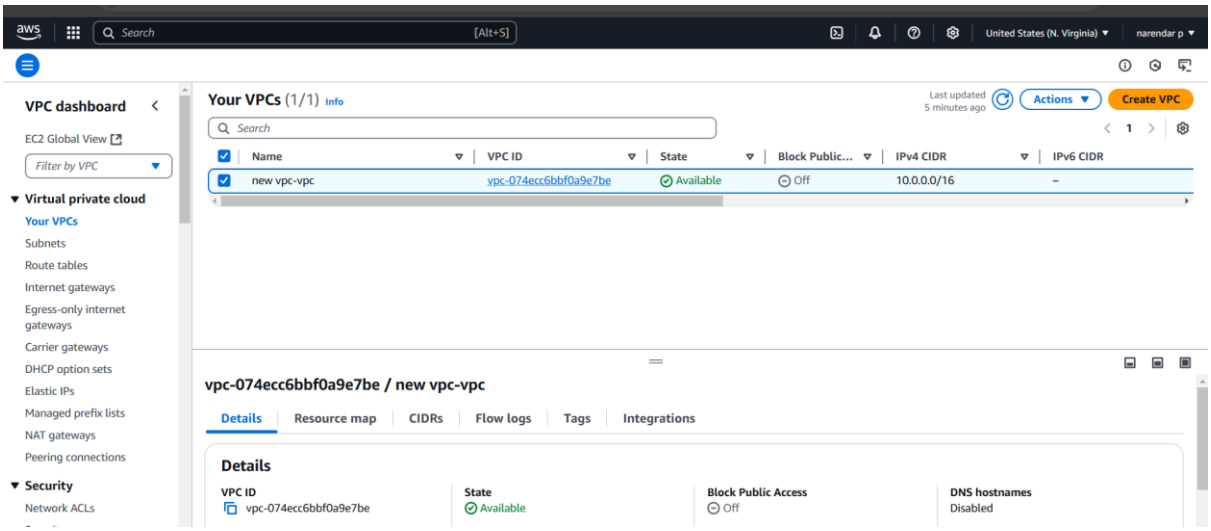
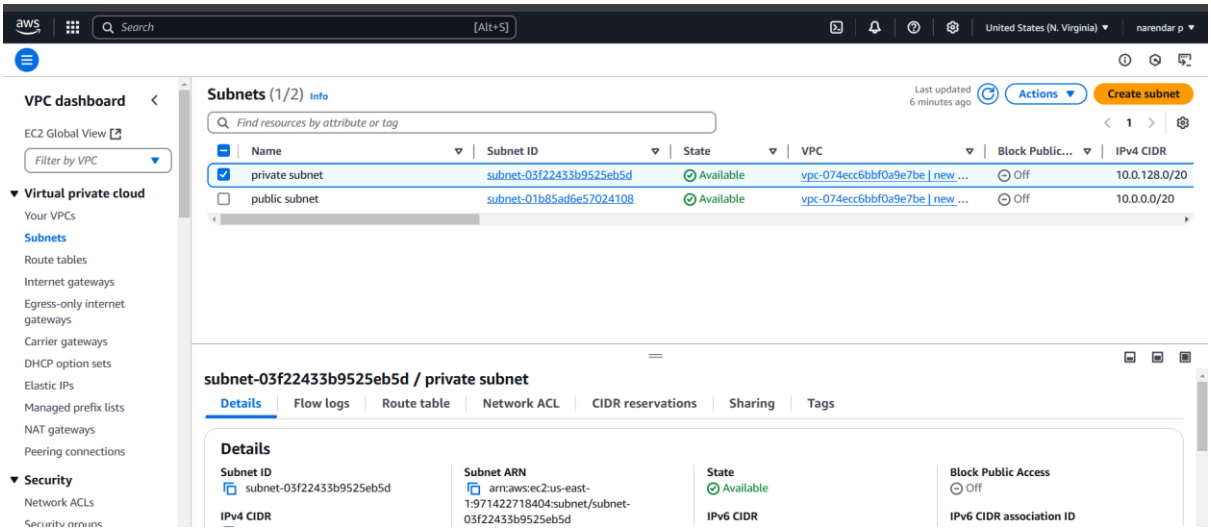
TASK ON AUTOSCALING GROUPS

1) Create one vpc in N.virginia region:

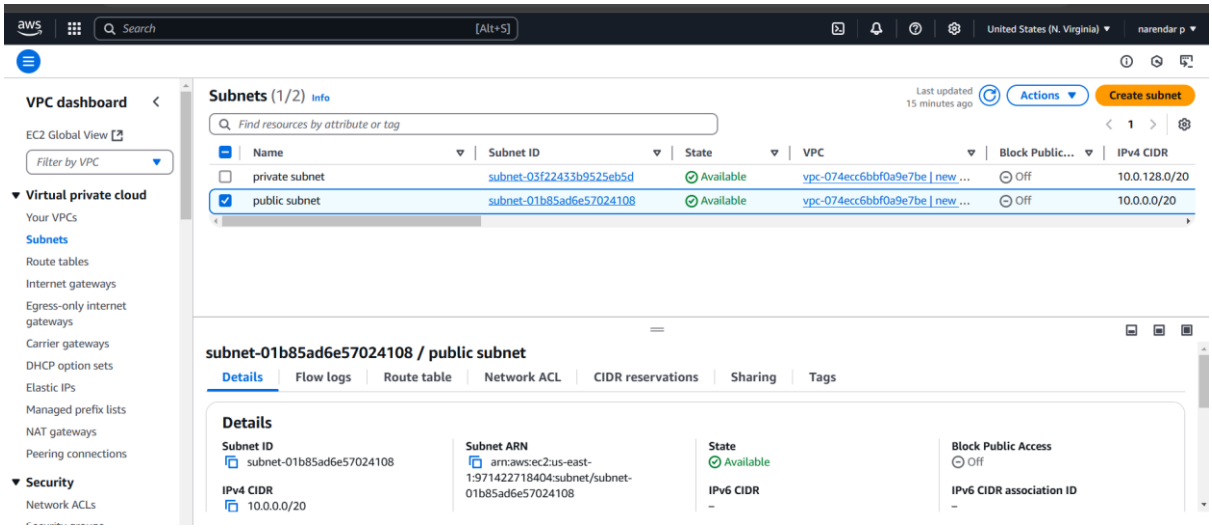


2) Create two subnets. One Public subnet and one private subnet:

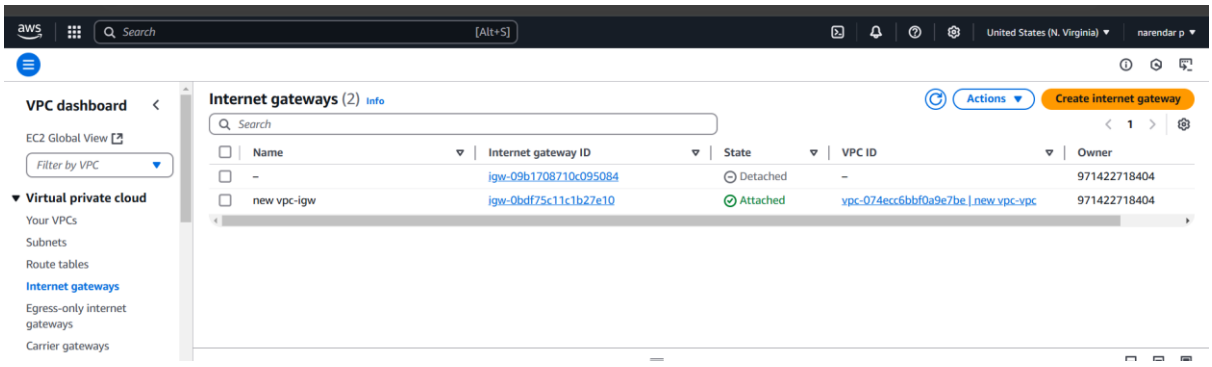
Private Subnet:



Public Subnet

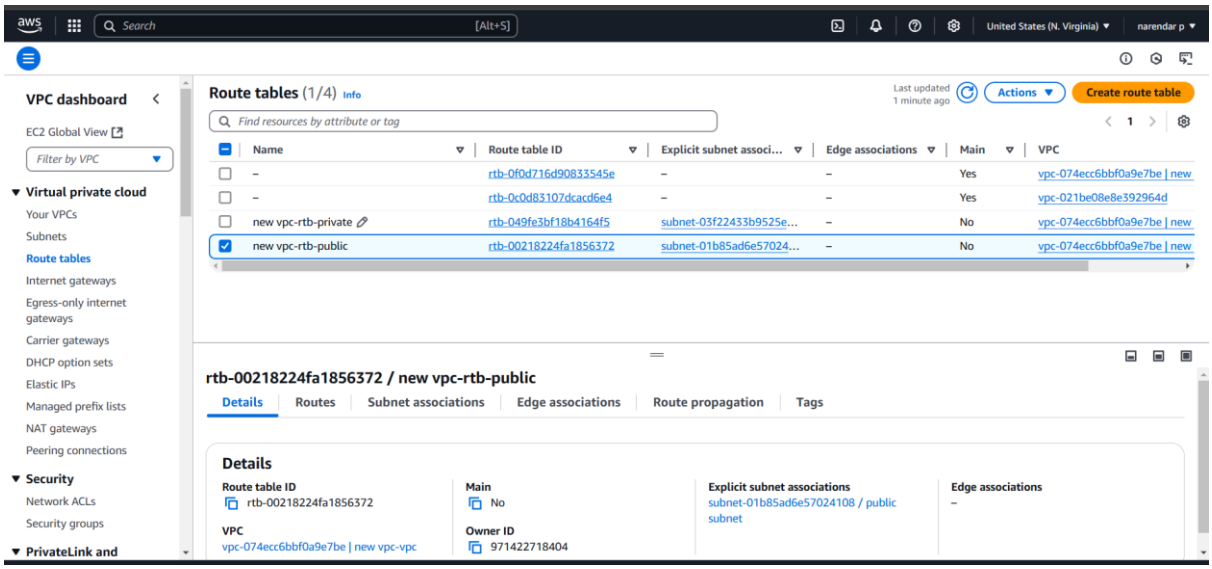


3) Provide the IGW to the vpc:

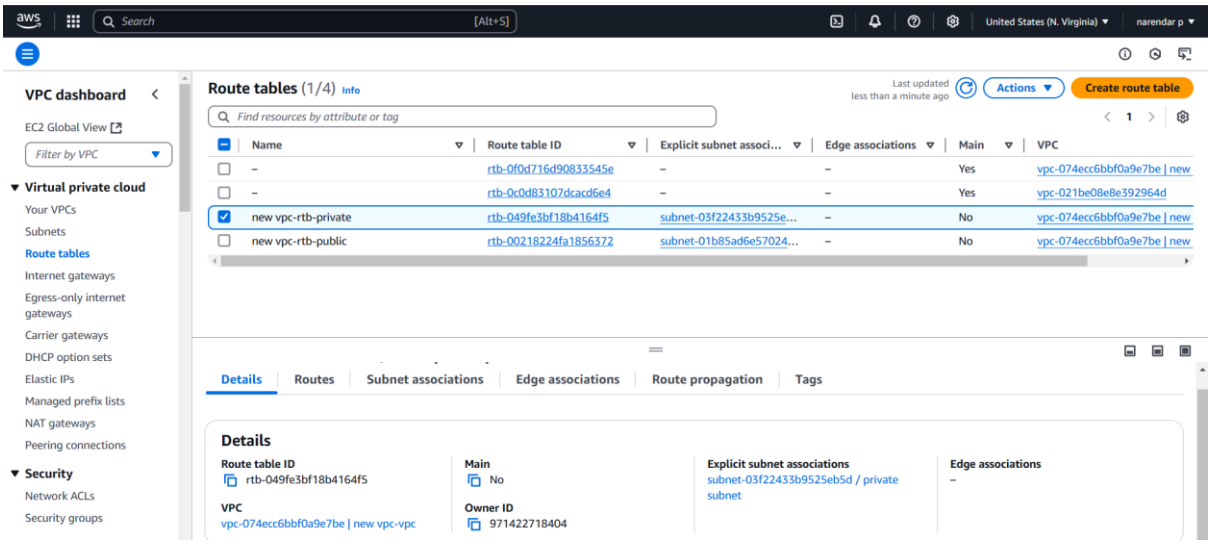


4) Create One public RT and one private RT:

Public RT:

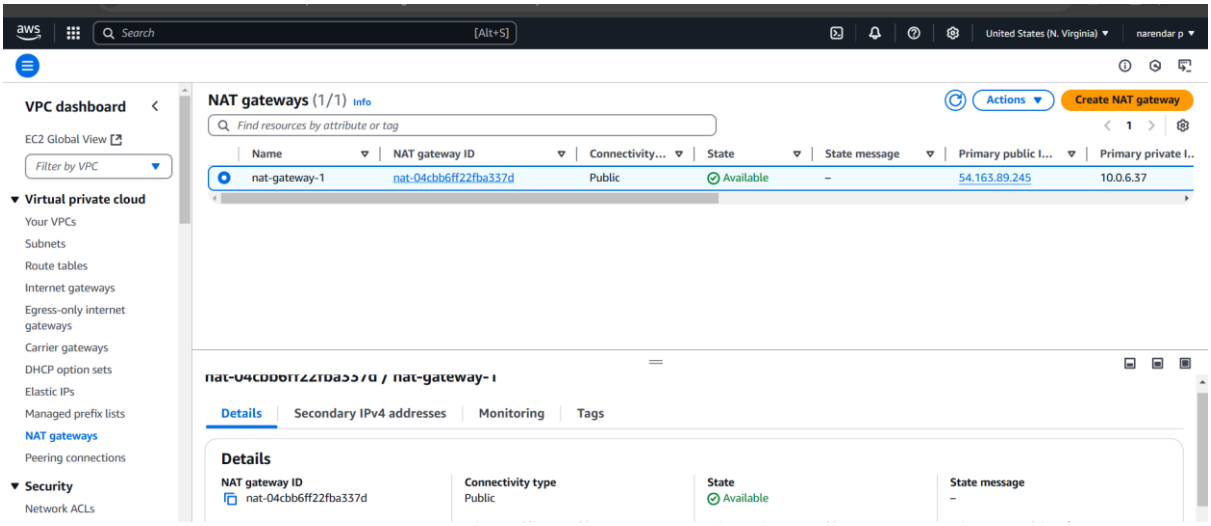


Private RT:

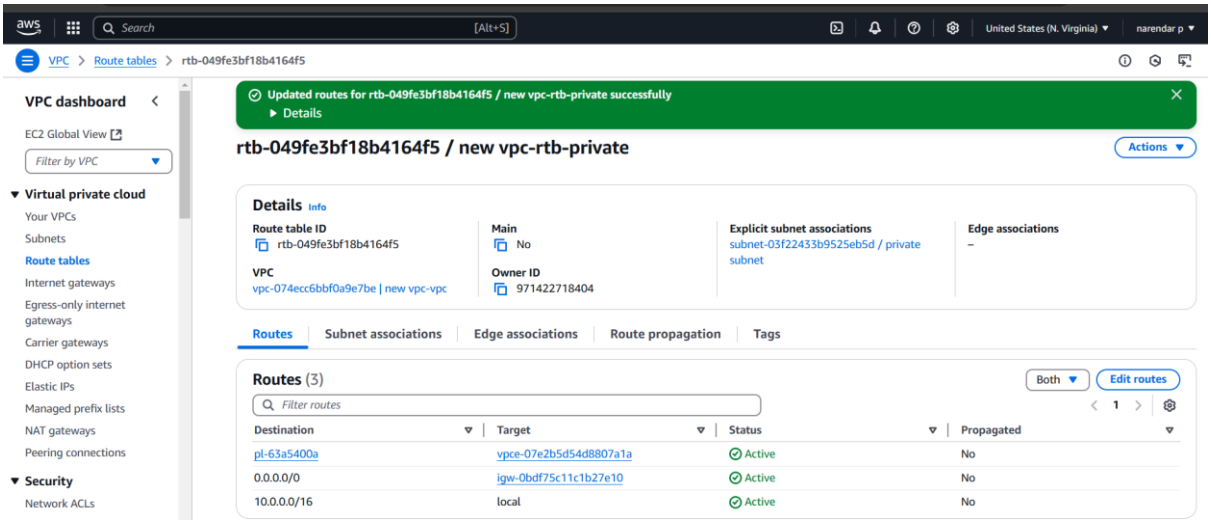


5) Deploy NAT gateway on public subnet and attach the NAT gateway to private subnet:

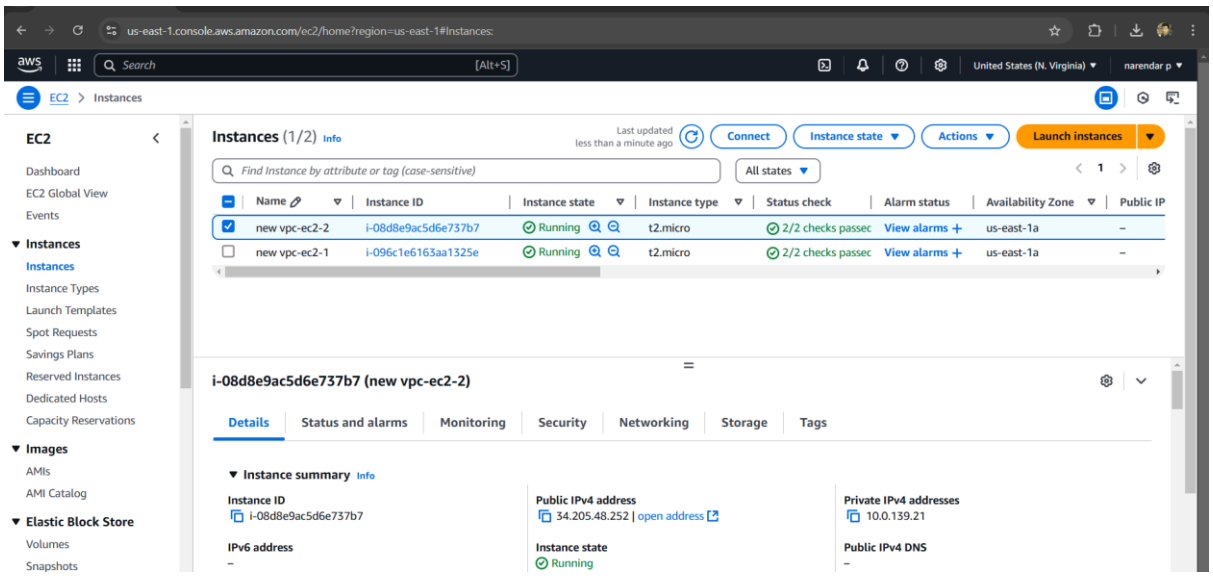
→Created NAT gateway on public subnet:

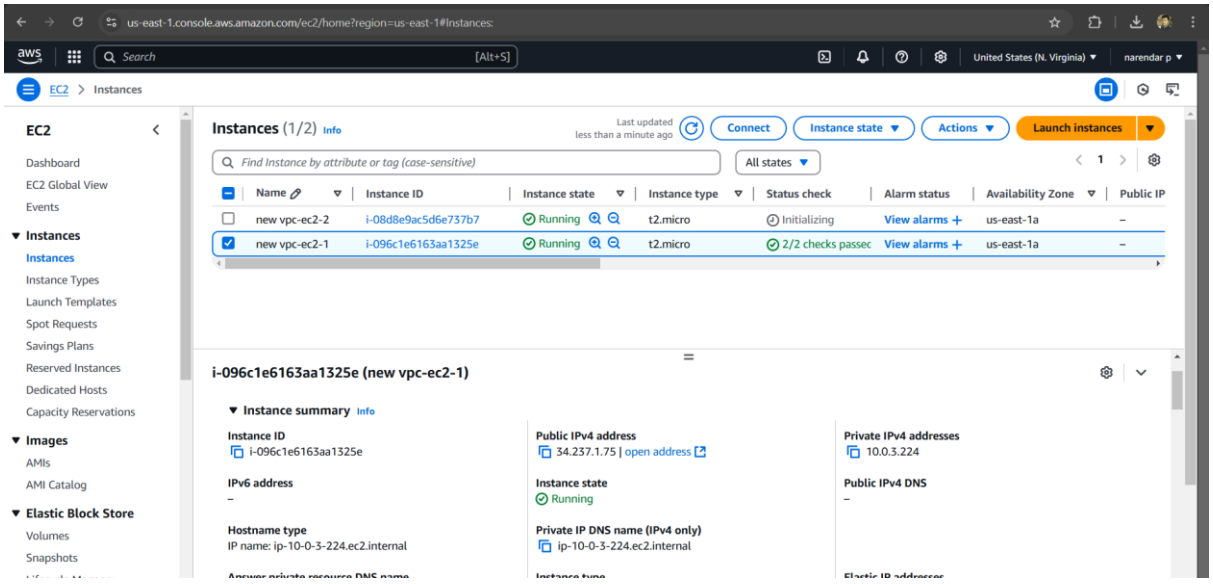


→Attached NAT gateway to Private subnet:



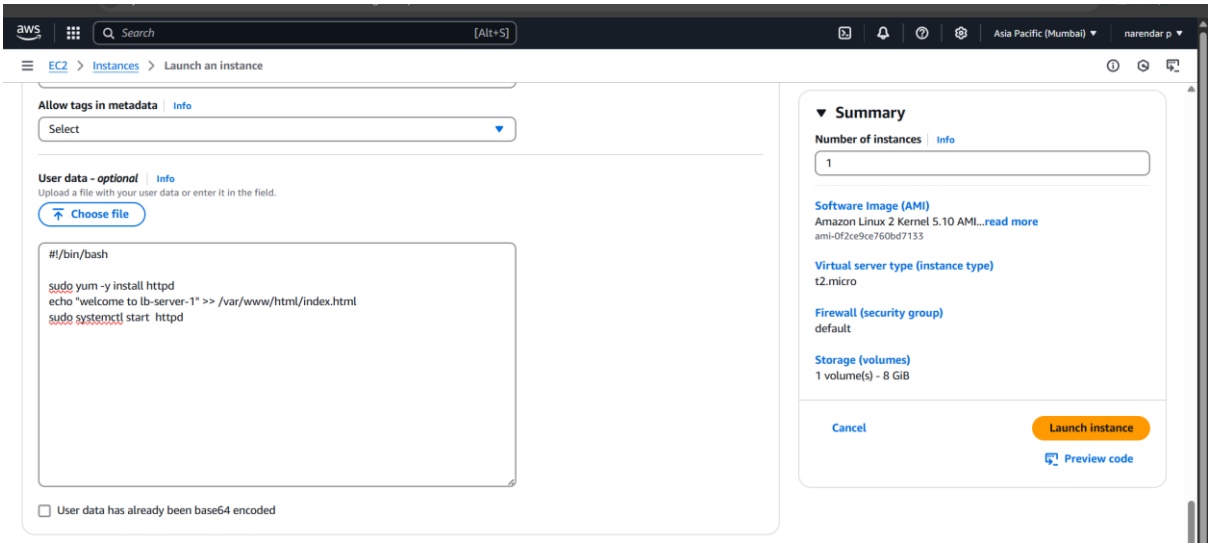
6) Create Two instances, one in public subnet and one in private subnet:





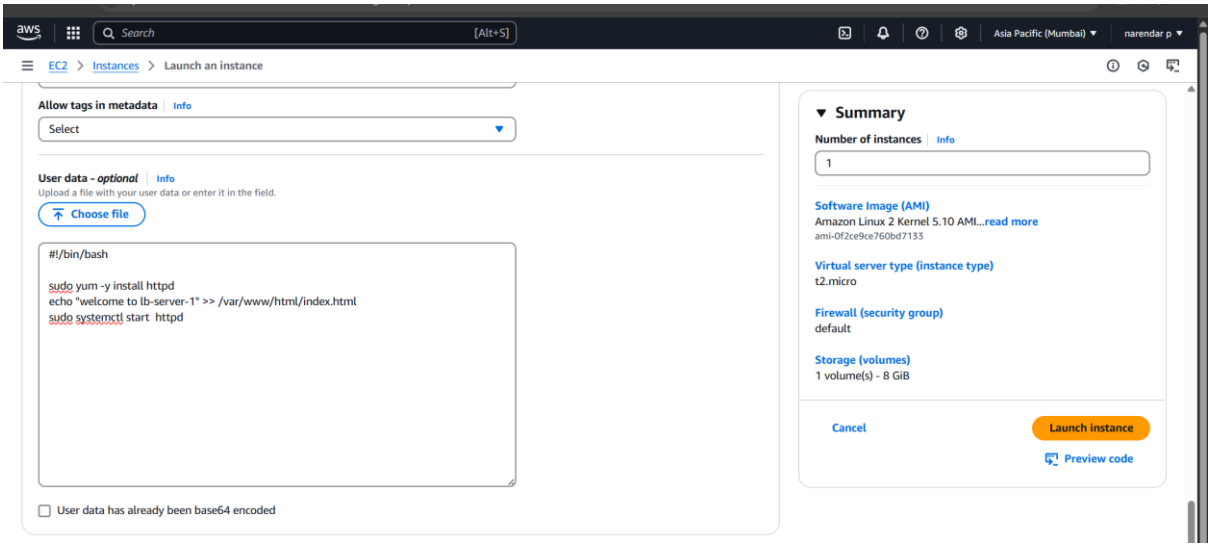
7)Deploy Apache server on both the ec2 instances with sample index.html file:

EC1



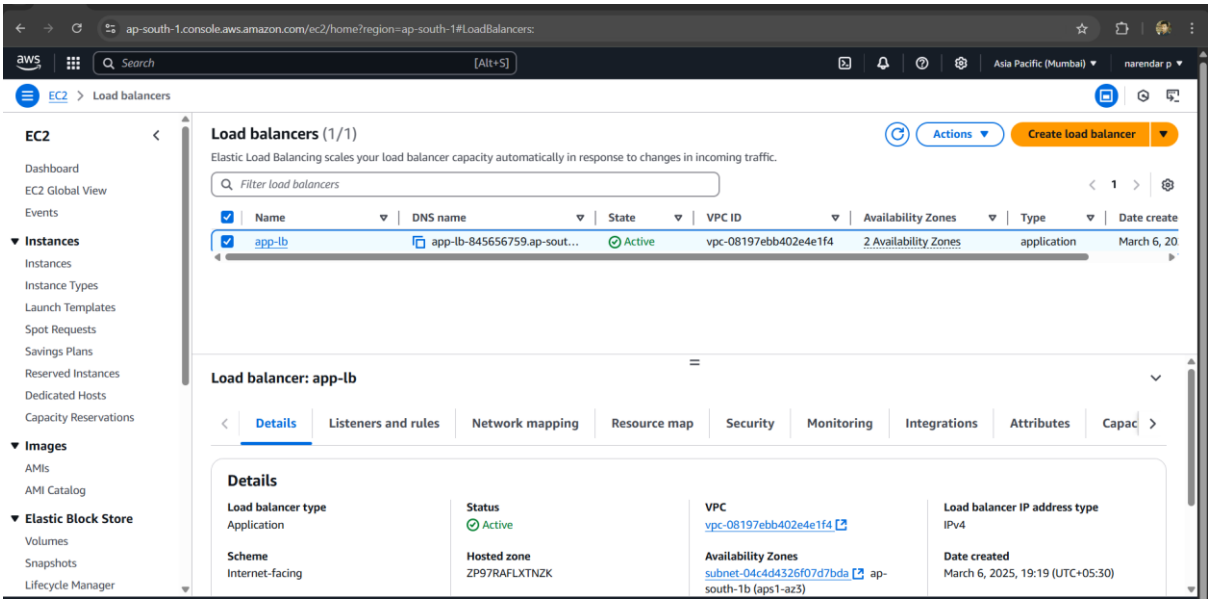
welcome to lb-server-1

EC2

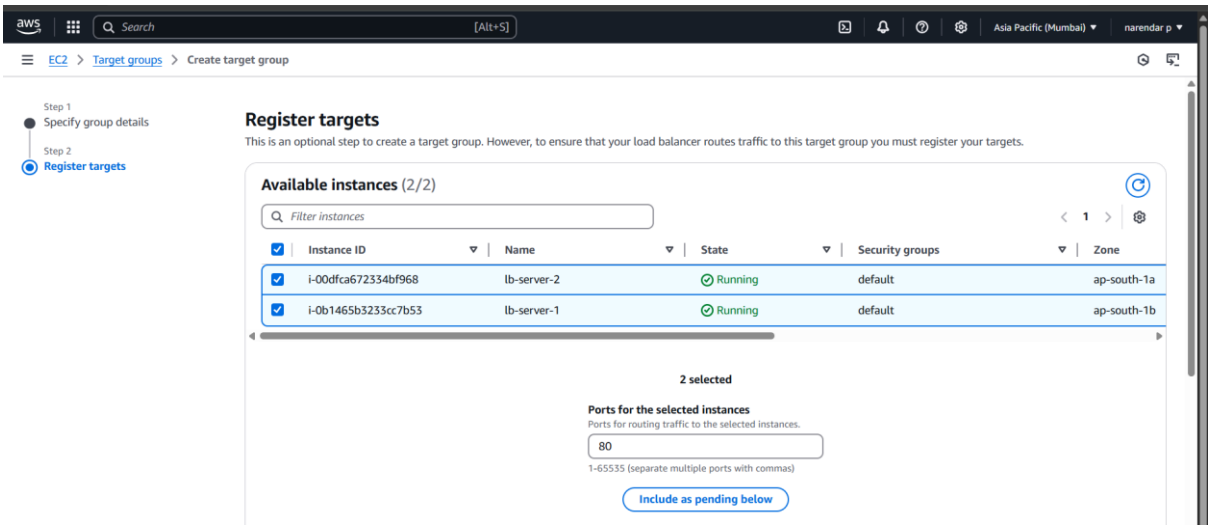


8)Create one application load balancer and attach the load balancer to both the ec2 instances:

→Created Application Load balancer:

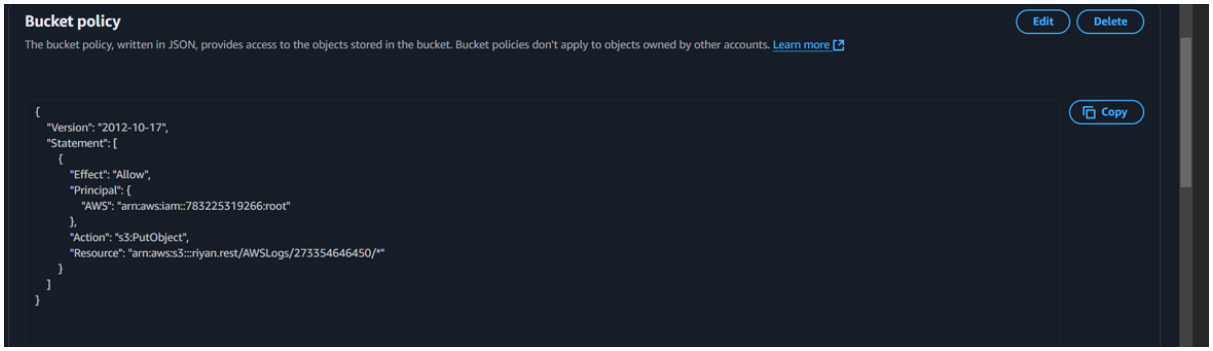


→Attached The load balancer to both the Ec2 instances which are created above task:

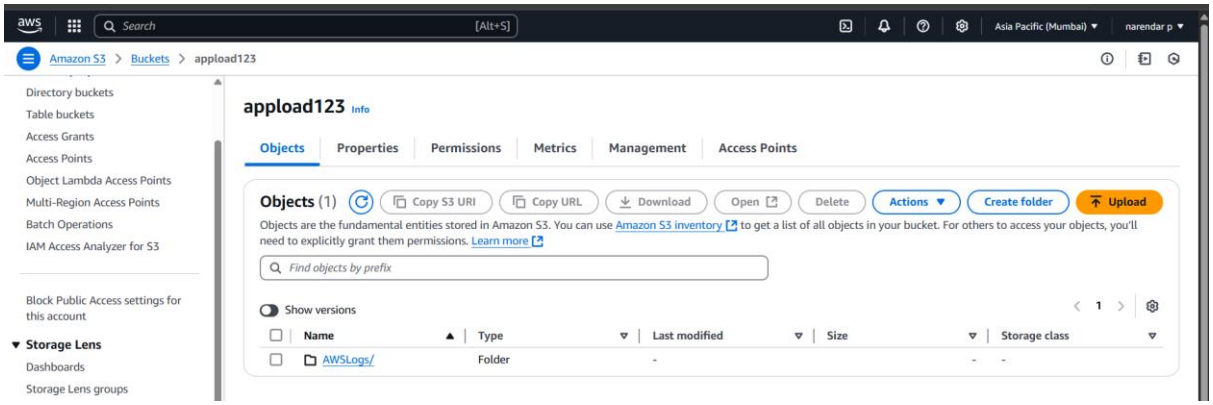


9) Store Application load balancer logs to s3:

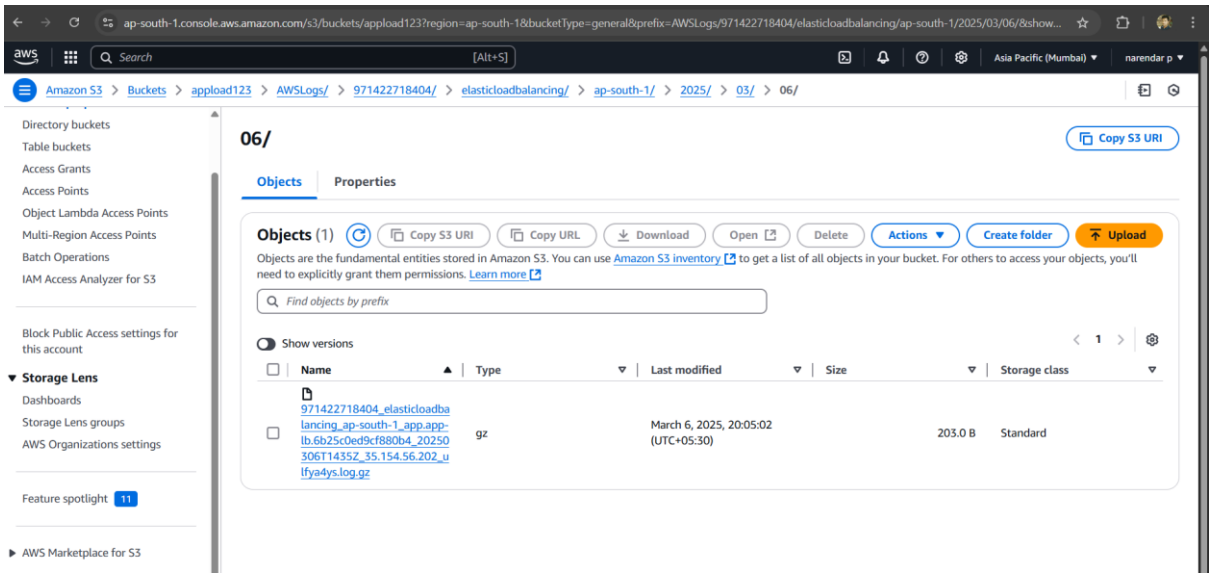
→Created bucket policy:



→Added application load balancer logs to s3:

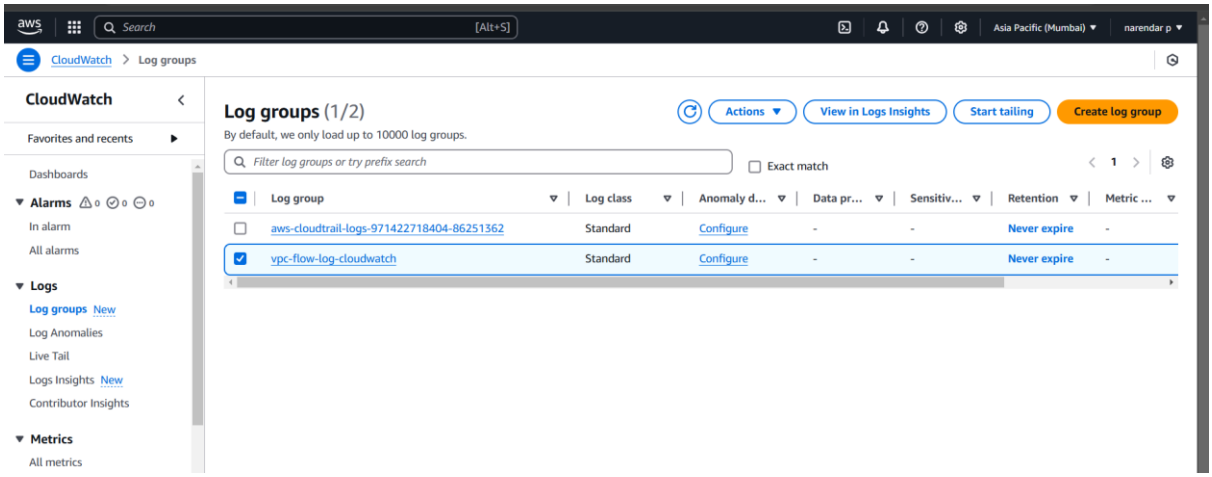


→logs generated in s3:

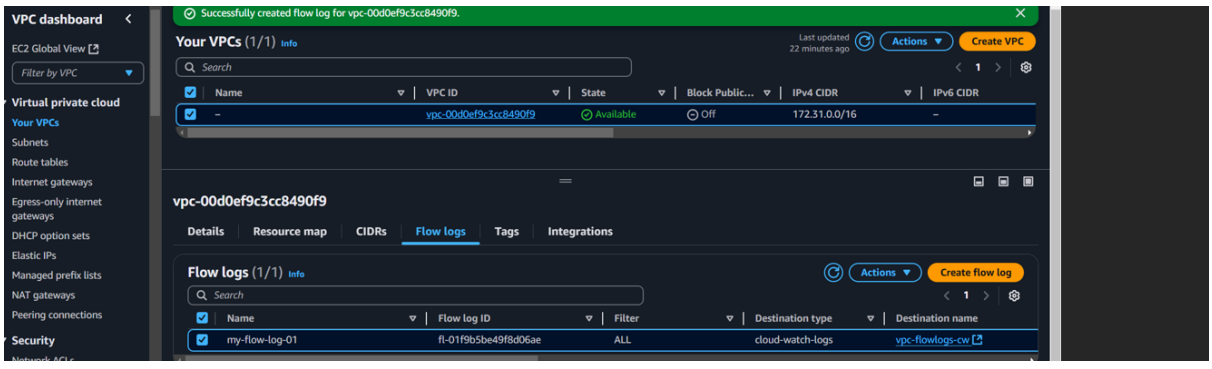


10) Store the vpc flow logs to cloud watch group:

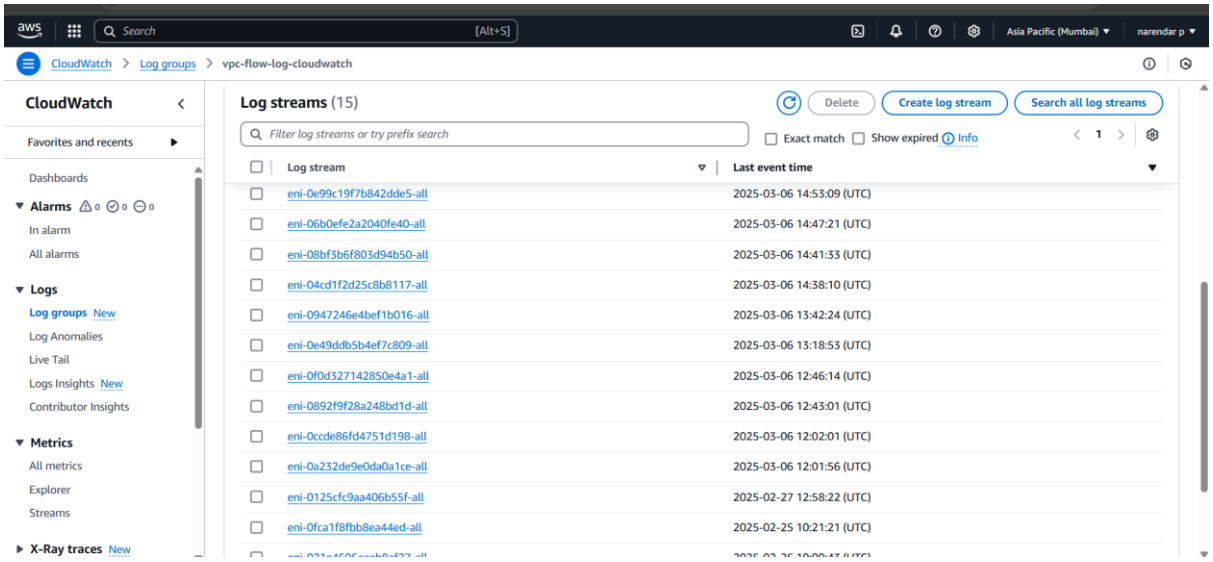
→Created log group in cloud watch:



→Created flow logs from VPC by giving the log group which we created



→The vpc logs generated in cloudwatch under log groups section:



11) Create Monitoring Dashboards to monitor cpu utilization and to monitor apache service:

→Installed apache httpd in an instance:

```
Unit apache.service could not be found.
[ec2-user@ip-10-0-0-200 ~]$ systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Wed 2025-03-05 10:14:26 UTC; 3h 30min ago
     Docs: man:httpd.service(8)
 Main PID: 3446 (httpd)
   Status: "Total requests: 17; Idle/Busy workers 100/0;Requests/sec: 0.00134; Bytes served/sec:
  1 B/sec"
   CGroup: /system.slice/httpd.service
           ├─3446 /usr/sbin/httpd -DFOREGROUND
           ├─3447 /usr/sbin/httpd -DFOREGROUND
           ├─3448 /usr/sbin/httpd -DFOREGROUND
           ├─3449 /usr/sbin/httpd -DFOREGROUND
           ├─3450 /usr/sbin/httpd -DFOREGROUND
           ├─3451 /usr/sbin/httpd -DFOREGROUND
           ├─3506 /usr/sbin/httpd -DFOREGROUND
           └─3572 /usr/sbin/httpd -DFOREGROUND

Mar 05 10:14:26 ip-10-0-0-200.ec2.internal systemd[1]: Starting The Apache HTTP Server...
Mar 05 10:14:26 ip-10-0-0-200.ec2.internal systemd[1]: Started The Apache HTTP Server.
```

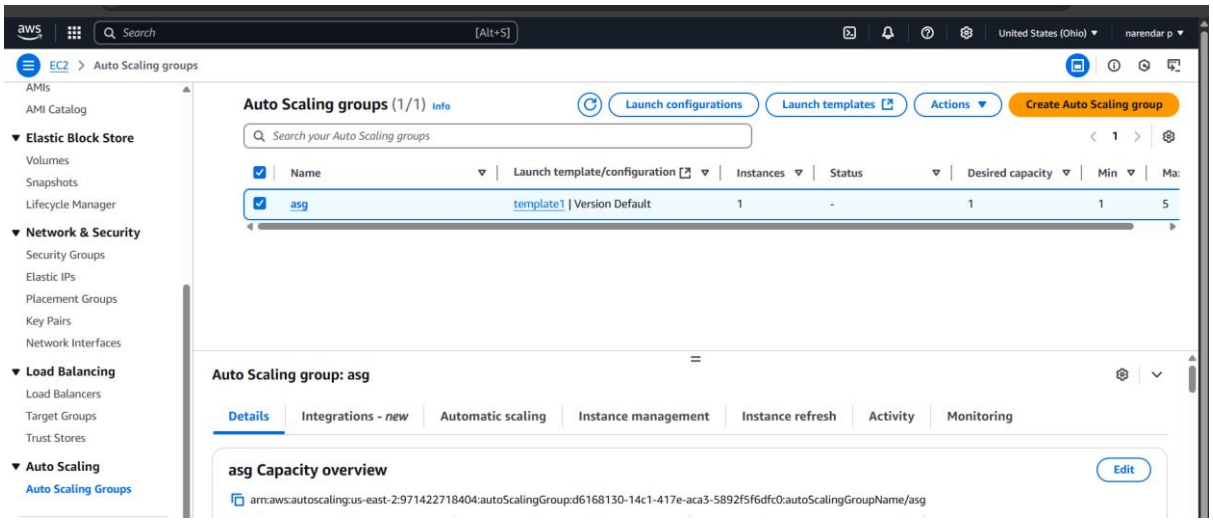
→script for appache monitoring:

```
#!/bin/bash
#set -x

# Get instance ID
INSTANCE_ID=$(/opt/aws/bin/ec2-metadata -i | awk '{print $2}')

# Function to check httpd process status
checkHttpdStatus() {
    ps x | grep 'httpd' | grep -v grep | wc -l
}

# Get httpd process count
i=$(checkHttpdStatus)

# Send metric to CloudWatch
if [ "$i" -eq 0 ]; then
    aws --region us-east-1 cloudwatch put-metric-data --metric-name httpd --value 0 --namespace h
ttpd --dimensions InstanceId="$INSTANCE_ID"
else
    aws --region us-east-1 cloudwatch put-metric-data --metric-name httpd --value 1 --namespace h
ttpd --dimensions InstanceId="$INSTANCE_ID"
fi

~
~
```

→created dashboard for cpu utilization:

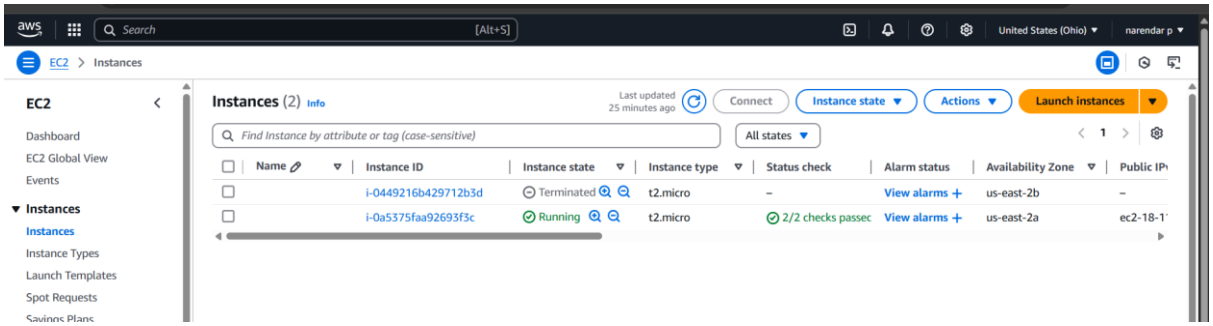
12) CPU utilizations more than 70% then it should trigger Autoscaling and launch new instance:

→Created an AutoScaling group and attached to a template:

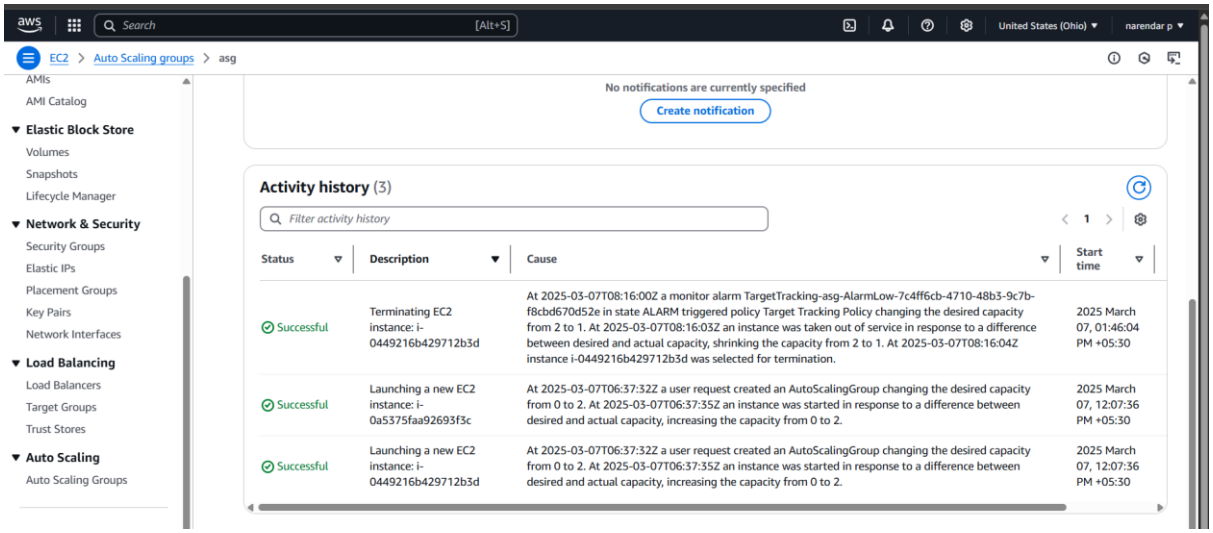


→Created an Auto Scaling Group and defined scaling policies:

→Instance terminated after stress applied:



→Capacity added on unhealthy condition (more than 70% cpu utilization)



→cpu utilization: