Load Balancer Task

1.Configure Classic Load Balancer.

TITLE:

Classic Load Balancer

OBJECTIVE:

To distribute incoming traffic to multiple EC2 instances and to improve the availability.

PREREQUISITES:

Two EC2 instances with some service running in it.

STEP-BY-STEP-IMPLIMENTAION:

These are two instances with httpd running in it.

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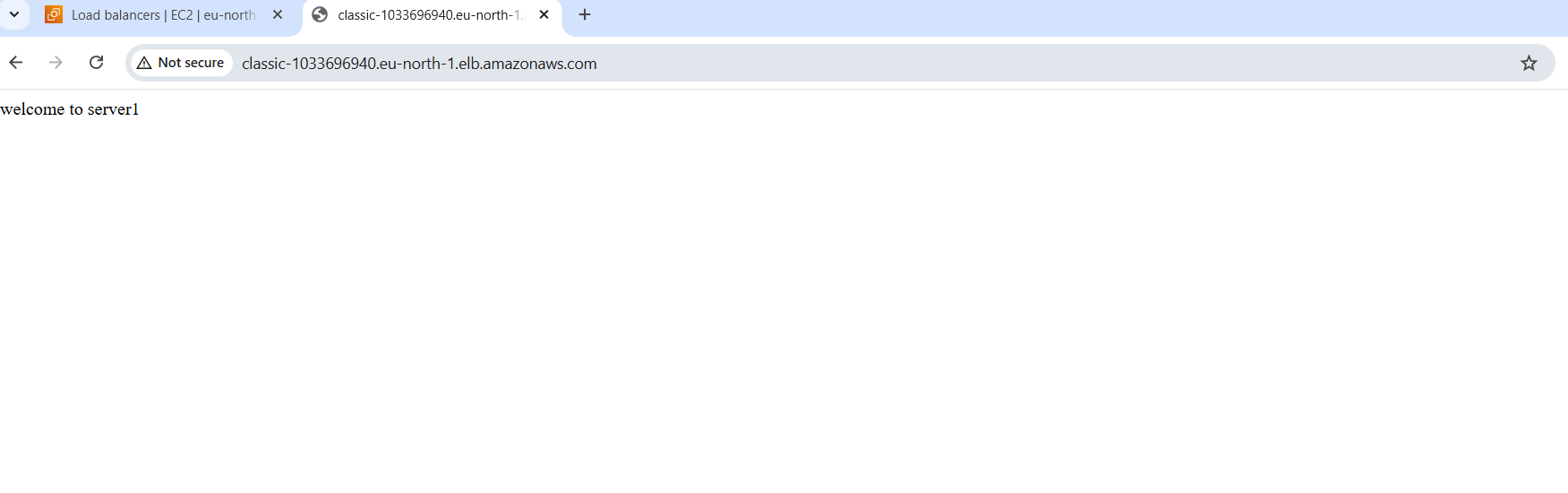
Created a classic load balancer

Attached these two instances in target instances

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Now test with domain name of load balancer in browser



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CONCLUSION: Configuring a Classic Load Balancer enables reliable distribution of incoming traffic across instances, improving application availability and fault tolerance.

2.Configure Application Load Balancer.

TITLE:

Application Load Balancer

OBJECTIVE:

To distribute incoming application traffic across multiple targets to ensure high availability, scalability.

PREREQUISITES:

EC2 instances

Target group

Application load balancer

Roles

STEP-BY-STEP-IMPLEMENTATION:

Here are the instances with httpd service running on it

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Target group created

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Application load balancer created

A screenshot of a computer

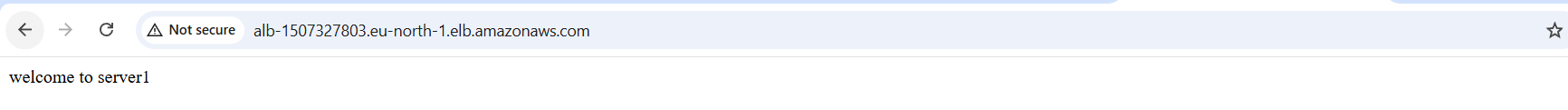
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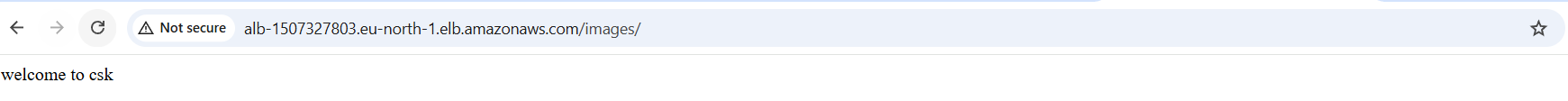
Role created

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Now check in browser with load balancer DNS and along with role we attached.





CONCLUSION: An Application Load Balancer intelligently routes HTTP/HTTPS traffic based on content, improving application scalability, availability, and security.

3.Configure a Network Load Balancer.

TITLE:

Network Load Balancer

OBJECTIVE:

To distribute high-volume, low-latency network traffic across multiple targets at the transport layer while maintaining extreme performance and availability.

PREREQUIISTES:

EC2 instances with any service running in it.

Target group

Network load balancer

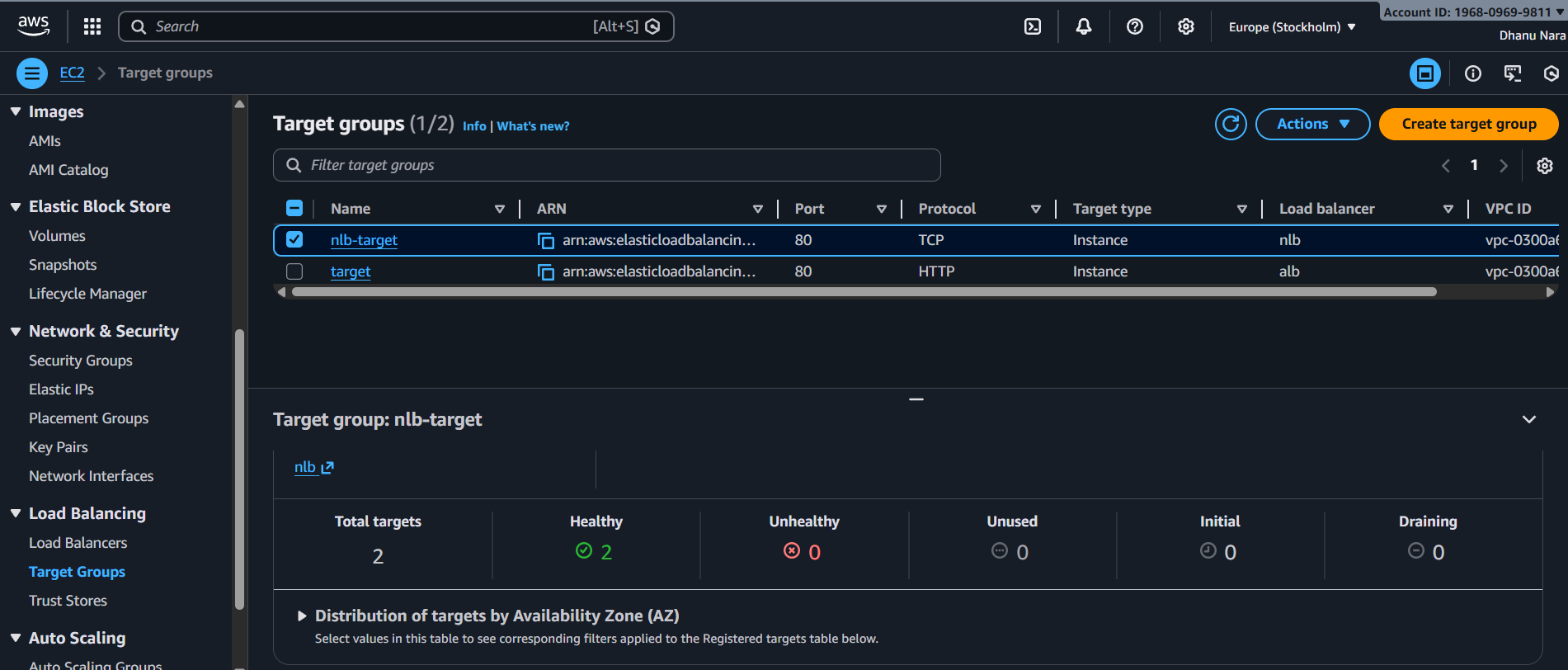
STEP-BY-STEP-IMPLIMENTATION:

Here are the two EC2s with httpd running in it.

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Created Target group



Created Network Loadbalancer

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Now in browser paste the DNS of Network Load balancer first it will show the first EC2 content and after refreshing it should show the second EC2 content.

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A screenshot of a computer

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CONCLUSION: A Network Load Balancer delivers ultra-low-latency, high-throughput traffic handling at Layer 4, ensuring scalable and highly available network-level load distribution.

4.Attach SSL for application load balancer.

TITLE:

SSL for Application Load Balancer

OBJECTIVE:

To secure client-to-application communication by encrypting traffic using HTTPS at the Application Load Balancer.

PREREQUISITES:

EC2 instances with service running in it

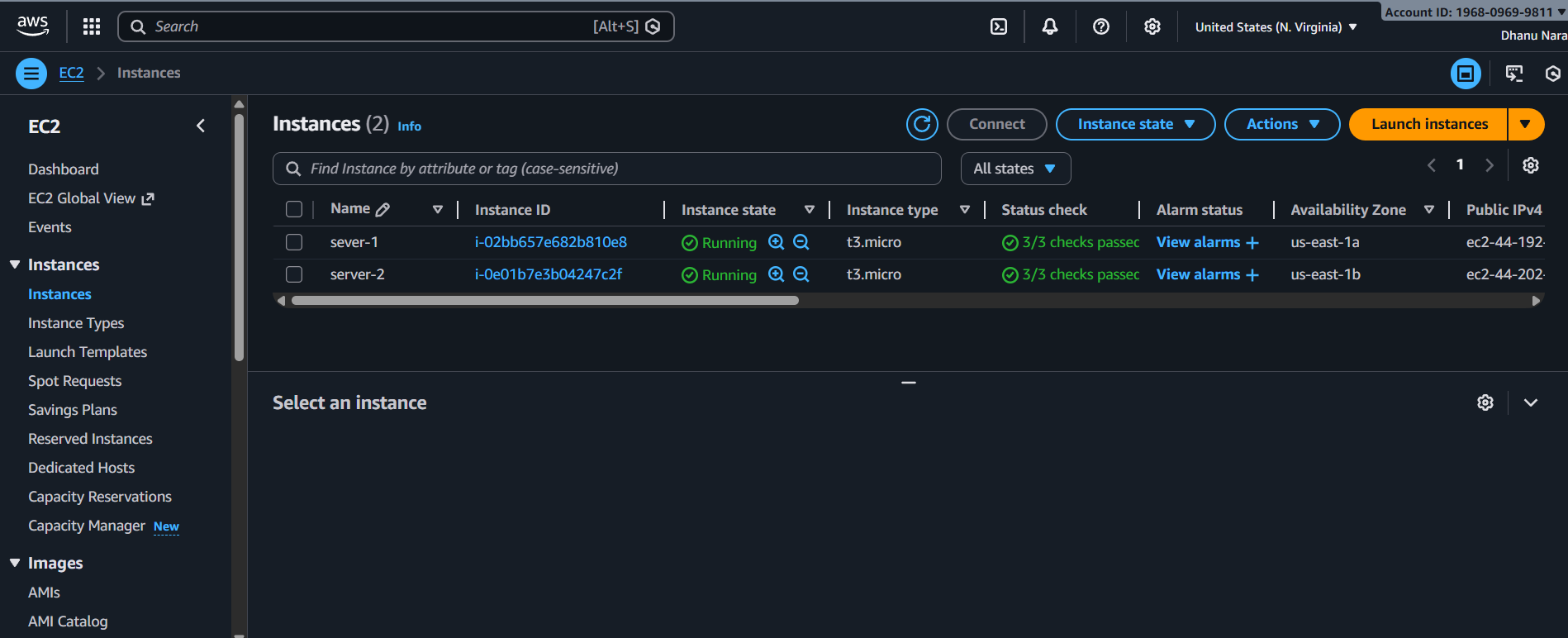
Target groups

SSL certificate

Application Load Balancer

STEP-BY-STEP-IMPLIMENTATION:

Two instances with httpd running in it



Target group



Created Application Load Balancer

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Request one SSL certificate from ACM

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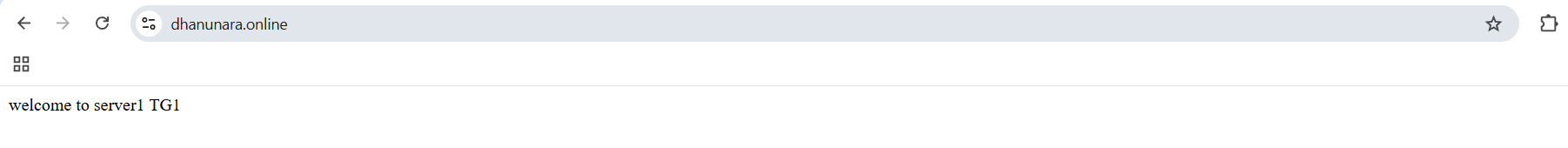
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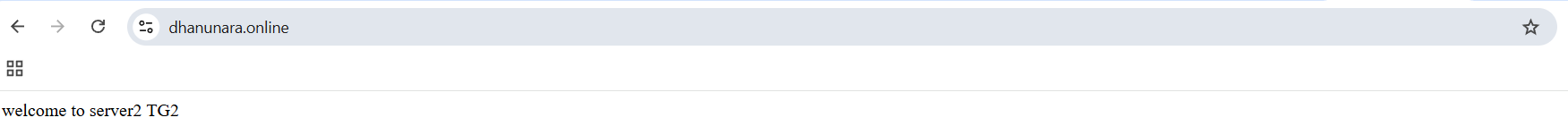
Attach that certificate in listeners

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Now browse with domain name





CONCLUSION: Attaching SSL to a load balancer secures client-to-application communication by encrypting data in transit and enabling trusted HTTPS access.

5.Map Application Load Balancer to R53.

TITLE:

Application Load Balancer mapping to r53

OBJECTIVE:

To route user traffic from a custom domain name to the Application Load Balancer using DNS for reliable and scalable access

PREREQUISITES:

EC2 Instances with service running in it

Target groups

Application Load Balancer

Hosted zone in R53

STEP-STEP-IMPLIMENTATION:

EC2 Instances with httpd running in it

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Created target group

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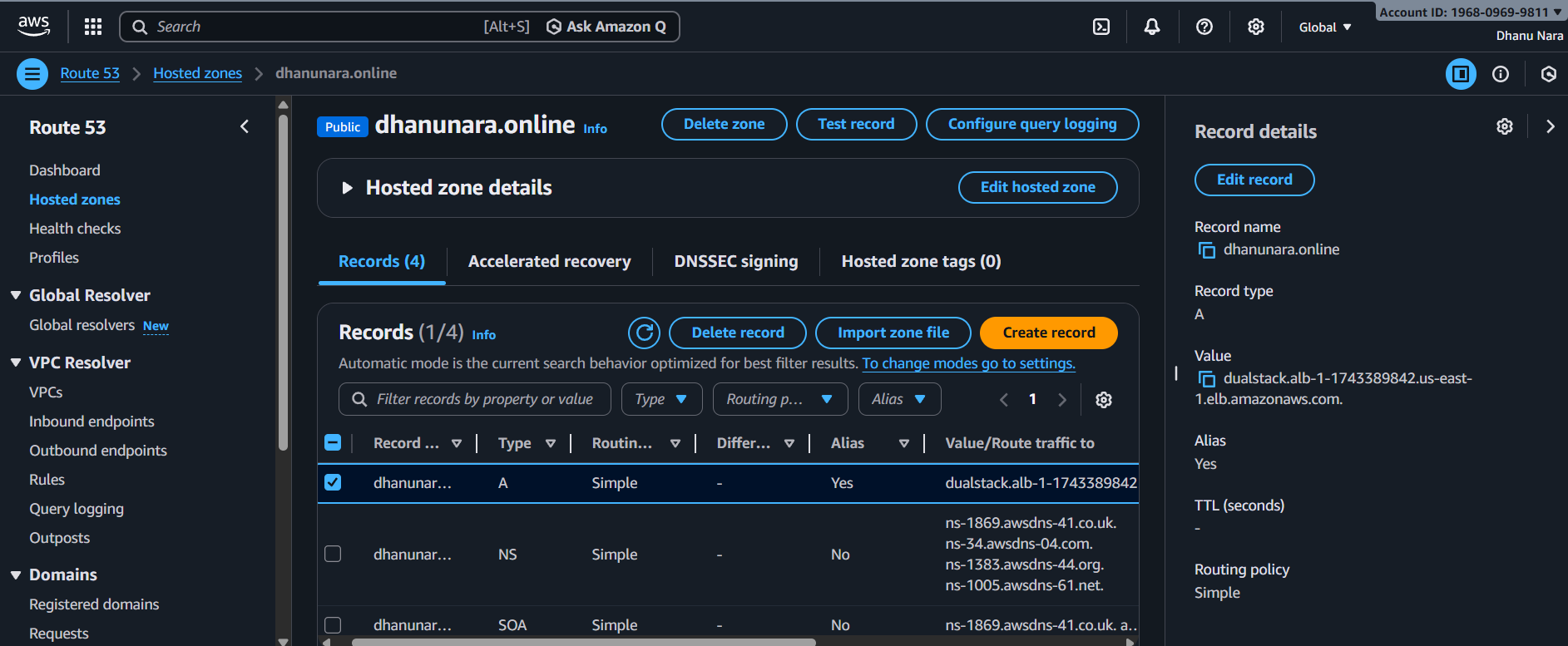
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Application Load Balancer

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Hoste zone in R53

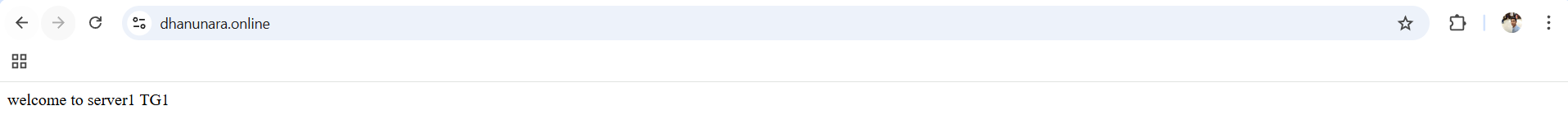


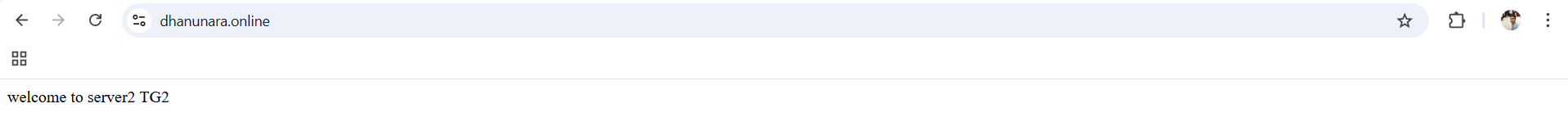
Create record

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Now browse with Domain name





CONCLUSION: Mapping an Application Load Balancer to Route 53 enables users to access the application through a friendly domain name while providing reliable DNS-based traffic routing and high availability.

6.Push the Application Load Balancer logs S3.

TITLE:

Application Load Blancer logs to S3

OBJECTIVE:

To store Application Load Balancer access logs in Amazon S3 for centralized request analysis, security auditing, troubleshooting, and long-term retention.

PREREQUISITES:

Application Load Balancer

S3 Bucket

STEP-BY-STEP-IMPLIMENTATION:

Create bucket

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Add bucket policy

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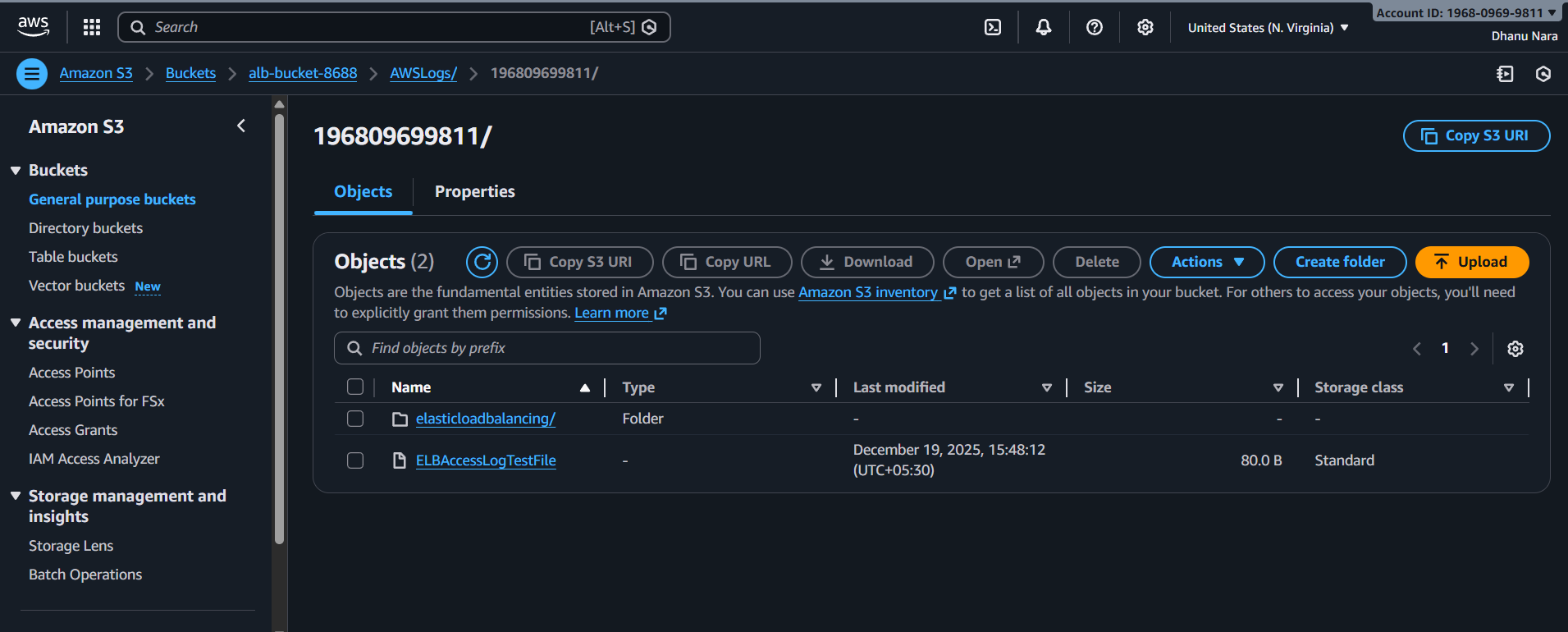
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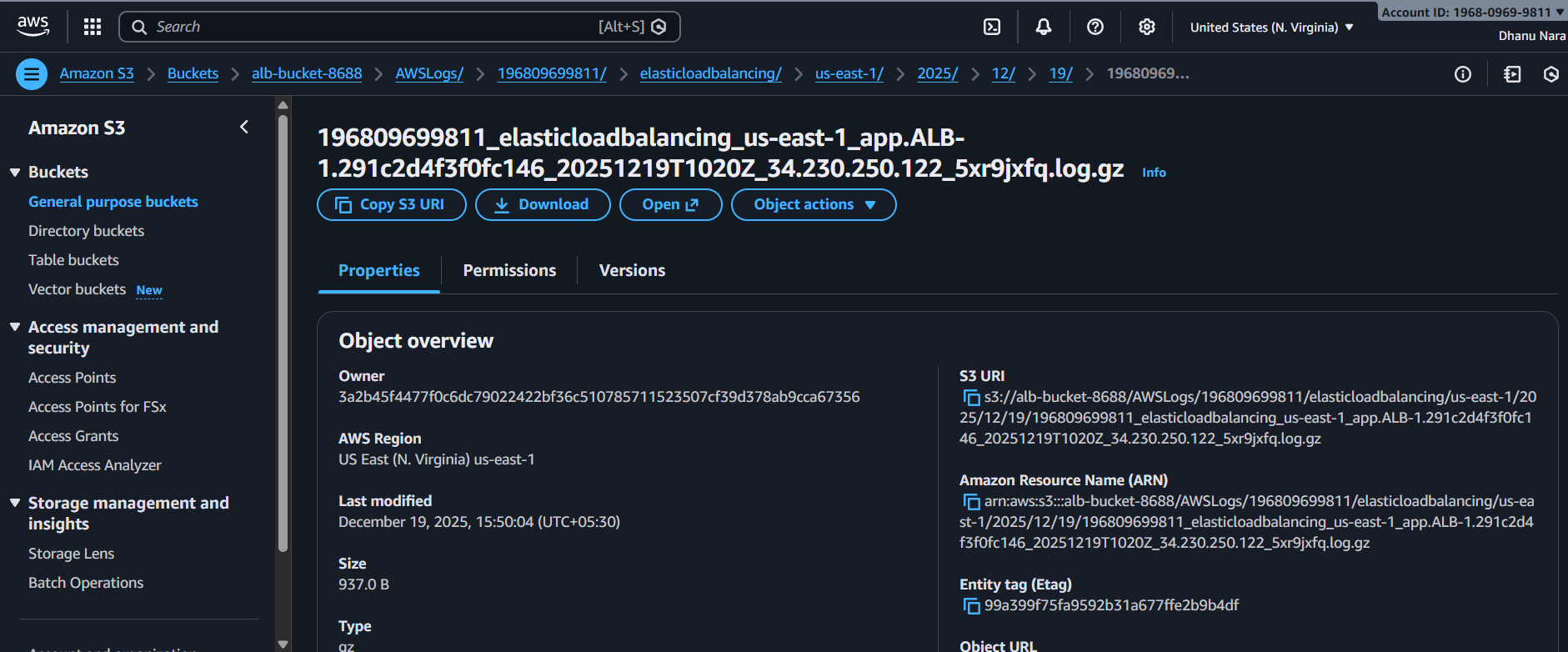
Create Application Load Balancer attribute

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Access logs of application load balancer





CONCLUSION: Pushing Application Load Balancer logs to Amazon S3 enables centralized storage for monitoring traffic patterns, troubleshooting issues, and meeting security and compliance requirements.