



IT4090

Cloud Computing

4th Year, 1st Semester

Assignment 3

Submitted to

Sri Lanka Institute of Information Technology

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Bachelor of Science Special Honors Degree in Information Technology

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Table of Contents

| | |
|--------------------------------|----|
| 1. Architectural diagram | 4 |
| 2. Create VPC | 5 |
| 3. Launch an instance | 6 |
| 4. Create load balancer..... | 10 |
| 5. Create Image | 15 |

Table of Figures

| | |
|---|----|
| Figure 1. 1: AWS architecture diagram | 4 |
| Figure 2. 1: Create VPC successful | 5 |
| Figure 2. 2: Created VPC's dashboard..... | 5 |
| Figure 3. 1: Give name for instance | 6 |
| Figure 3. 2: Select Ubuntu OS and AMI..... | 6 |
| Figure 3. 3: Select instance type..... | 7 |
| Figure 3. 4: Create new key pair | 7 |
| Figure 3. 5: Select VPC, subnet and enable auto assign public IP. Give some name for security group name..... | 8 |
| Figure 3. 6: Select source type | 8 |
| Figure 3. 7: Instance created successfully | 9 |
| Figure 3. 8: Created instance running and check passed..... | 9 |
| Figure 4. 1: Give a name for load balancer | 10 |
| Figure 4. 2: Select created VPC | 10 |
| Figure 4. 3: Choose us-east-1a and 1b..... | 11 |
| Figure 4. 4: Select security group and created target group..... | 11 |
| Figure 4. 5: Create new target group with instances for load balancer | 12 |
| Figure 4. 6: Create name for target group. Select HTTP and VPC | 12 |
| Figure 4. 7: Successfully created load balancer | 13 |
| Figure 4. 8: Edit inbound rule with HTTP and Anywhere..... | 13 |
| Figure 4. 9: Successfully created inbound security group rule..... | 14 |
| Figure 5. 1: Give a name for image | 15 |
| Figure 5. 2: Image created successful..... | 15 |

| | |
|--|----|
| Figure 5. 3: Give a name for launch template | 16 |
| Figure 5. 4: Select own by me and created AMI | 16 |
| Figure 5. 5: Select security group | 17 |
| Figure 5. 6: Launch template created successfully | 17 |
| Figure 5. 7: Give a name for scaling group and choose launch template | 18 |
| Figure 5. 8: Set minimum and maximum for VCPUs | 18 |
| Figure 5. 9: Set minimum and maximum for memory | 19 |
| Figure 5. 10: Select network VPC and availability zones and subnets | 19 |
| Figure 5. 11: Select attach to an existing load balancer | 20 |
| Figure 5. 12: Select target group | 20 |
| Figure 5. 13: Configure group size and scaling..... | 21 |
| Figure 5. 14: Click create auto scaling | 21 |
| Figure 5. 15: I can't access to create auto scaling group and get some error message | 22 |

1. Architectural diagram

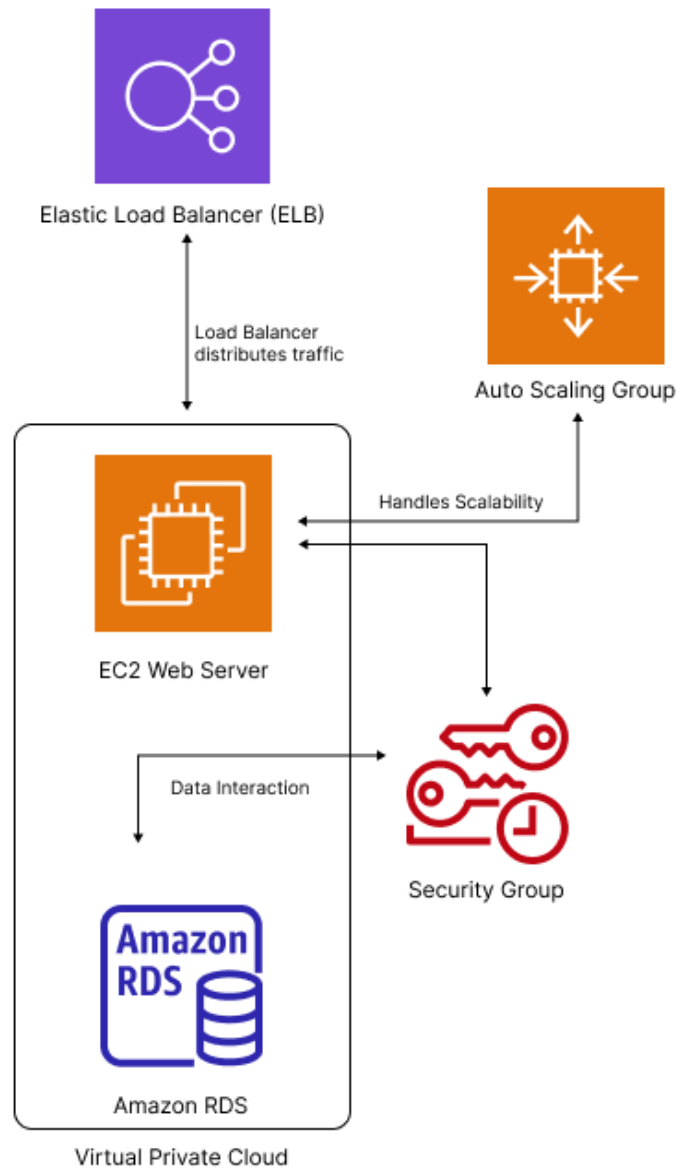


Figure 1. 1: AWS architecture diagram

2. Create VPC

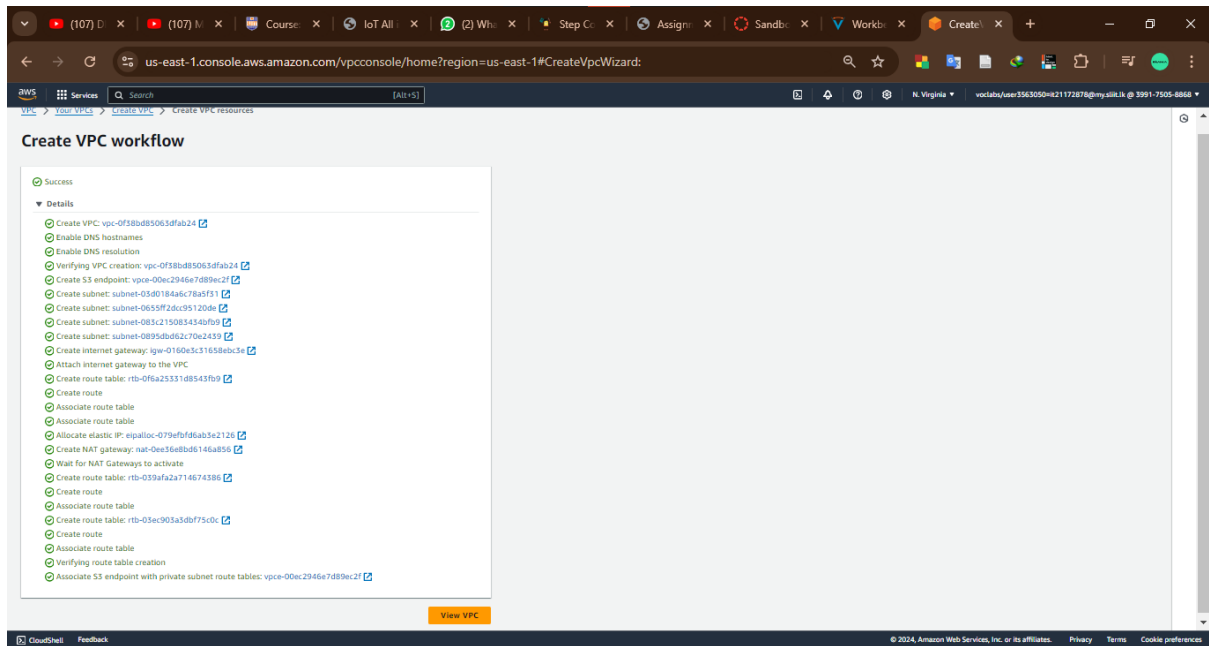


Figure 2. 1: Create VPC successful

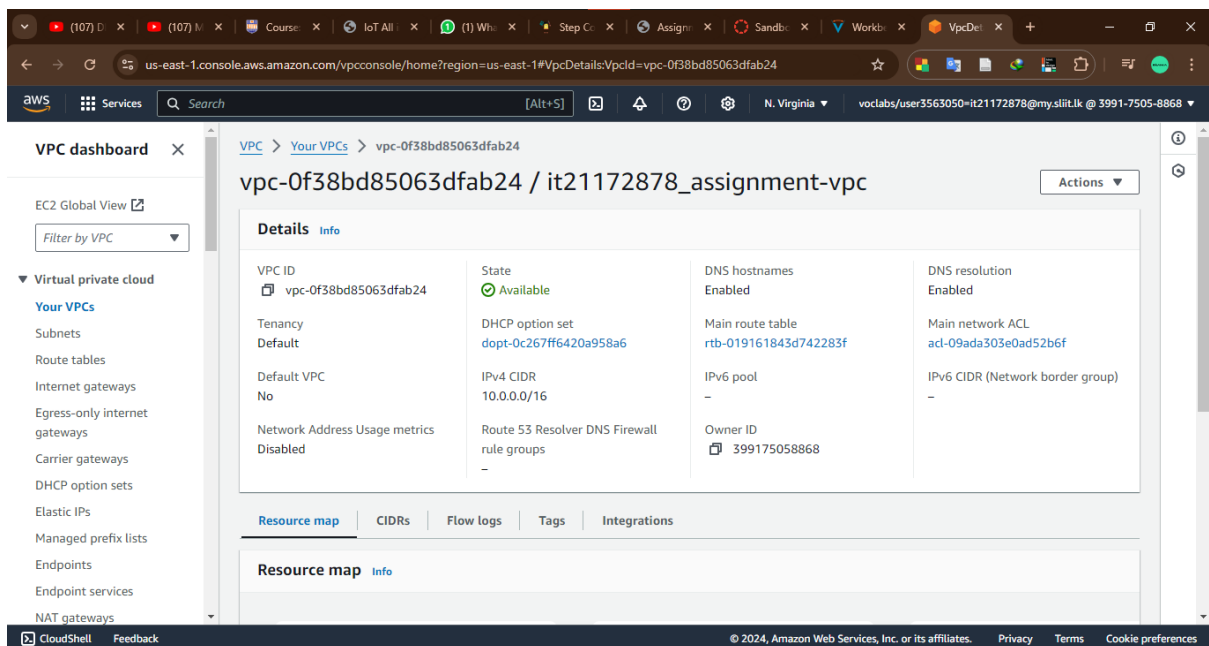


Figure 2. 2: Created VPC's dashboard

3. Launch an instance

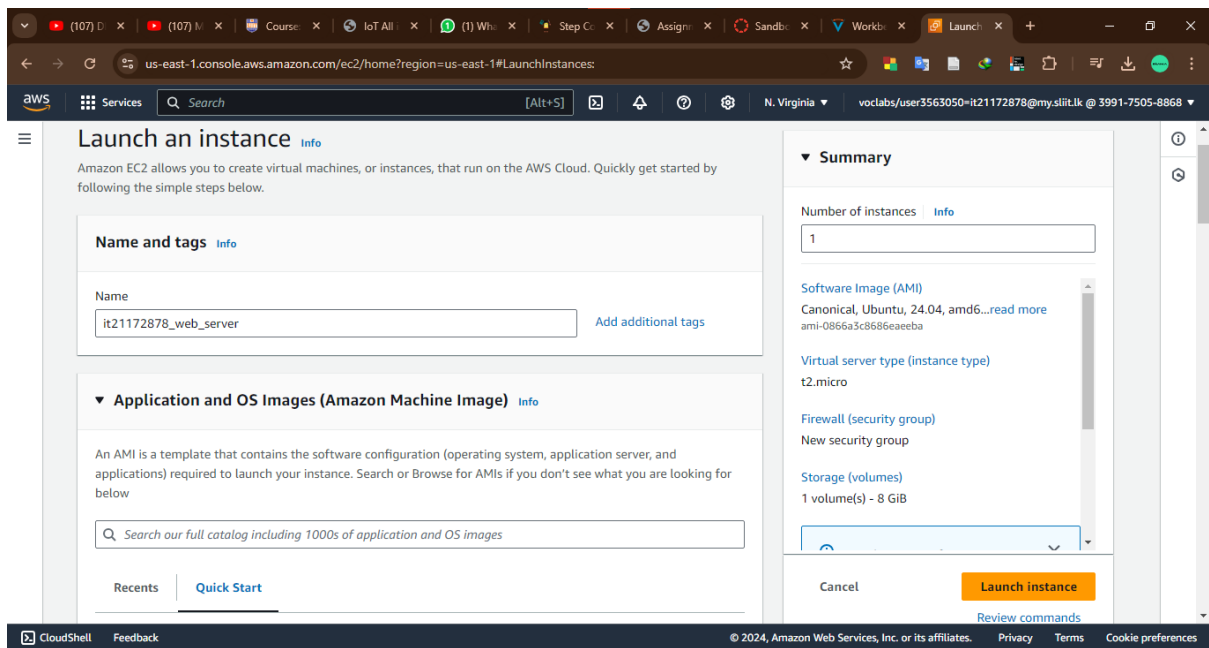


Figure 3. 1: Give name for instance

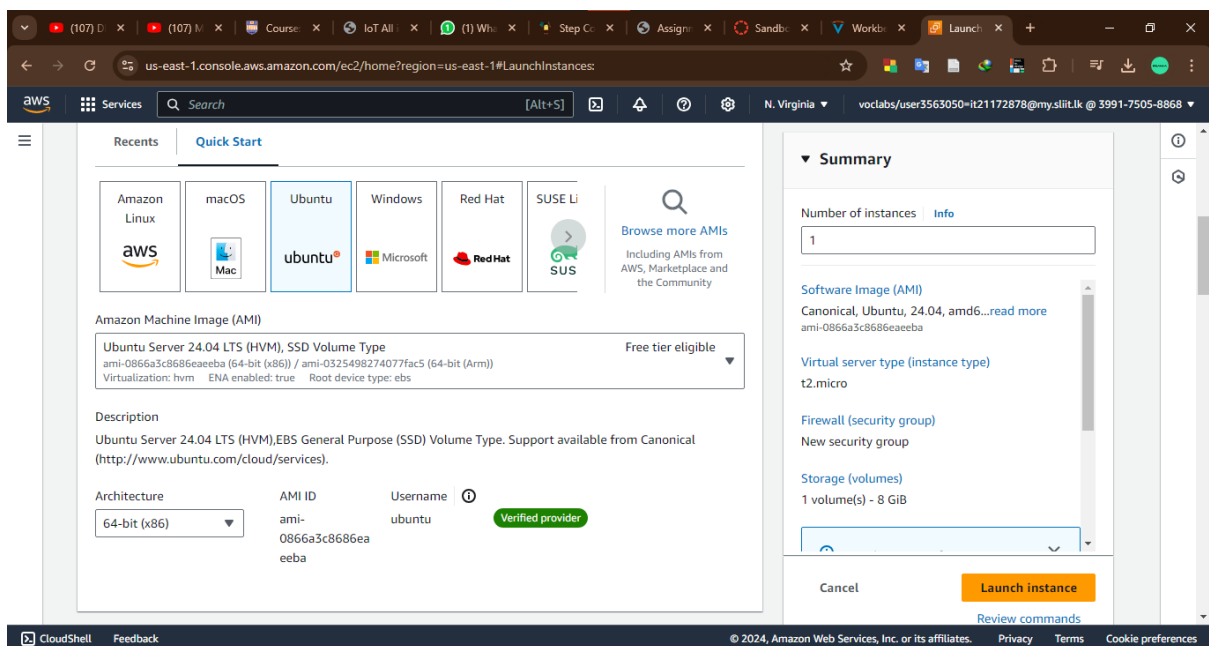


Figure 3. 2: Select Ubuntu OS and AMI

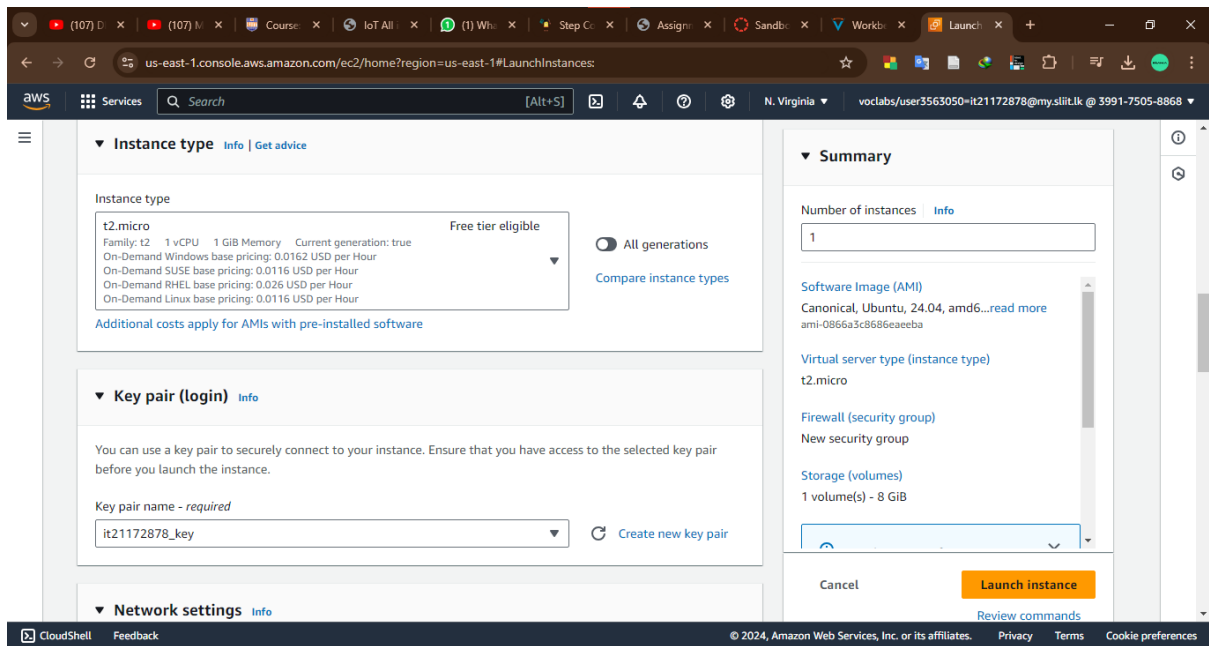


Figure 3. 3: Select instance type

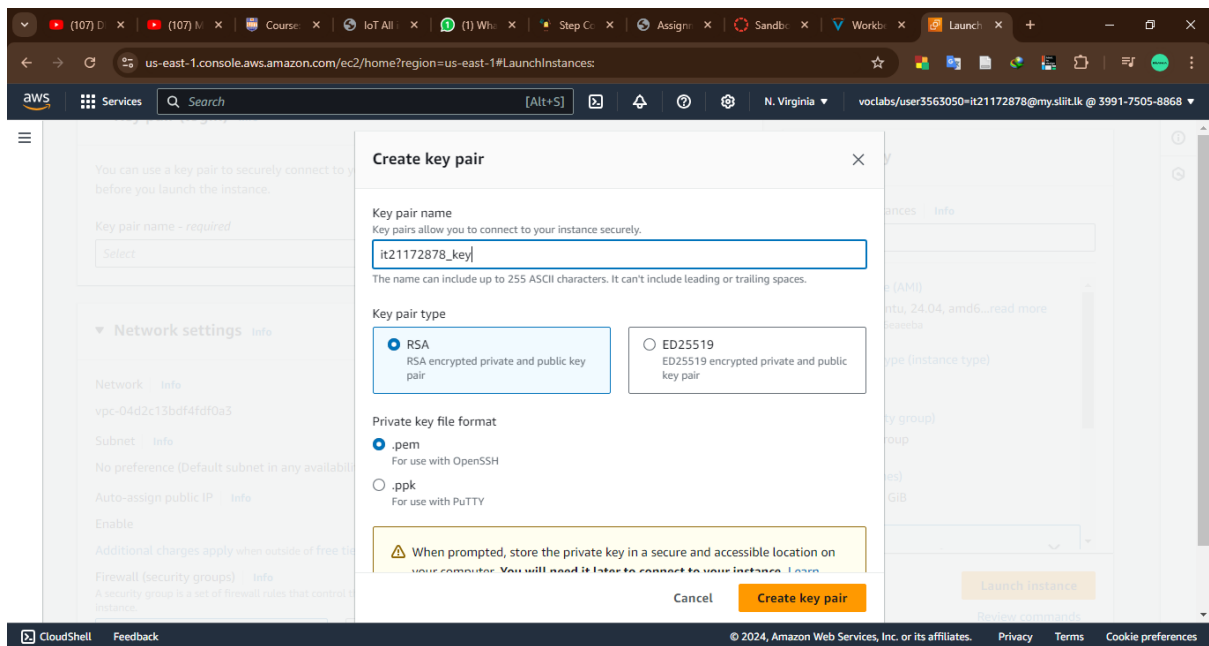


Figure 3. 4: Create new key pair

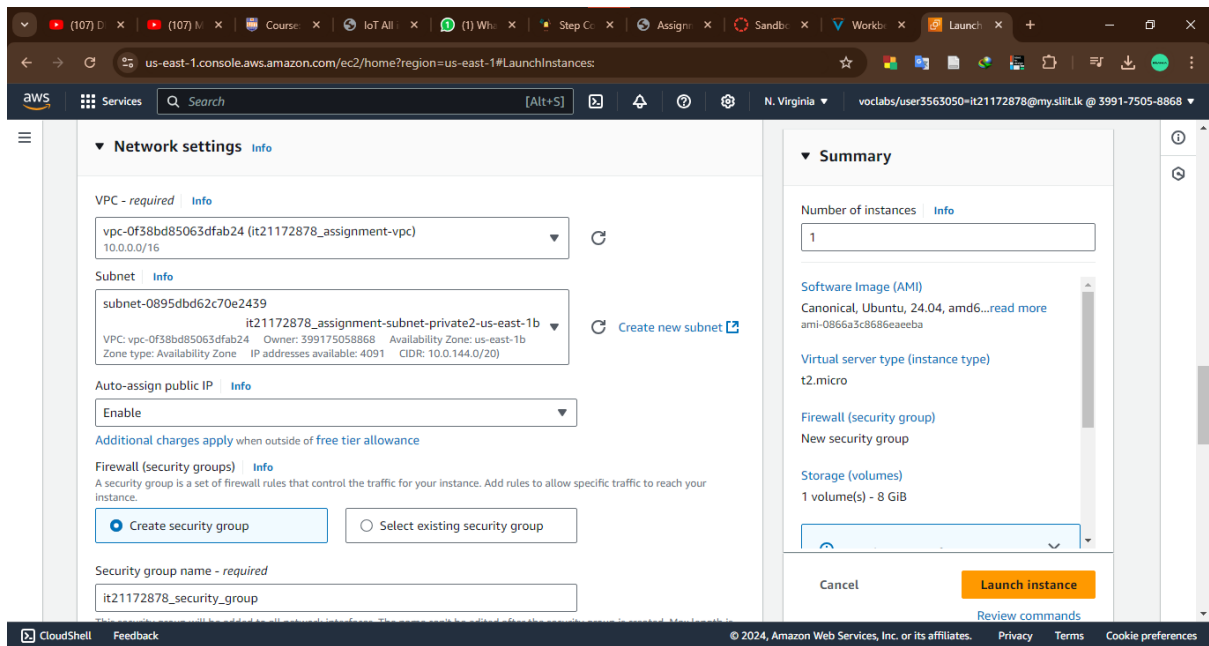


Figure 3. 5: Select VPC, subnet and enable auto assign public IP. Give some name for security group name

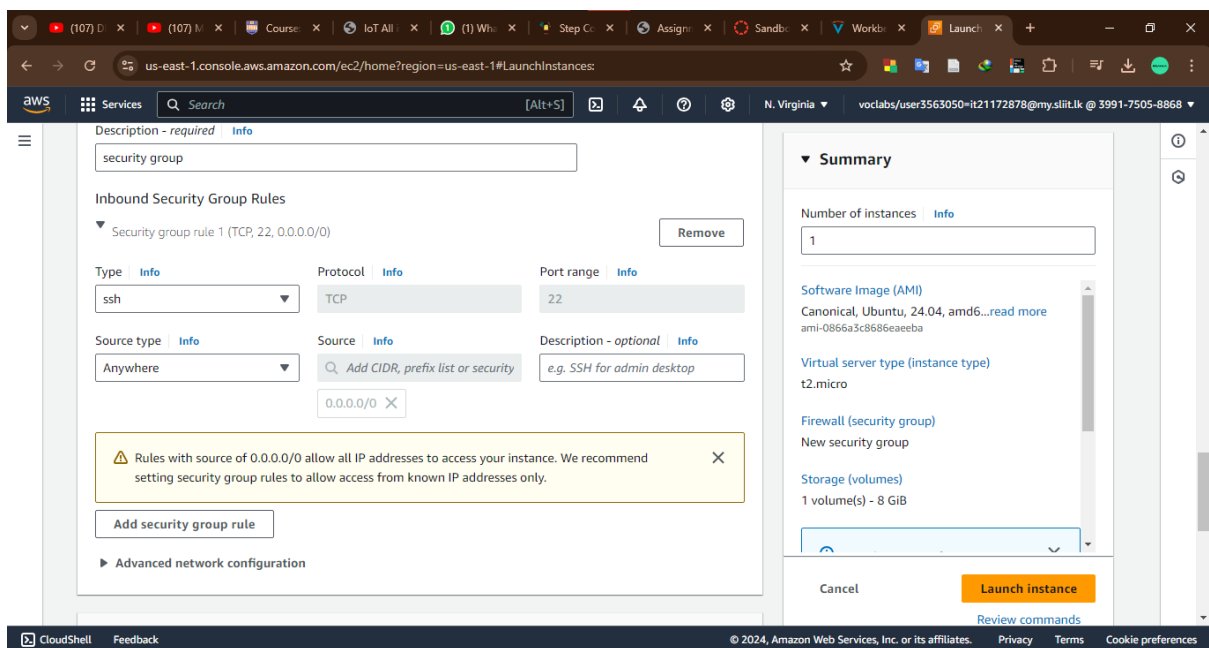


Figure 3. 6: Select source type

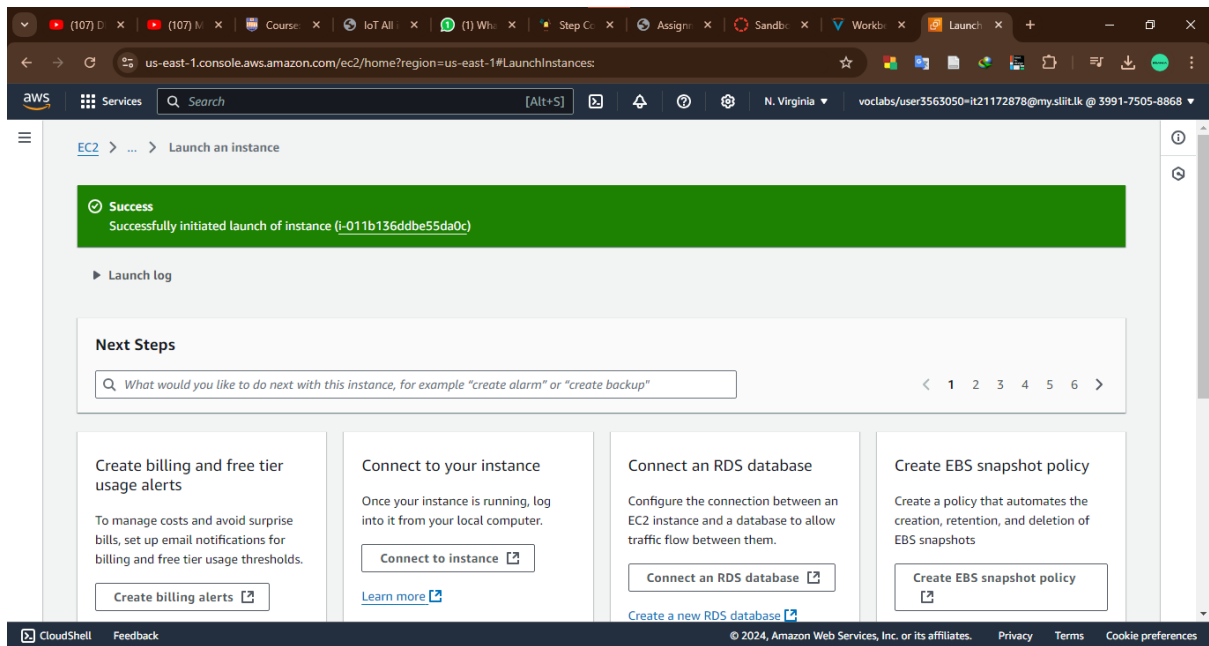


Figure 3. 7: Instance created successfully

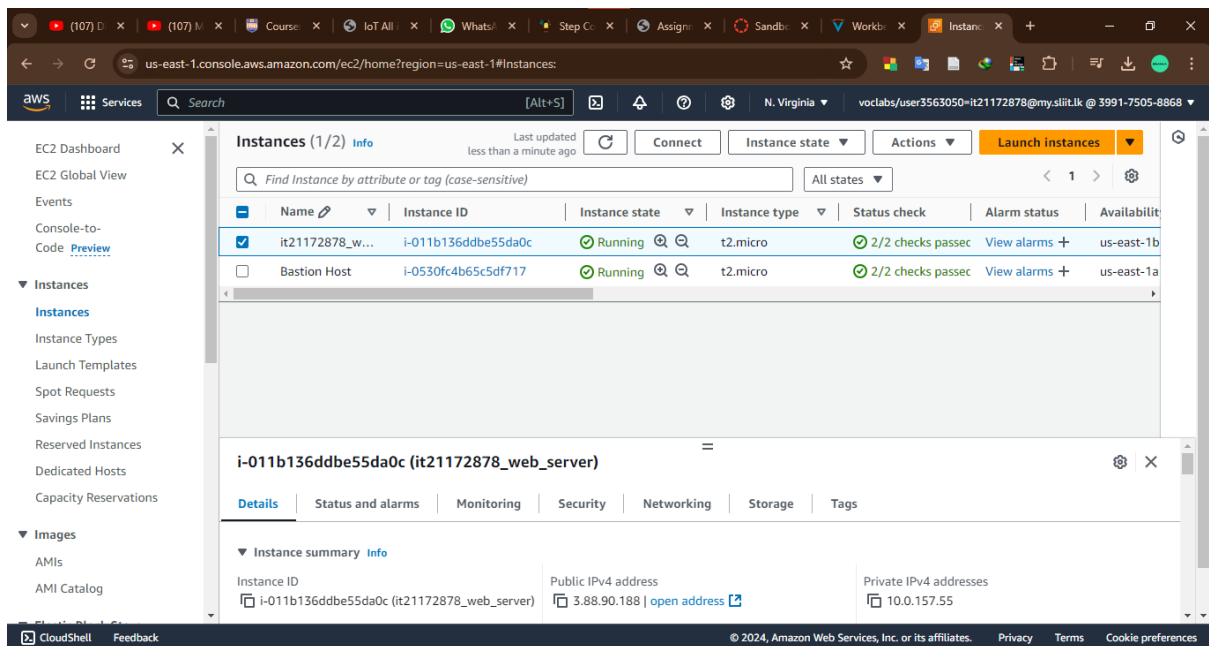


Figure 3. 8: Created instance running and check passed

4. Create load balancer

on request attributes. When the load balancer receives a connection request, it evaluates the listener rules in priority order to determine which rule to apply, and if applicable, it selects a target from the target group for the rule action.

How Application Load Balancers work

Basic configuration

Load balancer name
Name must be unique within your AWS account and can't be changed after the load balancer is created.

it21172878-load-balancer

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme [Info](#)
Scheme can't be changed after the load balancer is created.

☒ **Internet-facing**
An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)

☐ **Internal**
An internal load balancer routes requests from clients to targets using private IP addresses. Compatible with the IPv4 and Dualstack IP address types.

Load balancer IP address type [Info](#)
Select the front-end IP address type to assign to the load balancer. The VPC and subnets mapped to this load balancer must include the selected IP address types. Public IPv4 addresses have an additional cost.

☒ **IPv4**
Includes only IPv4 addresses.

☐ **Dualstack**
Includes IPv4 and IPv6 addresses.

☐ **Dualstack without public IPv4**
Includes a public IPv6 address, and private IPv4 and IPv6 addresses. Compatible with **Internet-facing** load balancers only.

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Figure 4. 1: Give a name for load balancer

Load balancer IP address type [Info](#)
Select the front-end IP address type to assign to the load balancer. The VPC and subnets mapped to this load balancer must include the selected IP address types. Public IPv4 addresses have an additional cost.

☒ **IPv4**
Includes only IPv4 addresses.

☐ **Dualstack**
Includes IPv4 and IPv6 addresses.

☐ **Dualstack without public IPv4**
Includes a public IPv6 address, and private IPv4 and IPv6 addresses. Compatible with **Internet-facing** load balancers only.

Network mapping

The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings.

VPC [Info](#)
The load balancer will exist and scale within the selected VPC. The selected VPC is also where the load balancer targets must be hosted unless routing to Lambda or on-premises targets, or if using VPC peering. To confirm the VPC for your targets, view [target groups](#). For a new VPC, [create a VPC](#).

it21172878_assignment-vpc

vpc-0f38bd85063dfab24
IPv4 VPC CIDR: 10.0.0.0/16

Mappings [Info](#)
Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.

Availability Zones

☒ **us-east-1a (use1-az2)**

Subnet

Subnet-207c215087471b0c

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Figure 4. 2: Select created VPC

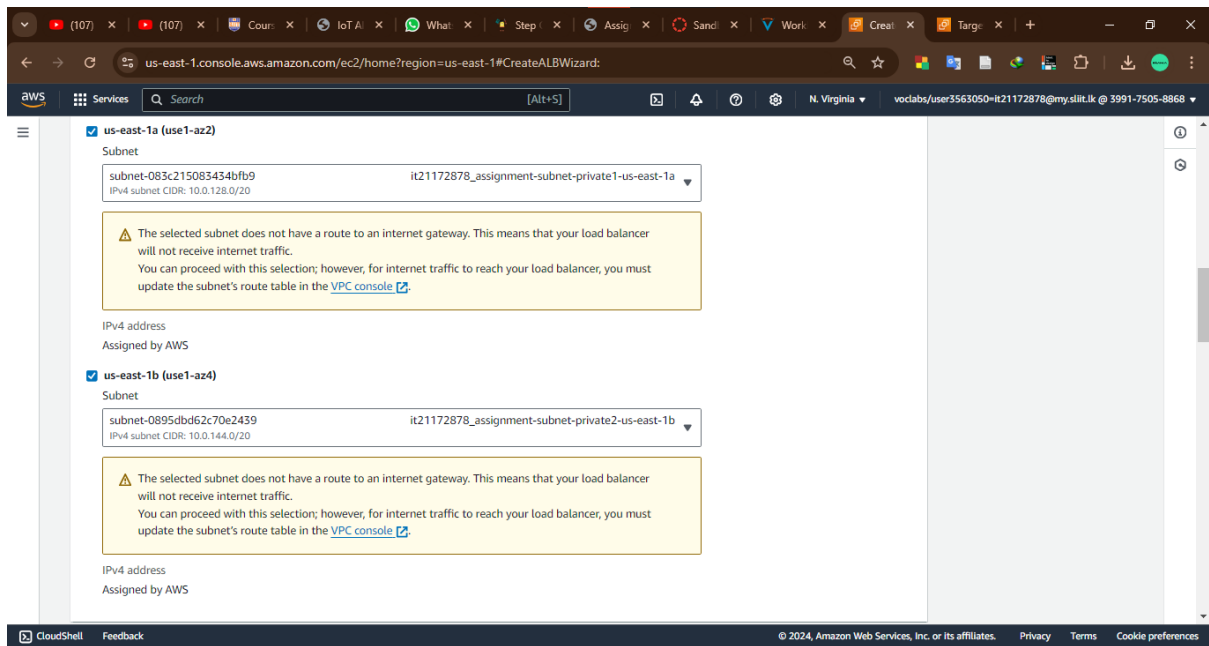


Figure 4. 3: Choose us-east-1a and 1b

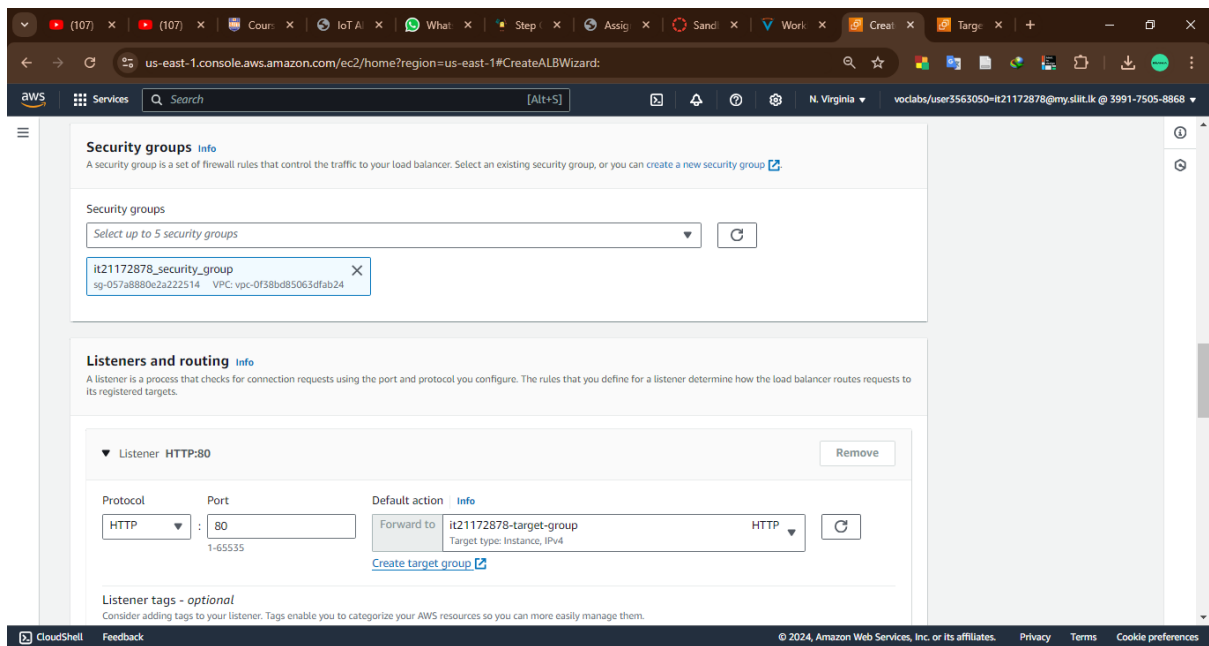


Figure 4. 4: Select security group and created target group

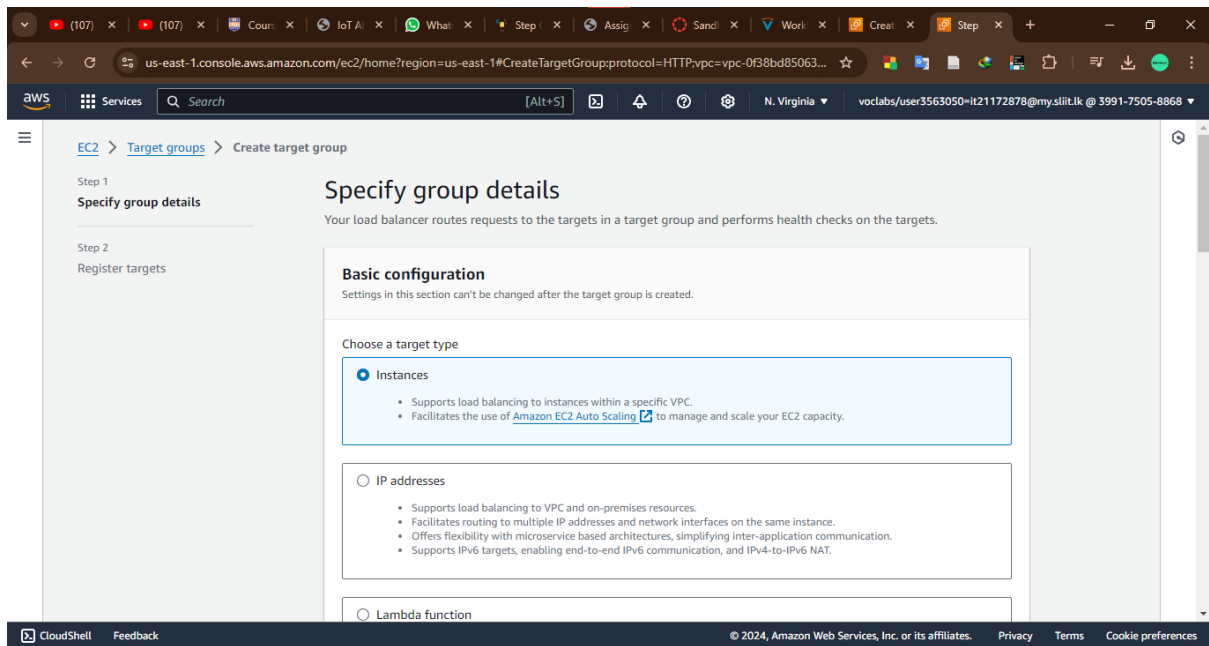


Figure 4. 5: Create new target group with instances for load balancer

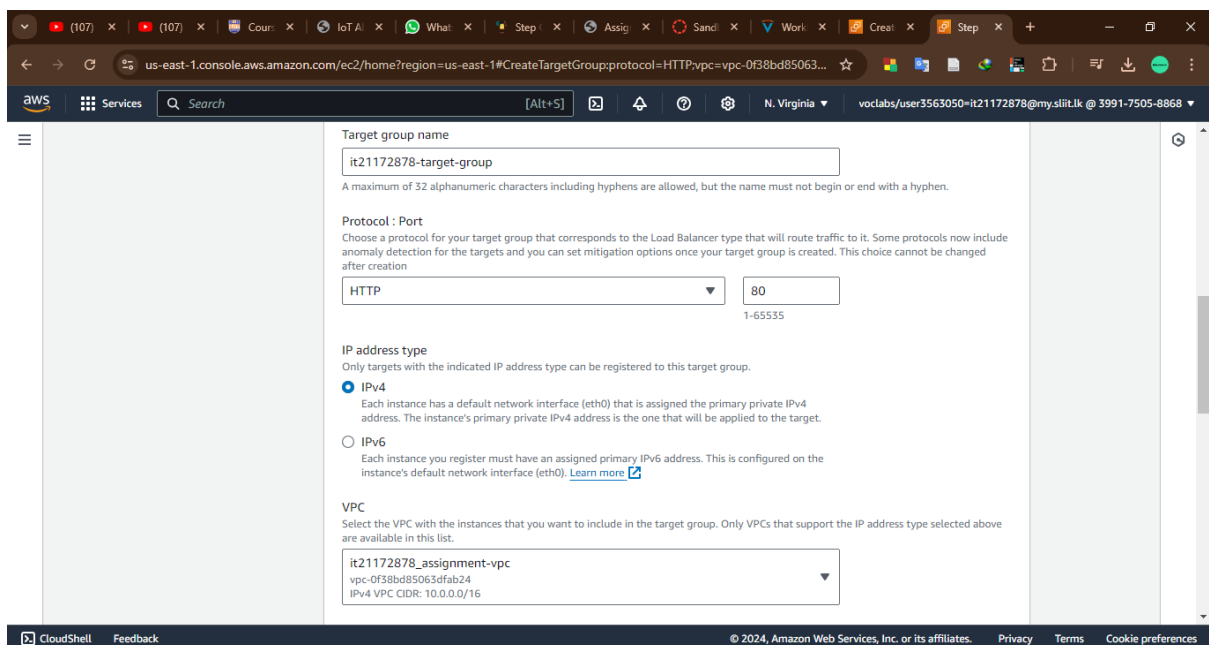


Figure 4. 6: Create name for target group. Select HTTP and VPC

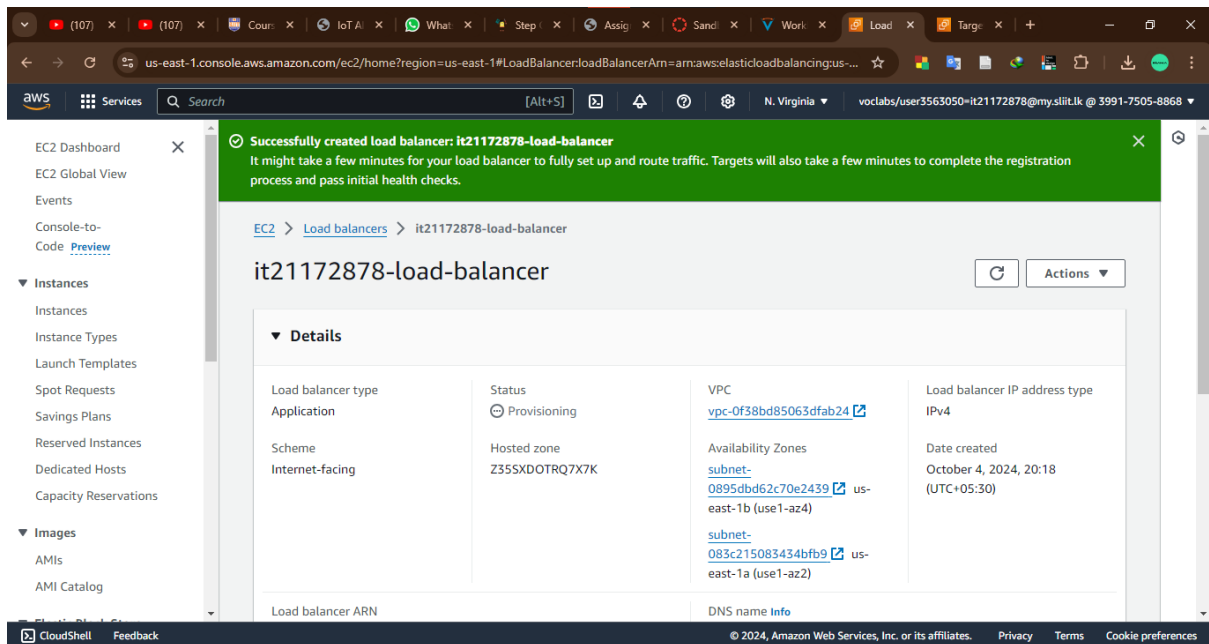


Figure 4. 7: Successfully created load balancer

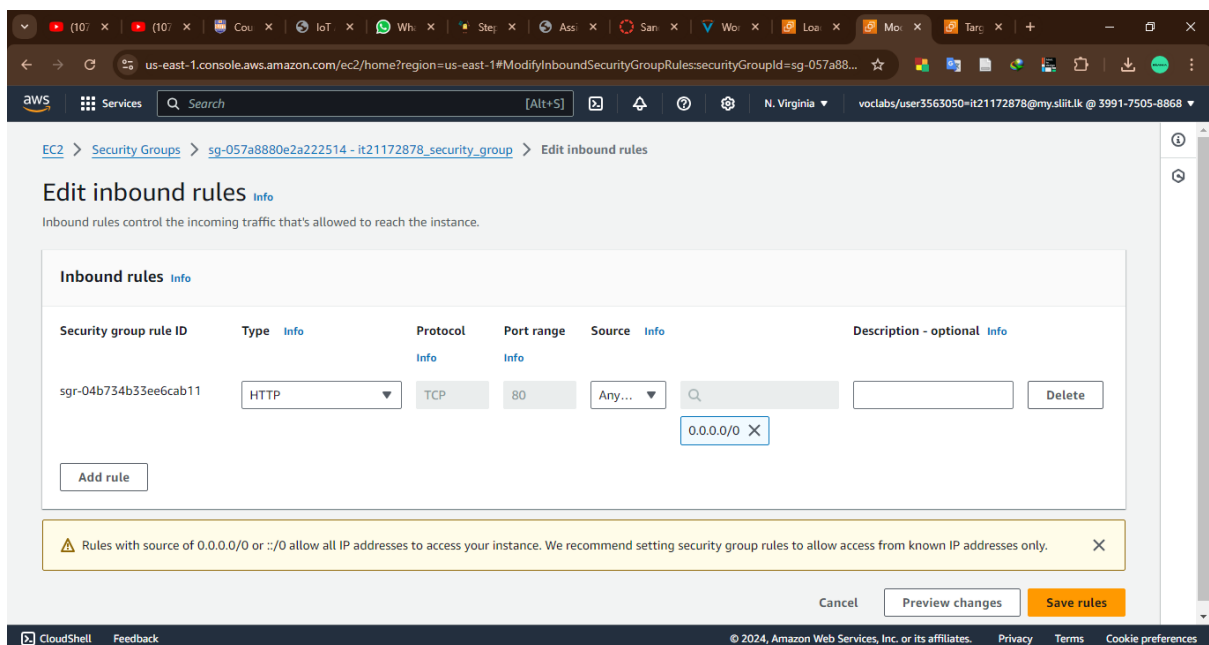


Figure 4. 8: Edit inbound rule with HTTP and Anywhere

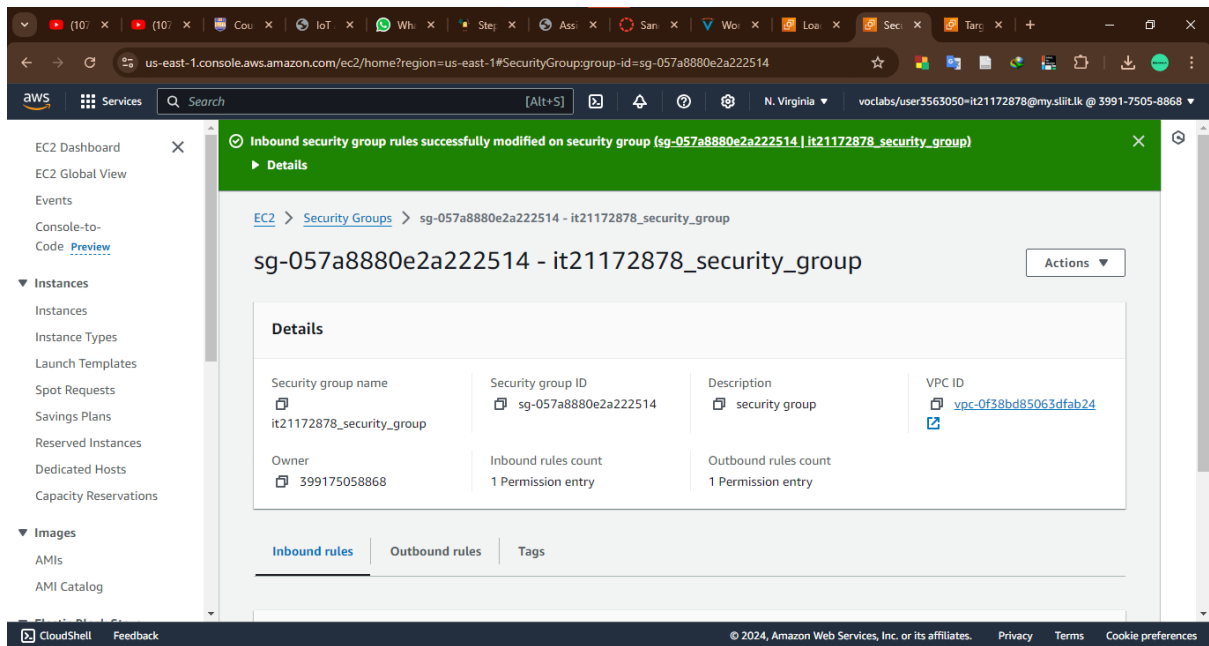


Figure 4. 9: Successfully created inbound security group rule

5. Create Image

Create image [Info](#)

An image (also referred to as an AMI) defines the programs and settings that are applied when you launch an EC2 instance. You can create an image from the configuration of an existing instance.

Instance ID
i-011b136ddb55da0c (it21172878_web_server)

Image name
it21172878-image
Maximum 127 characters. Can't be modified after creation.

Image description - optional
Image description
Maximum 255 characters

☒ Reboot instance
When selected, Amazon EC2 reboots the instance so that data is at rest when snapshots of the attached volumes are taken. This ensures data consistency.

Instance volumes

Figure 5. 1: Give a name for image

Currently creating AMI ami-0a967369a662069b8 from instance i-011b136ddb55da0c. Check that the AMI status is 'Available' before deleting the instance or carrying out other actions related to this AMI.

Instances (1/2) [Info](#)

Last updated less than a minute ago [Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

Find Instance by attribute or tag (case-sensitive) [All states](#)

| Name | Instance ID | Instance state | Instance type | Status check | Alarm status | Availability |
|-----------------|---------------------|----------------|---------------|-------------------|--------------|--------------|
| it21172878_w... | i-011b136ddb55da0c | Running | t2.micro | 2/2 checks passed | View alarms | us-east-1b |
| Bastion Host | i-0530fc4b65c5df717 | Running | t2.micro | 2/2 checks passed | View alarms | us-east-1a |

i-011b136ddb55da0c (it21172878_web_server)

[Details](#) [Status and alarms](#) [Monitoring](#) [Security](#) [Networking](#) [Storage](#) [Tags](#)

Instance summary [Info](#)

| | | |
|---|---|---|
| Instance ID i-011b136ddb55da0c (it21172878_web_server) | Public IPv4 address 3.88.90.188 open address | Private IPv4 addresses 10.0.157.55 |
| IPv6 address - | Instance state Running | Public IPv4 DNS ec2-3-88-90-188.compute-1.amazonaws.com open address |
| Hostname type | Private IP DNS name (IPv4 only) | |

Figure 5. 2: Image created successful

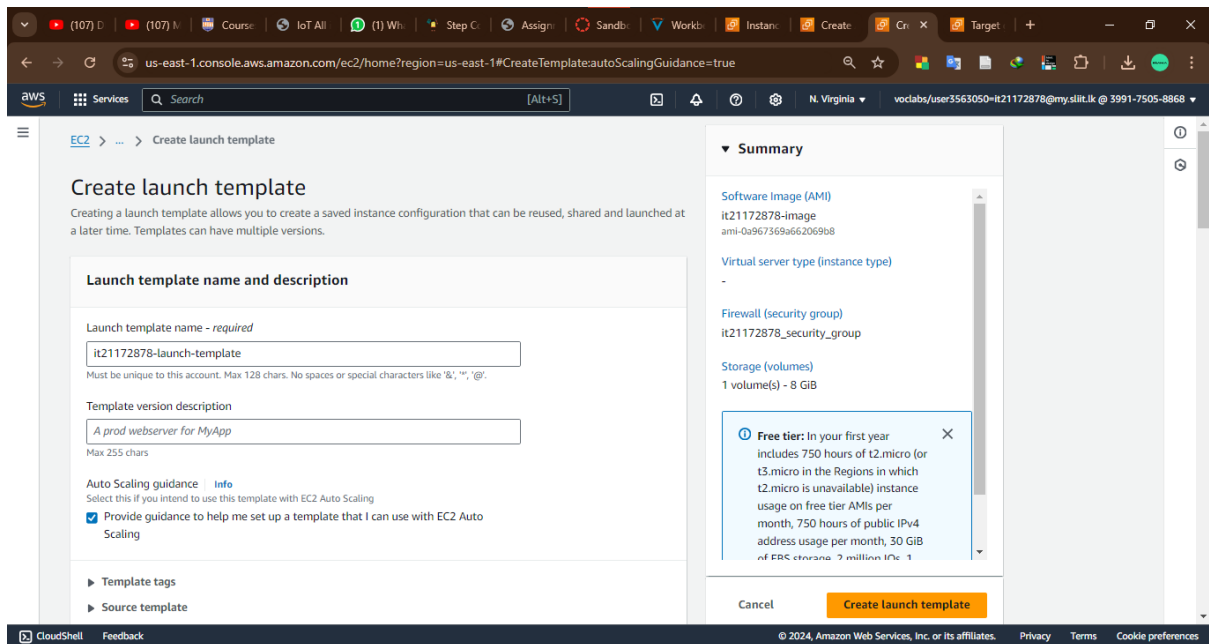


Figure 5. 3: Give a name for launch template

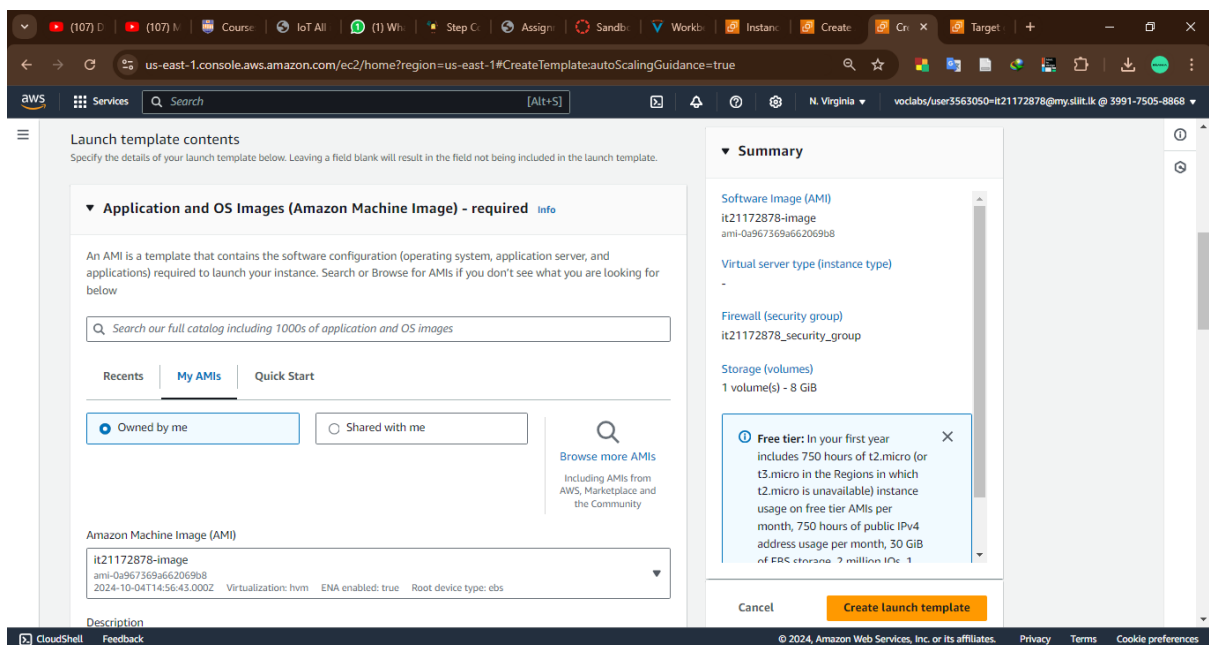


Figure 5. 4: Select own by me and created AMI

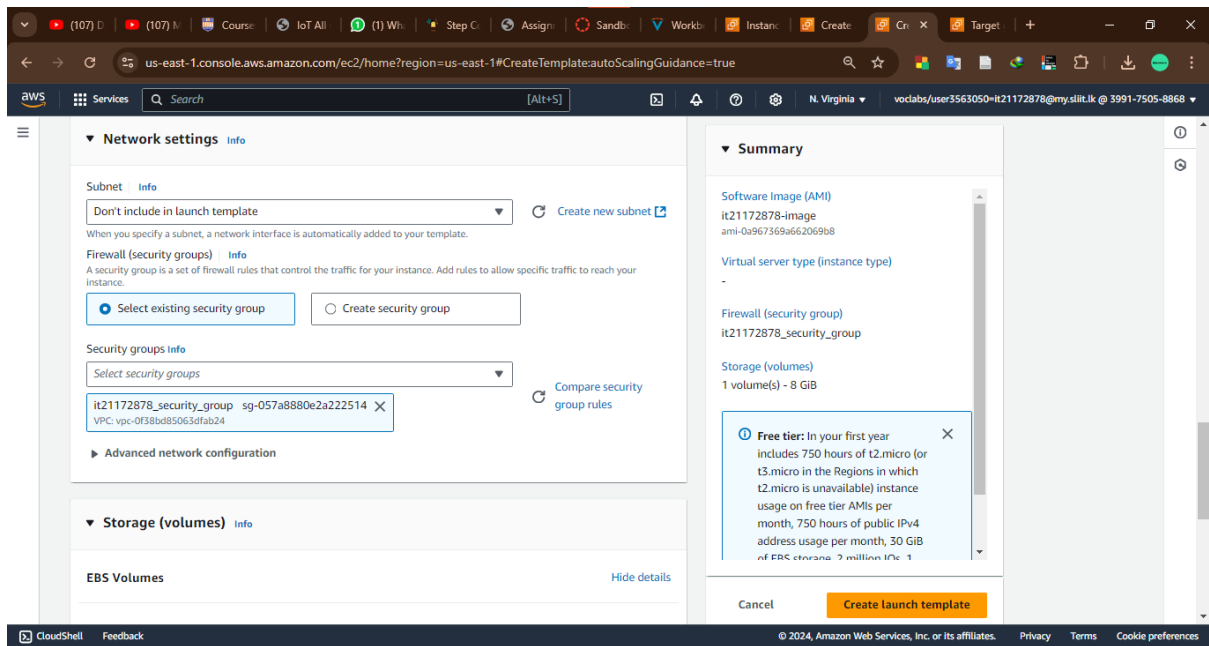


Figure 5. 5: Select security group

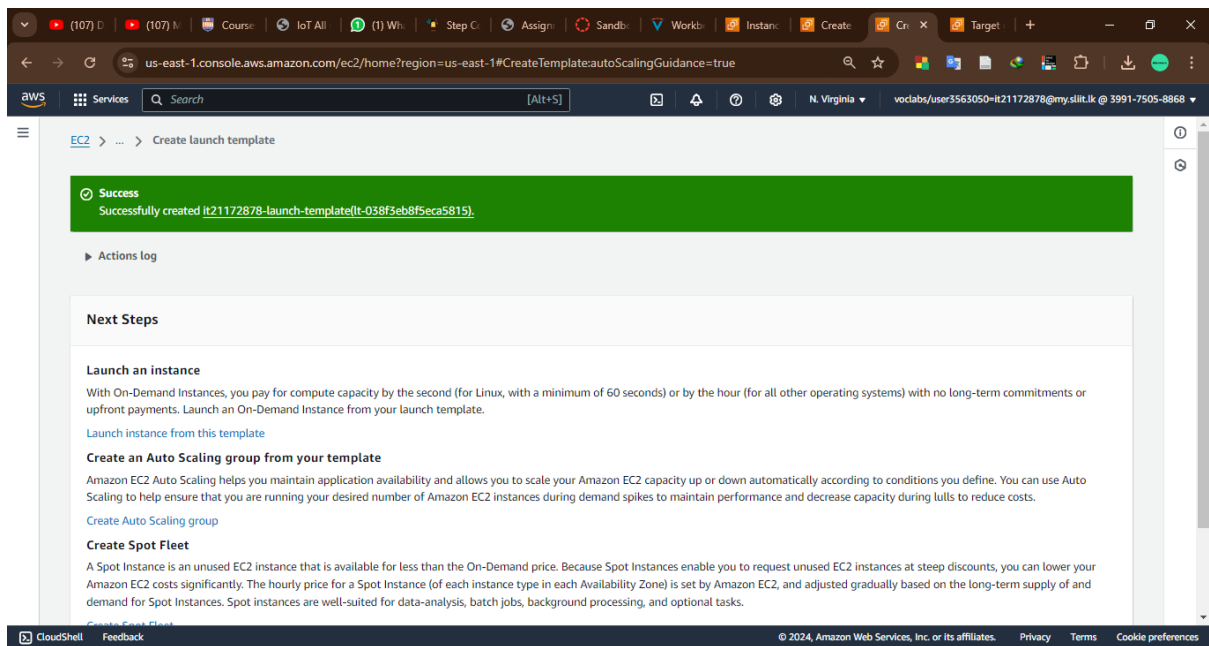


Figure 5. 6: Launch template created successfully

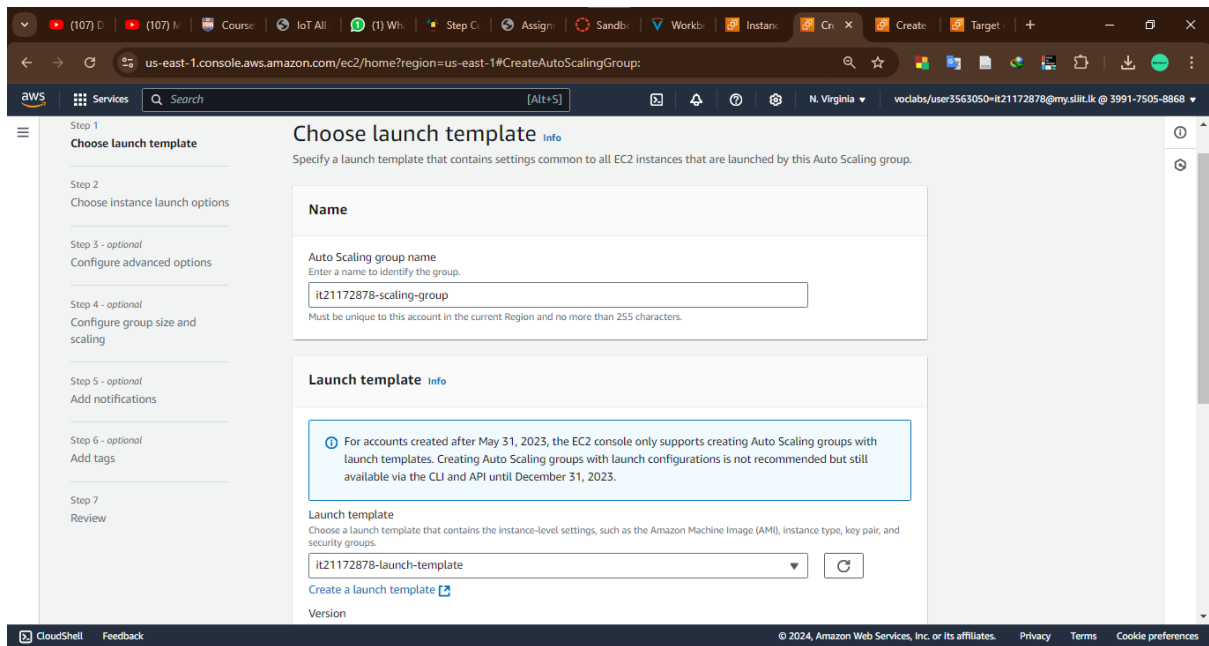


Figure 5. 7: Give a name for scaling group and choose launch template

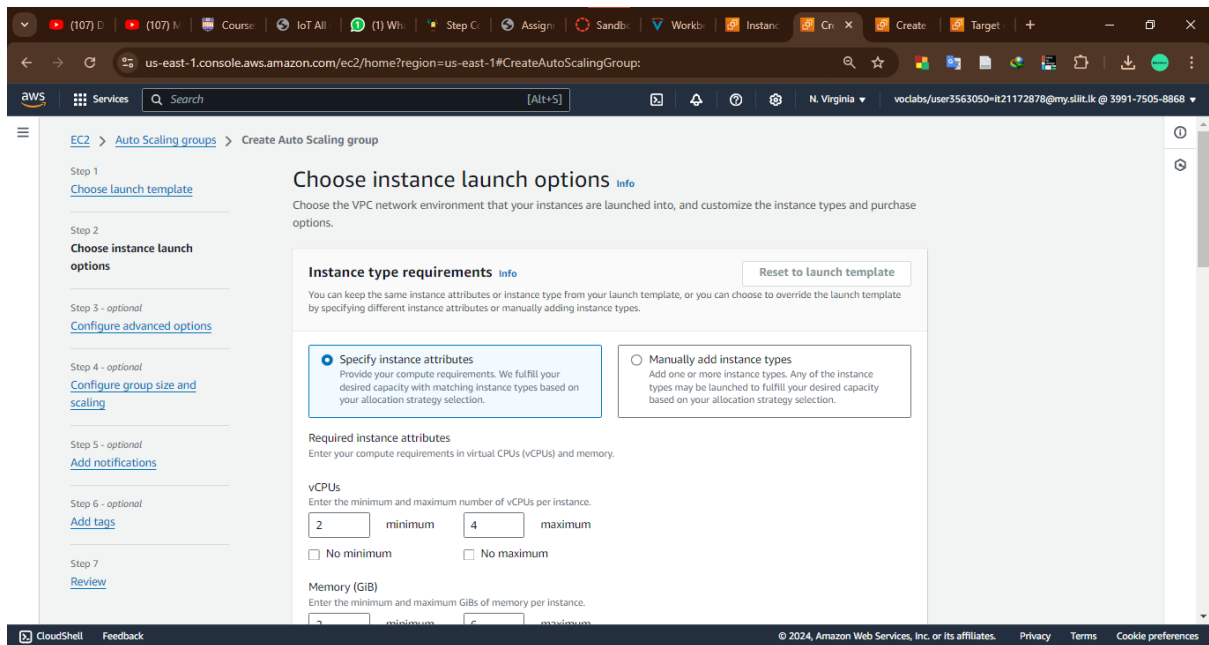


Figure 5. 8: Set minimum and maximum for VCPUs

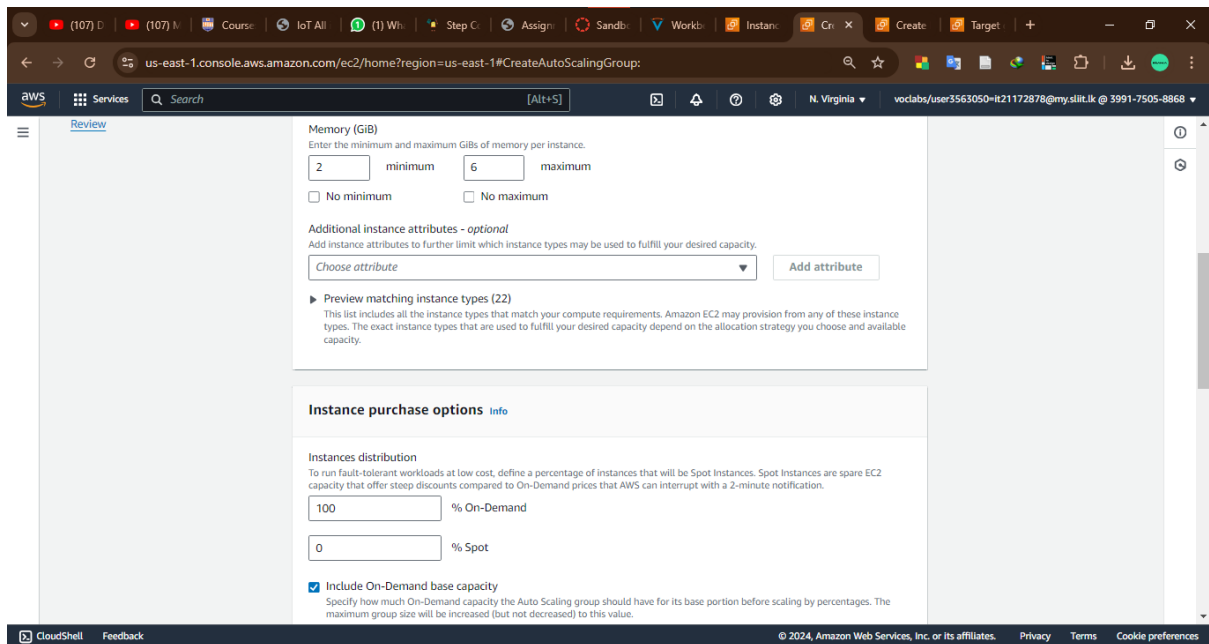


Figure 5. 9: Set minimum and maximum for memory

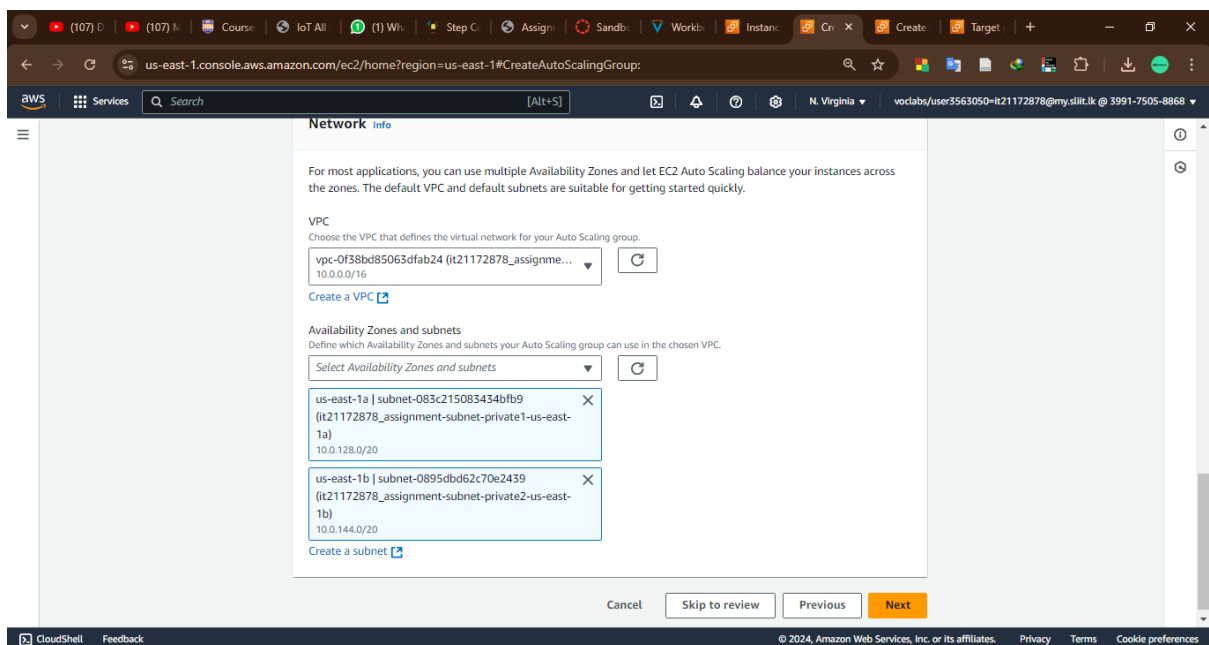


Figure 5. 10: Select network VPC and availability zones and subnets

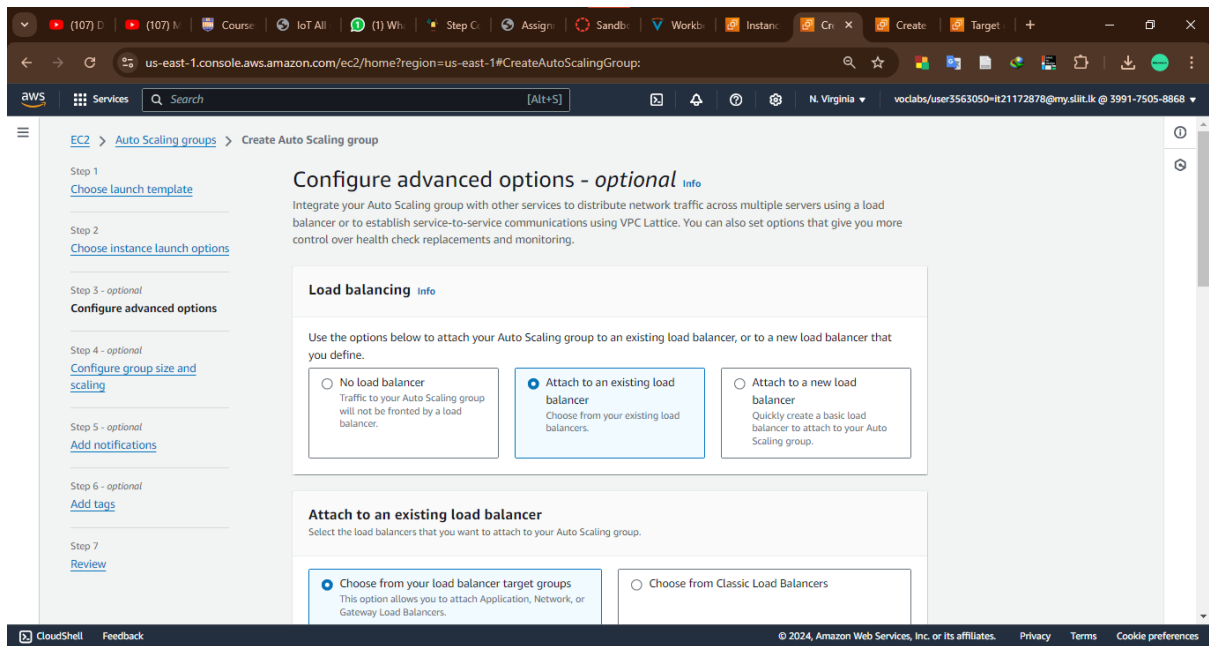


Figure 5. 11: Select attach to an existing load balancer

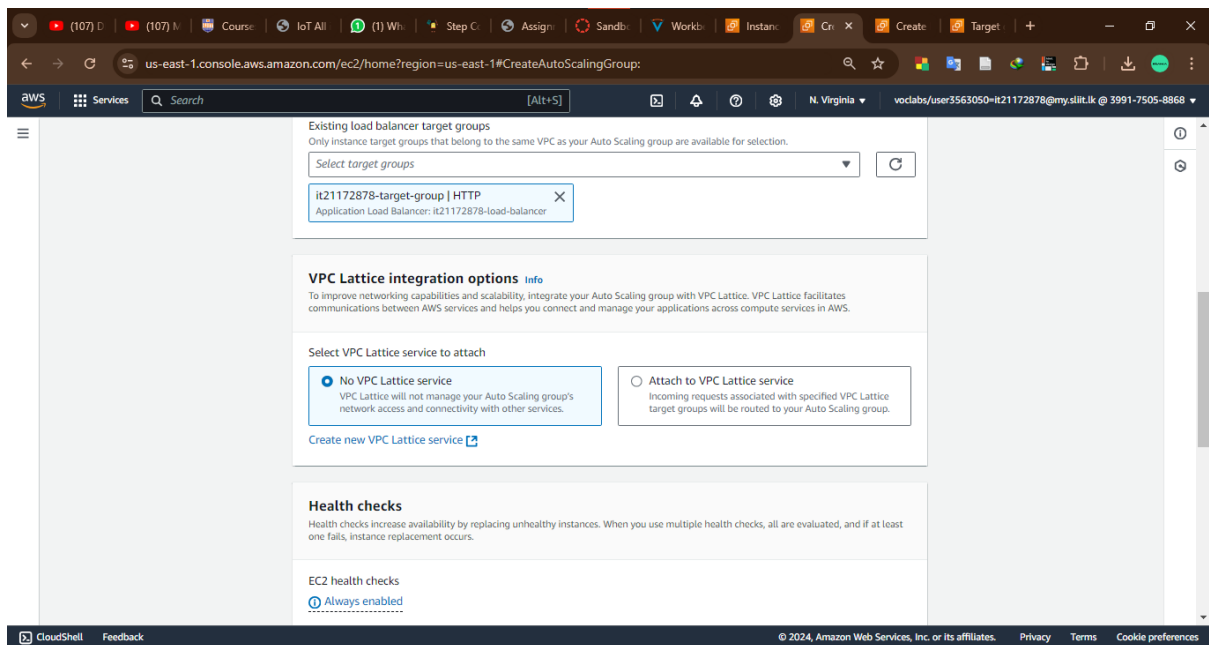


Figure 5. 12: Select target group

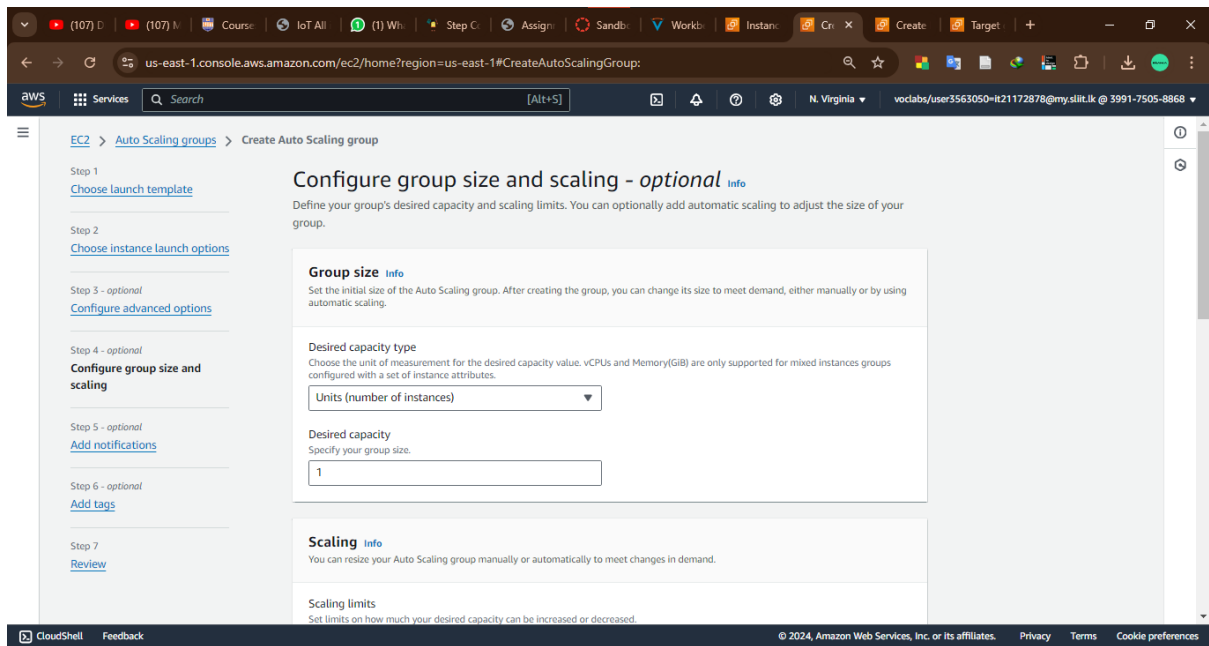


Figure 5. 13: Configure group size and scaling

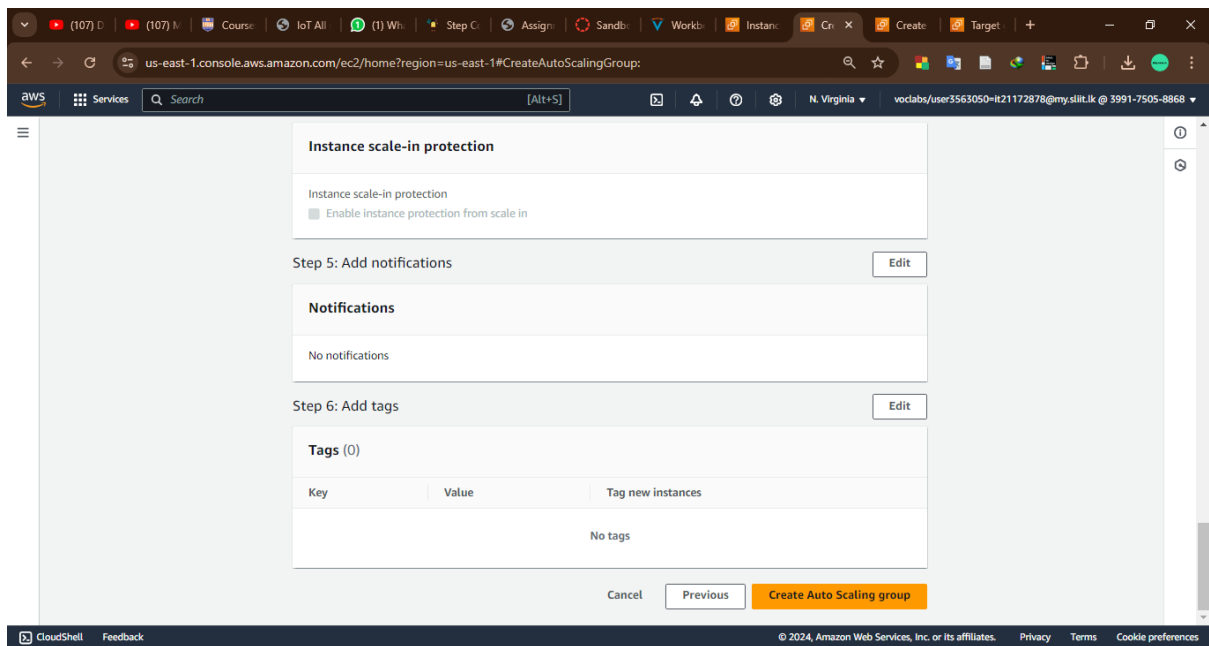


Figure 5. 14: Click create auto scaling

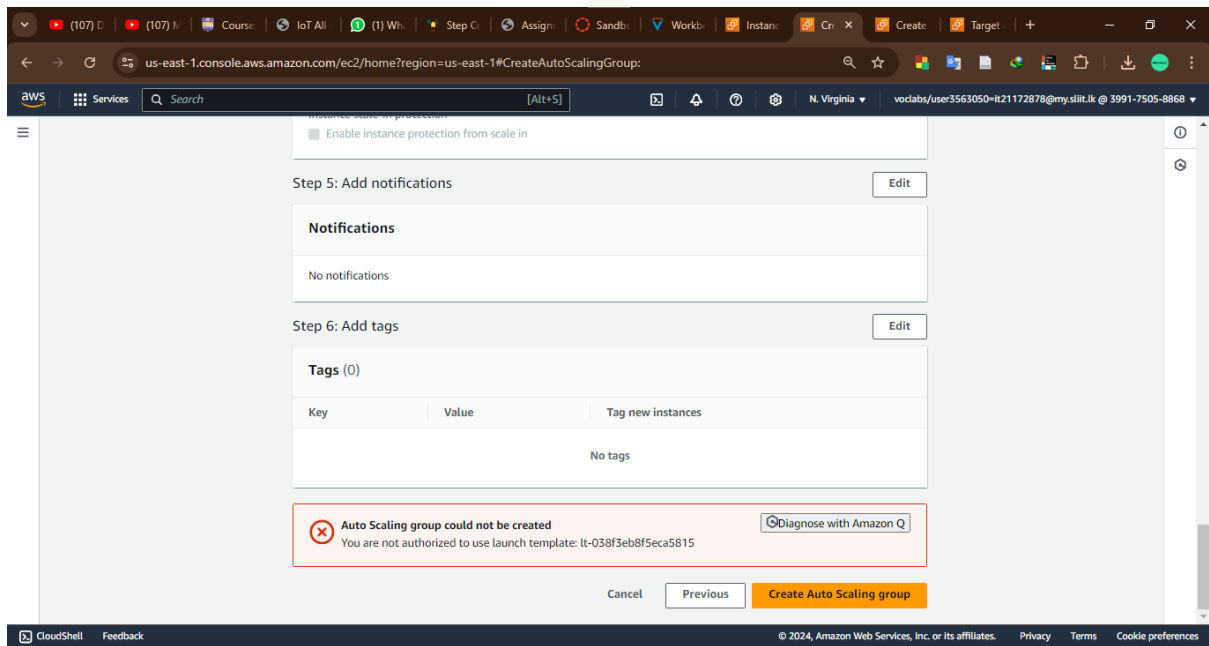


Figure 5. 15: I can't access to create auto scaling group and get some error message