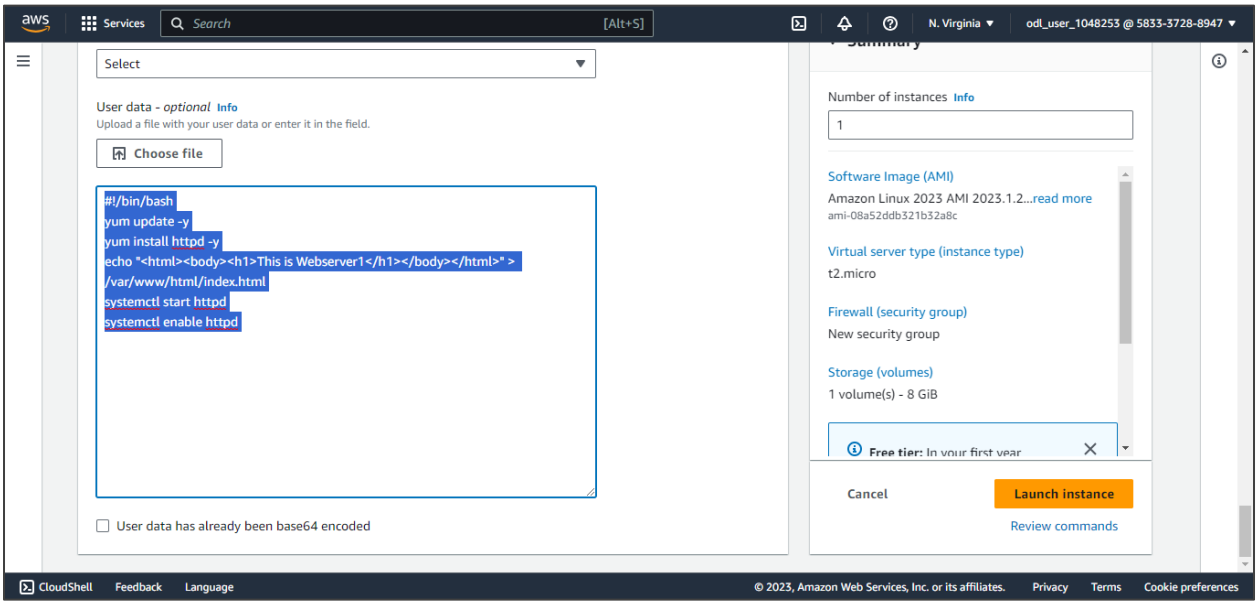
2.3 Configure instance details such as instance type, subnet, and security group



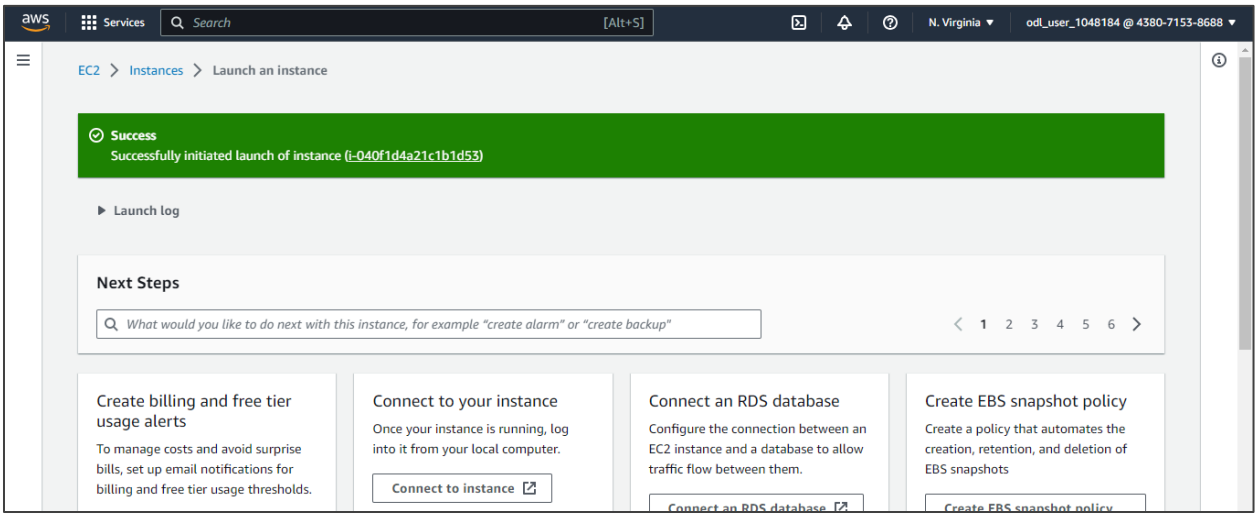


2.4 Under **Advanced Details**, enter the following user data script:

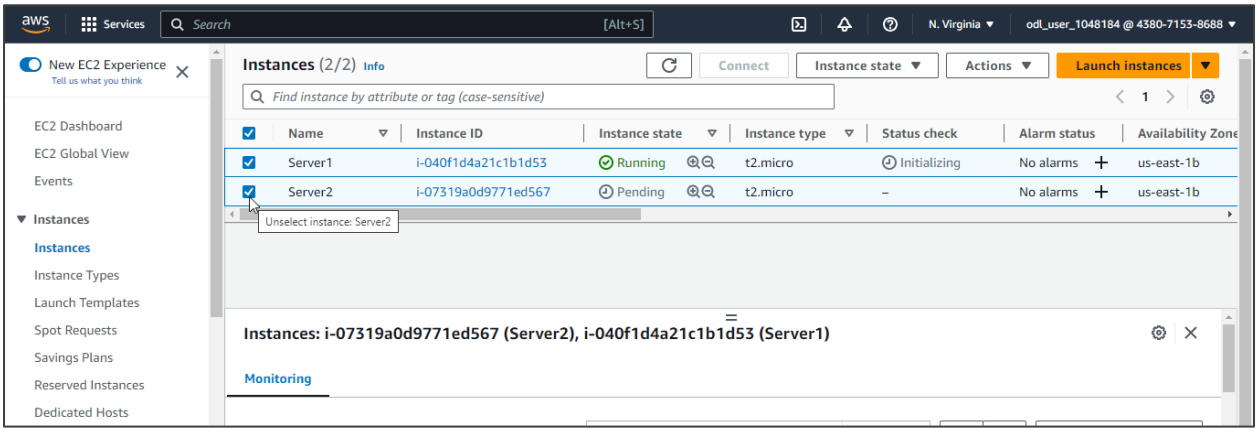
```
#!/bin/bash
yum update -y
yum install httpd -y
echo "<html><body><h1>This is Webserver1</h1></body></html>" >
/var/www/html/index.html
systemctl start httpd
systemctl enable httpd
```



2.5 Complete the instance launch process by choosing a key pair, reviewing, and launching the instance



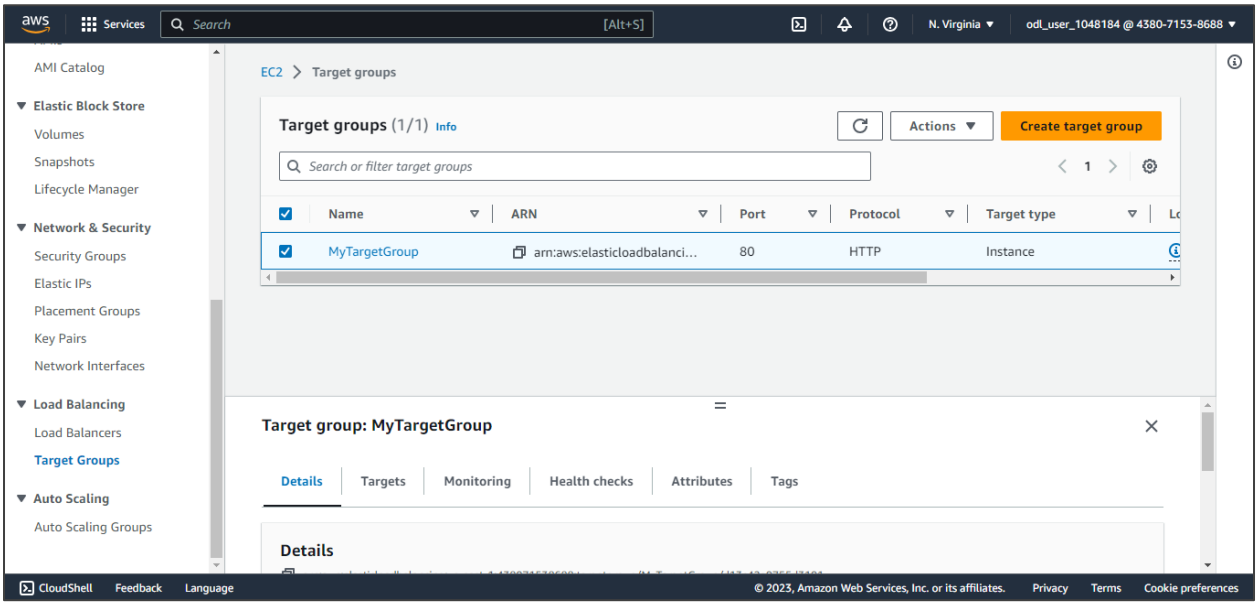
2.6 Launch another EC2 instance using the same steps, but modify the user data script to display the message **This is Webserver2**



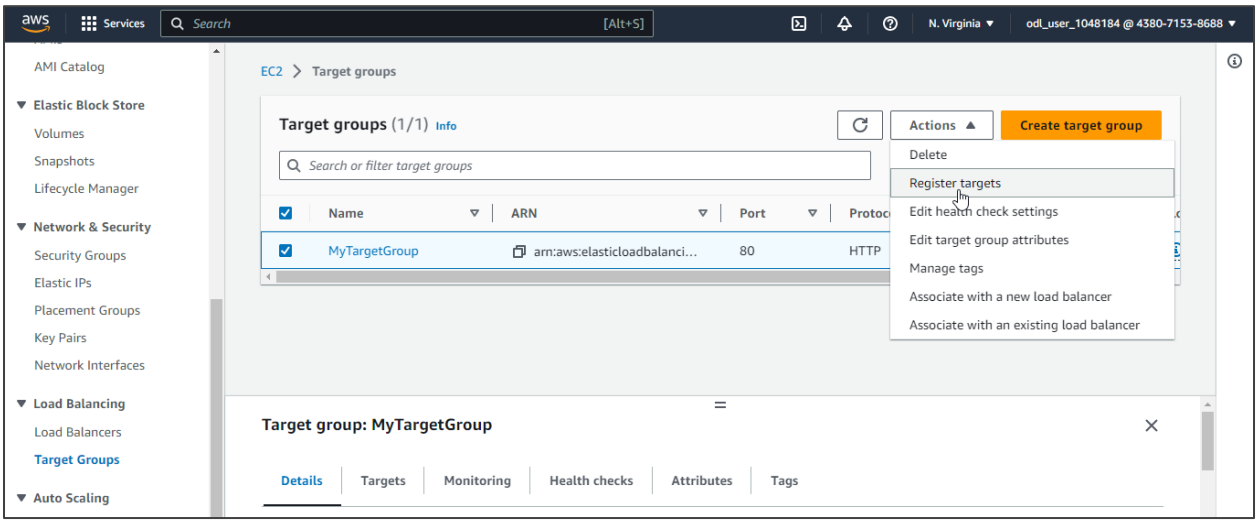
The EC2 instances are successfully launched.

Step 3: Configure the target group

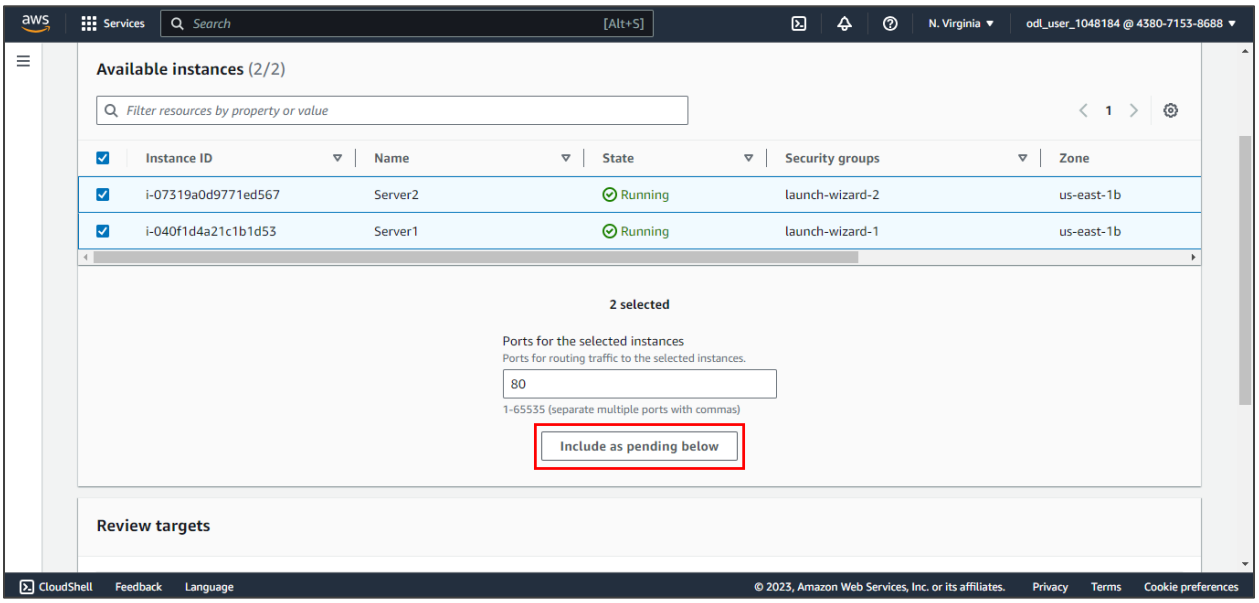
3.1 Navigate to the **Target Groups** section, and select the target group created in Step 1



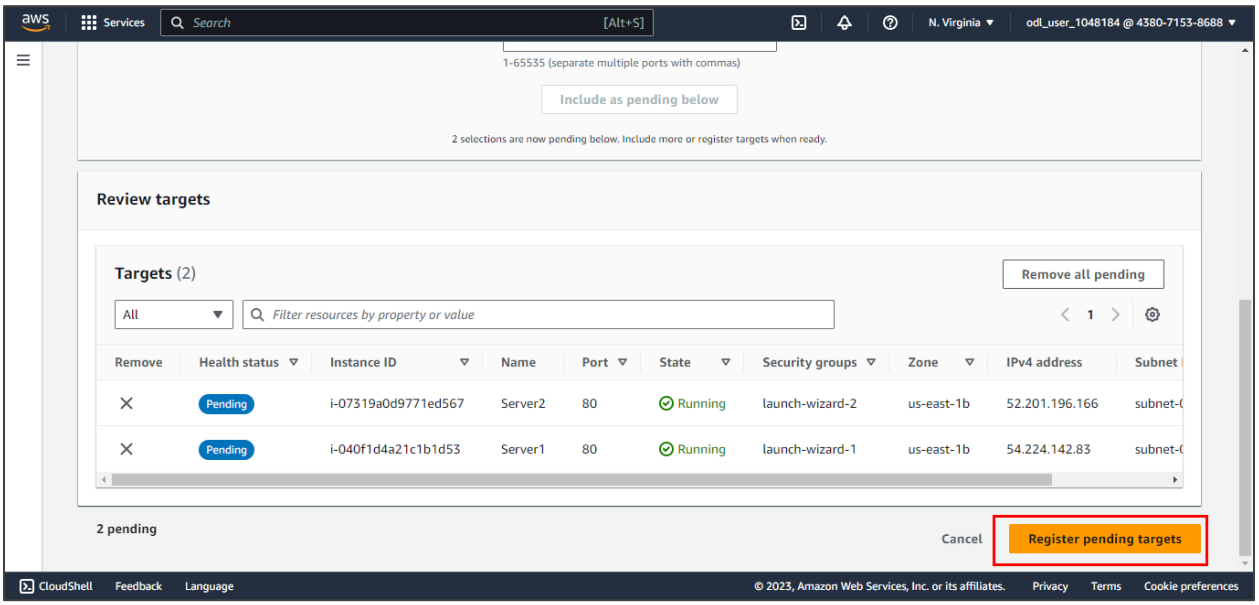
3.2 Click on **Register targets** from the **Actions** menu

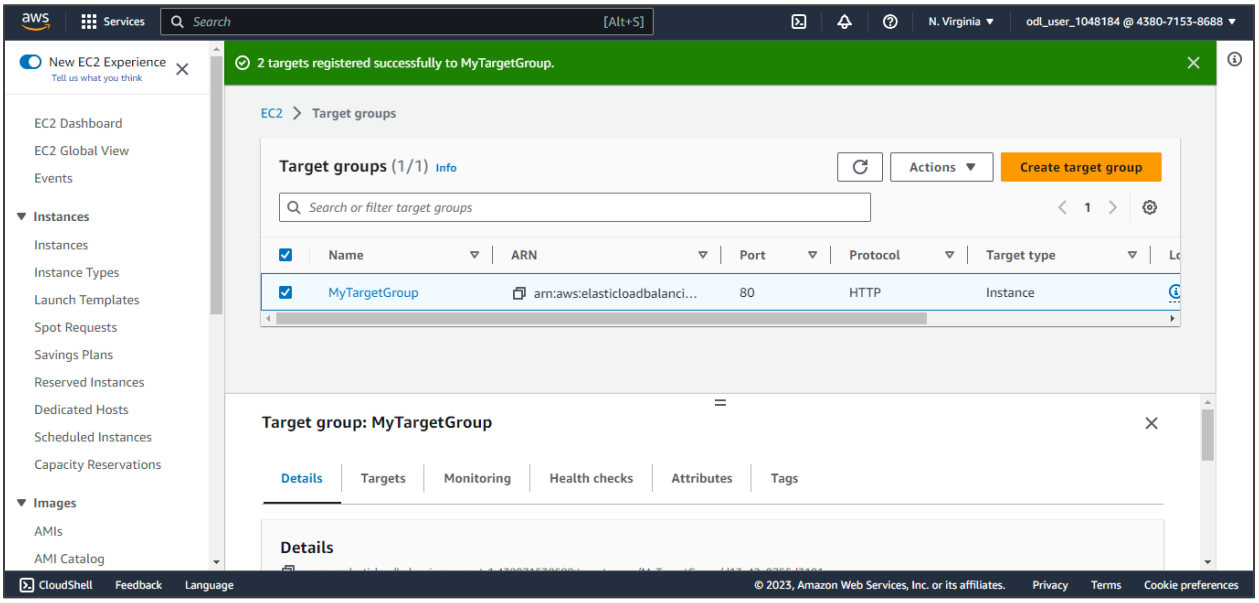


3.3 Select the instances (**Server1** and **Server2**) that were launched in Step 2 and click **Include as pending below**



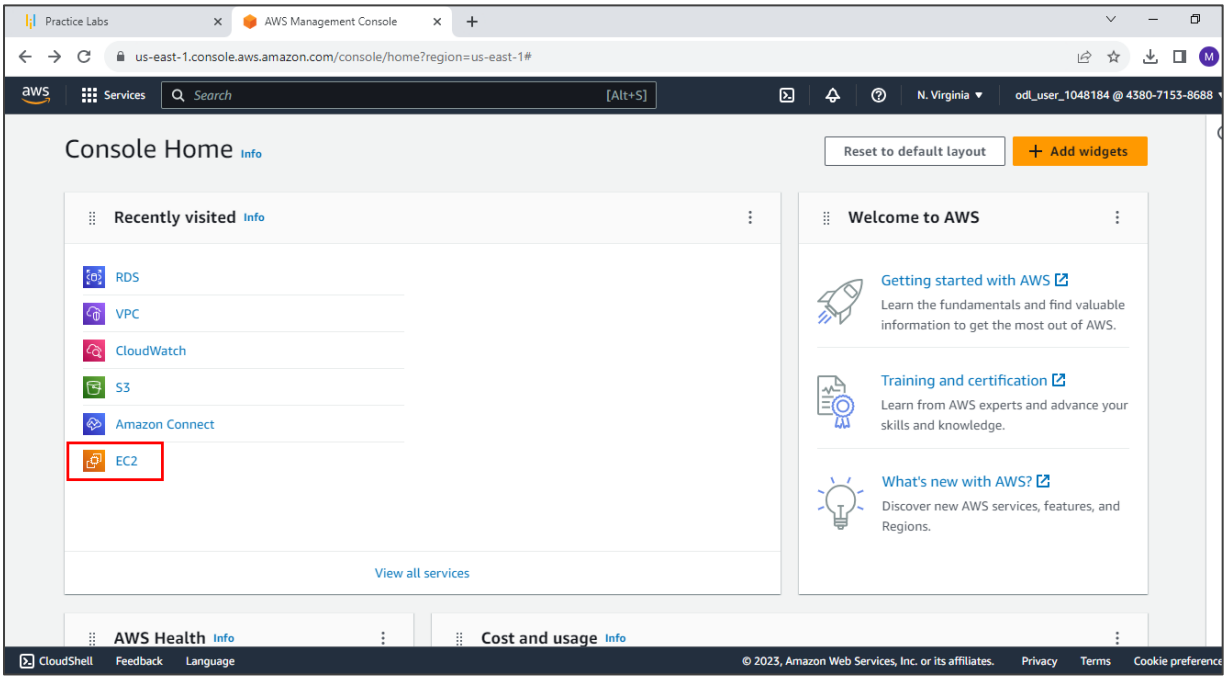
3.4 Click **Register pending targets** to register the instances with the target group



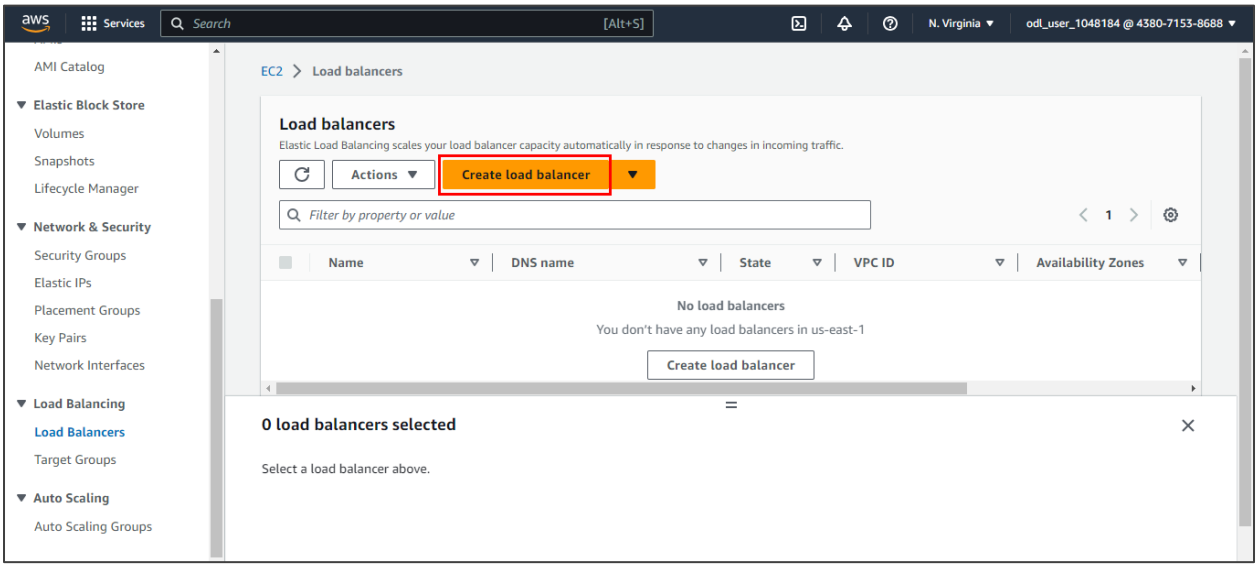


Step 4: Create a Load Balancer

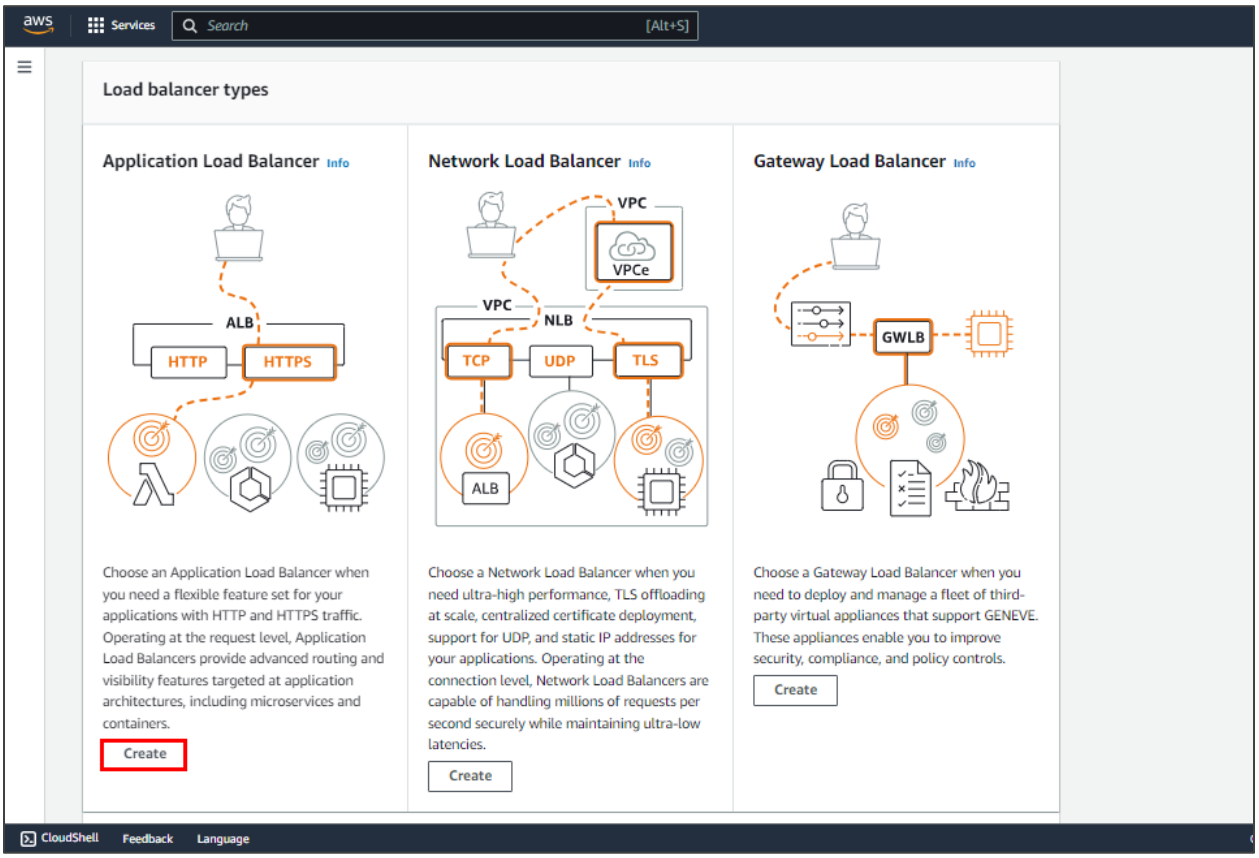
4.1 Open the Amazon EC2 console



4.2 Navigate to the **Load Balancers** section under **Load Balancing** and click **Create load balancer**

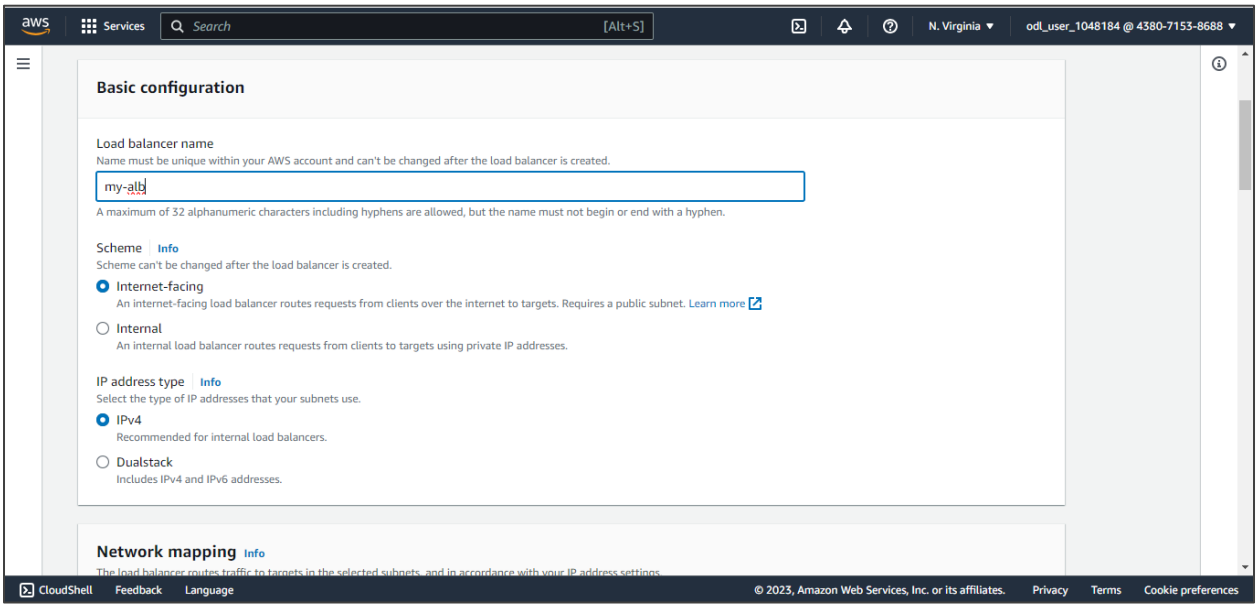


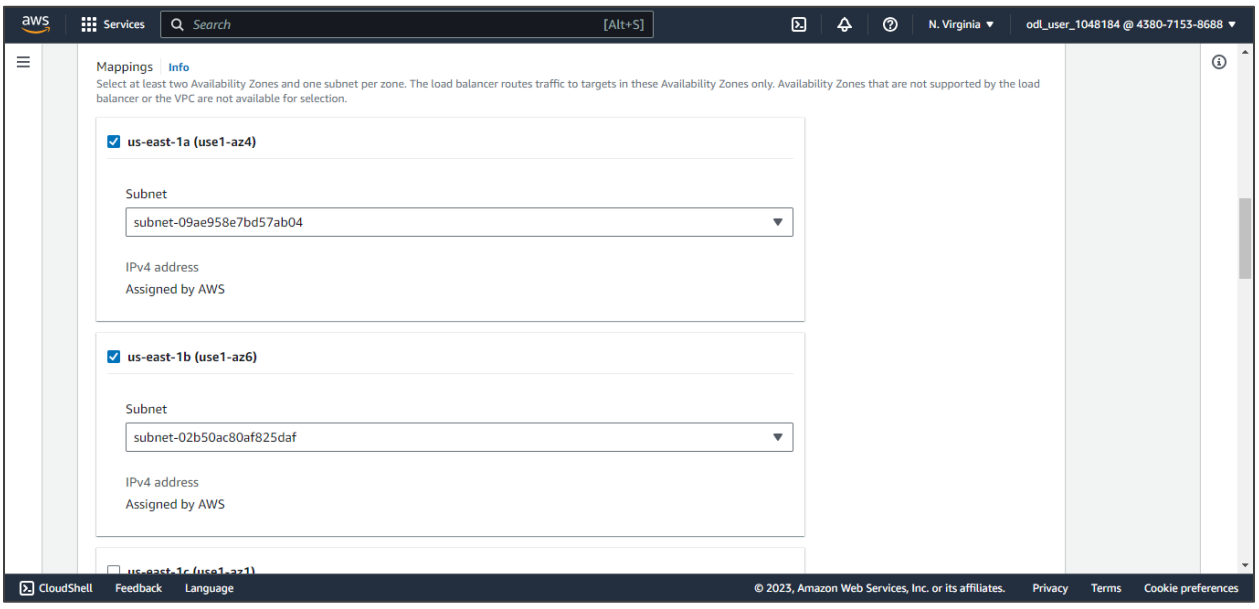
4.3 Choose **Application Load Balancer** and click **Create**



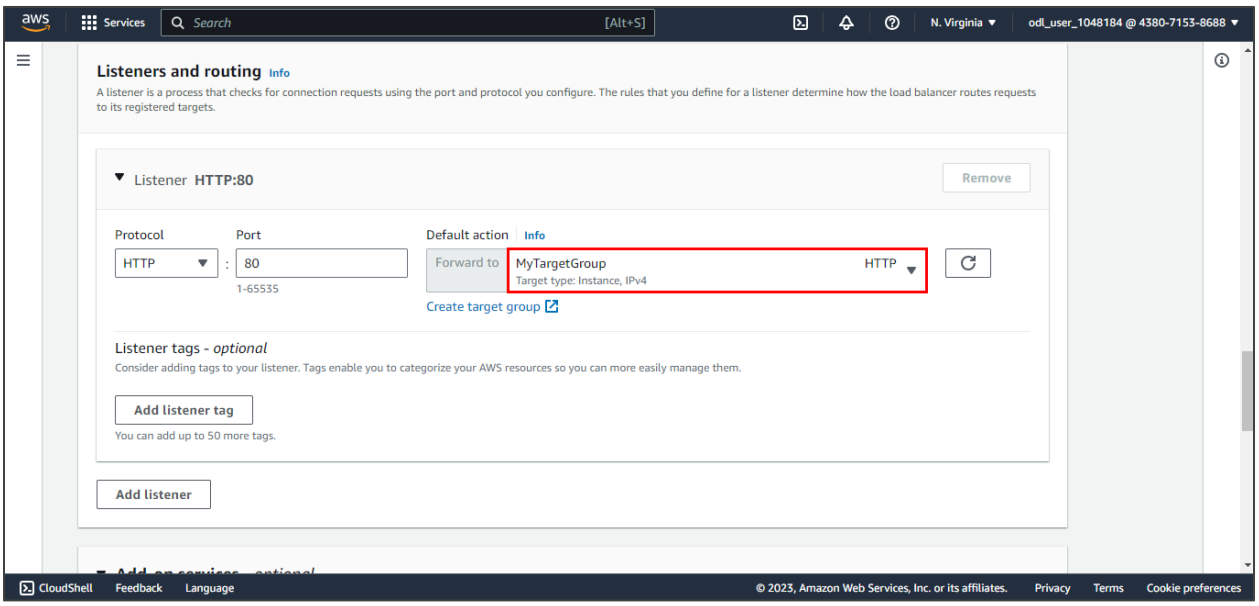
4.4 Configure the load balancer settings:

- Enter a name for the load balancer such as **my-alb**
- Choose availability zones such as **us-east-1a** and **us-east-1b**

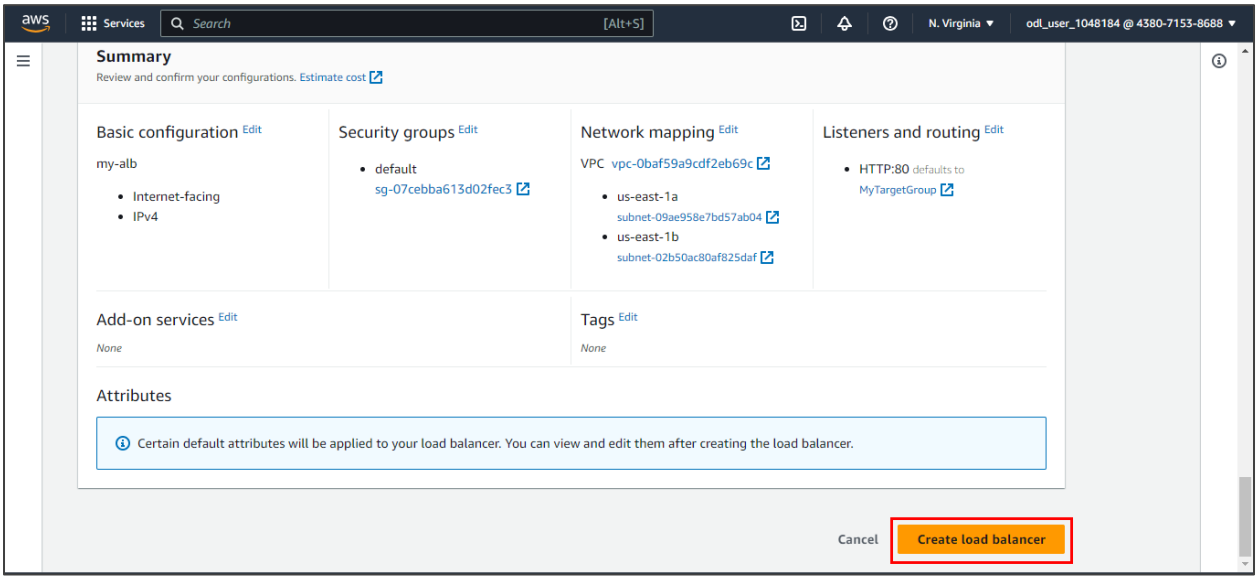




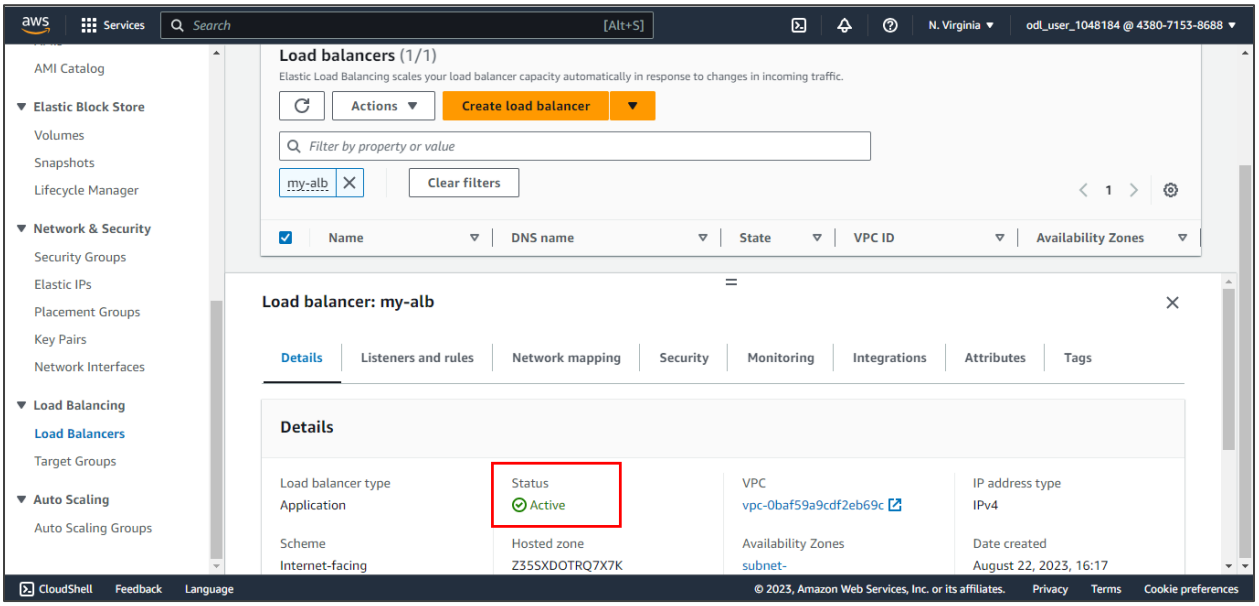
4.5 Choose the default action for the listener configuration to accept HTTP traffic on port **80**, and select the target group created in Step 1



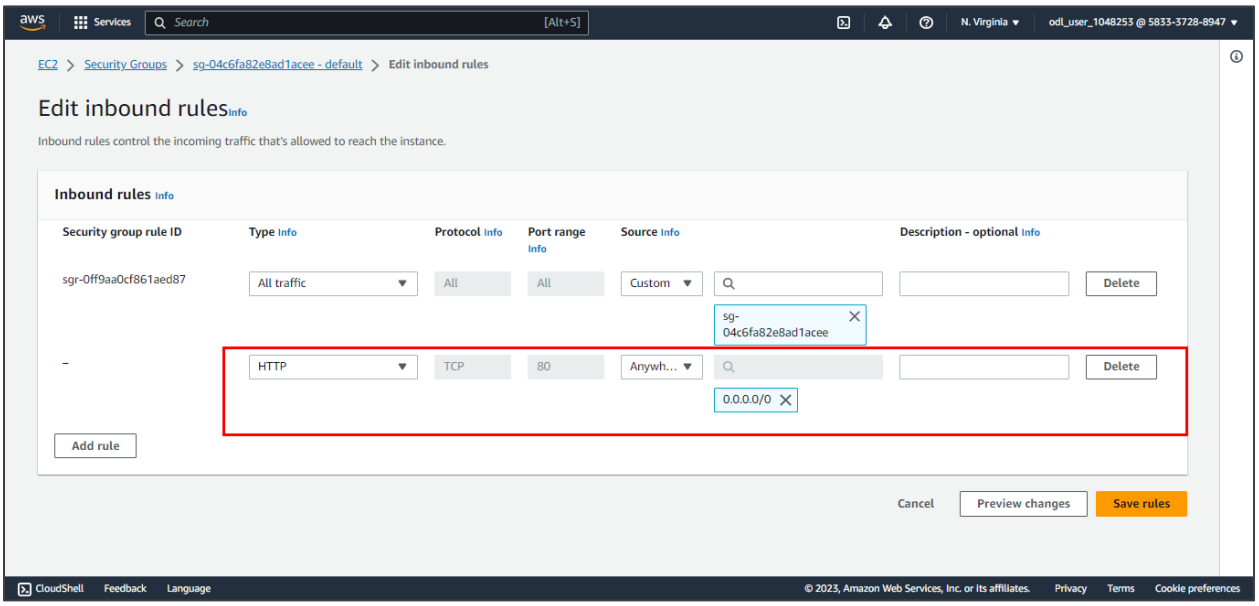
4.6 Review the configuration and click **Create load balancer**



Wait until the **Status** changes from **Provisioning** to **Active**

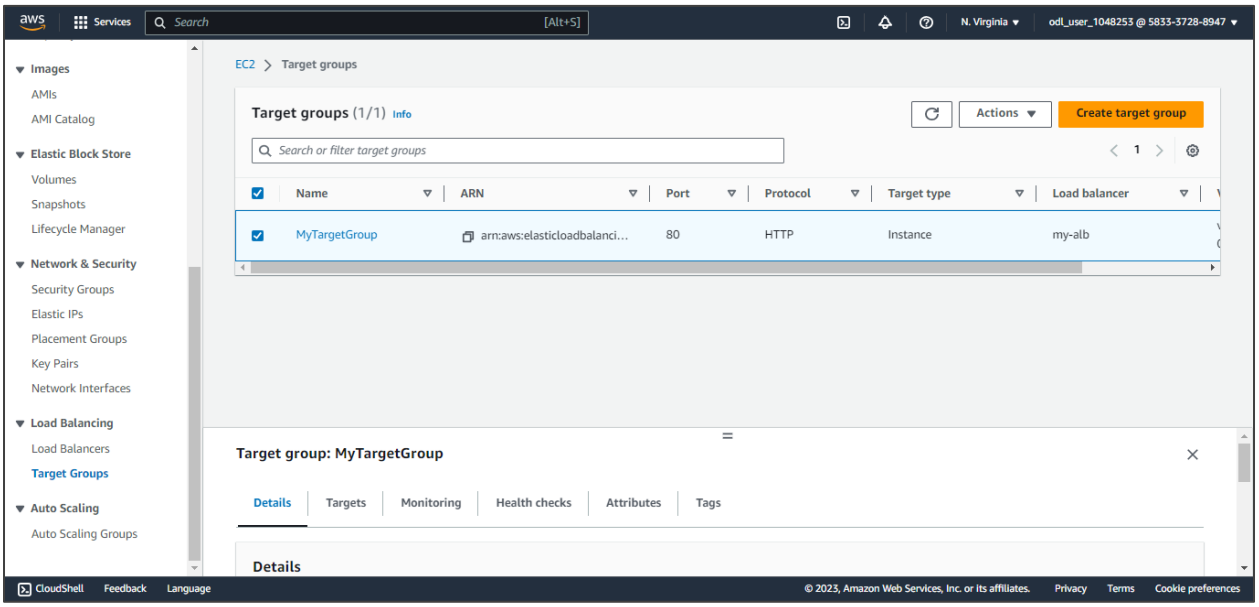


4.7 Create an inbound rule within the Load Balancer's security groups to permit port **80** access for all

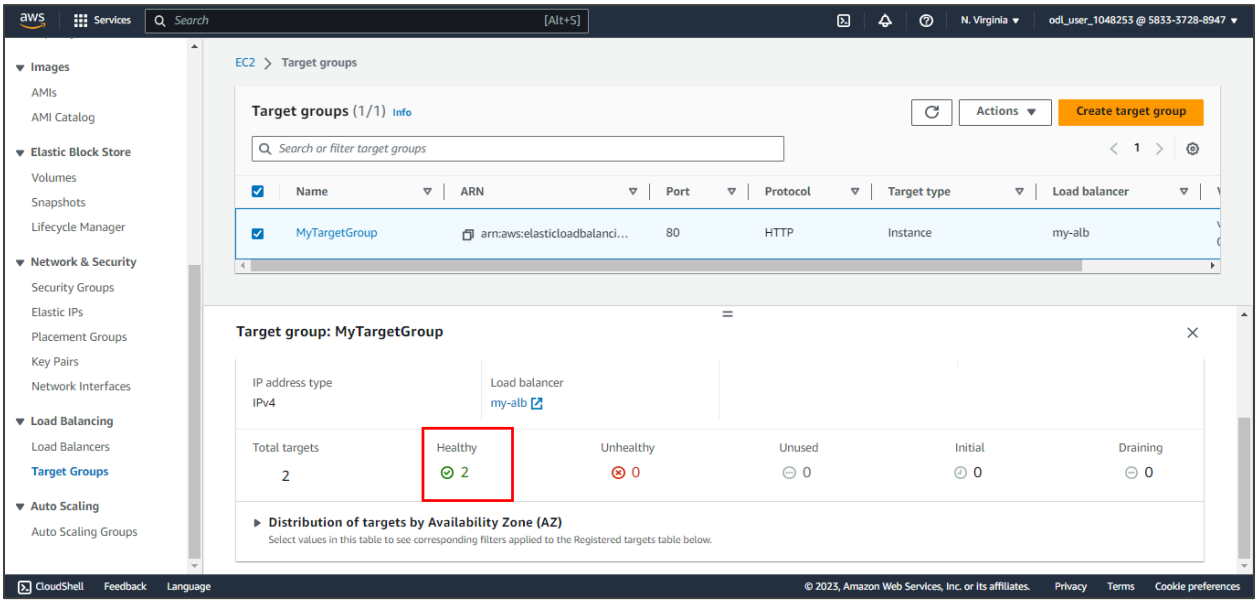


Step 5: Test the Load Balancer

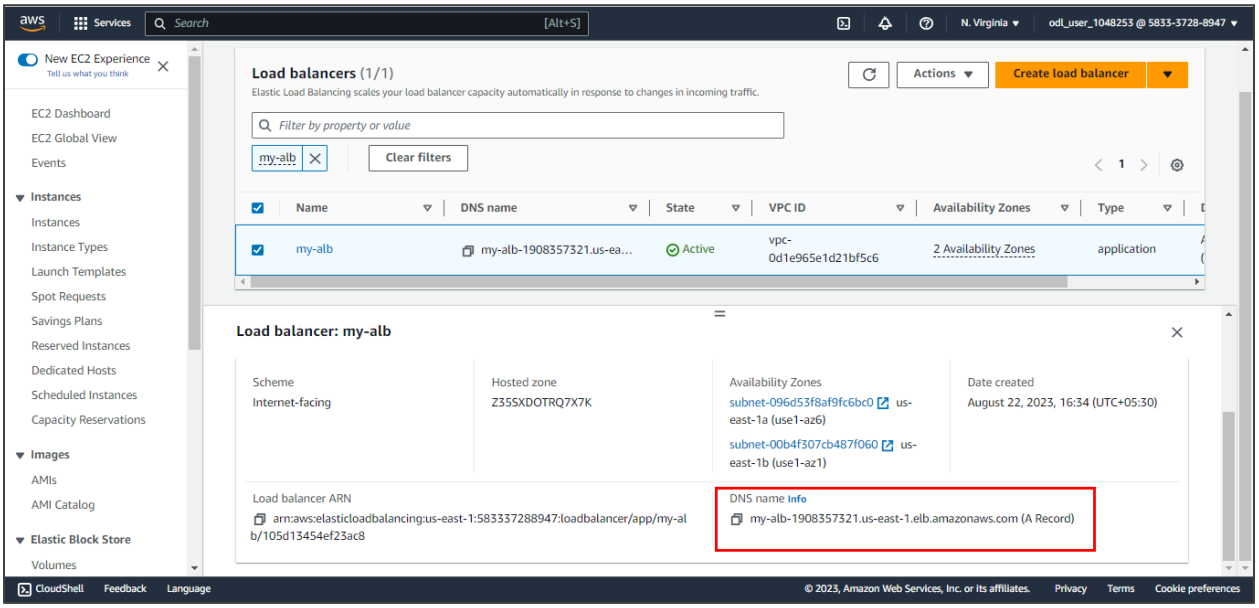
5.1 Navigate to the **Target Groups** section, and select the target group you created



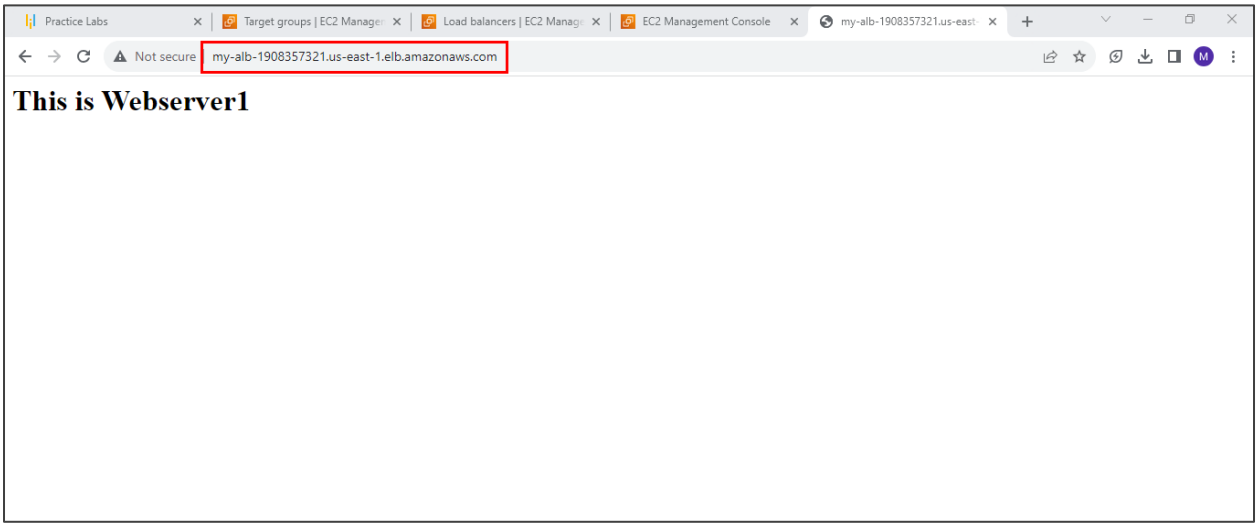
5.2 Click on **Details** to verify that your instances are registered and healthy



5.3 Navigate to the **Load Balancers** section and copy the DNS name of the Load Balancer

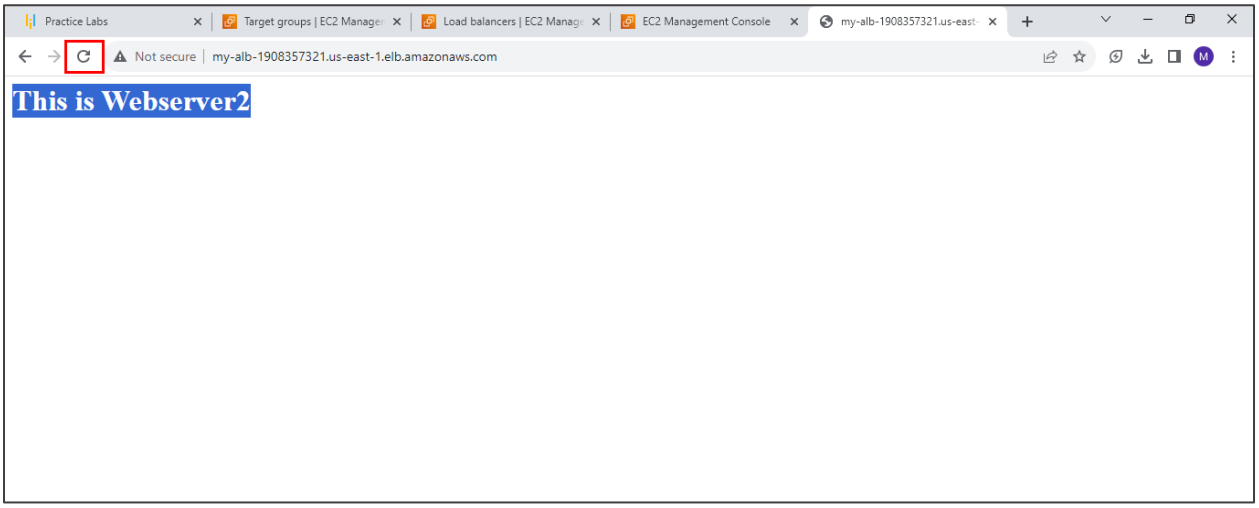


5.4 Open the browser window and paste the DNS URL into the address bar



You will observe the header message originating from the **Server1** instance.

5.5 Refresh the web page multiple times to witness the header message originating from the **Server2** instance



By following these steps, you have successfully set up an AWS Application Load Balancer, launched instances, and verified load balancing functionality.