

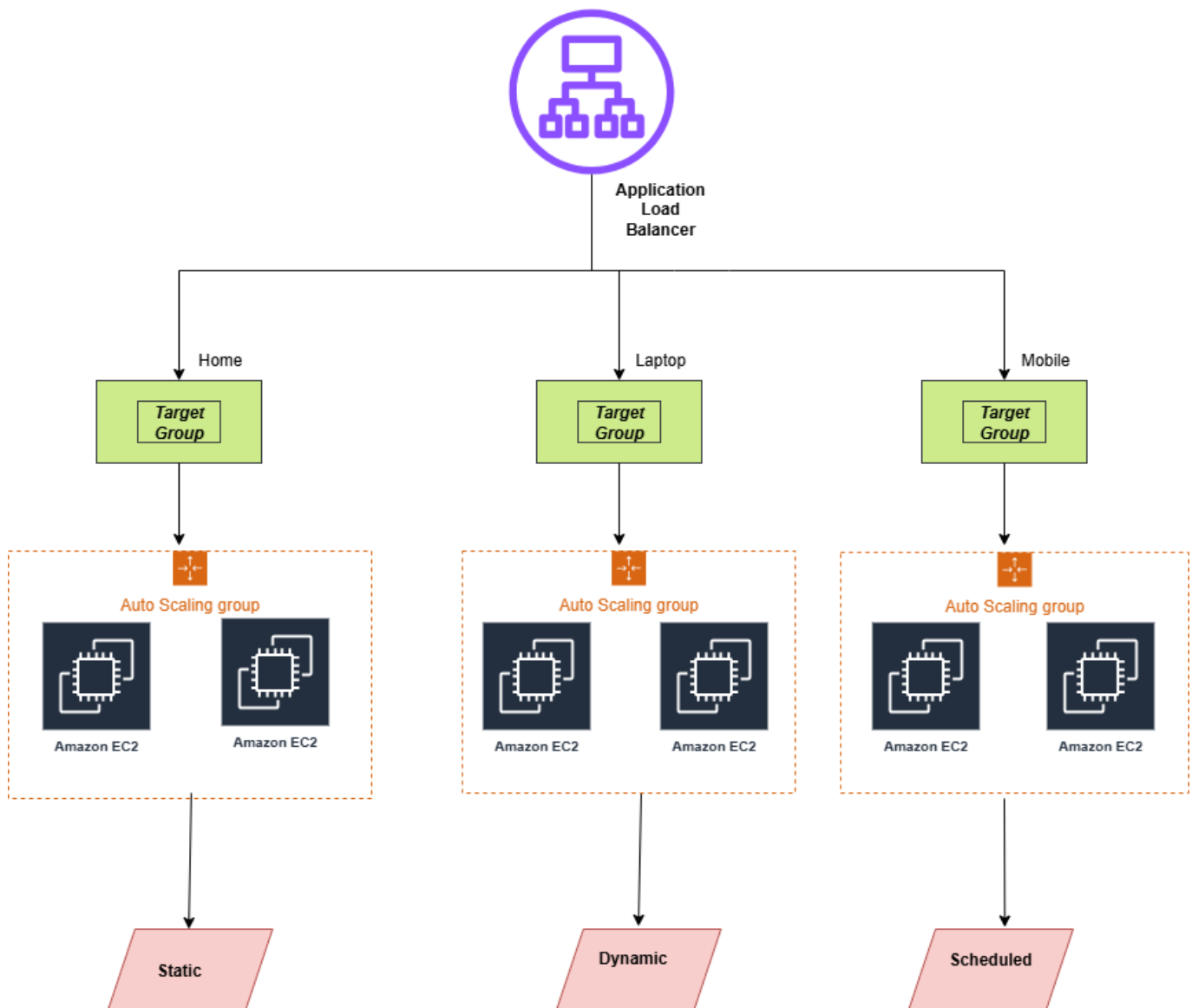
Application Load Balancer with Auto Scaling Group Project

Project Overview

This project demonstrates how to deploy a highly available and scalable web application on AWS using:

- **Application Load Balancer (ALB)** for distributing traffic.
- **Auto Scaling Group (ASG)** for automatic scaling of EC2 instances.
- **Launch Template** (or Launch Configuration) to define instance settings.
- **Target Group** to register healthy EC2 instances behind the ALB.

Architecture Diagram



Steps to Deploy

1. Create a Launch Template:

- Choose an AMI (Amazon Linux 2 or Ubuntu).
- Select instance type (e.g., t2.micro).
- Add User Data to install web server

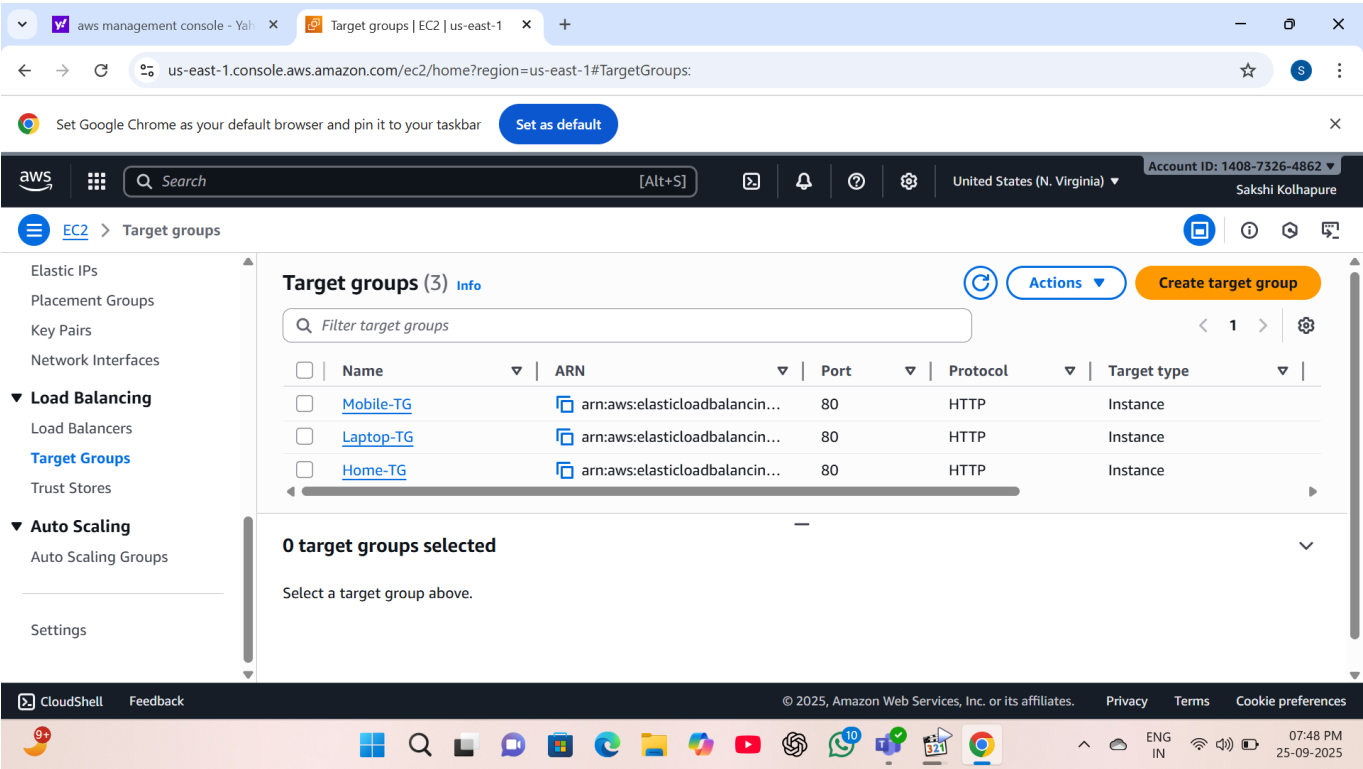
The screenshot shows the AWS Management Console interface for the 'us-east-1' region. The main content area is titled 'Launch Templates (3)' and contains a table with the following data:

Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time
lt-0b82820de79d13669	Laptop-LT	1	1	2025-09-25
lt-05cc90bf8ab8a7b32	Home-LT	1	1	2025-09-25
lt-03f1eb0fa22cb3ca9	Mobile-LT	1	1	2025-09-25

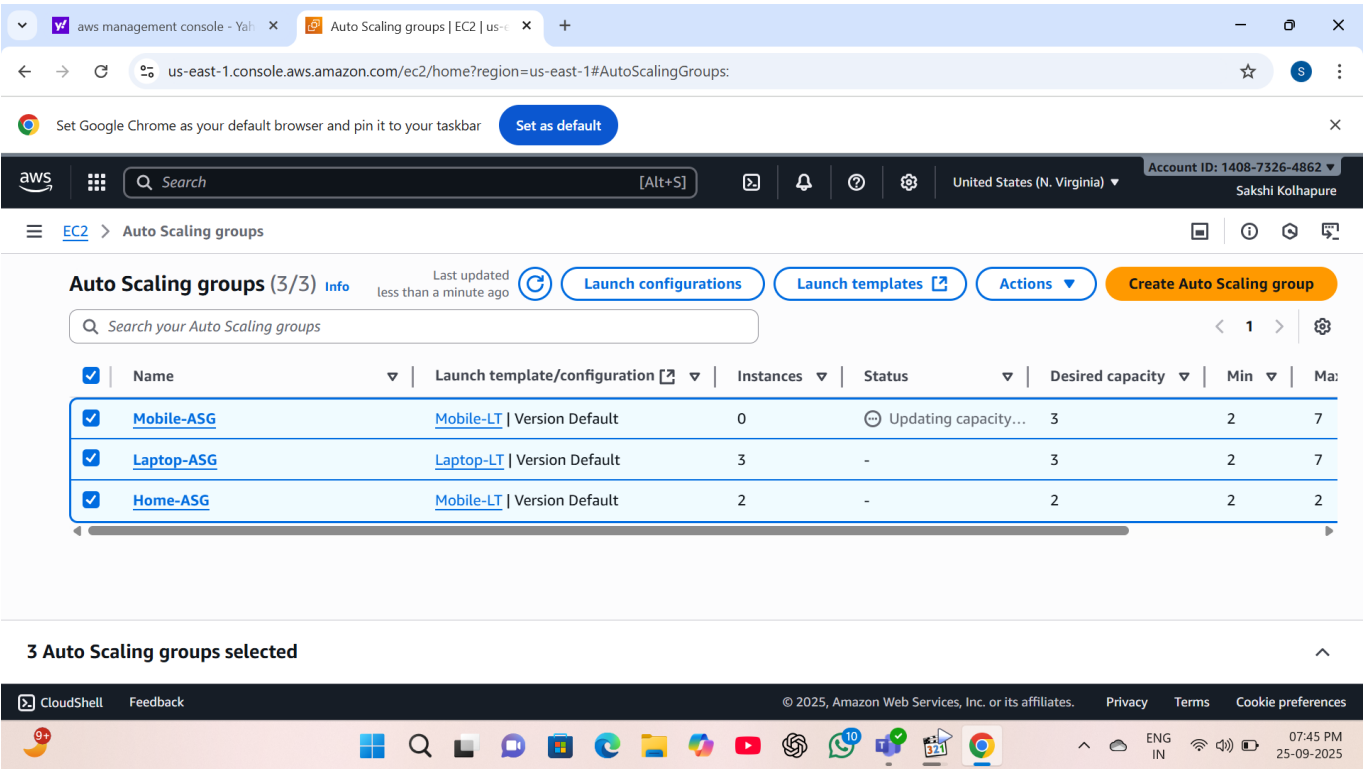
Below the table, there is a section titled 'Select a launch template' with a search bar and a dropdown menu. The bottom of the console shows the AWS footer with copyright information and links to Privacy, Terms, and Cookie preferences.

2.Create Target Group:

- Protocol: HTTP
- Port: 80
- Health check path: /



3.Create Auto Scaling Group:



4.Create Application Load Balancer and add rules with particular path:

aws management console - Yal

Listener details | EC2 | us-east-1

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ELBListenerV2:loadBalancerArn=arn:aws:elasticloadbalancing:us-east-1:140873264862:loadbal...

Set Google Chrome as your default browser and pin it to your taskbar

Set as default

aws

Search

[Alt+S]

United States (N. Virginia)

Account ID: 1408-7326-4862

Sakshi Kolhapure

EC2 > Load balancers > ALB > HTTP:80 listener

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

▼ Load Balancing

Load Balancers

Target Groups

Trust Stores

▼ Auto Scaling

Auto Scaling Groups

Settings

Listener rules (3) Info

Rule limits

Actions

Add rule

Traffic received by the listener is routed according to the default action and any additional rules. Rules are evaluated in priority order from the lowest value to the highest value.

Filter rules

	Priority	Name tag	Conditions (If)	Actions (Then)	Actions
<input type="checkbox"/>	1	Mbile-rule	Path = /mobile/*	• Forward to target group Mobile-TG: 1 (100%) Target group stickiness: 0	
<input type="checkbox"/>	2	Laptop-rule	Path = /laptop/*	• Forward to target group Laptop-TG: 1 (100%) Target group stickiness: 0	
<input type="checkbox"/>	Last	Default	If no other rule applies	• Forward to target group	

CloudShell

Feedback

© 2025, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

9+

ENG IN

08:01 PM

25-09-2025

5.Attach the Target Group:

aws management console - Yal

Edit Auto Scaling group | EC2 |

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#EditAutoScalingGroup:id=Home-ASG

Set Google Chrome as your default browser and pin it to your taskbar

Set as default

aws

Search

[Alt+S]

United States (N. Virginia)

Account ID: 1408-7326-4862

Sakshi Kolhapure

EC2 > Auto Scaling groups > Home-ASG > Edit

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

▼ Load Balancing

Load Balancers

Target Groups

Trust Stores

▼ Auto Scaling

Auto Scaling Groups

Settings

Load balancing - optional

Load balancers

☒ Application, Network or Gateway Load Balancer target groups

Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups

Home-TG | HTTP

Load balancer: Not associated with any load balancer

One of your target groups is not yet associated with any load balancer. In order for routing and scaling to occur, you will need to attach the target group to a load balancer. This can be done later in the [Load Balancing console](#).

☐ Classic Load Balancers

Create and attach new load balancers

CloudShell

Feedback

© 2025, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

9+

ENG IN

07:54 PM

25-09-2025

aws management console - Yal x Edit Auto Scaling group | EC2 | x +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#EditAutoScalingGroup:id=Laptop-ASG

Set Google Chrome as your default browser and pin it to your taskbar Set as default

aws Search [Alt+S] United States (N. Virginia) Account ID: 1408-7326-4862 Sakshi Kolhapure

EC2 > Auto Scaling groups > Laptop-ASG > Edit

Elastic IPs
Placement Groups
Key Pairs
Network Interfaces

▼ Load Balancing
Load Balancers
Target Groups
Trust Stores

▼ Auto Scaling
Auto Scaling Groups

Settings

Load balancing - optional

Load balancers

☒ Application, Network or Gateway Load Balancer target groups
Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups

Laptop-TG | HTTP
Load balancer: Not associated with any load balancer

One of your target groups is not yet associated with any load balancer. In order for routing and scaling to occur, you will need to attach the target group to a load balancer. This can be done later in the [Load Balancing console](#).

☐ Classic Load Balancers

CloudShell Feedback © 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

9+ ENG IN 07:53 PM 25-09-2025

aws management console - Yal x Edit Auto Scaling group | EC2 | x +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#EditAutoScalingGroup:id=Mobile-ASG

Set Google Chrome as your default browser and pin it to your taskbar Set as default

aws Search [Alt+S] United States (N. Virginia) Account ID: 1408-7326-4862 Sakshi Kolhapure

EC2 > Auto Scaling groups > Mobile-ASG > Edit

Elastic IPs
Placement Groups
Key Pairs
Network Interfaces

▼ Load Balancing
Load Balancers
Target Groups
Trust Stores

▼ Auto Scaling
Auto Scaling Groups

Settings

Load balancing - optional

Load balancers

☒ Application, Network or Gateway Load Balancer target groups
Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups

Mobile-TG | HTTP
Load balancer: Not associated with any load balancer

One of your target groups is not yet associated with any load balancer. In order for routing and scaling to occur, you will need to attach the target group to a load balancer. This can be done later in the [Load Balancing console](#).

☐ Classic Load Balancers

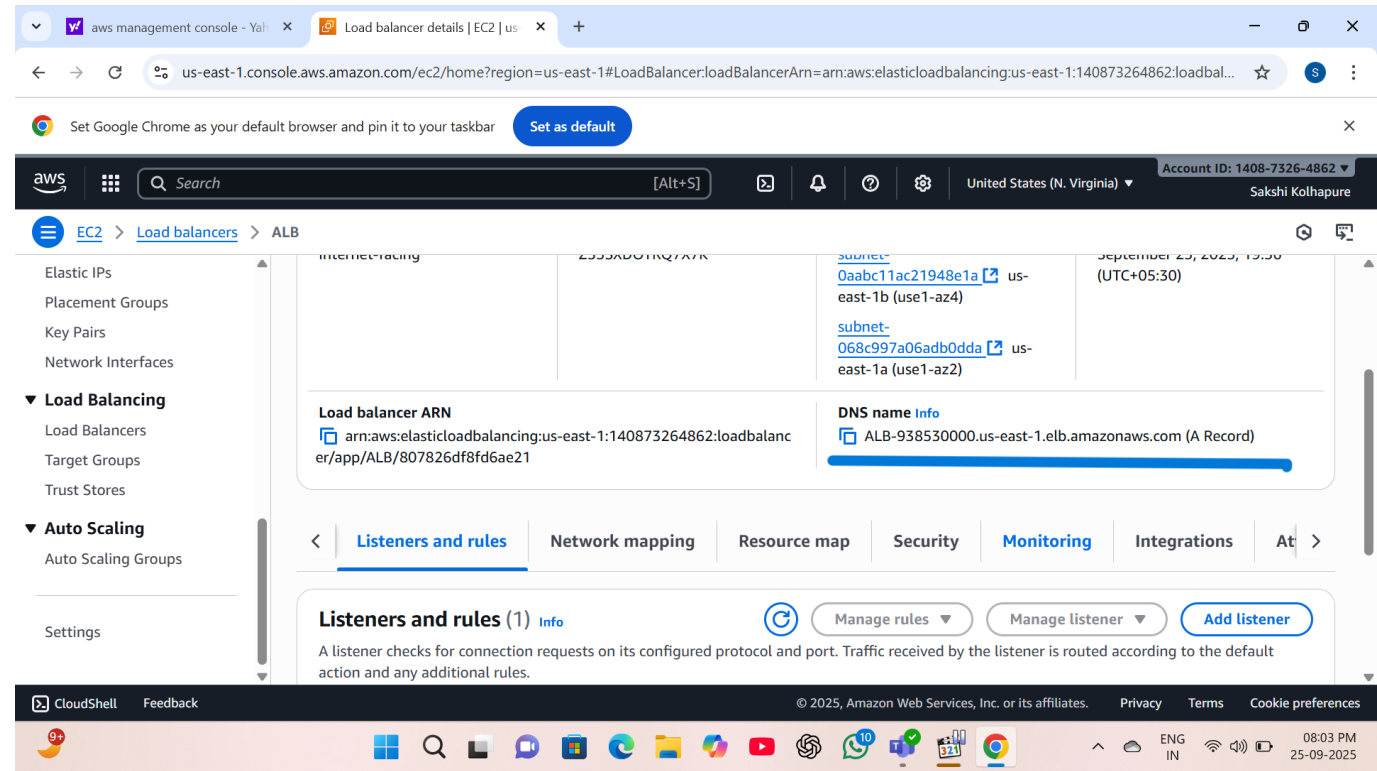
Create and attach new load balancers

Add a new load balancer

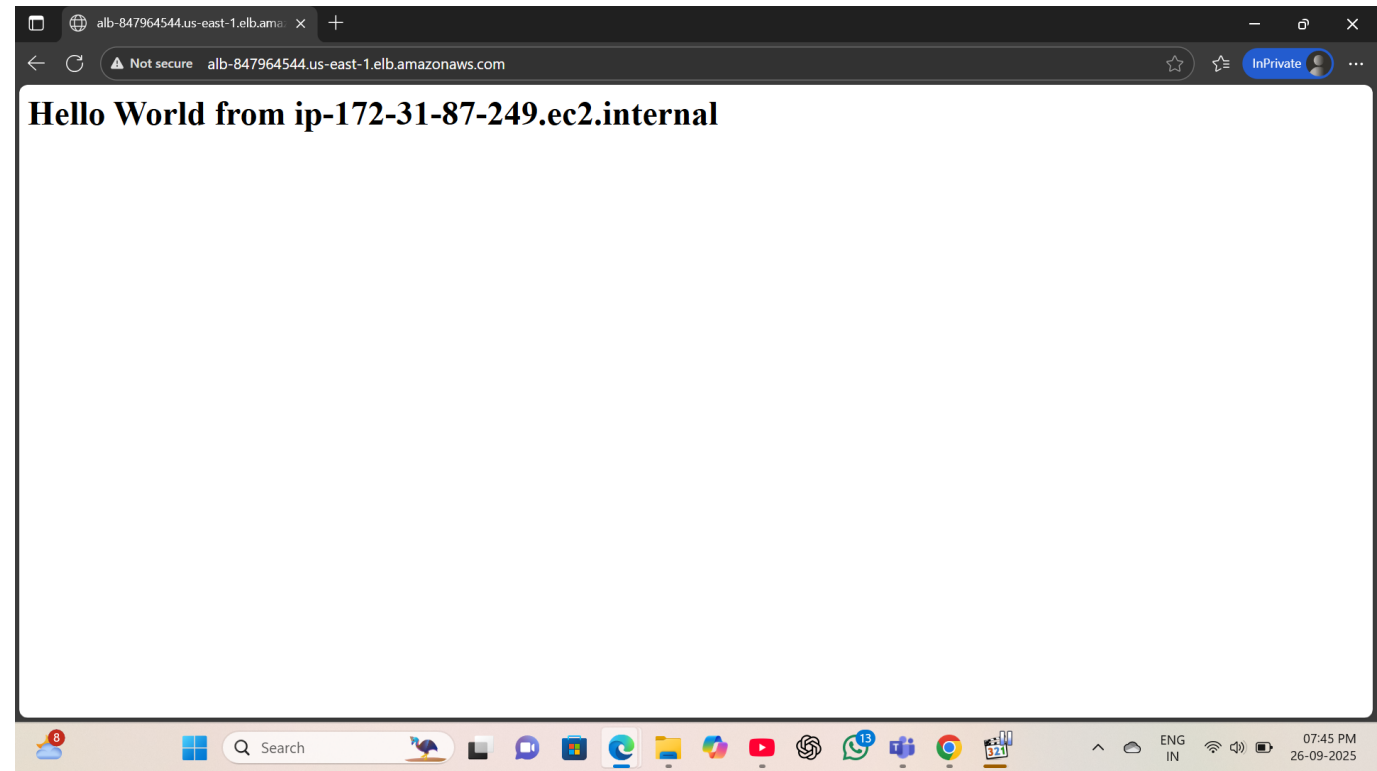
CloudShell Feedback © 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

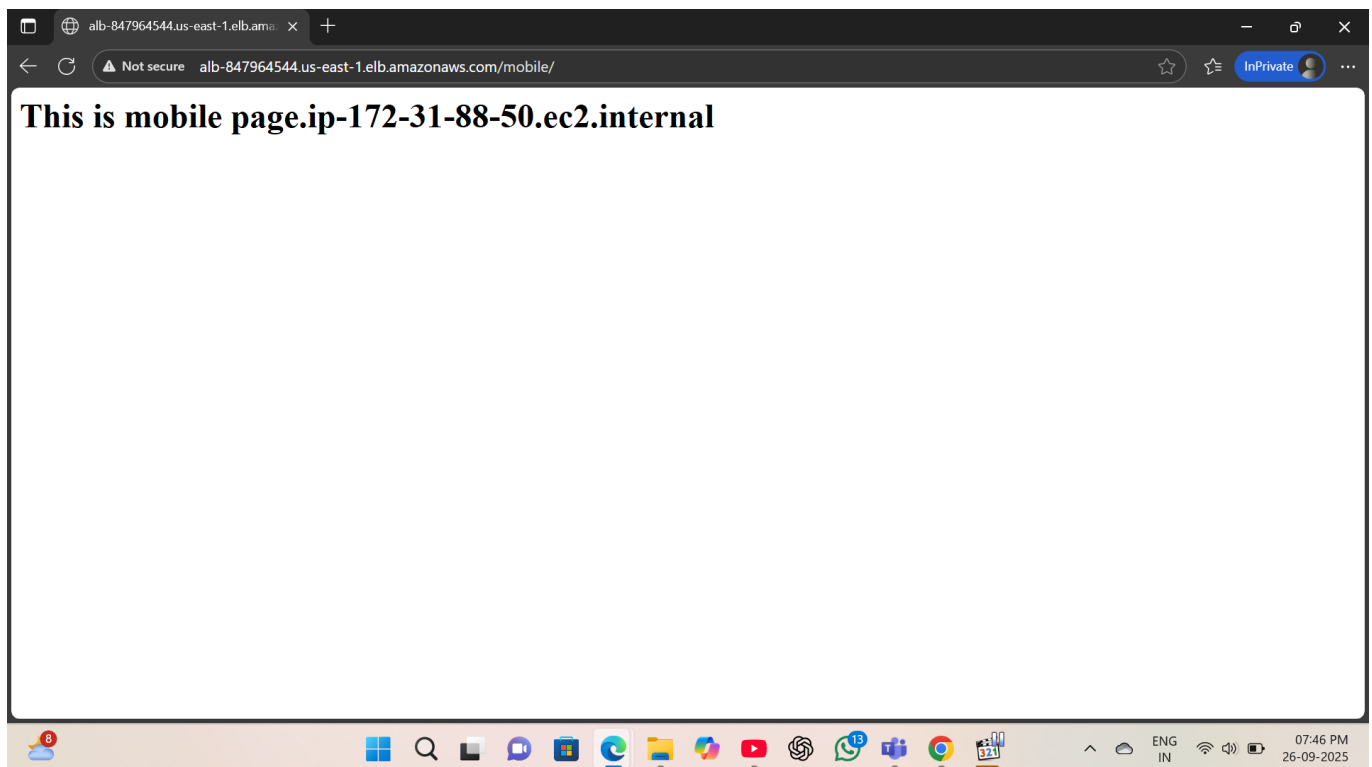
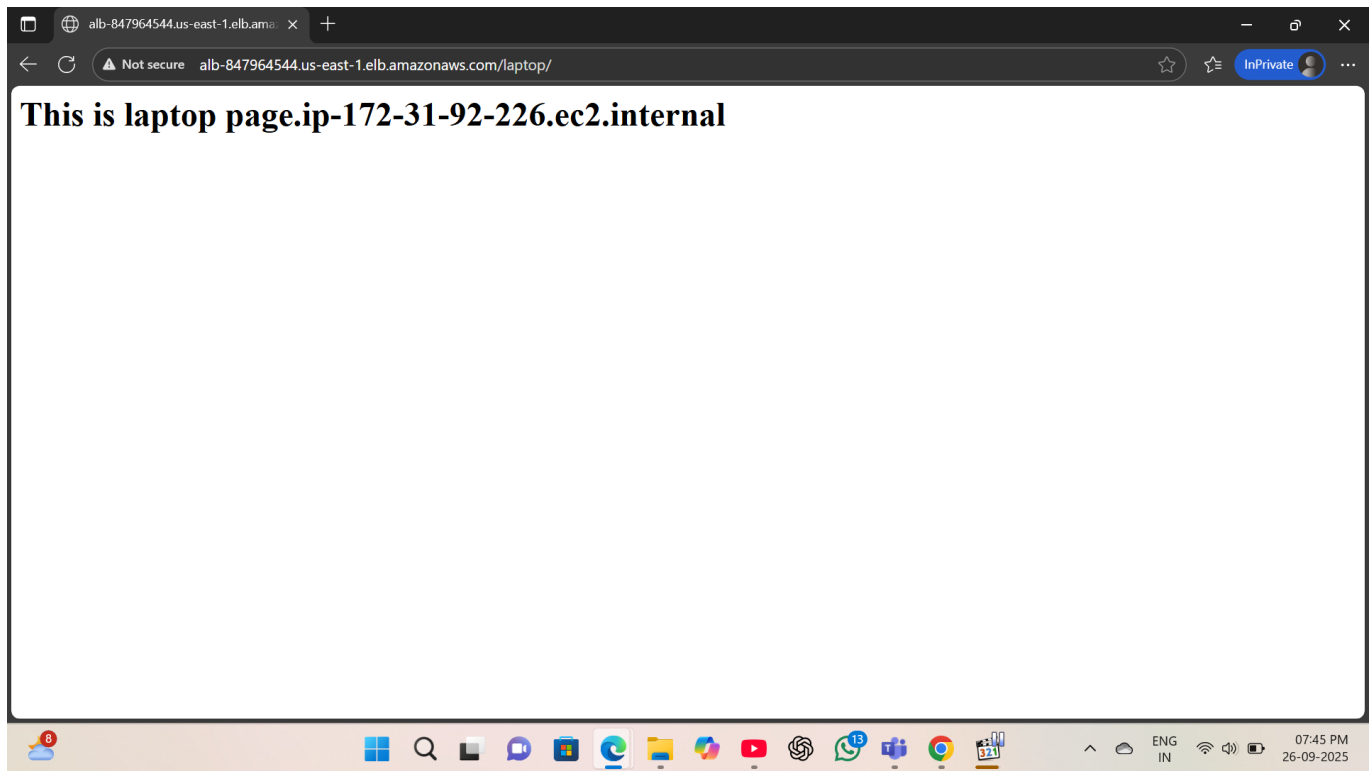
9+ ENG IN 07:54 PM 25-09-2025

6. Get the ALB DNS Name:



7.Test the Setup:





Summary

In this project, we deployed a highly available, fault-tolerant, and scalable web application using AWS services. The Application Load Balancer evenly distributed incoming traffic, while the Auto Scaling Group ensured that the right number of EC2 instances were always running based on demand.