

3) Create an AWS EC2 / GCP VM Instances (Instance Name: Regno_EC2_VM1, Regno_EC2_VM2) and install a webserver of your choice in each of the instances to host web site of your organization globally.

4) Create an Application Load Balancer to ensure the fare allocation of tasks among the web servers deployed on the Virtual machine instances.

Solution:

Step 1: Navigate to EC2 homepage of AWS console.

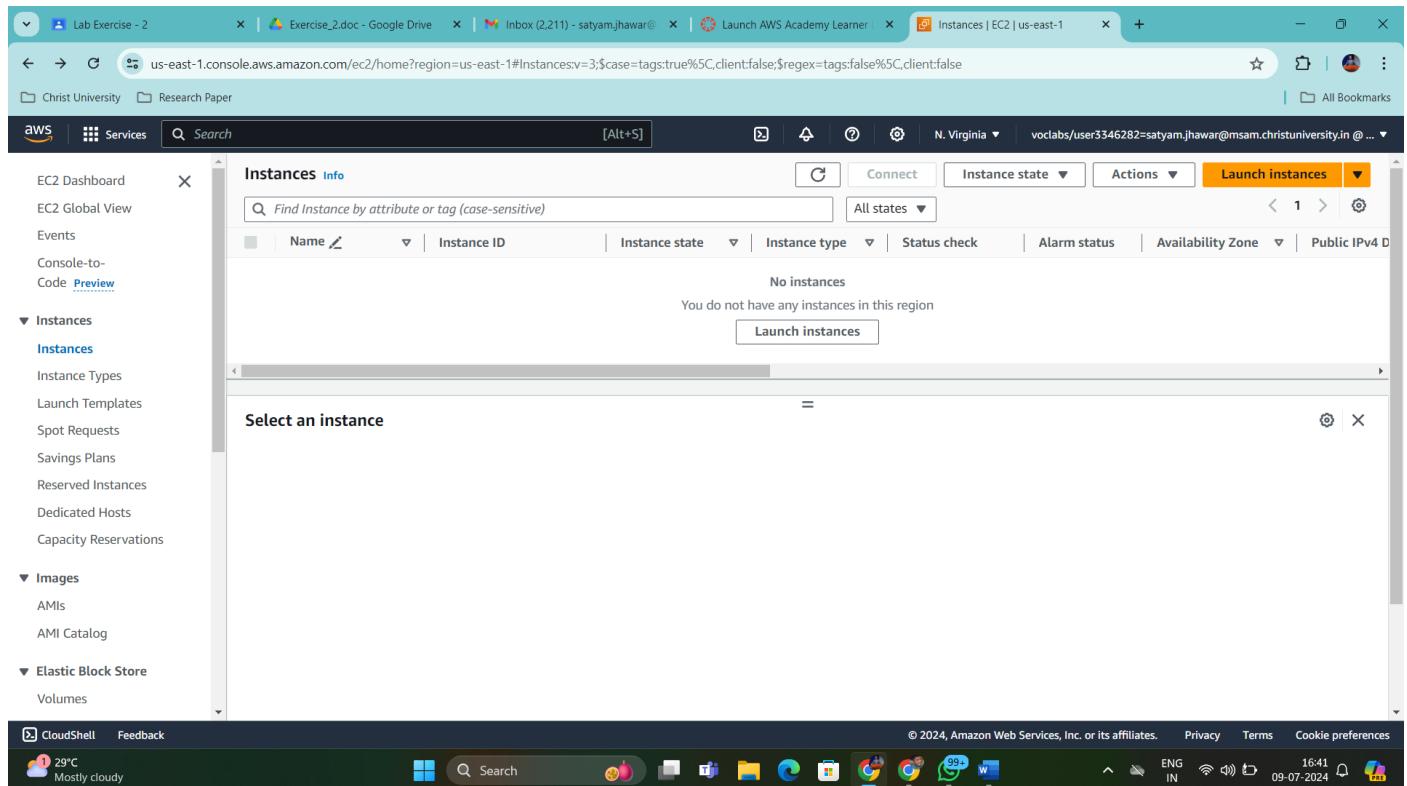


Figure 1: EC2 Homepage

Step 2: Click on Launch Instances and Create 2 identical EC2 instances with having the same security group

EC2 Configurations:

- i) No. of instances = 2
- ii) Name: 2348554_EC2_VM1 and 2348554_EC2_VM2
- iii) AMI: Amazon Linux 2023 AMI
- iv) Instance Type: t2.micro
- v) Key Pair: vockey
- vi) Network Settings
 - a. Click on Existing Security Group
 - b. Select launch wizard 1
- vii) Click on Launch Instances

The screenshot shows the AWS Cloud Console interface for launching an EC2 instance. The left sidebar lists services like CloudShell and Feedback. The main content area is titled 'Network settings' and includes sections for Network (VPC: vpc-0eb2aa90c7f9fd2), Subnet (No preference), Auto-assign public IP (Enable), Firewall (security groups), and Common security groups (Select security groups dropdown showing 'launch-wizard-1 sg-0ada3fb5fe7e2e981'). Below this is a 'Configure storage' section with an 'Advanced' tab. On the right, a 'Summary' panel shows 'Number of instances' set to 2, 'Software Image (AMI)' as Amazon Linux 2023 AMI 2023.5.2..., 'Virtual server type (instance type)' as t2.micro, and 'Storage (volumes)' as 1 volume(s) - 8 GiB. A 'Free tier: In your first year' message is displayed. At the bottom are 'Cancel', 'Launch instance' (highlighted in orange), and 'Review commands' buttons.

Figure 2: EC2 Configurations

The screenshot shows the AWS Cloud Console interface for managing EC2 instances. The left sidebar lists services like CloudShell and Feedback. The main content area is titled 'Instances (2) Info' and displays a table of two running instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 D
2348554_EC2_VM1	i-0081226e9b787f3cf	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1d	ec2-3-80-100
2348554_EC2_VM2	i-05a78d734a2a84197	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1d	ec2-54-242-1

A modal window titled 'Select an instance' is open at the bottom, listing the two instances. The bottom navigation bar includes CloudShell, Feedback, and various system icons.

Figure 3: EC2 Ready to Launch

Step 3: Connect both the instances via amazon connect and run a static website in it. To do it run the below commands

- i) Sudo su
- ii) Yum update -y

```
[ec2-user@ip-172-31-19-217 ~]$ sudo su
[ec2-user@ip-172-31-19-217 ~]$ yum update -y
Last metadata expiration check: 0:07:44 ago on Tue Jul 9 11:16:42 2024.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-19-217 ec2-user]#
```

i-0081226e9b787f3cf (2348554_EC2_VM1)
Public IPs: 3.80.100.36 Private IPs: 172.31.19.217

Figure 4: Update on instance 1

```
[ec2-user@ip-172-31-29-42 ~]$ sudo su
[root@ip-172-31-29-42 ec2-user]# yum update -y
Last metadata expiration check: 0:07:55 ago on Tue Jul 9 11:16:41 2024.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-29-42 ec2-user]#
```

i-05a78d734a2a84197 (2348554_EC2_VM2)
Public IPs: 54.242.139.201 Private IPs: 172.31.29.42

Figure 5: Update on instance 2

iii) Yum install httpd -y

```
Lab Exercise - 2 | Exercise_2.doc - | Inbox (2,211) | Launch AWS Ac... | Instances | EC2 | EC2 Instance Con... | EC2 Instance Con... | Cloud Computin... + - _ 
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0081226e9b787f3cf&osUser=ec2-user&region=us-east-1&sshPort=22#/
Christ University Research Paper All Bookmarks
aws Services Search [Alt+S] N. Virginia vocabs/user3346282=satyam.jhawar@msam.christuniversity.in @ ...
Installing : httpd-core-2.4.59-2.amzn2023.x86_64 8/12
Installing : mod_http2-2.0.27-1.amzn2023.0.2.x86_64 9/12
Installing : mod_lua-2.4.59-2.amzn2023.x86_64 10/12
Installing : generic-logos-httd-18.0.0-12.amzn2023.0.3.noarch 11/12
Installing : httpd-2.4.59-2.amzn2023.x86_64 12/12
Running scriptlet: httpd-2.4.59-2.amzn2023.x86_64 12/12
Verifying : apr-1.7.2-2.amzn2023.0.2.x86_64 1/12
Verifying : apr-util-1.6.3-1.amzn2023.0.1.x86_64 2/12
Verifying : apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64 3/12
Verifying : generic-logos-httd-18.0.0-12.amzn2023.0.3.noarch 4/12
Verifying : httpd-2.4.59-2.amzn2023.x86_64 5/12
Verifying : httpd-2.4.59-2.amzn2023.x86_64 6/12
Verifying : httpd-filesystem-2.4.59-2.amzn2023.noarch 7/12
Verifying : httpd-tools-2.4.59-2.amzn2023.x86_64 8/12
Verifying : libbrotli-1.0.9-4.amzn2023.0.2.x86_64 9/12
Verifying : mailcap-2.1.49-3.amzn2023.0.3.noarch 10/12
Verifying : mod_http2-2.0.27-1.amzn2023.0.2.x86_64 11/12
Verifying : mod_lua-2.4.59-2.amzn2023.x86_64 12/12

Installed:
apr-1.7.2-2.amzn2023.0.2.x86_64
generic-logos-httd-18.0.0-12.amzn2023.0.3.noarch
httpd-filesystem-2.4.59-2.amzn2023.noarch
mailcap-2.1.49-3.amzn2023.0.3.noarch

april-util-1.6.3-1.amzn2023.0.1.x86_64
httpd-2.4.59-2.amzn2023.x86_64
httpd-tools-2.4.59-2.amzn2023.x86_64
mod_http2-2.0.27-1.amzn2023.0.2.x86_64
mod_lua-2.4.59-2.amzn2023.x86_64

Complete!
[root@ip-172-31-19-217 ec2-user]# i-0081226e9b787f3cf (2348554_EC2_VM1)
PublicIPs: 3.80.100.36 PrivateIPs: 172.31.19.217
```

Figure 6: Httpd server on Instance 1

Figure 7: Httpd server on instance 2

- iv) Systemctl start httpd
- v) Systemctl status httpd

The screenshot shows a CloudShell terminal window with the AWS logo at the top. The title bar includes tabs for 'Lab Exercise - 2', 'Exercise_2.doc -', 'Inbox (2,211) -', 'Launch AWS Acc...', 'Instances | EC2 |', 'EC2 Instance Con...', 'EC2 Instance Con...', 'Cloud Computin...', and '+'. The main area displays the output of the following commands:

```

aws | Services | Q Search [Alt+S]
generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch httpd-2.4.59-2.amzn2023.x86_64 httpd-core-2.4.59-2.amzn2023.x86_64
httpd-filesystem-2.4.59-2.amzn2023.noarch httpd-tools-2.4.59-2.amzn2023.x86_64 libbrotli-1.0.9-4.amzn2023.0.2.x86_64
mailcap-2.1.49-3.amzn2023.0.3.noarch mod_http2-2.0.27-1.amzn2023.0.2.x86_64 mod_lua-2.4.59-2.amzn2023.x86_64

Complete!
[root@ip-172-31-19-217 ec2-user]# systemctl start httpd
[root@ip-172-31-19-217 ec2-user]# systemctl status httpd
● httpd.service - The Apache HTTP Server
    Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
      Active: active (running) since Tue 2024-07-09 11:27:09 UTC; 11s ago
        Docs: man:httpd.service(8)
       Main PID: 26148 (httpd)
          Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
         Tasks: 177 (limit: 1114)
        Memory: 12.9M
           CPU: 69ms
          CGroup: /system.slice/httpd.service
                  ├─26148 /usr/sbin/httpd -DFOREGROUND
                  ├─26164 /usr/sbin/httpd -DFOREGROUND
                  ├─26166 /usr/sbin/httpd -DFOREGROUND
                  ├─26169 /usr/sbin/httpd -DFOREGROUND
                  └─26170 /usr/sbin/httpd -DFOREGROUND

Jul 09 11:27:09 ip-172-31-19-217.ec2.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Jul 09 11:27:09 ip-172-31-19-217.ec2.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Jul 09 11:27:09 ip-172-31-19-217.ec2.internal httpd[26148]: Server configured, listening on: port 80
[root@ip-172-31-19-217 ec2-user]#

```

At the bottom of the terminal, it shows the instance ID: i-0081226e9b787f3cf (2348554_EC2_VM1) and the IP address: PublicIPs: 3.80.100.36 PrivateIPs: 172.31.19.217.

The CloudShell interface at the bottom includes tabs for 'CloudShell' and 'Feedback', a search bar, and various icons for file operations and monitoring. The status bar shows the date (09-07-2024), time (16:57), and language (ENG IN).

Figure 8: Running Apache server on Instance 1

The screenshot shows a CloudShell terminal window with the AWS logo at the top. The title bar includes tabs for 'Lab Exercise - 2', 'Exercise_2.doc -', 'Inbox (2,211) -', 'Launch AWS Acc...', 'Instances | EC2 |', 'EC2 Instance Con...', 'EC2 Instance Con...', 'Cloud Computin...', and '+'. The main area displays the output of the following commands:

```

aws | Services | Q Search [Alt+S]
mailcap-2.1.49-3.amzn2023.0.3.noarch mod_http2-2.0.27-1.amzn2023.0.2.x86_64 mod_lua-2.4.59-2.amzn2023.x86_64

Complete!
[root@ip-172-31-29-42 ec2-user]# cd /var/www/html
[root@ip-172-31-29-42 html]# ls
[root@ip-172-31-29-42 html]# systemctl start httpd
[root@ip-172-31-29-42 html]# systemctl status httpd
● httpd.service - The Apache HTTP Server
    Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
      Active: active (running) since Tue 2024-07-09 11:29:08 UTC; 10s ago
        Docs: man:httpd.service(8)
       Main PID: 26195 (httpd)
          Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
         Tasks: 177 (limit: 1114)
        Memory: 12.9M
           CPU: 67ms
          CGroup: /system.slice/httpd.service
                  ├─26195 /usr/sbin/httpd -DFOREGROUND
                  ├─26218 /usr/sbin/httpd -DFOREGROUND
                  ├─26223 /usr/sbin/httpd -DFOREGROUND
                  ├─26224 /usr/sbin/httpd -DFOREGROUND
                  └─26225 /usr/sbin/httpd -DFOREGROUND

Jul 09 11:29:08 ip-172-31-29-42.ec2.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Jul 09 11:29:08 ip-172-31-29-42.ec2.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Jul 09 11:29:08 ip-172-31-29-42.ec2.internal httpd[26195]: Server configured, listening on: port 80
[root@ip-172-31-29-42 html]#

```

At the bottom of the terminal, it shows the instance ID: i-05a78d734a2a84197 (2348554_EC2_VM2) and the IP address: PublicIPs: 54.242.139.201 PrivateIPs: 172.31.29.42.

The CloudShell interface at the bottom includes tabs for 'CloudShell' and 'Feedback', a search bar, and various icons for file operations and monitoring. The status bar shows the date (09-07-2024), time (16:59), and language (ENG IN).

Figure 9: Running Apache Server on Instance 2

vi) Cd/var/www/html

Lab Exercise - 2 | Exercise_2.doc - | Inbox (2,211) - | Launch AWS Ac... | Instances | EC2 | EC2 Instance Con... | EC2 Instance Con... | Cloud Computin... | +

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0081226e9b787f3cf&osUser=ec2-user®ion=us-east-1&sshPort=22#

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aws Services Search [Alt+S] N. Virginia v vocabs/user3346282=satyam.jhawar@msam.christuniversity.in @ ...

mailcap-2.1.49-3.amzn2023.0.3.noarch mod_http2-2.0.27-1.amzn2023.0.2.x86_64 mod_lua-2.4.59-2.amzn2023.x86_64

Complete!

```
[root@ip-172-31-19-217 ec2-user]# systemctl start httpd
[root@ip-172-31-19-217 ec2-user]# systemctl status httpd
● httpd.service - The Apache HTTP Server
    Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
    Active: active (running) since Tue 2024-07-09 11:27:09 UTC; 11s ago
      Docs: man:httdp.service(8)
   Main PID: 26148 (httpd)
     Status: "Total requests: 0; Idle/Busy workers 100/0; Requests/sec: 0; Bytes served/sec: 0 B/sec"
     Tasks: 177 (limit: 1114)
    Memory: 12.9M
       CPU: 69ms
      CGroup: /system.slice/httpd.service
              ├─26148 /usr/sbin/httpd -DFOREGROUND
              ├─26164 /usr/sbin/httpd -DFOREGROUND
              ├─26166 /usr/sbin/httpd -DFOREGROUND
              ├─26169 /usr/sbin/httpd -DFOREGROUND
              └─26170 /usr/sbin/httpd -DFOREGROUND

Jul 09 11:27:09 ip-172-31-19-217.ec2.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Jul 09 11:27:09 ip-172-31-19-217.ec2.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Jul 09 11:27:09 ip-172-31-19-217.ec2.internal httpd[26148]: Server configured, listening on: port 80
[root@ip-172-31-19-217 ec2-user]# cd /var/www/html
[root@ip-172-31-19-217 html]# ls
[root@ip-172-31-19-217 html]# 
```

i-0081226e9b787f3cf (2348554_EC2_VMX)

Public IPs: 3.80.100.36 Private IPs: 172.31.19.217

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29°C Mostly cloudy ENG IN 16:58 09-07-2024

Figure 10: Changing to html directory on instance 1

Lab Exercise - 2 | Exercise_2.doc - | Inbox (2,211) - | Launch AWS Ac... | Instances | EC2 | EC2 Instance Co... | EC2 Instance Co... | Cloud Computin... | +

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-05a78d734a2a84197&osUser=ec2-user&sshPort=22#/
Christ University Research Paper All Bookmarks

aws Services Search [Alt+S] N. Virginia v vocabs/user3346282=satyam.jhawar@msam.christuniversity.in @ ...

```
Complete!
[root@ip-172-31-29-42 ec2-user]# cd /var/www/html
[root@ip-172-31-29-42 html]# ls
[root@ip-172-31-29-42 html]# systemctl start httpd
[root@ip-172-31-29-42 html]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: active (running) since Tue 2024-07-09 11:29:08 UTC; 10s ago
       Docs: man:httpd.service(8)
 Main PID: 26195 (httpd)
    Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
      Tasks: 177 (limit: 1114)
     Memory: 12.9M
        CPU: 67ms
      CGrou... /system.slice/httpd.service
           ├─26195 /usr/sbin/httpd -DFOREGROUND
           ├─26218 /usr/sbin/httpd -DFOREGROUND
           ├─26223 /usr/sbin/httpd -DFOREGROUND
           ├─26224 /usr/sbin/httpd -DFOREGROUND
           └─26225 /usr/sbin/httpd -DFOREGROUND

Jul 09 11:29:08 ip-172-31-29-42.ec2.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Jul 09 11:29:08 ip-172-31-29-42.ec2.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Jul 09 11:29:08 ip-172-31-29-42.ec2.internal httpd[26195]: Server configured, listening on: port 80
[root@ip-172-31-29-42 html]# cd /var/www/html
[root@ip-172-31-29-42 html]# ls
[root@ip-172-31-29-42 html]# i-05a78d734a2a84197 (2348554_EC2_VM2)
PublicIPs: 54.242.139.201 PrivateIPs: 172.31.29.42
```

Figure 11: changing to html directory in instance 2

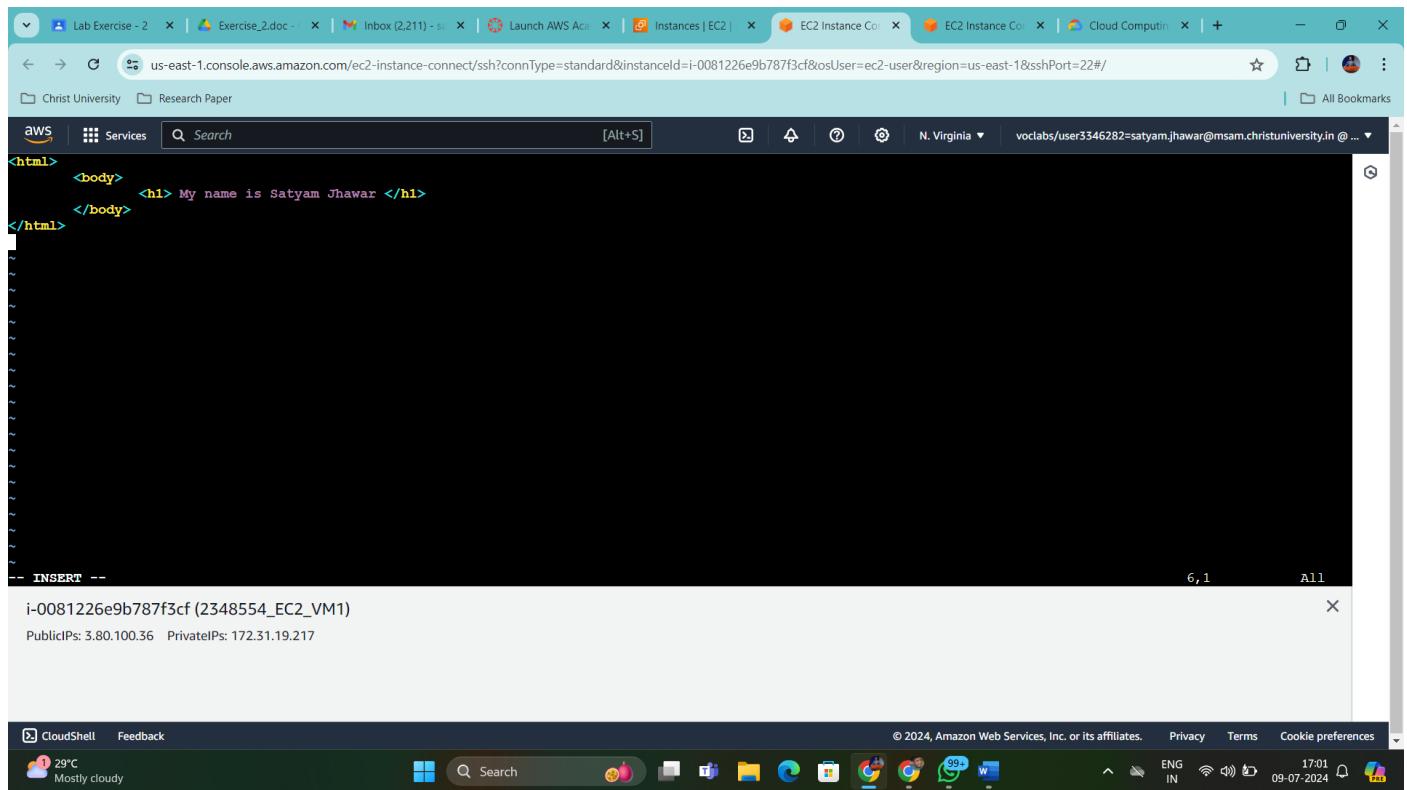
vii) Vim index.html

a. For Instance 1

```
<html>
<body>
<h1> My name is Satyam Jhawar </h1>
</body>
</html>
```

b. For instance 2

```
<html>
<body>
<h1> I Love cloud </h1>
</body>
</html>
```



```
<html>
<body>
<h1> My name is Satyam Jhawar </h1>
</body>
</html>
```

-- INSERT --

i-0081226e9b787f3cf (2348554_EC2_VM1)
PublicIPs: 3.80.100.36 PrivateIPs: 172.31.19.217

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29°C Mostly cloudy Search ENG IN 17:01 09-07-2024

Figure 12: Creating a index.html in instance 1

```

<html>
  <body>    <h1> I love Cloud </h1>
</body>
</html>

```

i-05a78d734a2a84197 (2348554_EC2_VM2)
PublicIPs: 54.242.139.201 PrivateIPs: 172.31.29.42

Figure 13: Creating index.html in instance 2

viii) Systemctl start httpd

```

root@ip-172-31-19-217 ec2-user]# systemctl status httpd
● httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
  Active: active (running) since Tue 2024-07-09 11:27:09 UTC; 11s ago
    Docs: man:httpd.service(8)
Main PID: 26148 (httpd)
  Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
   Tasks: 177 (limit: 1114)
  Memory: 12.9M
     CPU: 69ms
    CGroup: /system.slice/httpd.service
            ├─26148 /usr/sbin/httpd -DFOREGROUND
            ├─26164 /usr/sbin/httpd -DFOREGROUND
            ├─26166 /usr/sbin/httpd -DFOREGROUND
            ├─26169 /usr/sbin/httpd -DFOREGROUND
            └─26170 /usr/sbin/httpd -DFOREGROUND

Jul 09 11:27:09 ip-172-31-19-217.ec2.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Jul 09 11:27:09 ip-172-31-19-217.ec2.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Jul 09 11:27:09 ip-172-31-19-217.ec2.internal httpd[26148]: Server configured, listening on: port 80
[root@ip-172-31-19-217 ec2-user]# cd /var/www/html
[root@ip-172-31-19-217 html]# ls
[root@ip-172-31-19-217 html]# vim index.html
[root@ip-172-31-19-217 html]# ls
index.html
[root@ip-172-31-19-217 html]# systemctl start httpd
[root@ip-172-31-19-217 html]# 
```

i-0081226e9b787f3cf (2348554_EC2_VM1)
PublicIPs: 3.80.100.36 PrivateIPs: 172.31.19.217

Figure 14: Run index.html instance 1

```

aws | Services | Search [Alt+S] | N. Virginia | vclabs/user3346282=sat�am.jhawar@msam.christuniversity.in ...
Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
Active: active (running) since Tue 2024-07-09 11:29:08 UTC; 10s ago
  Docs: man:httpd.service(8)
Main PID: 26195 (httpd)
    Status: "Total requests: 0; Idle/Busy workers 100/0; Requests/sec: 0; Bytes served/sec: 0 B/sec"
   Tasks: 177 (limit: 1114)
  Memory: 12.9M
     CPU: 67ms
    CGroup: /system.slice/httpd.service
            ├─26195 /usr/sbin/httpd -DFOREGROUND
            ├─26218 /usr/sbin/httpd -DFOREGROUND
            ├─26223 /usr/sbin/httpd -DFOREGROUND
            ├─26224 /usr/sbin/httpd -DFOREGROUND
            └─26225 /usr/sbin/httpd -DFOREGROUND

Jul 09 11:29:08 ip-172-31-29-42.ec2.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Jul 09 11:29:08 ip-172-31-29-42.ec2.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Jul 09 11:29:08 ip-172-31-29-42.ec2.internal httpd[26195]: Server configured, listening on: port 80
[root@ip-172-31-29-42 html]# cd /var/www/html
[root@ip-172-31-29-42 html]# ls
[root@ip-172-31-29-42 html]# vim index.html
[root@ip-172-31-29-42 html]#
[root@ip-172-31-29-42 html]# ls
index.html
[root@ip-172-31-29-42 html]# systemctl start httpd
[root@ip-172-31-29-42 html]# 
```

i-05a78d734a2a84197 (2348554_EC2_VM2)
PublicIPs: 54.242.139.201 PrivateIPs: 172.31.29.42

Figure 15: Ru-n index.html in instance 2

Step 4: Exit the Cloudshell of both the instances and navigate back to EC2

Step 5: Copy the public IPv4DNS address of both the instances and paste it in anew tab and verify the html file is running or not.

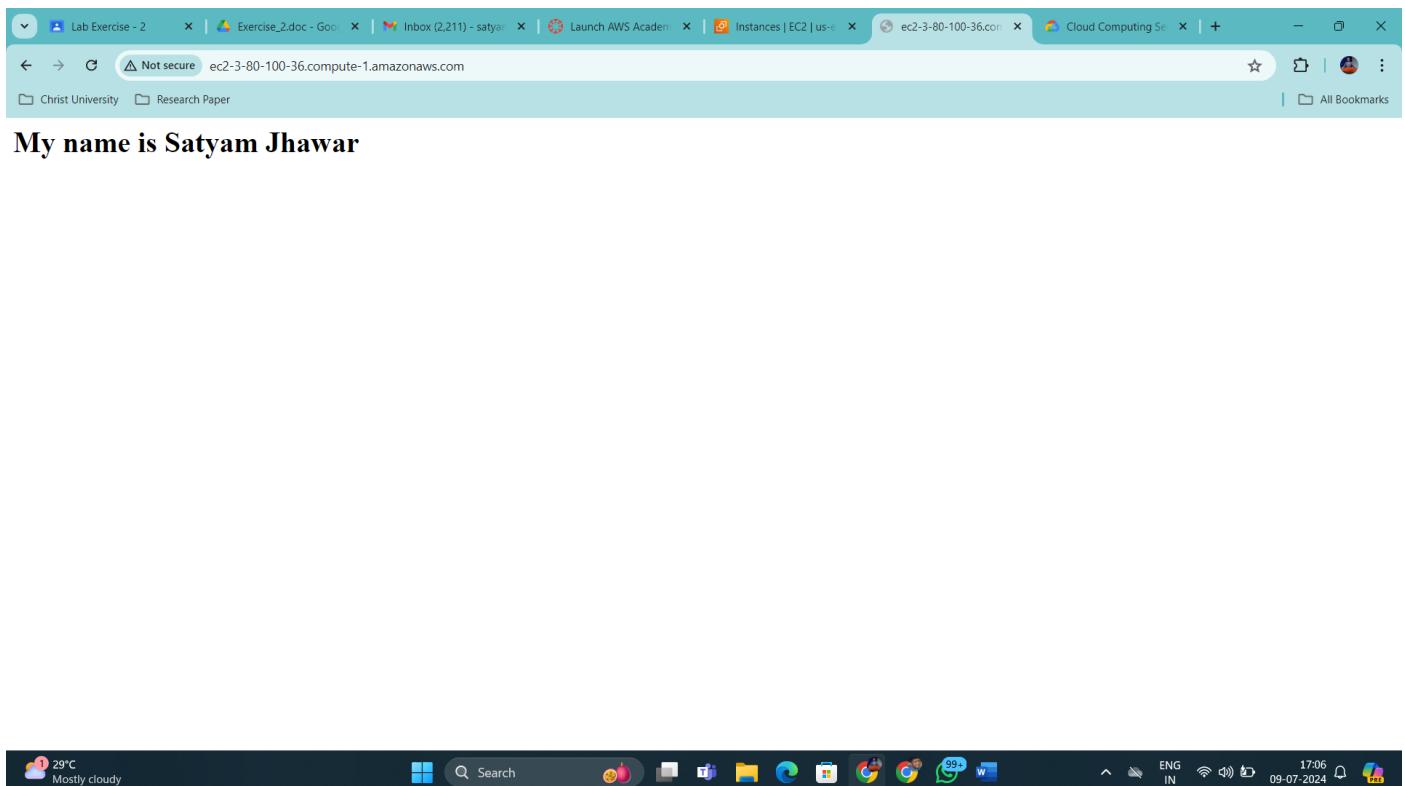


Figure 16: Instance 1 Output

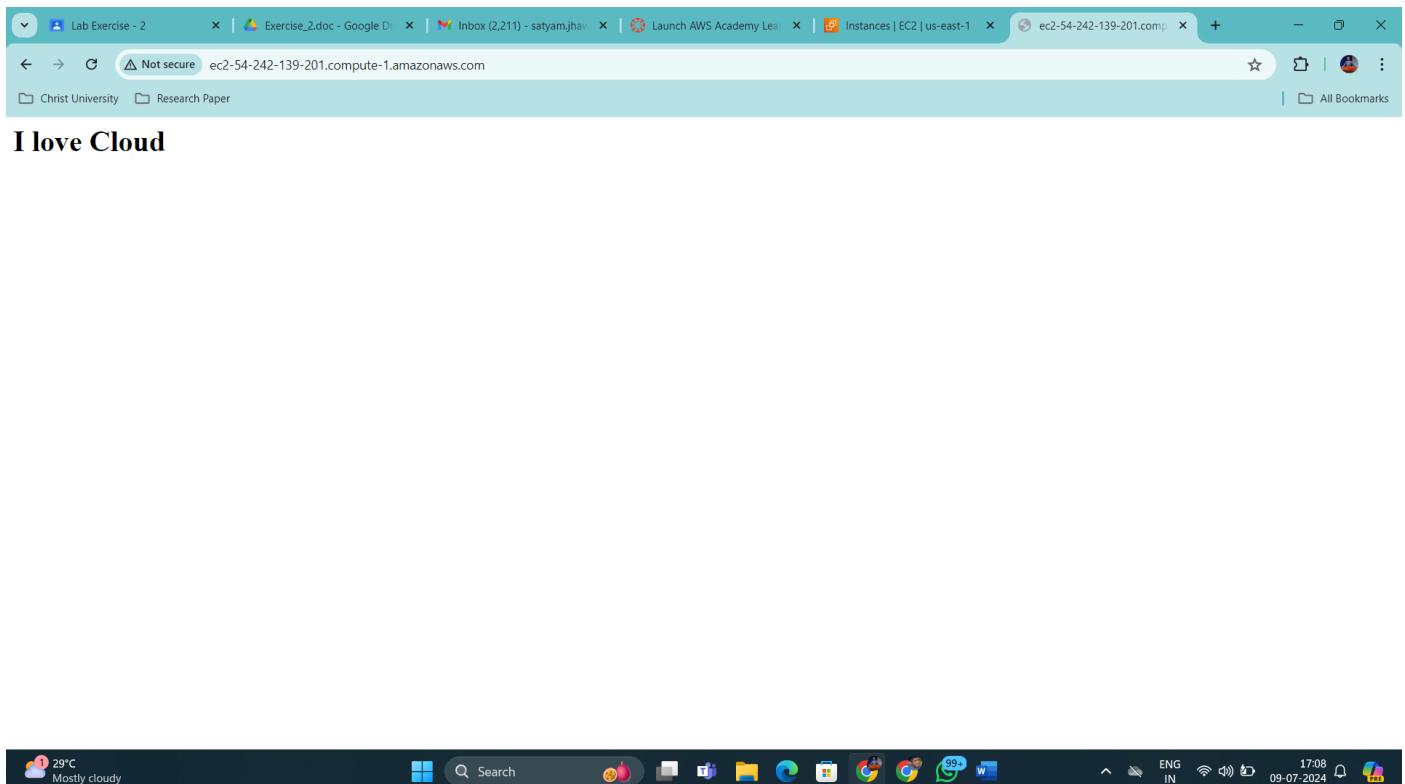


Figure 17: Instance 2 Output

Step 6: Navigate to AWS search panel and search for EC2 Load Balancer

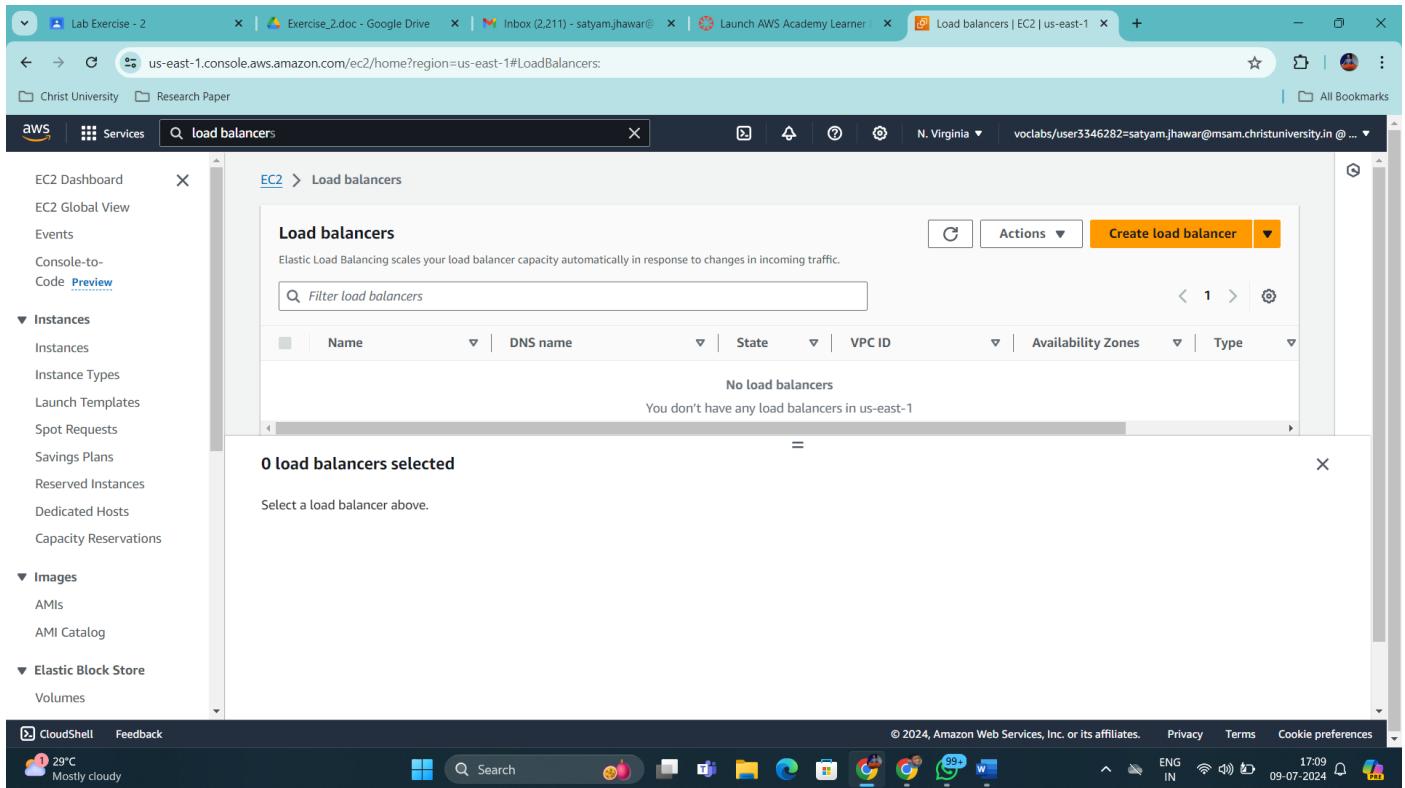


Figure 18: Load Balancer Dashboard

Step 7: Click on Create Load Balancer and select Application Load Balancer

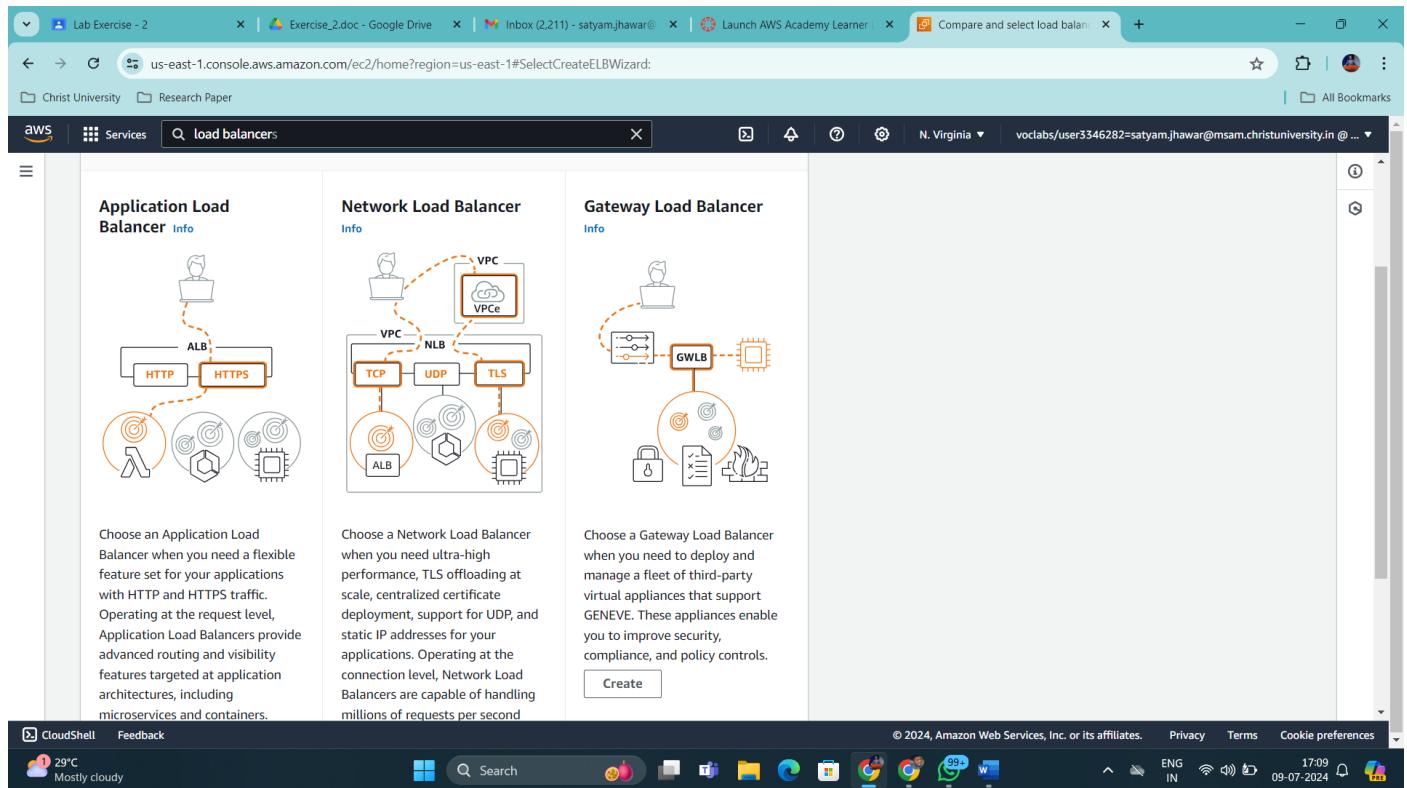


Figure 19: Create Load Balancer dashboard

Step 8: Application Load Balancer Configuration

- i) Load Balancer Name: 2348554LB
- ii) Scheme: Internet-facing (Default)
- iii) Load Balancer IP address type: IPv4 (Default)
- iv) Network Mapping: Select the default VPC and make sure to select the availability zone in which your instance is running on. In my case it is “us-east-1d”. We will have to select two availability zones, so select any other of your choice. Leave the subnet by default.
- v) Security Group: Select the same security group of your launched instances. In my case it is “launch-wizard-1”.
- vi) Listeners and Routing: Click on create a target group
 - a. Target Group Configurations
 - b. Target Group Name: 2348554TG
 - c. IP address Type: IPv4 (Default)
 - d. Protocol Version HTTP1 (Default)

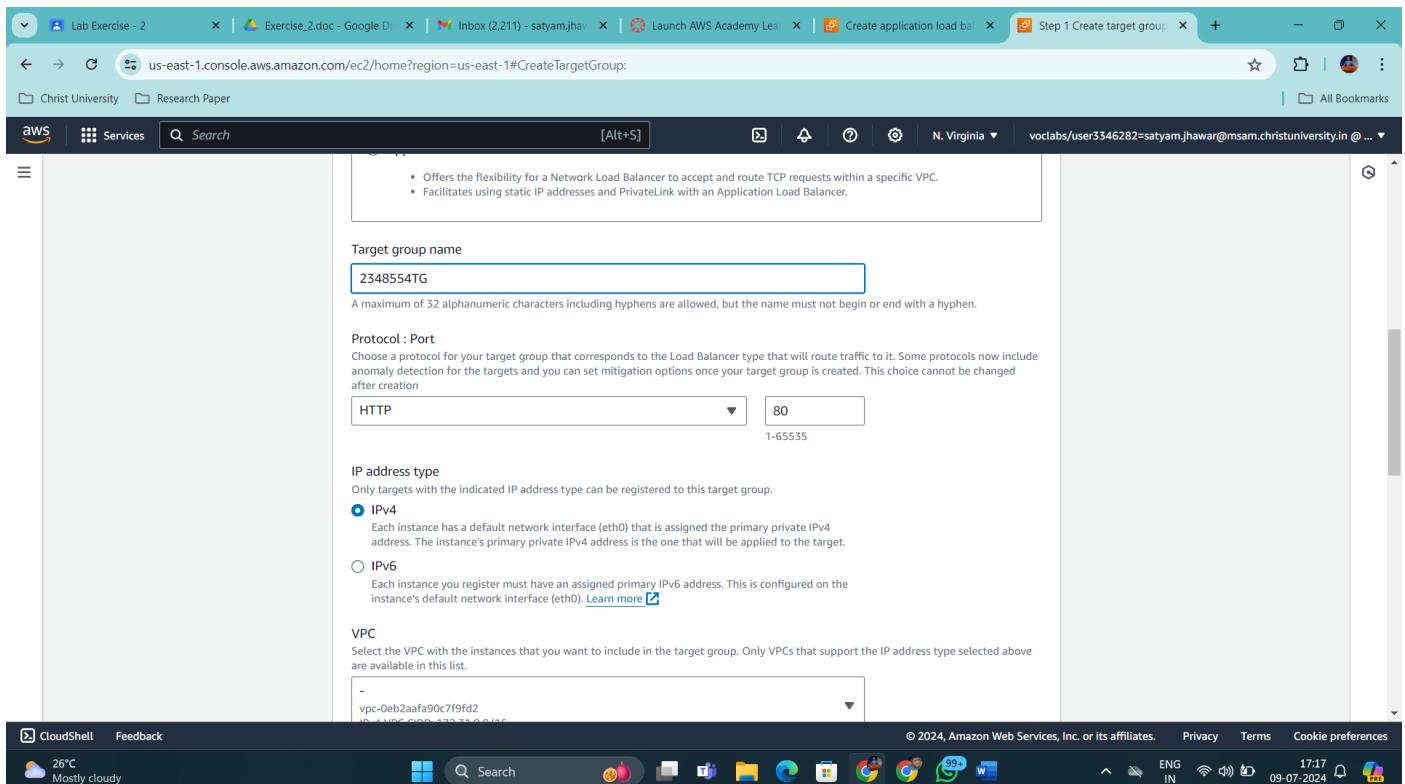


Figure 20: Target Group dashboard

- e. Click on Next
- f. Select both the available instances and click on include as pending below

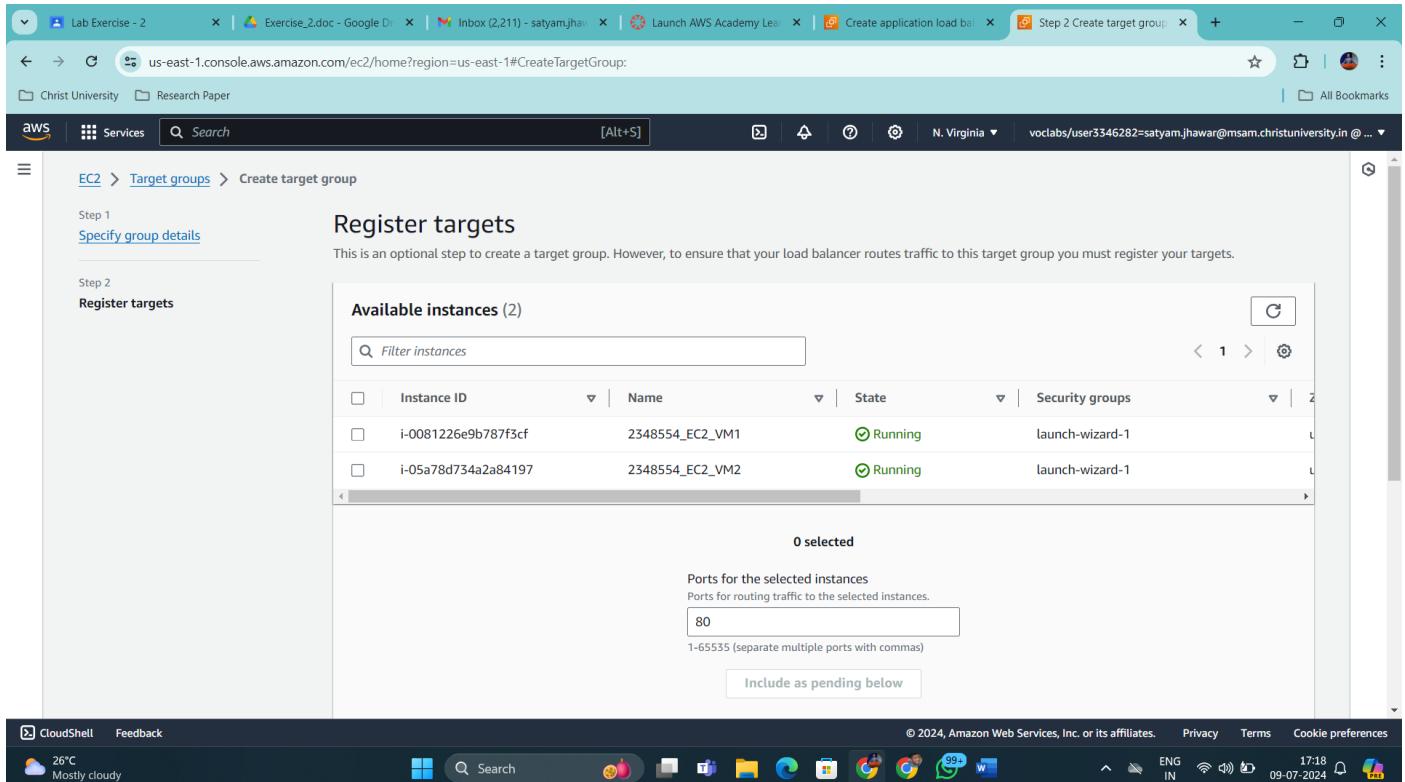


Figure 21: Selection of Instances

g. Click on Create Target Group

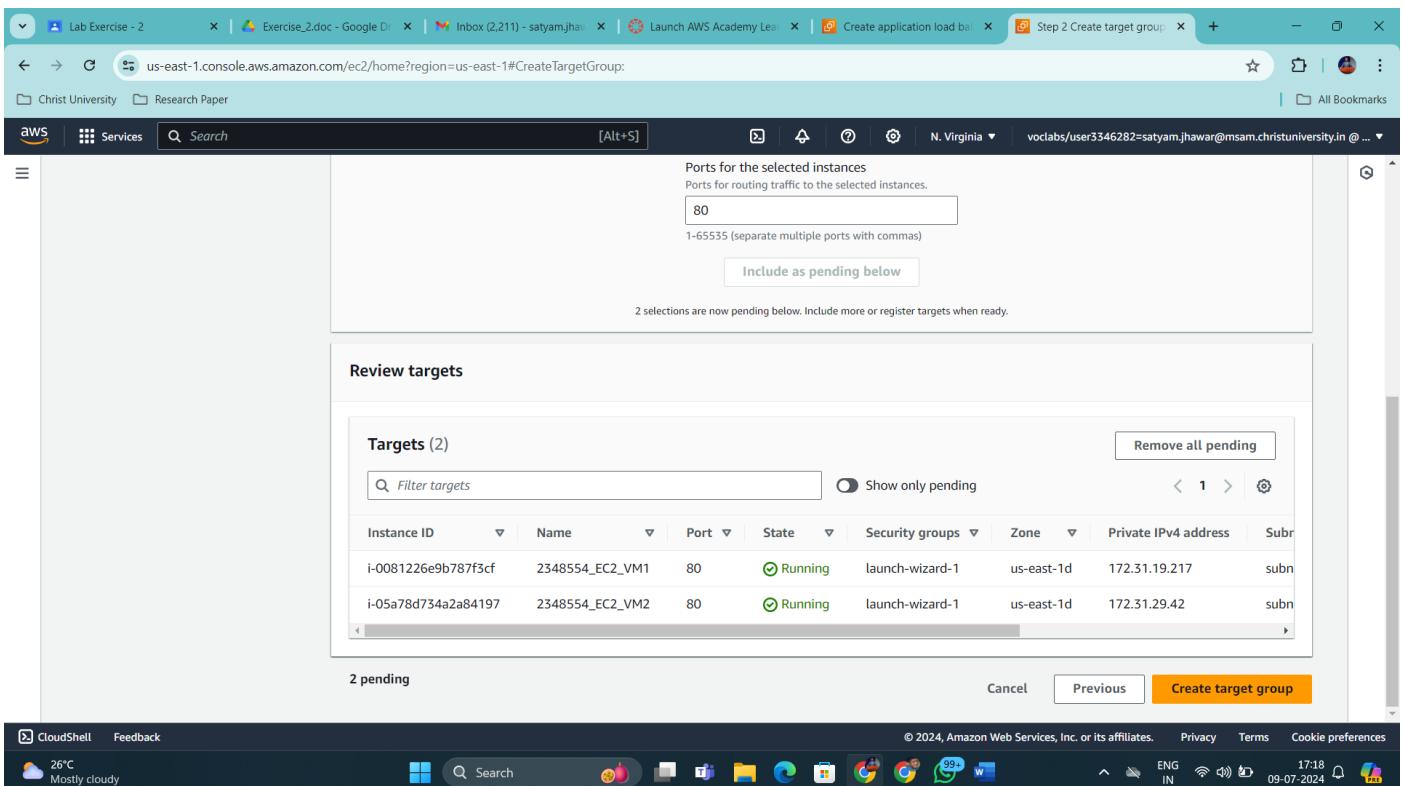


Figure 22: Target Group Creation

vii) Navigate back to load balancer and select the created target group

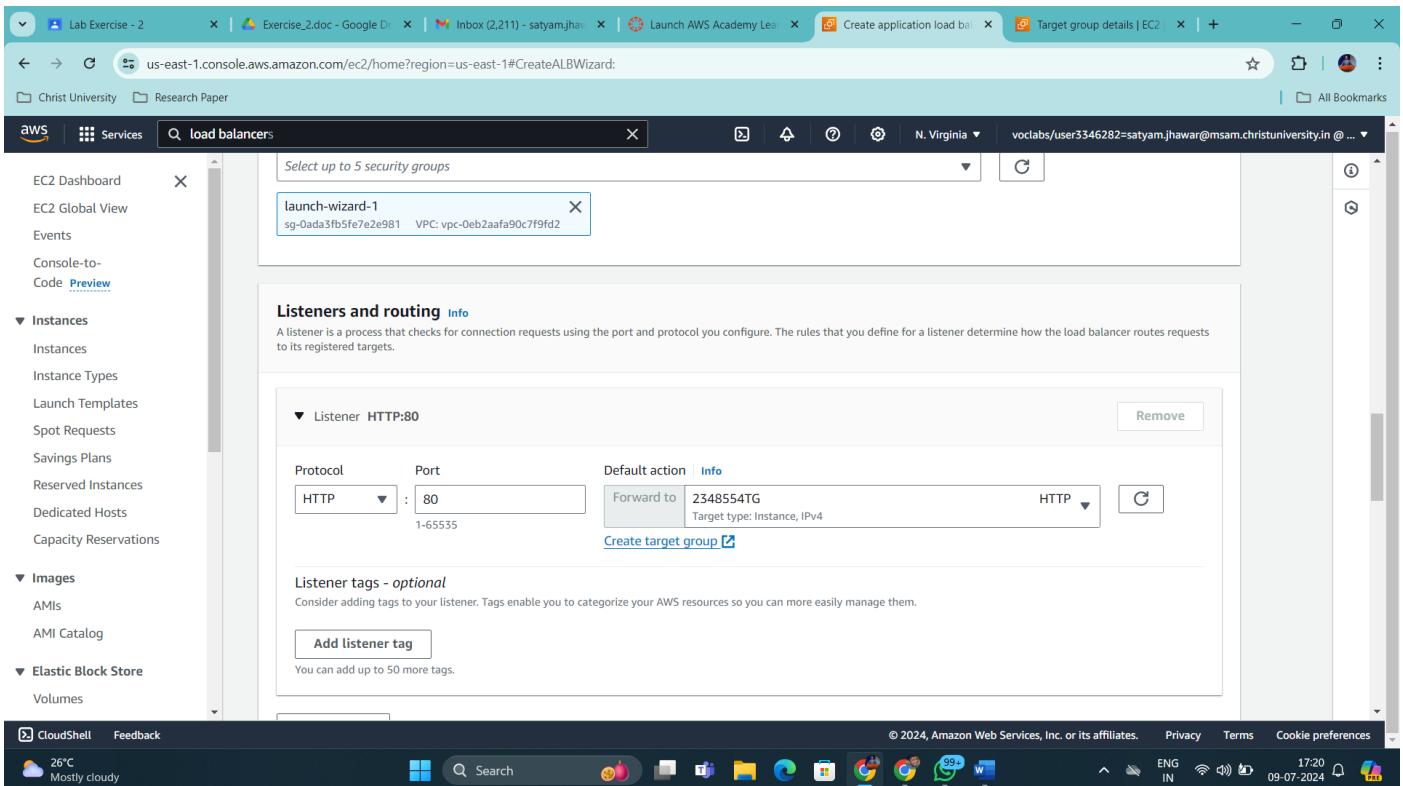


Figure 23: Select created Target Group

viii) Click on Create Load Balancer

The screenshot shows the AWS EC2 Load Balancers page. On the left, there's a sidebar with various navigation options like EC2 Dashboard, Instances, Images, and Elastic Block Store. The main content area displays a single load balancer named "2348554LB". The "Details" section provides information such as Load balancer type (Application), Status (Provisioning), VPC (vpc-0eb2aafa90c7f9fd2), and Load balancer IP address type (IPv4). Below this, the "Listeners and rules" tab is selected, showing one listener rule. The bottom of the screen includes the AWS footer with links for CloudShell, Feedback, and various services.

Figure 24: Load Balancer successfully created

Step 9: Wait for the Load Balancer Status to be active. Might take 2-5 minutes.

The screenshot shows the AWS EC2 Load Balancers page again. The sidebar remains the same. The main table now lists the load balancer "2348554LB" with its status set to "Active". A modal window titled "0 load balancers selected" is open at the bottom, instructing the user to "Select a load balancer above." The AWS footer is visible at the bottom of the screen.

Figure 25: Load Balancer to active Stage

Step 10: Navigate back to Target Group and check the health status of both the instances, it should be “healthy”.

The screenshot shows the AWS EC2 Target Group details page. The top navigation bar includes tabs for Lab Exercise - 2, Exercise_2.doc - Google Doc, Inbox (2,211) - satyamjhawar, Launch AWS Academy, Load balancers | EC2, and Target group details | EC2. The main content area displays a summary of target states: 2 Total targets, 2 Healthy (green), 0 Unhealthy (red), 0 Unused, 0 Initial, and 0 Draining. Below this is a section titled "Distribution of targets by Availability Zone (AZ)" with a note to "Select values in this table to see corresponding filters applied to the Registered targets table below." A table titled "Registered targets (2)" lists two entries: i-0081226e9b787f3cf and i-05a78d734a2a84197, both marked as "Healthy". The table includes columns for Instance ID, Name, Port, Zone, Health status, and Launch time. The bottom of the page features a CloudShell button, a search bar, and various system icons.

Figure 26: Health status of both the instances

Step 11: Copy the Load Balancer DNS name and paste it on a browser. We will see the index.html of first instance. On refreshing we will see the output of index.html of second instance.

The screenshot shows a web browser window with the URL 2348554lb-1397032493.us-east-1.elb.amazonaws.com. The page content is "My name is Satyam Jhawar". The browser's address bar shows the URL, and the bottom status bar indicates the weather as 26°C Mostly cloudy. The taskbar at the bottom includes icons for File Explorer, Search, Task View, File, Microsoft Edge, Google Chrome, and others.

Figure 27: Load Balancer Output

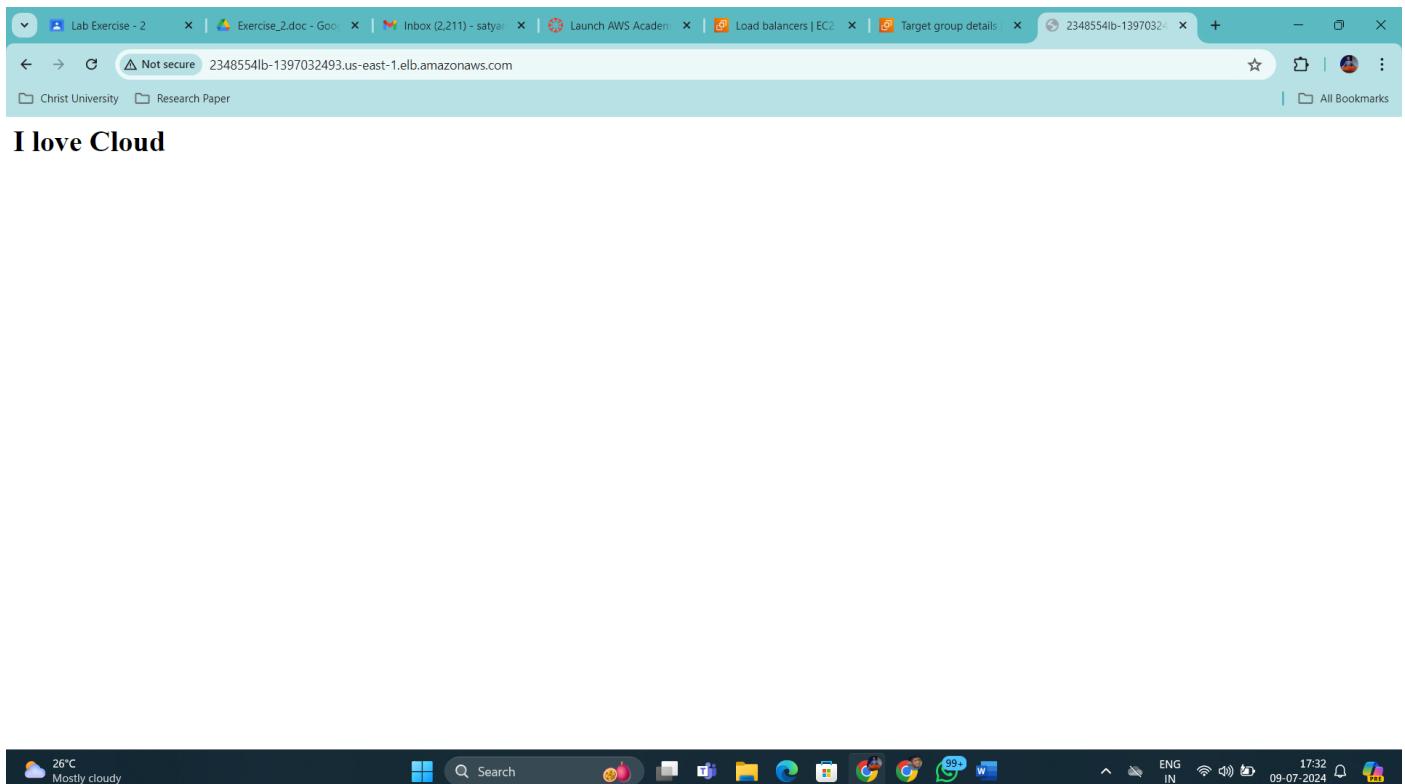


Figure 28: Load Balancer Output

Navigate to Load Balancer and check the monitoring requests graph and we will find a surge in the graph.

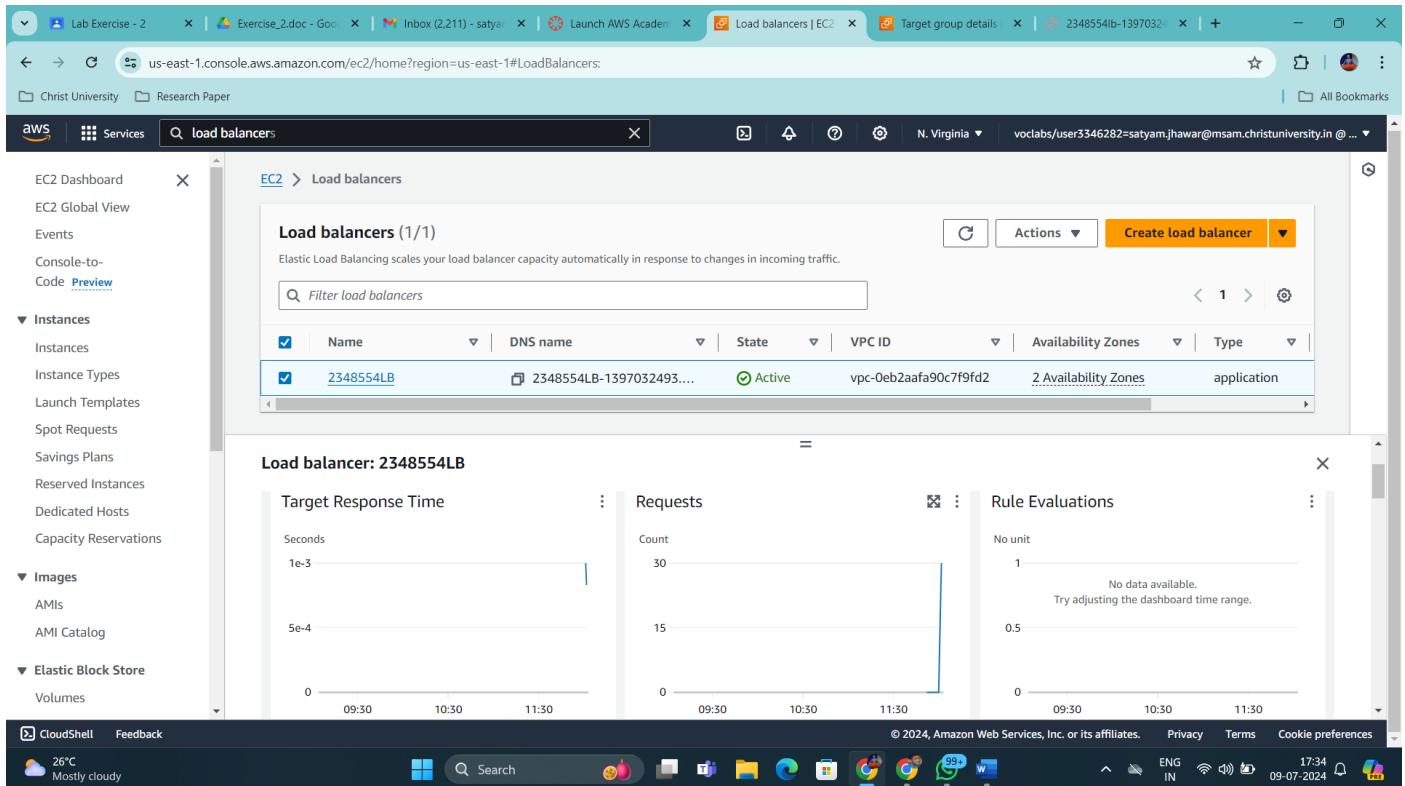


Figure 29: Load Balancer Monitoring Graphs

Navigate to EC2 and select both the instances and check the monitoring graphs.

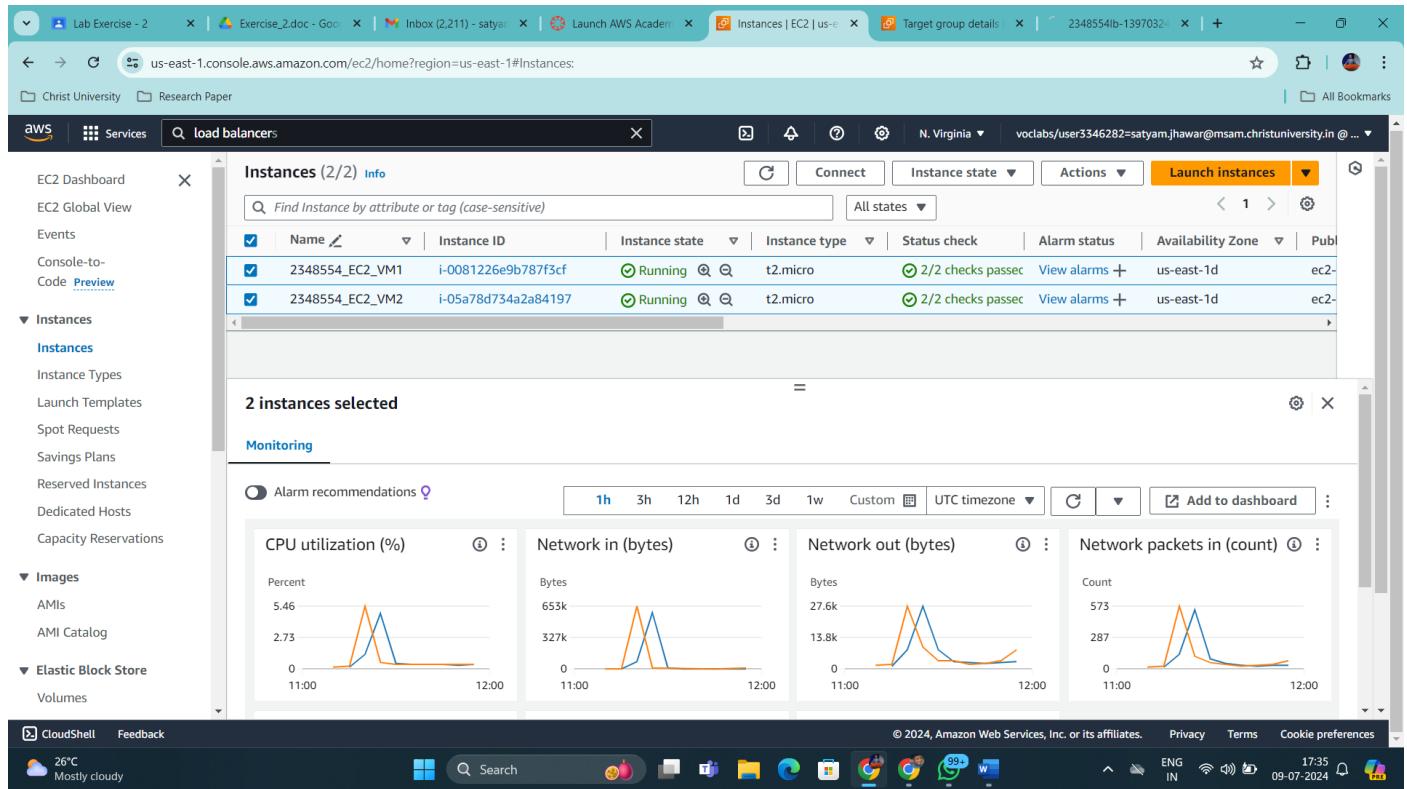


Figure 30: EC2 Monitoring Graph

Delete every services step by step to avoid costs