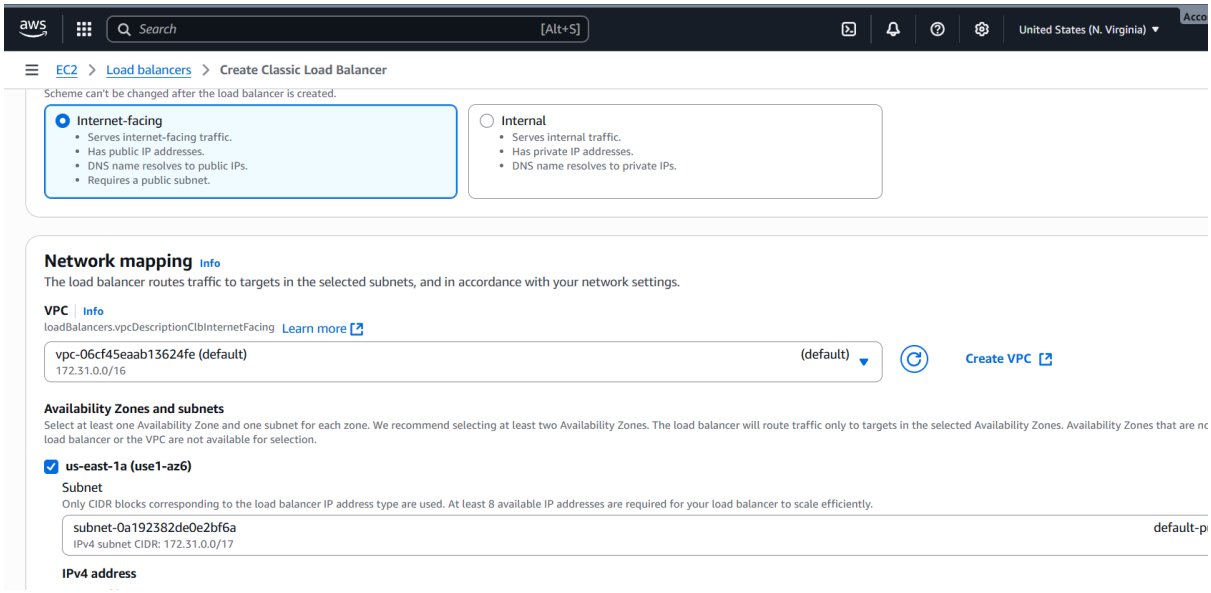
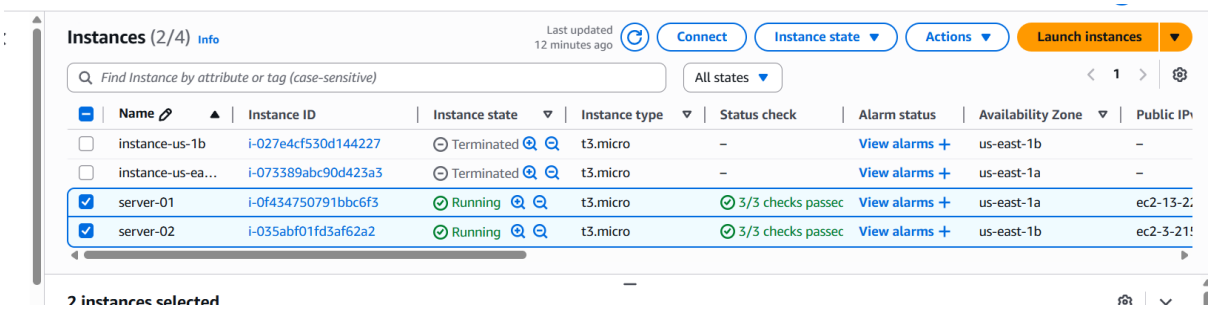
1. Configure Classic Load balancer.

Go to load balancers and create classic load balancer.



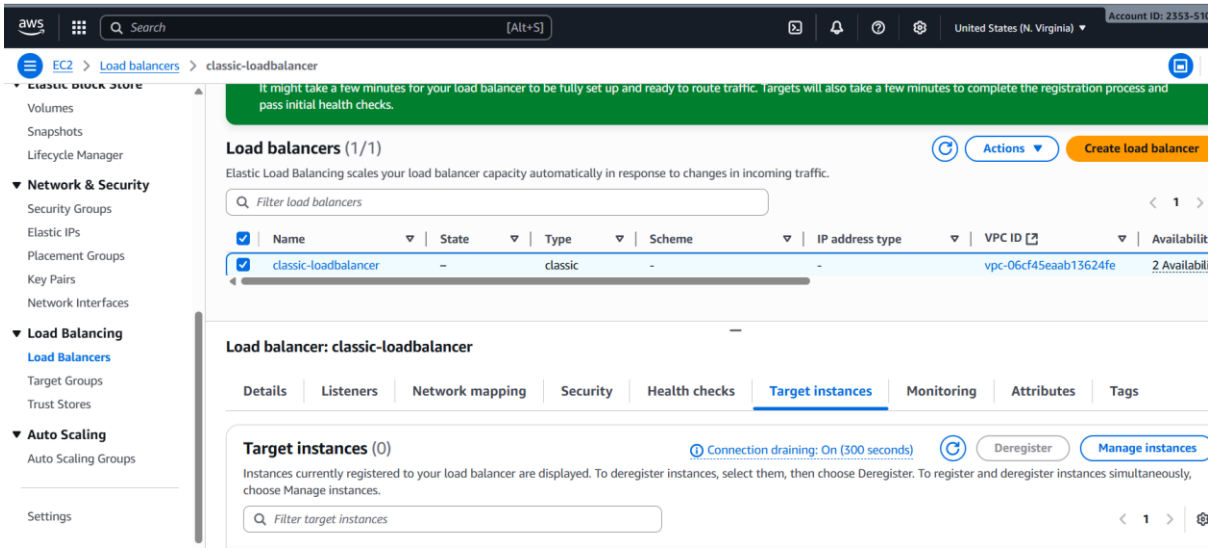
Go to ec2-instances and create 2 instances with different zones.while creating add the data of installing httpd and server-no and httpd configuration and index.html file.

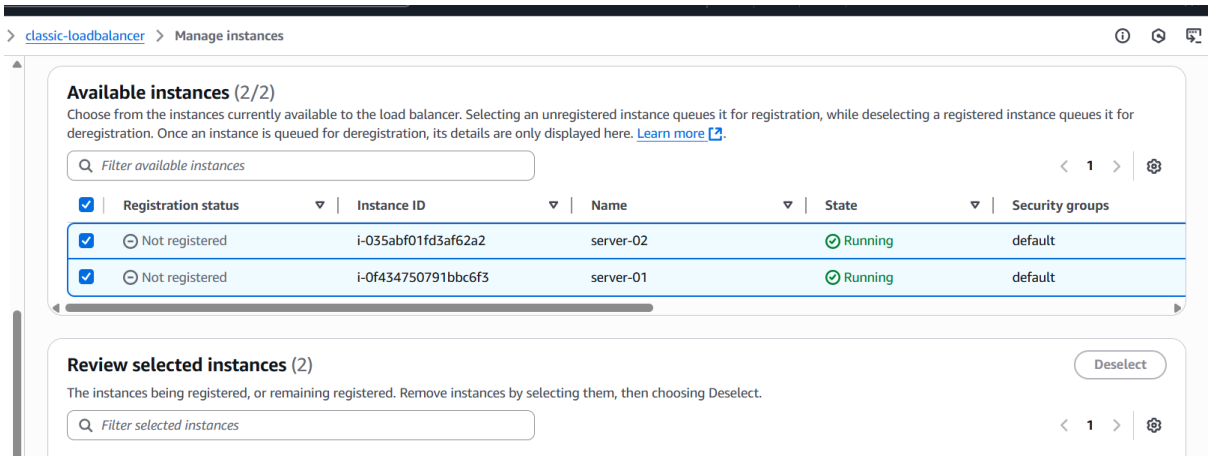
```
#!/bin/bash
sudo yum  -y install httpd
echo "welcome to server-02" >> /var/www/html/index.html
sudo systemctl start httpd
```



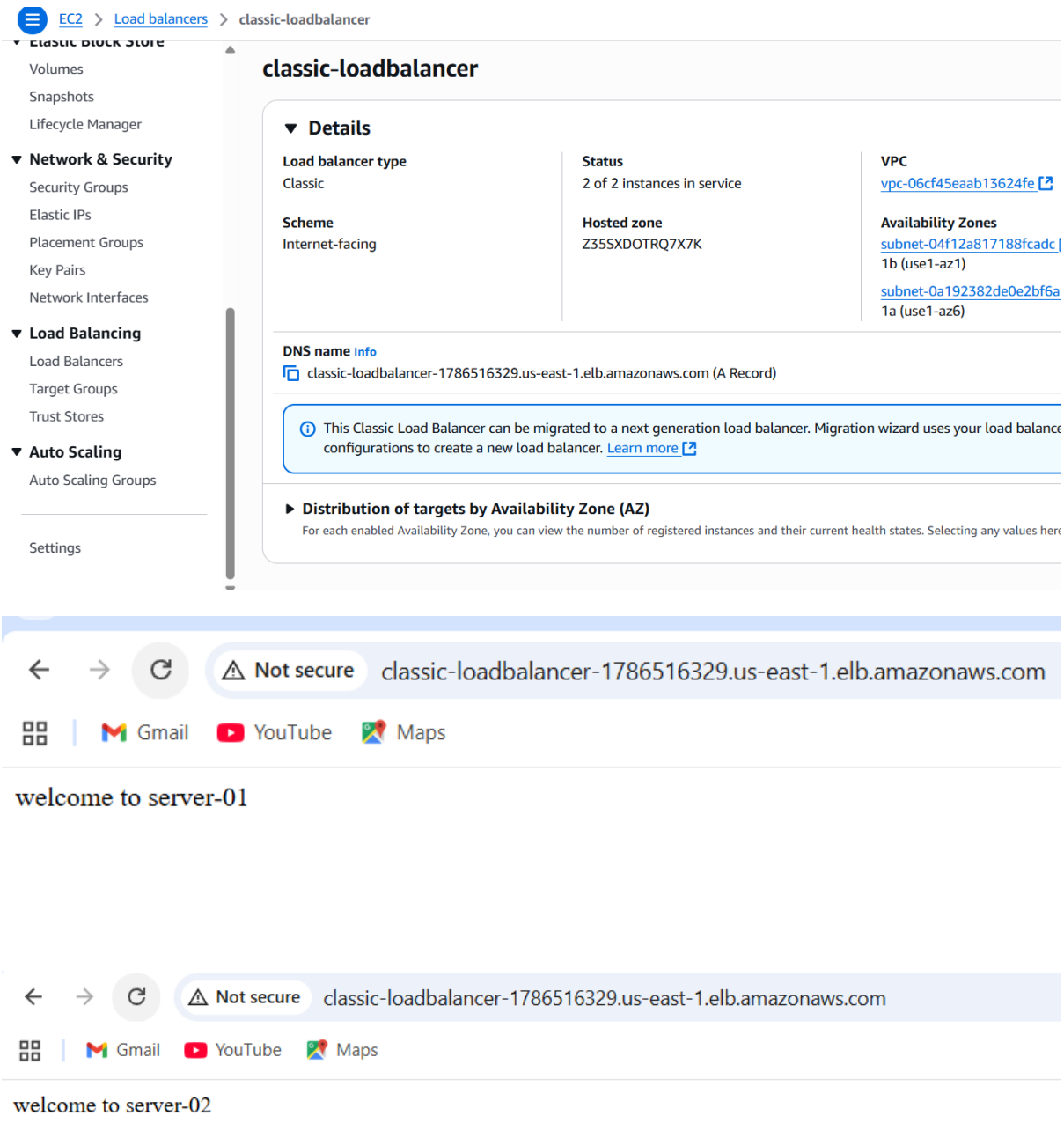
Check whether it was running or not with port 80.

Go to loadbalancers and go to target instances and manage instances and add 2 instances.



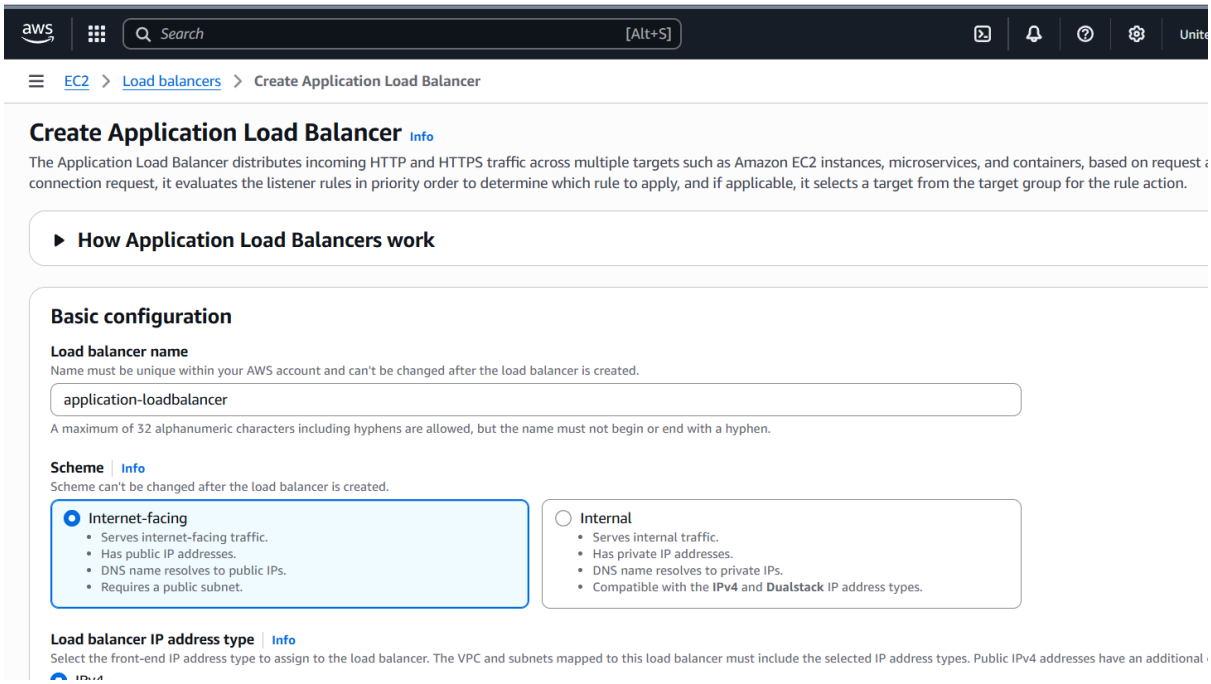


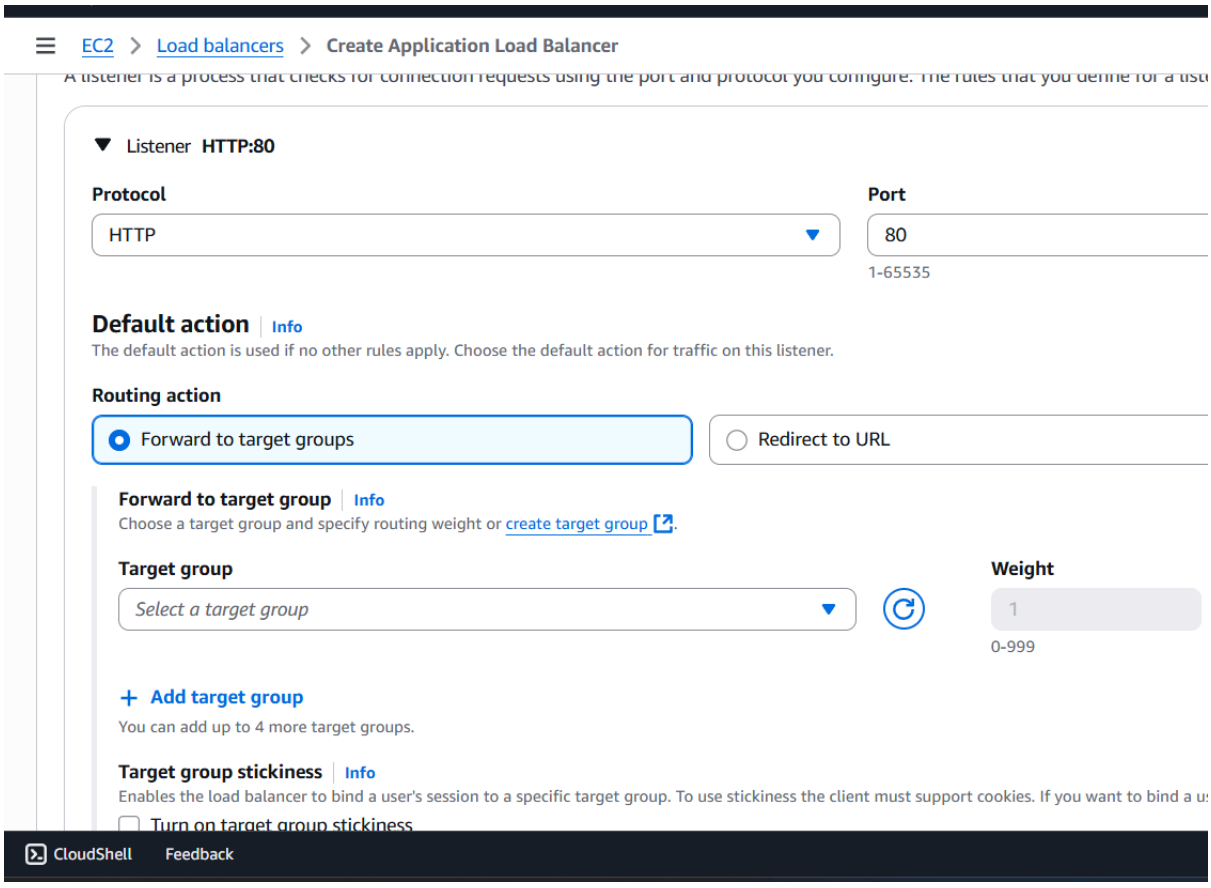
Copy the DNS name of load balancer and paste in browser.



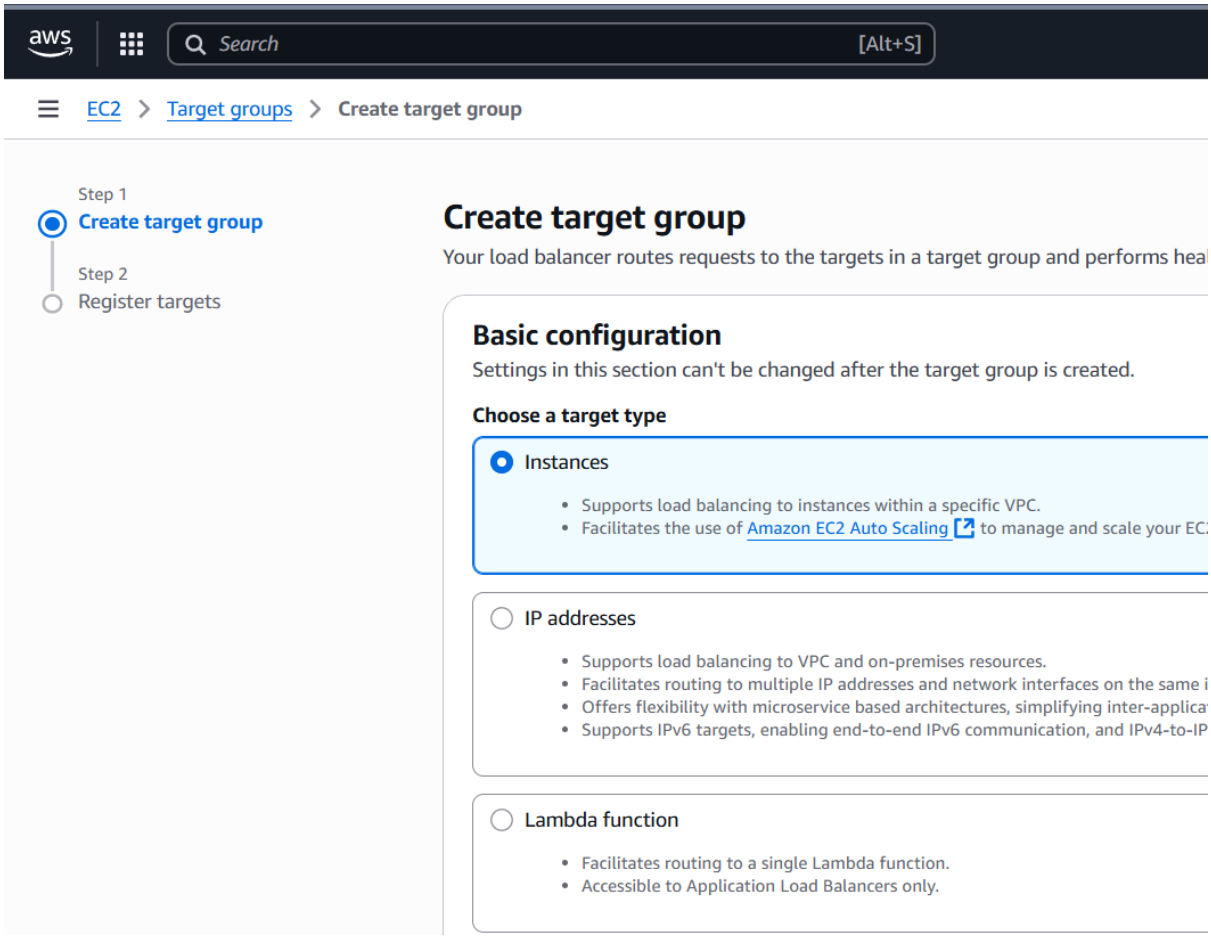
2. Configure Application Load balancer.

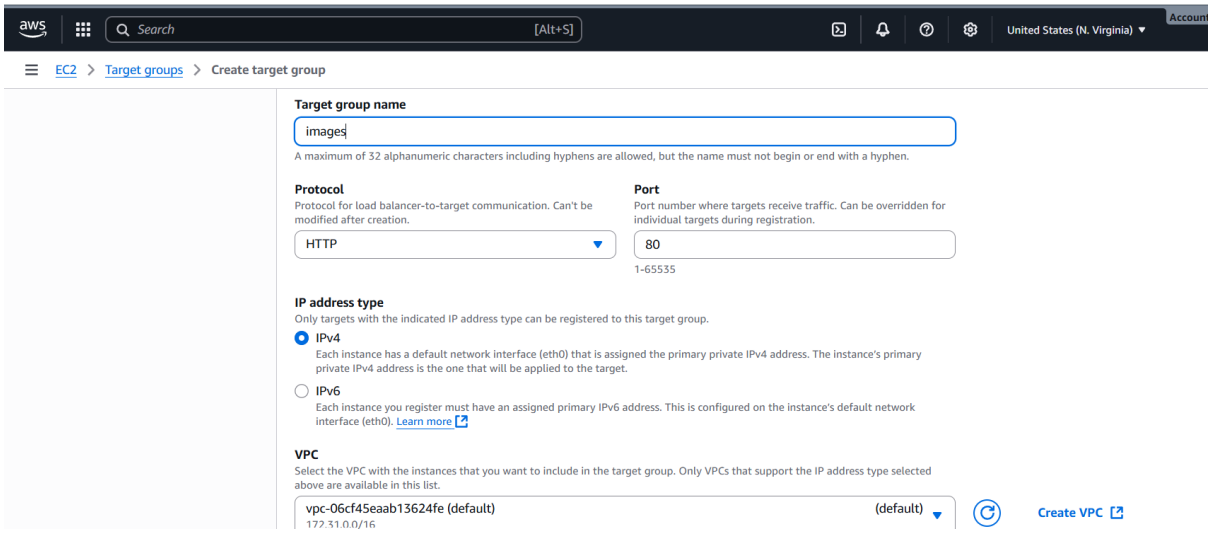
Go to load balancers and click on application load balancer and create application load balancer.

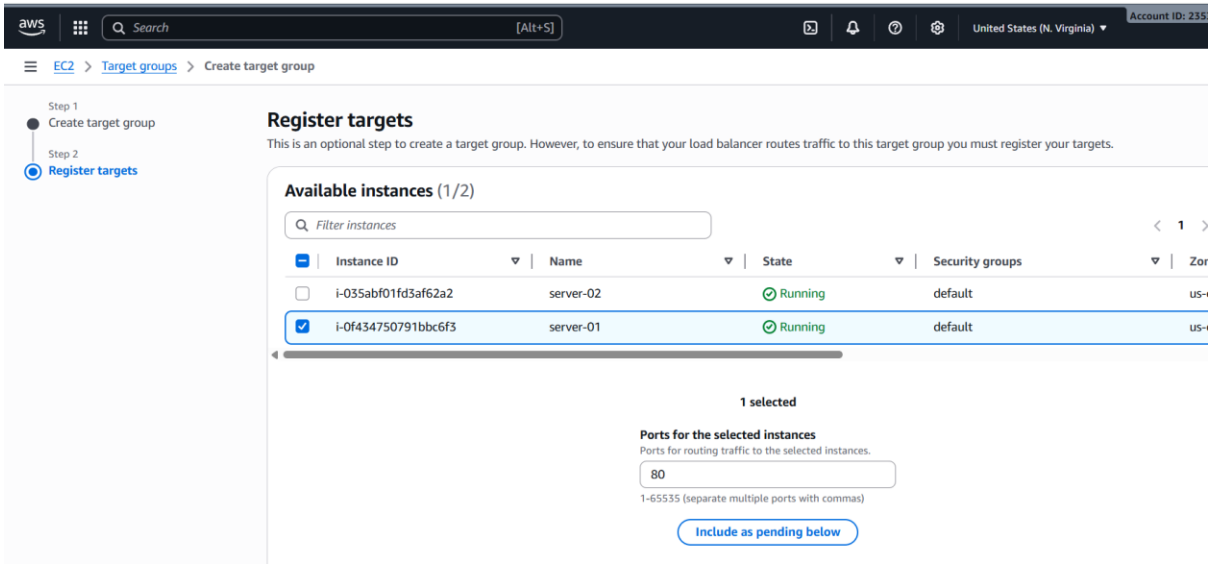




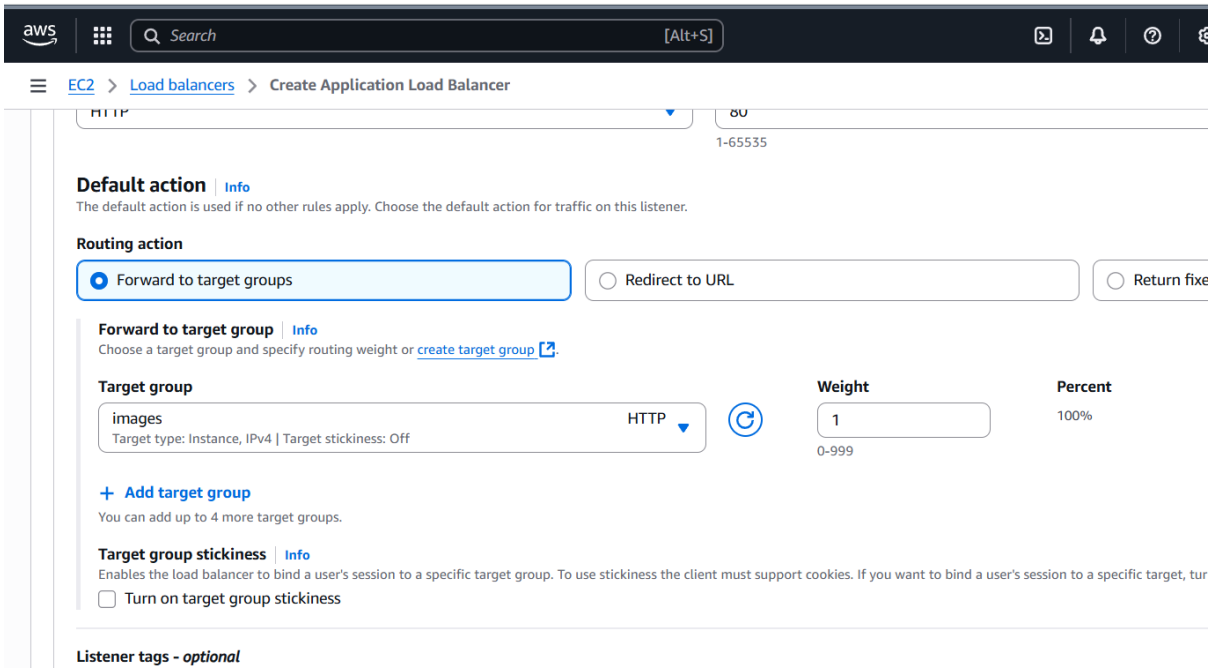
For this we need target groups so,go to target groups and create target groups.


aws
Search
[Alt+S]
EC2 > Target groups > Create target group
Step 1
Create target group
Step 2
Register targets
Create target group
Your load balancer routes requests to the targets in a target group and performs hea
Basic configuration
Settings in this section can't be changed after the target group is created.
Choose a target type
Instances
Supports load balancing to instances within a specific VPC.
Facilitates the use of Amazon EC2 Auto Scaling to manage and scale your EC
IP addresses
Supports load balancing to VPC and on-premises resources.
Facilitates routing to multiple IP addresses and network interfaces on the same i
Offers flexibility with microservice based architectures, simplifying inter-applica
Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IP
Lambda function
Facilitates routing to a single Lambda function.
Accessible to Application Load Balancers only.

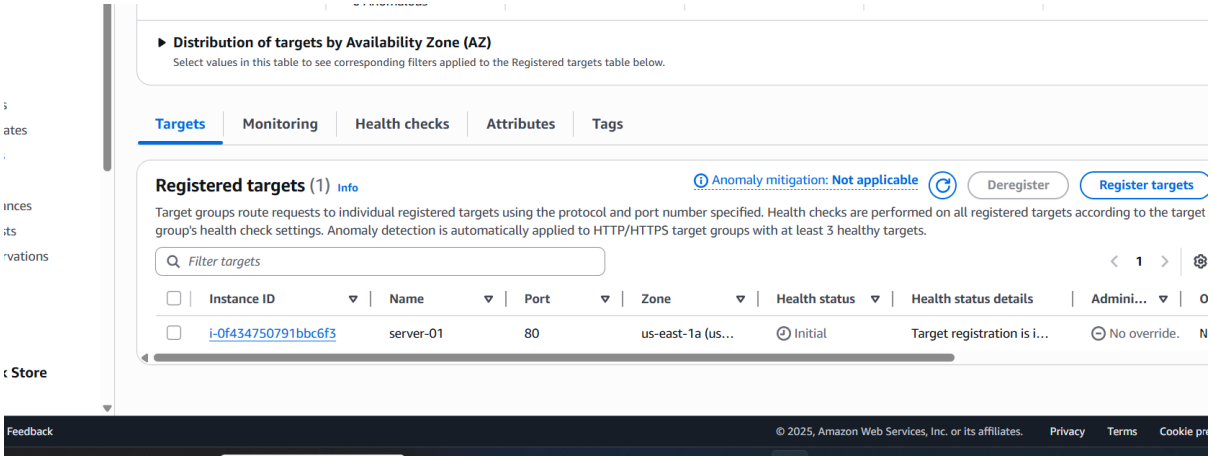

aws
Search
[Alt+S]
United States (N. Virginia)
EC2 > Target groups > Create target group
Target group name
images
A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.
Protocol
Protocol for load balancer-to-target communication. Can't be modified after creation.
HTTP
Port
Port number where targets receive traffic. Can be overridden for individual targets during registration.
80
1-65535
IP address type
Only targets with the indicated IP address type can be registered to this target group.
IPv4
Each instance has a default network interface (eth0) that is assigned the primary private IPv4 address. The instance's primary private IPv4 address is the one that will be applied to the target.
IPv6
Each instance you register must have an assigned primary IPv6 address. This is configured on the instance's default network interface (eth0). Learn more
VPC
Select the VPC with the instances that you want to include in the target group. Only VPCs that support the IP address type selected above are available in this list.
vpc-06cf45eaab13624fe (default)
172.31.0.0/16
(default)
Create VPC



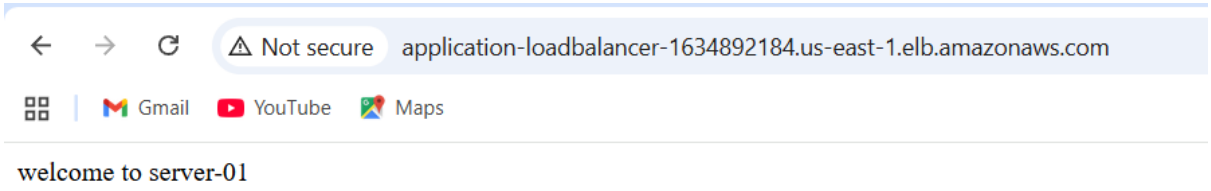
Go to creating loadbalancer and give the default path and create.



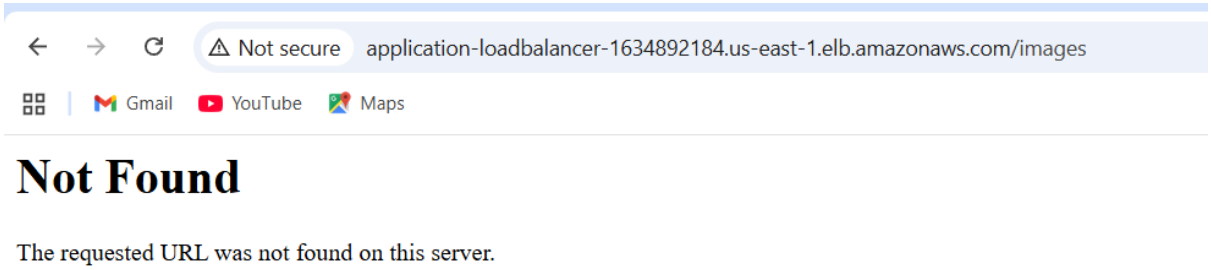
If we go to target groups and go to targets it will be intialising.



Copy loadbalancer dns and add port 80



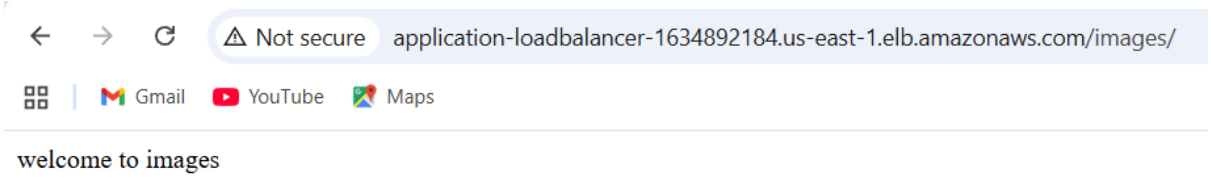
When we do with port number and /images it shows not found.



So we need to configure that images so, we need to login to that server and go to create a directory mkdir images and create echo “welcome to images”>>index.html

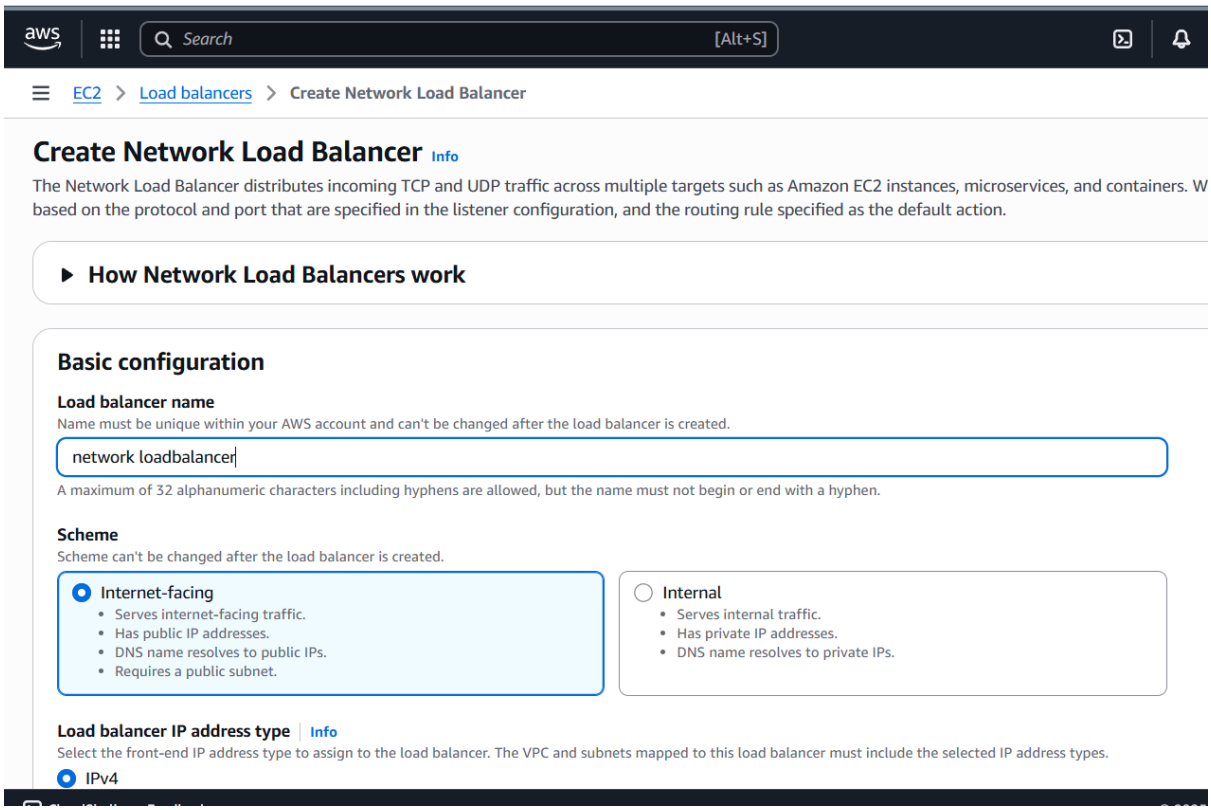

```
[root@ip-172-31-52-53 ~]# cd /var/www/html/
[root@ip-172-31-52-53 html]# ls
index.html
[root@ip-172-31-52-53 html]# mkdir images
[root@ip-172-31-52-53 html]# cd images
[root@ip-172-31-52-53 images]# echo "welcome to images" >> index.html
[root@ip-172-31-52-53 images]# ls
index.html
[root@ip-172-31-52-53 images]#
```

Now if you access that page it will redirect to images.

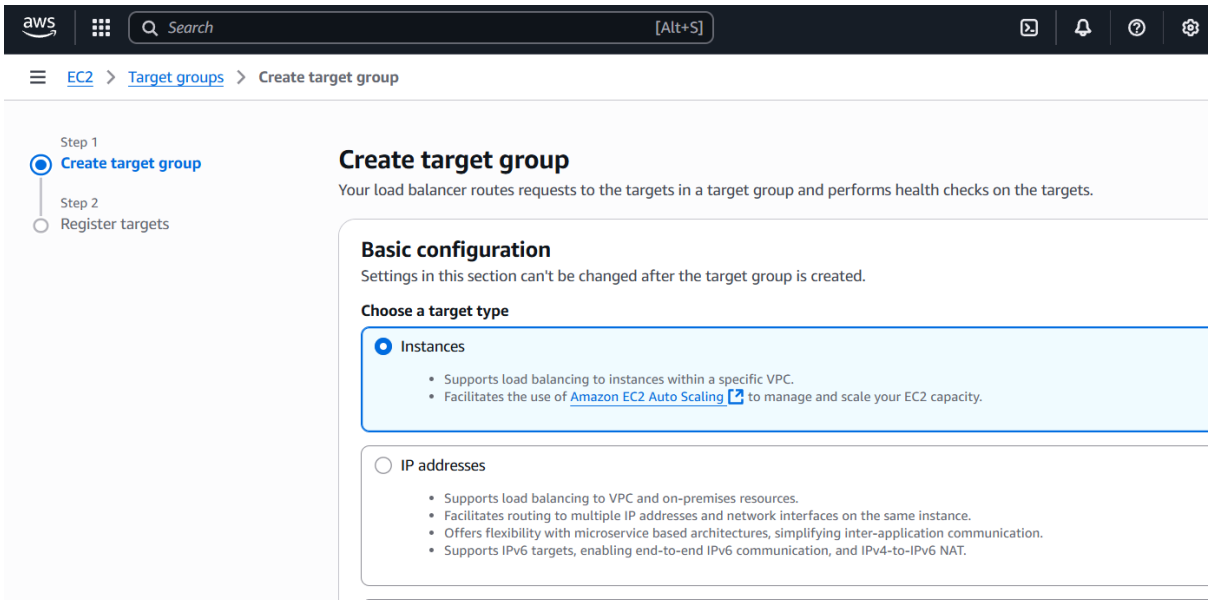


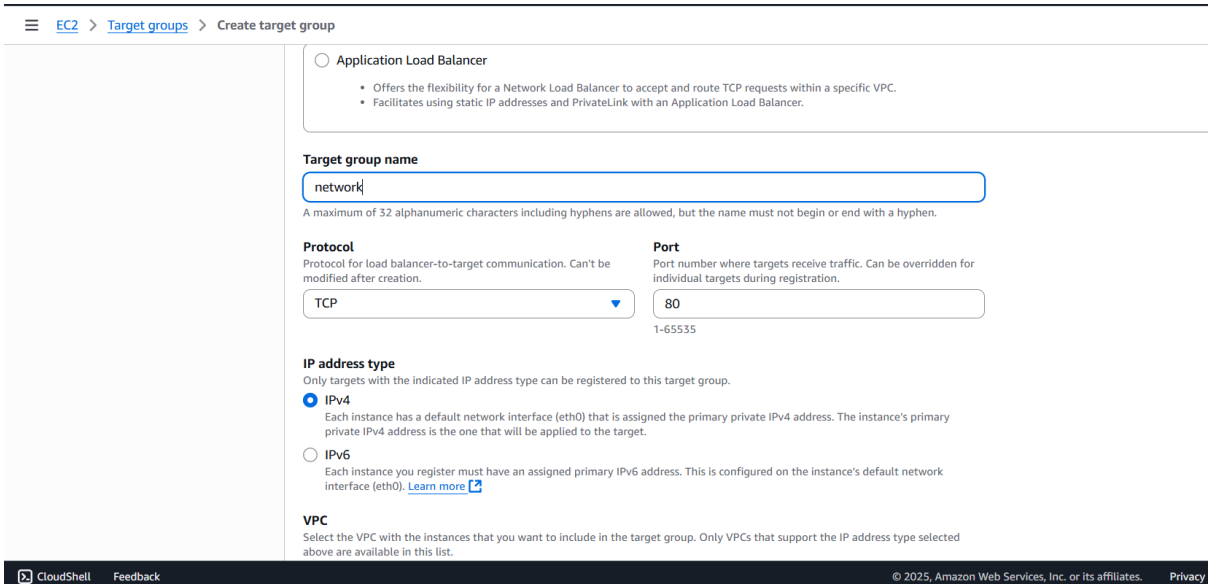
3. Configure Network Load balancer.

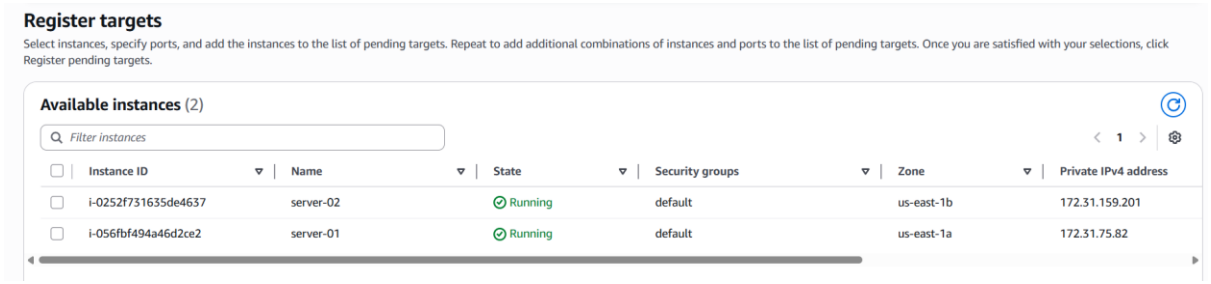
Go to load balancers and create network load balancer.

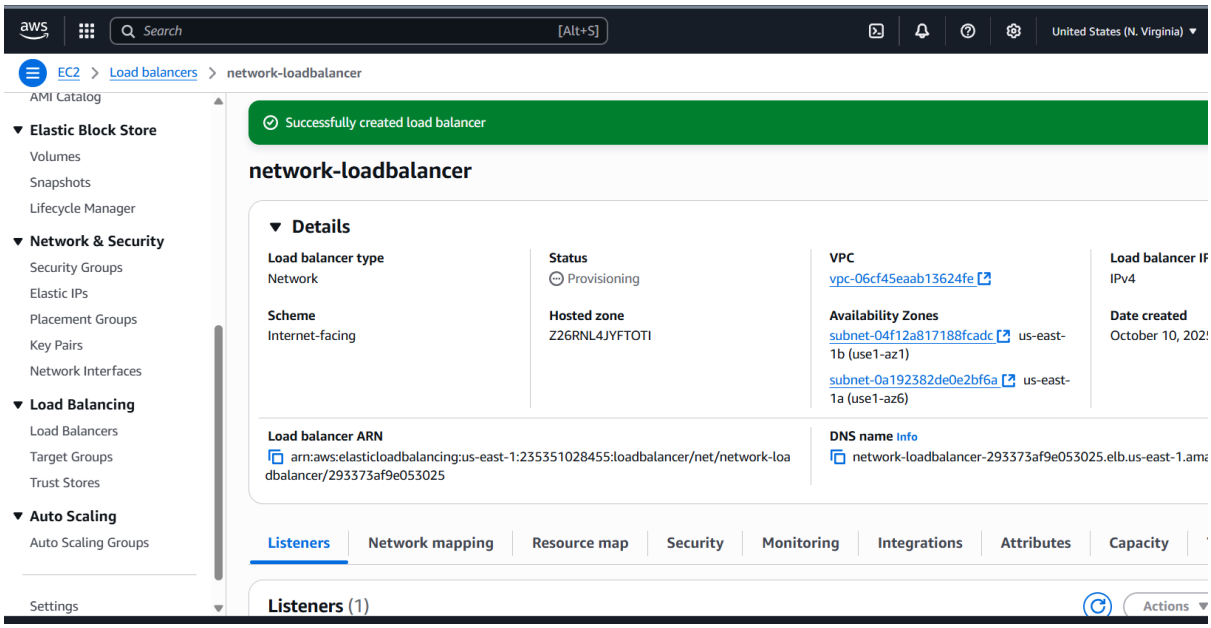


Create target groups









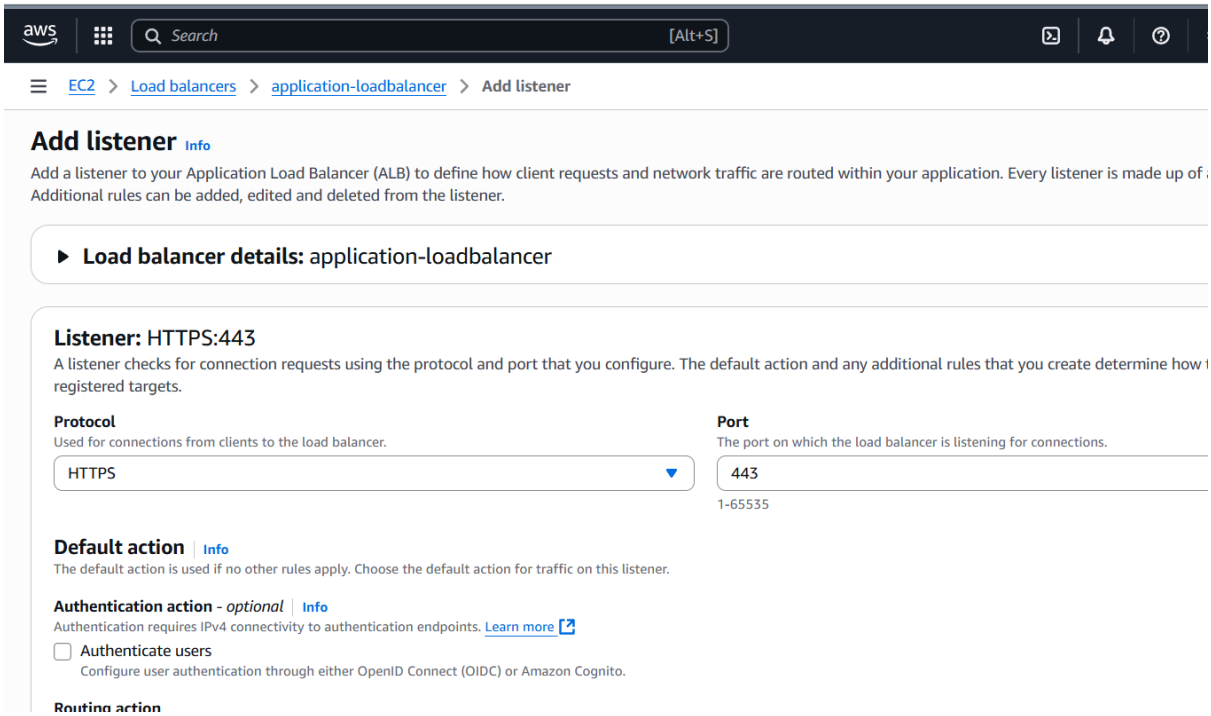
Copy the load balancer url and paste it.

welcome to server-01

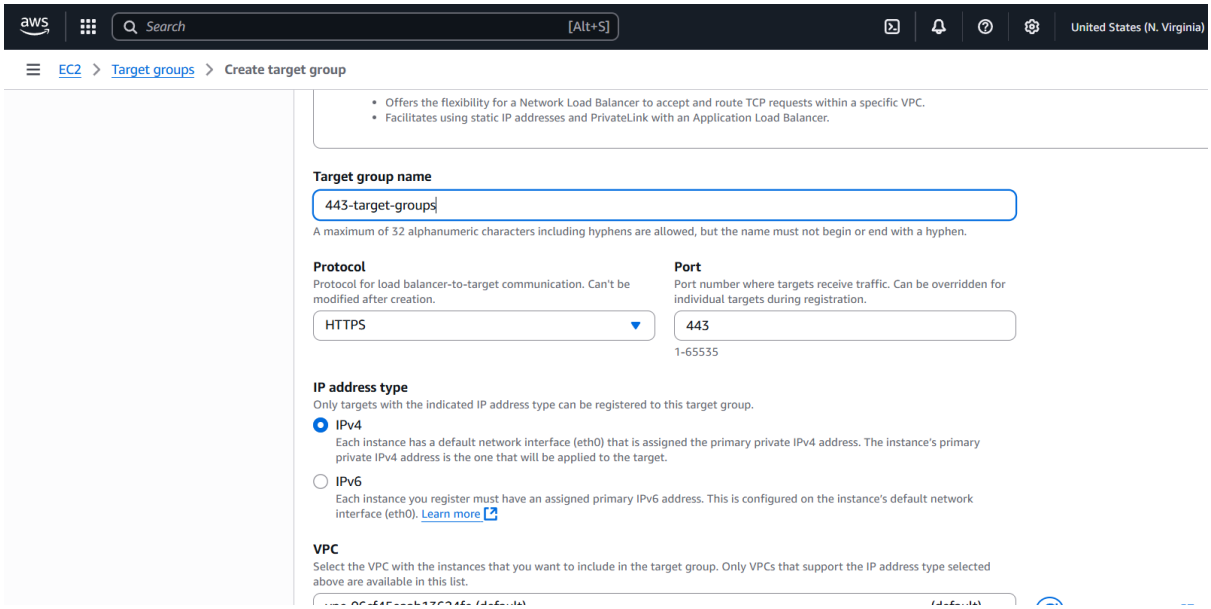
welcome to server-02

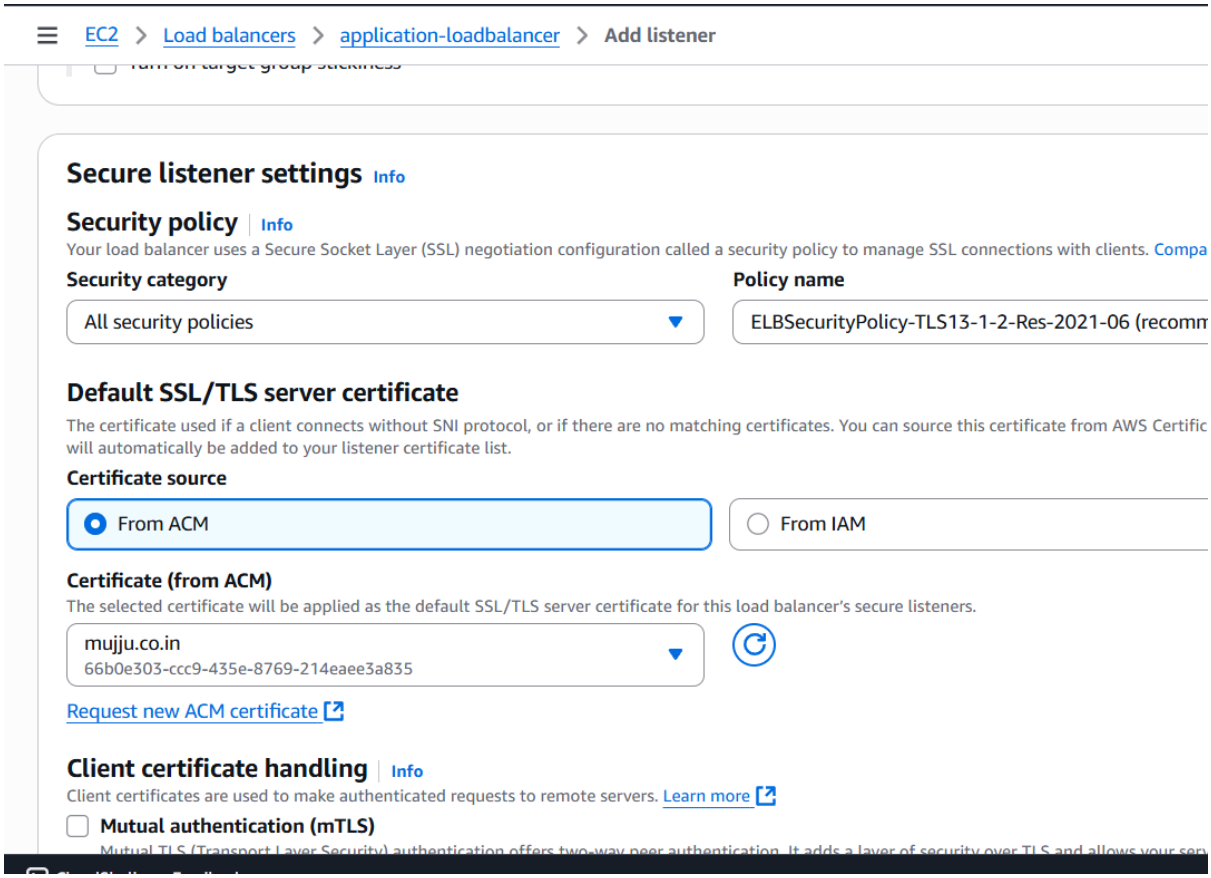
4. Attach SSL for application load balancer.

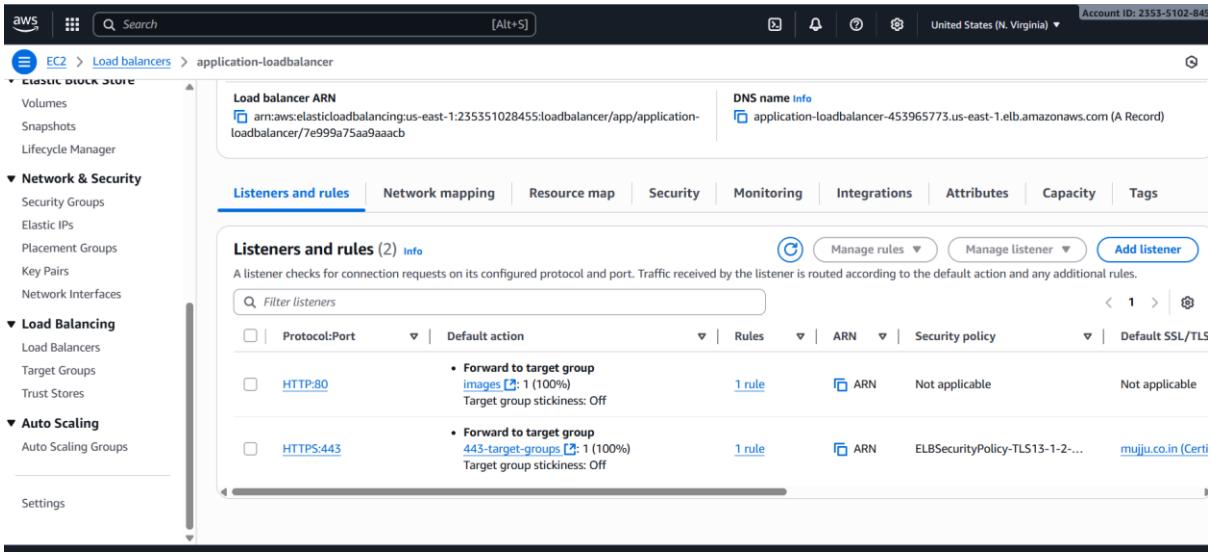
Go to loadbalancers and select your ALB and go to liastners and rules and select add rule-HTTPS-443.



Create your target groups for https and select your acm certificate

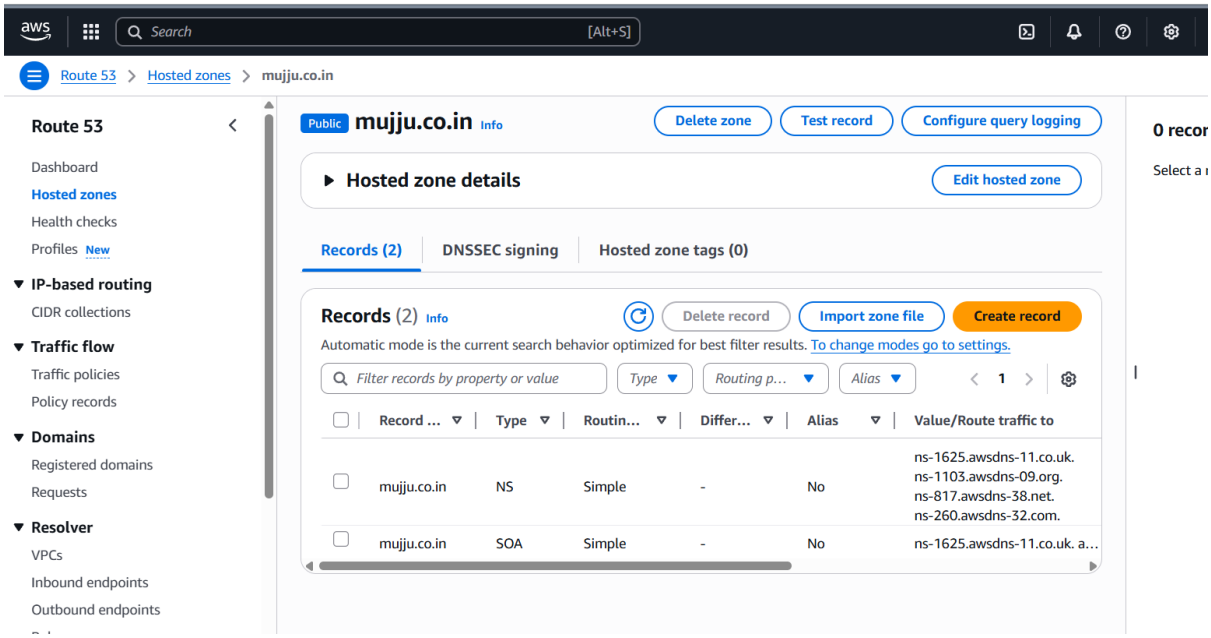

aws
Search
[Alt+S]
United States (N. Virginia)
EC2 > Target groups > Create target group
• Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
• Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.
Target group name
443-target-groups
A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.
Protocol
Protocol for load balancer-to-target communication. Can't be modified after creation.
HTTPS
Port
Port number where targets receive traffic. Can be overridden for individual targets during registration.
443
1-65535
IP address type
Only targets with the indicated IP address type can be registered to this target group.
IPv4
Each instance has a default network interface (eth0) that is assigned the primary private IPv4 address. The instance's primary private IPv4 address is the one that will be applied to the target.
IPv6
Each instance you register must have an assigned primary IPv6 address. This is configured on the instance's default network interface (eth0). Learn more
VPC
Select the VPC with the instances that you want to include in the target group. Only VPCs that support the IP address type selected above are available in this list.


EC2 > Load balancers > application-loadbalancer > Add listener
Secure listener settings Info
Security policy Info
Your load balancer uses a Secure Socket Layer (SSL) negotiation configuration called a security policy to manage SSL connections with clients. Compa
Security category
All security policies
Policy name
ELBSecurityPolicy-TLS13-1-2-Res-2021-06 (recomm
Default SSL/TLS server certificate
The certificate used if a client connects without SNI protocol, or if there are no matching certificates. You can source this certificate from AWS Certific
will automatically be added to your listener certificate list.
Certificate source
From ACM
From IAM
Certificate (from ACM)
The selected certificate will be applied as the default SSL/TLS server certificate for this load balancer's secure listeners.
mujju.co.in
66b0e303-ccc9-435e-8769-214eaee3a835
Request new ACM certificate
Client certificate handling Info
Client certificates are used to make authenticated requests to remote servers. Learn more
Mutual authentication (mTLS)

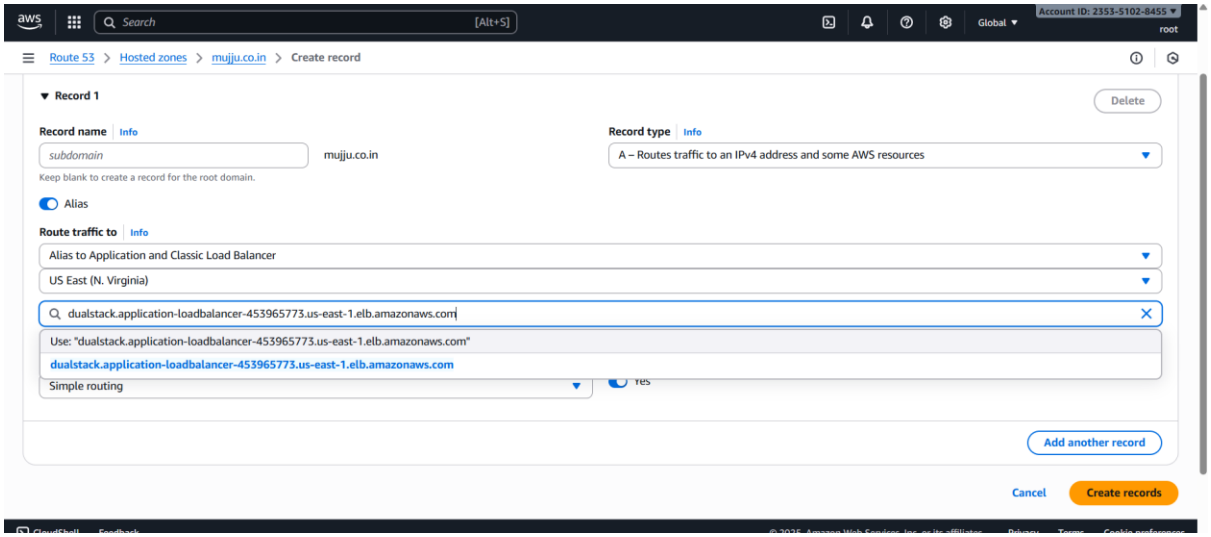


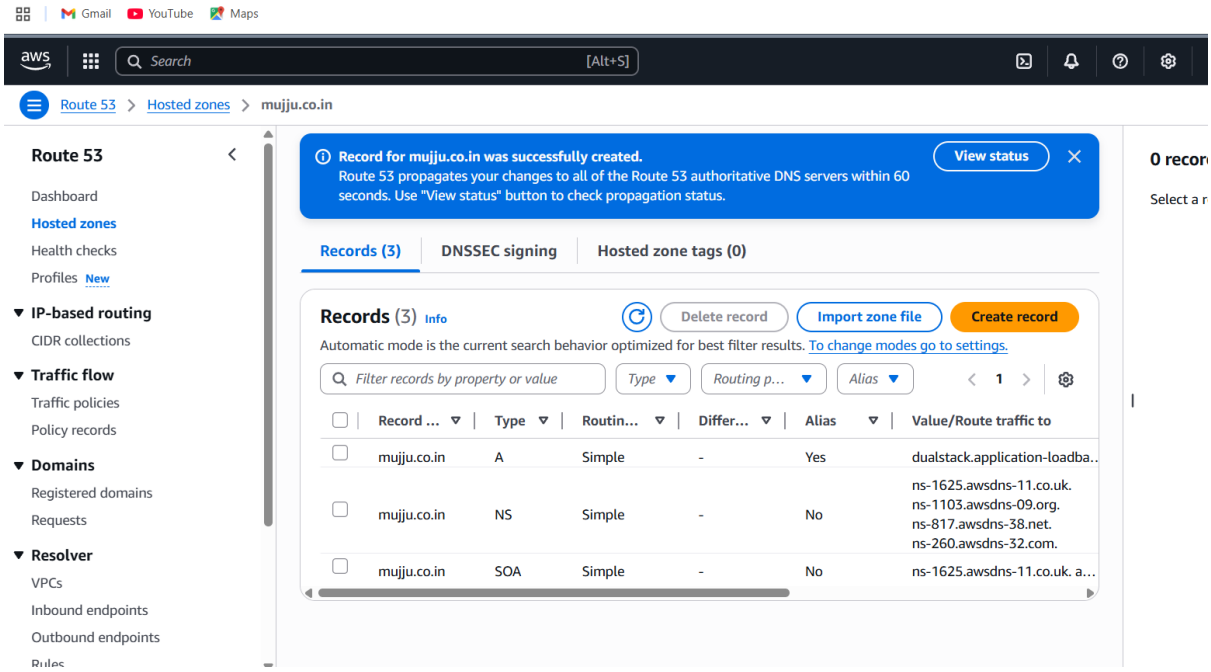
5.Map Application load balancer to R53.

Go to ec2 and select your alb load balancer copy the DNS name and go to route53 and select your domain

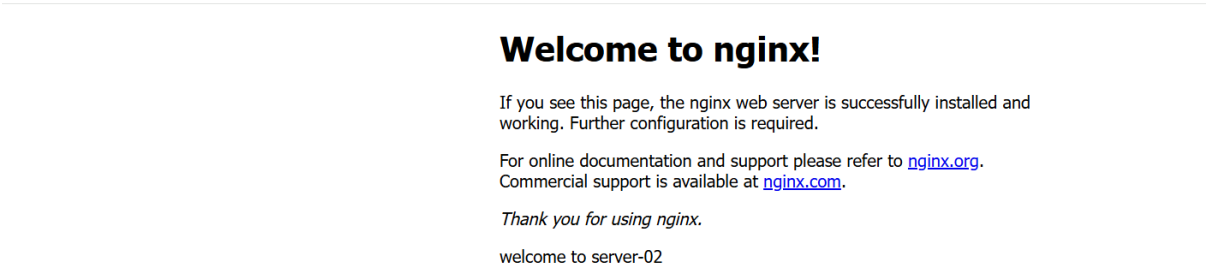


Select create record and select alias,route traffic to ALB,select region, select load balancer create record.





go to browser and search for your domain the alias record will redirect the page to nginx that you are installed application init.



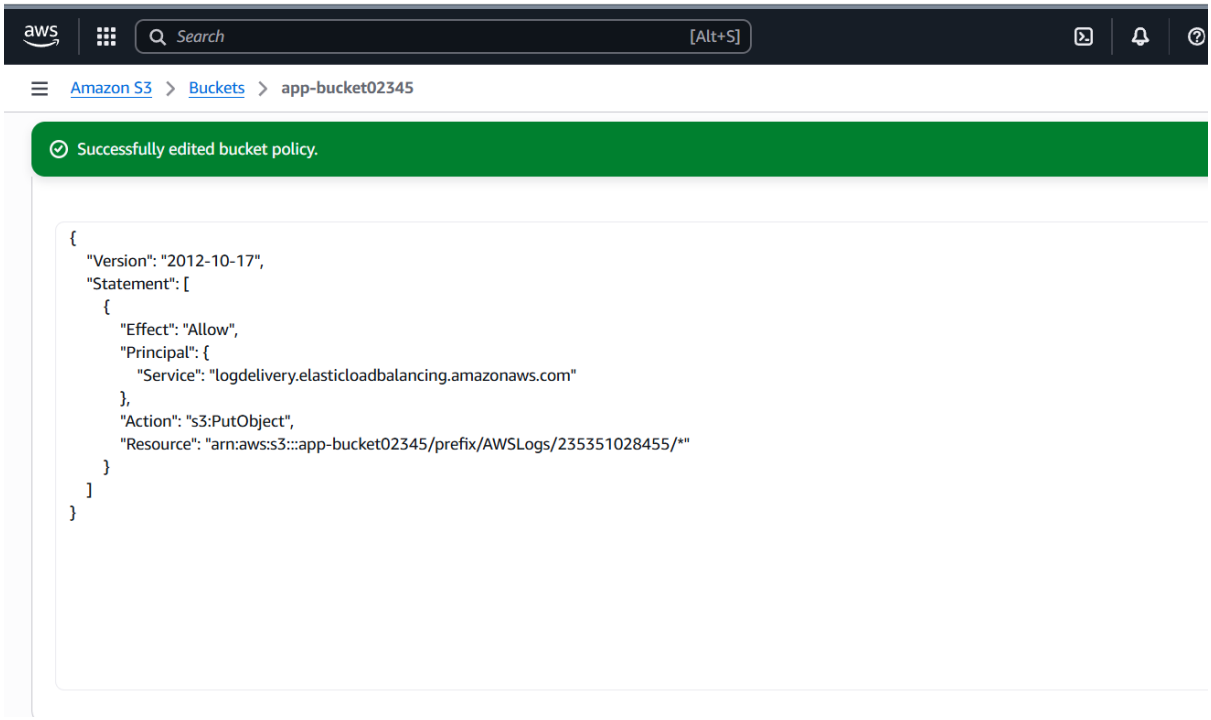
6. Push the application load balancer logs to S3.

Go to s3 buckets and go to permissions and add the script.

```
{
  "Version":"2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Principal": {
        "Service":
"logdelivery.elasticloadbalancing.amazonaws.com"
      },
      "Action": "s3:PutObject",
      "Resource": "arn:aws:s3:::amzn-s3-demo-
bucket/prefix/AWSLogs/123456789012/*"
    }
```

]

}



Go to ALB and select attributes and enable access logs