**Little Bit Advance Labs**

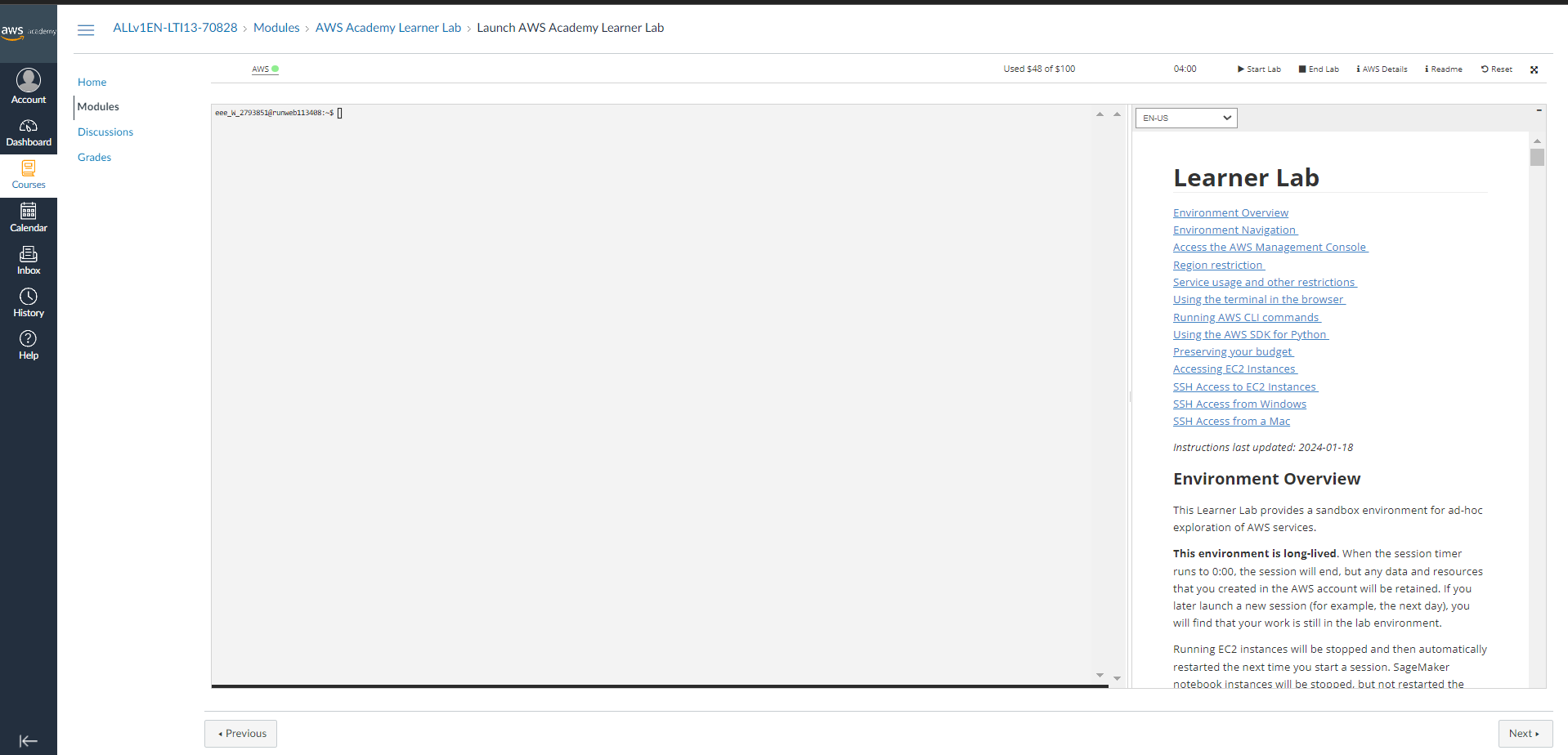
**Part 1: EC2 with ELB and ASG**

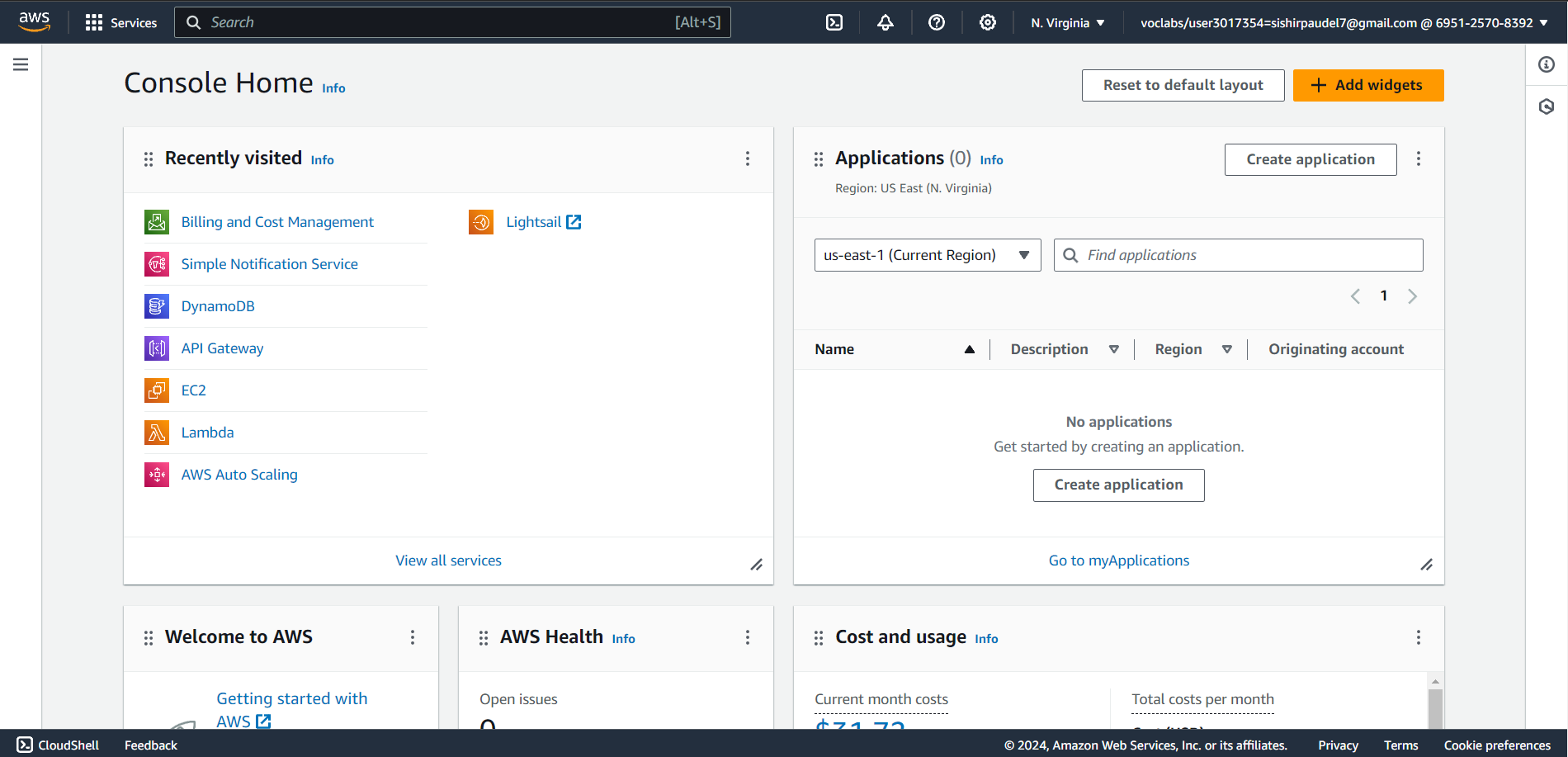
**Objective**: Learn how to create a scalable and highly available web application environment using Amazon EC2 instances, ELB, and ASG.

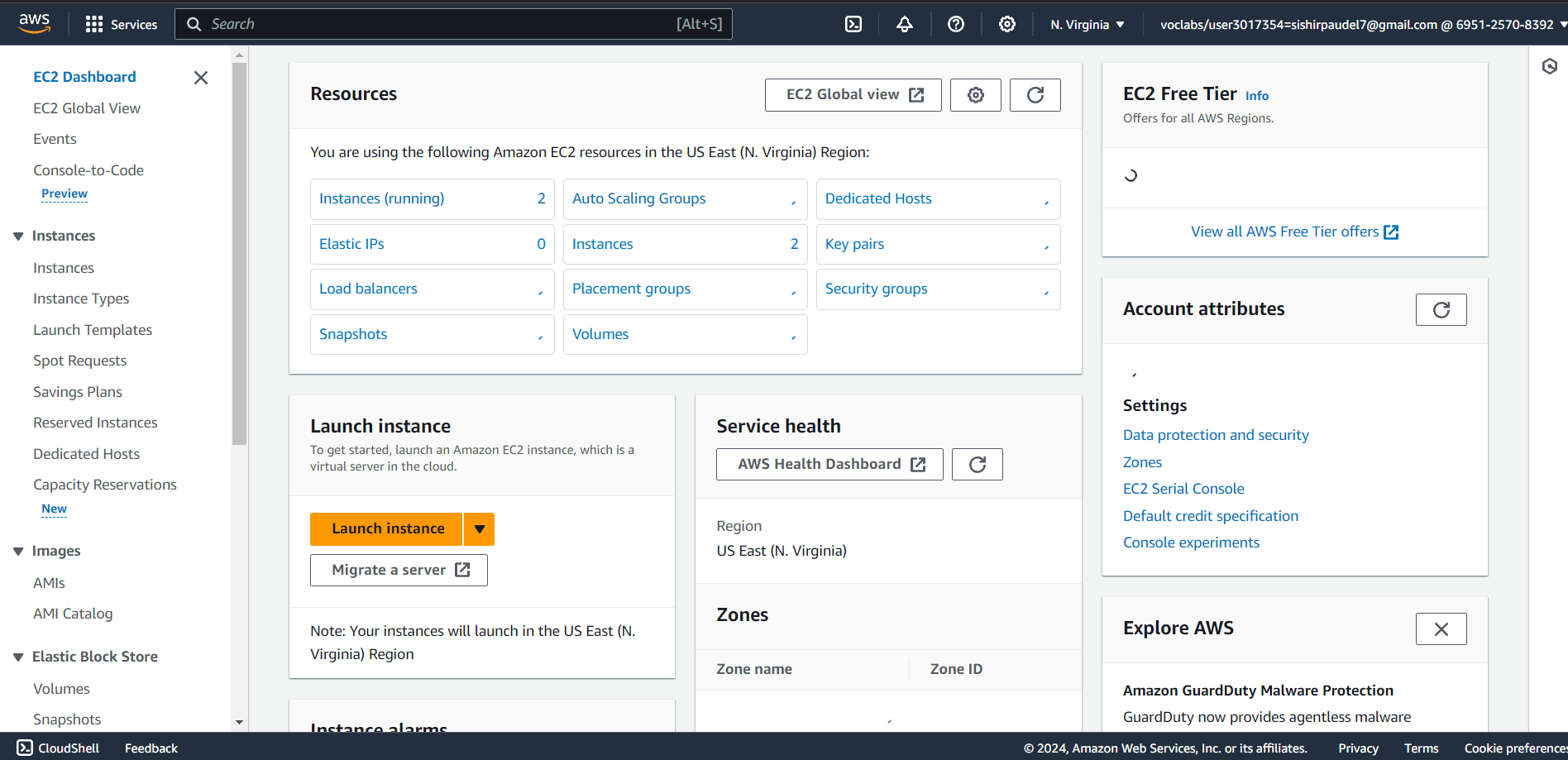
**Approach**:

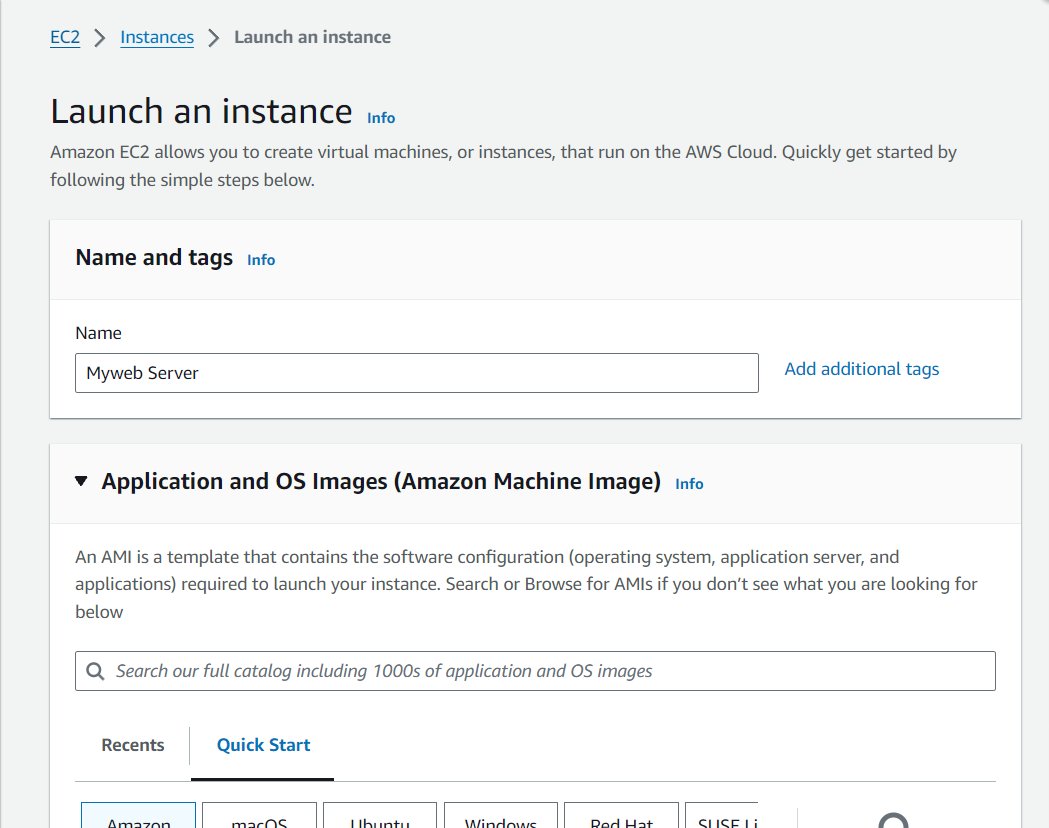
1. **Launch EC2 Instances**: Start by launching two or more EC2 instances. These instances will run a simple web application (e.g., a "Hello World" page or any basic web service).
2. **Configure Load Balancer**: Set up an Elastic Load Balancer (ELB) to distribute incoming web traffic across your EC2 instances. This step ensures high availability and fault tolerance.
3. **Set Up Auto Scaling Group (ASG)**: Create an ASG that uses the launched EC2 instances. Configure ASG policies to automatically scale the number of instances up or down based on criteria like CPU usage or network traffic.
4. **Test Your Setup**: Simulate traffic to test the scaling policies and the load balancer. Observe how ASG adds or removes instances and how ELB distributes traffic.
5. **Verify Website Functionality**: Ensure that the website hosted on EC2 instances remains accessible and functional during scaling operations.

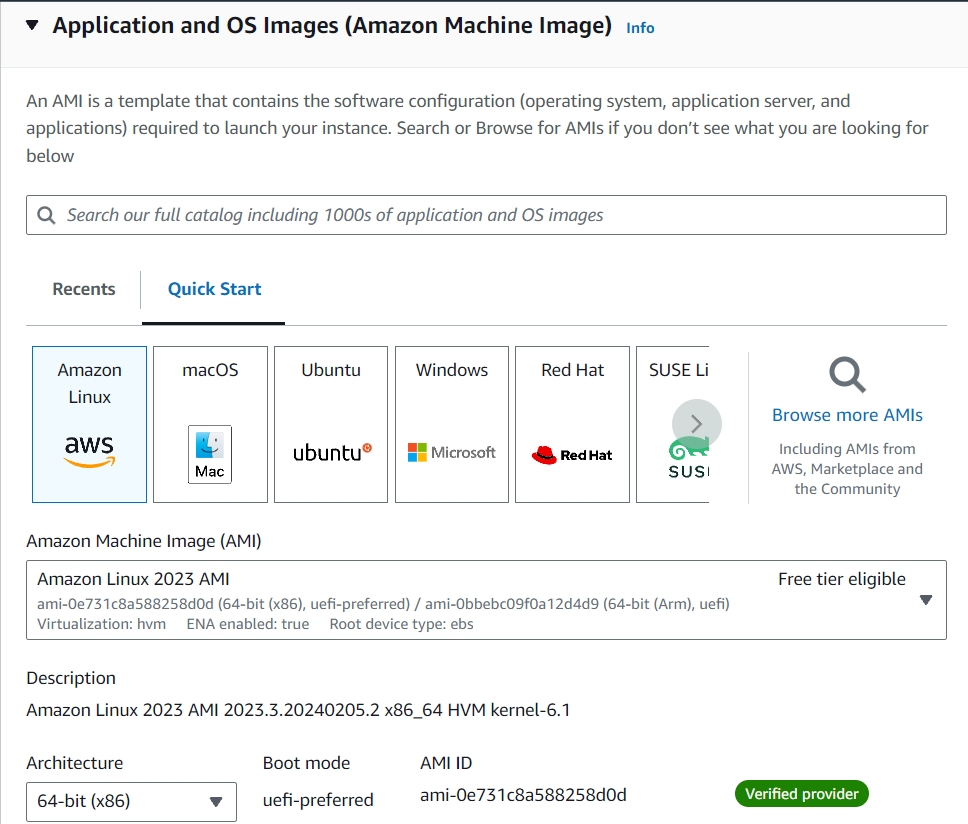
**Goal**: By the end of this lab, students will have a hands-on understanding of setting up a load-balanced and auto-scaled web application using AWS services.



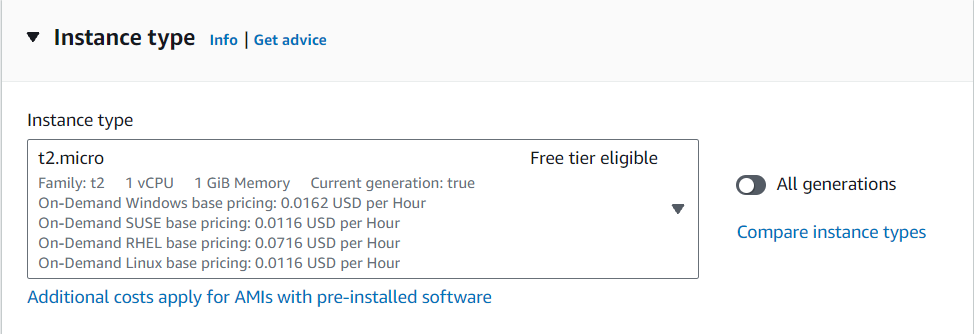


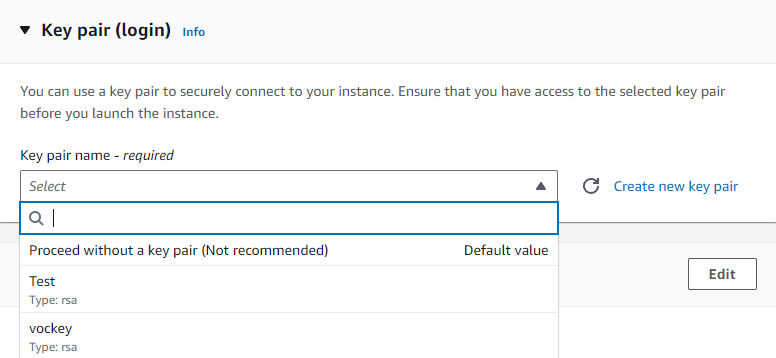


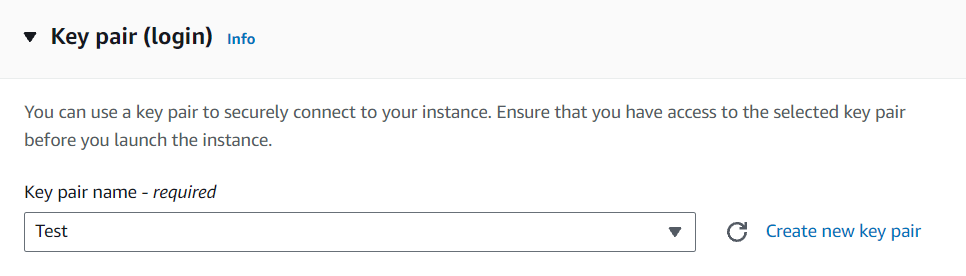


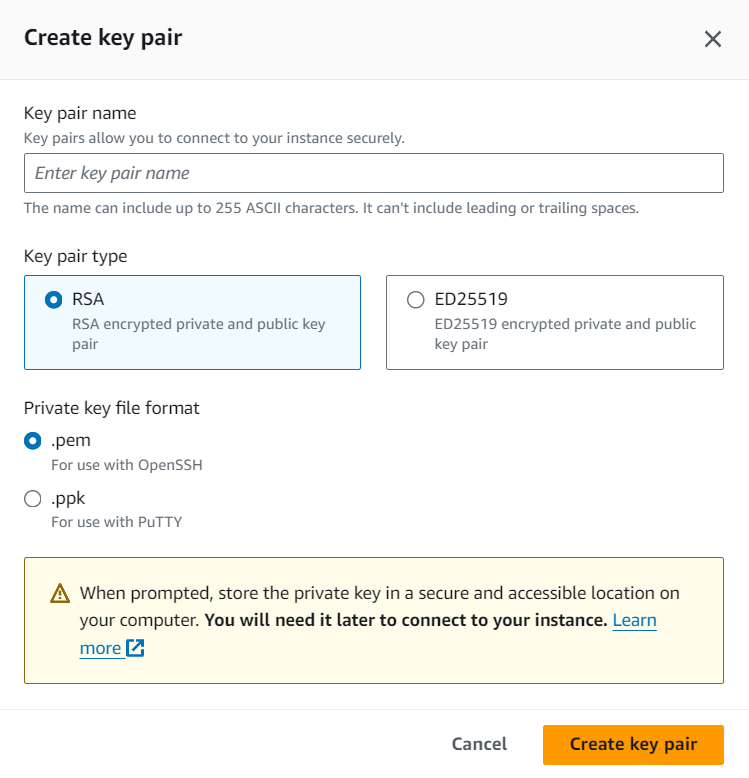


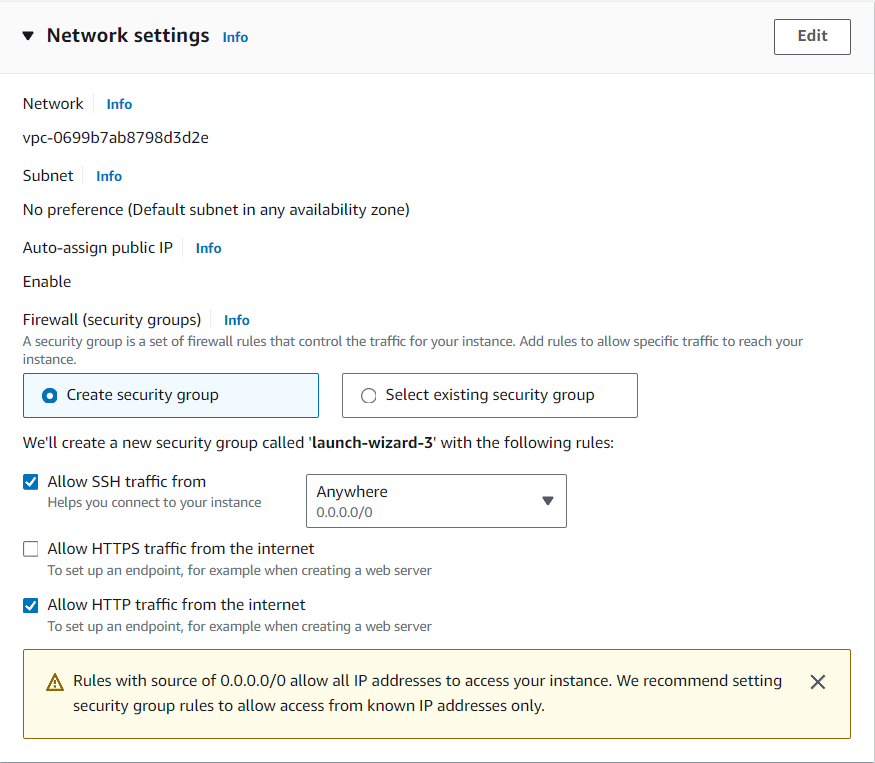
Using amazon OS environment

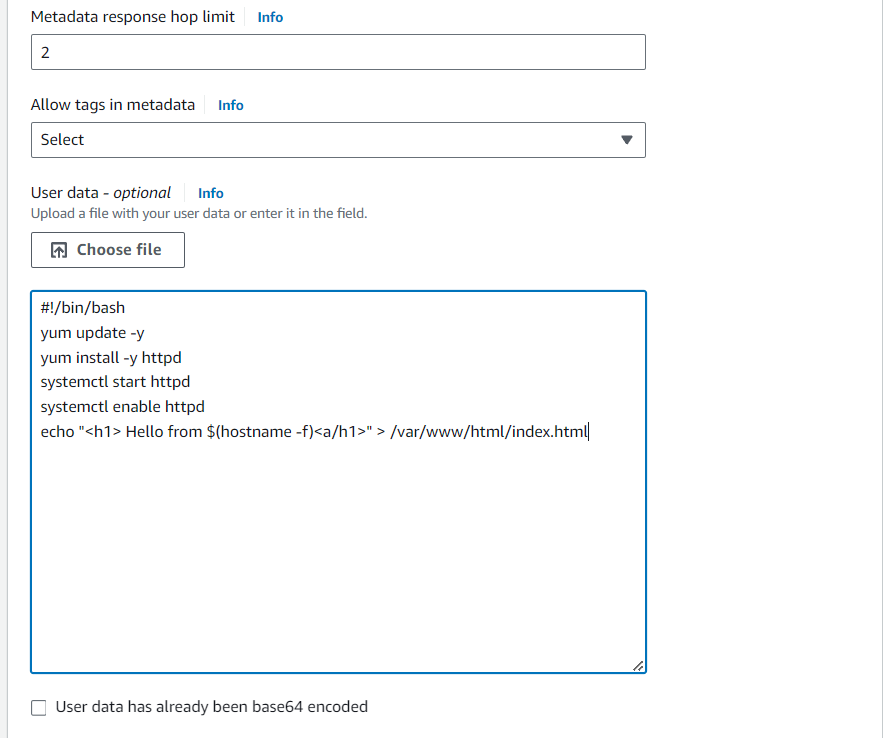






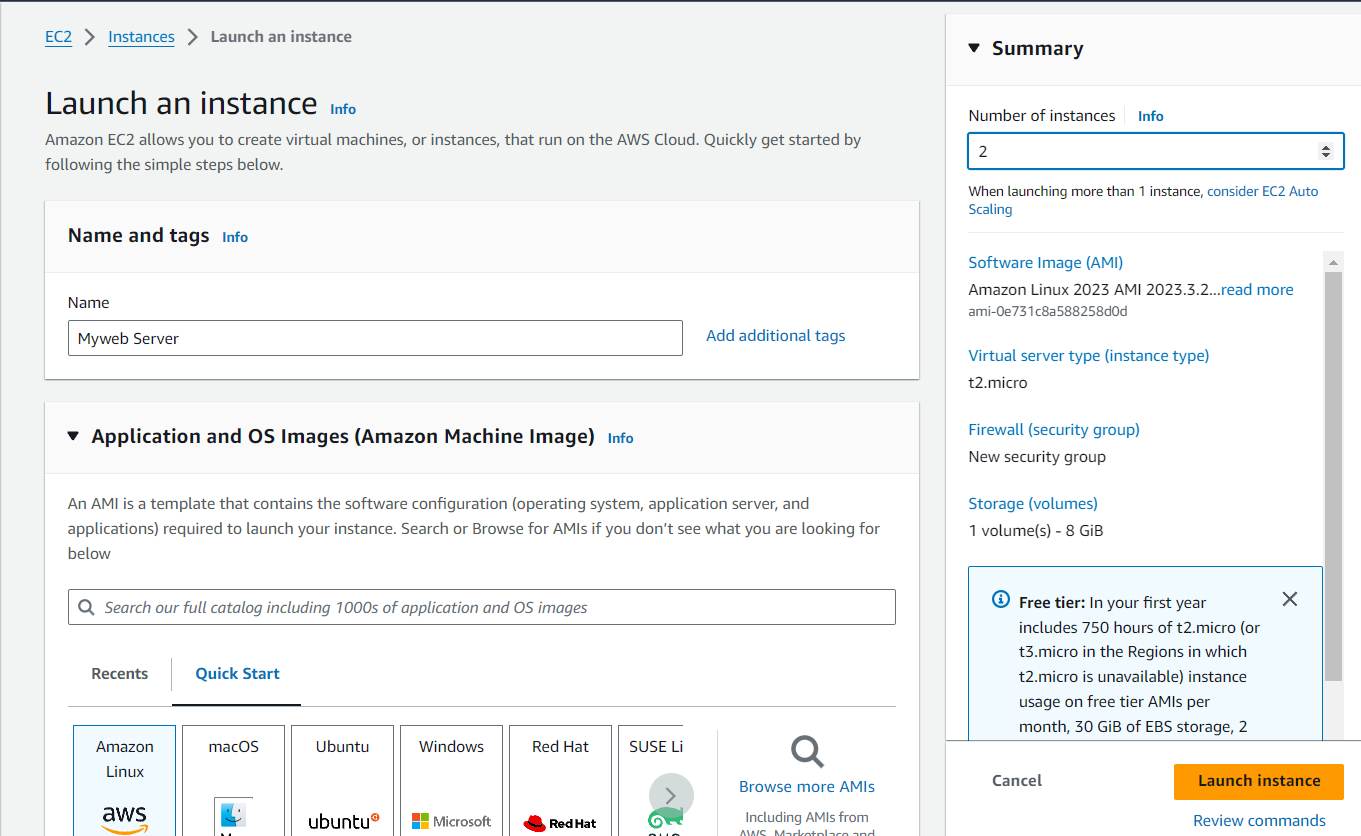


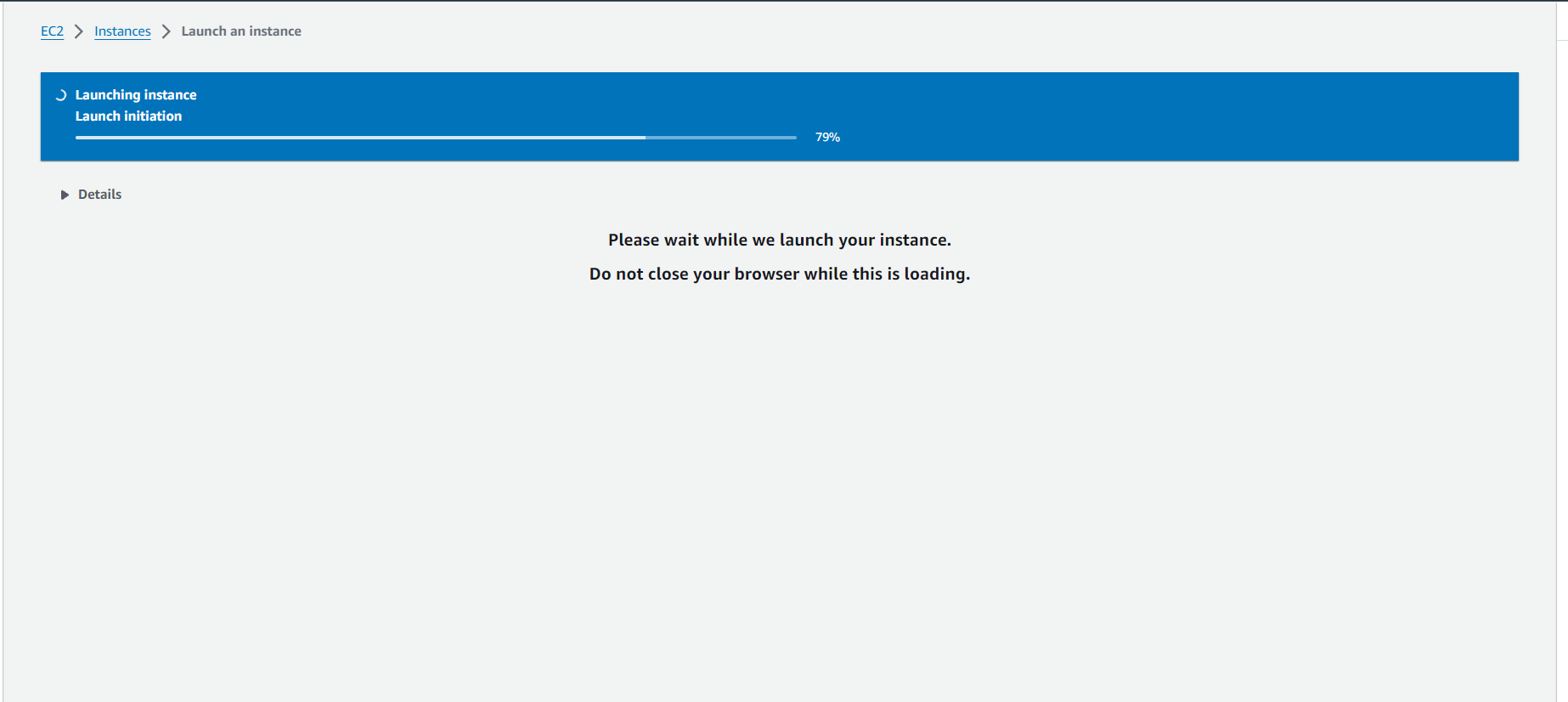


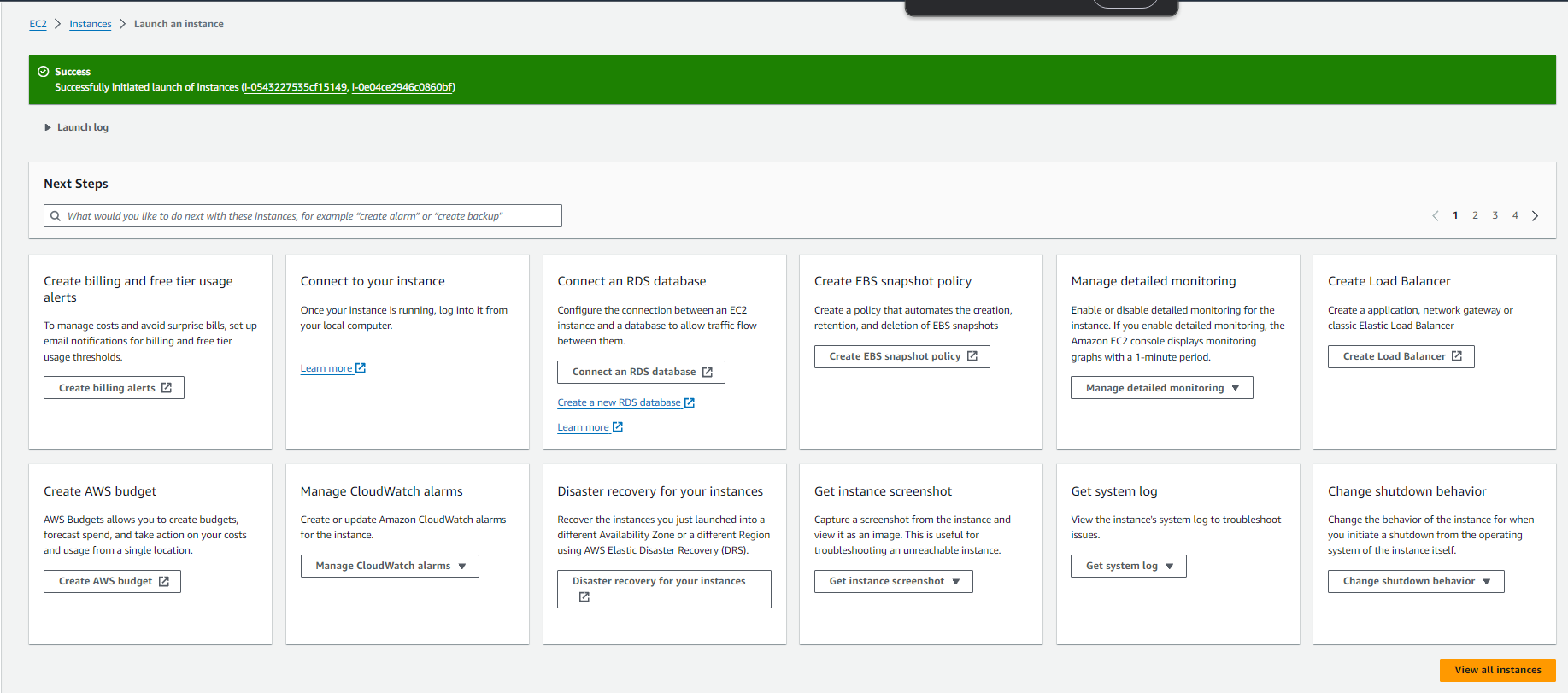


This script will be run when ec2 instances are activated

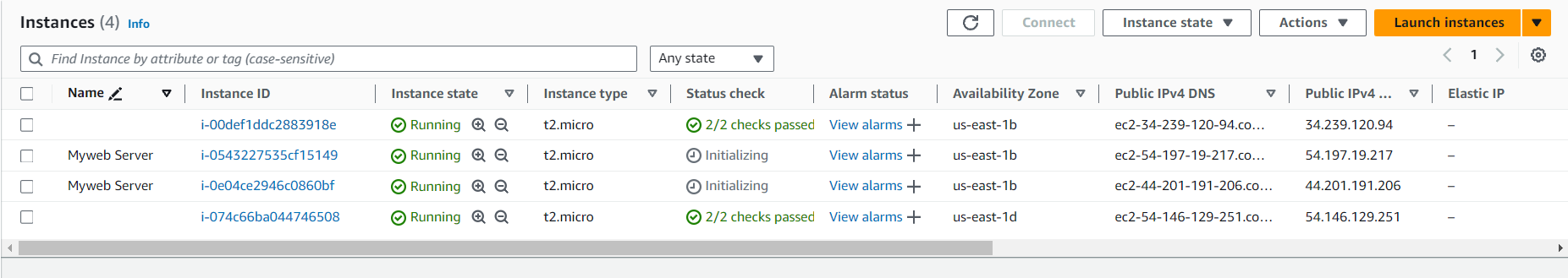
Because its amazon linus that’s why we use yum command

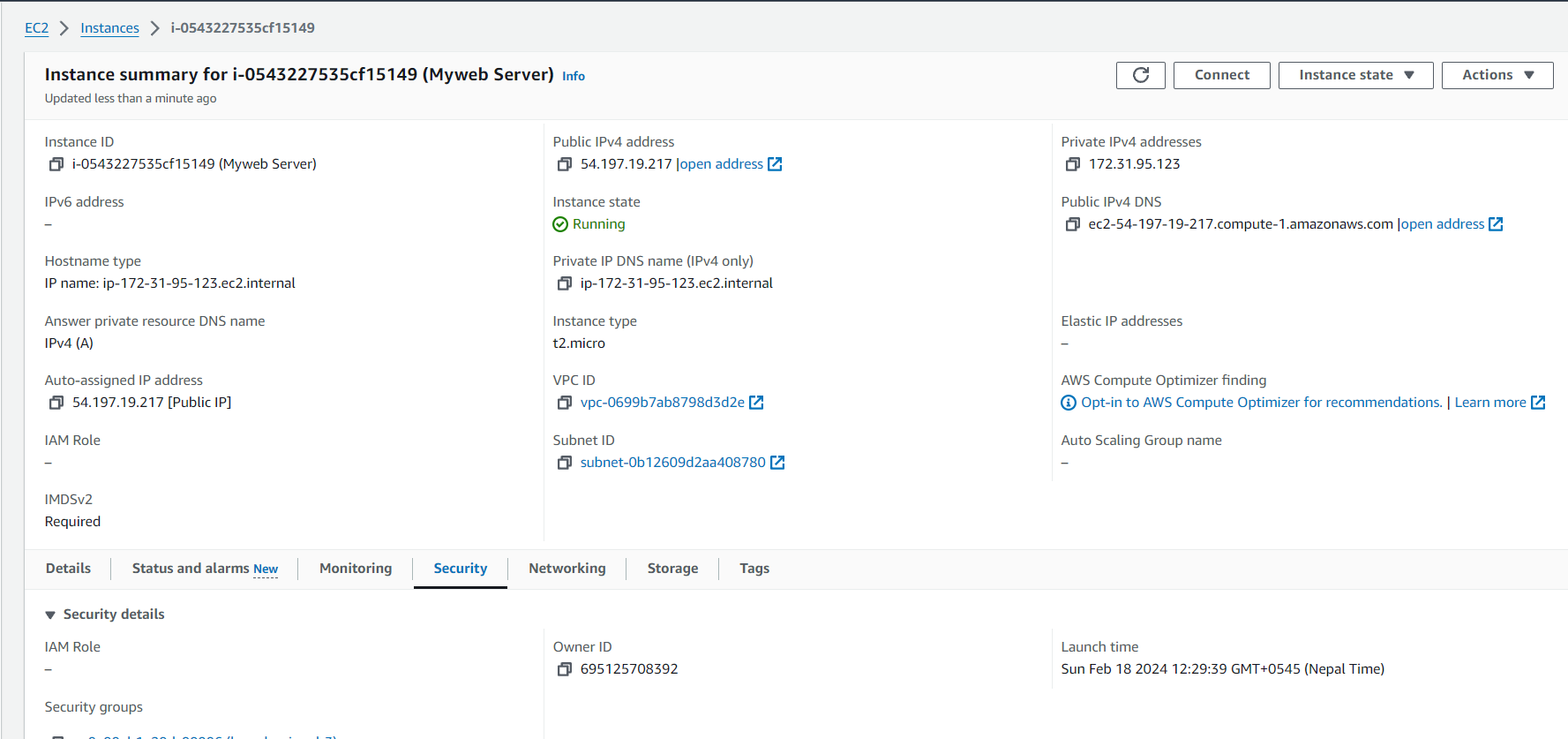


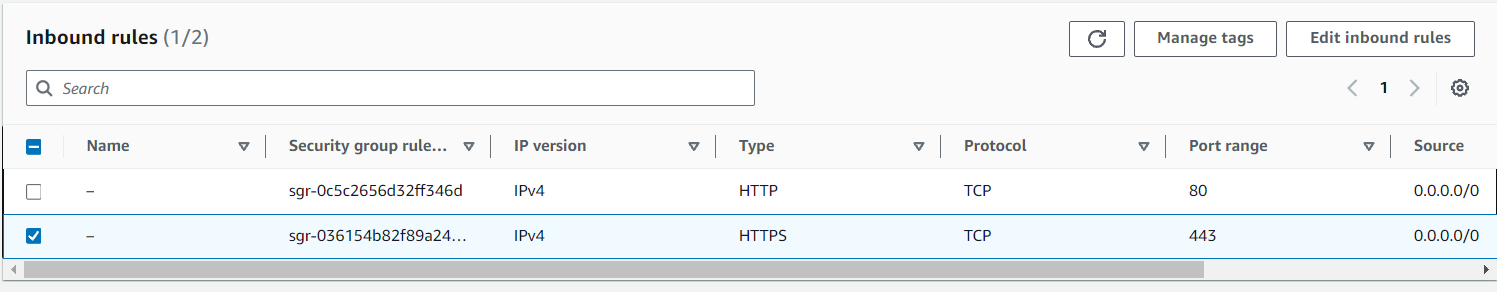




2 instances that we created are listed like this





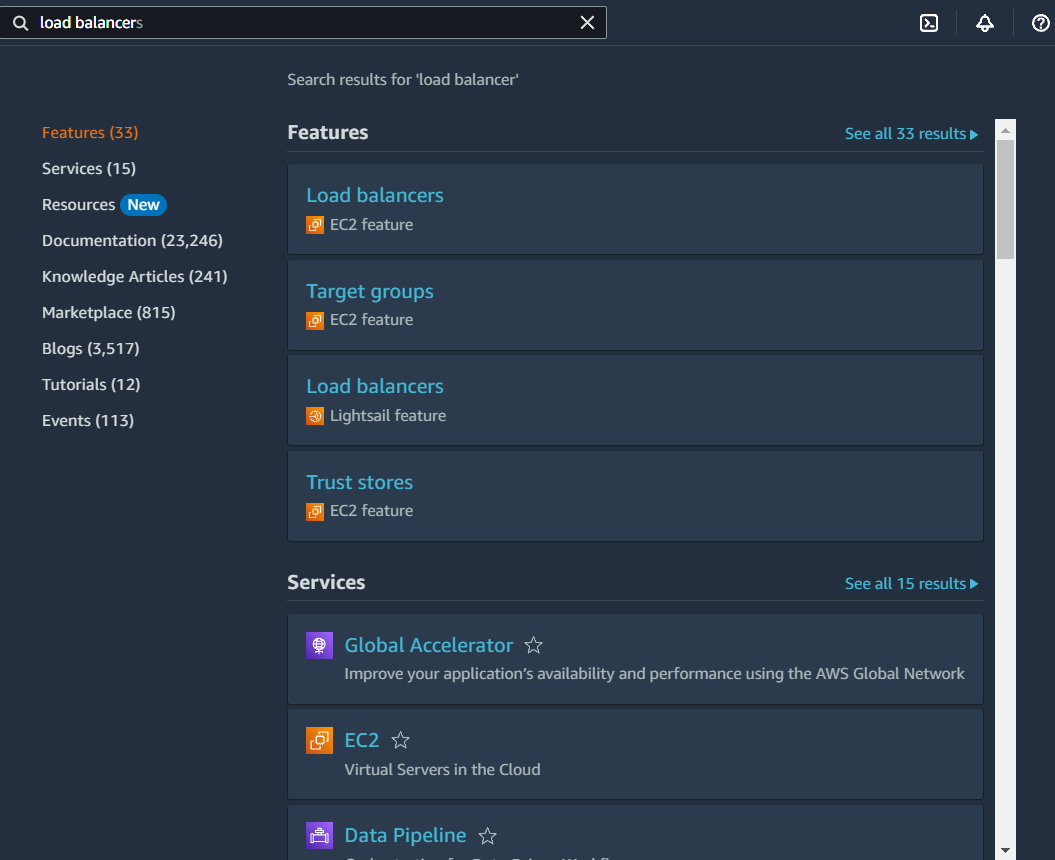


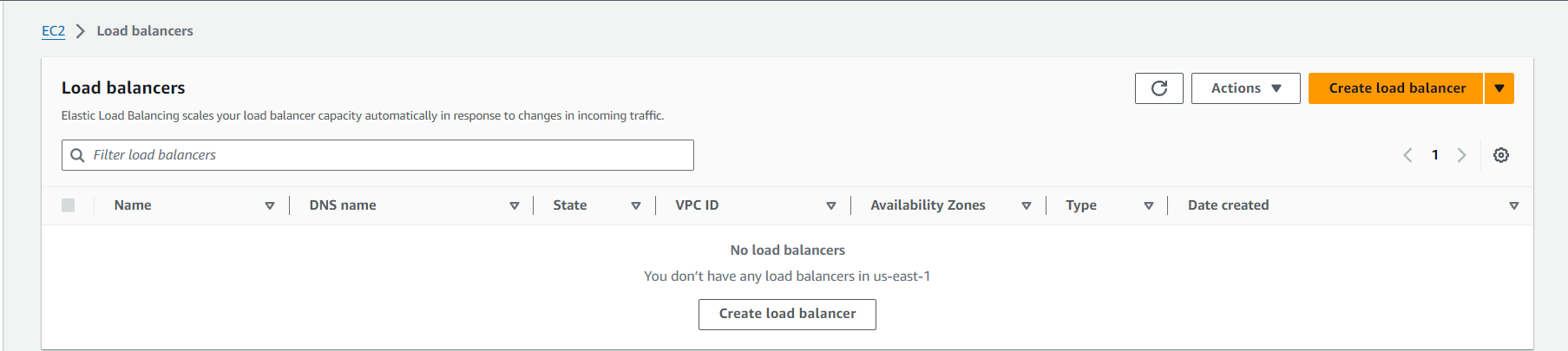
When checking the public ip link we can get this output

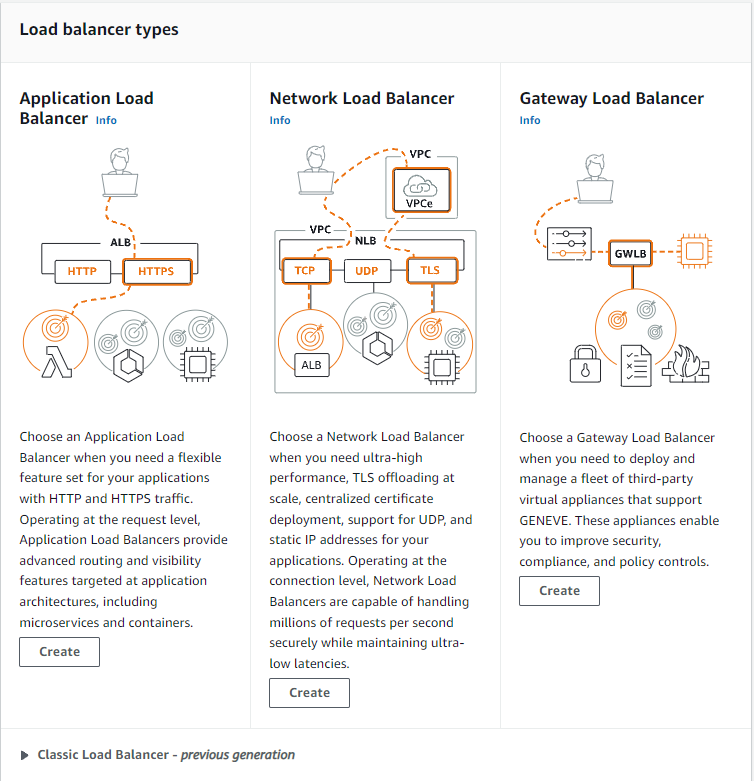


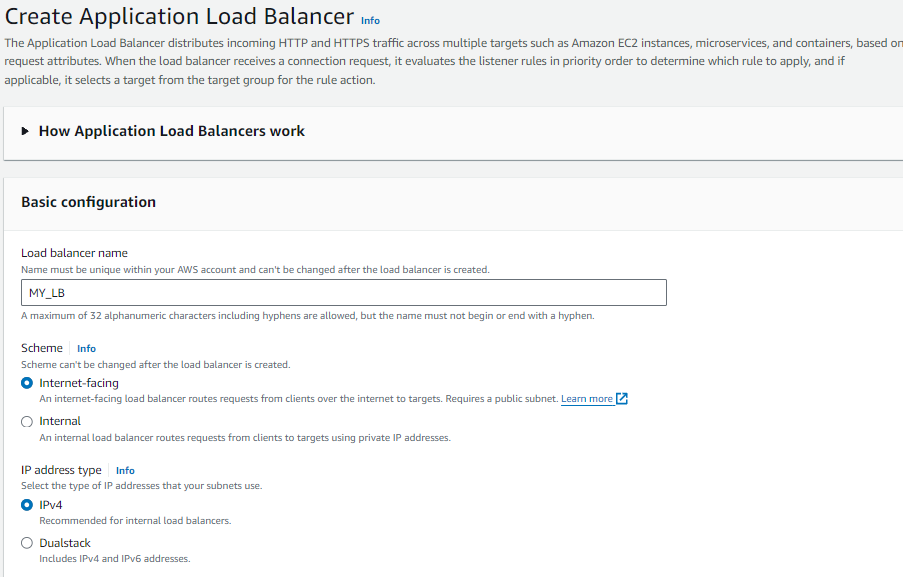
There are 2 instances with 2 different public ip so in order to minimize that ,and if we hit only 1 dns then we can access both the instances public ip.

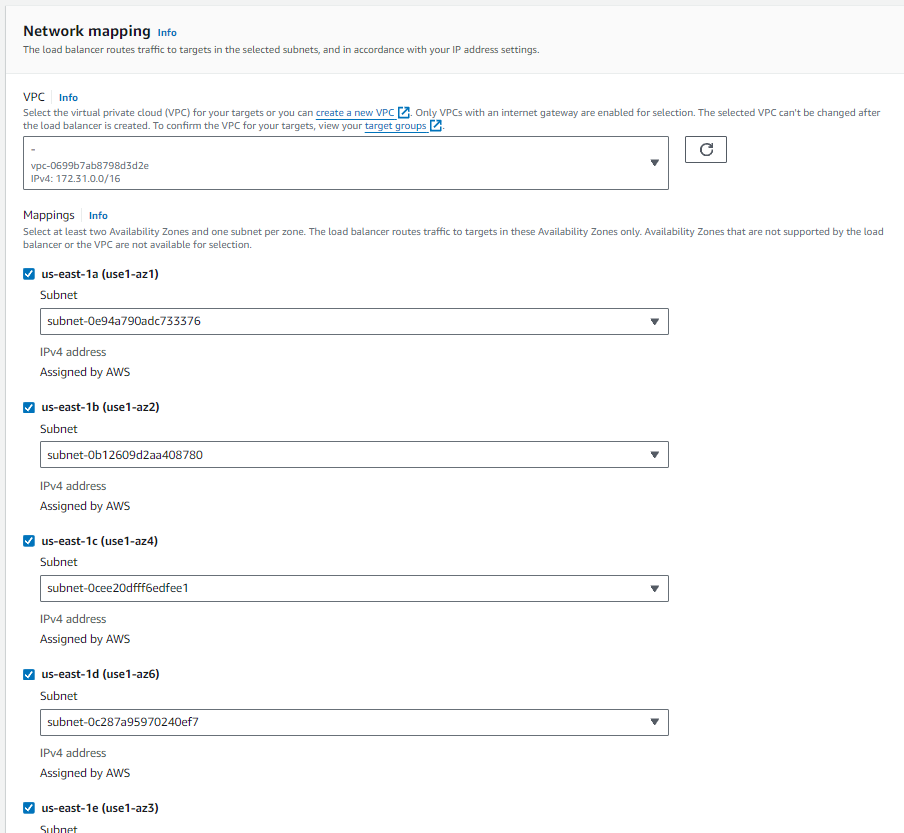
Load Balancer

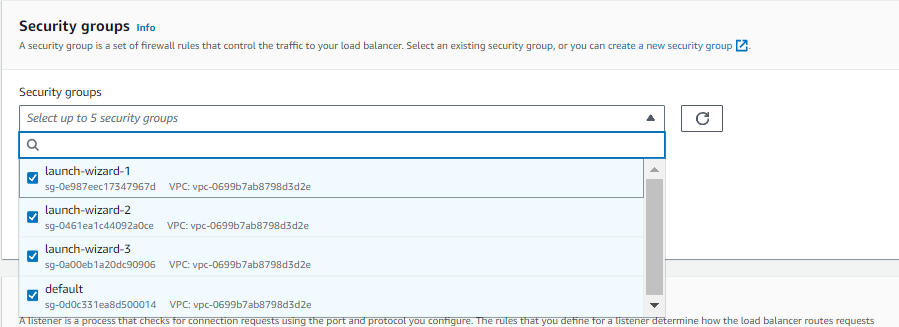




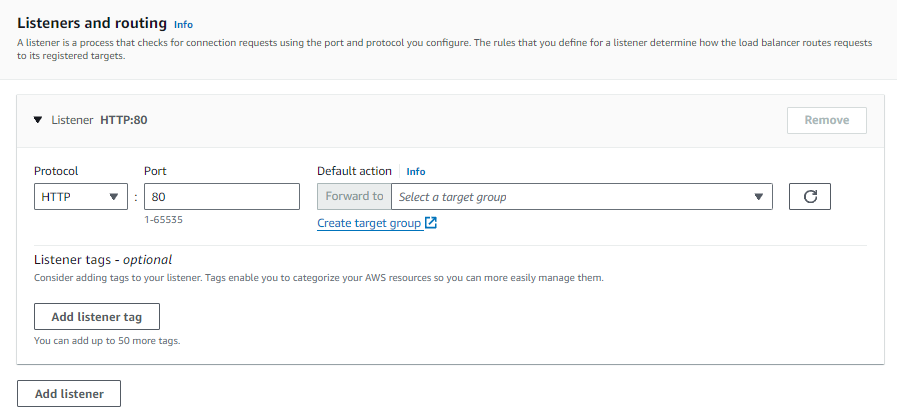


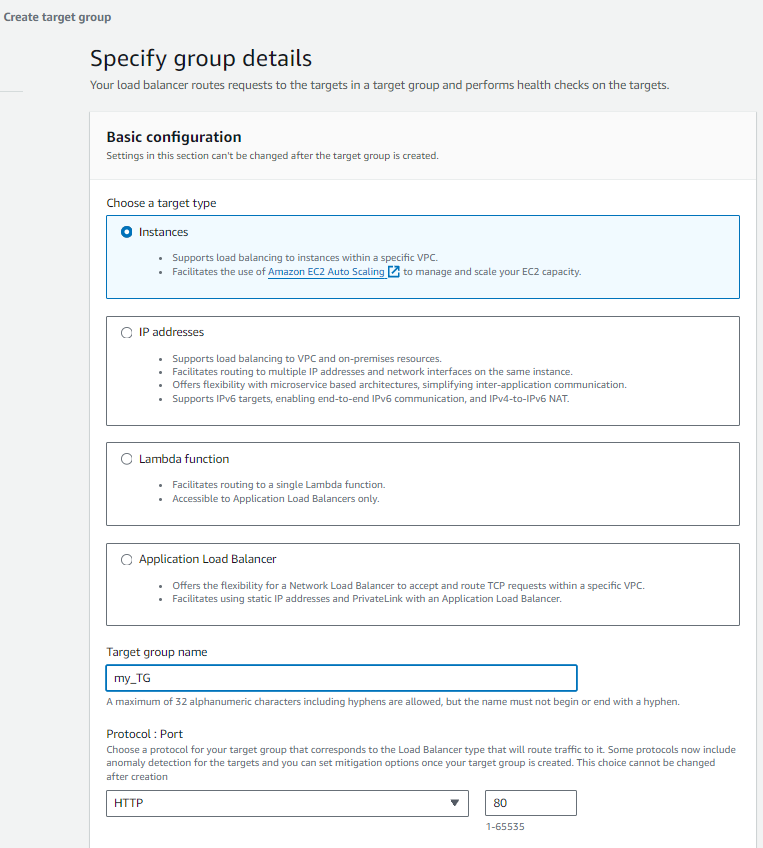


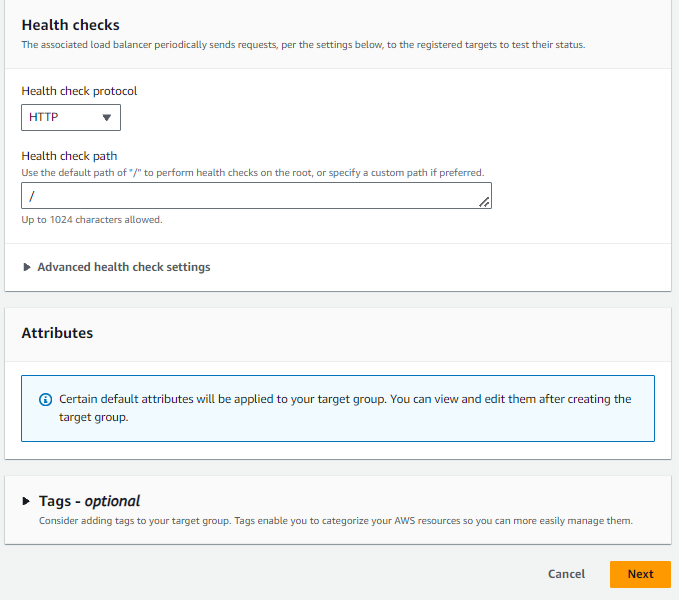


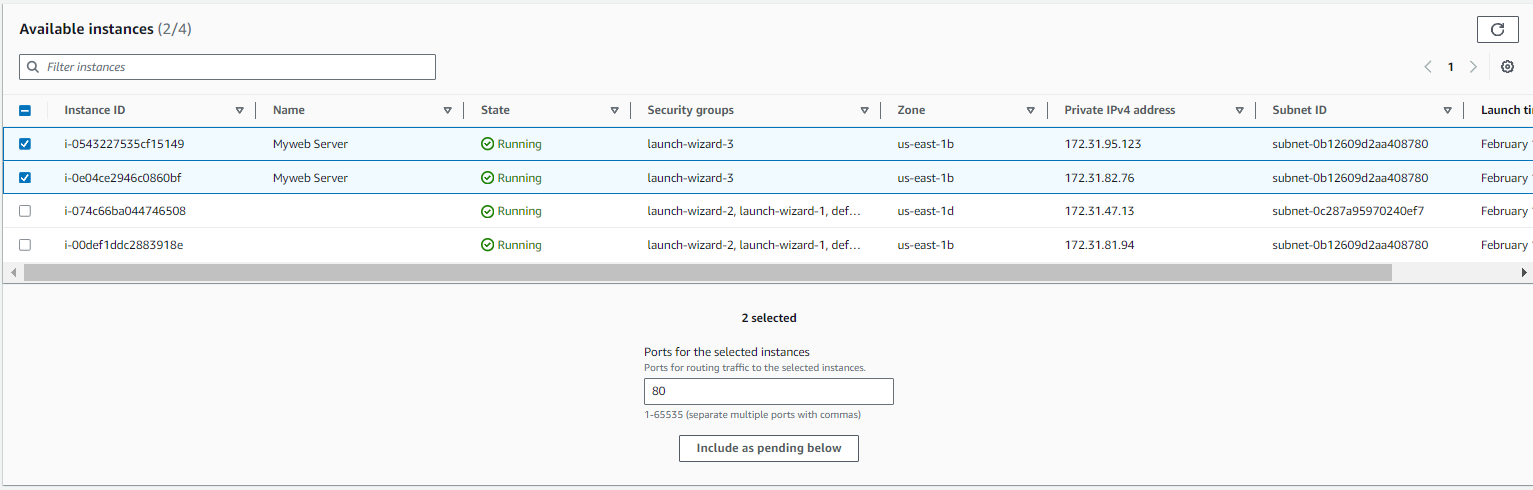


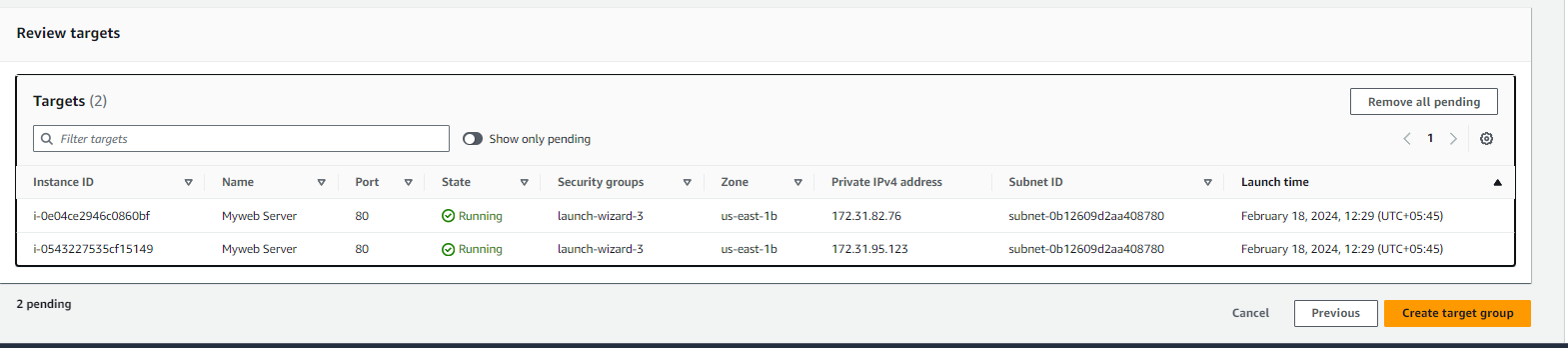
Now we have to make a target group

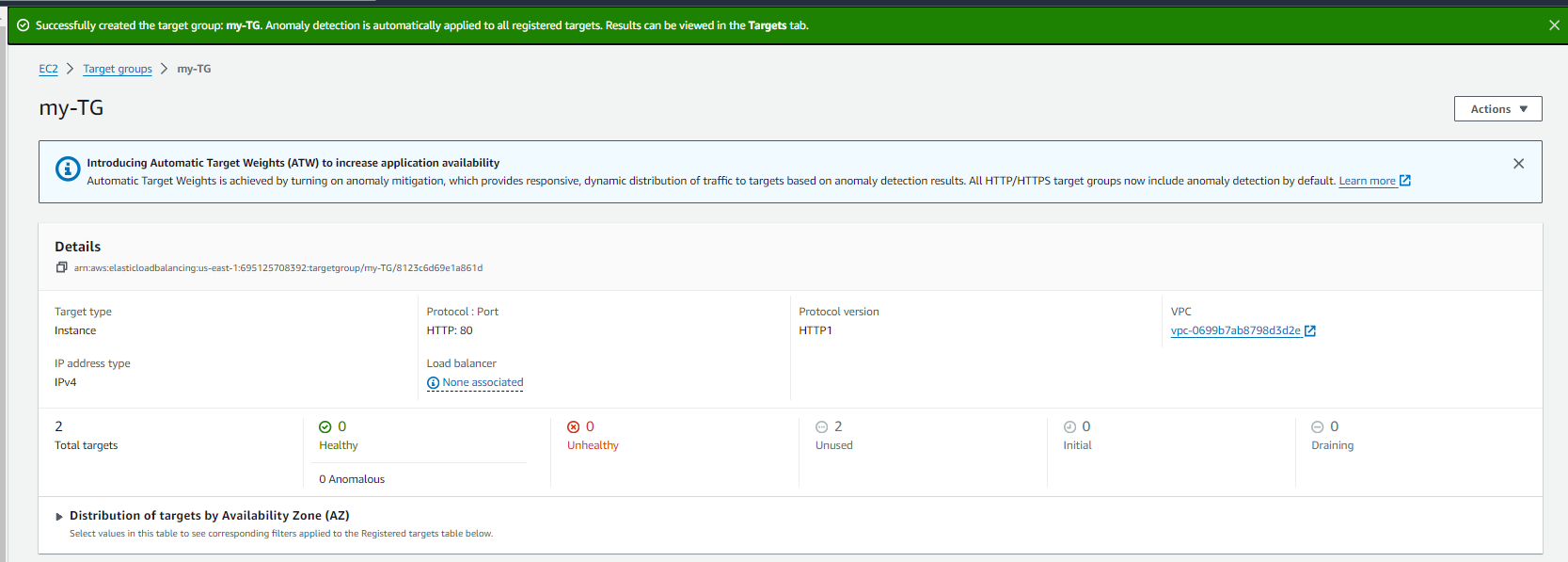




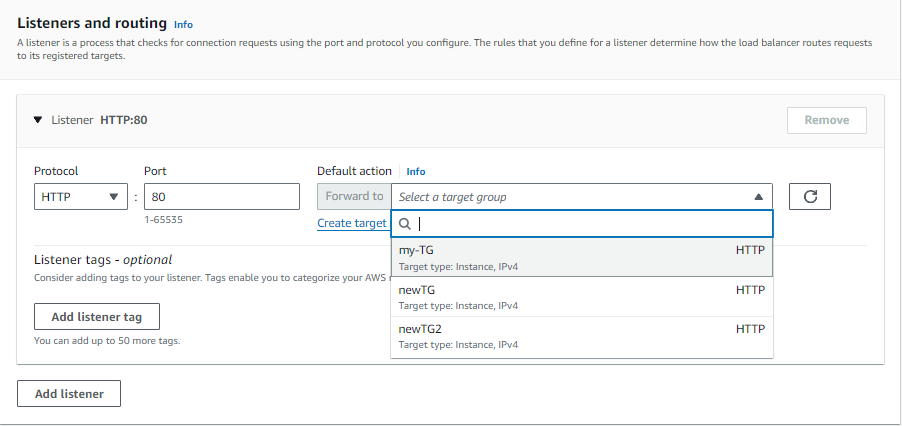


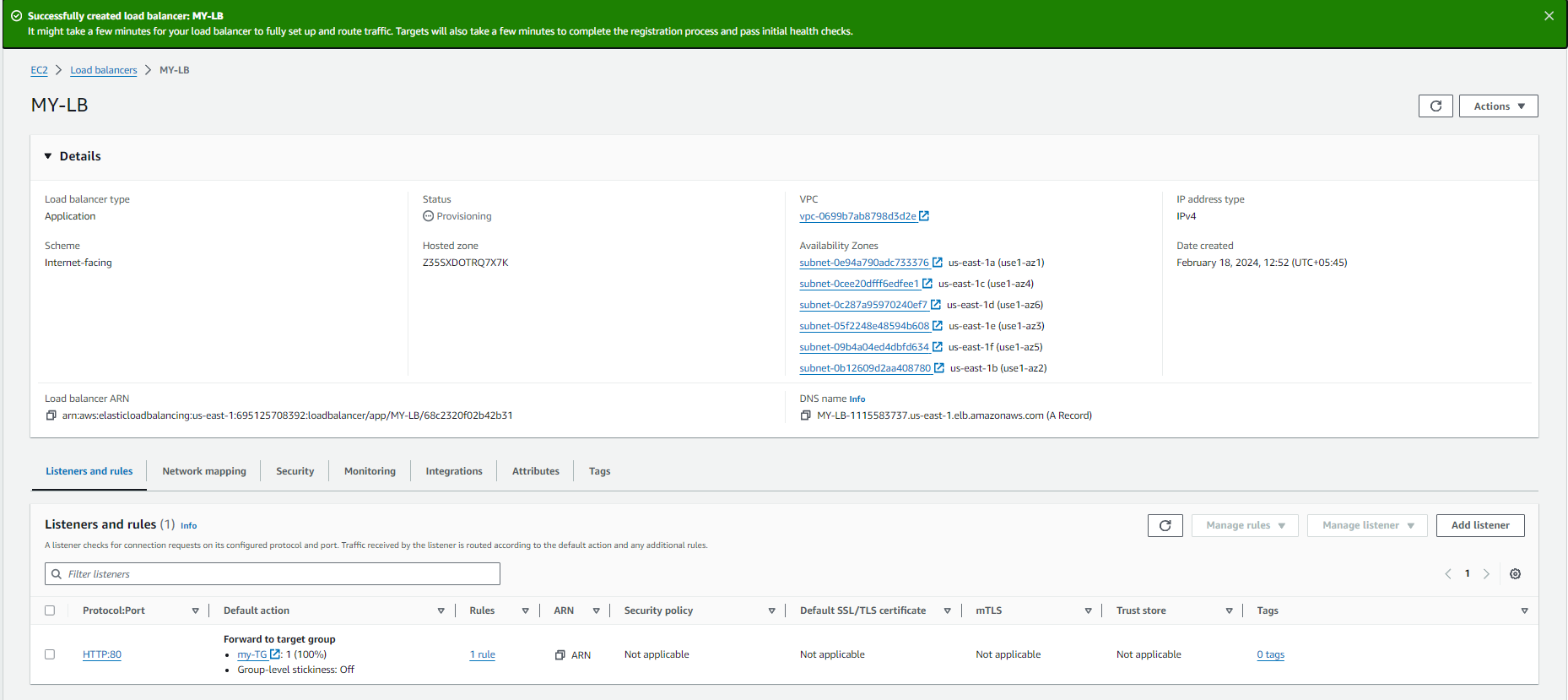




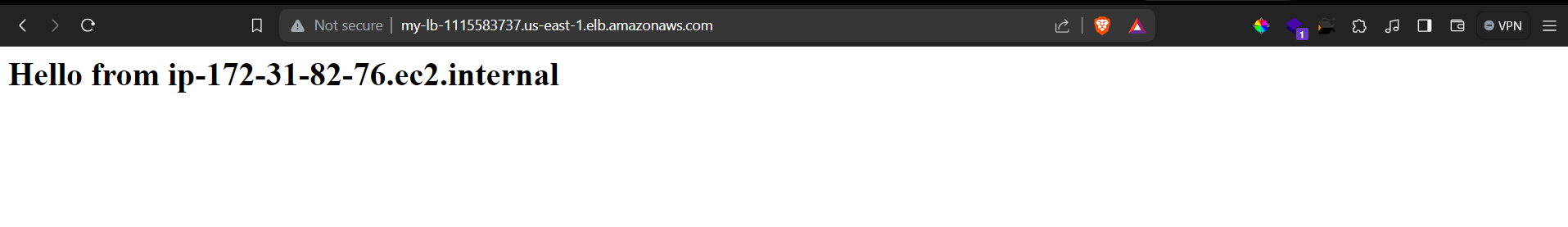


Now we will select the target group that we just created





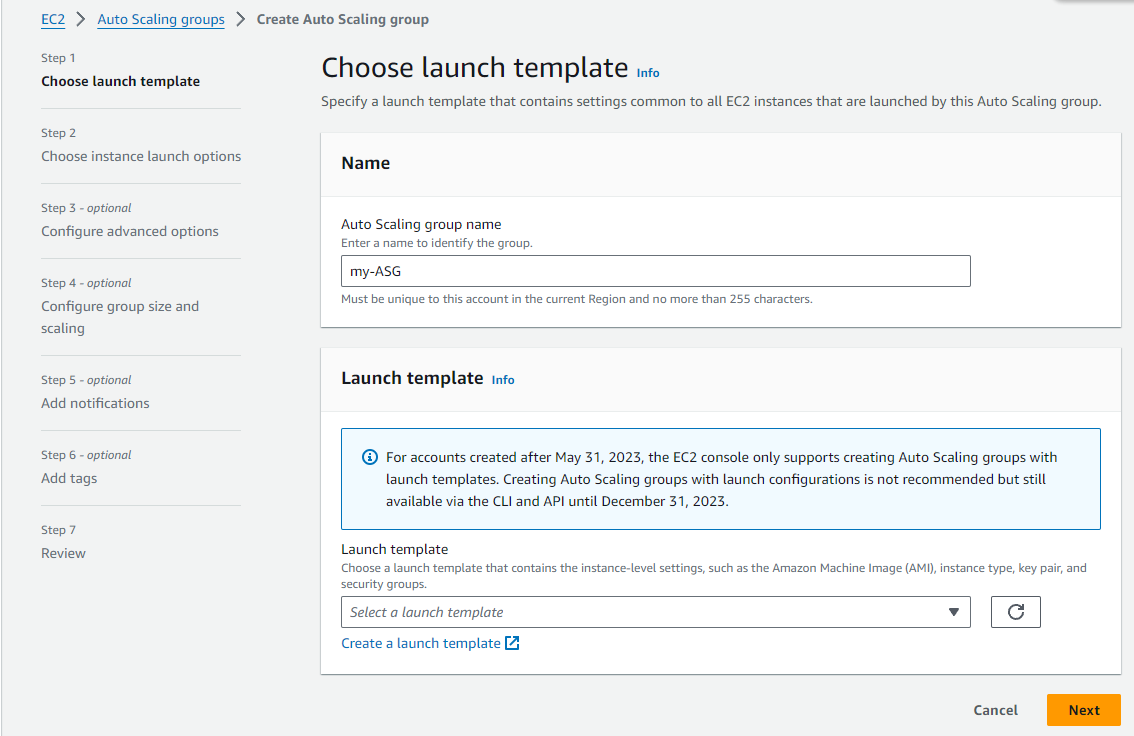
We have successfully created our load balancer





Now we can access both the public ip with a single DNS

Auto Scaling



Create launch template

