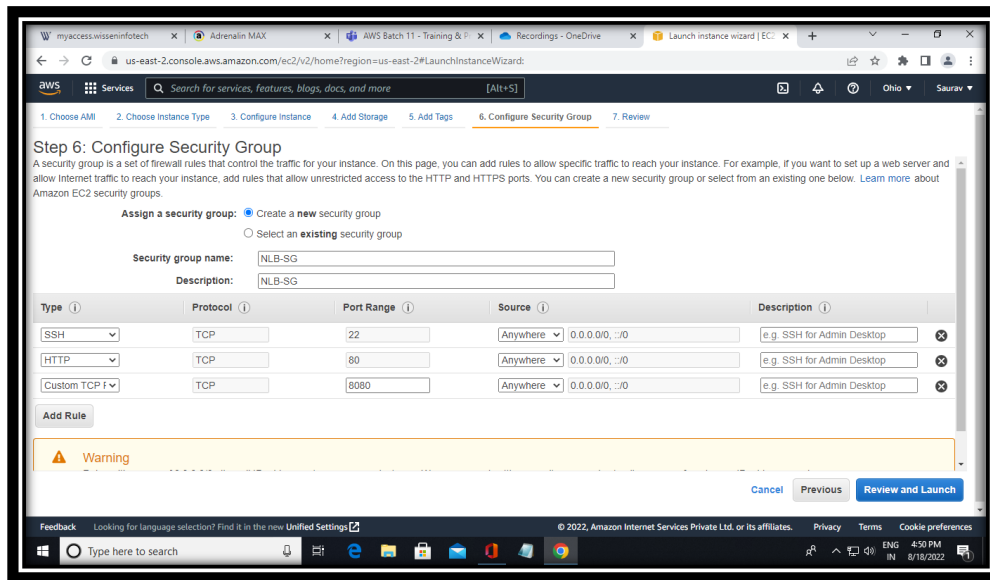


Network Load Balancer

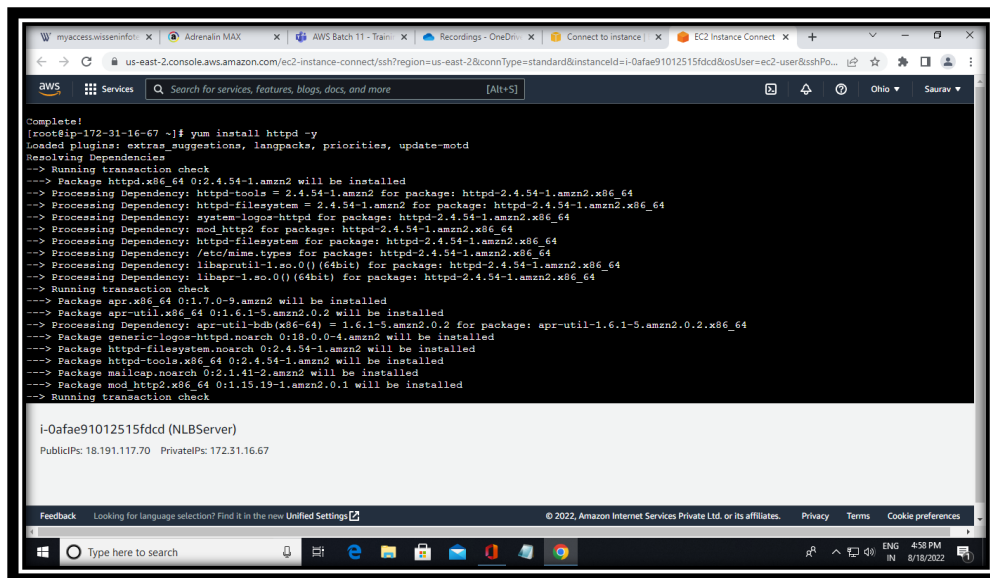
AWS Network Load Balancer (NLB) is an Amazon Web Services (AWS) tool that distributes end user traffic across multiple cloud resources to ensure low latency and high throughput for applications.

Steps to create Network Load Balancer:

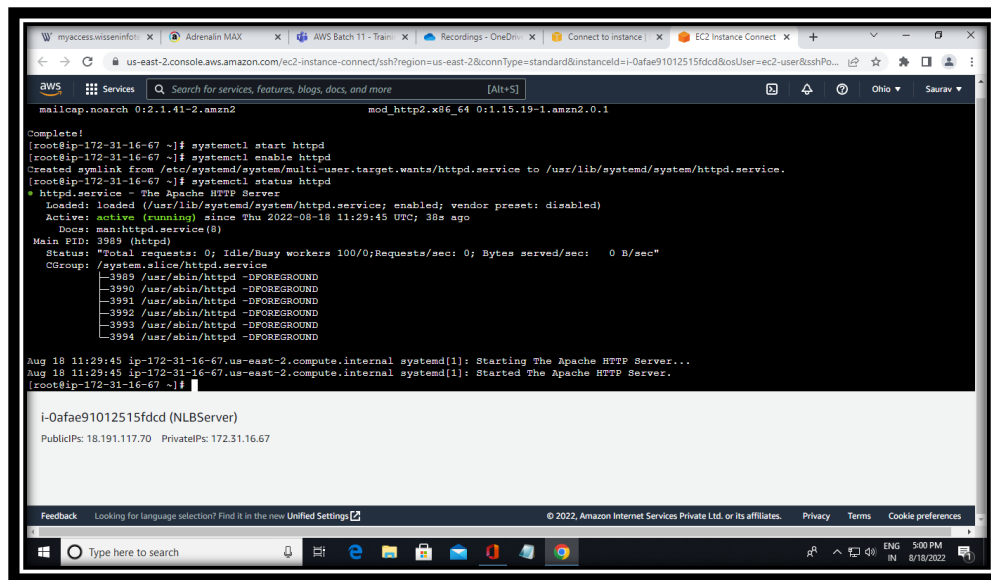
Create an instance with security group SSH 22, HTTP 80, Custom TCP Nginx 8080



Open the instance and install httpd and start the httpd



The httpd is successfully running on the server.



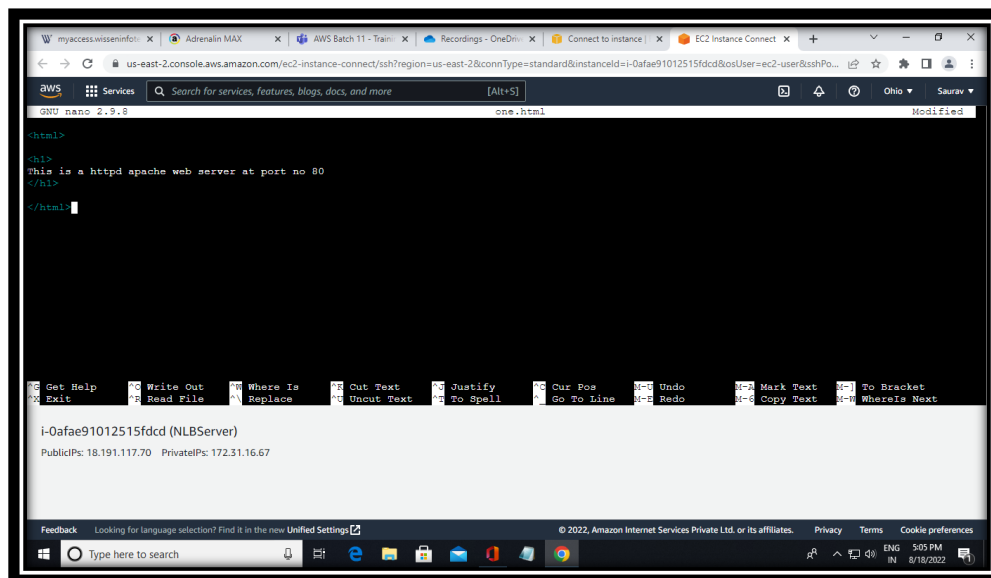
The screenshot shows the AWS Management Console with the EC2 Instance Connect terminal. The terminal output shows the following commands and results:

```
Complete!  
[root@ip-172-31-16-67 ~]# systemctl start httpd  
[root@ip-172-31-16-67 ~]# systemctl enable httpd  
Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.  
[root@ip-172-31-16-67 ~]# systemctl status httpd  
* httpd.service - The Apache HTTP Server  
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)  
   Active: active (running) since Thu 2022-08-18 11:29:45 UTC; 30s ago  
     Docs: man:httpd.service(8)  
  Main PID: 3989 (httpd)  
    Status: "Total requests: 0; Idle/Busy workers 100/0; Requests/sec: 0; Bytes served/sec: 0 B/sec"  
   CGroup: /system.slice/httpd.service  
           └─3989 /usr/sbin/httpd -DFOREGROUND  
             └─3990 /usr/sbin/httpd -DFOREGROUND  
               └─3991 /usr/sbin/httpd -DFOREGROUND  
                 └─3992 /usr/sbin/httpd -DFOREGROUND  
                   └─3993 /usr/sbin/httpd -DFOREGROUND  
                     └─3994 /usr/sbin/httpd -DFOREGROUND  
  
Aug 18 11:29:45 ip-172-31-16-67.us-east-2.compute.internal systemd[1]: Starting The Apache HTTP Server...  
Aug 18 11:29:45 ip-172-31-16-67.us-east-2.compute.internal systemd[1]: Started The Apache HTTP Server.  
[root@ip-172-31-16-67 ~]#
```

Below the terminal output, the instance details are shown:

```
i-Oafae91012515fdcd (NLBServer)  
PublicIPs: 18.191.117.70 PrivateIPs: 172.31.16.67
```

Create one html file in /var/www/html location



The screenshot shows the AWS Management Console with the EC2 Instance Connect terminal. The terminal output shows the following commands and results:

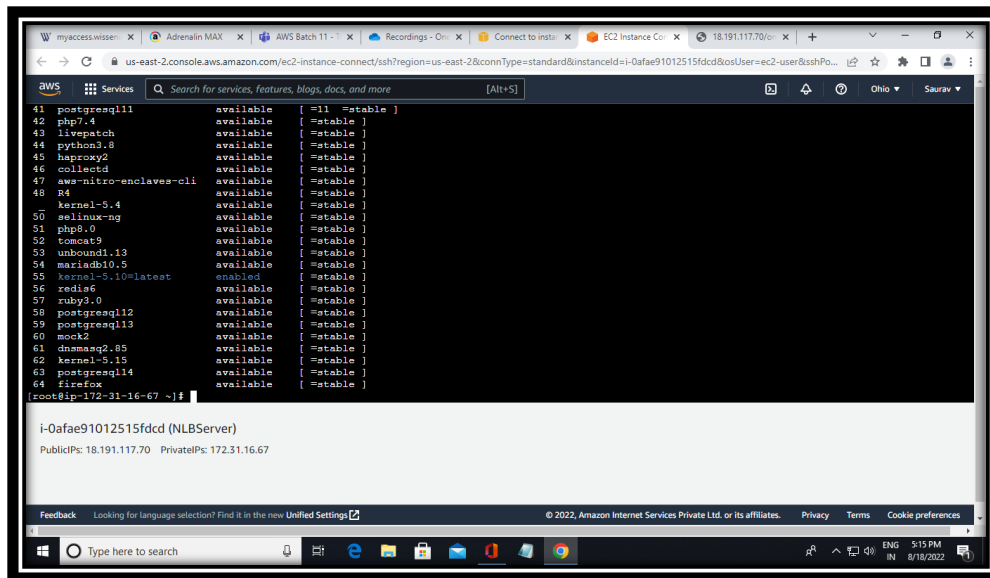
```
GNU nano 2.9.8 one.html Modified  
  
<html>  
<h1>  
This is a httpd apache web server at port no 80  
</h1>  
</html>
```

Below the terminal output, the instance details are shown:

```
i-Oafae91012515fdcd (NLBServer)  
PublicIPs: 18.191.117.70 PrivateIPs: 172.31.16.67
```

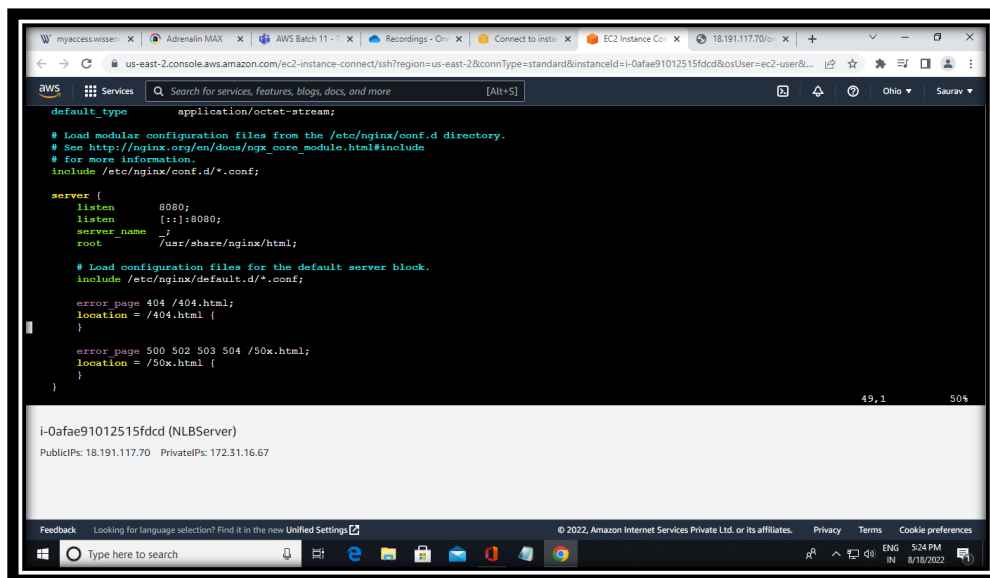
Now, install the nginx and change the default port no 80 to 8080.

The command to install the nginx: `amazon-linux-extras install nginx1 -y`



The command to change the port no: `cd /etc/nginx`

`vi nginx.conf`



Now start the nginx service

```
myaccess-winner: [Adrenalin MAX] [AWS Batch 11] [Recordings - On] [Connect to inst...] [EC2 Instance Co] [18.191.117.70]
us-east-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-2&connType=standard&instanceId=i-0afae91012515fddc&rosUser=ec2-user8...

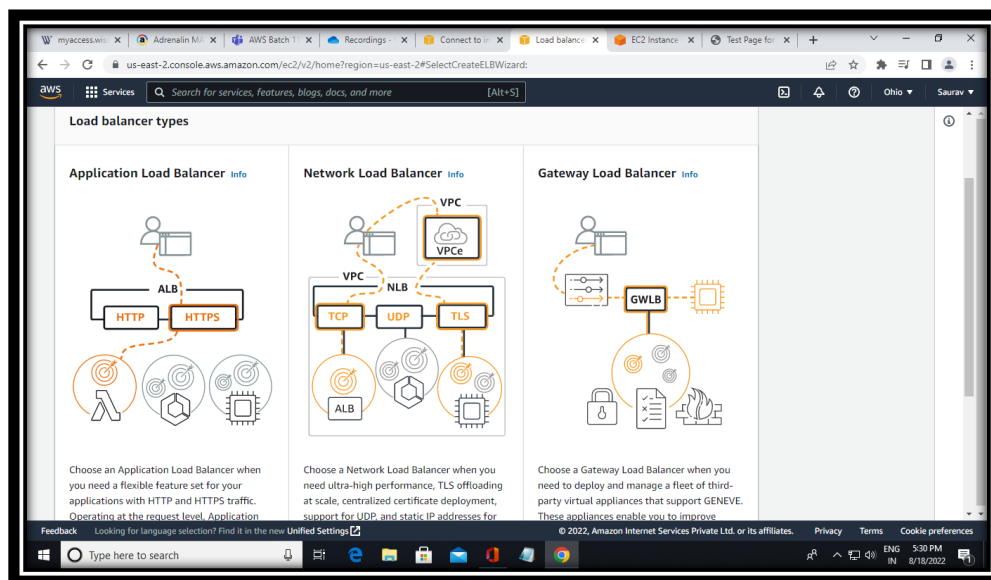
63 postgresql14 available [ =stable ]
64 firefox available [ =stable ]
[root@ip-172-31-16-67 ~]# cd /etc/nginx
[root@ip-172-31-16-67 nginx]# vi nginx.conf
[root@ip-172-31-16-67 nginx]# vi nginx.conf
[root@ip-172-31-16-67 nginx]# service start nginx
The service command supports only basic LSB actions (start, stop, restart, try-restart, reload, force-reload, status). For other actions, please try to
o use systemctl.
[root@ip-172-31-16-67 nginx]# systemctl start nginx
[root@ip-172-31-16-67 nginx]# systemctl enable nginx
Created symlink from /etc/systemd/system/multi-user.target.wants/nginx.service to /usr/lib/systemd/system/nginx.service.
[root@ip-172-31-16-67 nginx]# systemctl status nginx
* nginx.service - The nginx HTTP and reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; vendor preset: disabled)
   Active: active (running) since Thu 2022-08-18 11:57:27 UTC; 18s ago
     Main PID: 4303 (nginx)
    CGroup: /system.slice/nginx.service
            └─4303 nginx: master process /usr/sbin/nginx
               └─4304 nginx: worker process

Aug 18 11:57:26 ip-172-31-16-67.us-east-2.compute.internal systemd[1]: Starting The nginx HTTP and reverse proxy server...
Aug 18 11:57:27 ip-172-31-16-67.us-east-2.compute.internal nginx[4296]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
Aug 18 11:57:27 ip-172-31-16-67.us-east-2.compute.internal nginx[4296]: nginx: configuration file /etc/nginx/nginx.conf test is successful
Aug 18 11:57:27 ip-172-31-16-67.us-east-2.compute.internal systemd[1]: Started The nginx HTTP and reverse proxy server.
[root@ip-172-31-16-67 nginx]#

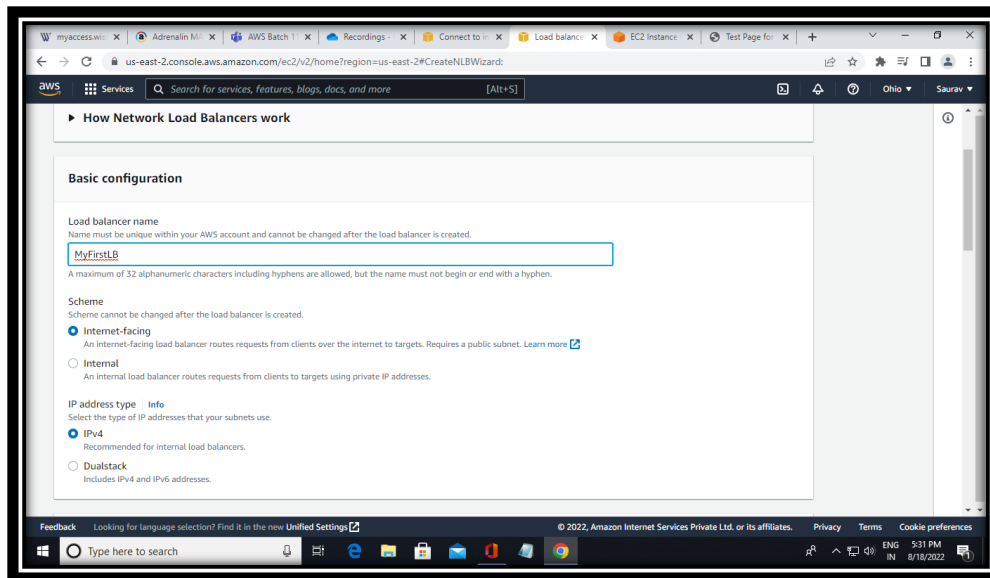
i-0afae91012515fddc (NLBServer)
PublicIPs: 18.191.117.70 PrivateIPs: 172.31.16.67

Feedback Looking for language selection? Find it in the new Unified Settings
© 2022, Amazon Internet Services Private Ltd. or its affiliates. Privacy Terms Cookie preferences
```

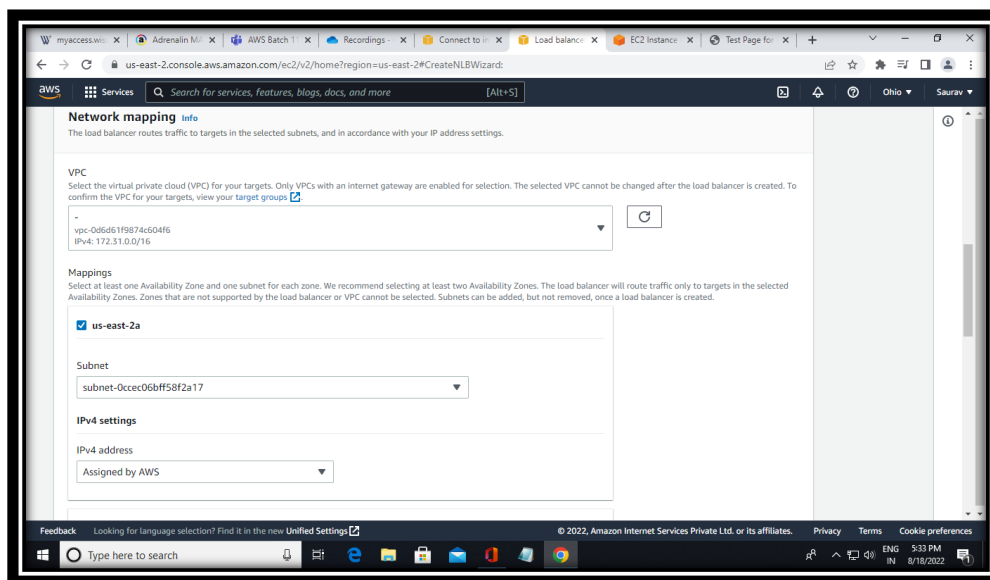
Now, create the LB and select the Network Load Balancer



Give the name of LB and select Internet-facing option from Scheme and IPv4 option from IP address type

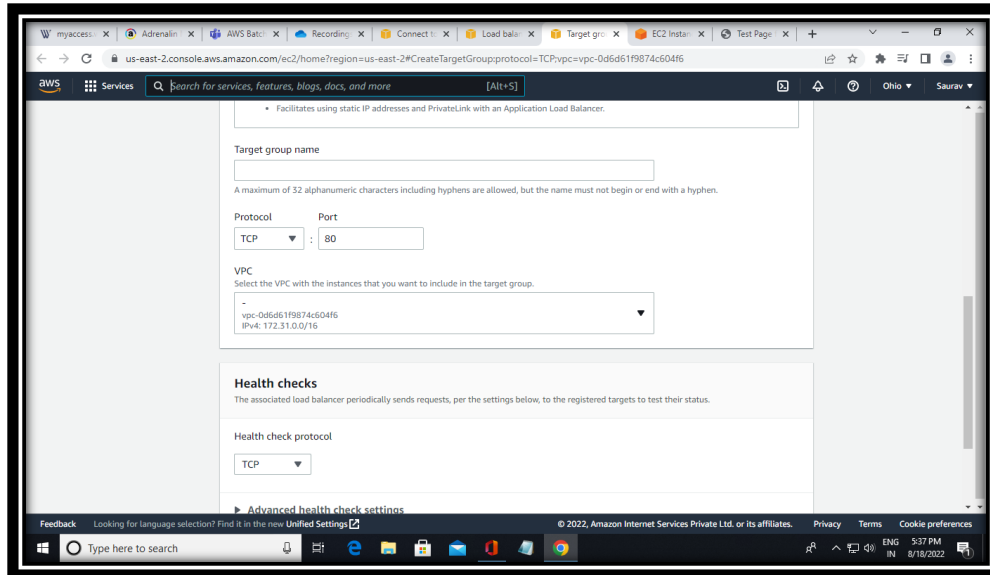


Select the all-mappings option from network mapping

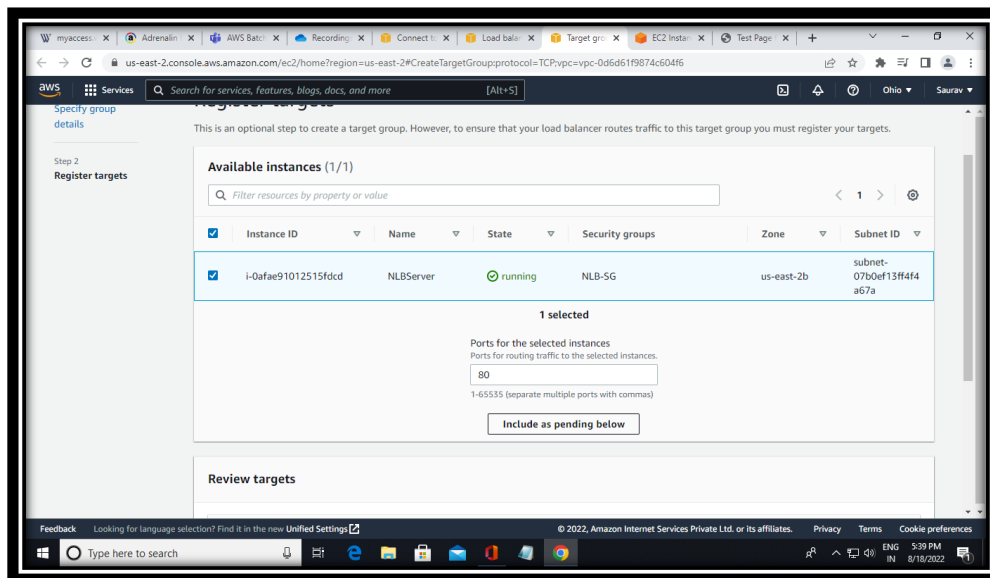


Now create the target group for httpd server

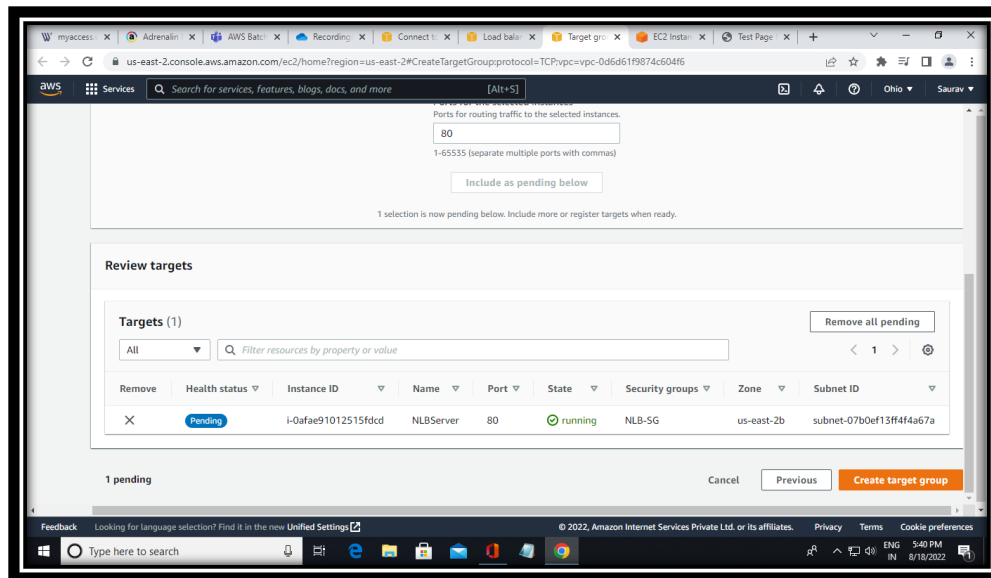
Give the name and Select TCP 80



Select the instance id and click the include as pending below button

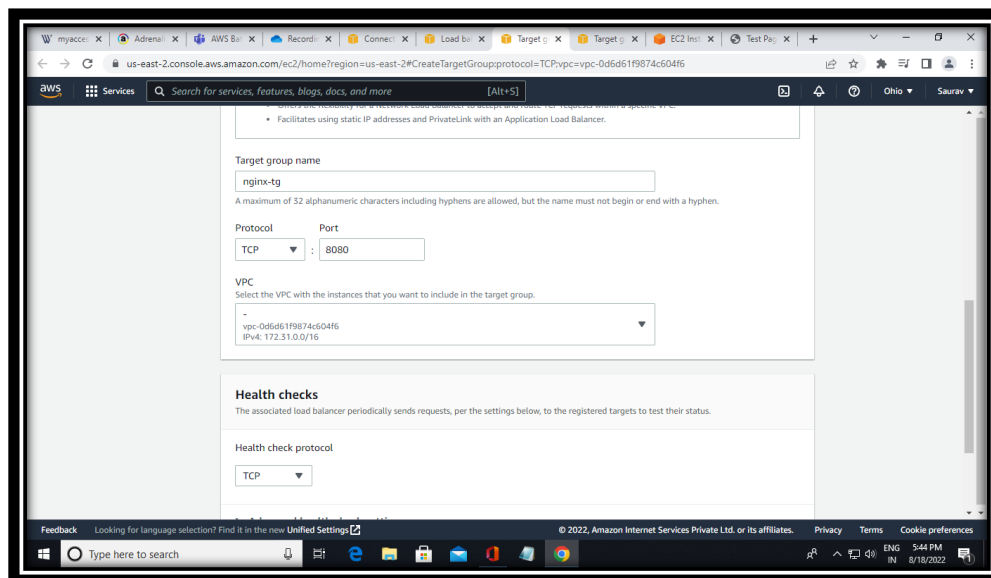


Now select the create target group button

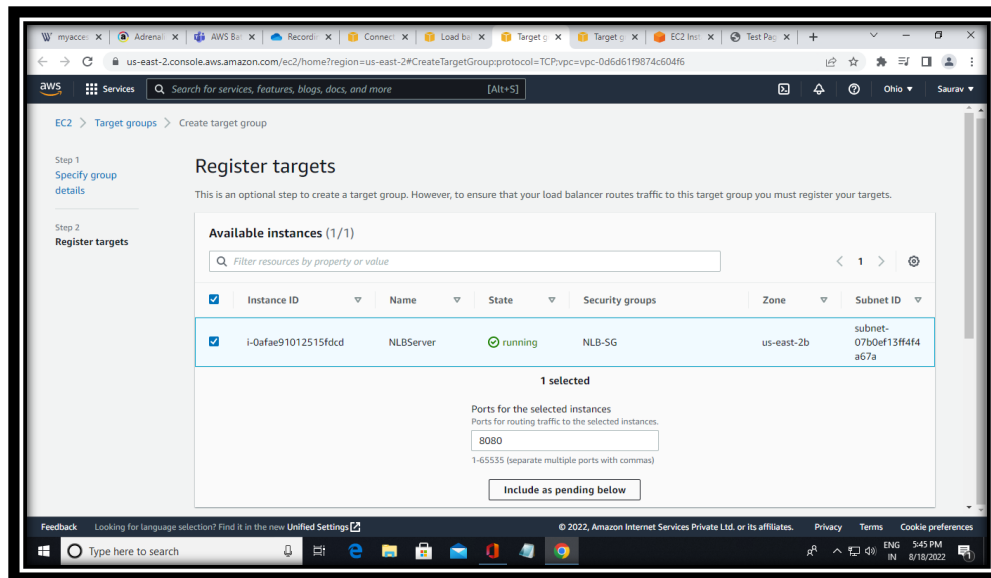


Now, create another target group for nginx server.

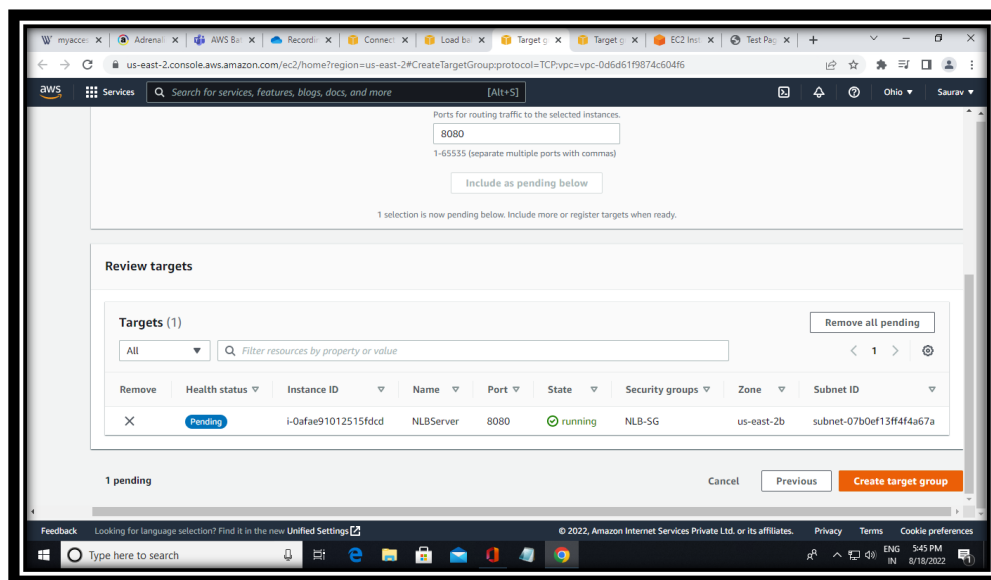
Give the name and set the TCP port to 8080



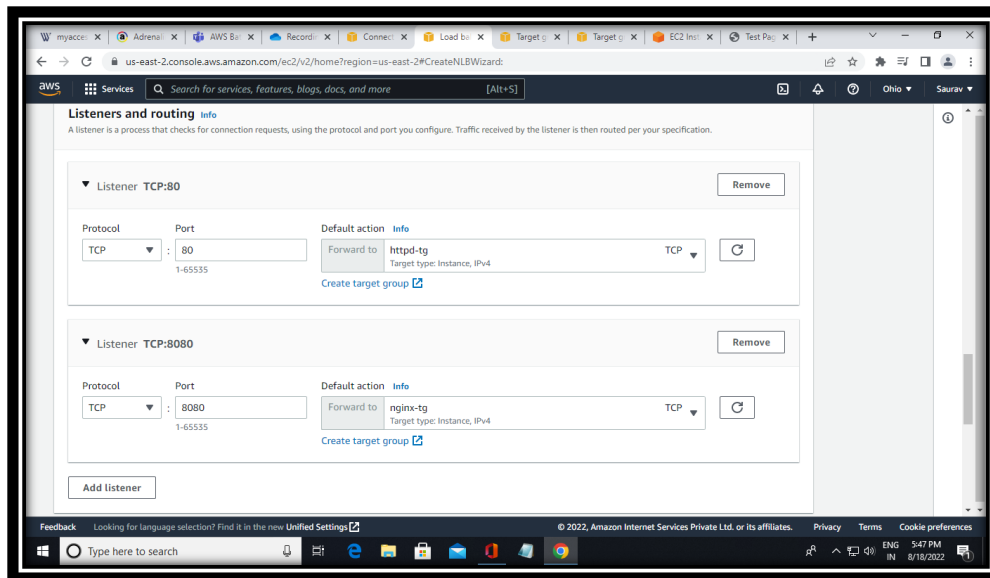
Select the instance id and click the include as pending below button



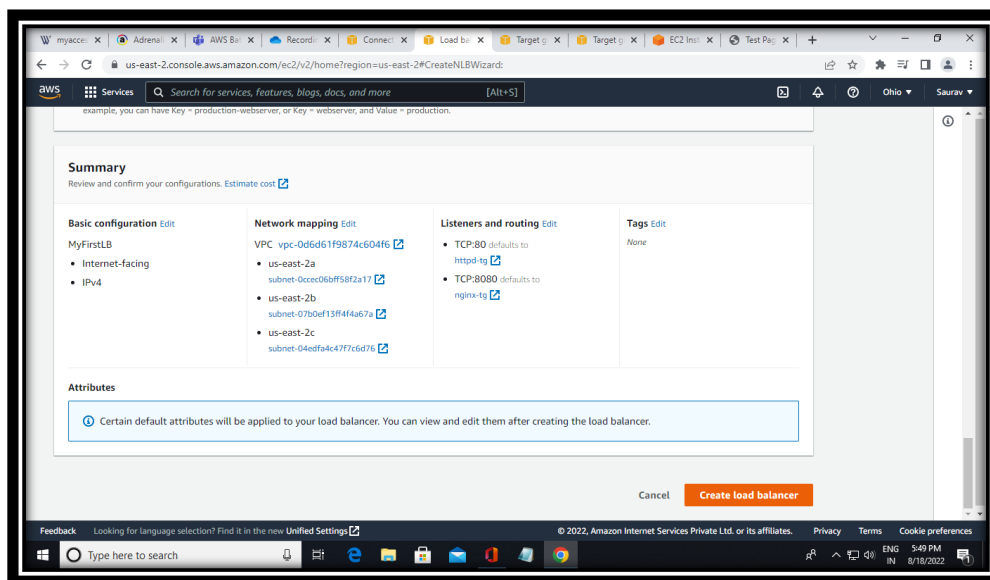
Now select the create target group button



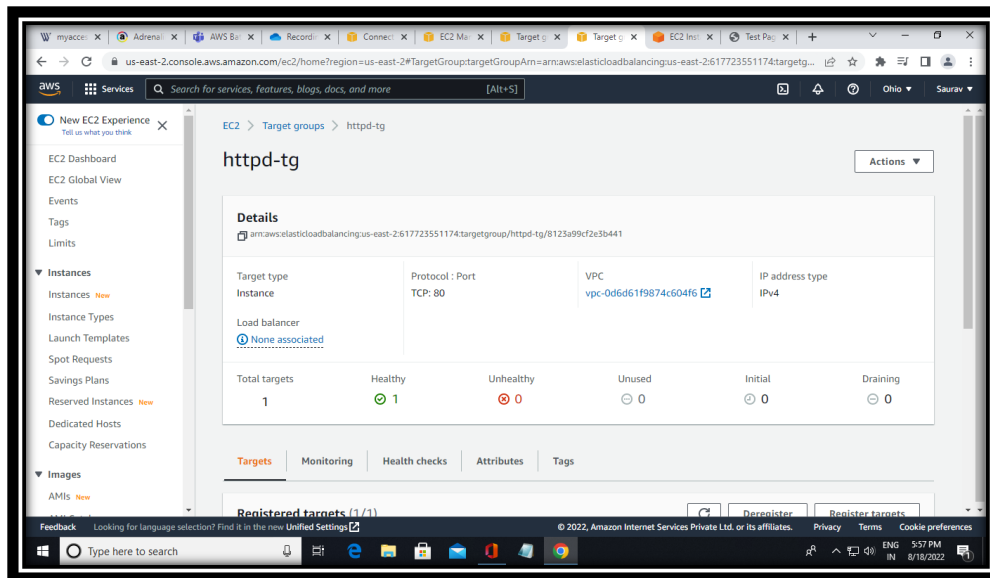
Now, come to the load balancer and add both target groups to the listener I.e., TCP 80 and TCP 8080



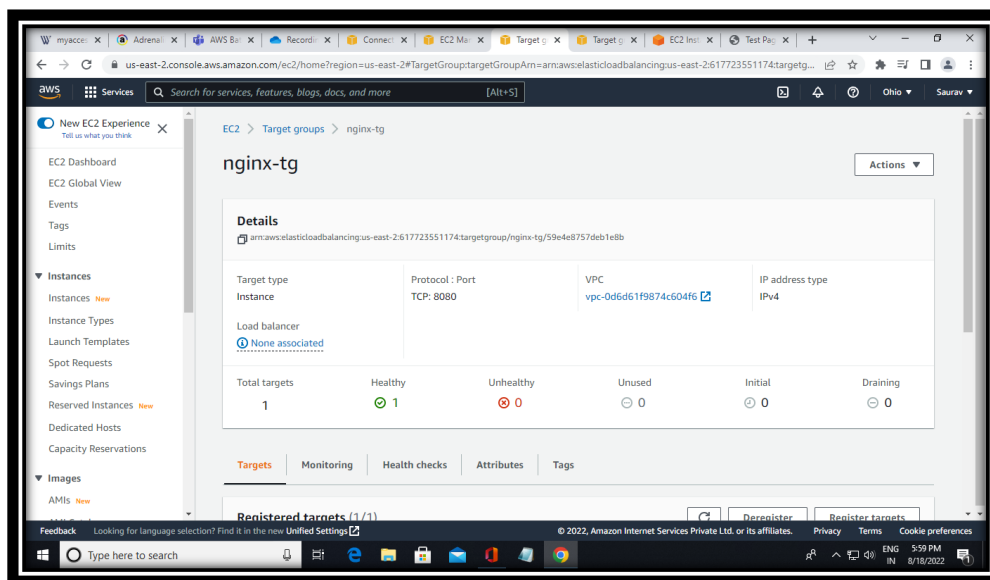
Now click on the create load balancer



The Httpd target group is working properly because Health Check is showing 1



The Ngnix target group is working properly because Health Check is showing 1



My Network Load Balancer is working properly.

