Production-Grade Highly Available Web Application Architecture on AWS

Project Summary

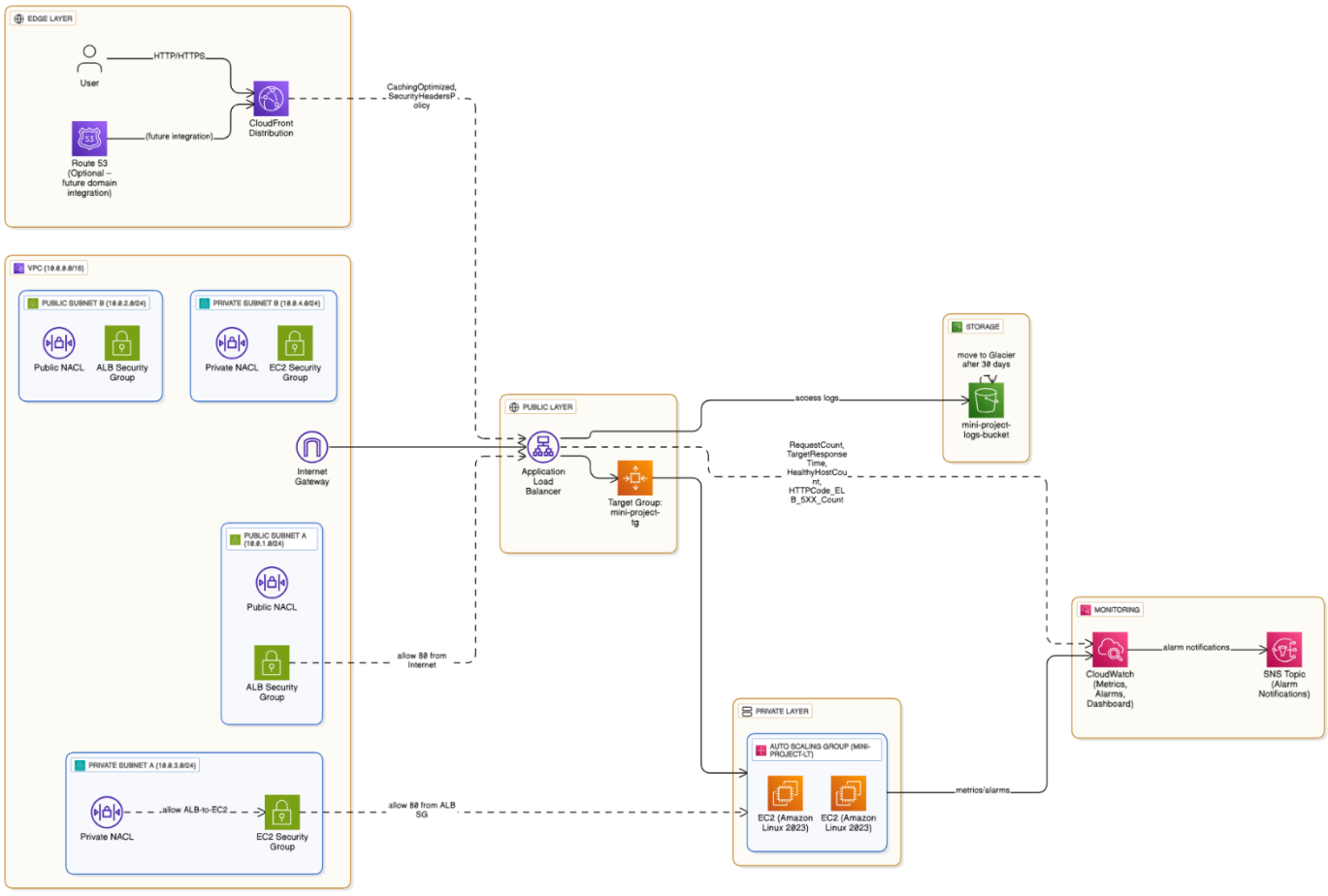
This project implements a production-grade, highly available, and secure web application architecture using AWS best practices. The system is deployed across multiple Availability Zones to ensure fault tolerance and continuous operation under varying load conditions. Users access the application through Amazon CloudFront, which provides global caching and performance optimization. CloudFront routes traffic to an Application Load Balancer in public subnets, which distributes requests to a private Auto Scaling Group (ASG) of EC2 instances configured through launch templates and automated user-data provisioning.

The architecture enforces strong security controls using segmented VPC subnets, security groups, and Network ACLs to isolate traffic flows between the edge, public, and private layers. Centralized logging is handled through an S3 logging bucket with lifecycle policies, and full observability is provided through Amazon CloudWatch dashboards, metrics, and alarms, with automated notifications via SNS.

This deployment mirrors real-world enterprise infrastructure and demonstrates expertise in high availability, load balancing, auto scaling, secure network design, observability, and AWS cloud architecture.

Architecture Diagram

Description:
The following diagram illustrates the complete production-grade architecture including CloudFront, ALB, Auto Scaling Group, multi-AZ VPC design, security layers, logging, and monitoring components.



3. AWS Services Utilized

List them clearly:

- Amazon VPC
- Public & Private Subnets
- Internet Gateway
- Route Tables
- Network ACLs
- Security Groups
- Application Load Balancer
- Target Group
- EC2 Launch Template
- Auto Scaling Group
- Amazon CloudFront
- Amazon S3 (logging bucket)
- Amazon CloudWatch (dashboards, alarms, metrics)
- Amazon SNS (notifications)
- IAM Roles & Instance Profiles

4. Key Architecture Features

- Multi-AZ high availability
- Secure network segmentation (public/private subnets)
- Auto scaling based on CPU utilization
- Global content delivery with CloudFront
- Centralized ALB access logging in S3
- Cost-optimized log storage with lifecycle rules
- Health checks for automated failover and recovery
- CloudWatch dashboards and alarms for observability
- SNS email notifications for operational events

5. Implementation Overview

1. Created VPC and subnets across two Availability Zones
2. Configured route tables and attached Internet Gateway
3. Implemented NACLs and Security Groups
4. Deployed Application Load Balancer in public subnets
5. Created Launch Template with user-data to install Apache
6. Deployed Auto Scaling Group in private subnets
7. Configured CPU-based scaling policies
8. Enabled ALB access logging to S3
9. Created S3 lifecycle rule (transition logs to Glacier after 30 days)
10. Configured CloudFront distribution using ALB as origin
11. Built CloudWatch dashboard and alarms
12. Integrated SNS for alert notifications
13. Tested CloudFront and ALB endpoints

6. Monitoring and Logging

Monitoring (CloudWatch):

- CPU utilization
- RequestCount
- 5XX errors
- TargetResponseTime
- HealthyHostCount

Alarms:

- High CPU
- Low CPU
- ALB 5XX errors

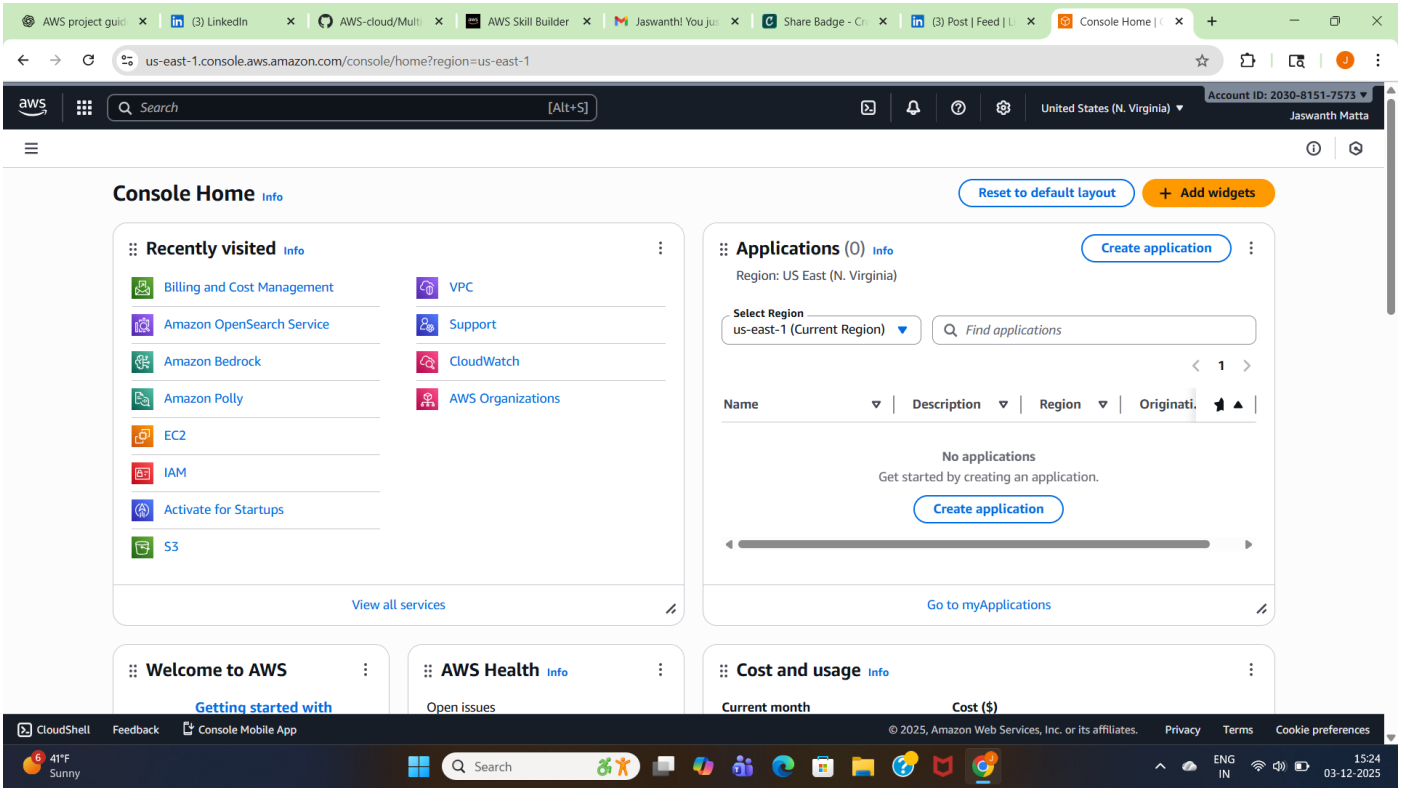
Notifications:

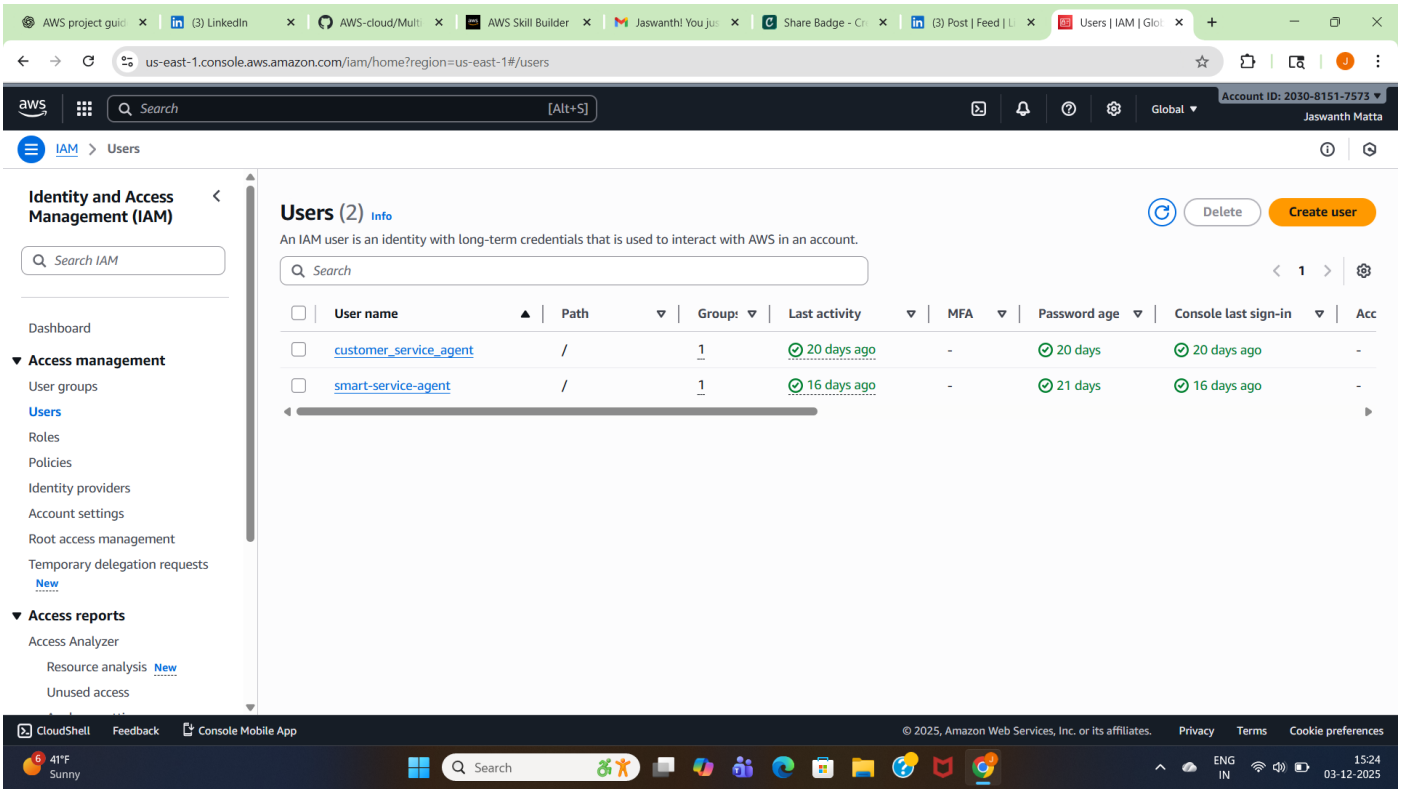
- SNS email alerts

Logging:

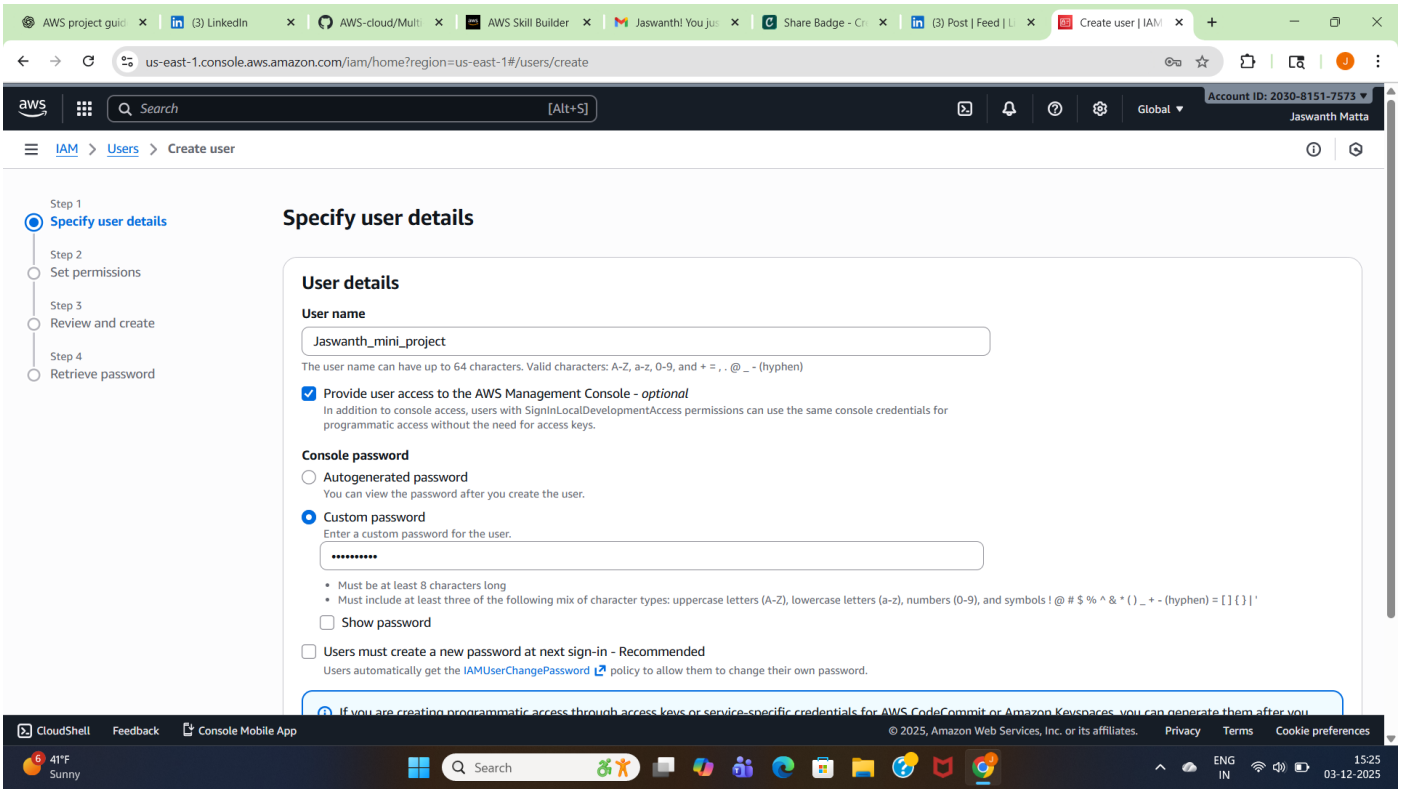
- ALB access logs stored in S3
- Lifecycle rule transitions logs to Glacier after 30 days

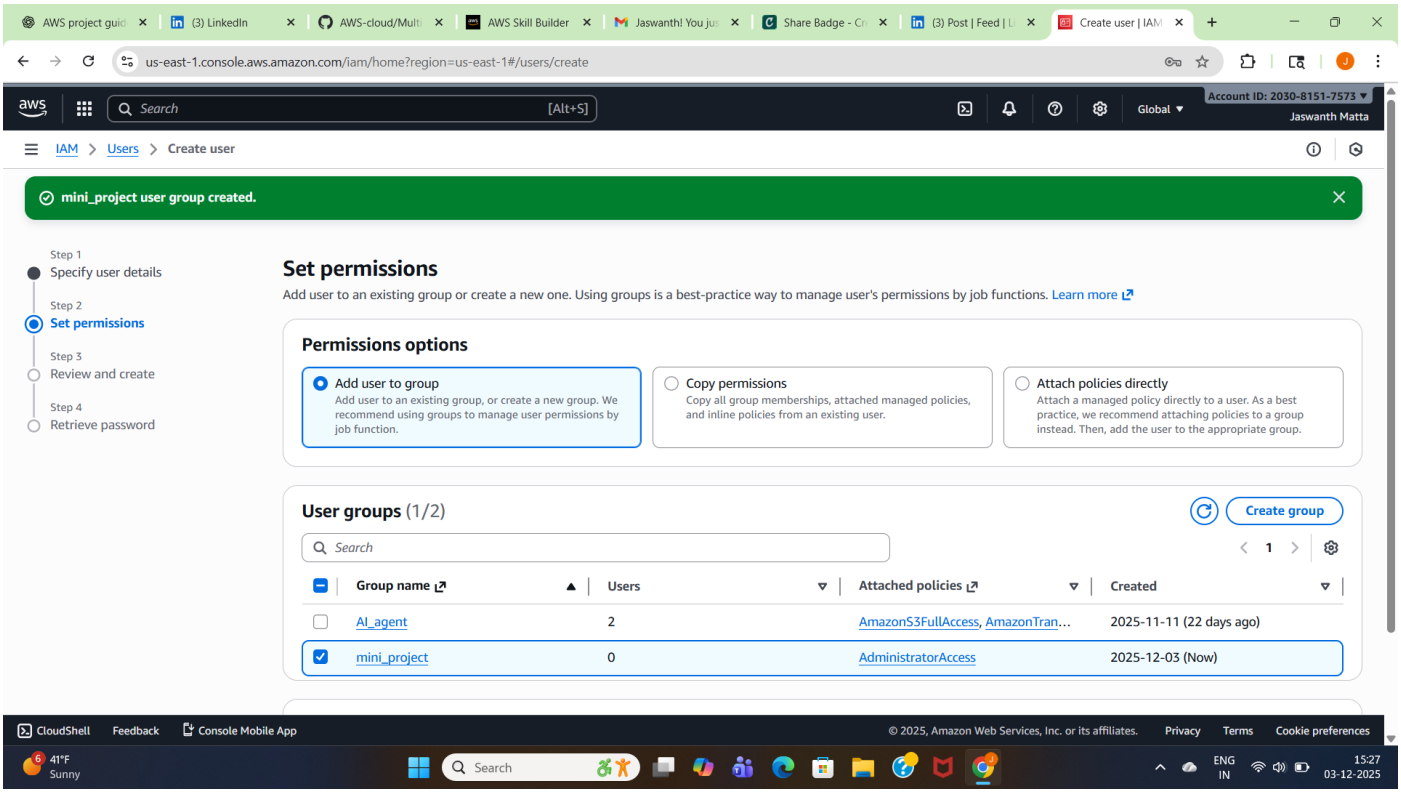
7. Implementation Screenshots

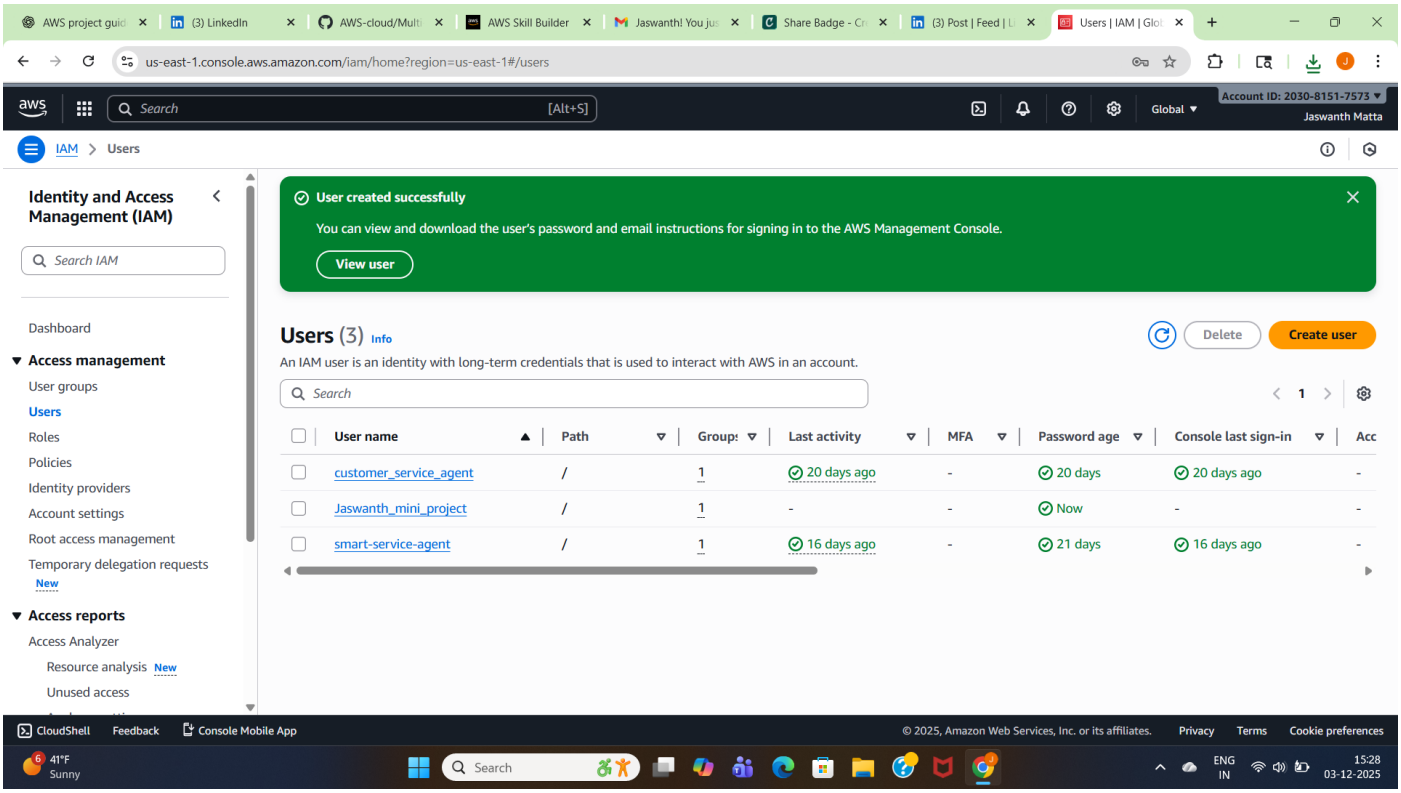




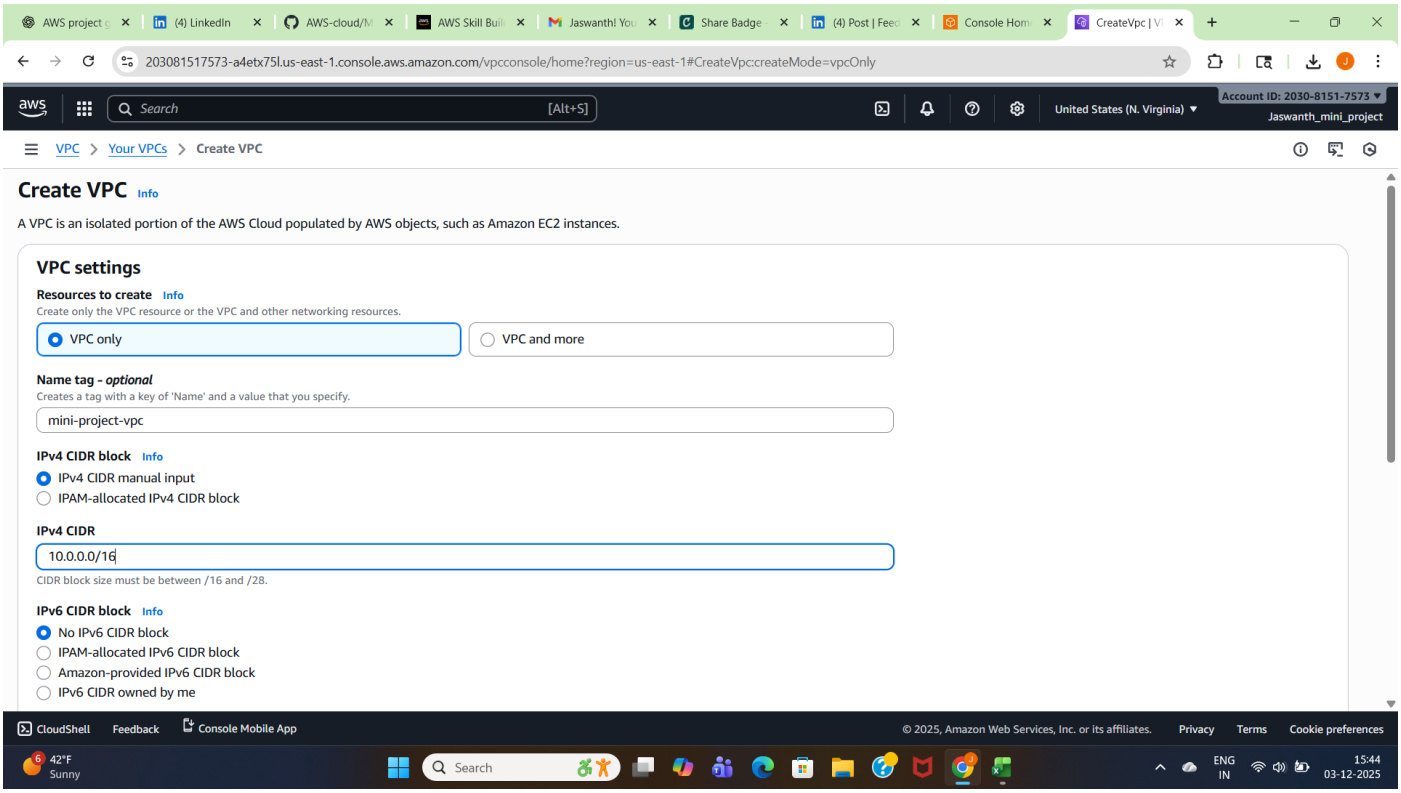
A dedicated IAM user (Jaswanth_mini_project) was created to handle all project-related AWS operations. This aligns with AWS best practices by isolating project access from the root account and enabling controlled permissions for secure resource management.

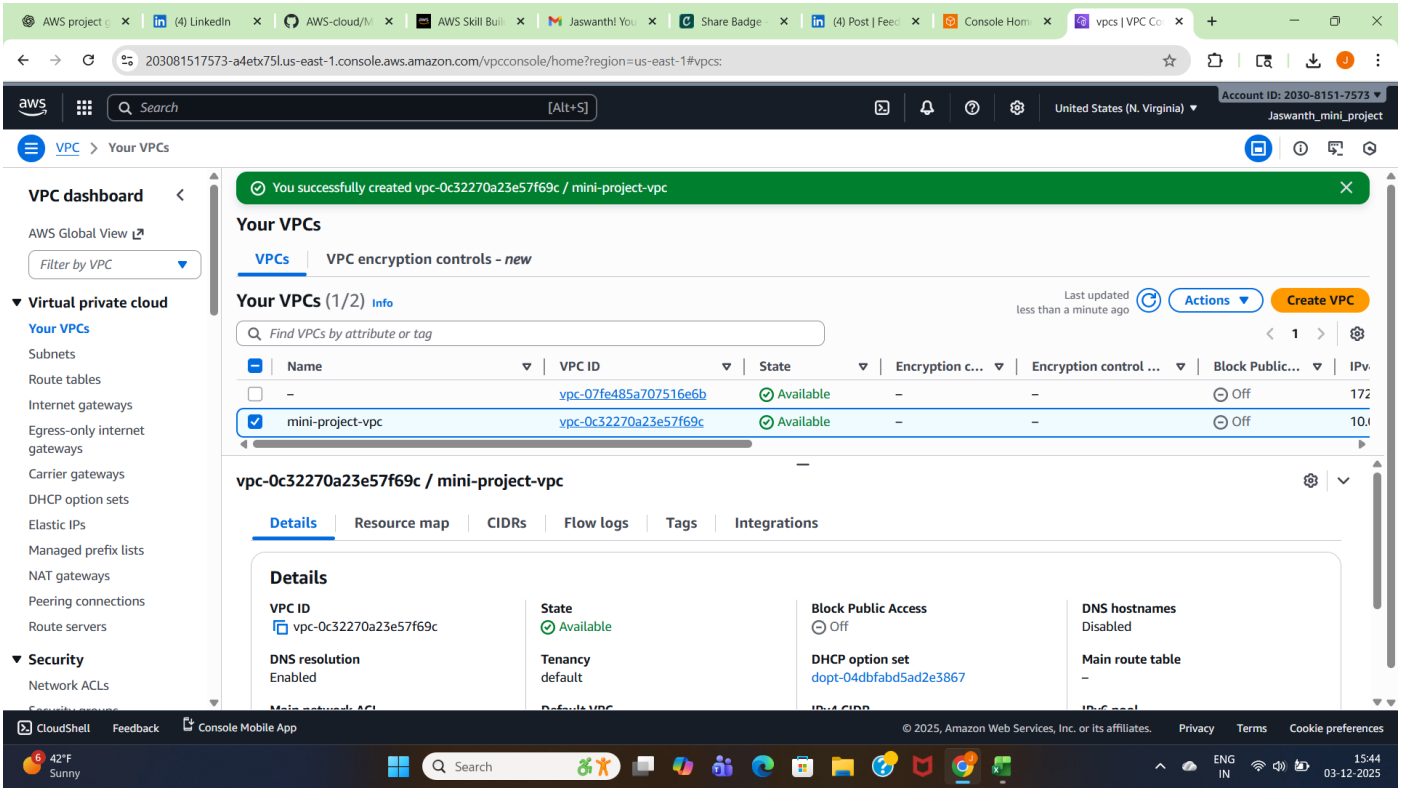






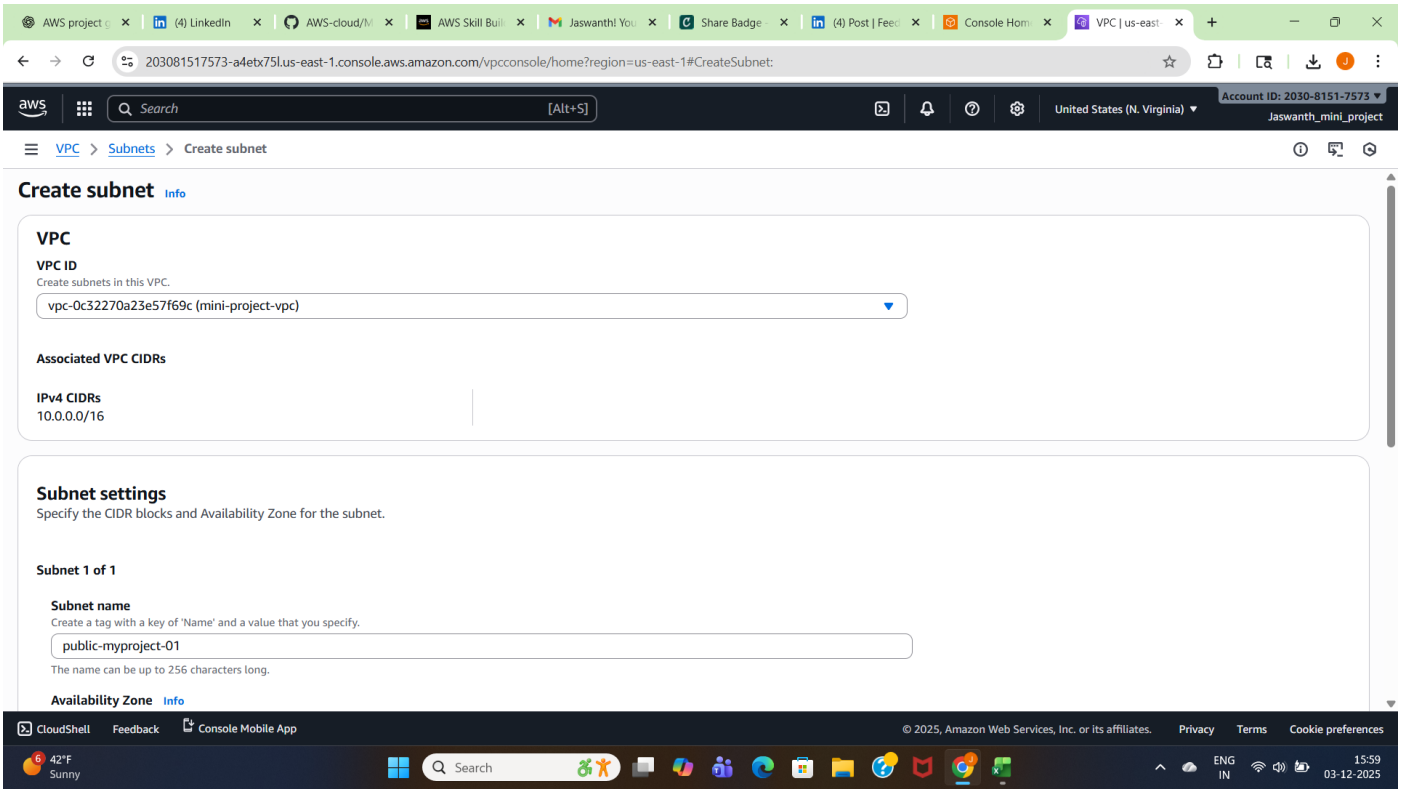
A new VPC named **mini-project-vpc** was created using the CIDR block **10.0.0.0/16**, providing the network foundation for all public and private subnets in the project.





Subnet Creation

Public and private subnets were created across two Availability Zones using /24 CIDR blocks, enabling separation of external-facing resources (ALB) from internal compute resources (EC2 Auto Scaling Group).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Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Subnets > Create subnet
Create subnet Info
VPC
VPC ID
Create subnets in this VPC.
vpc-0c32270a23e57f69c (mini-project-vpc)
Associated VPC CIDRs
IPv4 CIDRs
10.0.0.0/16
Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.
Subnet 1 of 1
Subnet name
Create a tag with a key of 'Name' and a value that you specify.
public-myproject-01
The name can be up to 256 characters long.
Availability Zone Info
CloudShell
Feedback
Console Mobile App
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Terms
Cookie preferences
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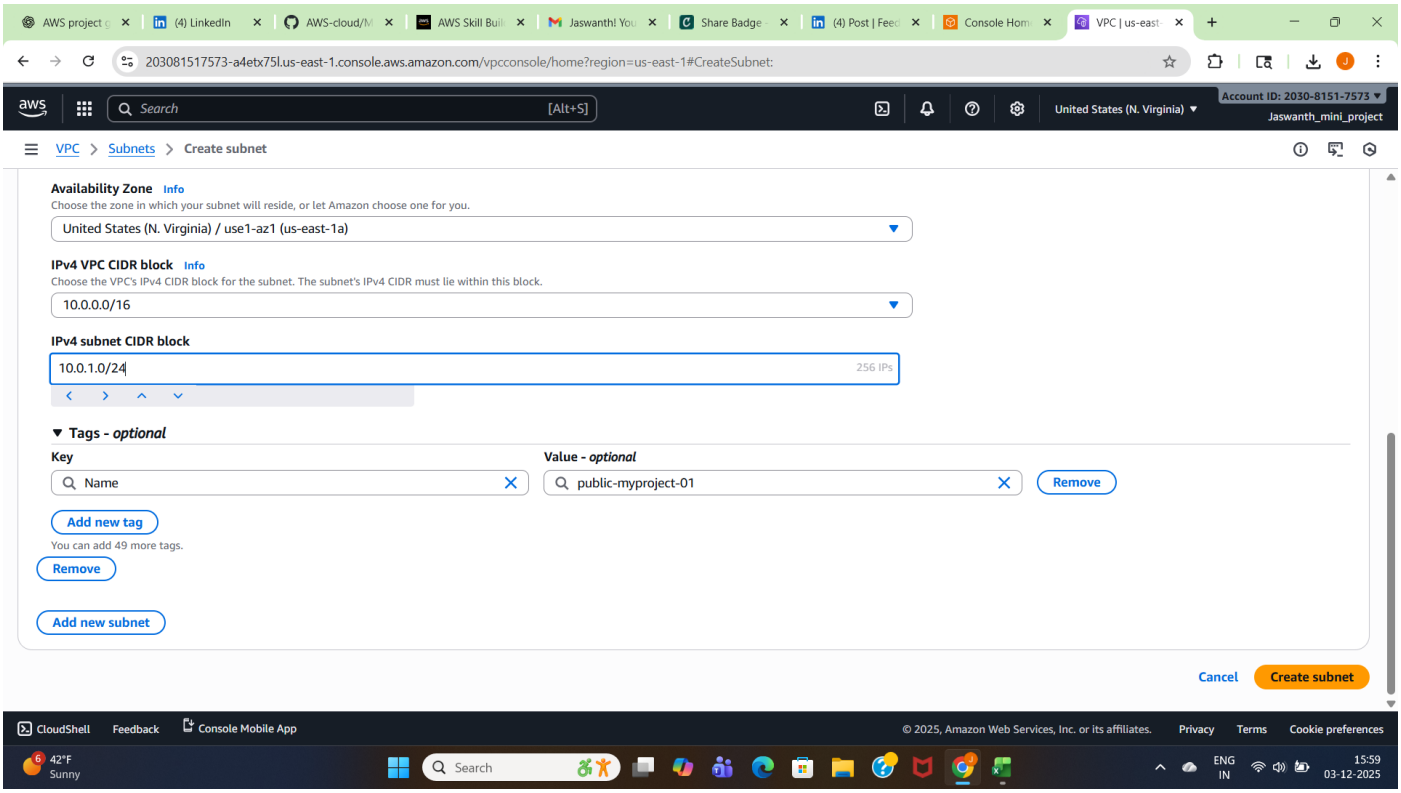
Sunny
ENG
IN
15:59
03-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateSubnet:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Subnets > Create subnet
Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
United States (N. Virginia) / use1-az1 (us-east-1a)
IPv4 VPC CIDR block Info
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.
10.0.0.0/16
IPv4 subnet CIDR block
10.0.1.0/24
256 IPs
Tags - optional
Key
Value - optional
Name
public-myproject-01
Remove
Add new tag
You can add 49 more tags.
Remove
Add new subnet
Cancel
Create subnet
CloudShell
Feedback
Console Mobile App
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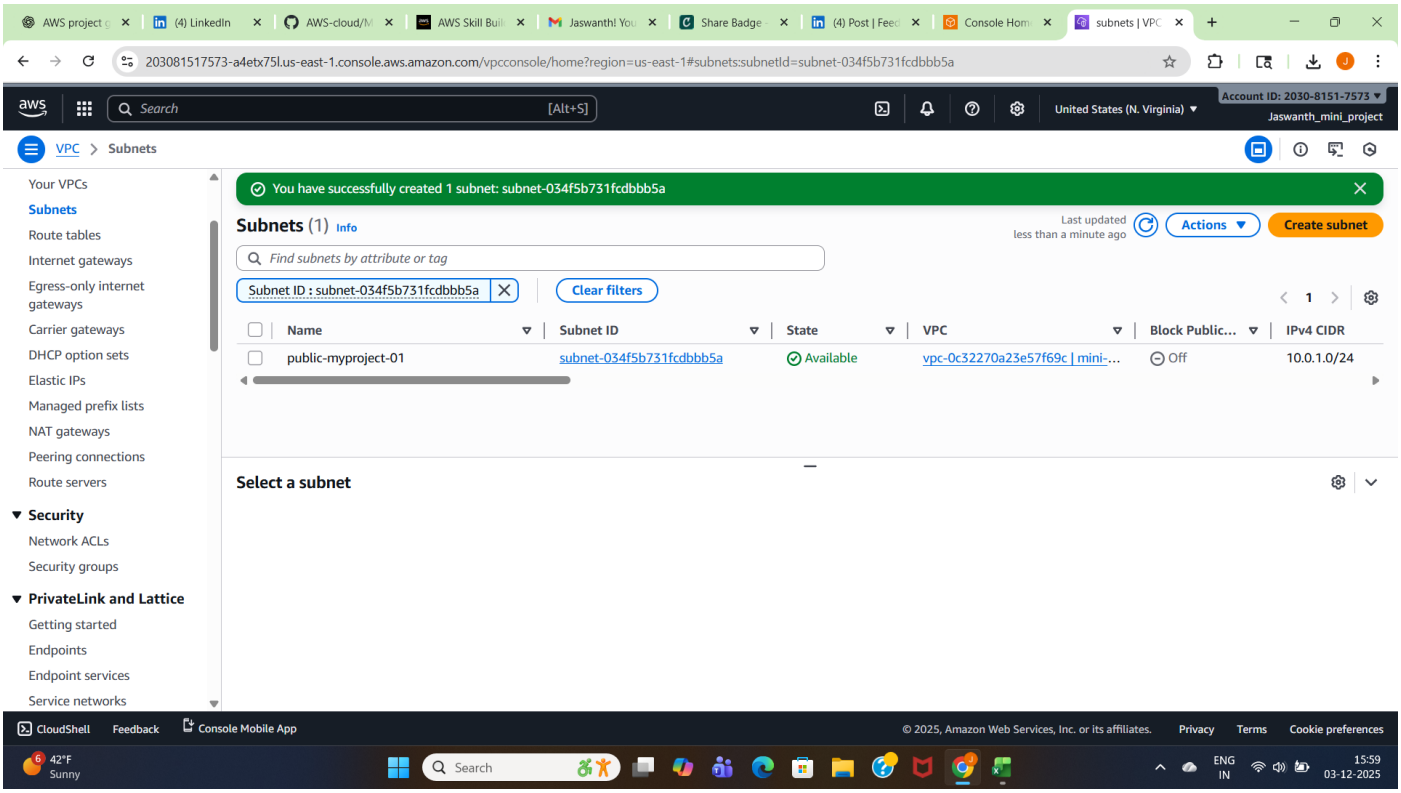
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Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Subnets
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Endpoint services
Service networks
You have successfully created 1 subnet: subnet-034f5b731fcdbbb5a
Subnets (1) Info
Last updated less than a minute ago
Actions
Create subnet
Find subnets by attribute or tag
Subnet ID : subnet-034f5b731fcdbbb5a
Clear filters
Name
Subnet ID
State
VPC
Block Public...
IPv4 CIDR
public-myproject-01
subnet-034f5b731fcdbbb5a
Available
vpc-0c32270a23e57f69c | mini-...
Off
10.0.1.0/24
Select a subnet
CloudShell
Feedback
Console Mobile App
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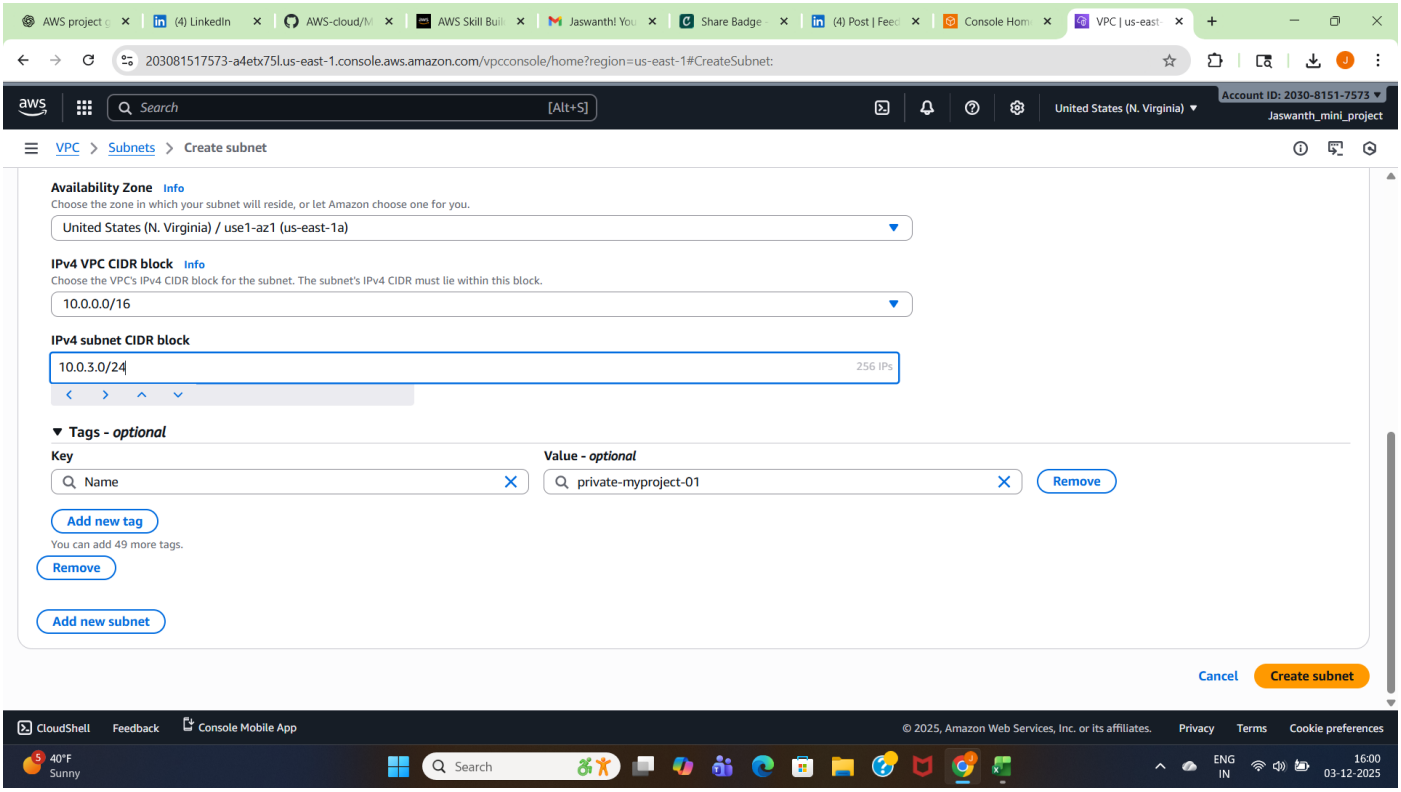
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateSubnet:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Subnets > Create subnet
Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
United States (N. Virginia) / use1-az1 (us-east-1a)
IPv4 VPC CIDR block Info
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.
10.0.0.0/16
IPv4 subnet CIDR block
10.0.3.0/24
256 IPs
Tags - optional
Key
Value - optional
Name
private-myproject-01
Remove
Add new tag
You can add 49 more tags.
Remove
Add new subnet
Cancel
Create subnet
CloudShell
Feedback
Console Mobile App
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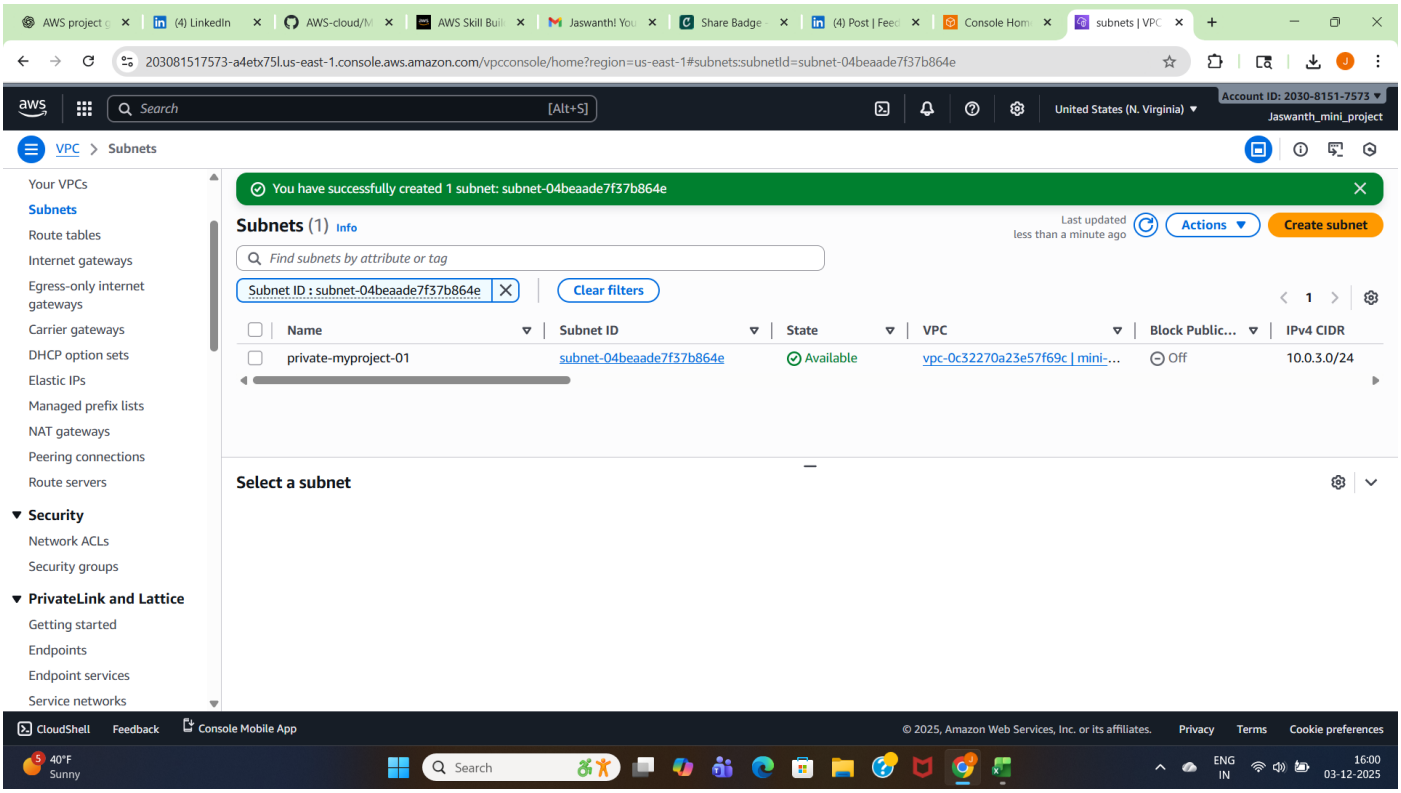
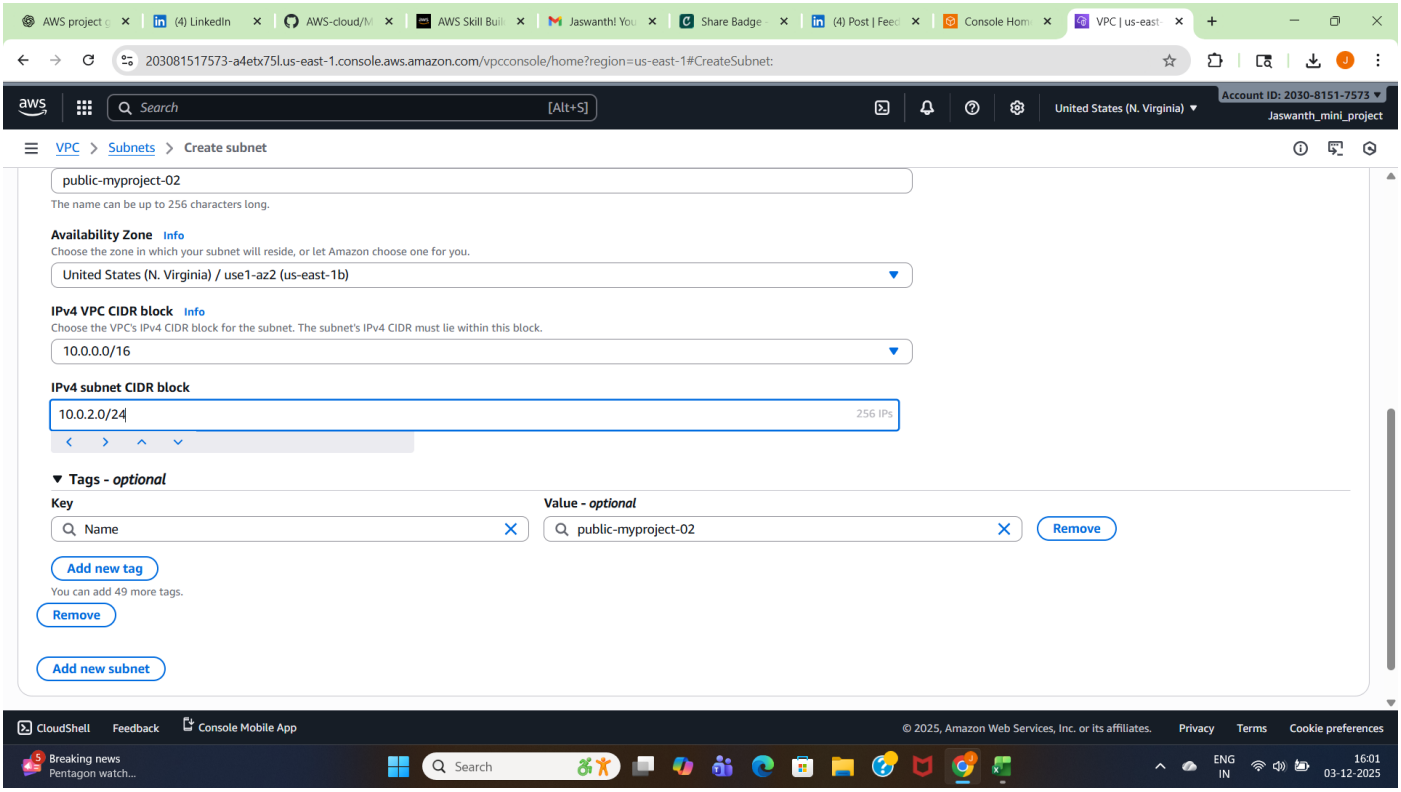
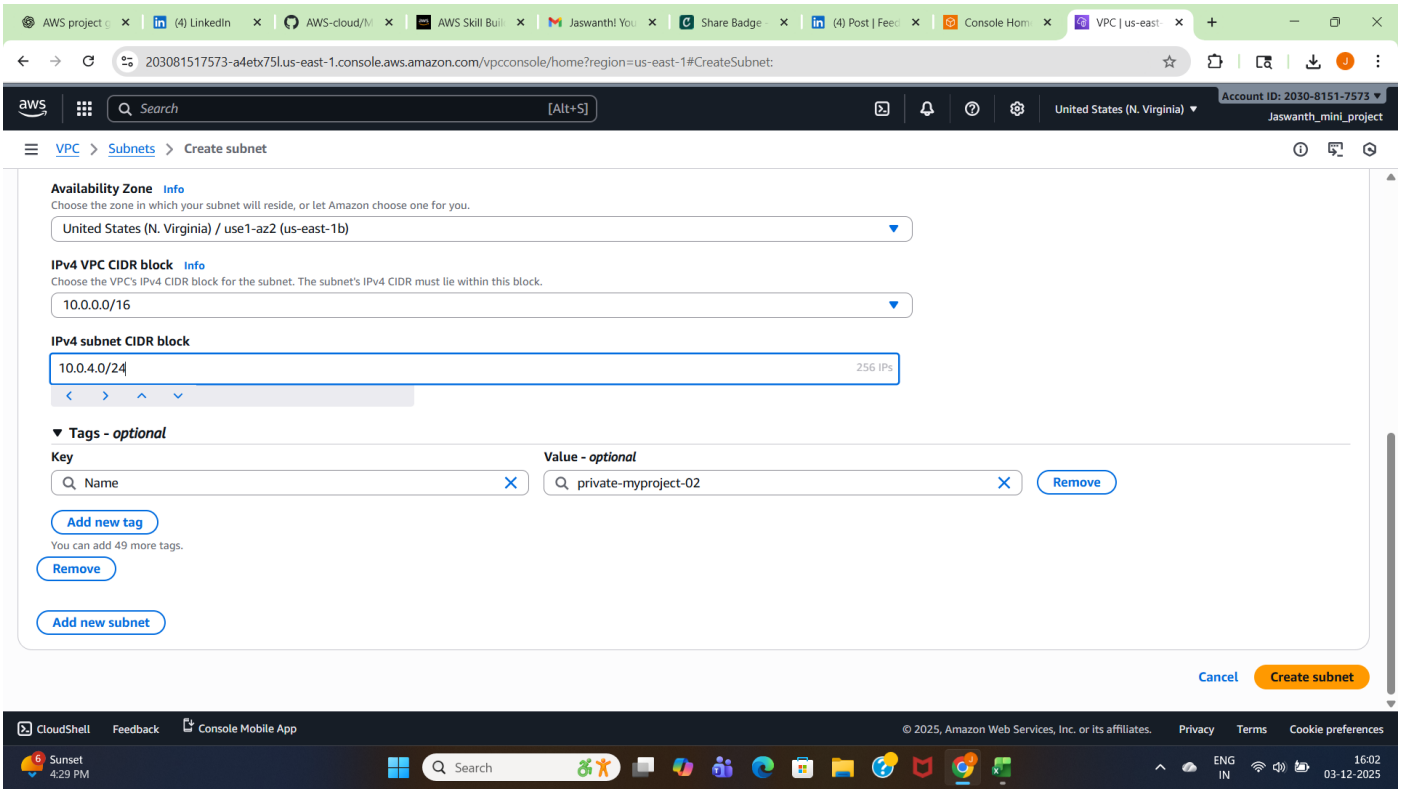

You have successfully created 1 subnet: subnet-04beaade7f37b864e
Subnets (1) Info
Actions
Create subnet
Subnet ID : subnet-04beaade7f37b864e
Clear filters
Name
Subnet ID
State
VPC
Block Public...
IPv4 CIDR
private-myproject-01
subnet-04beaade7f37b864e
Available
Off
10.0.3.0/24
Select a subnet


public-myproject-02
Availability Zone Info
United States (N. Virginia) / use1-az2 (us-east-1b)
IPv4 VPC CIDR block Info
10.0.0.0/16
IPv4 subnet CIDR block
10.0.2.0/24
256 IPs
Tags - optional
Key
Value - optional
Name
public-myproject-02
Remove
Add new tag
Remove
Add new subnet


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateSubnet:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Subnets > Create subnet
Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
United States (N. Virginia) / use1-az2 (us-east-1b)
IPv4 VPC CIDR block Info
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.
10.0.0.0/16
IPv4 subnet CIDR block
10.0.4.0/24
256 IPs
Tags - optional
Key
Value - optional
Name
private-myproject-02
Remove
Add new tag
You can add 49 more tags.
Remove
Add new subnet
Cancel
Create subnet
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Feedback
Console Mobile App
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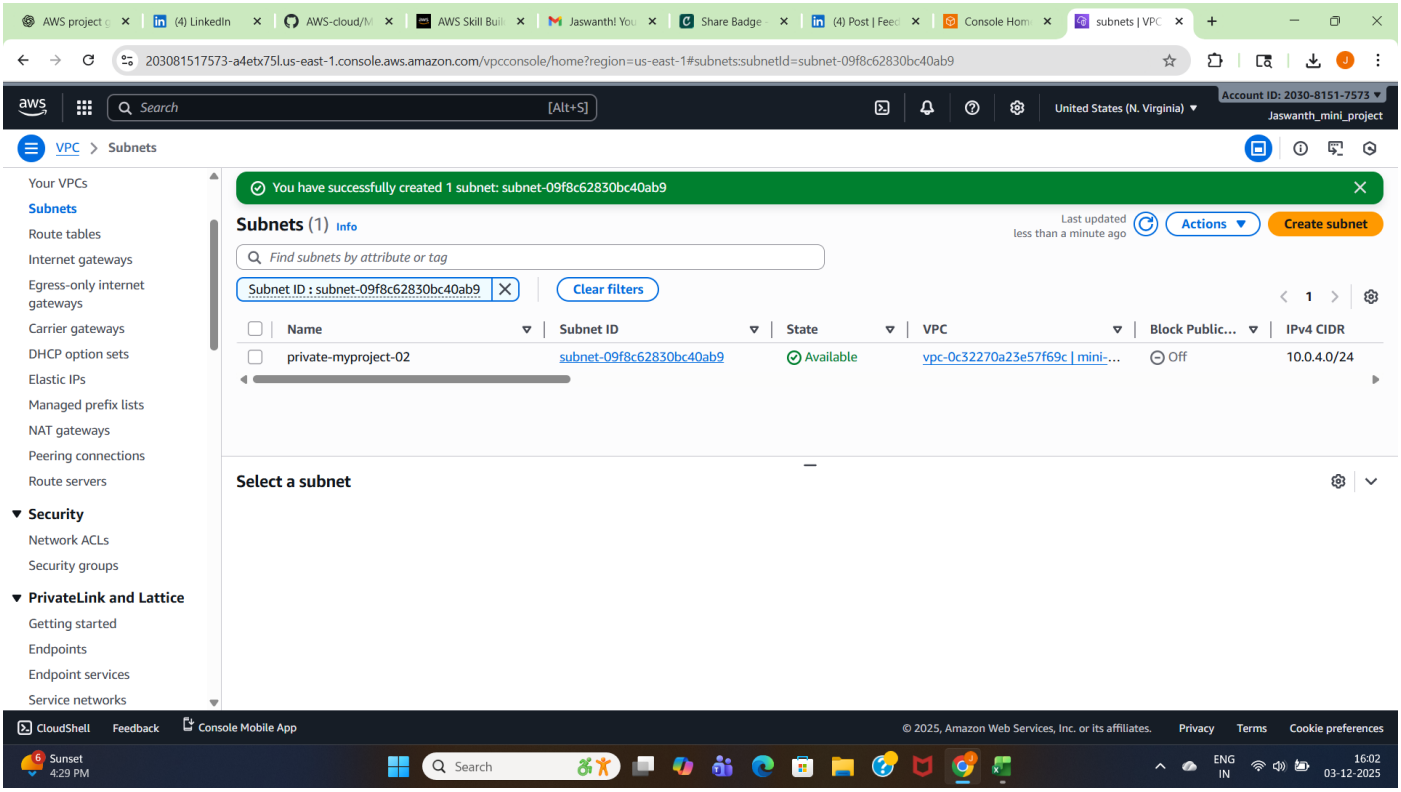
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Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Subnets
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Endpoint services
Service networks
You have successfully created 1 subnet: subnet-09f8c62830bc40ab9
Subnets (1) Info
Last updated less than a minute ago
Actions
Create subnet
Find subnets by attribute or tag
Subnet ID : subnet-09f8c62830bc40ab9
Clear filters
Name
Subnet ID
State
VPC
Block Public...
IPv4 CIDR
private-myproject-02
subnet-09f8c62830bc40ab9
Available
vpc-0c32270a23e57f69c | mini-...
Off
10.0.4.0/24
Select a subnet
CloudShell
Feedback
Console Mobile App
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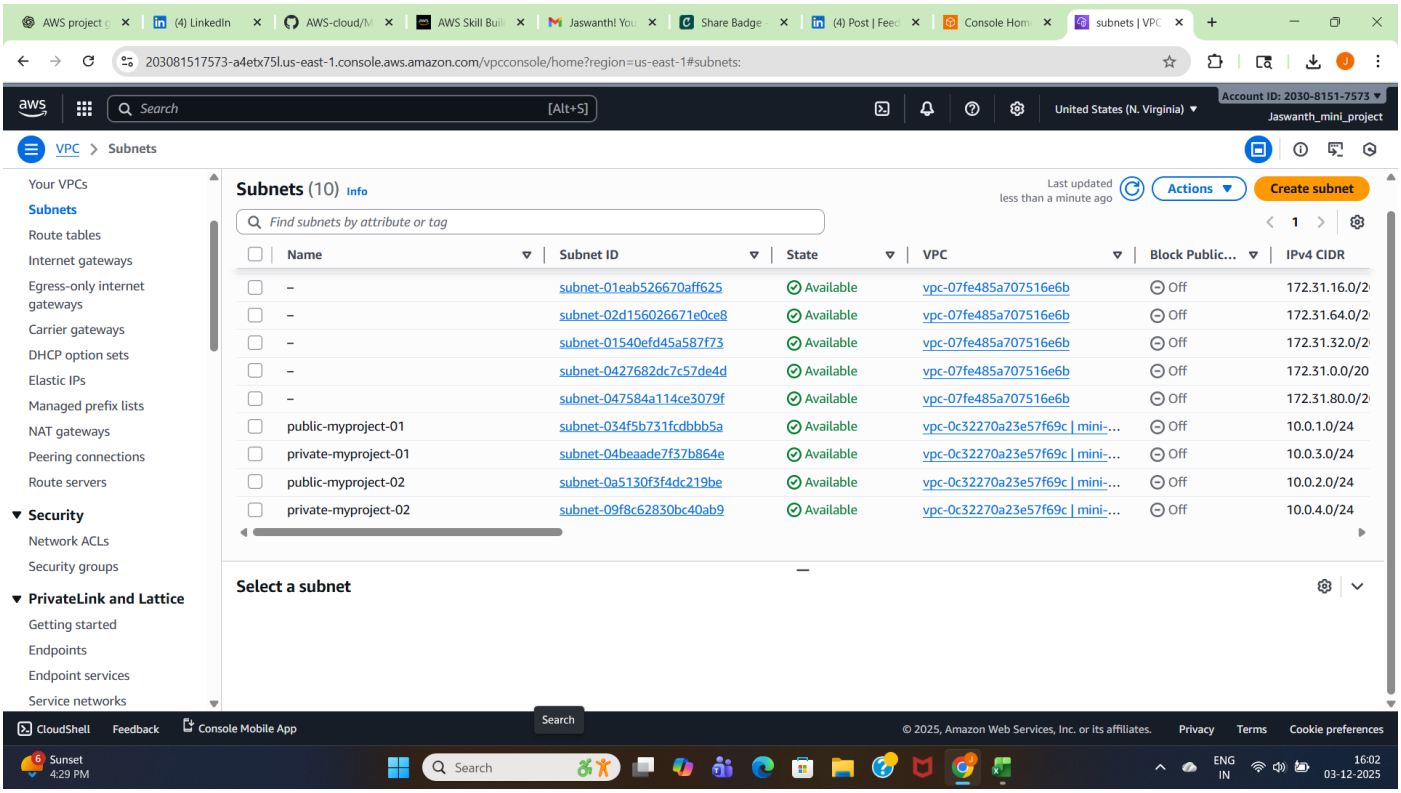
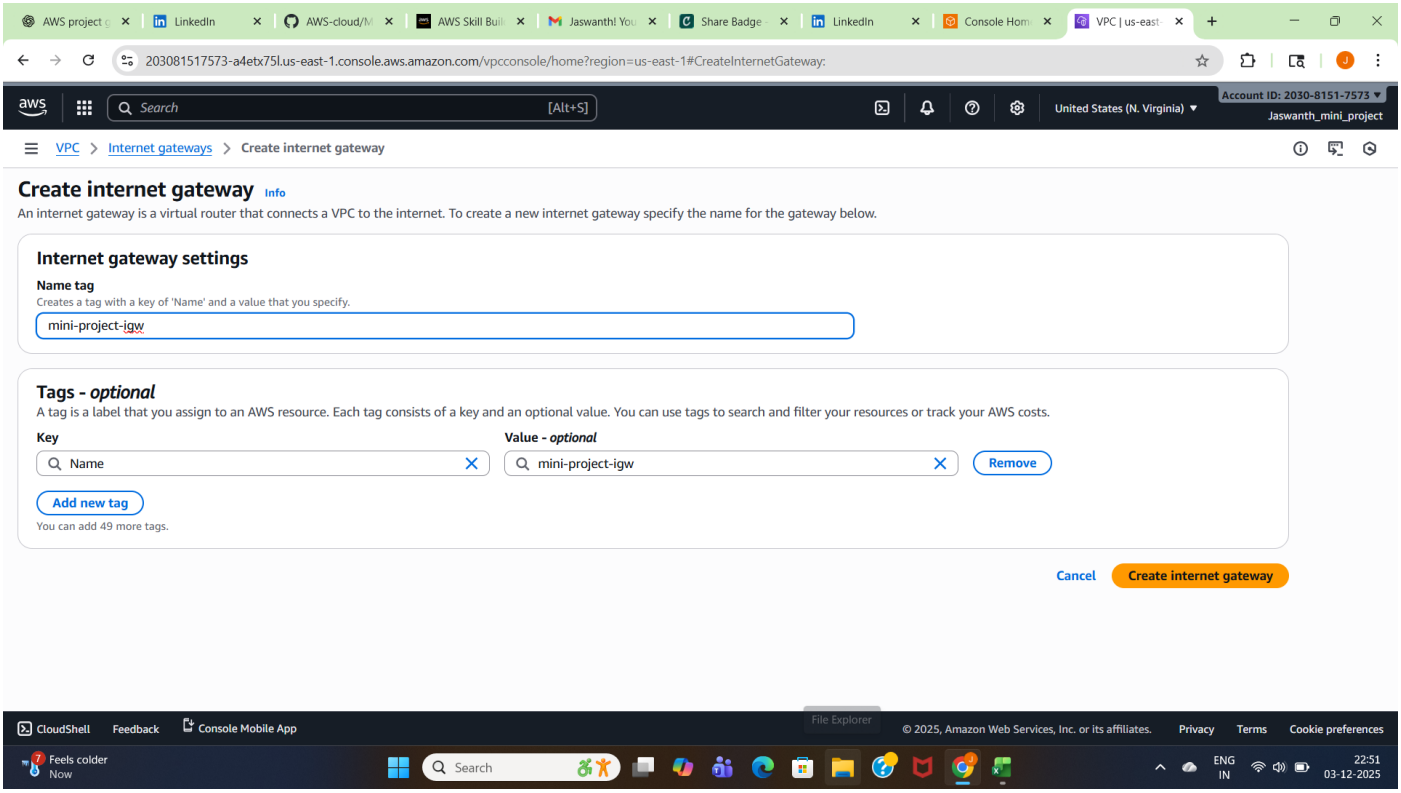
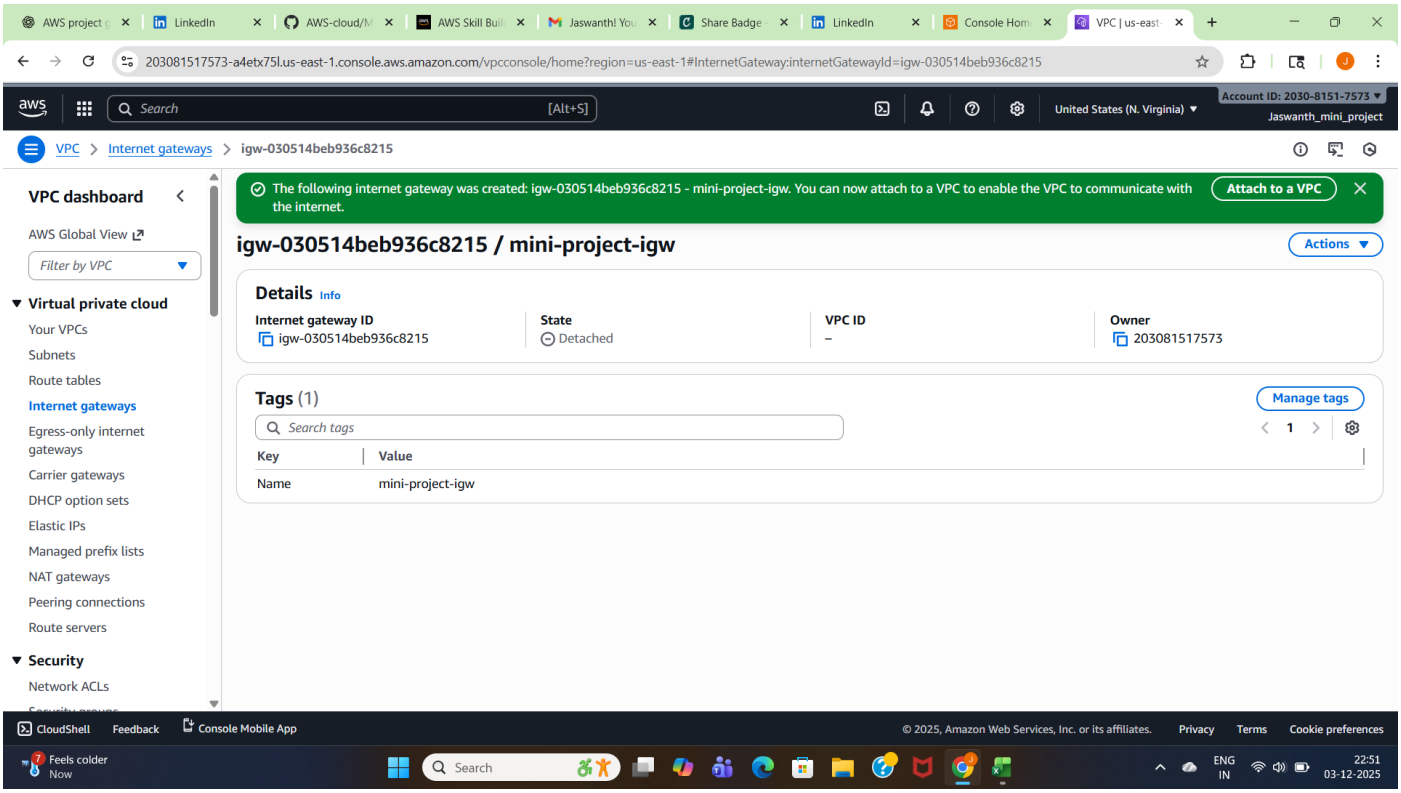


Internet Gateway Creation

An Internet Gateway (mini-project-igw) was created and attached to the VPC to provide internet connectivity for public subnets.




203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#InternetGateway:internetGatewayId=igw-030514beb936c8215
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Internet gateways > igw-030514beb936c8215
VPC dashboard
AWS Global View
Filter by VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
The following internet gateway was created: igw-030514beb936c8215 - mini-project-igw. You can now attach to a VPC to enable the VPC to communicate with the internet.
Attach to a VPC
igw-030514beb936c8215 / mini-project-igw
Actions
Details Info
Internet gateway ID
igw-030514beb936c8215
State
Detached
VPC ID
–
Owner
203081517573
Tags (1)
Manage tags
Search tags
Key
Value
Name
mini-project-igw
CloudShell
Feedback
Console Mobile App
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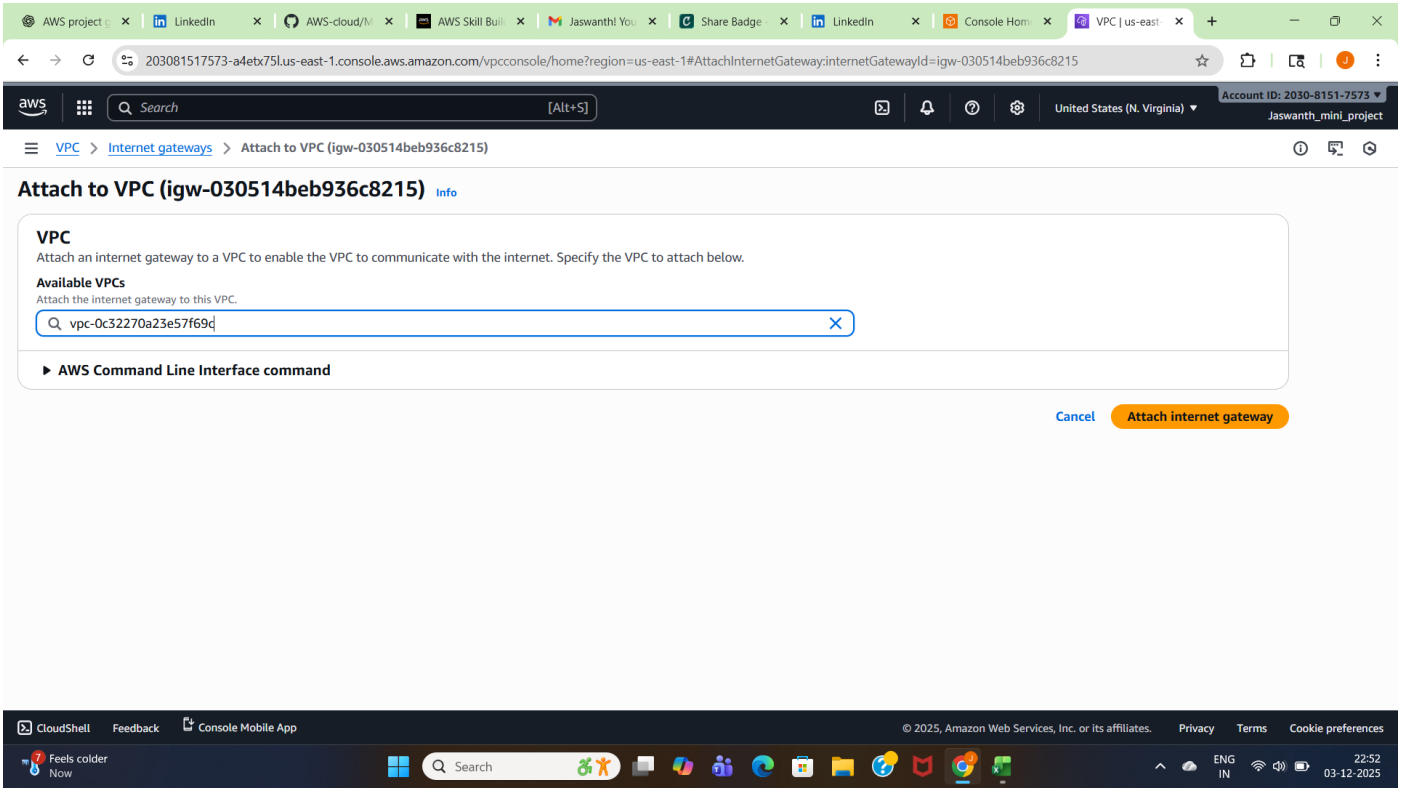
Terms
Cookie preferences
Feels colder Now
Search
ENG IN
22:51
03-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#AttachInternetGateway:internetGatewayId=igw-030514beb936c8215
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Internet gateways > Attach to VPC (igw-030514beb936c8215)
Attach to VPC (igw-030514beb936c8215) Info
VPC
Attach an internet gateway to a VPC to enable the VPC to communicate with the internet. Specify the VPC to attach below.
Available VPCs
Attach the internet gateway to this VPC.
vpc-0c32270a23e57f69c
AWS Command Line Interface command
Cancel
Attach internet gateway
CloudShell
Feedback
Console Mobile App
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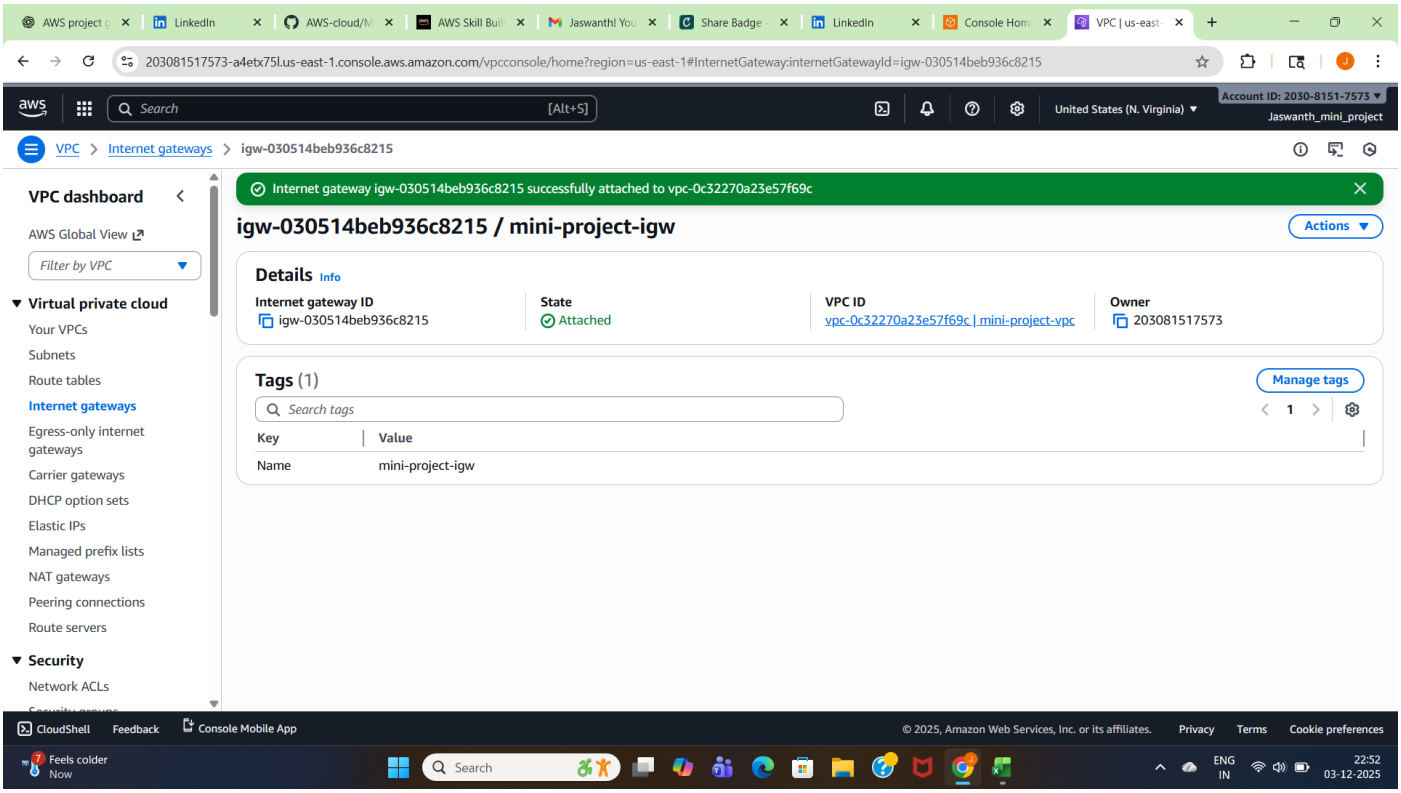
Cookie preferences
Feels colder Now
Search
ENG IN
22:52
03-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#InternetGateway:internetGatewayId=igw-030514beb936c8215
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Internet gateways > igw-030514beb936c8215
VPC dashboard
AWS Global View
Filter by VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Internet gateway igw-030514beb936c8215 successfully attached to vpc-0c32270a23e57f69c
igw-030514beb936c8215 / mini-project-igw
Actions
Details Info
Internet gateway ID
igw-030514beb936c8215
State
Attached
VPC ID
vpc-0c32270a23e57f69c | mini-project-vpc
Owner
203081517573
Tags (1)
Manage tags
Search tags
Key
Value
Name
mini-project-igw
CloudShell
Feedback
Console Mobile App
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Privacy
Terms
Cookie preferences
Feels colder
Now
Search
ENG
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22:52
03-12-2025

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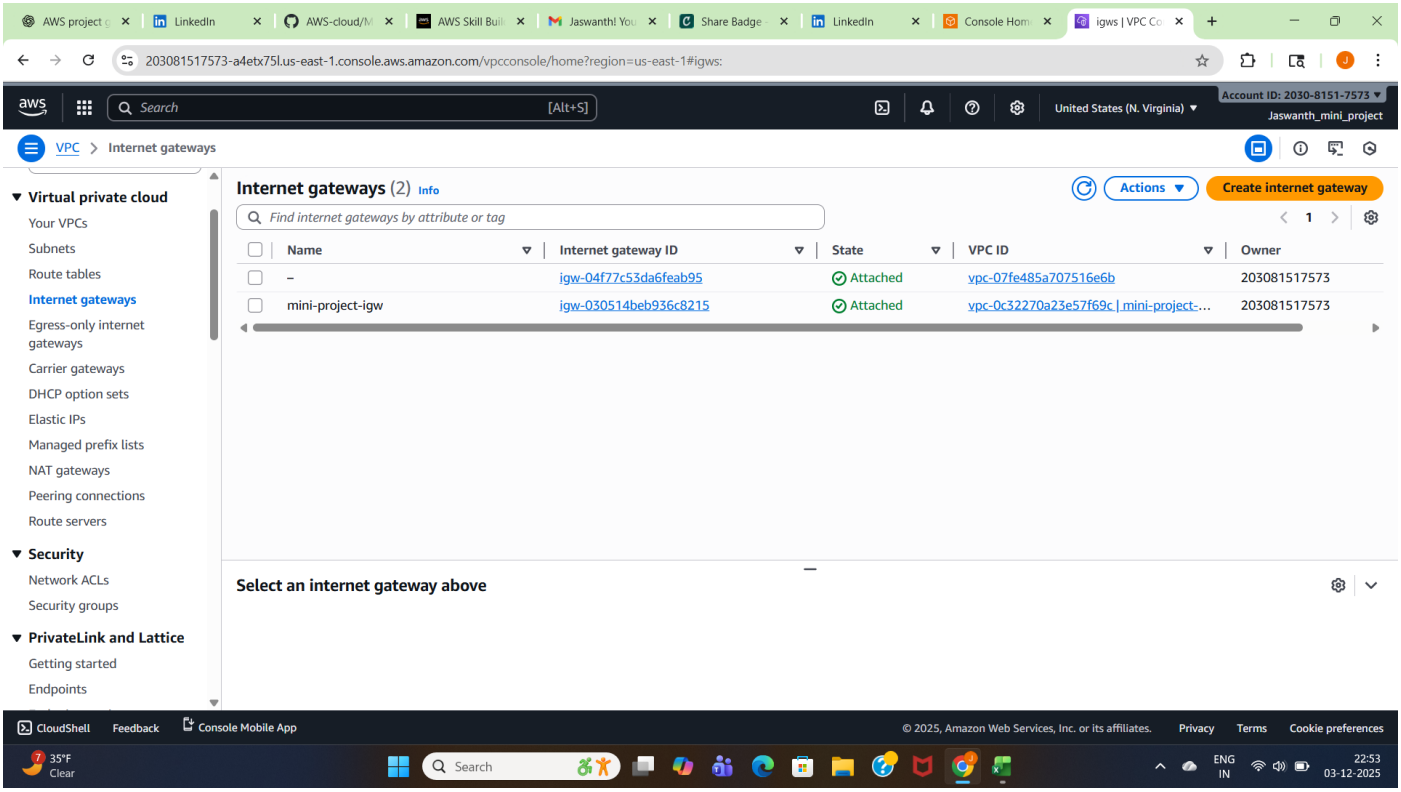
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#igws:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
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VPC > Internet gateways
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Internet gateways (2) Info
Actions
Create internet gateway
Find internet gateways by attribute or tag
Name
Internet gateway ID
State
VPC ID
Owner
–
igw-04f77c53da6feab95
Attached
vpc-07fe485a707516e6b
203081517573
mini-project-igw
igw-030514beb936c8215
Attached
vpc-0c32270a23e57f69c | mini-project-...
203081517573
Select an internet gateway above
CloudShell
Feedback
Console Mobile App
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Terms
Cookie preferences
35°F
Clear
Search
ENG
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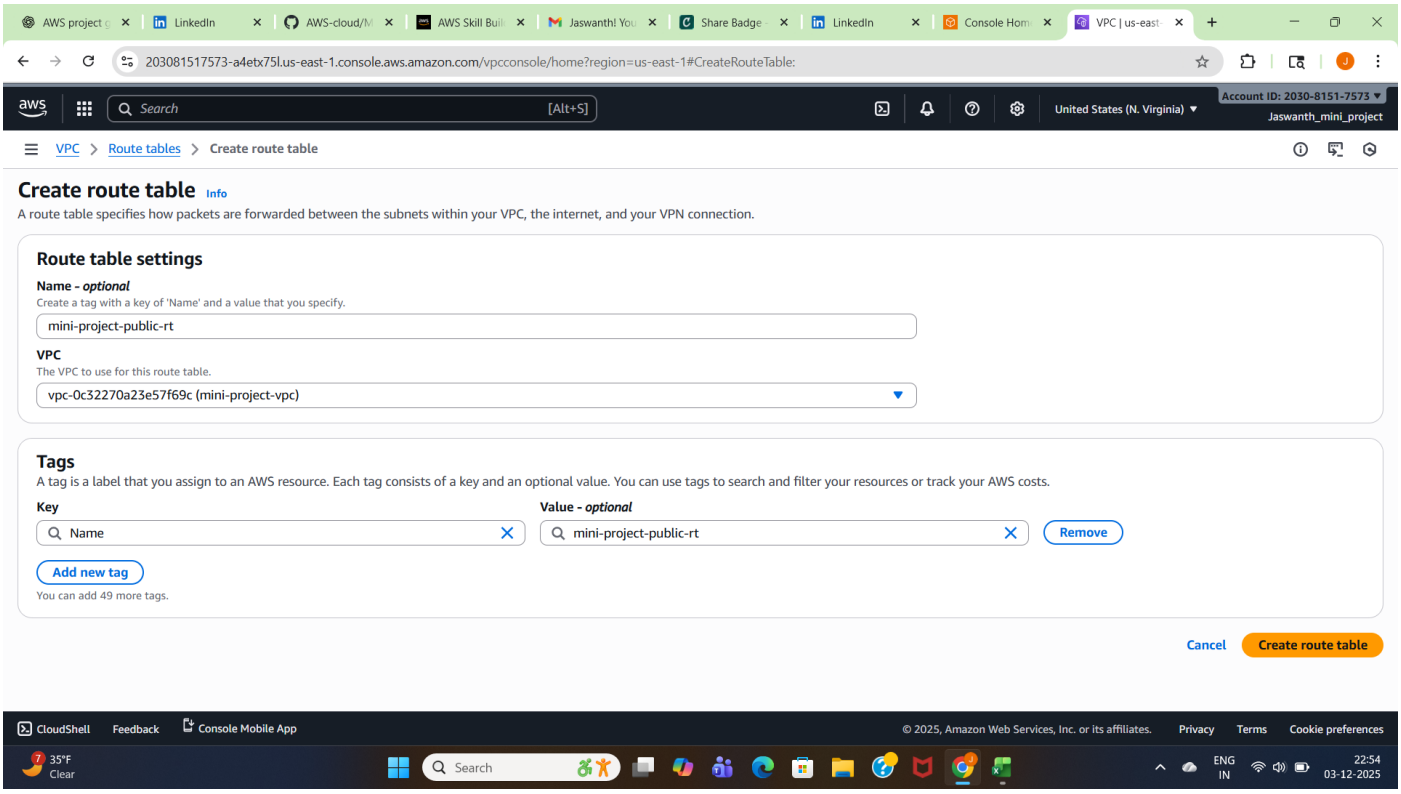
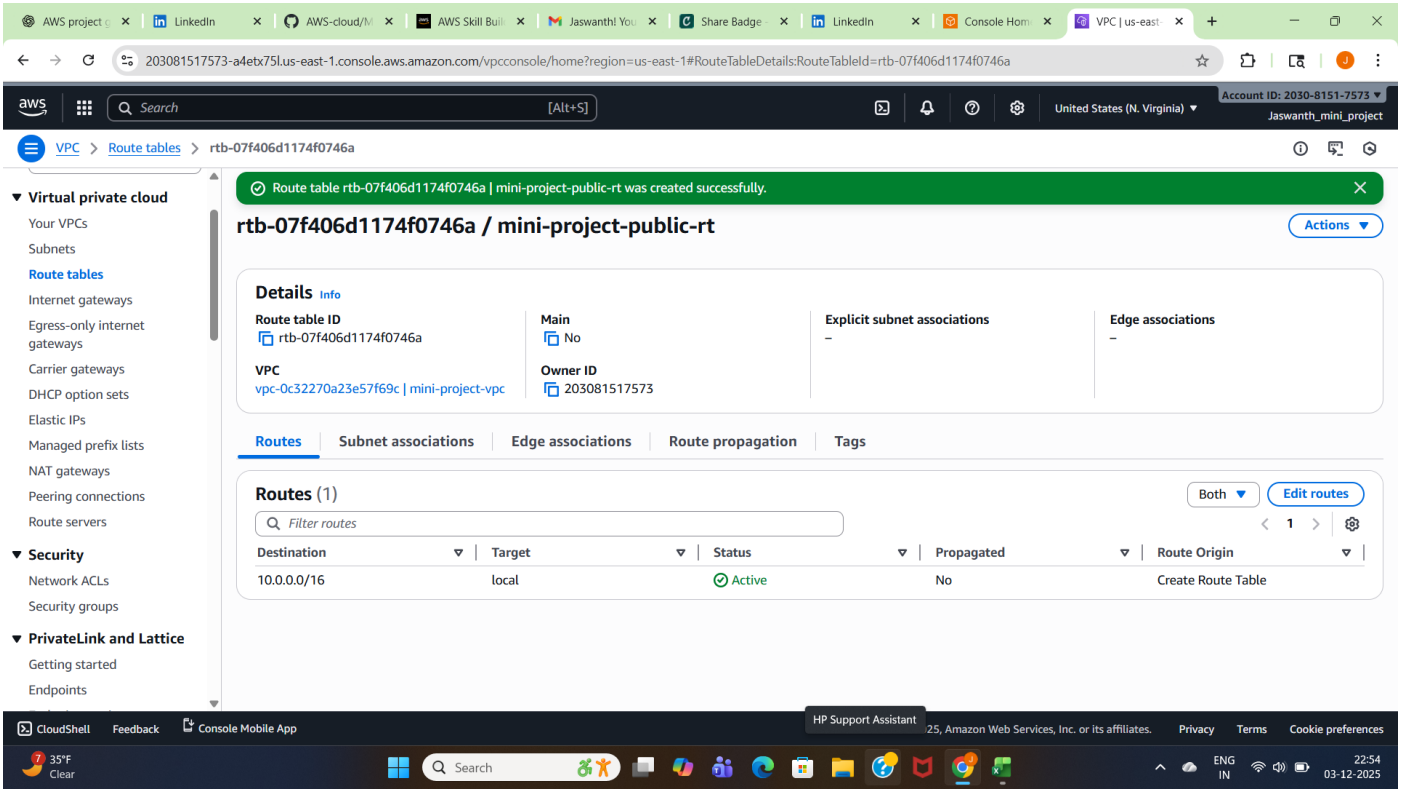
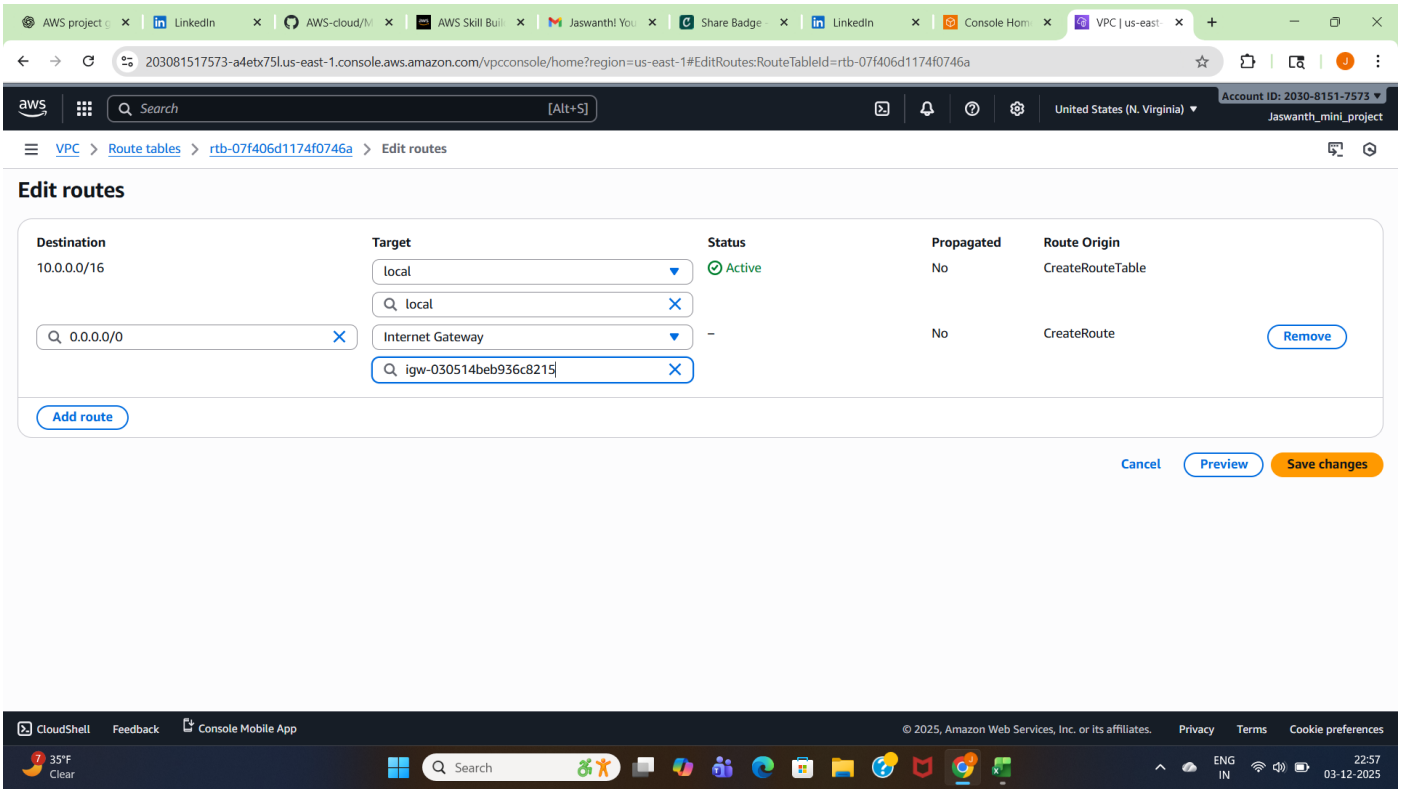
Route Table Creation

A public route table (mini-project-public-rt) was created to manage internet routing for the VPC's public subnets.



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VPC | us-east
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#EditRoutes:RouteTableId=rtb-07f406d1174f0746a
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Route tables > rtb-07f406d1174f0746a > Edit routes
Edit routes
Destination
Target
Status
Propagated
Route Origin
10.0.0.0/16
local
Active
No
CreateRouteTable
local
0.0.0.0/0
Internet Gateway
–
No
CreateRoute
Remove
igw-030514beb936c8215
Add route
Cancel
Preview
Save changes
CloudShell
Feedback
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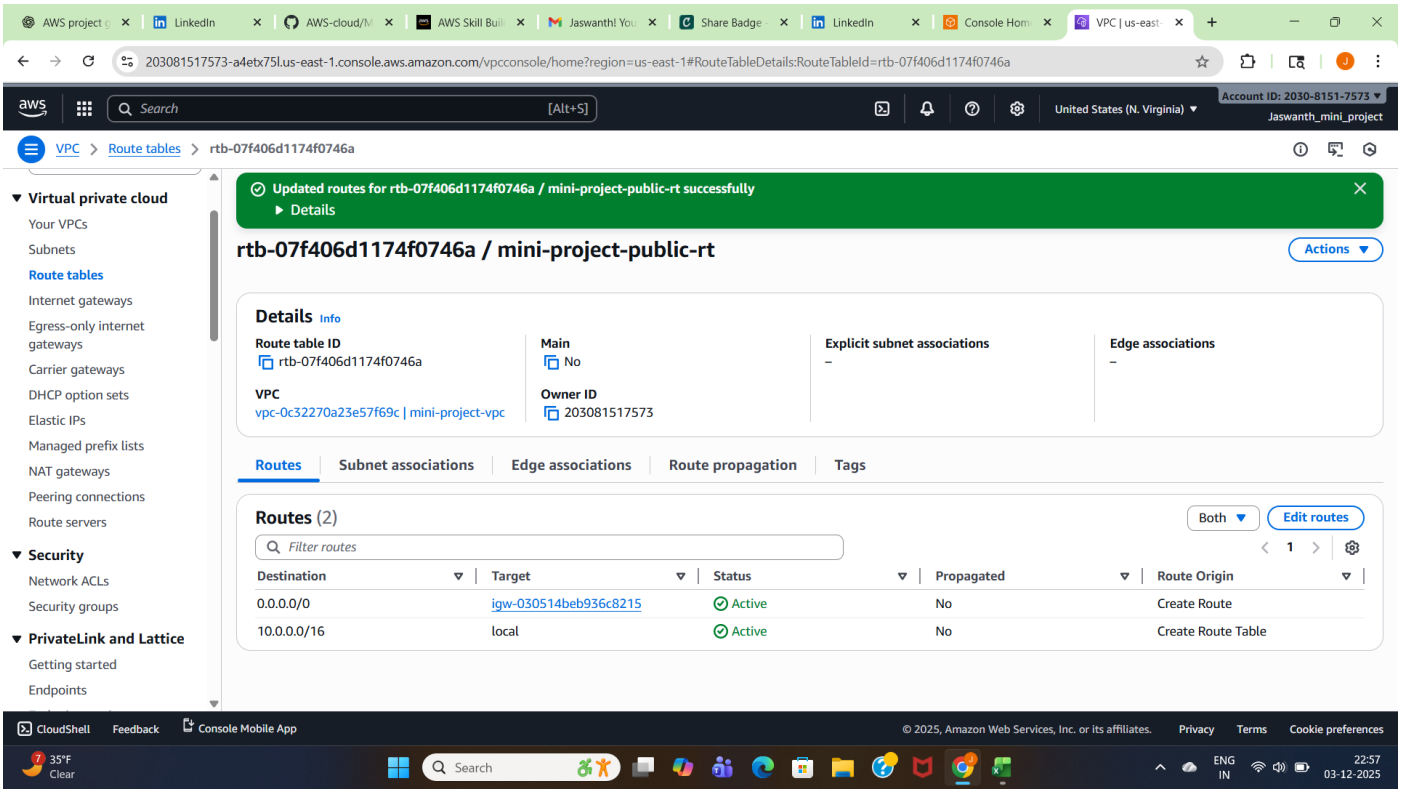
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Console Hom
VPC | us-east
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#RouteTableDetails:RouteTableId=rtb-07f406d1174f0746a
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Route tables > rtb-07f406d1174f0746a
Virtual private cloud
Your VPCs
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Carrier gateways
DHCP option sets
Elastic IPs
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Peering connections
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PrivateLink and Lattice
Getting started
Endpoints
Updated routes for rtb-07f406d1174f0746a / mini-project-public-rt successfully
Details
rtb-07f406d1174f0746a / mini-project-public-rt
Actions
Details Info
Route table ID
rtb-07f406d1174f0746a
Main
No
Explicit subnet associations
–
Edge associations
–
VPC
vpc-0c32270a23e57f69c | mini-project-vpc
Owner ID
203081517573
Routes
Subnet associations
Edge associations
Route propagation
Tags
Routes (2)
Both
Edit routes
Filter routes
1
Destination
Target
Status
Propagated
Route Origin
0.0.0.0/0
igw-030514beb936c8215
Active
No
Create Route
10.0.0.0/16
local
Active
No
Create Route Table
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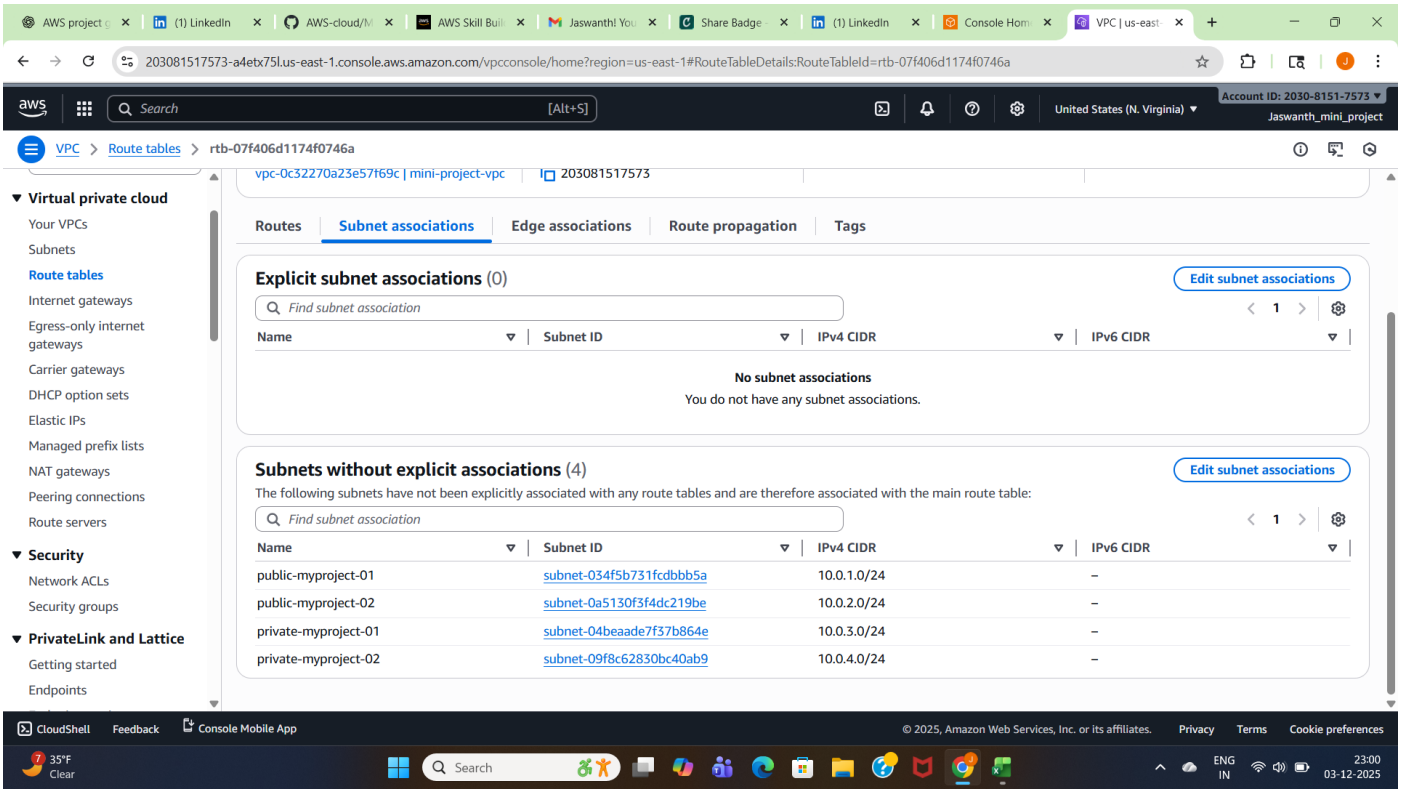
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#RouteTableDetails:RouteTableId=rtb-07f406d1174f0746a
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Route tables > rtb-07f406d1174f0746a
vpc-0c32270a23e57f69c | mini-project-vpc
203081517573
Virtual private cloud
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Endpoints
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Subnet associations
Edge associations
Route propagation
Tags
Explicit subnet associations (0)
Edit subnet associations
Find subnet association
Name
Subnet ID
IPv4 CIDR
IPv6 CIDR
No subnet associations
You do not have any subnet associations.
Subnets without explicit associations (4)
Edit subnet associations
The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:
Find subnet association
Name
Subnet ID
IPv4 CIDR
IPv6 CIDR
public-myproject-01
subnet-034f5b731fcdbbb5a
10.0.1.0/24
public-myproject-02
subnet-0a5130f3f4dc219be
10.0.2.0/24
private-myproject-01
subnet-04beaade7f37b864e
10.0.3.0/24
private-myproject-02
subnet-09f8c62830bc40ab9
10.0.4.0/24
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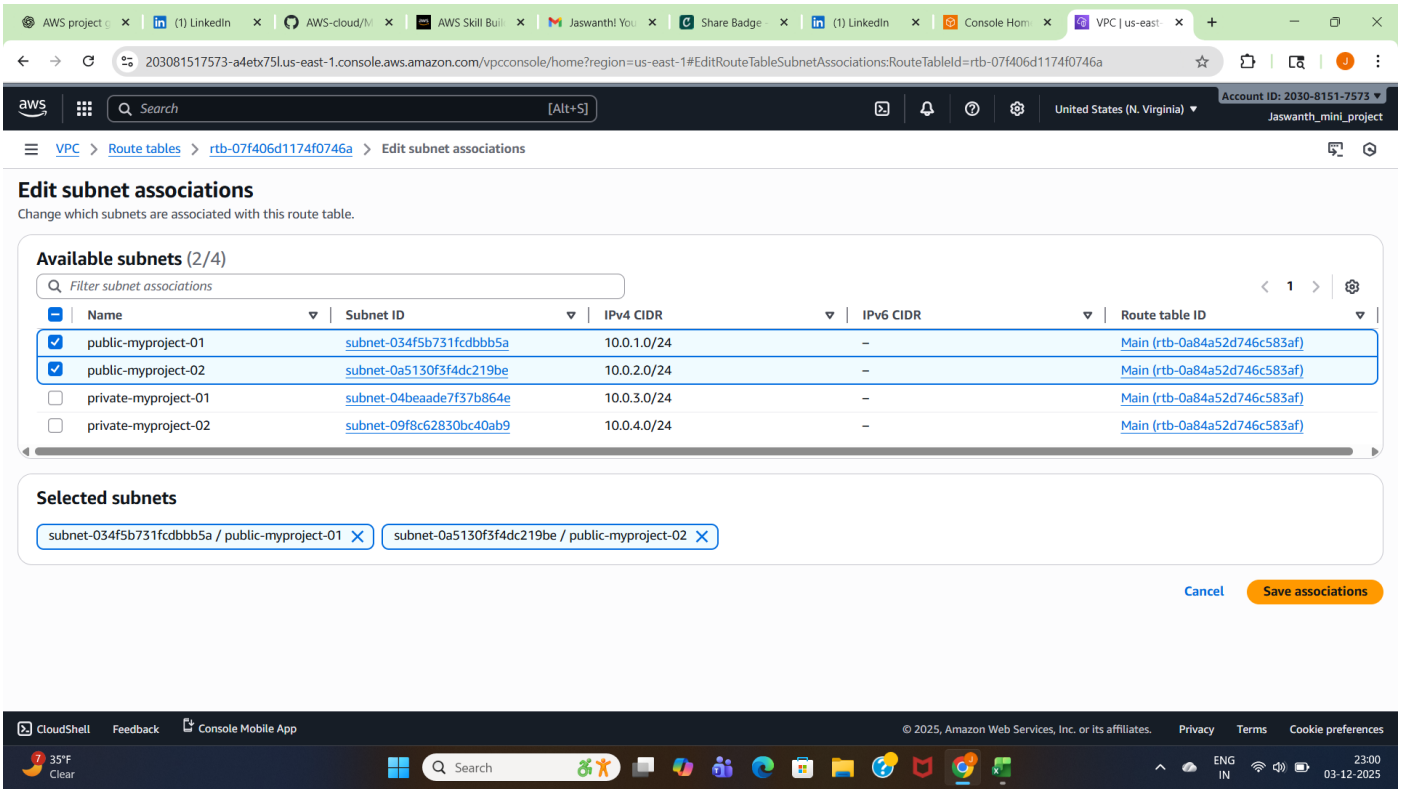
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#EditRouteTableSubnetAssociations:RouteTableId=rtb-07f406d1174f0746a
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Route tables > rtb-07f406d1174f0746a > Edit subnet associations
Edit subnet associations
Change which subnets are associated with this route table.
Available subnets (2/4)
Filter subnet associations
Name
Subnet ID
IPv4 CIDR
IPv6 CIDR
Route table ID
public-myproject-01
subnet-034f5b731fcdbbb5a
10.0.1.0/24
Main (rtb-0a84a52d746c583af)
public-myproject-02
subnet-0a5130f3f4dc219be
10.0.2.0/24
Main (rtb-0a84a52d746c583af)
private-myproject-01
subnet-04beaade7f37b864e
10.0.3.0/24
Main (rtb-0a84a52d746c583af)
private-myproject-02
subnet-09f8c62830bc40ab9
10.0.4.0/24
Main (rtb-0a84a52d746c583af)
Selected subnets
subnet-034f5b731fcdbbb5a / public-myproject-01
subnet-0a5130f3f4dc219be / public-myproject-02
Cancel
Save associations
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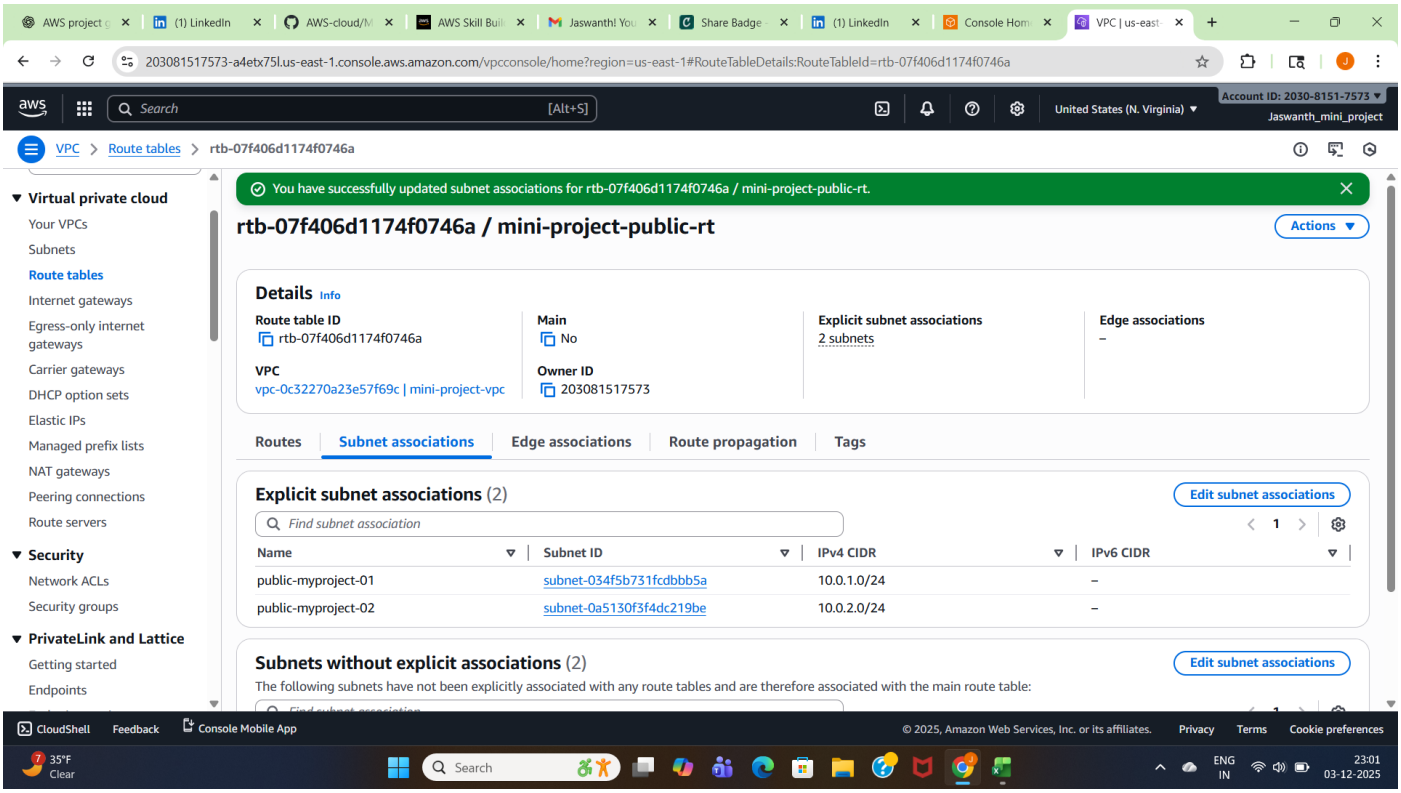
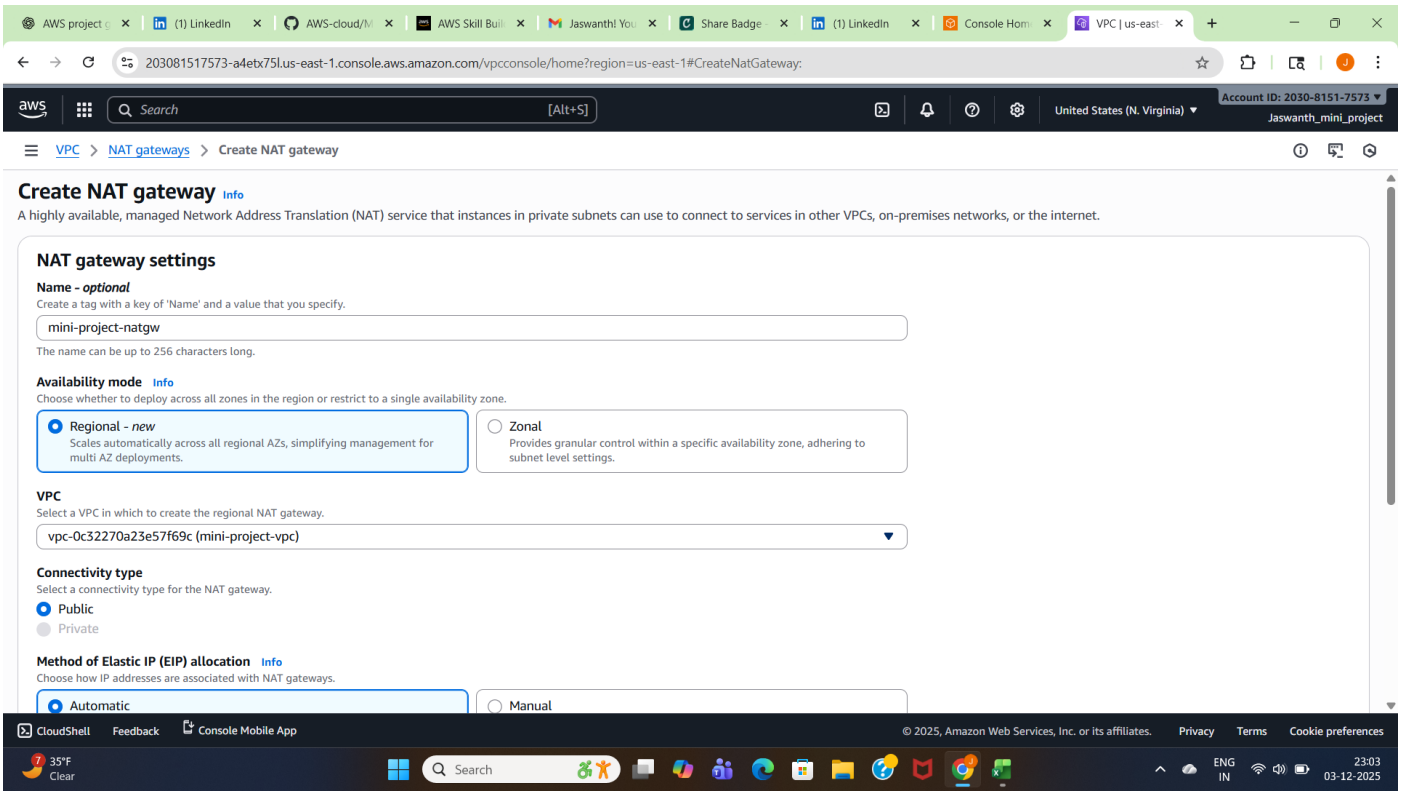
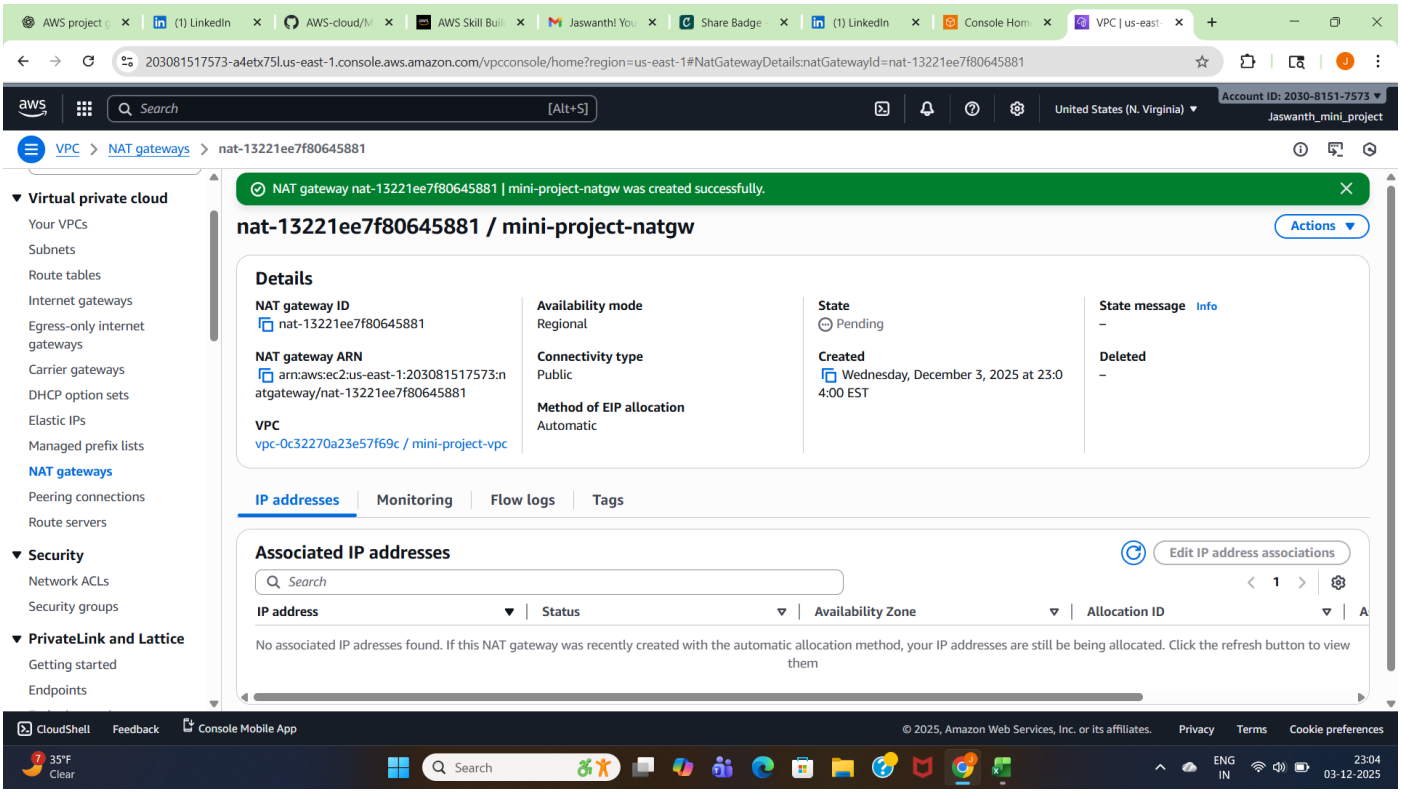


NAT Gateway Creation

A NAT Gateway (mini-project-natgw) was created to provide secure outbound internet access for private subnets, allowing EC2 instances to download updates and communicate externally without being exposed to the public internet.

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Console Hom
VPC | us-east
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#NatGatewayDetails:natGatewayId=nat-13221ee7f80645881
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > NAT gateways > nat-13221ee7f80645881
Virtual private cloud
Your VPCs
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Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
NAT gateway nat-13221ee7f80645881 | mini-project-natgw was created successfully.
nat-13221ee7f80645881 / mini-project-natgw
Actions
Details
NAT gateway ID
nat-13221ee7f80645881
NAT gateway ARN
arn:aws:ec2:us-east-1:203081517573:natgateway/nat-13221ee7f80645881
VPC
vpc-0c32270a23e57f69c / mini-project-vpc
Availability mode
Regional
Connectivity type
Public
Method of EIP allocation
Automatic
State
Pending
Created
Wednesday, December 3, 2025 at 23:04:00 EST
State message Info
-
Deleted
-
IP addresses
Monitoring
Flow logs
Tags
Associated IP addresses
Edit IP address associations
Search
IP address
Status
Availability Zone
Allocation ID
No associated IP adresses found. If this NAT gateway was recently created with the automatic allocation method, your IP addresses are still be being allocated. Click the refresh button to view them
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Search
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23:04
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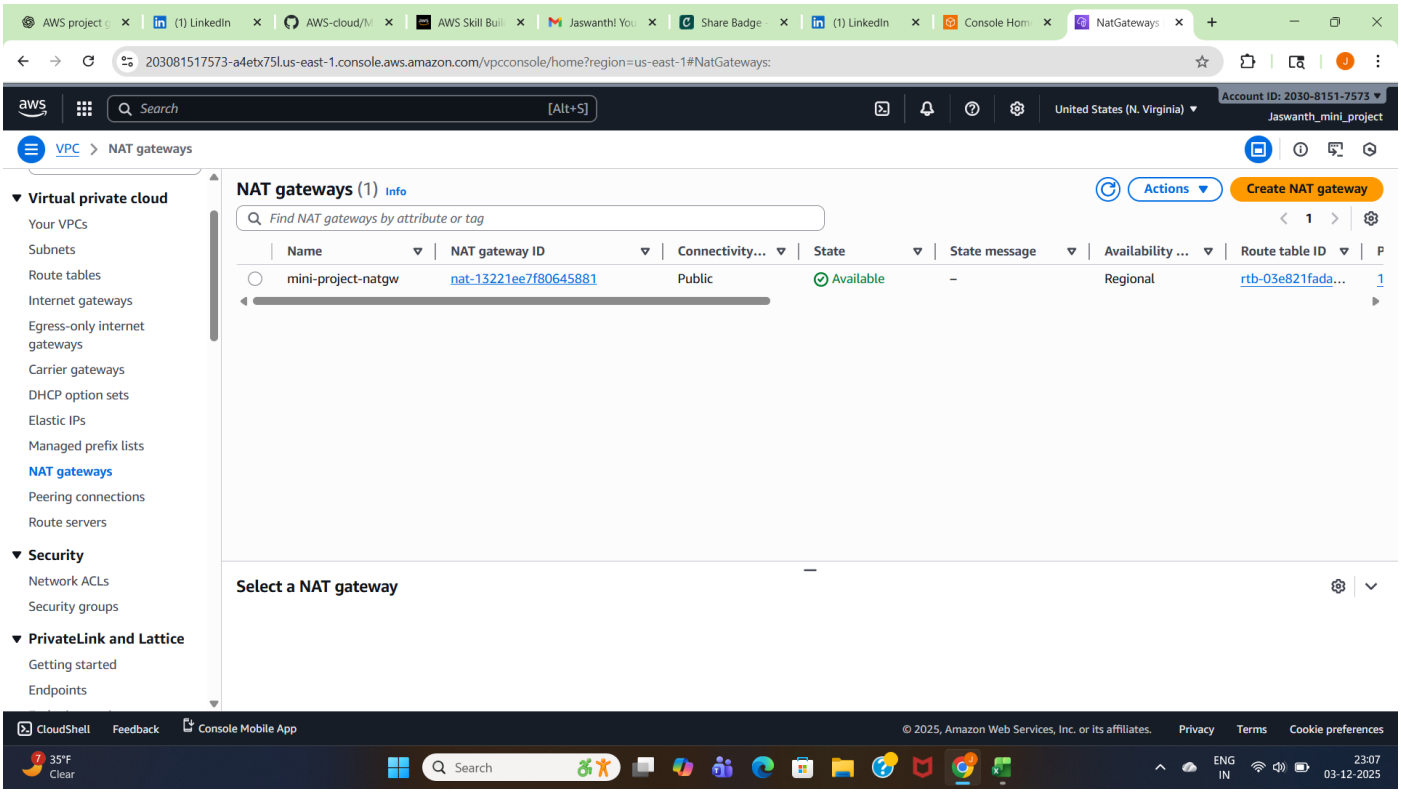
AWS project
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Console Hom
NatGateways
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#NatGateways:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > NAT gateways
Virtual private cloud
Your VPCs
Subnets
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Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
NAT gateways (1) Info
Find NAT gateways by attribute or tag
Actions
Create NAT gateway
Name
NAT gateway ID
Connectivity...
State
State message
Availability ...
Route table ID
mini-project-natgw
nat-13221ee7f80645881
Public
Available
-
Regional
rtb-03e821fada...
Select a NAT gateway
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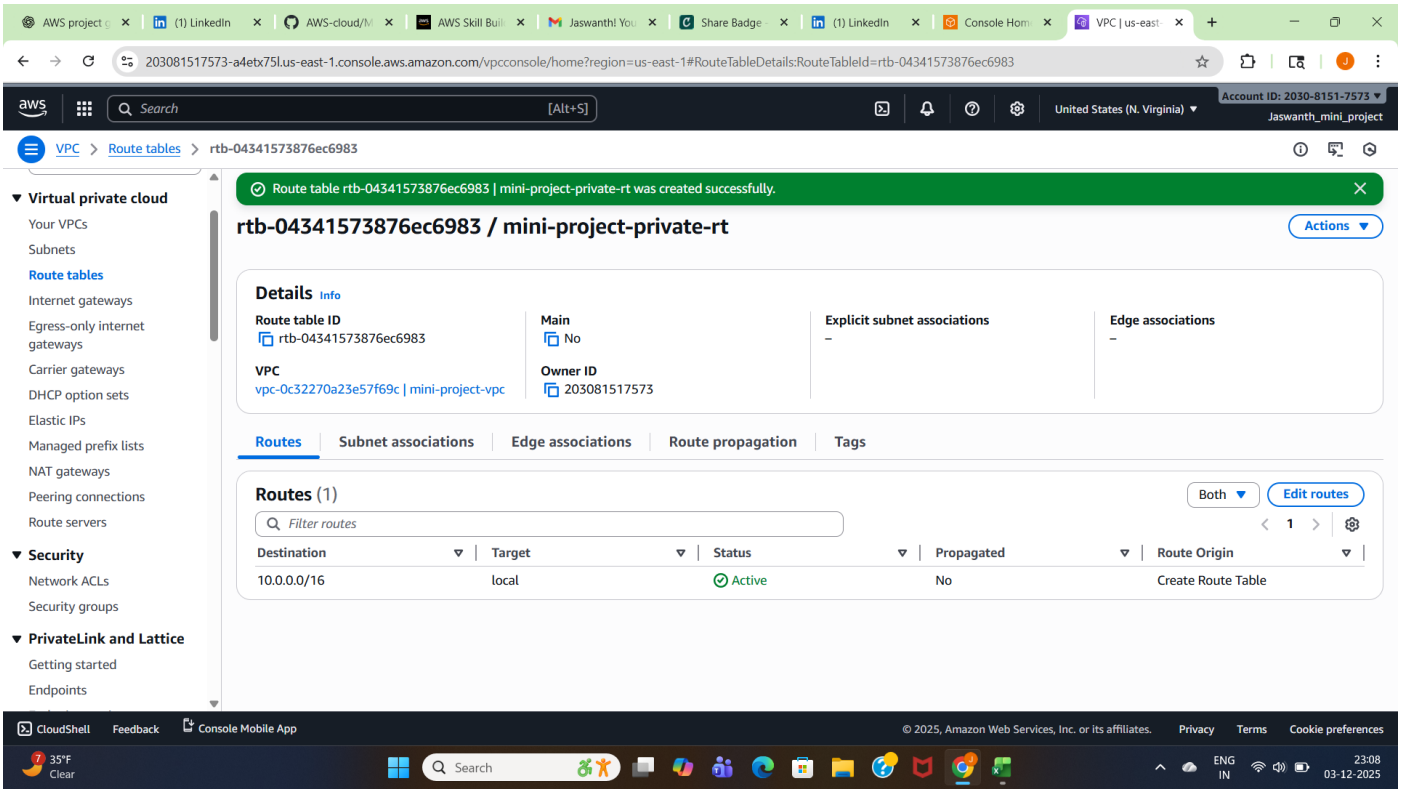
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#RouteTableDetails:RouteTableId=rtb-04341573876ec6983
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Route tables > rtb-04341573876ec6983
Virtual private cloud
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DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Route table rtb-04341573876ec6983 | mini-project-private-rt was created successfully.
rtb-04341573876ec6983 / mini-project-private-rt
Actions
Details Info
Route table ID
rtb-04341573876ec6983
Main
No
Explicit subnet associations
–
Edge associations
–
VPC
vpc-0c32270a23e57f69c | mini-project-vpc
Owner ID
203081517573
Routes
Subnet associations
Edge associations
Route propagation
Tags
Routes (1)
Both
Edit routes
Filter routes
Destination
Target
Status
Propagated
Route Origin
10.0.0.0/16
local
Active
No
Create Route Table
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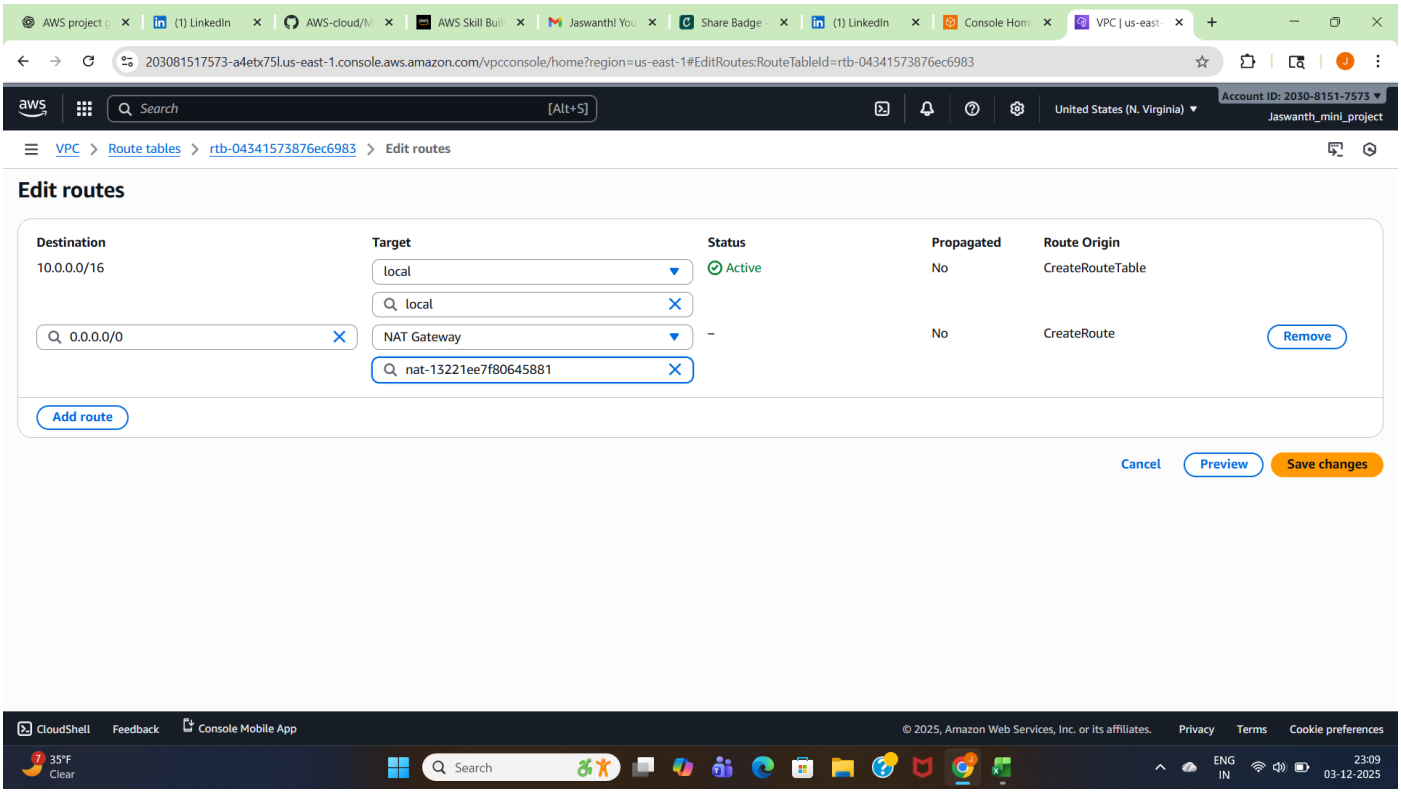
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#EditRoutes:RouteTableId=rtb-04341573876ec6983
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Route tables > rtb-04341573876ec6983 > Edit routes
Edit routes
Destination
Target
Status
Propagated
Route Origin
10.0.0.0/16
local
Active
No
CreateRouteTable
local
0.0.0.0/0
NAT Gateway
–
No
CreateRoute
Remove
nat-13221ee7f80645881
Add route
Cancel
Preview
Save changes
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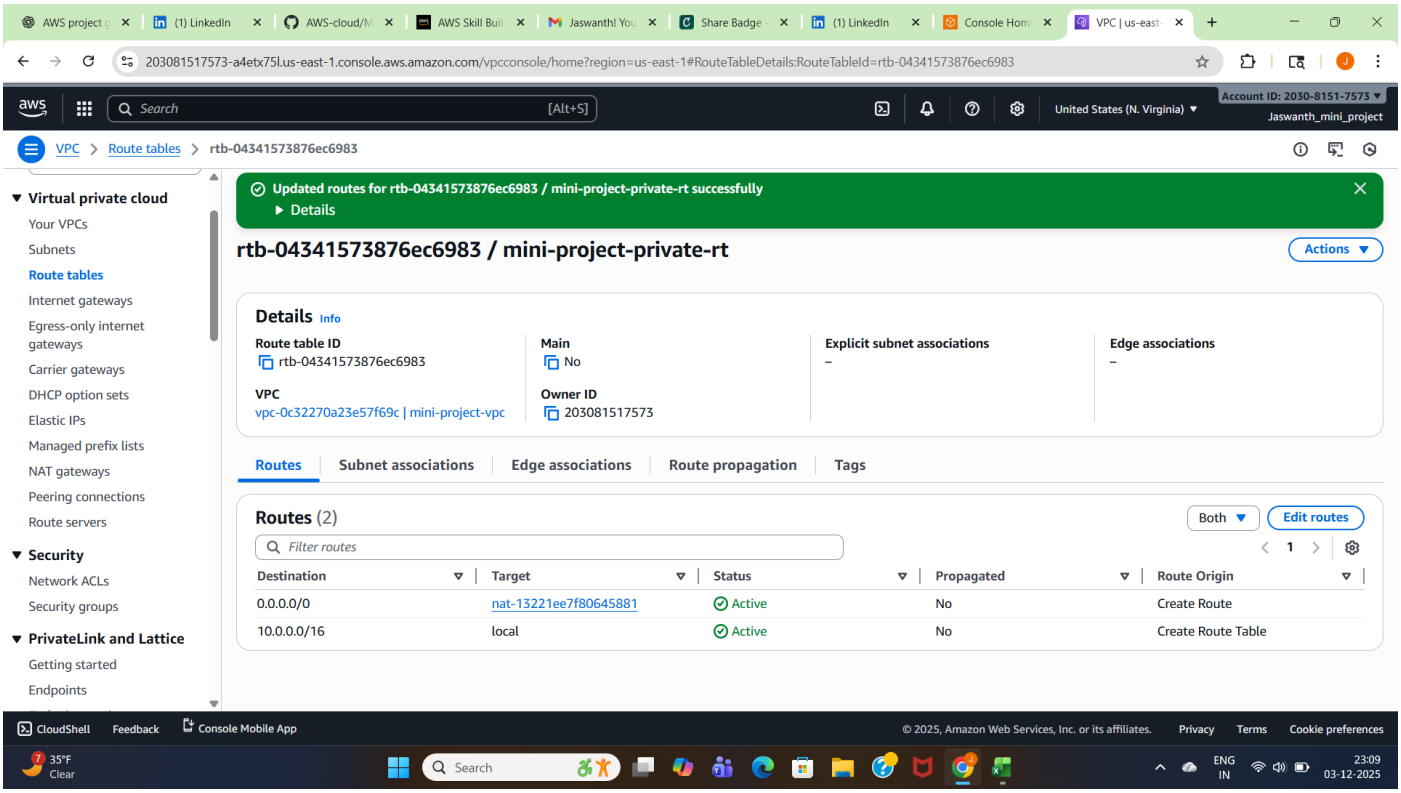
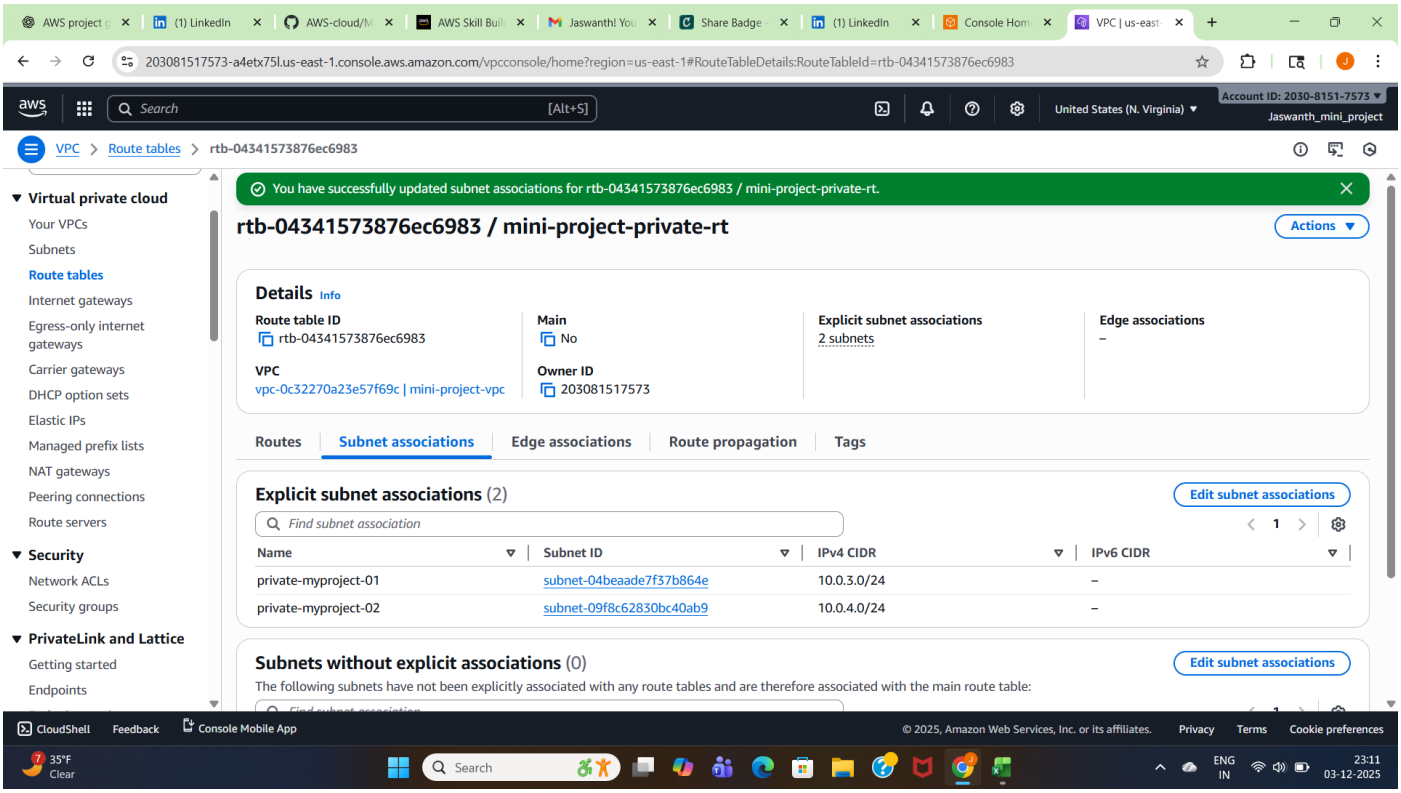
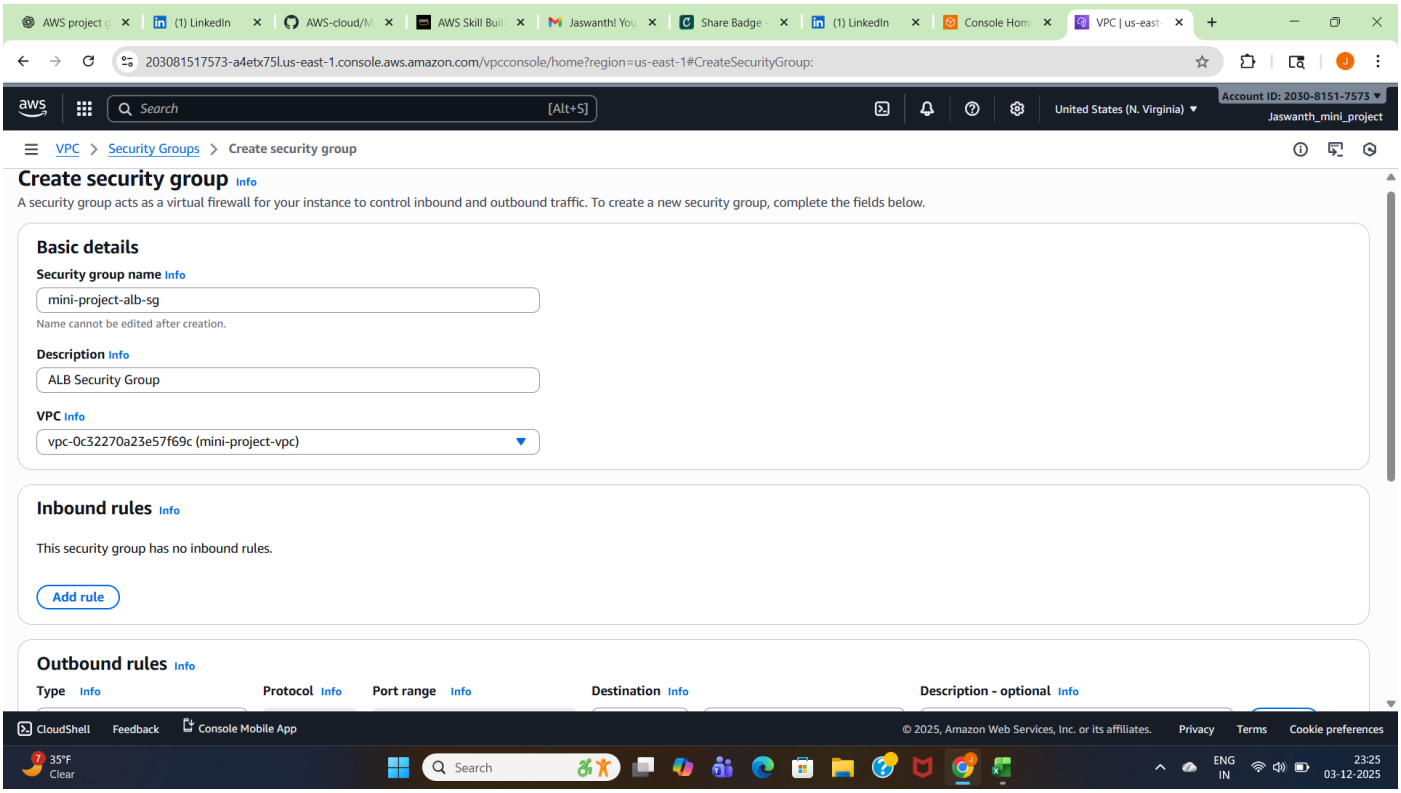




ALB Security Group

Created a security group (mini-project-alb-sg) to allow HTTP traffic to the Application Load Balancer from the internet.


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateSecurityGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Security Groups > Create security group
Create security group Info
A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.
Basic details
Security group name Info
mini-project-alb-sg
Name cannot be edited after creation.
Description Info
ALB Security Group
VPC Info
vpc-0c32270a23e57f69c (mini-project-vpc)
Inbound rules Info
This security group has no inbound rules.
Add rule
Outbound rules Info
Type Info
Protocol Info
Port range Info
Destination Info
Description - optional Info
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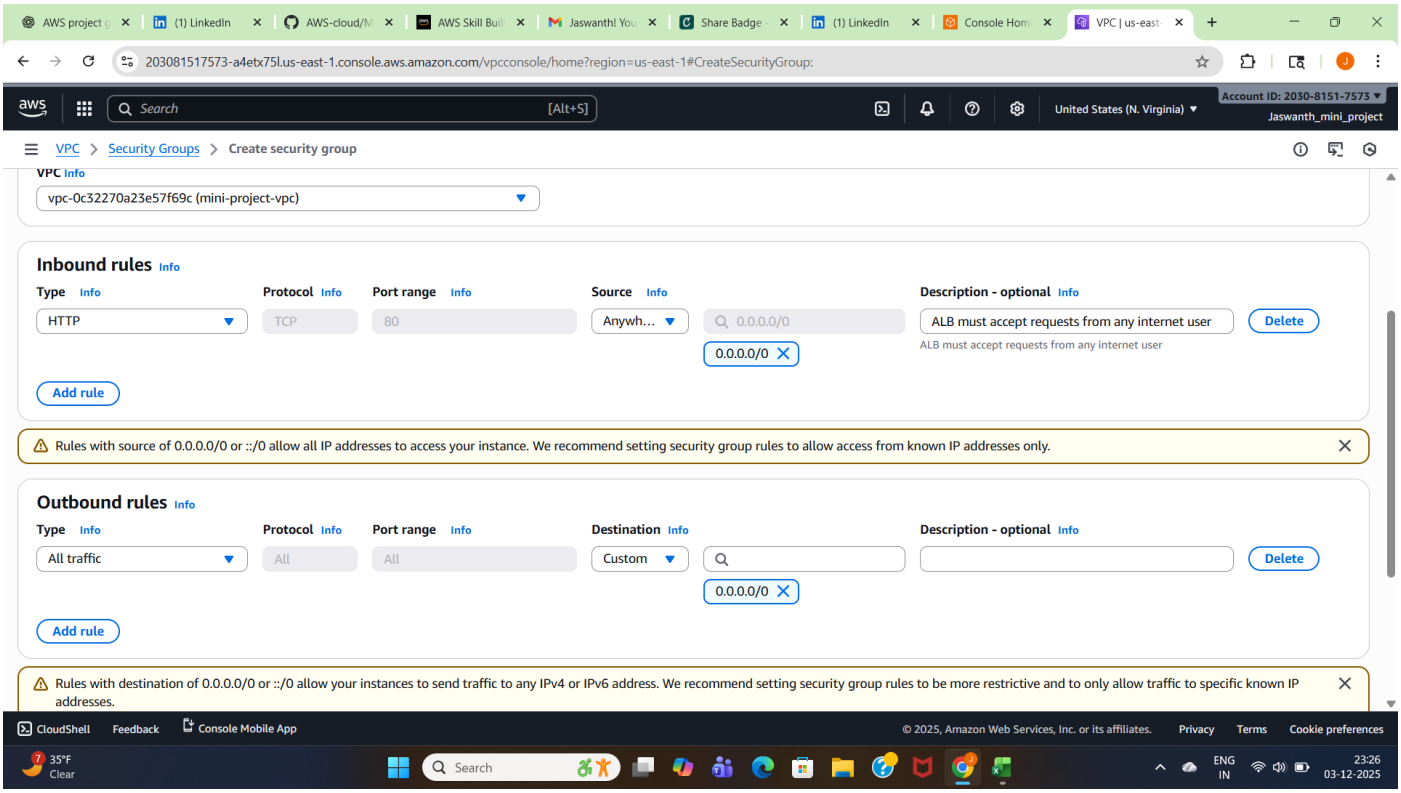
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateSecurityGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Security Groups > Create security group
VPC Info
vpc-0c32270a23e57f69c (mini-project-vpc)
Inbound rules Info
Type Info
Protocol Info
Port range Info
Source Info
Description - optional Info
HTTP
TCP
80
Anywh...
0.0.0.0/0
0.0.0.0/0
ALB must accept requests from any internet user
ALB must accept requests from any internet user
Delete
Add rule
Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.
Outbound rules Info
Type Info
Protocol Info
Port range Info
Destination Info
Description - optional Info
All traffic
All
All
Custom
0.0.0.0/0
Delete
Add rule
Rules with destination of 0.0.0.0/0 or ::/0 allow your instances to send traffic to any IPv4 or IPv6 address. We recommend setting security group rules to be more restrictive and to only allow traffic to specific known IP addresses.
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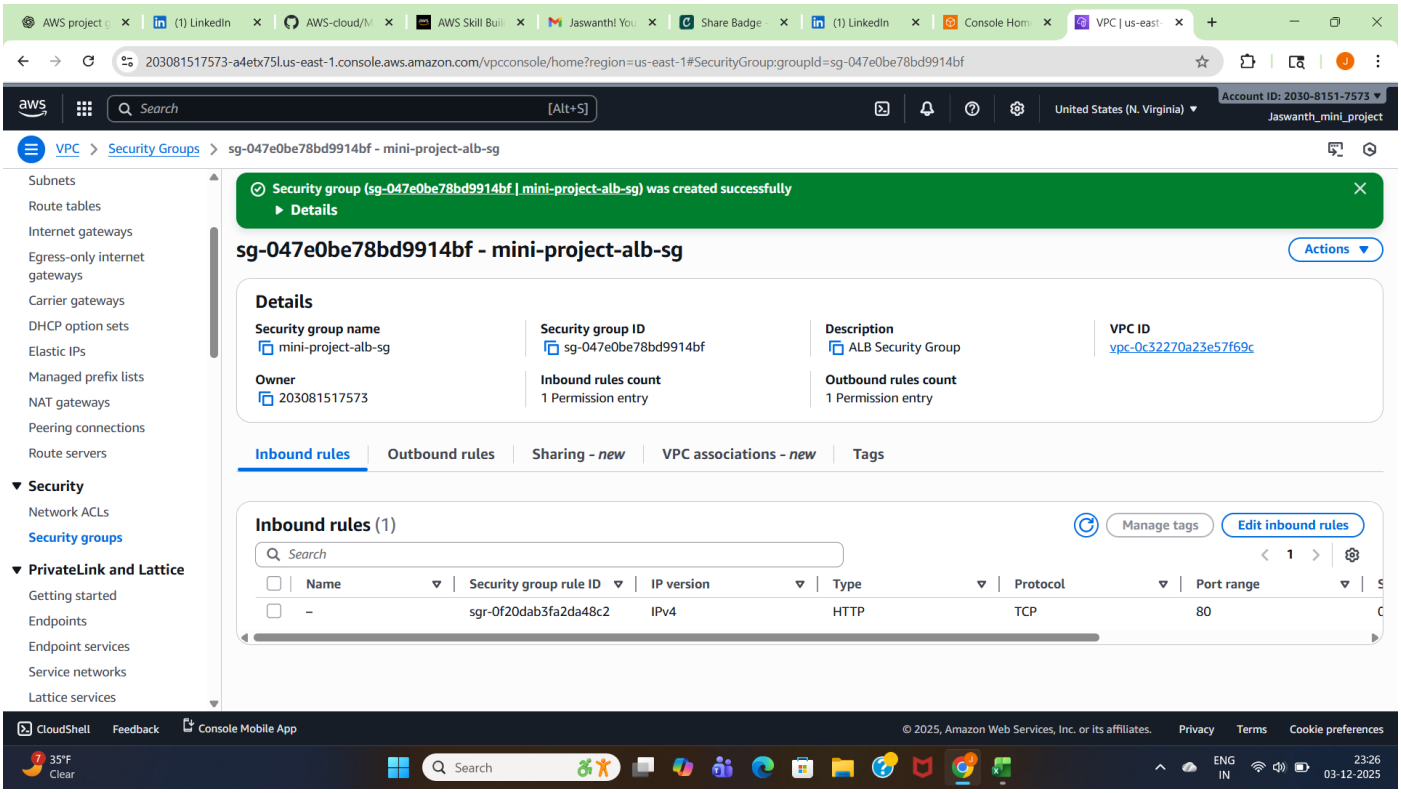
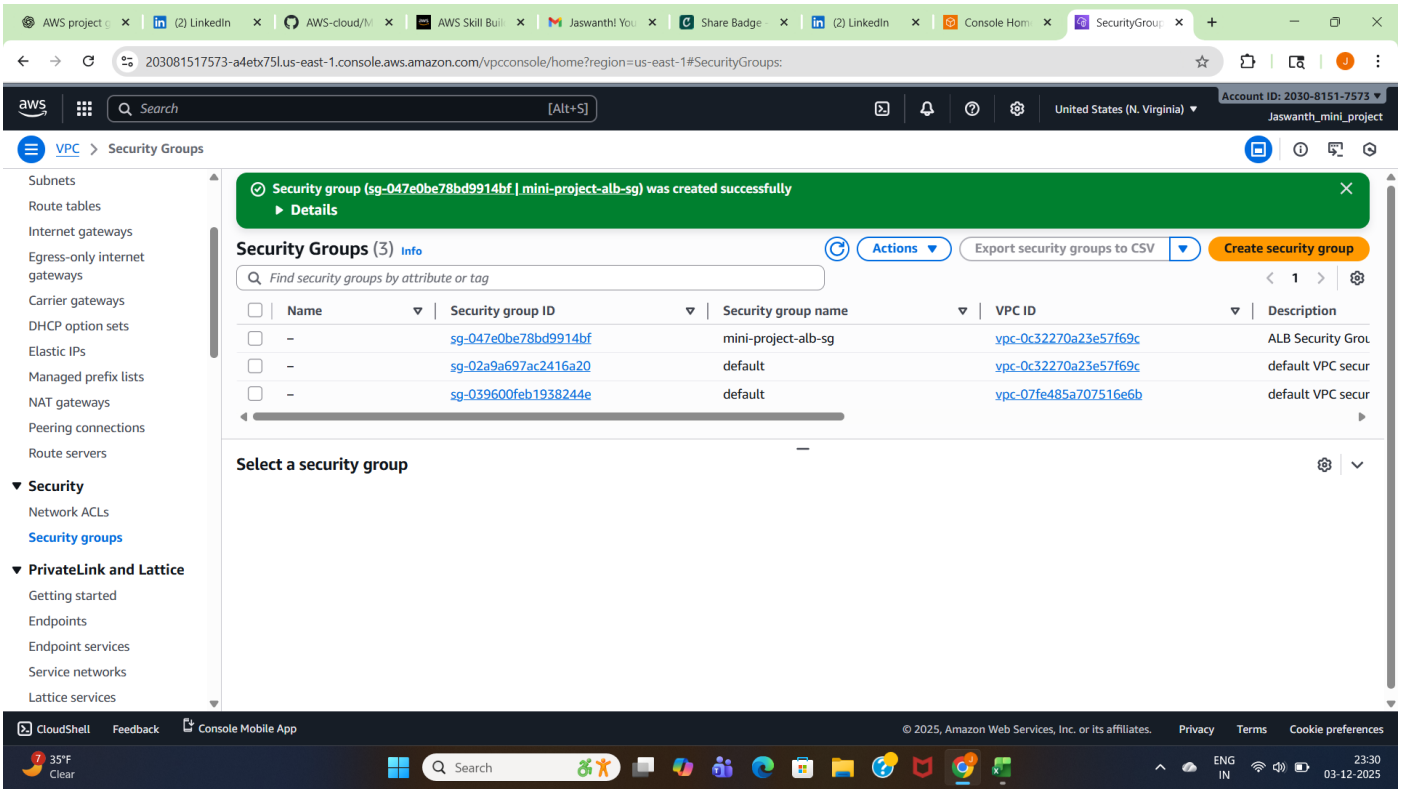
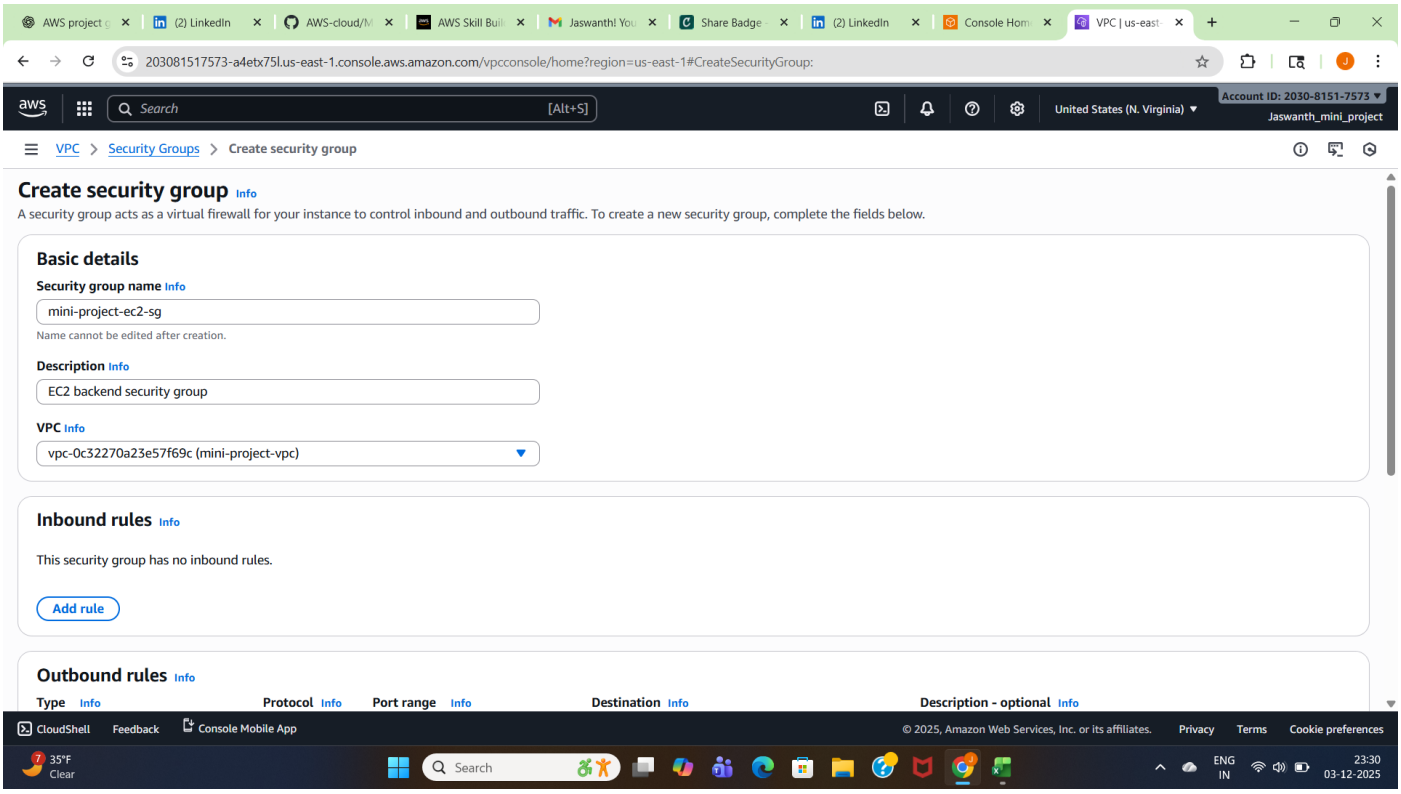




EC2 Security Group

Created mini-project-ec2-sg to allow HTTP traffic only from the ALB security group, securing backend EC2 instances.


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateSecurityGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Security Groups > Create security group
Create security group Info
A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.
Basic details
Security group name Info
mini-project-ec2-sg
Name cannot be edited after creation.
Description Info
EC2 backend security group
VPC Info
vpc-0c32270a23e57f69c (mini-project-vpc)
Inbound rules Info
This security group has no inbound rules.
Add rule
Outbound rules Info
Type Info
Protocol Info
Port range Info
Destination Info
Description - optional Info
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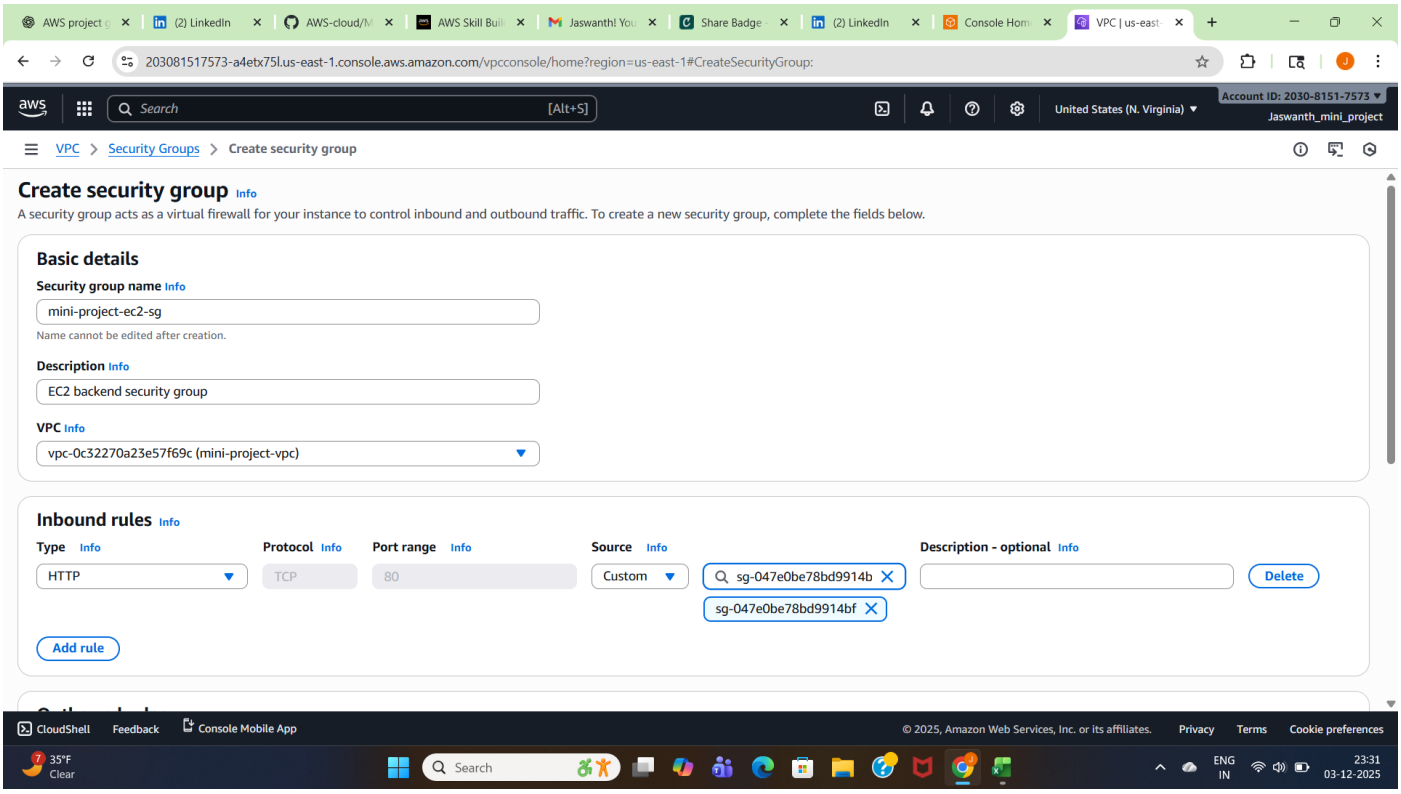
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateSecurityGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Security Groups > Create security group
Create security group Info
A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.
Basic details
Security group name Info
mini-project-ec2-sg
Name cannot be edited after creation.
Description Info
EC2 backend security group
VPC Info
vpc-0c32270a23e57f69c (mini-project-vpc)
Inbound rules Info
Type Info
Protocol Info
Port range Info
Source Info
Description - optional Info
HTTP
TCP
80
Custom
sg-047e0be78bd9914b
sg-047e0be78bd9914bf
Delete
Add rule
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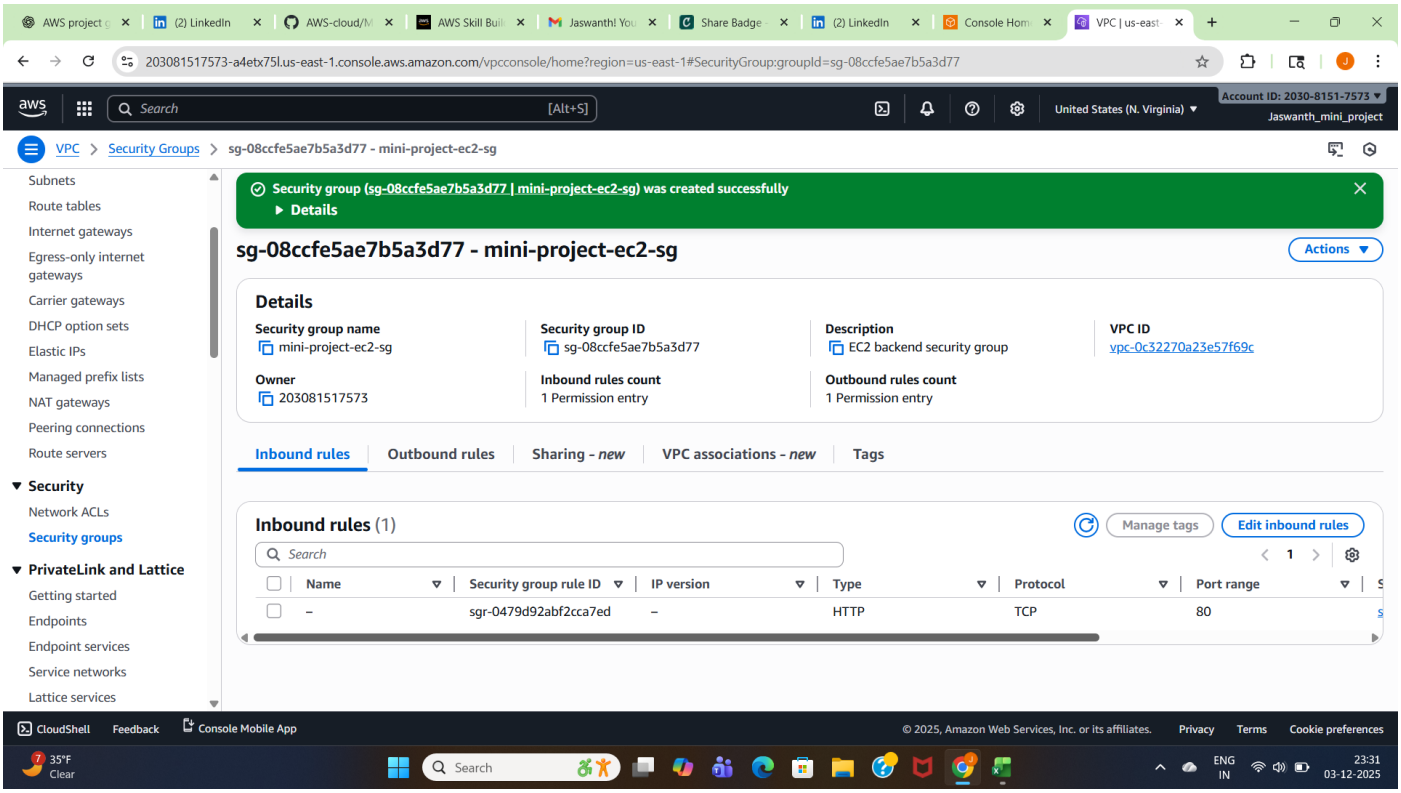
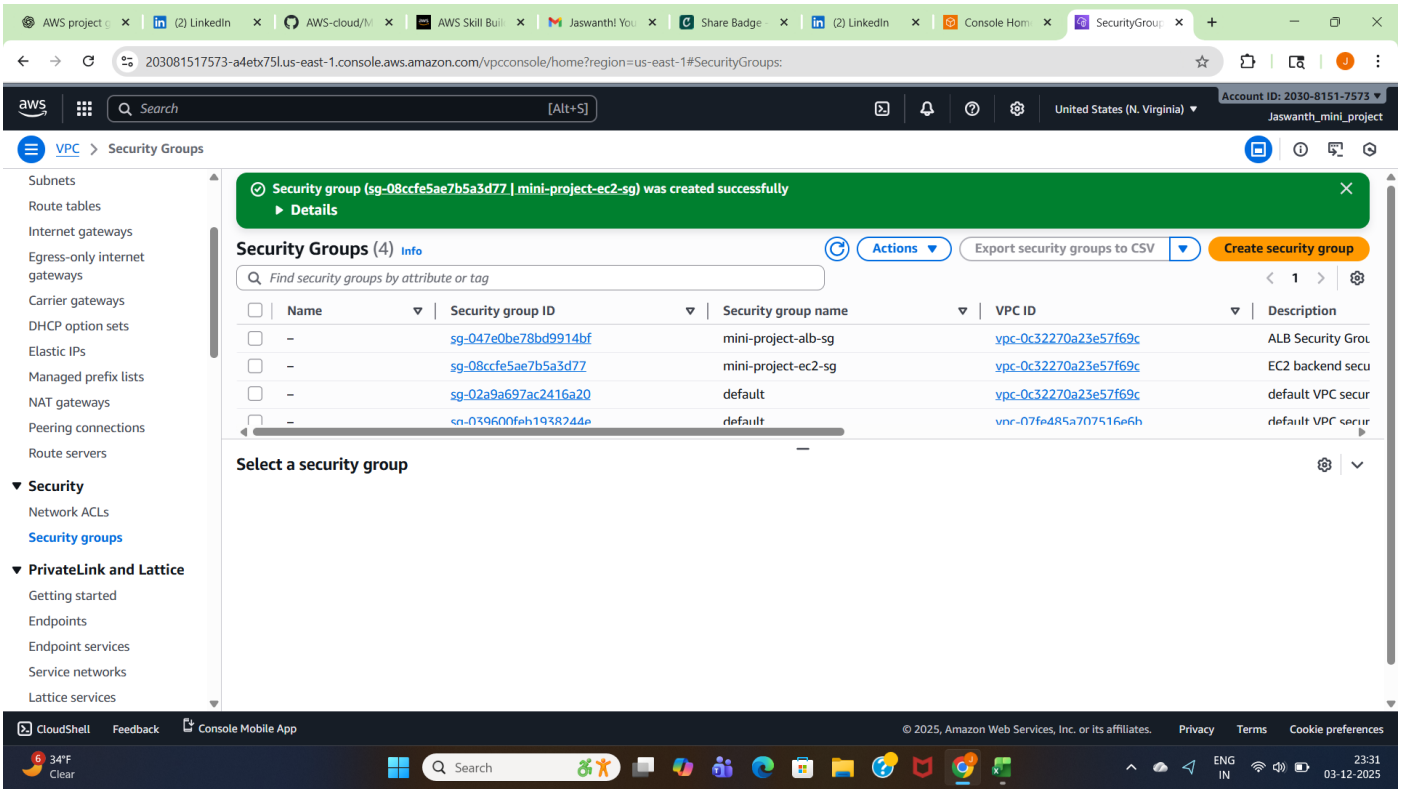
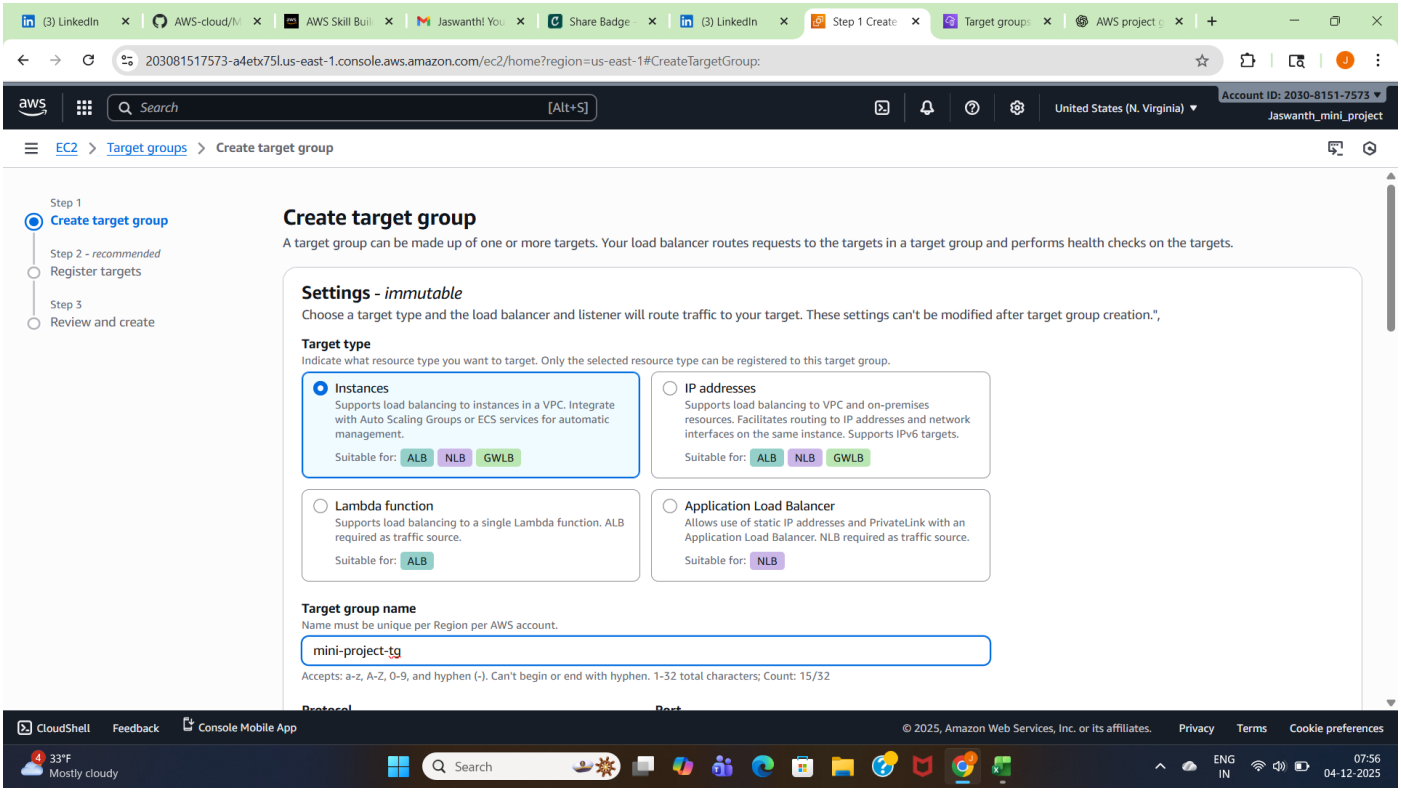
23:31
03-12-2025

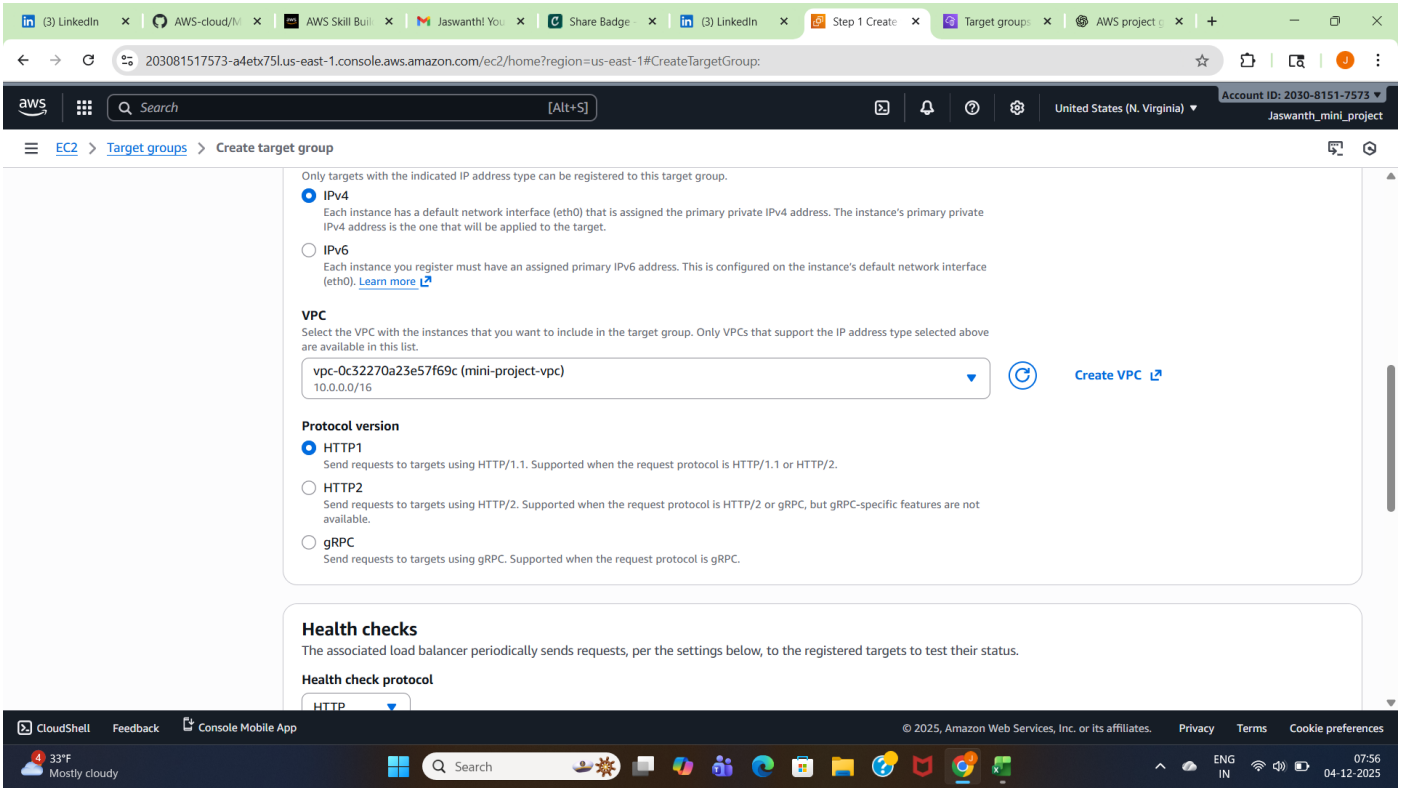




Target Group Creation

A target group (mini-project-tg) was created using HTTP on port 80 to route traffic from the Application Load Balancer to backend EC2 instances within the VPC.


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Target groups > Create target group
Step 1
Create target group
Step 2 - recommended
Register targets
Step 3
Review and create
Create target group
A target group can be made up of one or more targets. Your load balancer routes requests to the targets in a target group and performs health checks on the targets.
Settings - immutable
Choose a target type and the load balancer and listener will route traffic to your target. These settings can't be modified after target group creation.",
Target type
Indicate what resource type you want to target. Only the selected resource type can be registered to this target group.
Instances
Supports load balancing to instances in a VPC. Integrate with Auto Scaling Groups or ECS services for automatic management.
Suitable for: ALB NLB GWLB
IP addresses
Supports load balancing to VPC and on-premises resources. Facilitates routing to IP addresses and network interfaces on the same instance. Supports IPv6 targets.
Suitable for: ALB NLB GWLB
Lambda function
Supports load balancing to a single Lambda function. ALB required as traffic source.
Suitable for: ALB
Application Load Balancer
Allows use of static IP addresses and PrivateLink with an Application Load Balancer. NLB required as traffic source.
Suitable for: NLB
Target group name
Name must be unique per Region per AWS account.
mini-project-tg
Accepts: a-z, A-Z, 0-9, and hyphen (-). Can't begin or end with hyphen. 1-32 total characters; Count: 15/32
CloudShell
Feedback
Console Mobile App
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
33°F
Mostly cloudy
Search
ENG
IN
07:56
04-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Target groups > Create target group
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-0c32270a23e57f69c (mini-project-vpc)
10.0.0.0/16
Create VPC
Protocol version
HTTP1
Send requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.
HTTP2
Send requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC, but gRPC-specific features are not available.
gRPC
Send requests to targets using gRPC. Supported when the request protocol is gRPC.
Health checks
The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.
Health check protocol
HTTP
CloudShell
Feedback
Console Mobile App
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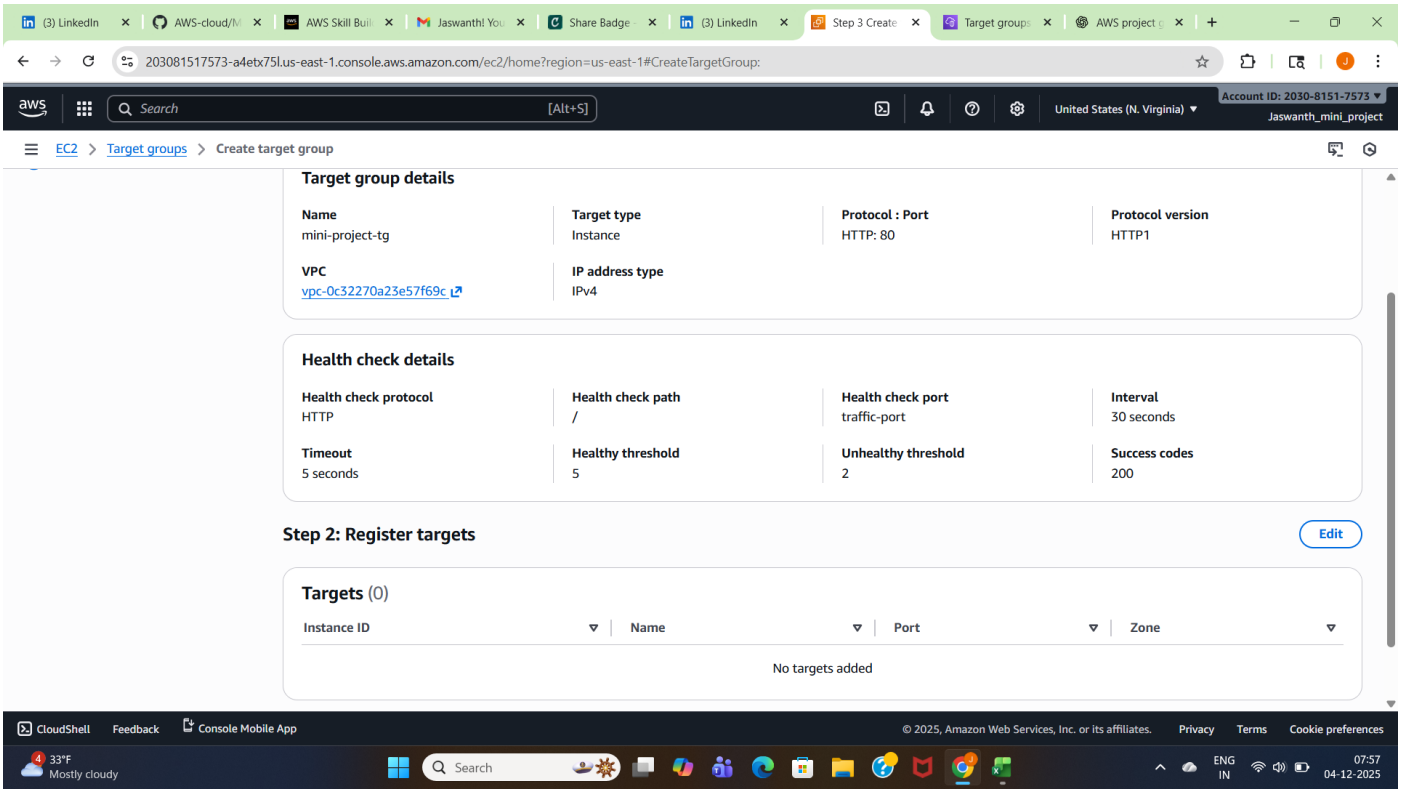
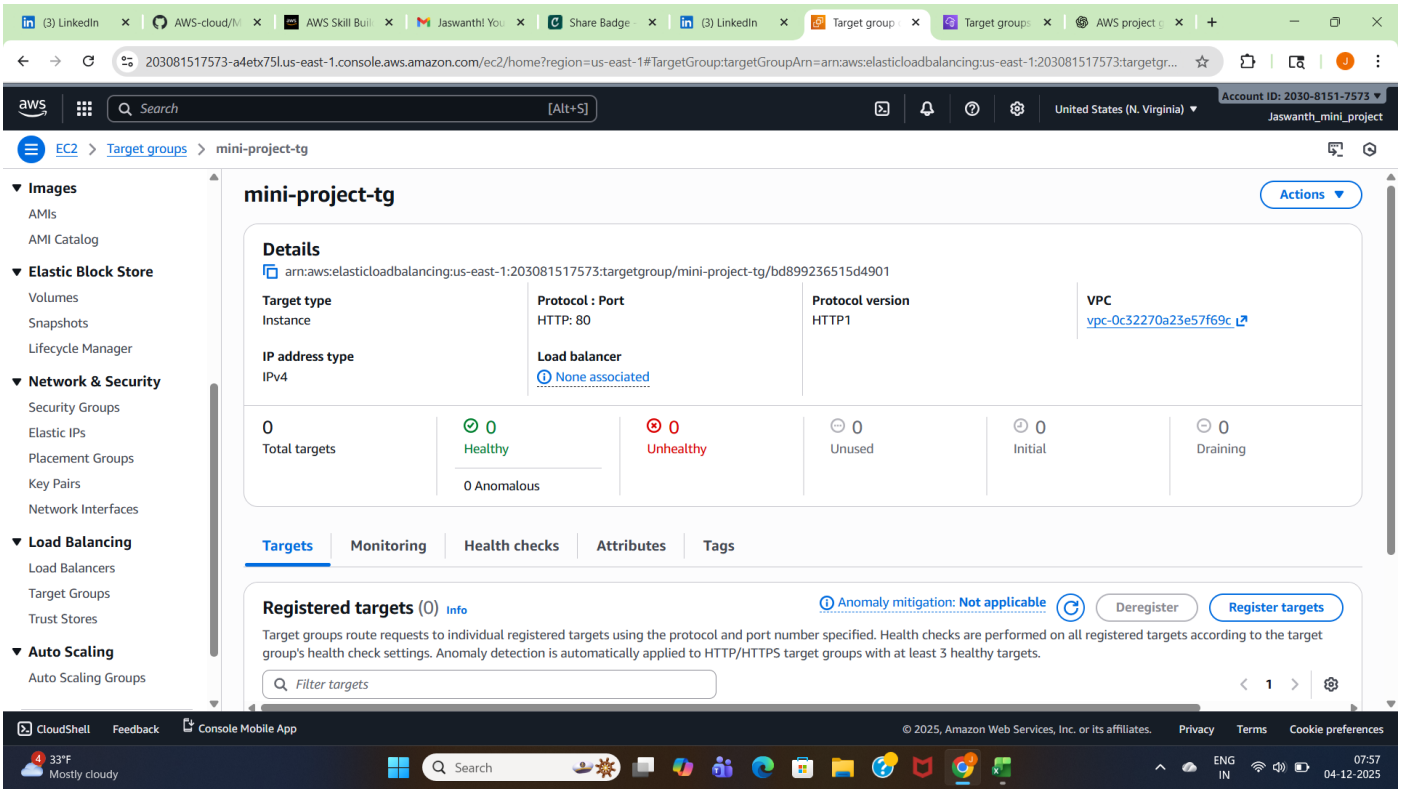
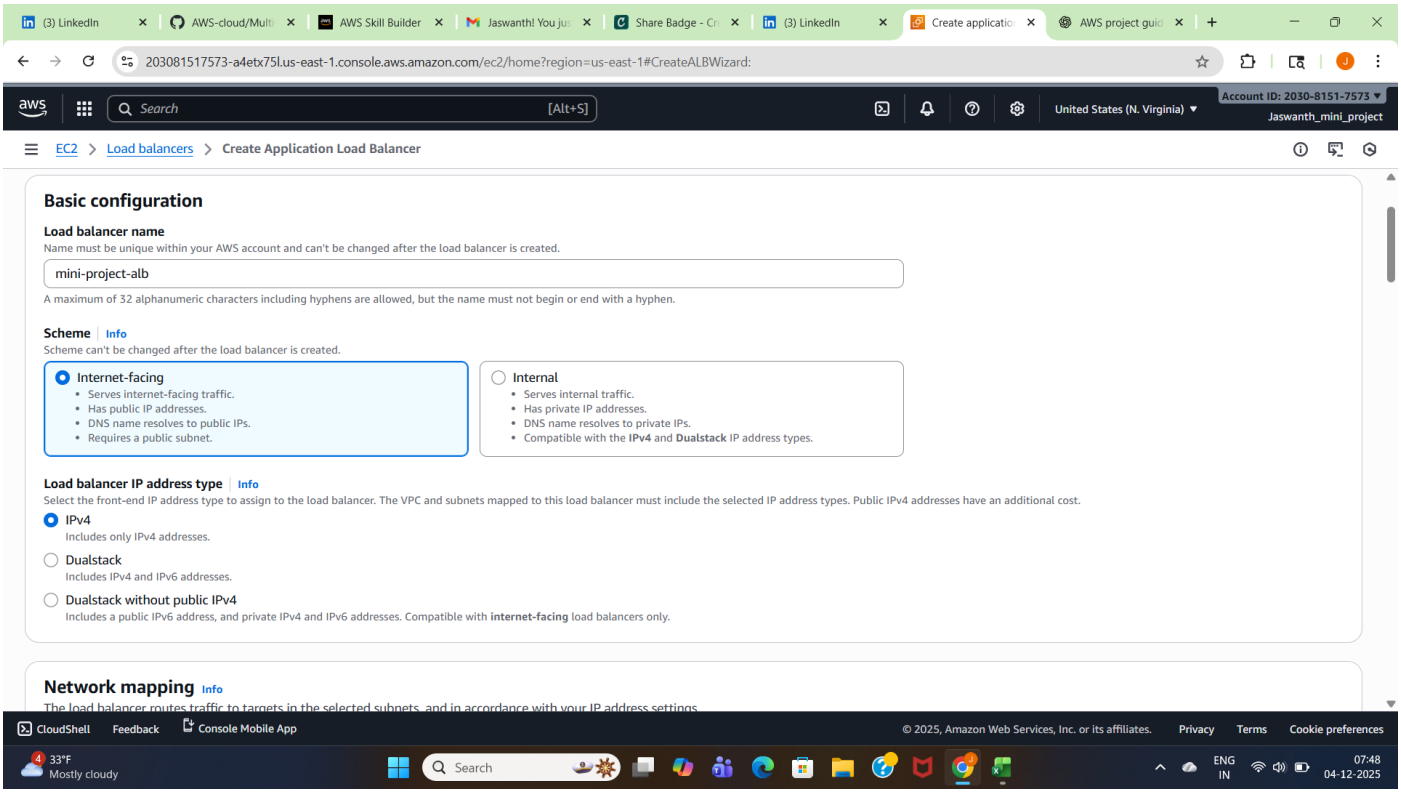
Privacy
Terms
Cookie preferences
33°F
Mostly cloudy
Search
ENG
IN
07:56
04-12-2025





Application Load Balancer

Created an internet-facing ALB (mini-project-alb) across two AZs to distribute HTTP traffic to the backend target group.


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Load balancers > Create Application Load Balancer
Basic configuration
Load balancer name
Name must be unique within your AWS account and can't be changed after the load balancer is created.
mini-project-alb
A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.
Scheme | Info
Scheme can't be changed after the load balancer is created.
Internet-facing
Serves internet-facing traffic.
Has public IP addresses.
DNS name resolves to public IPs.
Requires a public subnet.
Internal
Serves internal traffic.
Has private IP addresses.
DNS name resolves to private IPs.
Compatible with the IPv4 and Dualstack IP address types.
Load balancer IP address type | Info
Select the front-end IP address type to assign to the load balancer. The VPC and subnets mapped to this load balancer must include the selected IP address types. Public IPv4 addresses have an additional cost.
IPv4
Includes only IPv4 addresses.
Dualstack
Includes IPv4 and IPv6 addresses.
Dualstack without public IPv4
Includes a public IPv6 address, and private IPv4 and IPv6 addresses. Compatible with internet-facing load balancers only.
Network mapping Info
CloudShell
Feedback
Console Mobile App
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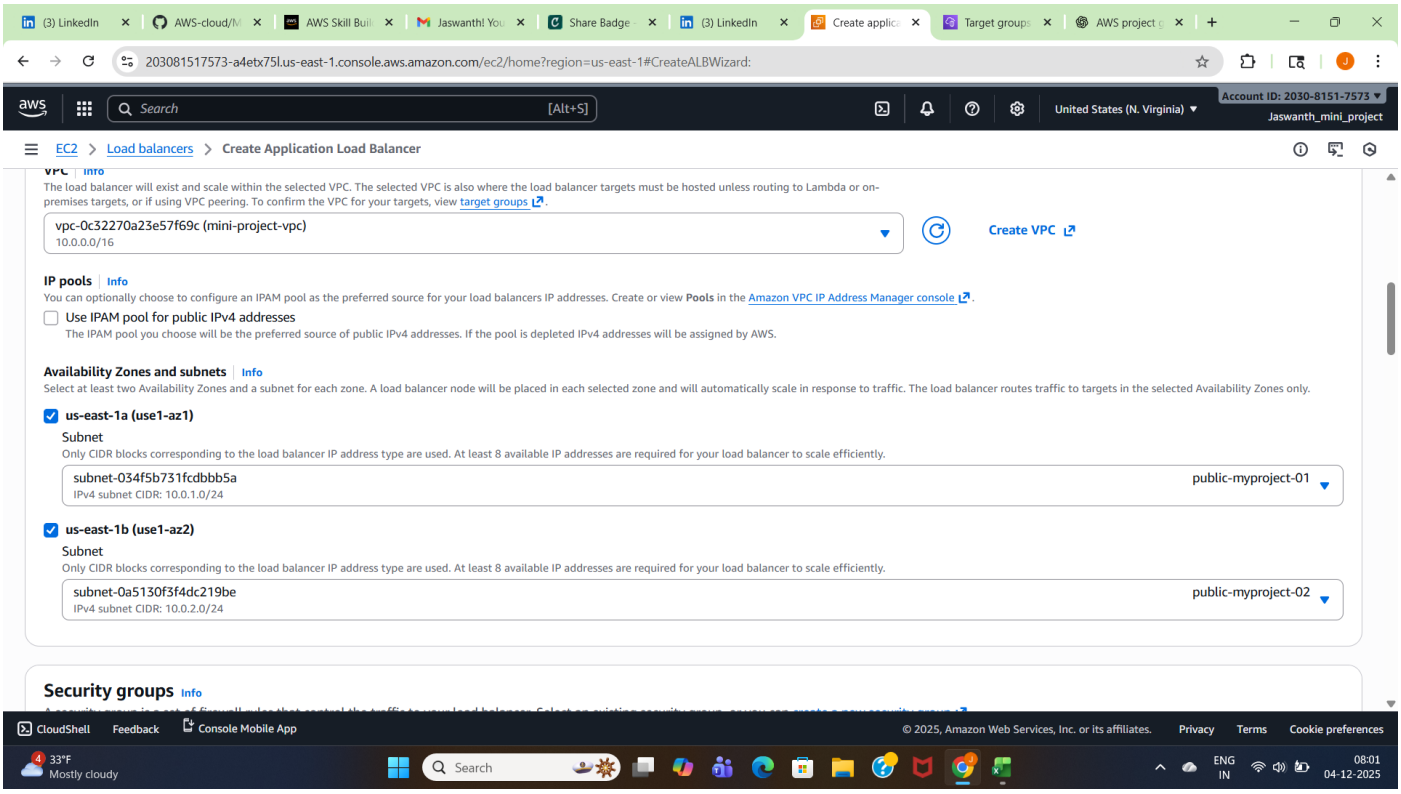
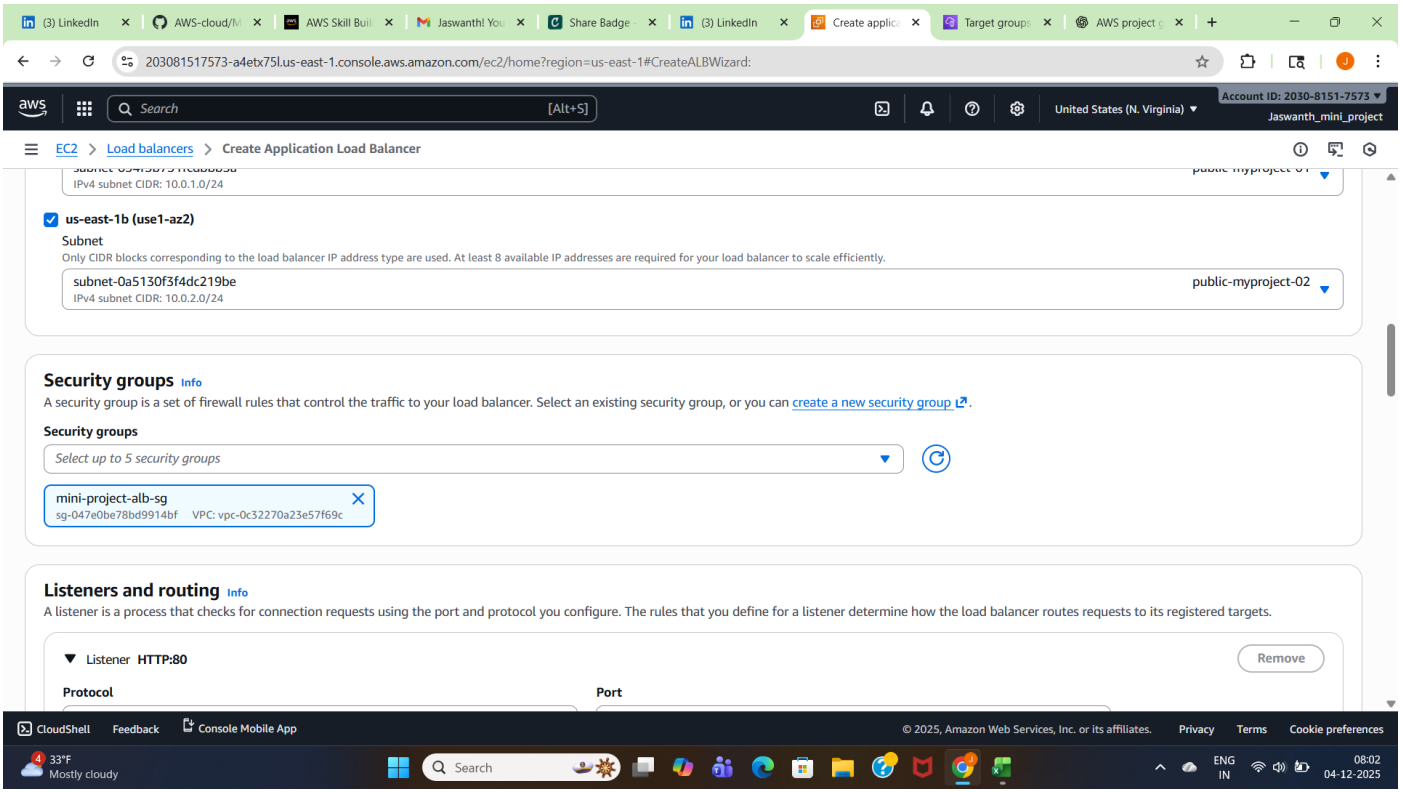
Privacy
Terms
Cookie preferences
33°F
Mostly cloudy
Search
ENG
IN
07:48
04-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Load balancers > Create Application Load Balancer
VPC | Info
The load balancer will exist and scale within the selected VPC. The selected VPC is also where the load balancer targets must be hosted unless routing to Lambda or on-premises targets, or if using VPC peering. To confirm the VPC for your targets, view target groups.
vpc-0c32270a23e57f69c (mini-project-vpc)
10.0.0.0/16
Create VPC
IP pools | Info
You can optionally choose to configure an IPAM pool as the preferred source for your load balancers IP addresses. Create or view Pools in the Amazon VPC IP Address Manager console.
Use IPAM pool for public IPv4 addresses
The IPAM pool you choose will be the preferred source of public IPv4 addresses. If the pool is depleted IPv4 addresses will be assigned by AWS.
Availability Zones and subnets | Info
Select at least two Availability Zones and a subnet for each zone. A load balancer node will be placed in each selected zone and will automatically scale in response to traffic. The load balancer routes traffic to targets in the selected Availability Zones only.
us-east-1a (use1-az1)
Subnet
Only CIDR blocks corresponding to the load balancer IP address type are used. At least 8 available IP addresses are required for your load balancer to scale efficiently.
subnet-034f5b731fcdbbb5a
IPv4 subnet CIDR: 10.0.1.0/24
public-myproject-01
us-east-1b (use1-az2)
Subnet
Only CIDR blocks corresponding to the load balancer IP address type are used. At least 8 available IP addresses are required for your load balancer to scale efficiently.
subnet-0a5130f3f4dc219be
IPv4 subnet CIDR: 10.0.2.0/24
public-myproject-02
Security groups Info
CloudShell
Feedback
Console Mobile App
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
33°F
Mostly cloudy
Search
ENG
IN
08:01
04-12-2025


(3) LinkedIn
AWS-cloud/M
AWS Skill Buil
Jaswanth! You
Share Badge
(3) LinkedIn
Create applica
Target groups
AWS project
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:
aws
Search
[Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Load balancers > Create Application Load Balancer
IPv4 subnet CIDR: 10.0.1.0/24
us-east-1b (use1-az2)
Subnet
Only CIDR blocks corresponding to the load balancer IP address type are used. At least 8 available IP addresses are required for your load balancer to scale efficiently.
subnet-0a5130f3f4dc219be
IPv4 subnet CIDR: 10.0.2.0/24
public-myproject-02
Security groups Info
A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can create a new security group.
Security groups
Select up to 5 security groups
mini-project-alb-sg
sg-047e0be78bd9914bf VPC: vpc-0c32270a23e57f69c
Listeners and routing Info
A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.
Listener HTTP:80
Remove
Protocol
Port
CloudShell
Feedback
Console Mobile App
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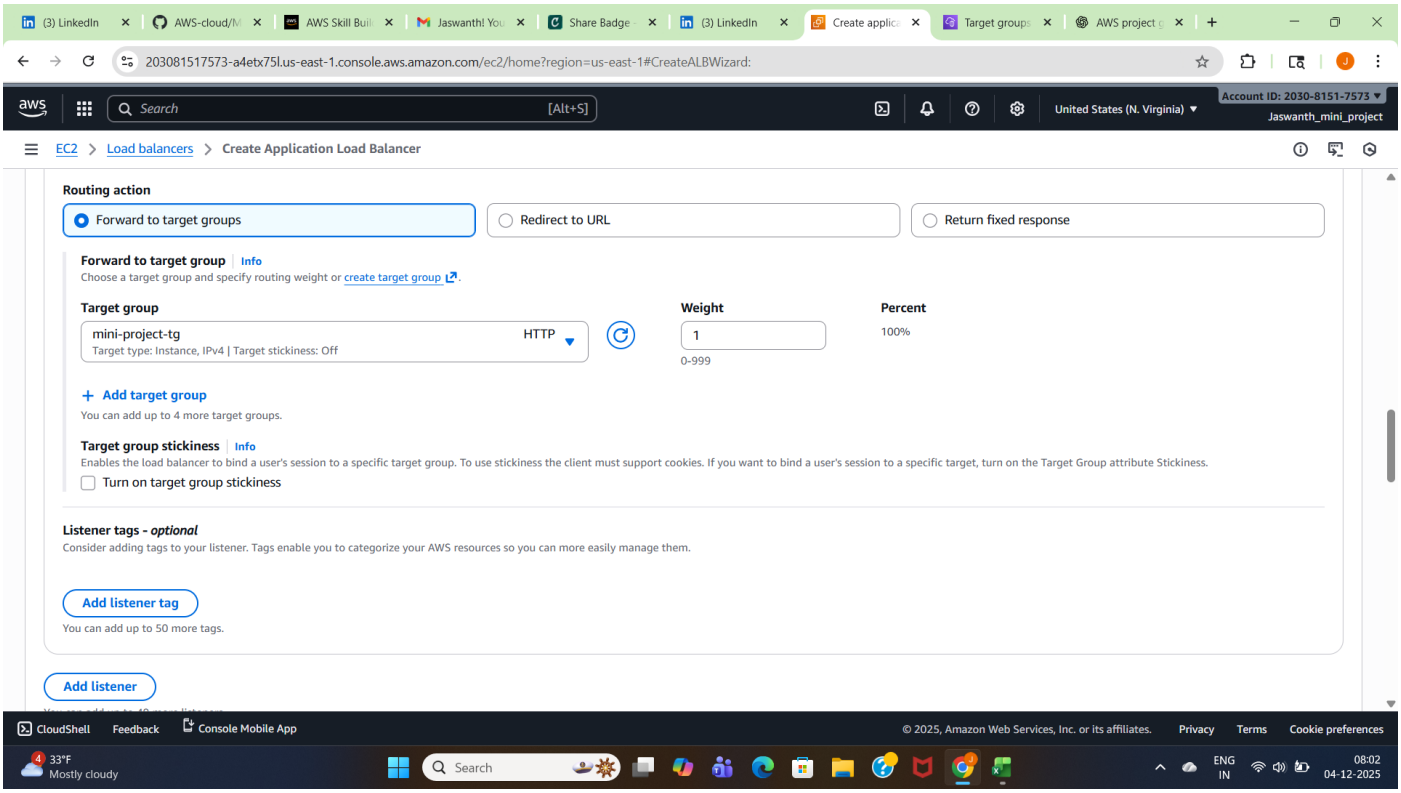
Privacy
Terms
Cookie preferences
33°F
Mostly cloudy
Search
ENG
IN
08:02
04-12-2025


(3) LinkedIn
AWS-cloud/M
AWS Skill Buil
Jaswanth! You
Share Badge
(3) LinkedIn
Create applica
Target groups
AWS project
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:
aws
Search
[Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Load balancers > Create Application Load Balancer
Routing action
Forward to target groups
Redirect to URL
Return fixed response
Forward to target group Info
Choose a target group and specify routing weight or create target group.
Target group
mini-project-tg
HTTP
Target type: Instance, IPv4 | Target stickiness: Off
Weight
1
0-999
Percent
100%
Add target group
You can add up to 4 more target groups.
Target group stickiness Info
Enables the load balancer to bind a user's session to a specific target group. To use stickiness the client must support cookies. If you want to bind a user's session to a specific target, turn on the Target Group attribute Stickiness.
Turn on target group stickiness
Listener tags - optional
Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.
Add listener tag
You can add up to 50 more tags.
Add listener
CloudShell
Feedback
Console Mobile App
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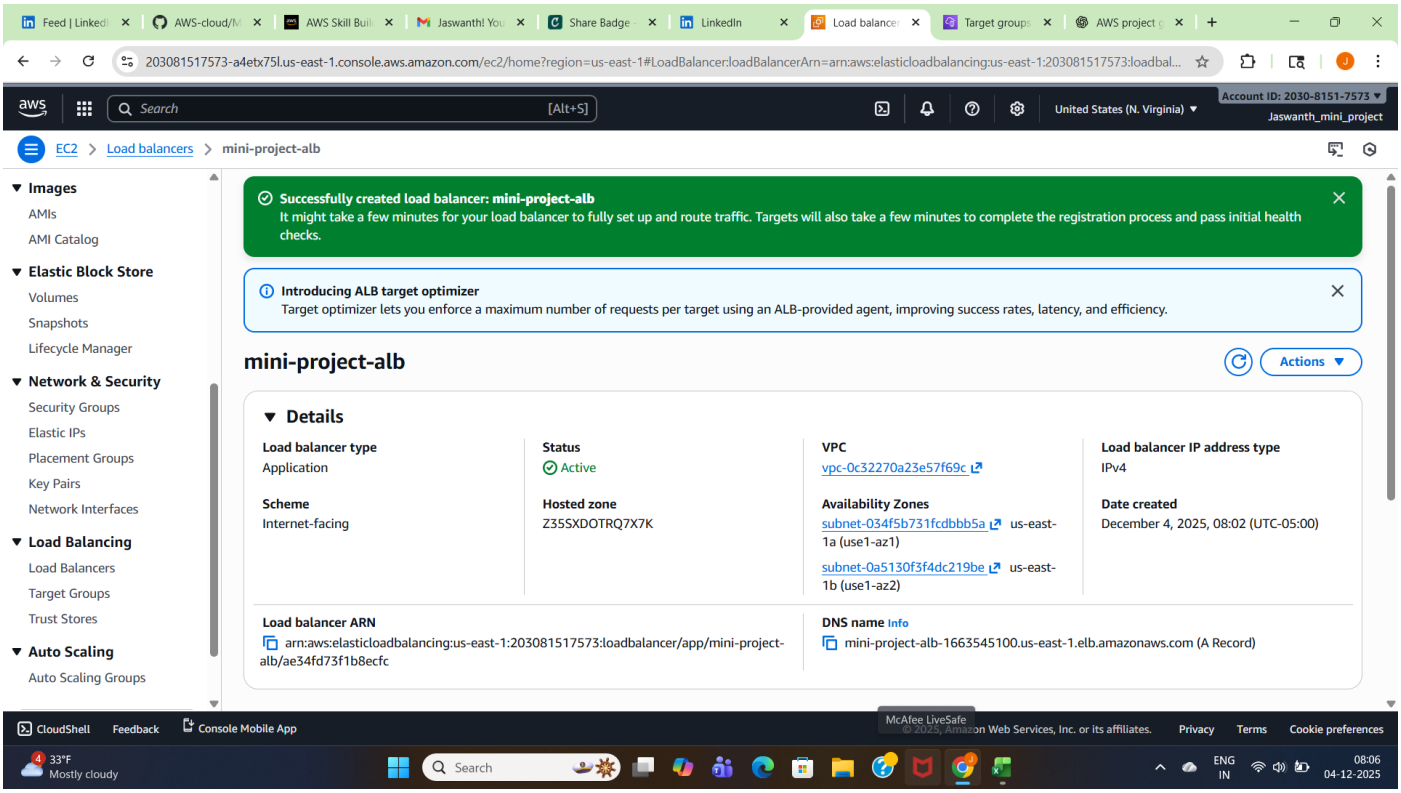
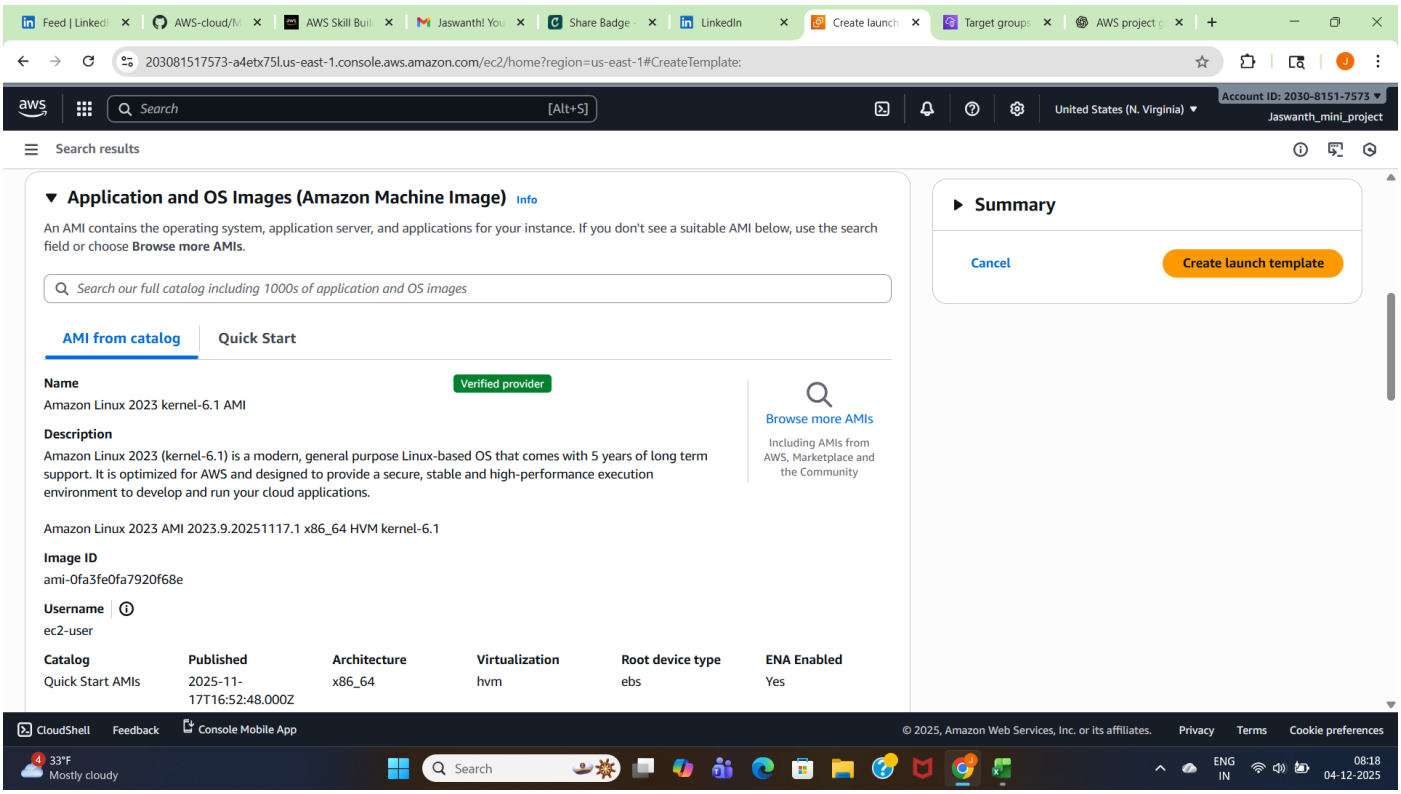
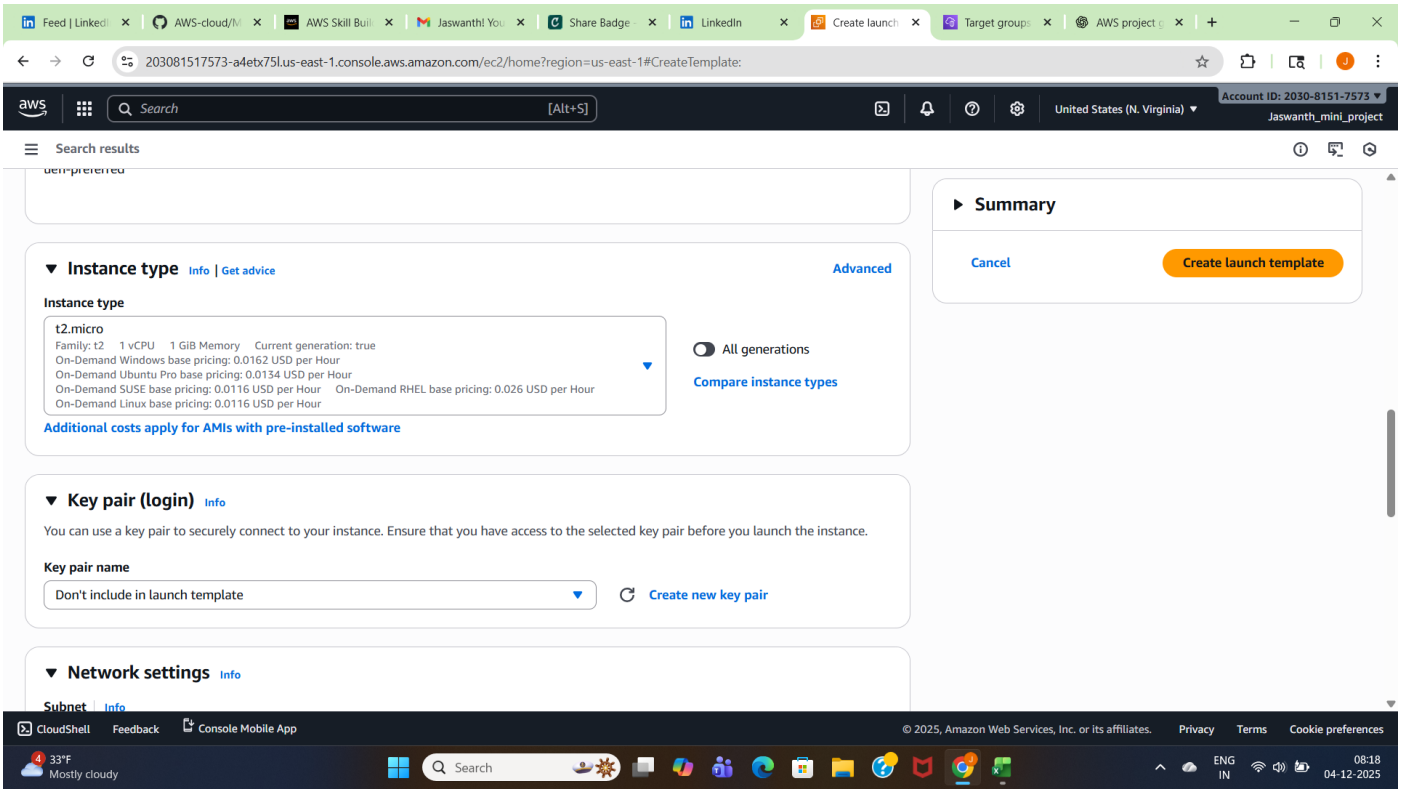
Privacy
Terms
Cookie preferences
33°F
Mostly cloudy
Search
ENG
IN
08:02
04-12-2025



Launch Template

Created a launch template (mini-project-lt) using Amazon Linux 2023 and t2.micro to define the EC2 configuration for the Auto Scaling Group.




Search results
Summary
Cancel
Create launch template
Instance type Info | Get advice
Advanced
Instance type
t2.micro
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand Ubuntu Pro base pricing: 0.0134 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour On-Demand RHEL base pricing: 0.026 USD per Hour
On-Demand Linux base pricing: 0.0116 USD per Hour
All generations
Compare instance types
Additional costs apply for AMIs with pre-installed software
Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name
Don't include in launch template
Create new key pair
Network settings Info
Subnet Info
CloudShell
Feedback
Console Mobile App
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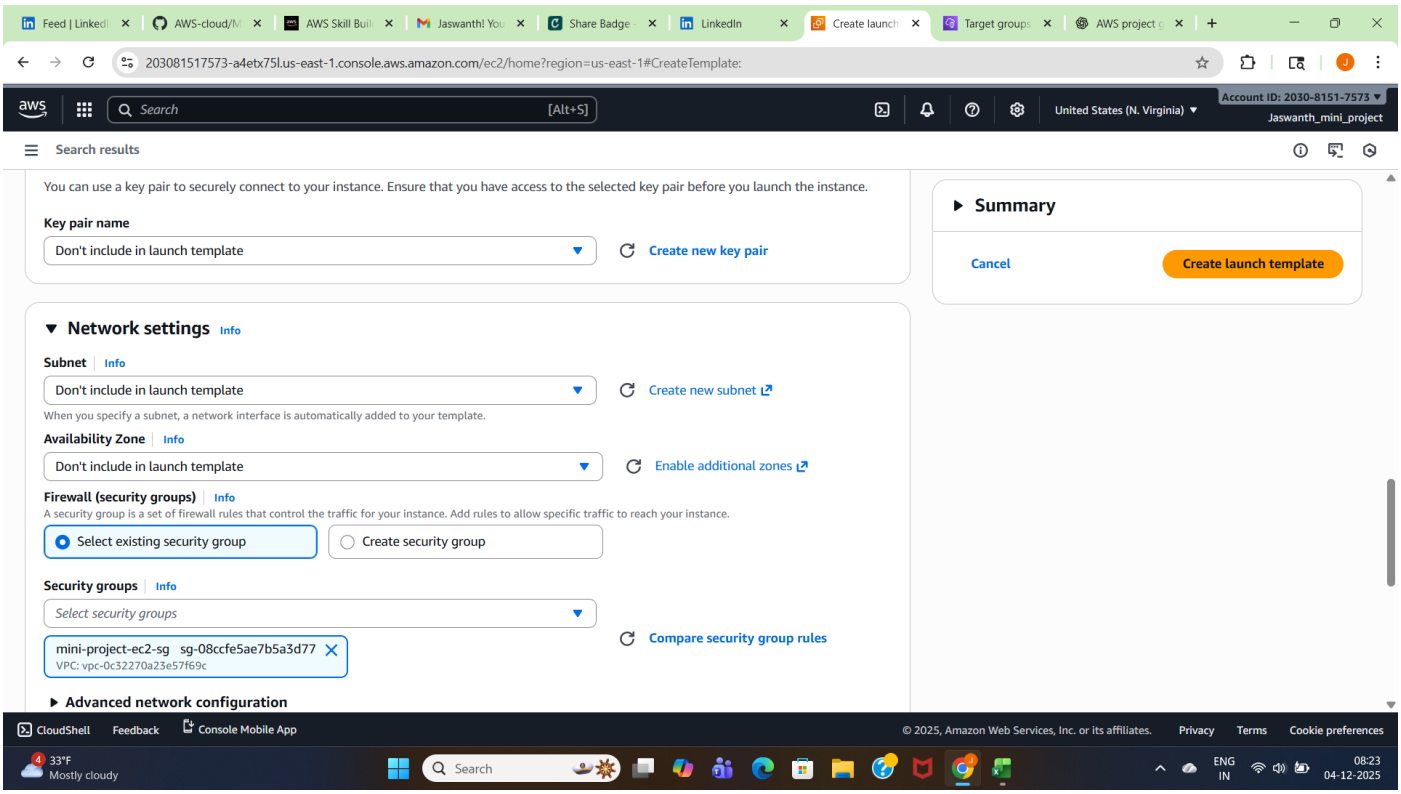
Search results
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name
Don't include in launch template
Create new key pair
Summary
Cancel
Create launch template
Network settings Info
Subnet Info
Don't include in launch template
Create new subnet
When you specify a subnet, a network interface is automatically added to your template.
Availability Zone Info
Don't include in launch template
Enable additional zones
Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
Select existing security group
Create security group
Security groups Info
Select security groups
mini-project-ec2-sg sg-08ccfe5ae7b5a3d77
VPC: vpc-0c32270a23e57f69c
Compare security group rules
Advanced network configuration
CloudShell
Feedback
Console Mobile App
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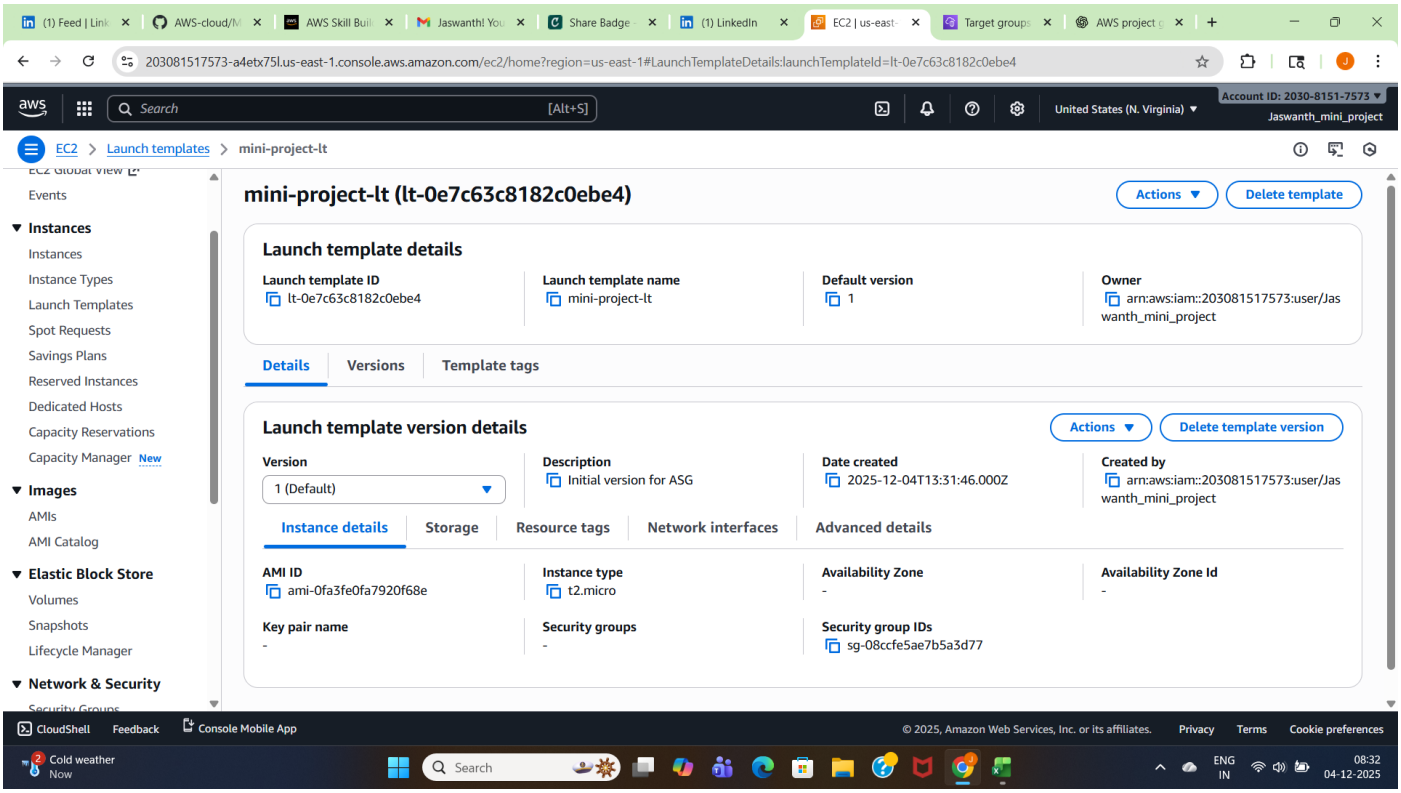
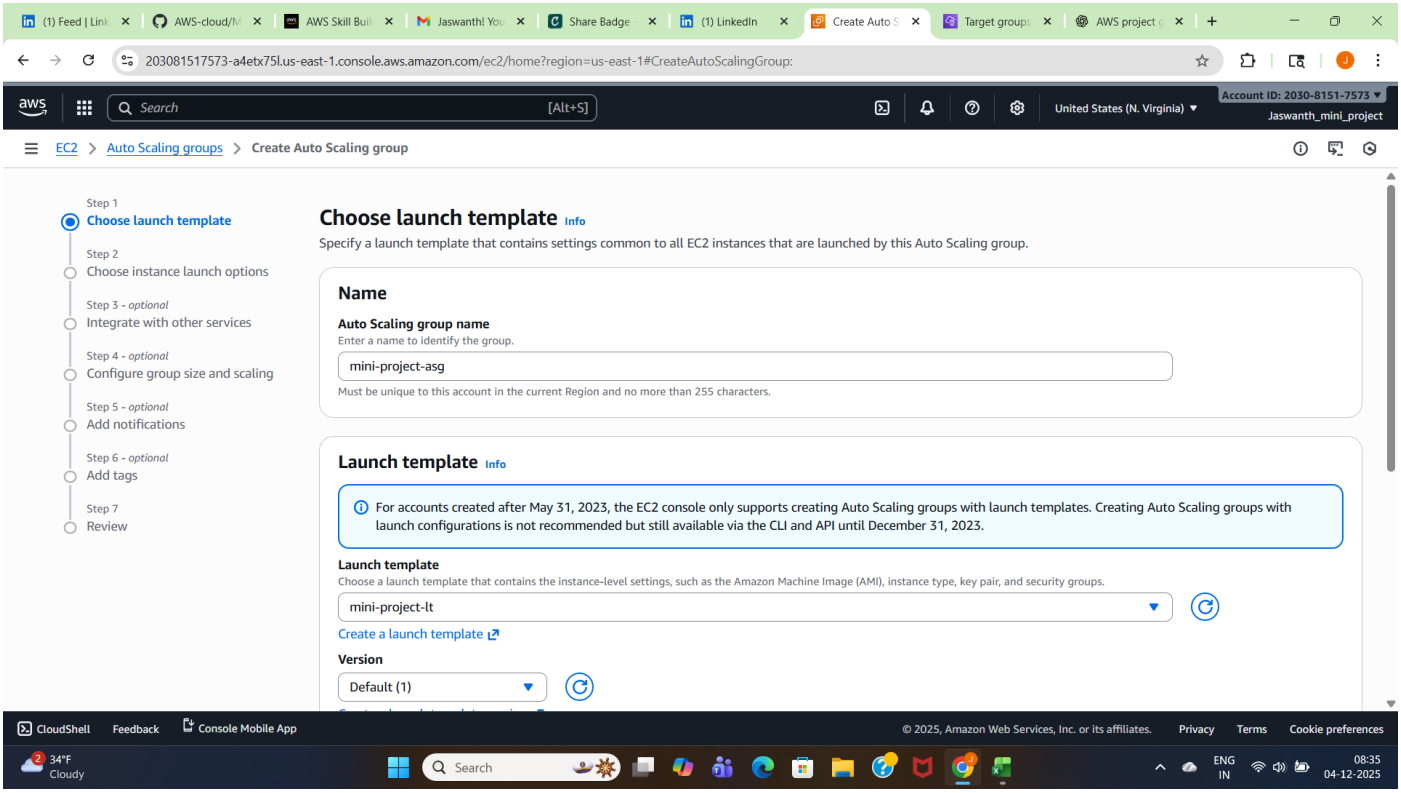
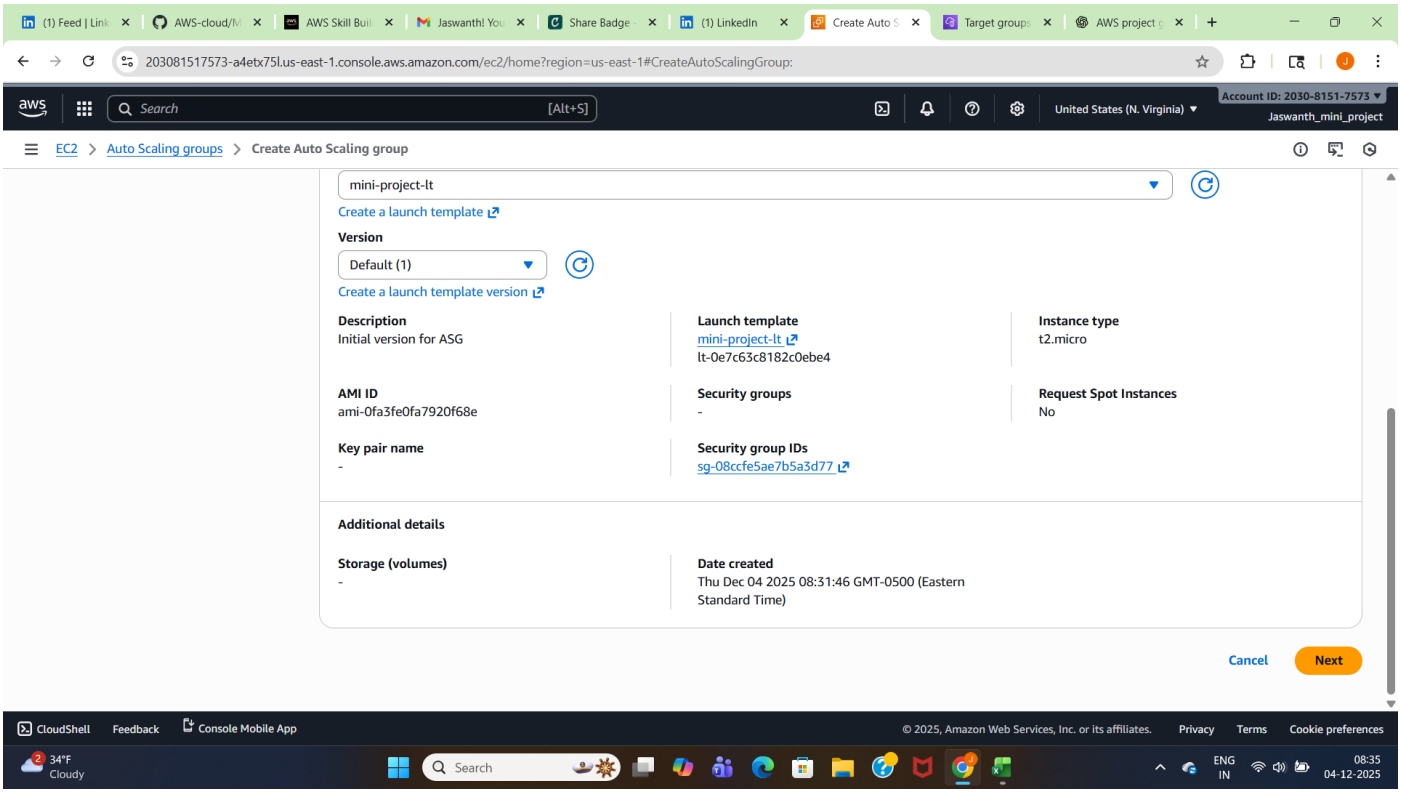
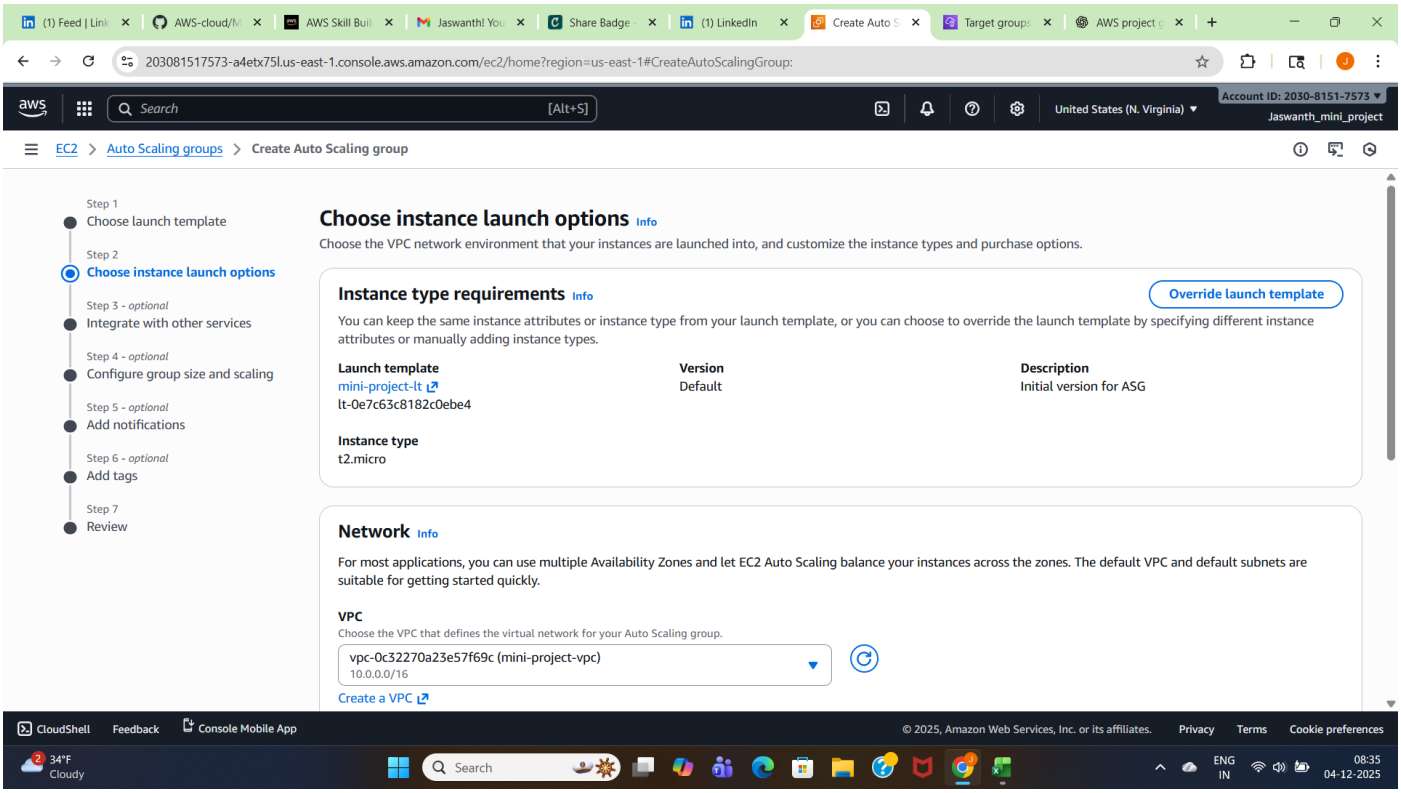


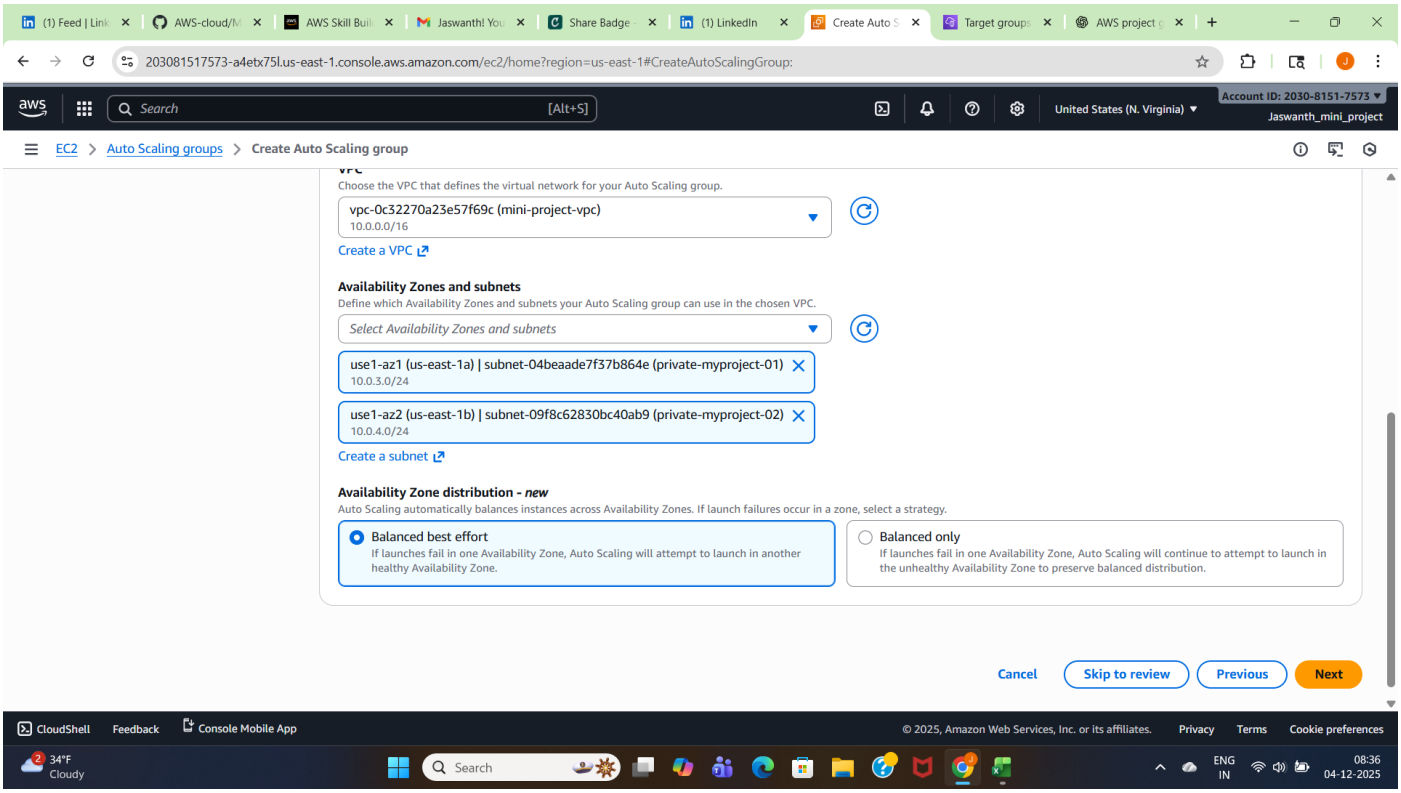
Auto Scaling Group Setup

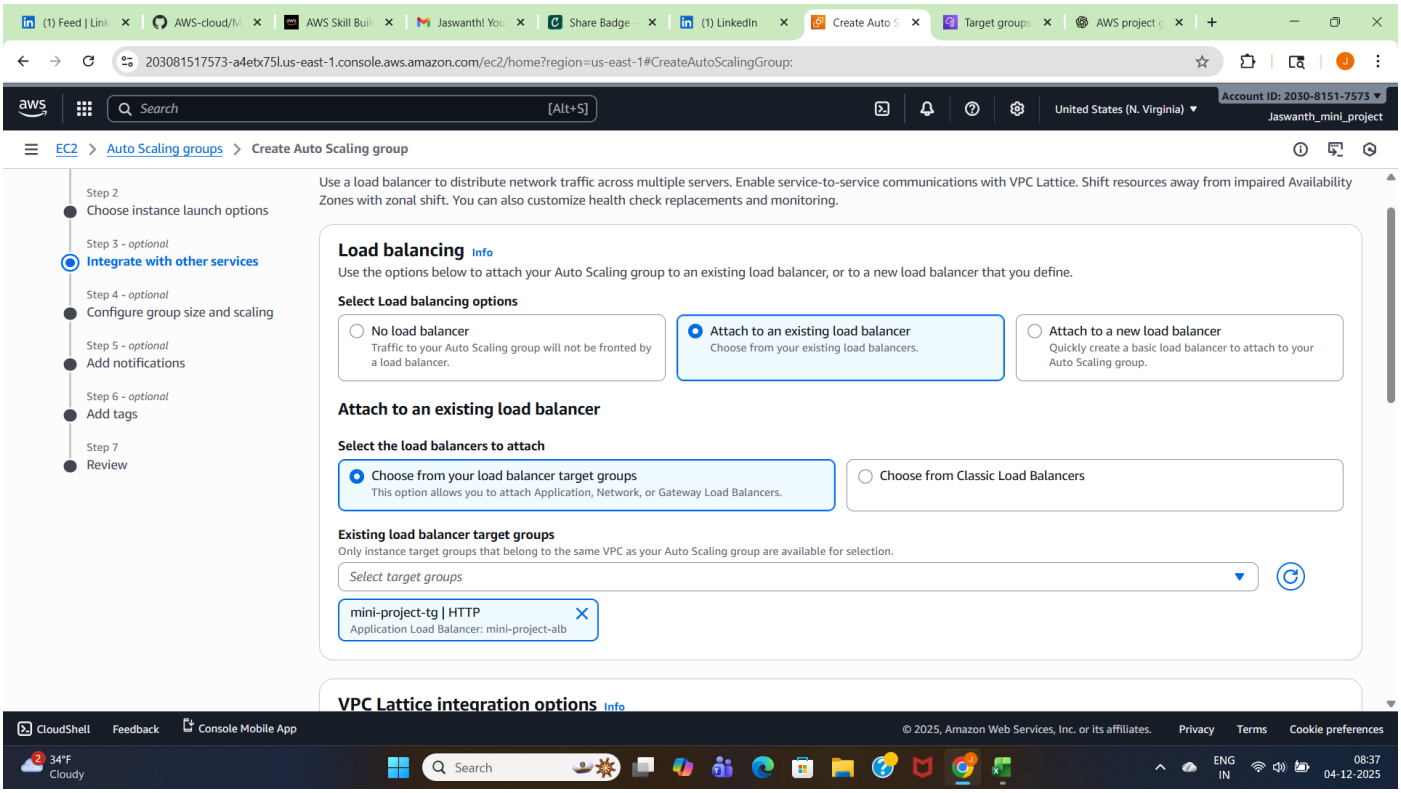
An Auto Scaling Group (mini-project-asg) was created using the launch template to automatically manage EC2 instances across multiple Availability Zones for high availability and elasticity.

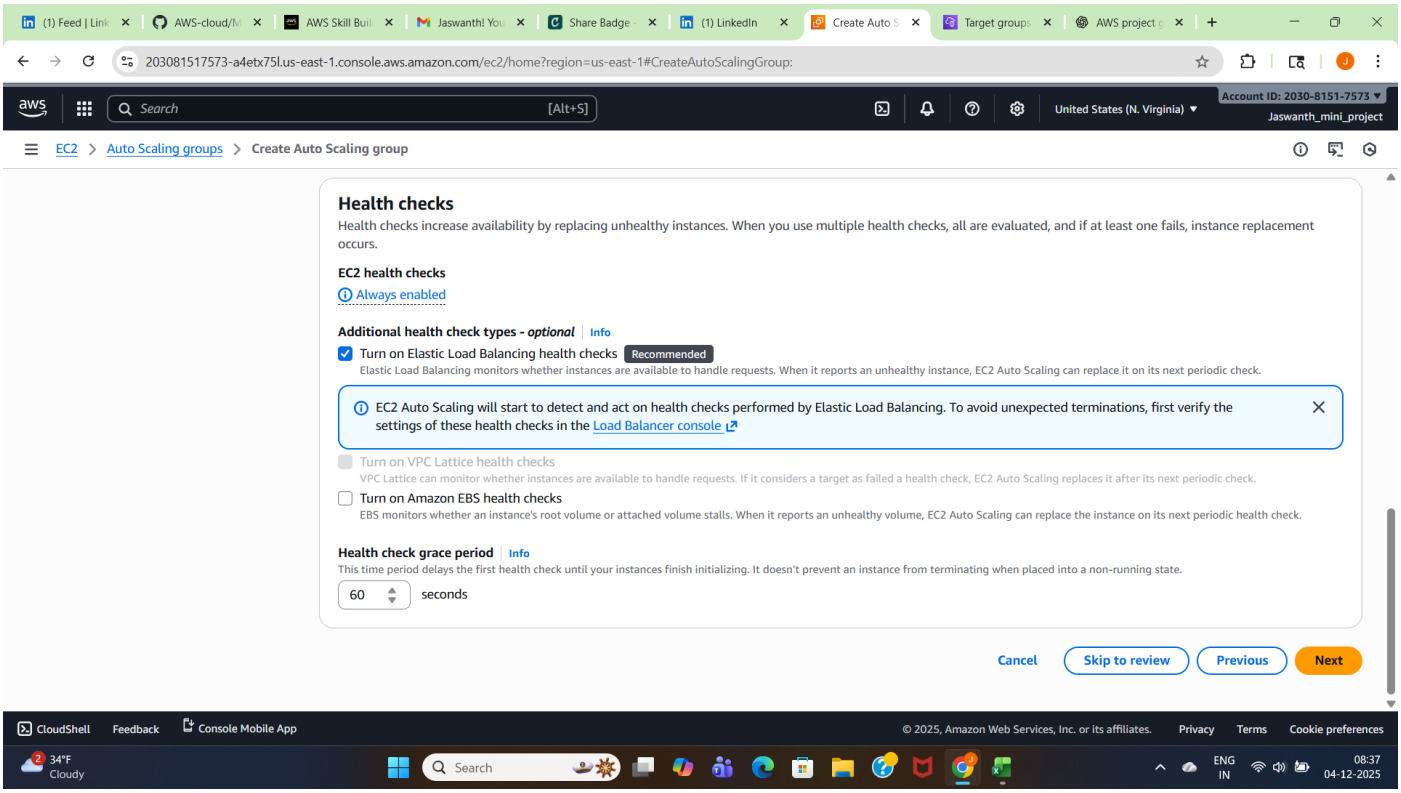


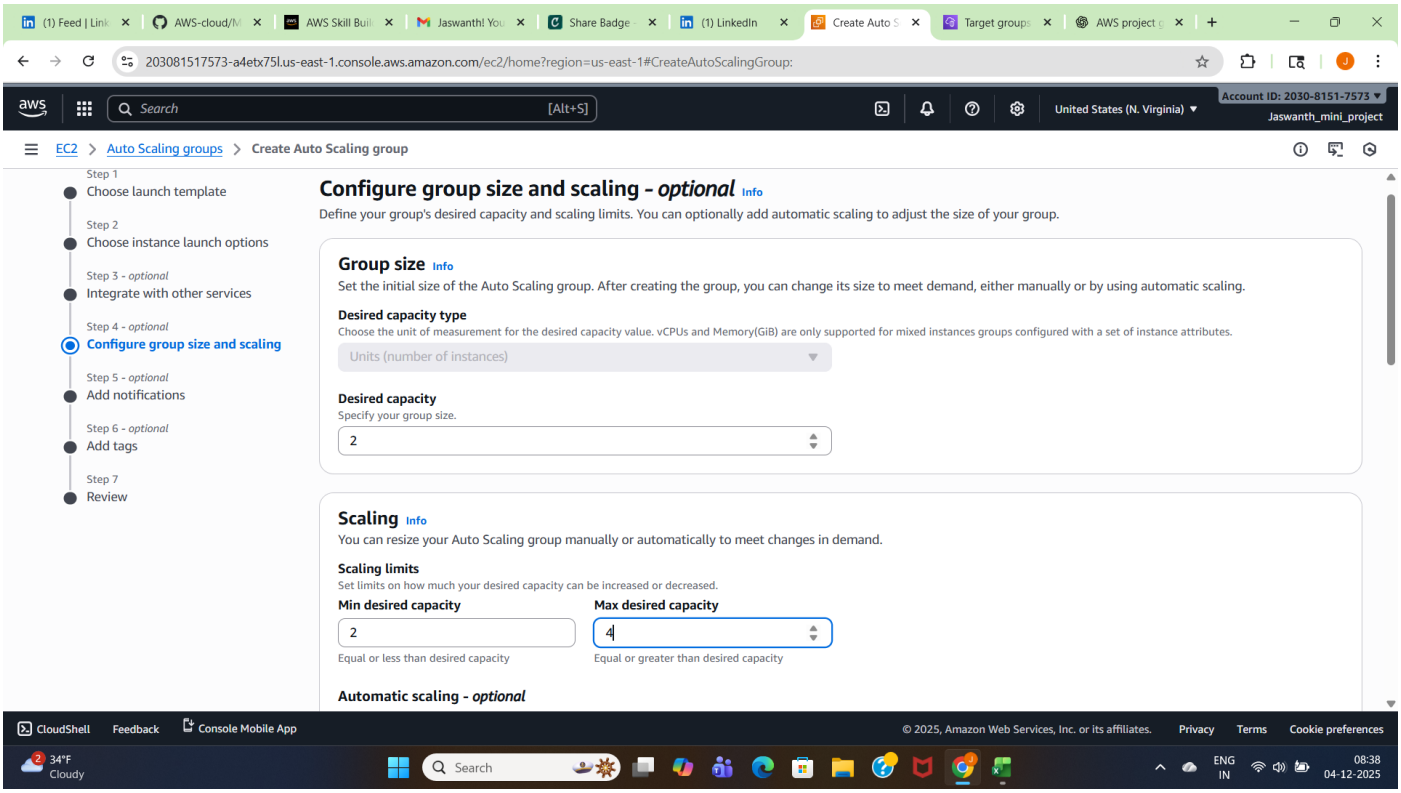

EC2 > Auto Scaling groups > Create Auto Scaling group
mini-project-lt
Create a launch template
Version
Default (1)
Create a launch template version
Description
Initial version for ASG
Launch template
mini-project-lt
lt-0e7c63c8182c0ebe4
Instance type
t2.micro
AMI ID
ami-0fa3fe0fa7920f68e
Security groups
-
Request Spot Instances
No
Key pair name
-
Security group IDs
sg-08ccfe5ae7b5a3d77
Additional details
Storage (volumes)
-
Date created
Thu Dec 04 2025 08:31:46 GMT-0500 (Eastern Standard Time)
Cancel
Next

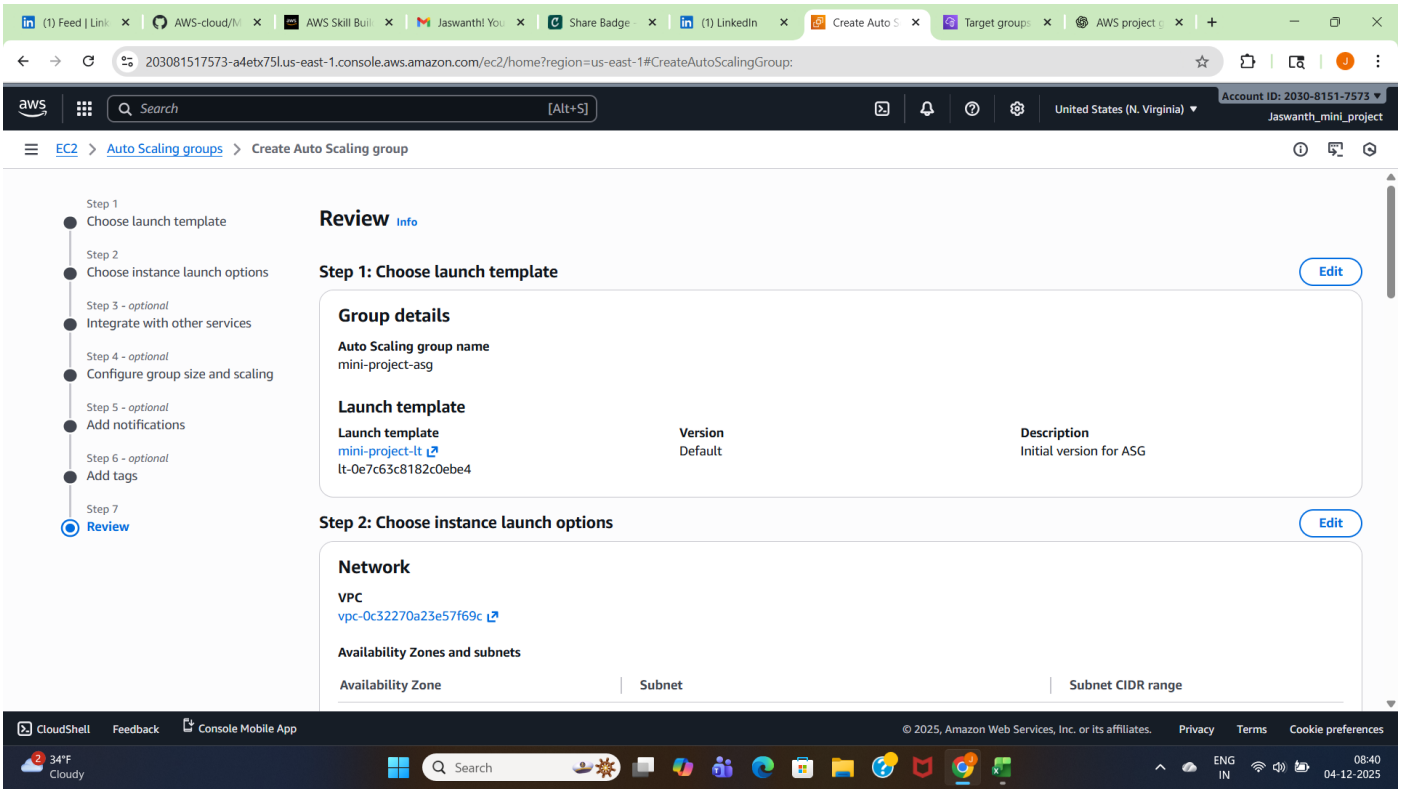

EC2 > Auto Scaling groups > Create Auto Scaling group
Step 1
Choose launch template
Step 2
Choose instance launch options
Step 3 - optional
Integrate with other services
Step 4 - optional
Configure group size and scaling
Step 5 - optional
Add notifications
Step 6 - optional
Add tags
Step 7
Review
Choose instance launch options
Info
Choose the VPC network environment that your instances are launched into, and customize the instance types and purchase options.
Instance type requirements
Info
Override launch template
You can keep the same instance attributes or instance type from your launch template, or you can choose to override the launch template by specifying different instance attributes or manually adding instance types.
Launch template
mini-project-lt
lt-0e7c63c8182c0ebe4
Version
Default
Description
Initial version for ASG
Instance type
t2.micro
Network
Info
For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly.
VPC
Choose the VPC that defines the virtual network for your Auto Scaling group.
vpc-0c32270a23e57f69c (mini-project-vpc)
10.0.0.0/16
Create a VPC


Choose the VPC that defines the virtual network for your Auto Scaling group.
vpc-0c32270a23e57f69c (mini-project-vpc)
10.0.0.0/16
Create a VPC
Availability Zones and subnets
Define which Availability Zones and subnets your Auto Scaling group can use in the chosen VPC.
Select Availability Zones and subnets
use1-az1 (us-east-1a) | subnet-04beaade7f37b864e (private-myproject-01)
10.0.3.0/24
use1-az2 (us-east-1b) | subnet-09f8c62830bc40ab9 (private-myproject-02)
10.0.4.0/24
Create a subnet
Availability Zone distribution - new
Auto Scaling automatically balances instances across Availability Zones. If launch failures occur in a zone, select a strategy.
Balanced best effort
If launches fail in one Availability Zone, Auto Scaling will attempt to launch in another healthy Availability Zone.
Balanced only
If launches fail in one Availability Zone, Auto Scaling will continue to attempt to launch in the unhealthy Availability Zone to preserve balanced distribution.
Cancel
Skip to review
Previous
Next


Step 2
Choose instance launch options
Step 3 - optional
Integrate with other services
Step 4 - optional
Configure group size and scaling
Step 5 - optional
Add notifications
Step 6 - optional
Add tags
Step 7
Review
Use a load balancer to distribute network traffic across multiple servers. Enable service-to-service communications with VPC Lattice. Shift resources away from impaired Availability Zones with zonal shift. You can also customize health check replacements and monitoring.
Load balancing Info
Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define.
Select Load balancing options
No load balancer
Traffic to your Auto Scaling group will not be fronted by a load balancer.
Attach to an existing load balancer
Choose from your existing load balancers.
Attach to a new load balancer
Quickly create a basic load balancer to attach to your Auto Scaling group.
Attach to an existing load balancer
Select the load balancers to attach
Choose from your load balancer target groups
This option allows you to attach Application, Network, or Gateway Load Balancers.
Choose from Classic Load Balancers
Existing 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
mini-project-tg | HTTP
Application Load Balancer: mini-project-alb
VPC Lattice integration options Info


Health checks
Health checks increase availability by replacing unhealthy instances. When you use multiple health checks, all are evaluated, and if at least one fails, instance replacement occurs.
EC2 health checks
Always enabled
Additional health check types - optional Info
Turn on Elastic Load Balancing health checks Recommended
Elastic Load Balancing monitors whether instances are available to handle requests. When it reports an unhealthy instance, EC2 Auto Scaling can replace it on its next periodic check.
EC2 Auto Scaling will start to detect and act on health checks performed by Elastic Load Balancing. To avoid unexpected terminations, first verify the settings of these health checks in the Load Balancer console
Turn on VPC Lattice health checks
VPC Lattice can monitor whether instances are available to handle requests. If it considers a target as failed a health check, EC2 Auto Scaling replaces it after its next periodic check.
Turn on Amazon EBS health checks
EBS monitors whether an instance's root volume or attached volume stalls. When it reports an unhealthy volume, EC2 Auto Scaling can replace the instance on its next periodic health check.
Health check grace period Info
This time period delays the first health check until your instances finish initializing. It doesn't prevent an instance from terminating when placed into a non-running state.
60 seconds
Cancel
Skip to review
Previous
Next


Step 1
Choose launch template
Step 2
Choose instance launch options
Step 3 - optional
Integrate with other services
Step 4 - optional
Configure group size and scaling
Step 5 - optional
Add notifications
Step 6 - optional
Add tags
Step 7
Review
Configure group size and scaling - optional Info
Define your group's desired capacity and scaling limits. You can optionally add automatic scaling to adjust the size of your group.
Group size Info
Set the initial size of the Auto Scaling group. After creating the group, you can change its size to meet demand, either manually or by using automatic scaling.
Desired capacity type
Choose the unit of measurement for the desired capacity value. vCPUs and Memory(GiB) are only supported for mixed instances groups configured with a set of instance attributes.
Units (number of instances)
Desired capacity
Specify your group size.
2
Scaling Info
You can resize your Auto Scaling group manually or automatically to meet changes in demand.
Scaling limits
Set limits on how much your desired capacity can be increased or decreased.
Min desired capacity
2
Equal or less than desired capacity
Max desired capacity
4
Equal or greater than desired capacity
Automatic scaling - optional


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Auto Scaling groups > Create Auto Scaling group
Step 1 Choose launch template
Step 2 Choose instance launch options
Step 3 - optional Integrate with other services
Step 4 - optional Configure group size and scaling
Step 5 - optional Add notifications
Step 6 - optional Add tags
Step 7 Review
Review Info
Step 1: Choose launch template
Edit
Group details
Auto Scaling group name
mini-project-asg
Launch template
Launch template
mini-project-lt
lt-0e7c63c8182c0ebe4
Version
Default
Description
Initial version for ASG
Step 2: Choose instance launch options
Edit
Network
VPC
vpc-0c32270a23e57f69c
Availability Zones and subnets
Availability Zone
Subnet
Subnet CIDR range
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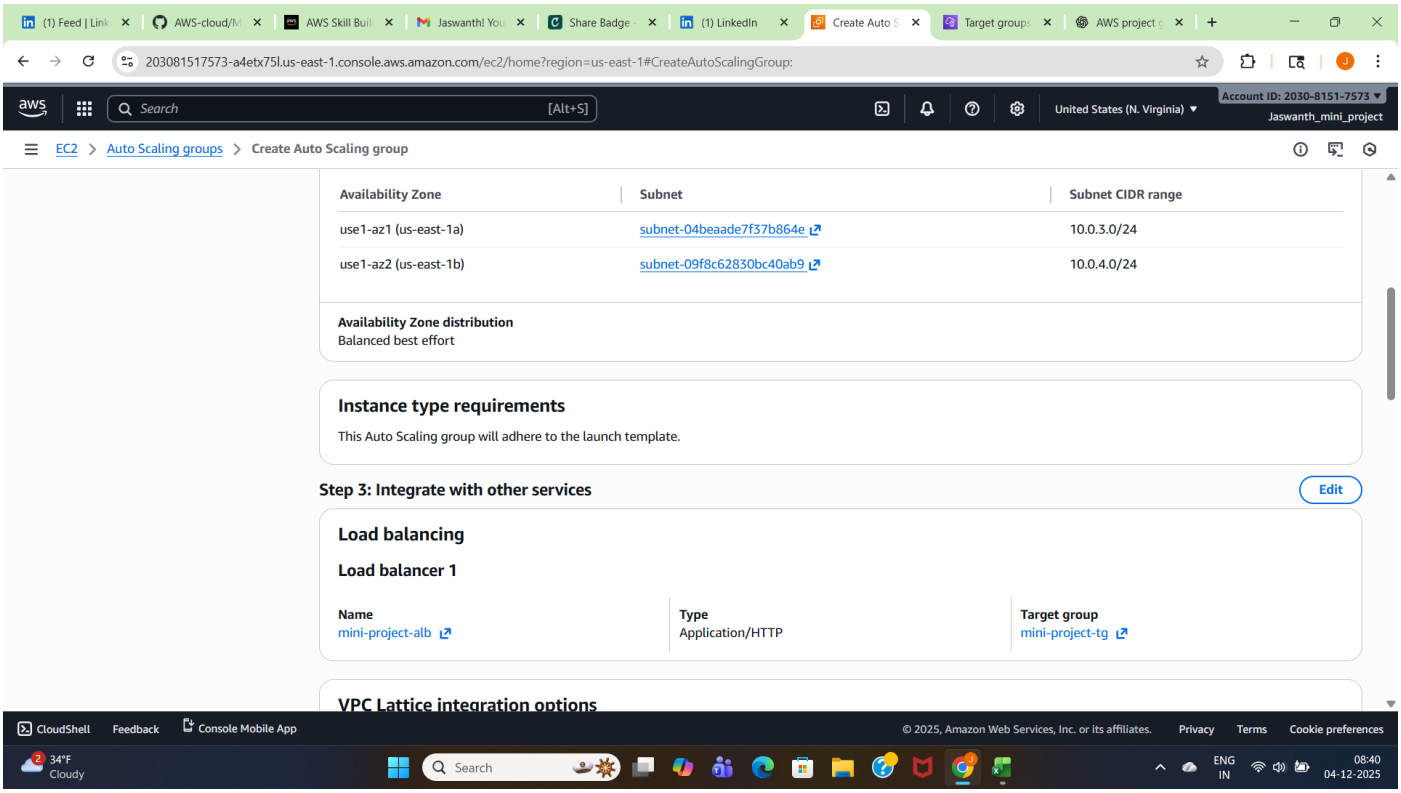
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Auto Scaling groups > Create Auto Scaling group
Availability Zone
Subnet
Subnet CIDR range
use1-az1 (us-east-1a)
subnet-04beaade7f37b864e
10.0.3.0/24
use1-az2 (us-east-1b)
subnet-09f8c62830bc40ab9
10.0.4.0/24
Availability Zone distribution
Balanced best effort
Instance type requirements
This Auto Scaling group will adhere to the launch template.
Step 3: Integrate with other services
Edit
Load balancing
Load balancer 1
Name
mini-project-alb
Type
Application/HTTP
Target group
mini-project-tg
VPC Lattice integration options
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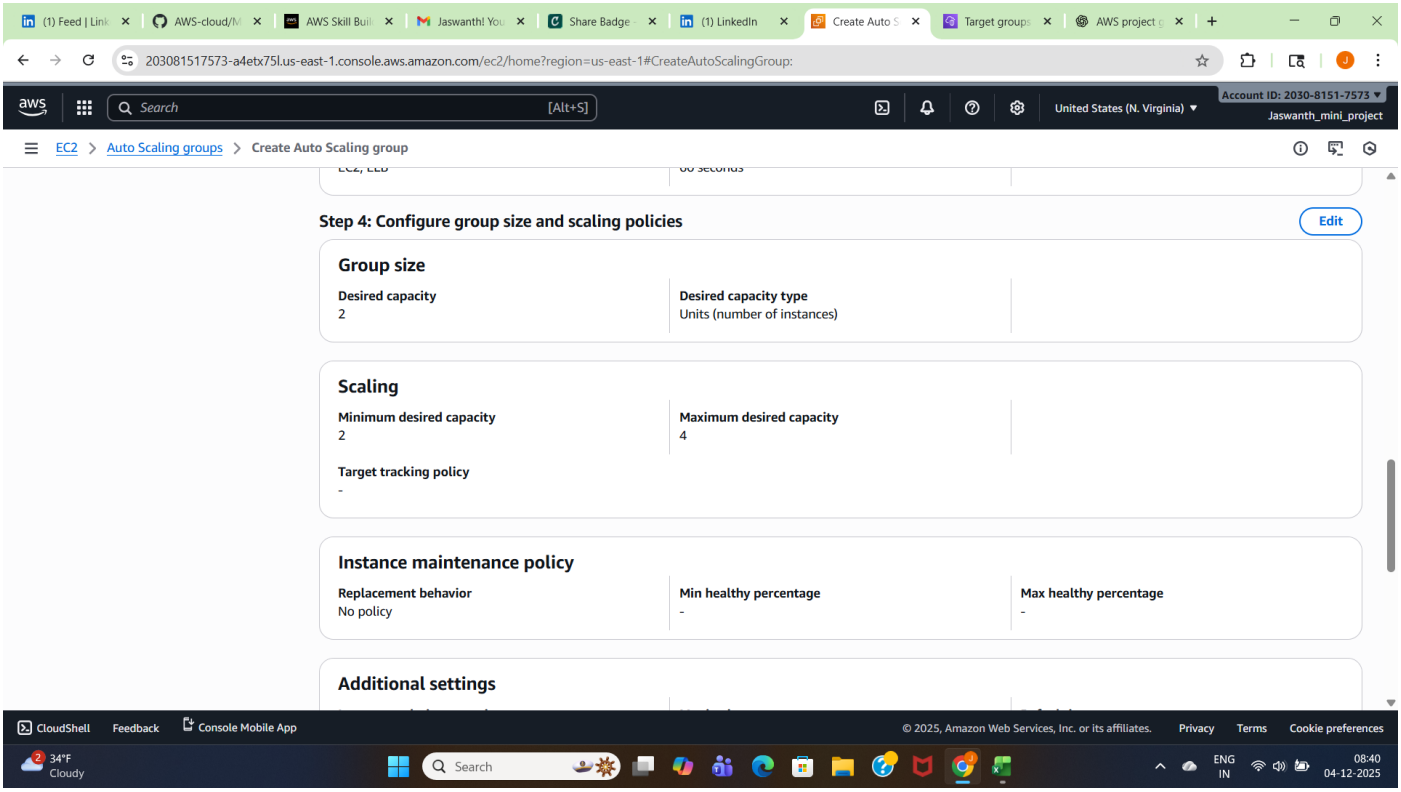
Create Auto S
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Auto Scaling groups > Create Auto Scaling group
Step 4: Configure group size and scaling policies
Edit
Group size
Desired capacity
2
Desired capacity type
Units (number of instances)
Scaling
Minimum desired capacity
2
Maximum desired capacity
4
Target tracking policy
-
Instance maintenance policy
Replacement behavior
No policy
Min healthy percentage
-
Max healthy percentage
-
Additional settings
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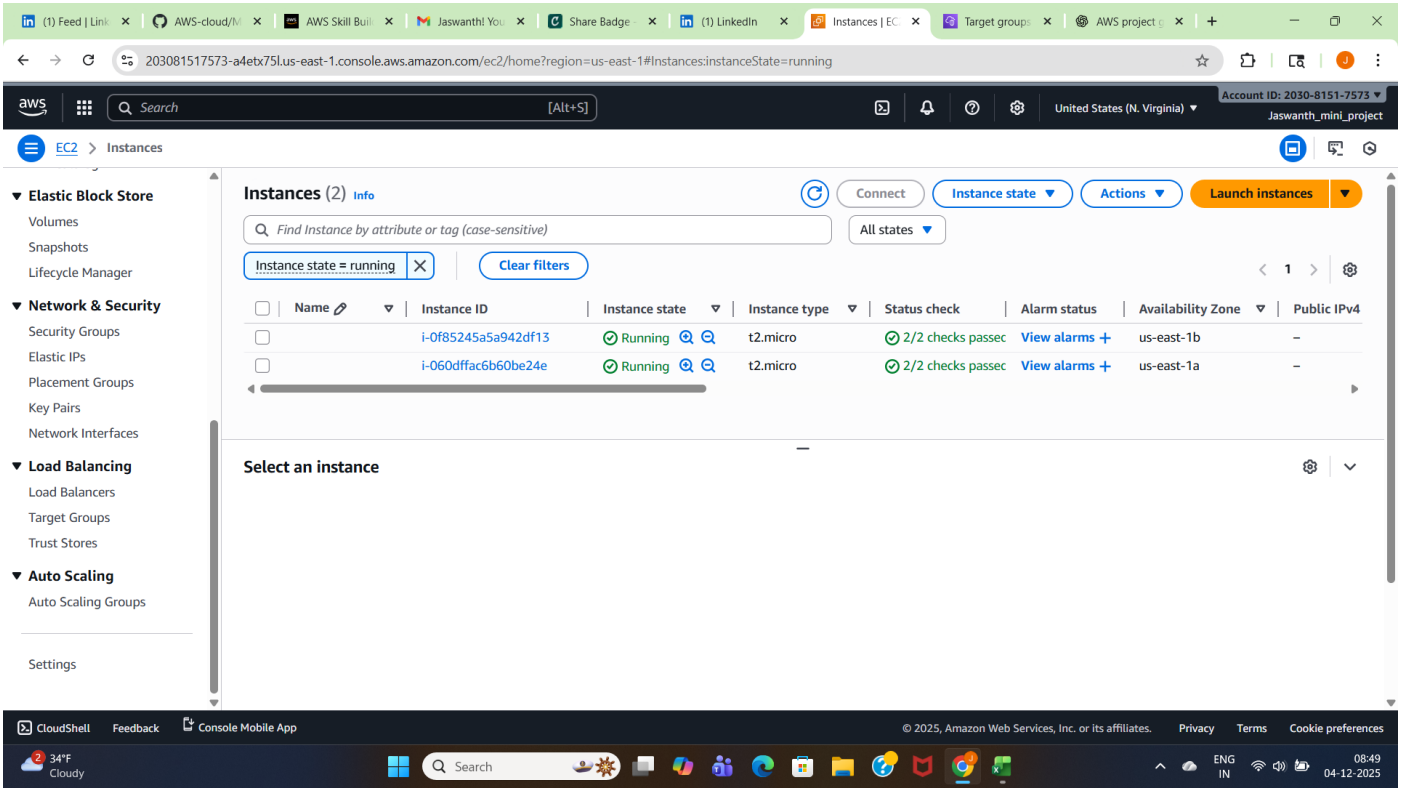
Instances | EC
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:instanceState=running
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Instances
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups
Trust Stores
Auto Scaling
Auto Scaling Groups
Settings
Instances (2) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Instance state = running
Clear filters
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4
i-0f85245a5a942df13
Running
t2.micro
2/2 checks passec
View alarms
us-east-1b
i-060dffac6b60be24e
Running
t2.micro
2/2 checks passec
View alarms
us-east-1a
Select an instance
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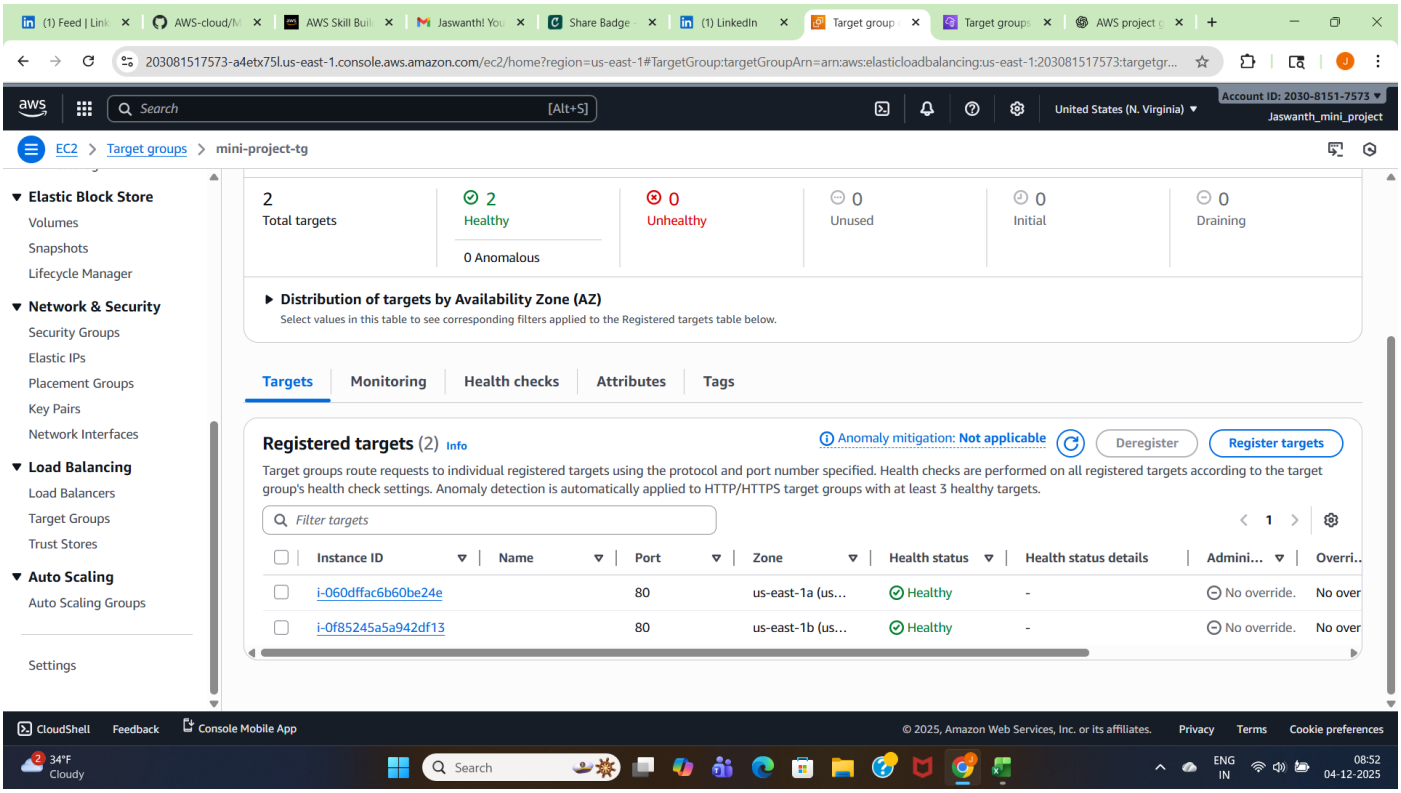
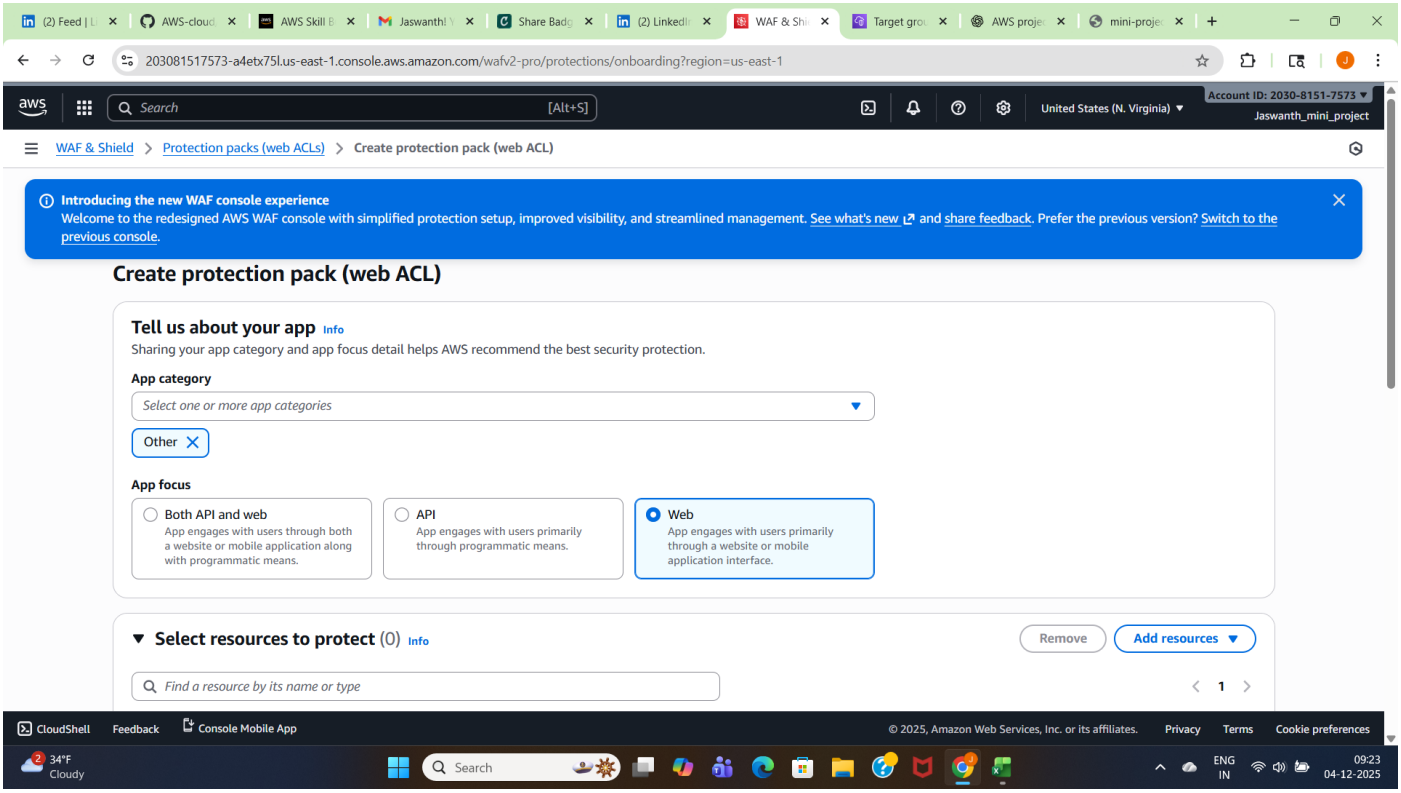
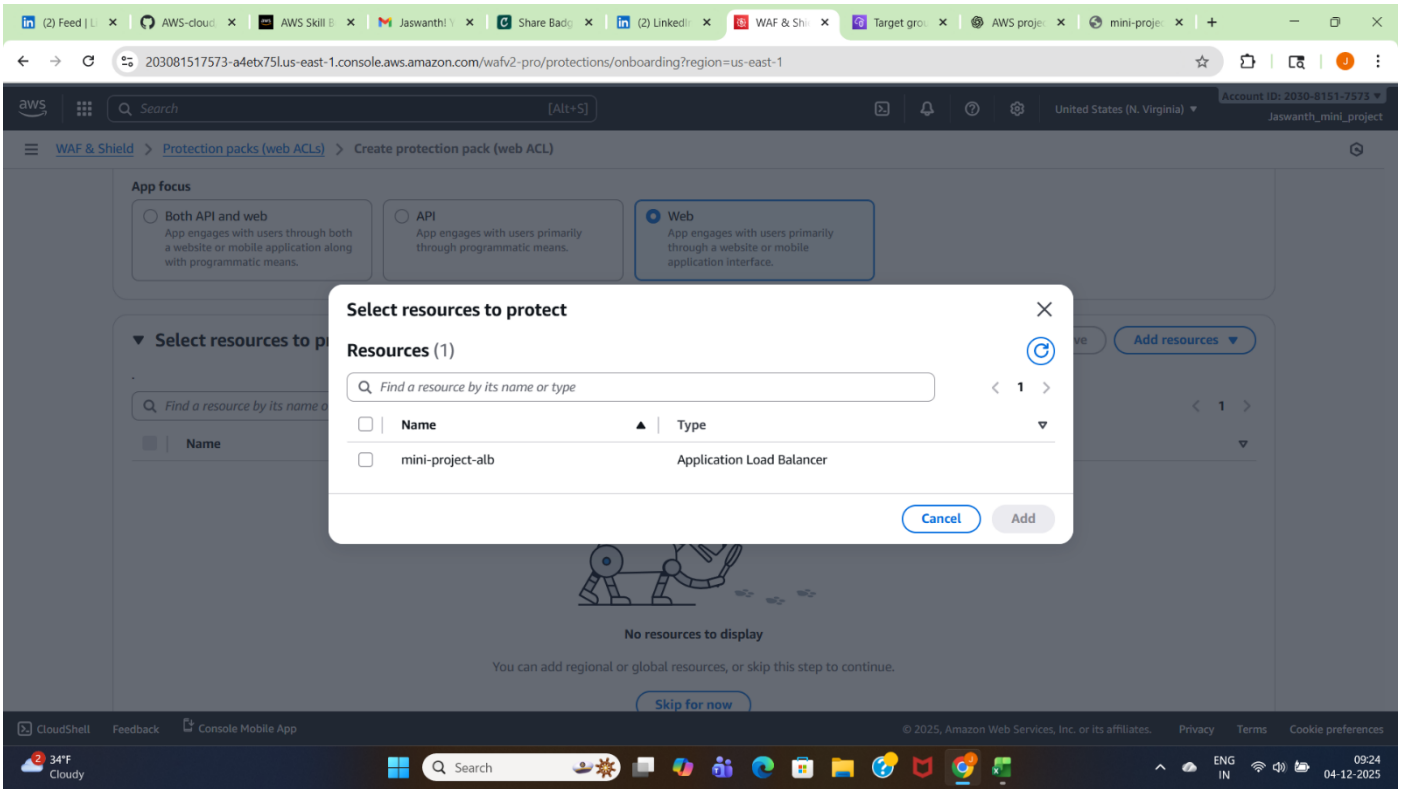


Web Application Firewall (AWS WAF)

Created a Web ACL and attached it to the ALB to add managed security rules and protect the application from common web attacks.




203081517573-a4etx75l.us-east-1.console.aws.amazon.com/wafv2-pro/protections/onboarding?region=us-east-1
WAF & Shield > Protection packs (web ACLs) > Create protection pack (web ACL)
App focus
Both API and web
App engages with users through both a website or mobile application along with programmatic means.
API
App engages with users primarily through programmatic means.
Web
App engages with users primarily through a website or mobile application interface.
Select resources to protect
Resources (1)
Find a resource by its name or type
Name
Type
mini-project-alb
Application Load Balancer
Cancel
Add
Add resources
No resources to display
You can add regional or global resources, or skip this step to continue.
Skip for now
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Console Mobile App
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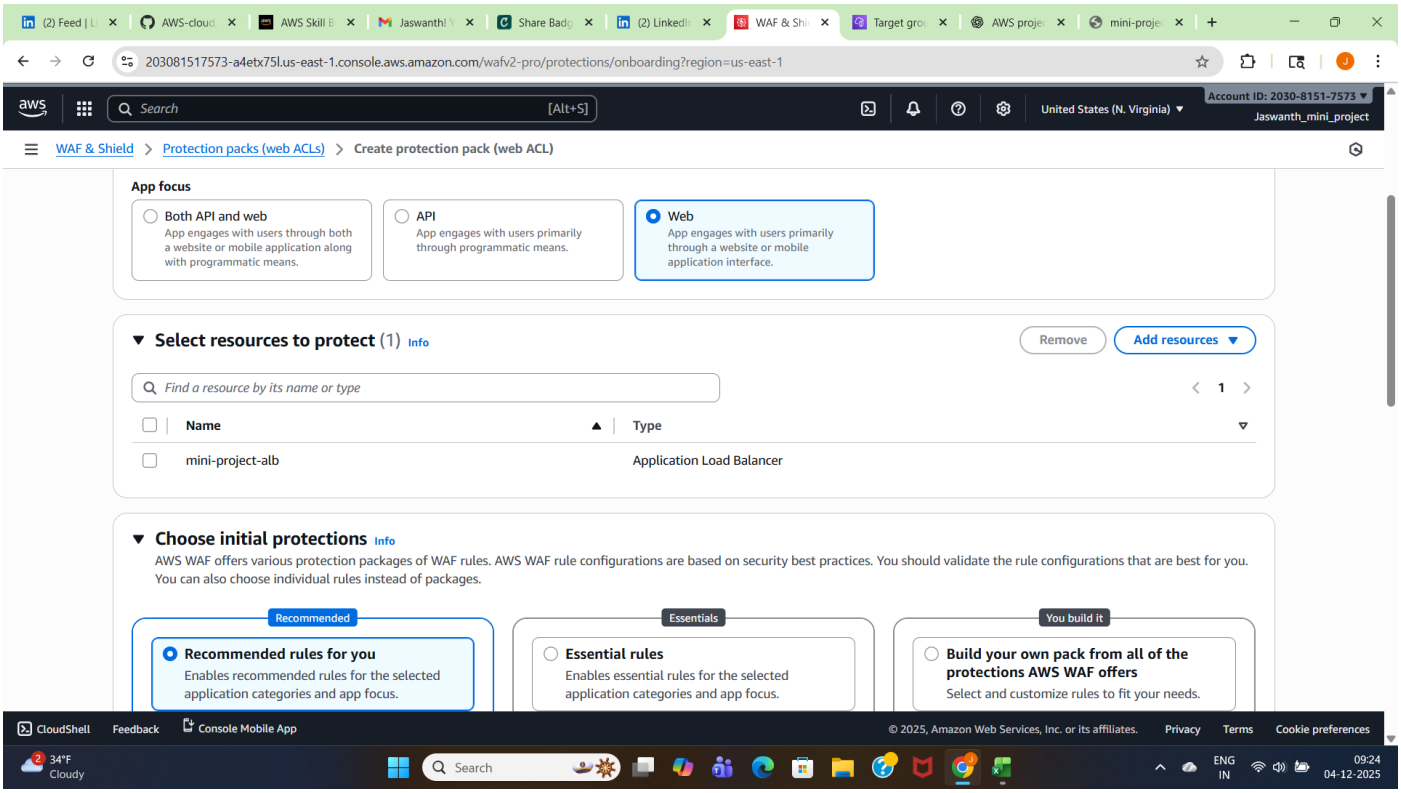
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/wafv2-pro/protections/onboarding?region=us-east-1
WAF & Shield > Protection packs (web ACLs) > Create protection pack (web ACL)
App focus
Both API and web
App engages with users through both a website or mobile application along with programmatic means.
API
App engages with users primarily through programmatic means.
Web
App engages with users primarily through a website or mobile application interface.
Select resources to protect (1) Info
Remove
Add resources
Find a resource by its name or type
Name
Type
mini-project-alb
Application Load Balancer
Choose initial protections Info
AWS WAF offers various protection packages of WAF rules. AWS WAF rule configurations are based on security best practices. You should validate the rule configurations that are best for you. You can also choose individual rules instead of packages.
Recommended
Recommended rules for you
Enables recommended rules for the selected application categories and app focus.
Essentials
Essential rules
Enables essential rules for the selected application categories and app focus.
You build it
Build your own pack from all of the protections AWS WAF offers
Select and customize rules to fit your needs.
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Feedback
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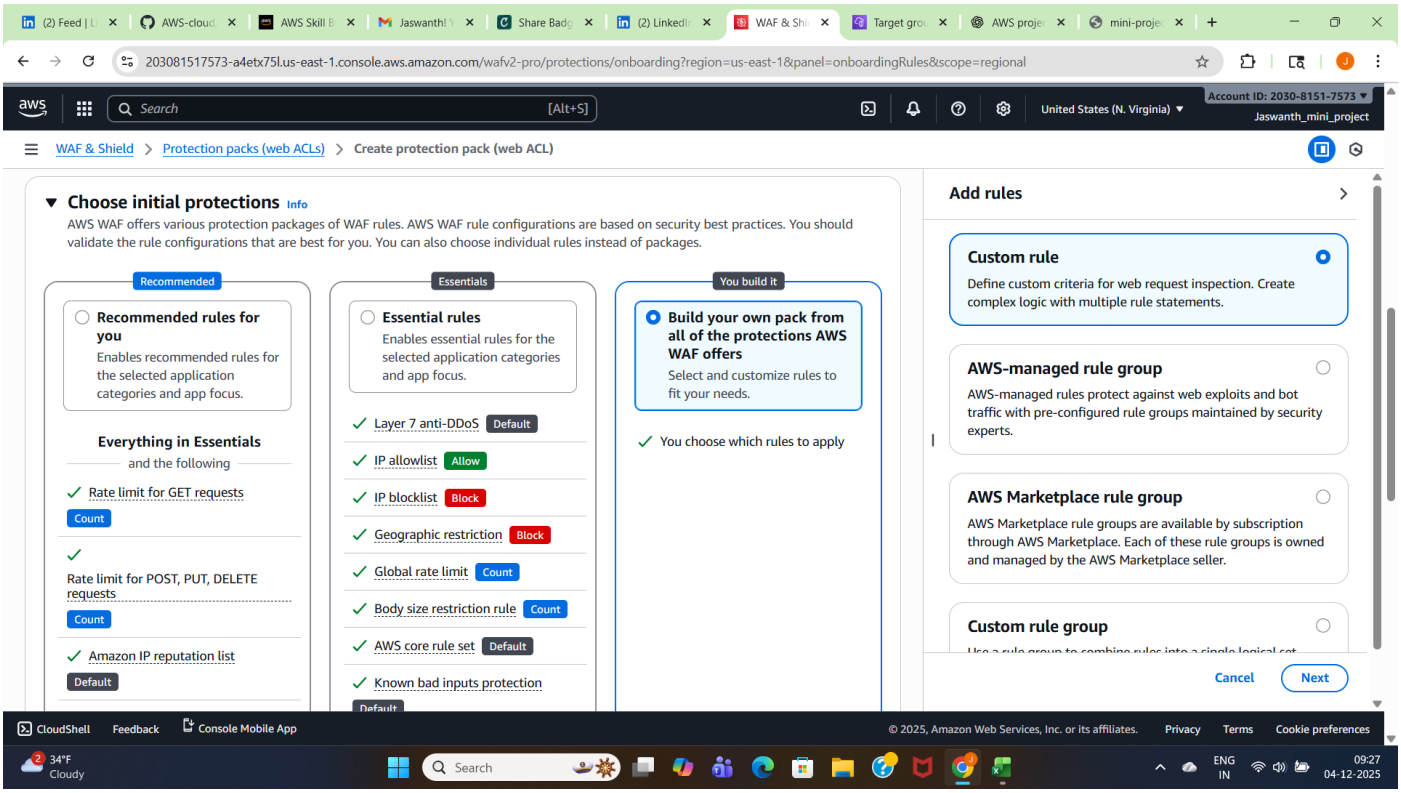
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/wafv2-pro/protections/onboarding?region=us-east-1&panel=onboardingRules&scope=regional
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
WAF & Shield > Protection packs (web ACLs) > Create protection pack (web ACL)
Choose initial protections Info
AWS WAF offers various protection packages of WAF rules. AWS WAF rule configurations are based on security best practices. You should validate the rule configurations that are best for you. You can also choose individual rules instead of packages.
Recommended
Recommended rules for you
Enables recommended rules for the selected application categories and app focus.
Everything in Essentials
and the following
Rate limit for GET requests
Count
Rate limit for POST, PUT, DELETE requests
Count
Amazon IP reputation list
Default
Essentials
Essential rules
Enables essential rules for the selected application categories and app focus.
Layer 7 anti-DDoS Default
IP allowlist Allow
IP blocklist Block
Geographic restriction Block
Global rate limit Count
Body size restriction rule Count
AWS core rule set Default
Known bad inputs protection
You build it
Build your own pack from all of the protections AWS WAF offers
Select and customize rules to fit your needs.
You choose which rules to apply
Add rules
Custom rule
Define custom criteria for web request inspection. Create complex logic with multiple rule statements.
AWS-managed rule group
AWS-managed rules protect against web exploits and bot traffic with pre-configured rule groups maintained by security experts.
AWS Marketplace rule group
AWS Marketplace rule groups are available by subscription through AWS Marketplace. Each of these rule groups is owned and managed by the AWS Marketplace seller.
Custom rule group
Cancel
Next
CloudShell
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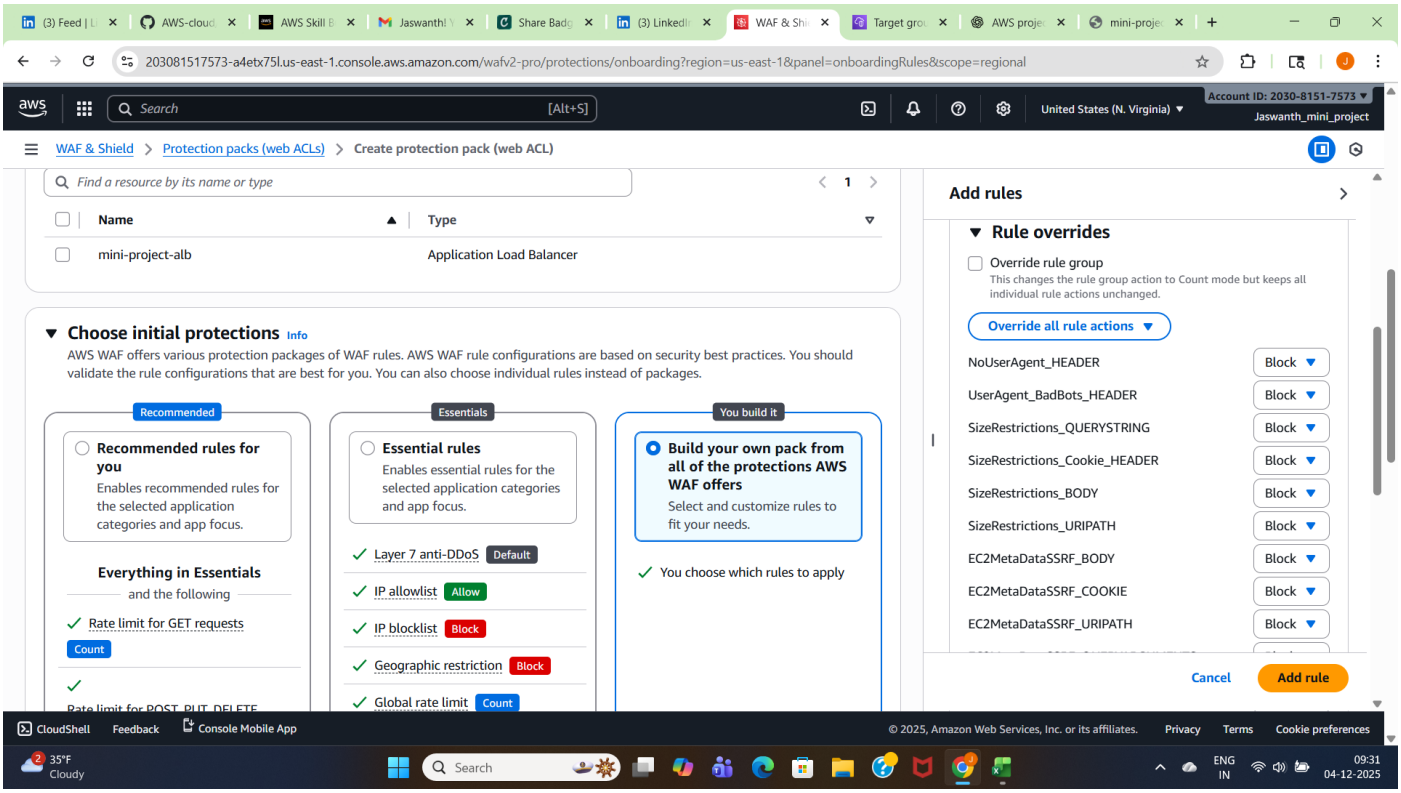
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/wafv2-pro/protections/onboarding?region=us-east-1&panel=onboardingRules&scope=regional
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
WAF & Shield > Protection packs (web ACLs) > Create protection pack (web ACL)
Find a resource by its name or type
Name
Type
mini-project-alb
Application Load Balancer
Choose initial protections Info
AWS WAF offers various protection packages of WAF rules. AWS WAF rule configurations are based on security best practices. You should validate the rule configurations that are best for you. You can also choose individual rules instead of packages.
Recommended
Recommended rules for you
Enables recommended rules for the selected application categories and app focus.
Everything in Essentials
and the following
Rate limit for GET requests
Count
Essentials
Essential rules
Enables essential rules for the selected application categories and app focus.
Layer 7 anti-DDoS Default
IP allowlist Allow
IP blocklist Block
Geographic restriction Block
Global rate limit Count
You build it
Build your own pack from all of the protections AWS WAF offers
Select and customize rules to fit your needs.
You choose which rules to apply
Add rules
Rule overrides
Override rule group
This changes the rule group action to Count mode but keeps all individual rule actions unchanged.
Override all rule actions
NoUserAgent_HEADER Block
UserAgent_BadBots_HEADER Block
SizeRestrictions_QUERYSTRING Block
SizeRestrictions_Cookie_HEADER Block
SizeRestrictions_BODY Block
SizeRestrictions_URIPATH Block
EC2MetaDataSSRF_BODY Block
EC2MetaDataSSRF_COOKIE Block
EC2MetaDataSSRF_URIPATH Block
Cancel
Add rule
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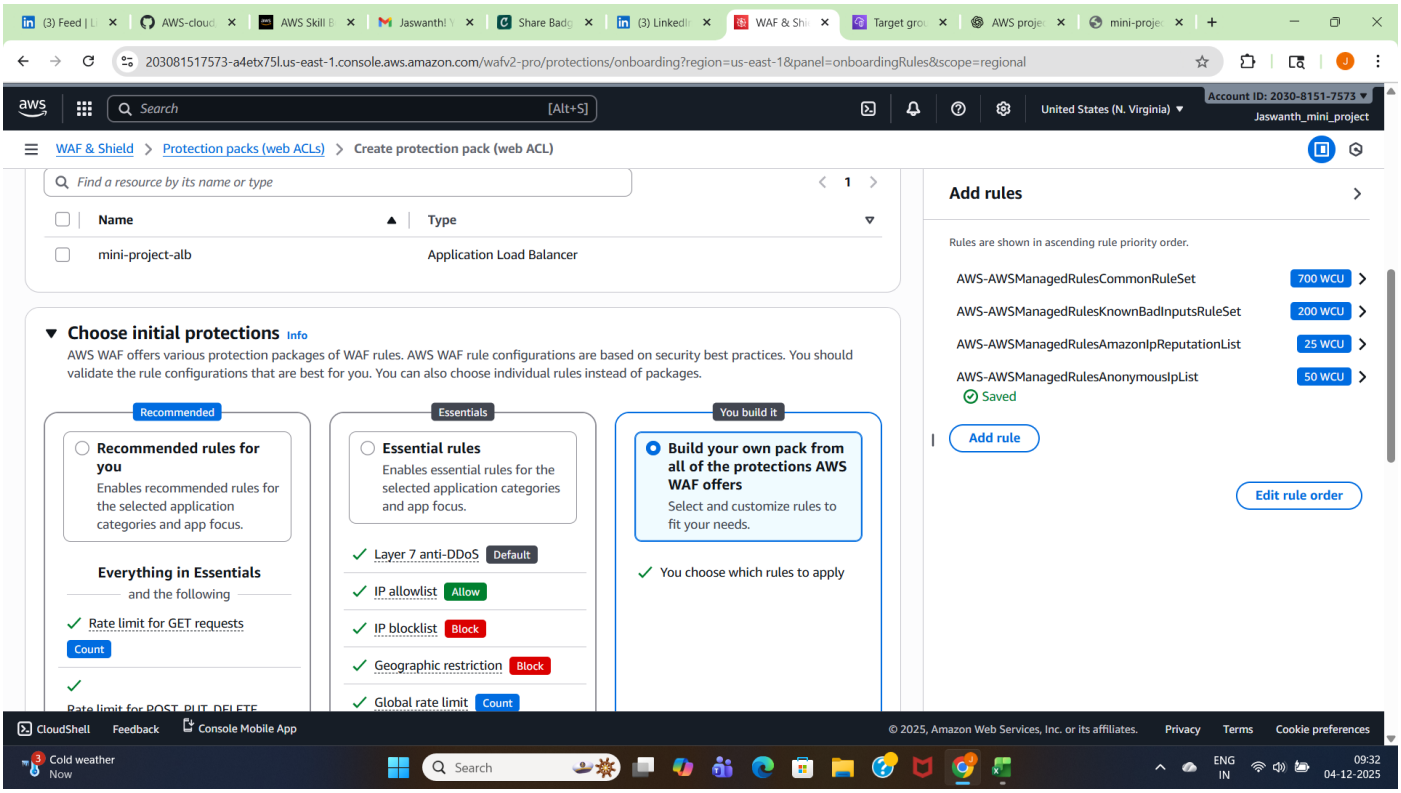
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/wafv2-pro/protections/onboarding?region=us-east-1&panel=onboardingRules&scope=regional
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
WAF & Shield > Protection packs (web ACLs) > Create protection pack (web ACL)
Find a resource by its name or type
Name
Type
mini-project-alb
Application Load Balancer
Choose initial protections Info
AWS WAF offers various protection packages of WAF rules. AWS WAF rule configurations are based on security best practices. You should validate the rule configurations that are best for you. You can also choose individual rules instead of packages.
Recommended
Recommended rules for you
Enables recommended rules for the selected application categories and app focus.
Everything in Essentials
and the following
Rate limit for GET requests
Count
Essentials
Essential rules
Enables essential rules for the selected application categories and app focus.
Layer 7 anti-DDoS
Default
IP allowlist
Allow
IP blocklist
Block
Geographic restriction
Block
Global rate limit
Count
You build it
Build your own pack from all of the protections AWS WAF offers
Select and customize rules to fit your needs.
You choose which rules to apply
Add rules
Rules are shown in ascending rule priority order.
AWS-AWSManagedRulesCommonRuleSet
700 WCU
AWS-AWSManagedRulesKnownBadInputsRuleSet
200 WCU
AWS-AWSManagedRulesAmazonIpReputationList
25 WCU
AWS-AWSManagedRulesAnonymousIpList
50 WCU
Saved
Add rule
Edit rule order
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Now
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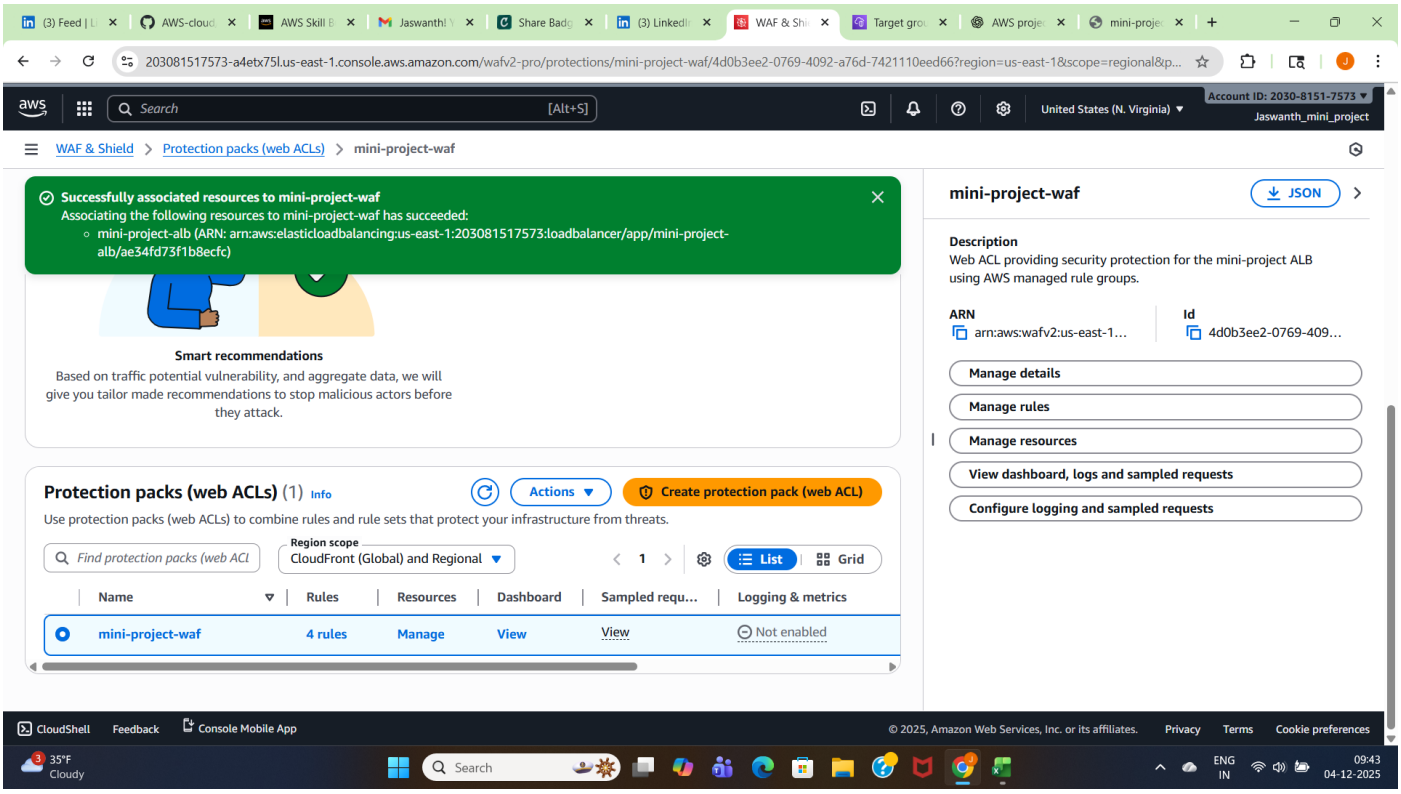
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/wafv2-pro/protections/mini-project-waf/4d0b3ee2-0769-4092-a76d-7421110eed66?region=us-east-1&scope=regional&p...
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
WAF & Shield > Protection packs (web ACLs) > mini-project-waf
Successfully associated resources to mini-project-waf
Associating the following resources to mini-project-waf has succeeded:
mini-project-alb (ARN: arn:aws:elasticloadbalancing:us-east-1:203081517573:loadbalancer/app/mini-project-alb/ae34fd73f1b8ecfc)
Smart recommendations
Based on traffic potential vulnerability, and aggregate data, we will give you tailor made recommendations to stop malicious actors before they attack.
Protection packs (web ACLs) (1) Info
Actions
Create protection pack (web ACL)
Use protection packs (web ACLs) to combine rules and rule sets that protect your infrastructure from threats.
Find protection packs (web ACL
Region scope
CloudFront (Global) and Regional
List
Grid
Name
Rules
Resources
Dashboard
Sampled requ...
Logging & metrics
mini-project-waf
4 rules
Manage
View
View
Not enabled
mini-project-waf
JSON
Description
Web ACL providing security protection for the mini-project ALB using AWS managed rule groups.
ARN
arn:aws:wafv2:us-east-1...
Id
4d0b3ee2-0769-409...
Manage details
Manage rules
Manage resources
View dashboard, logs and sampled requests
Configure logging and sampled requests
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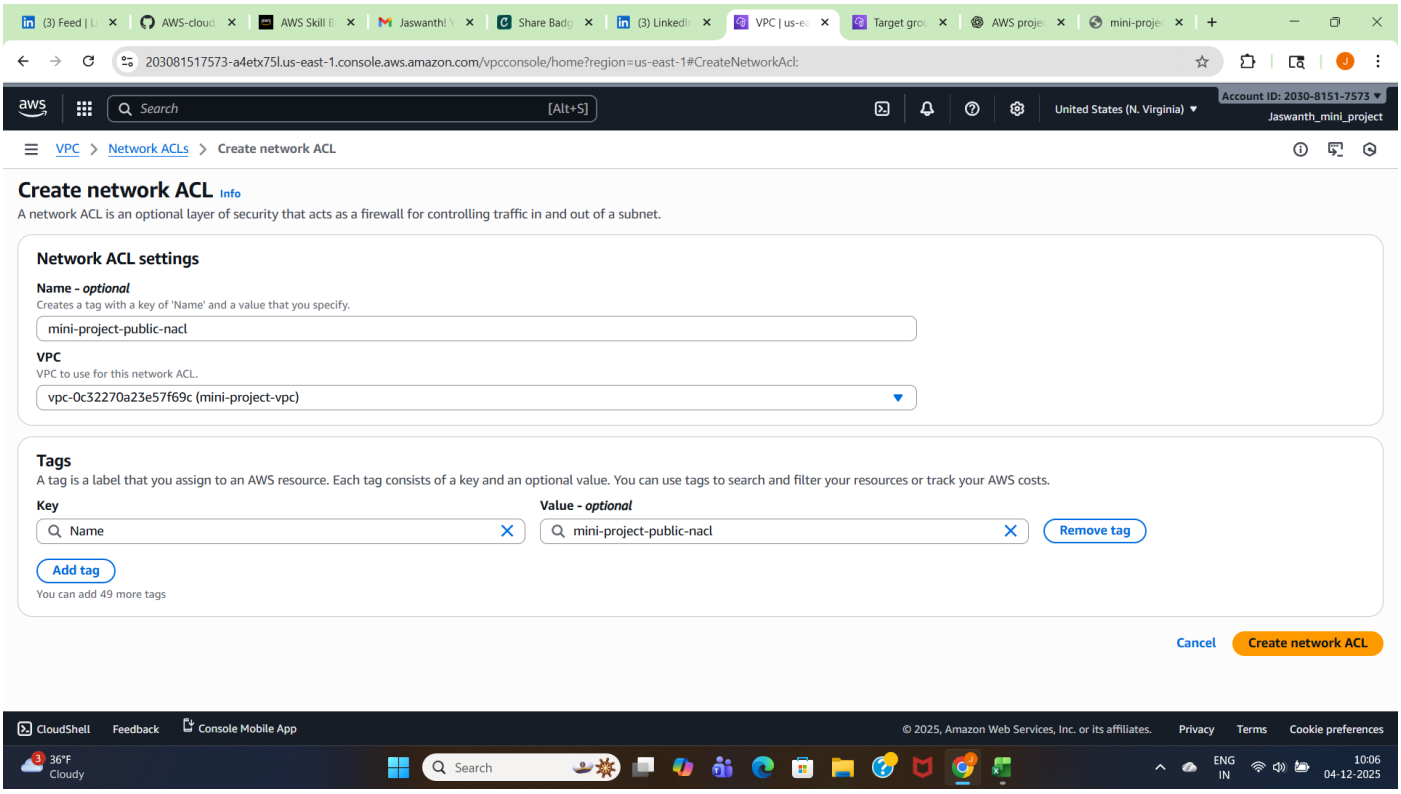
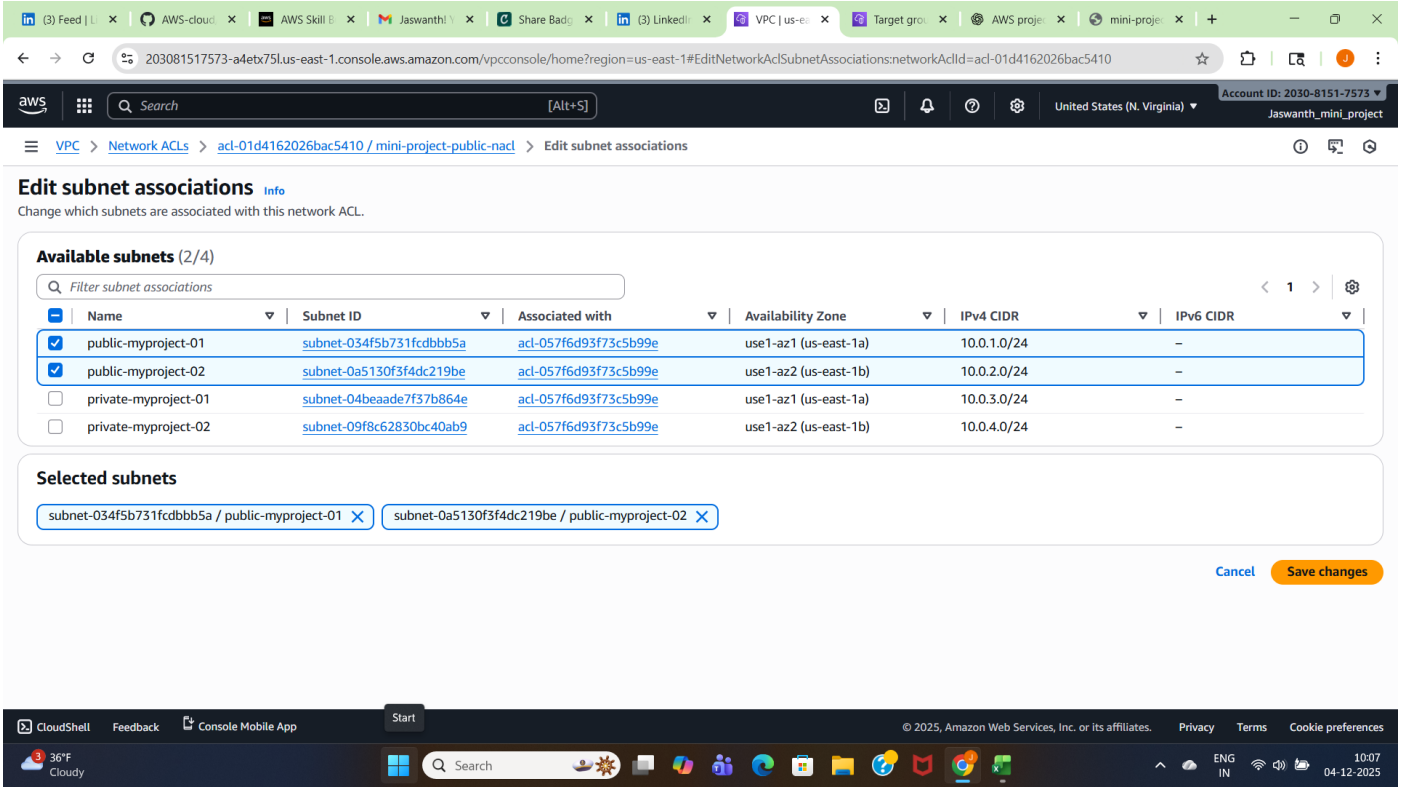
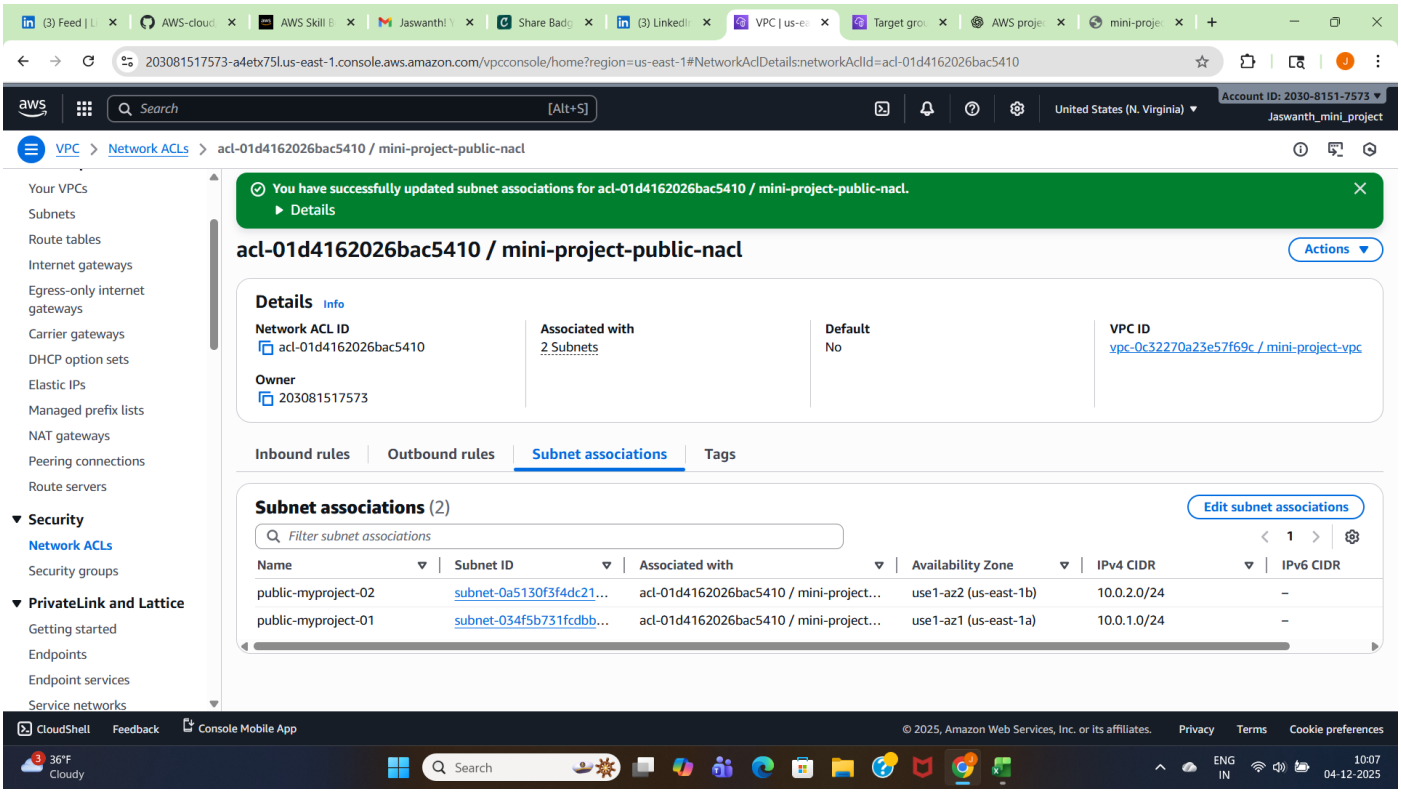
Network ACLs (NACLs)

Created custom public and private NACLs and associated them with the respective subnets to add an extra layer of stateless traffic filtering for inbound and outbound rules.






203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#NetworkAclDetails:networkAclId=acl-01d4162026bac5410
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-01d4162026bac5410 / mini-project-public-nacl
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Endpoint services
Service networks
You have successfully updated subnet associations for acl-01d4162026bac5410 / mini-project-public-nacl.
Details
acl-01d4162026bac5410 / mini-project-public-nacl
Actions
Details Info
Network ACL ID
acl-01d4162026bac5410
Associated with
2 Subnets
Default
No
VPC ID
vpc-0c32270a23e57f69c / mini-project-vpc
Owner
203081517573
Inbound rules
Outbound rules
Subnet associations
Tags
Subnet associations (2)
Edit subnet associations
Filter subnet associations
Name
Subnet ID
Associated with
Availability Zone
IPv4 CIDR
IPv6 CIDR
public-myproject-02
subnet-0a5130f3f4dc21...
acl-01d4162026bac5410 / mini-project...
use1-az2 (us-east-1b)
10.0.2.0/24
public-myproject-01
subnet-034f5b731fcdbb...
acl-01d4162026bac5410 / mini-project...
use1-az1 (us-east-1a)
10.0.1.0/24
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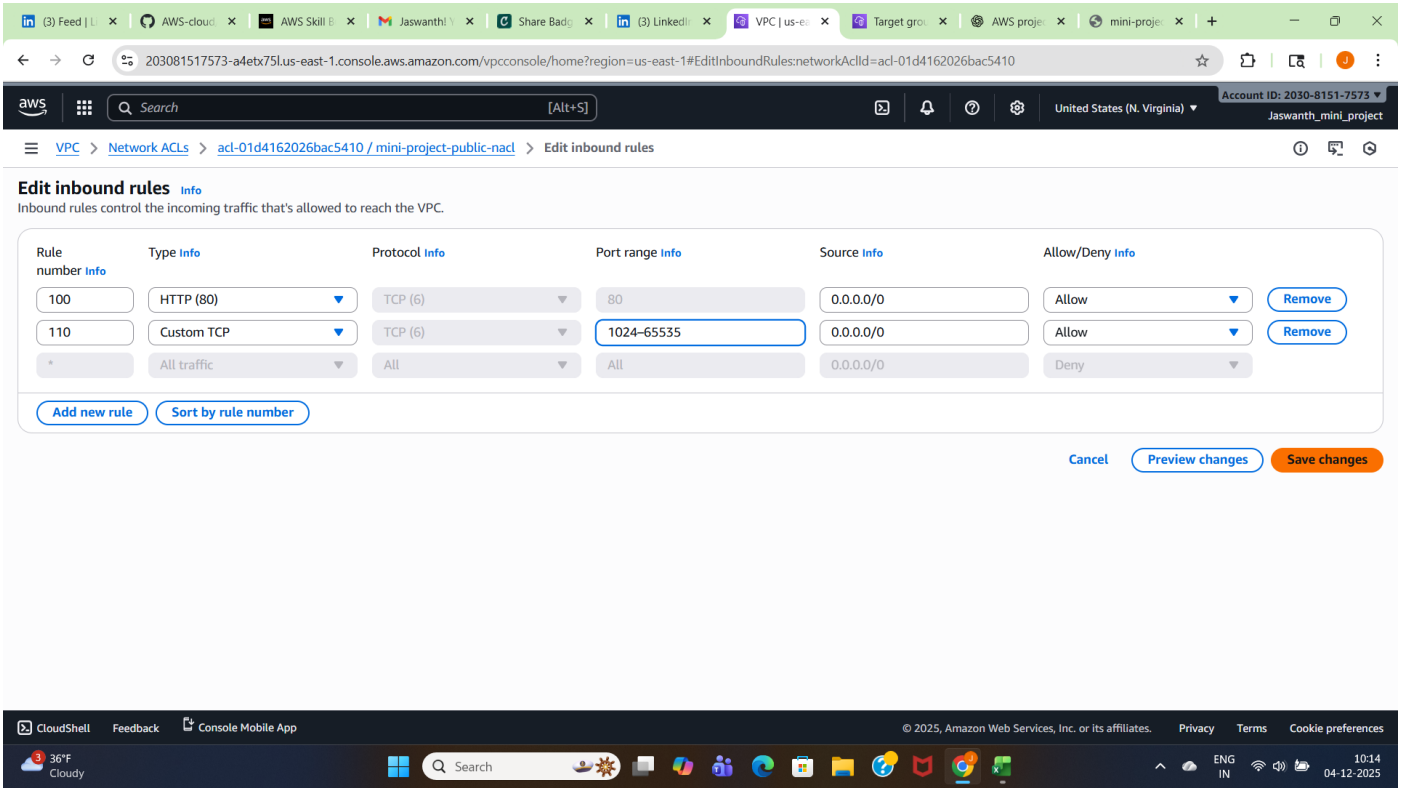
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#EditInboundRules:networkAclId=acl-01d4162026bac5410
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-01d4162026bac5410 / mini-project-public-nacl > Edit inbound rules
Edit inbound rules Info
Inbound rules control the incoming traffic that's allowed to reach the VPC.
Rule number Info
Type Info
Protocol Info
Port range Info
Source Info
Allow/Deny Info
100
HTTP (80)
TCP (6)
80
0.0.0.0/0
Allow
Remove
110
Custom TCP
TCP (6)
1024–65535
0.0.0.0/0
Allow
Remove
*
All traffic
All
All
0.0.0.0/0
Deny
Add new rule
Sort by rule number
Cancel
Preview changes
Save changes
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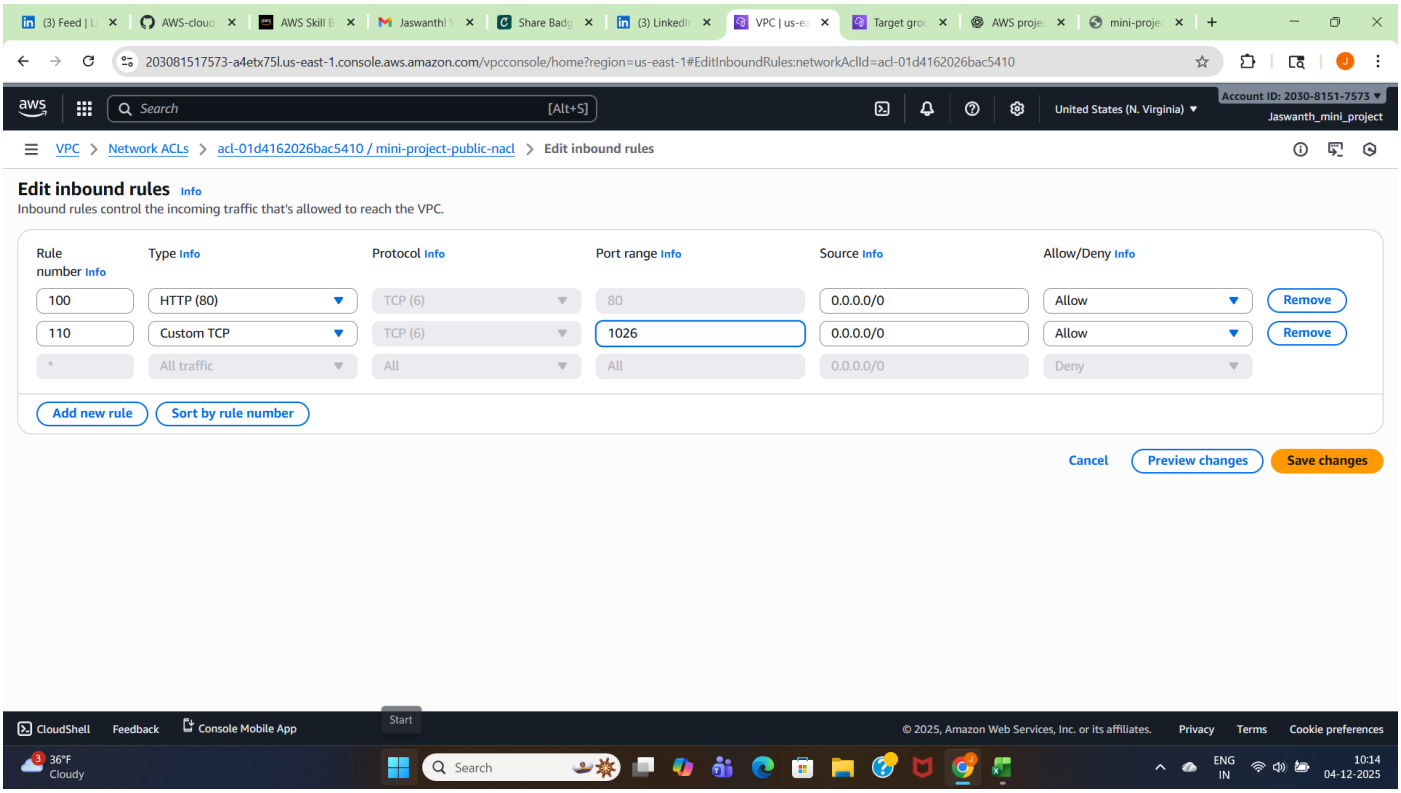
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#EditInboundRules:networkAclId=acl-01d4162026bac5410
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-01d4162026bac5410 / mini-project-public-nacl > Edit inbound rules
Edit inbound rules Info
Inbound rules control the incoming traffic that's allowed to reach the VPC.
Rule number Info
Type Info
Protocol Info
Port range Info
Source Info
Allow/Deny Info
100 HTTP (80) TCP (6) 80 0.0.0.0/0 Allow Remove
110 Custom TCP TCP (6) 1026 0.0.0.0/0 Allow Remove
* All traffic All All 0.0.0.0/0 Deny
Add new rule
Sort by rule number
Cancel
Preview changes
Save changes
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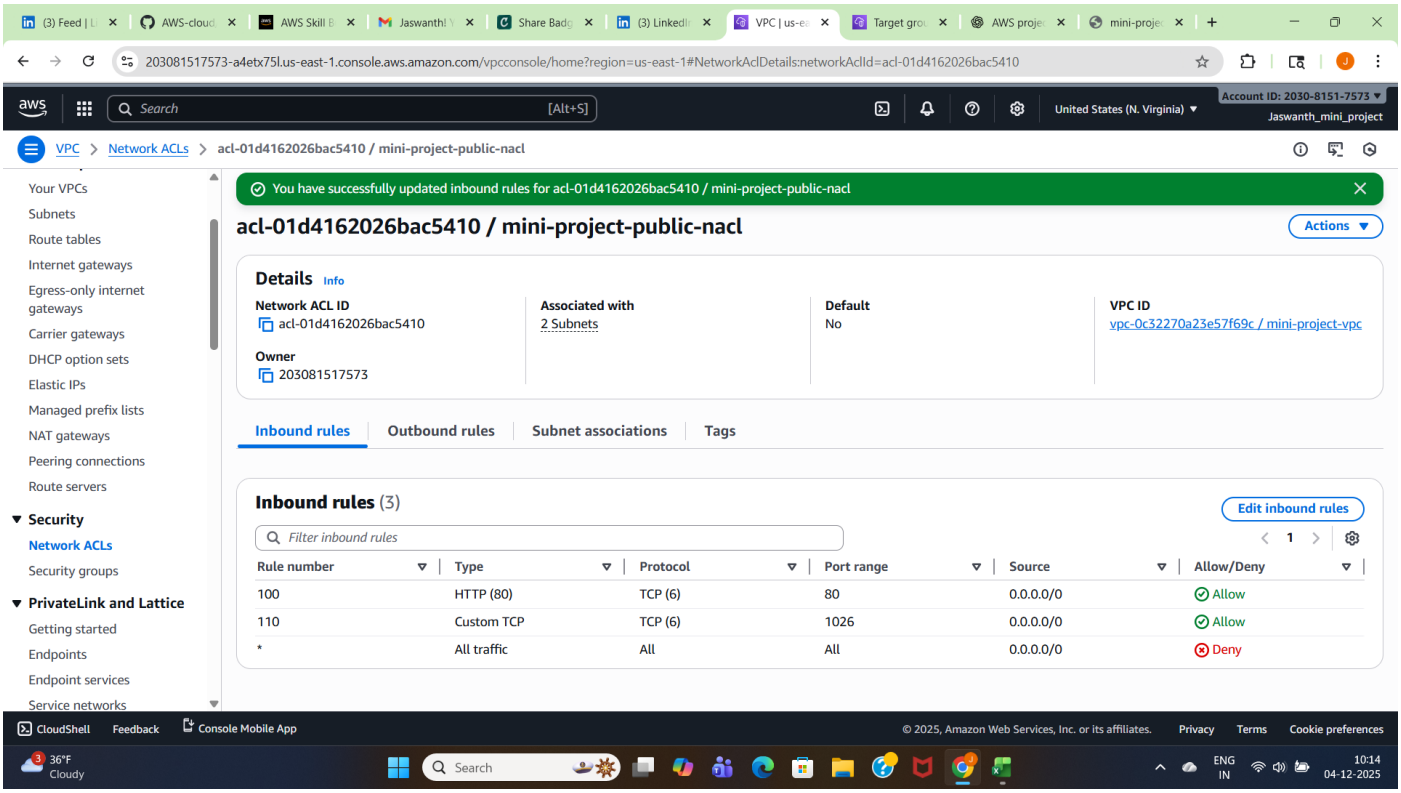
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#NetworkAclDetails:networkAclId=acl-01d4162026bac5410
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-01d4162026bac5410 / mini-project-public-nacl
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Endpoint services
Service networks
You have successfully updated inbound rules for acl-01d4162026bac5410 / mini-project-public-nacl
acl-01d4162026bac5410 / mini-project-public-nacl
Actions
Details Info
Network ACL ID
acl-01d4162026bac5410
Associated with
2 Subnets
Default
No
VPC ID
vpc-0c32270a23e57f69c / mini-project-vpc
Owner
203081517573
Inbound rules
Outbound rules
Subnet associations
Tags
Inbound rules (3)
Edit inbound rules
Filter inbound rules
Rule number
Type
Protocol
Port range
Source
Allow/Deny
100 HTTP (80) TCP (6) 80 0.0.0.0/0 Allow
110 Custom TCP TCP (6) 1026 0.0.0.0/0 Allow
* All traffic All All 0.0.0.0/0 Deny
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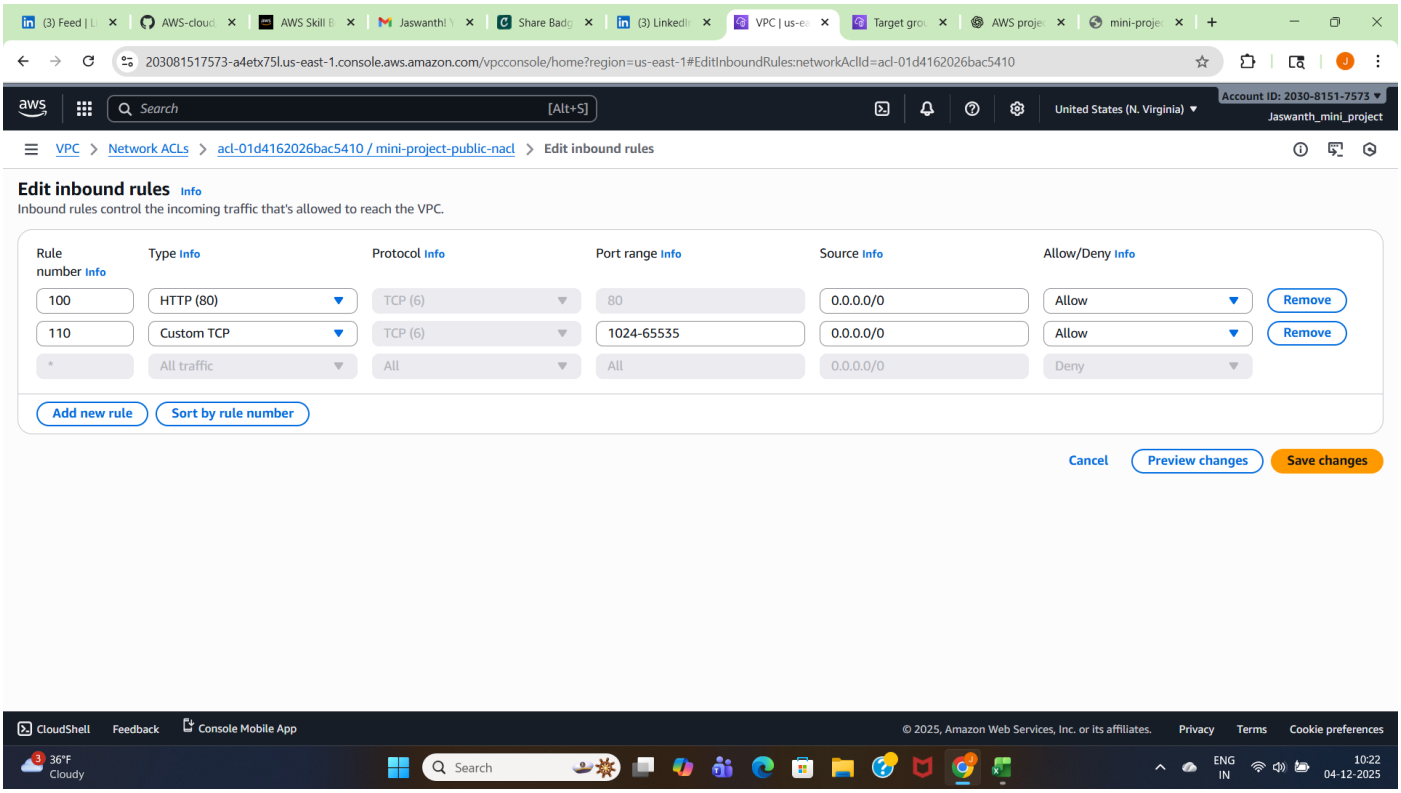
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#EditInboundRules:networkAclId=acl-01d4162026bac5410
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-01d4162026bac5410 / mini-project-public-nacl > Edit inbound rules
Edit inbound rules Info
Inbound rules control the incoming traffic that's allowed to reach the VPC.
Rule number Info
Type Info
Protocol Info
Port range Info
Source Info
Allow/Deny Info
100 HTTP (80) TCP (6) 80 0.0.0.0/0 Allow Remove
110 Custom TCP TCP (6) 1024-65535 0.0.0.0/0 Allow Remove
* All traffic All All 0.0.0.0/0 Deny
Add new rule
Sort by rule number
Cancel
Preview changes
Save changes
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Feedback
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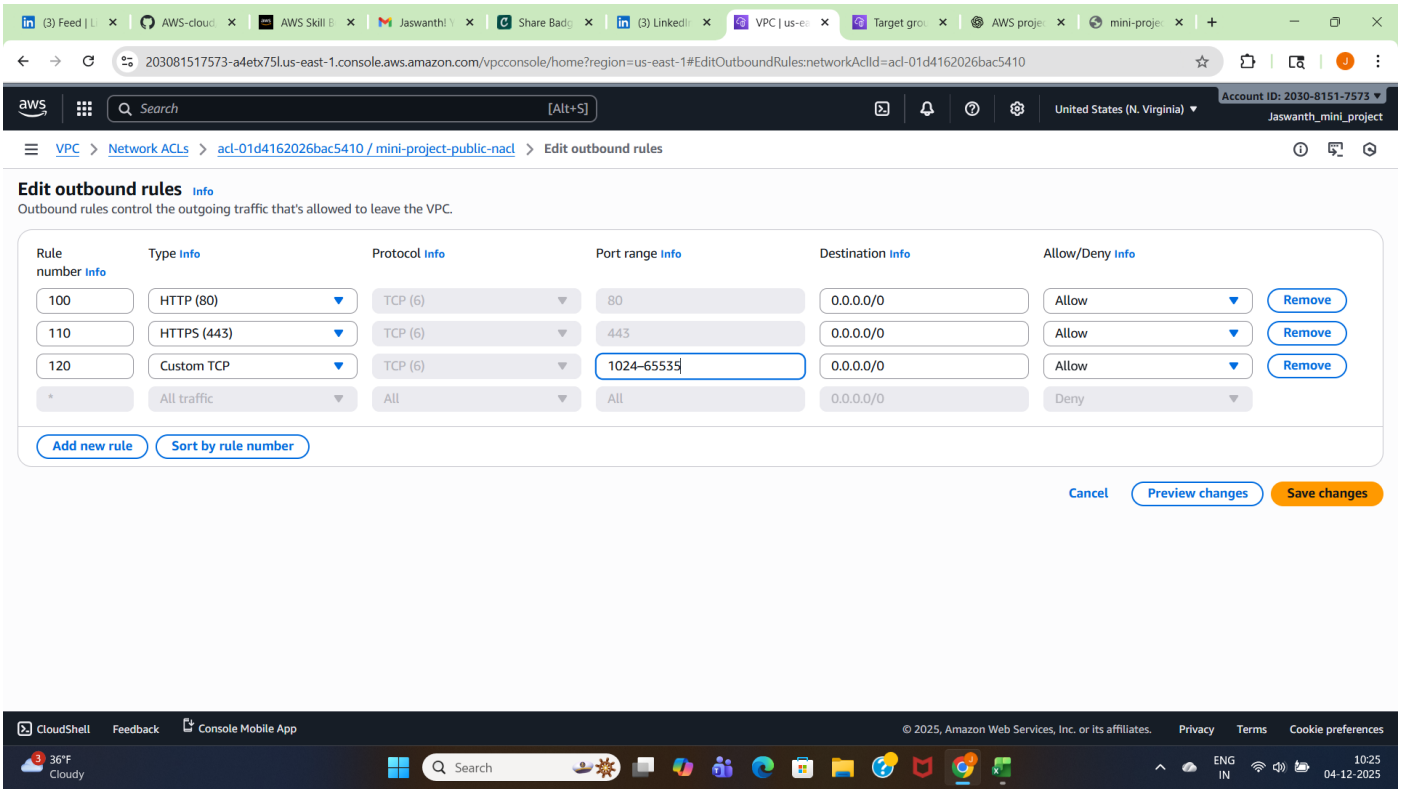
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#EditOutboundRules:networkAclId=acl-01d4162026bac5410
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-01d4162026bac5410 / mini-project-public-nacl > Edit outbound rules
Edit outbound rules Info
Outbound rules control the outgoing traffic that's allowed to leave the VPC.
Rule number Info
Type Info
Protocol Info
Port range Info
Destination Info
Allow/Deny Info
100 HTTP (80) TCP (6) 80 0.0.0.0/0 Allow Remove
110 HTTPS (443) TCP (6) 443 0.0.0.0/0 Allow Remove
120 Custom TCP TCP (6) 1024–65535 0.0.0.0/0 Allow Remove
* All traffic All All 0.0.0.0/0 Deny
Add new rule
Sort by rule number
Cancel
Preview changes
Save changes
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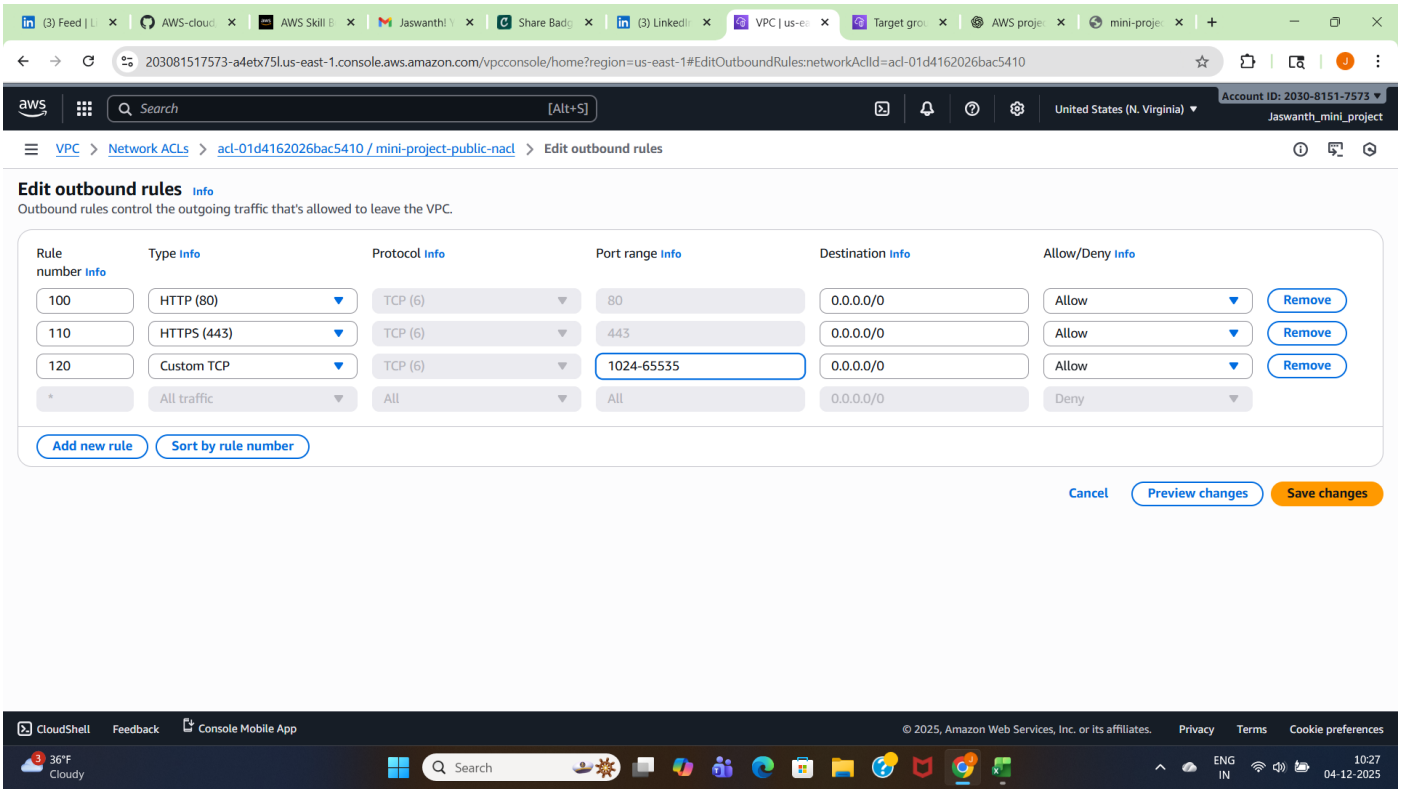
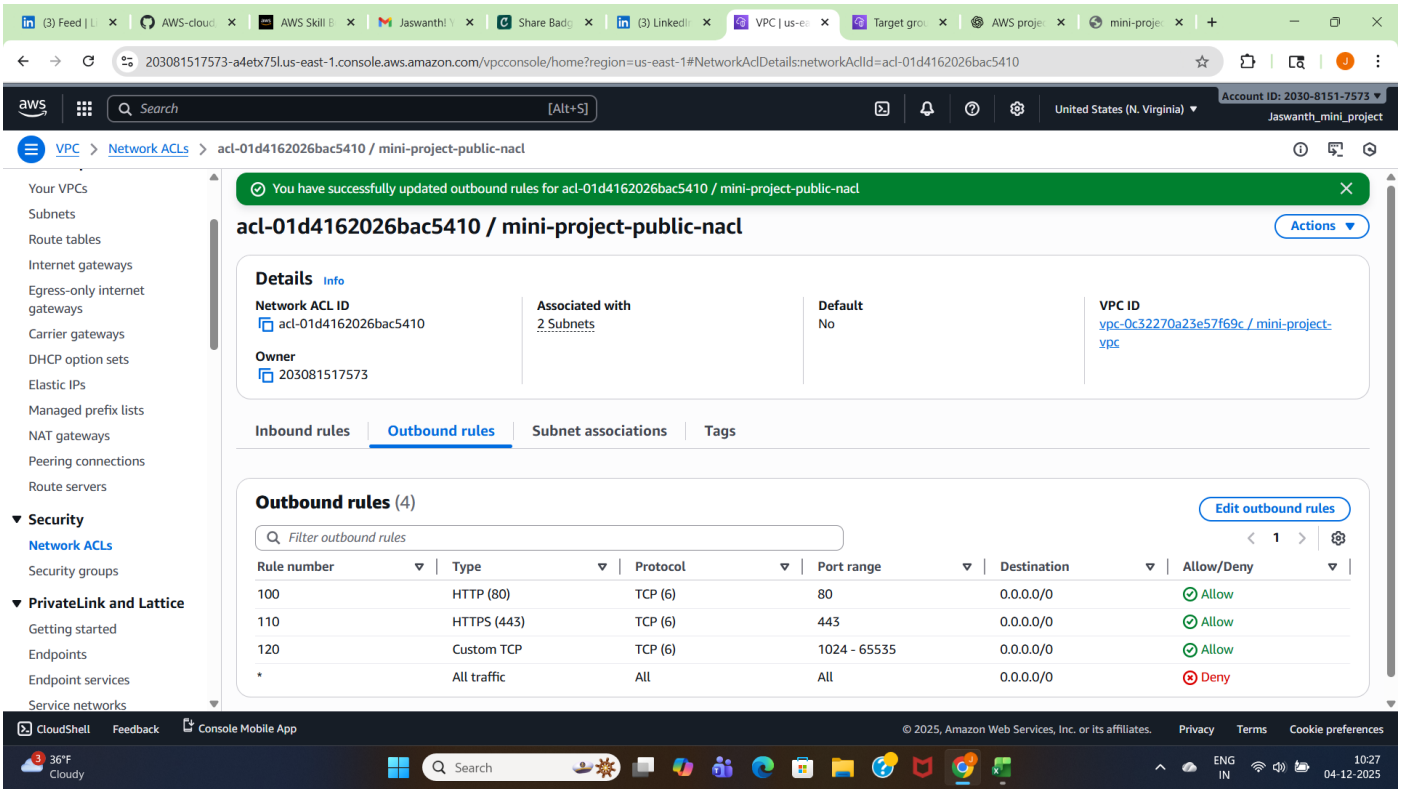
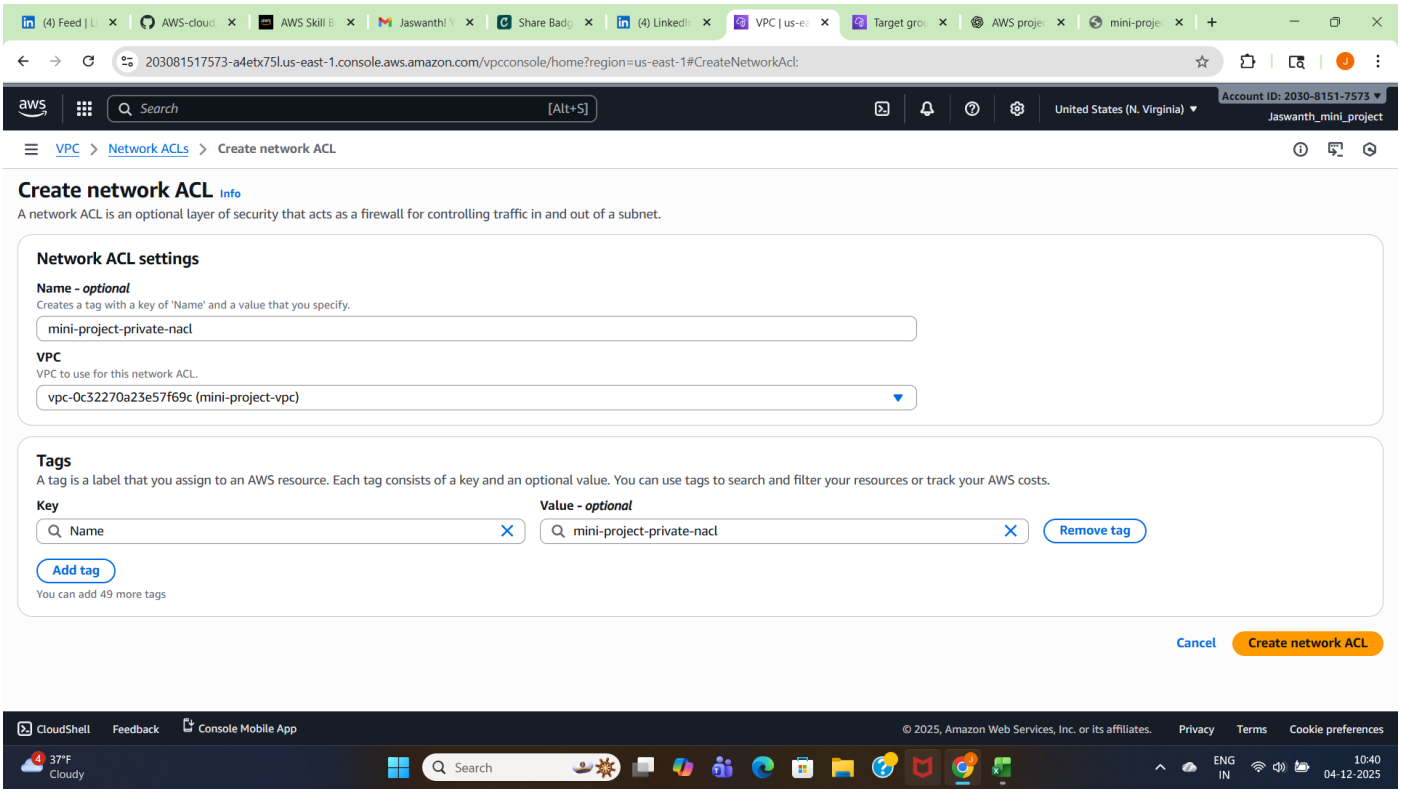

Edit outbound rules Info
Outbound rules control the outgoing traffic that's allowed to leave the VPC.
Rule number Info
Type Info
Protocol Info
Port range Info
Destination Info
Allow/Deny Info
100 HTTP (80) TCP (6) 80 0.0.0.0/0 Allow Remove
110 HTTPS (443) TCP (6) 443 0.0.0.0/0 Allow Remove
120 Custom TCP TCP (6) 1024-65535 0.0.0.0/0 Allow Remove
* All traffic All All 0.0.0.0/0 Deny
Add new rule
Sort by rule number
Cancel
Preview changes
Save changes


You have successfully updated outbound rules for acl-01d4162026bac5410 / mini-project-public-nacl
acl-01d4162026bac5410 / mini-project-public-nacl
Actions
Details Info
Network ACL ID
acl-01d4162026bac5410
Associated with
2 Subnets
Default
No
VPC ID
vpc-0c32270a23e57f69c / mini-project-vpc
Owner
203081517573
Inbound rules
Outbound rules
Subnet associations
Tags
Outbound rules (4)
Edit outbound rules
Filter outbound rules
Rule number
Type
Protocol
Port range
Destination
Allow/Deny
100 HTTP (80) TCP (6) 80 0.0.0.0/0 Allow
110 HTTPS (443) TCP (6) 443 0.0.0.0/0 Allow
120 Custom TCP TCP (6) 1024 - 65535 0.0.0.0/0 Allow
* All traffic All All 0.0.0.0/0 Deny


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateNetworkAcl:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > Create network ACL
Create network ACL Info
A network ACL is an optional layer of security that acts as a firewall for controlling traffic in and out of a subnet.
Network ACL settings
Name - optional
Creates a tag with a key of 'Name' and a value that you specify.
mini-project-private-nacl
VPC
VPC to use for this network ACL.
vpc-0c32270a23e57f69c (mini-project-vpc)
Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.
Key
Name
Value - optional
mini-project-private-nacl
Remove tag
Add tag
You can add 49 more tags
Cancel
Create network ACL
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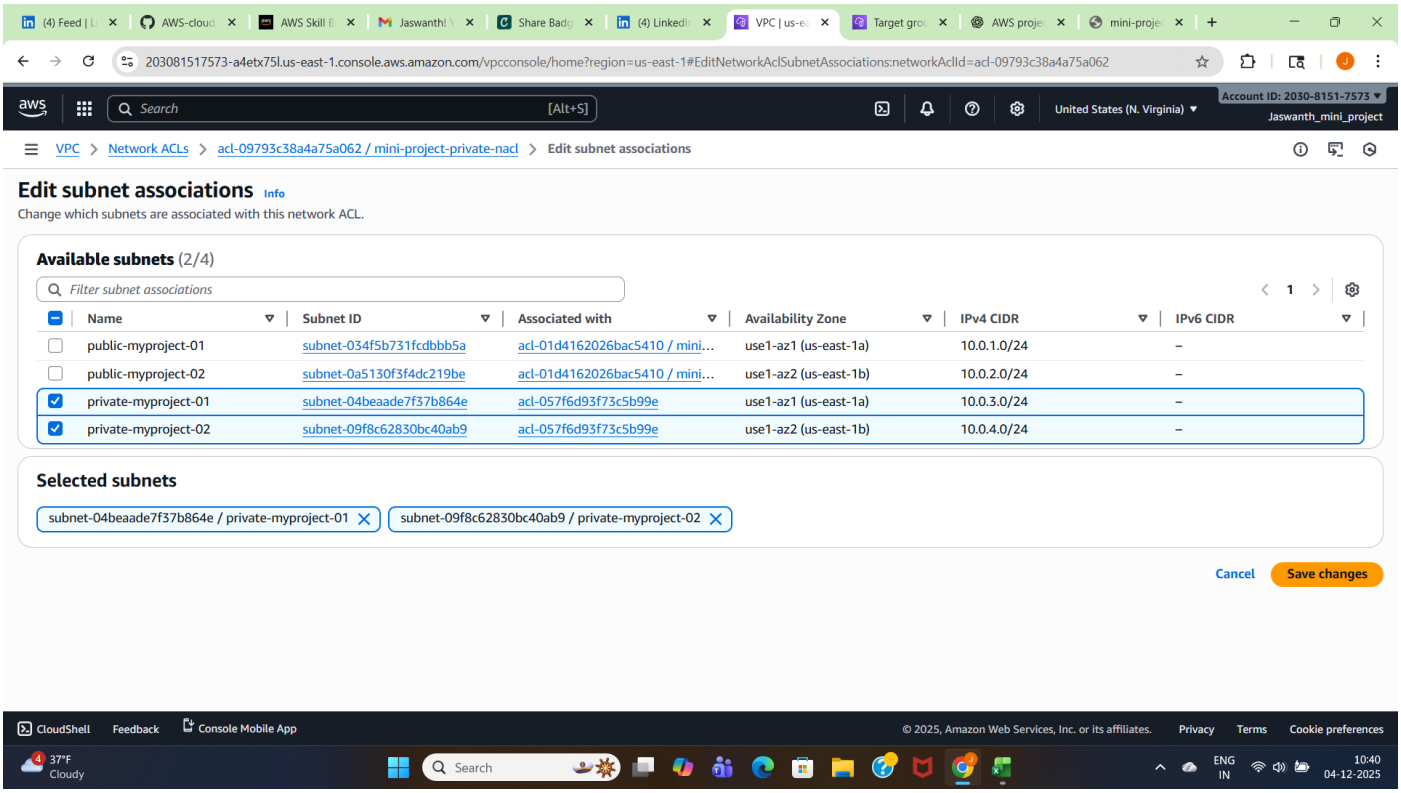
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#EditNetworkAclSubnetAssociations:networkAclId=acl-09793c38a4a75a062
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-09793c38a4a75a062 / mini-project-private-nacl > Edit subnet associations
Edit subnet associations Info
Change which subnets are associated with this network ACL.
Available subnets (2/4)
Filter subnet associations
Name
Subnet ID
Associated with
Availability Zone
IPv4 CIDR
IPv6 CIDR
public-myproject-01 subnet-034f5b731fcdbbb5a acl-01d4162026bac5410 / mini... use1-az1 (us-east-1a) 10.0.1.0/24 –
public-myproject-02 subnet-0a5130f3f4dc219be acl-01d4162026bac5410 / mini... use1-az2 (us-east-1b) 10.0.2.0/24 –
private-myproject-01 subnet-04beaade7f37b864e acl-057f6d93f73c5b99e use1-az1 (us-east-1a) 10.0.3.0/24 –
private-myproject-02 subnet-09f8c62830bc40ab9 acl-057f6d93f73c5b99e use1-az2 (us-east-1b) 10.0.4.0/24 –
Selected subnets
subnet-04beaade7f37b864e / private-myproject-01
subnet-09f8c62830bc40ab9 / private-myproject-02
Cancel
Save changes
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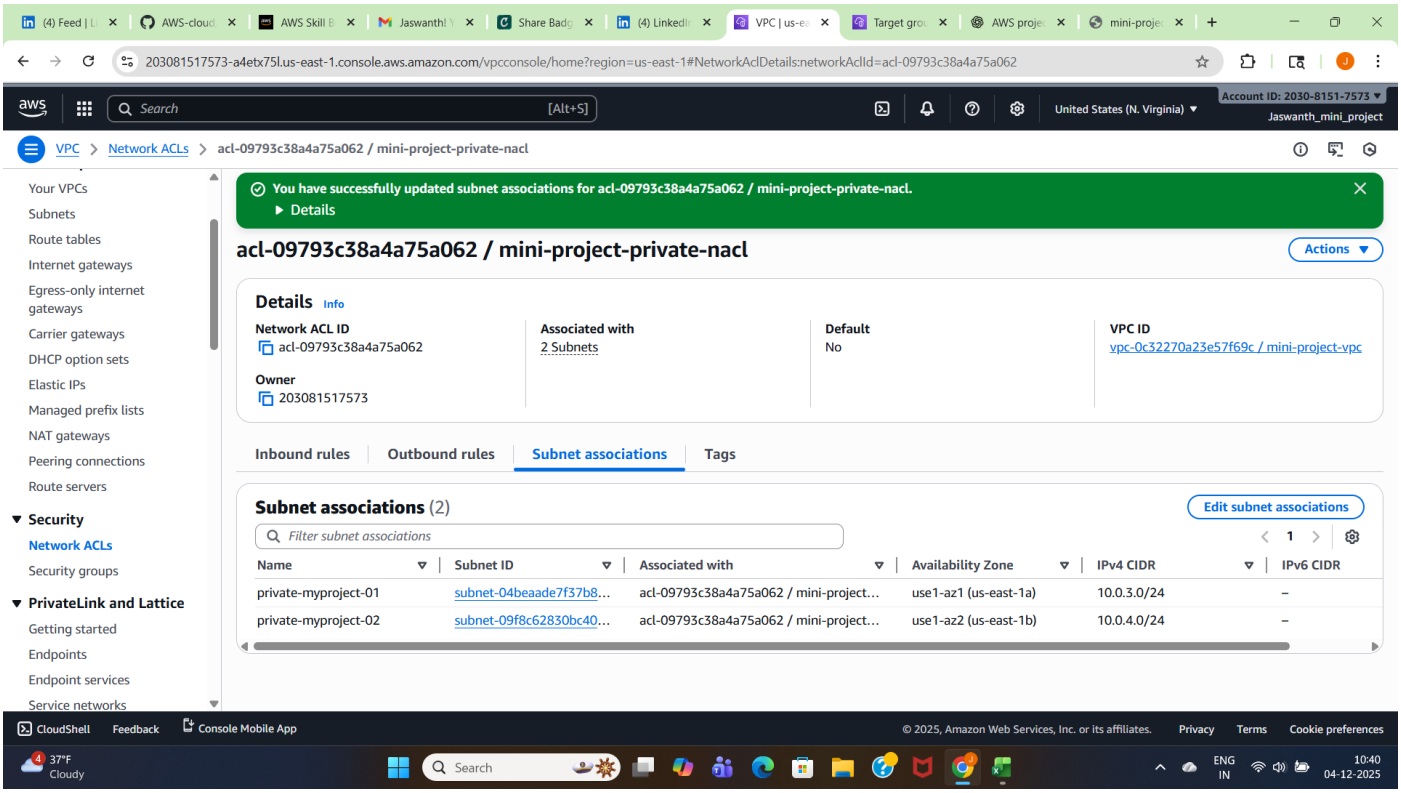
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#NetworkAclDetails:networkAclId=acl-09793c38a4a75a062
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-09793c38a4a75a062 / mini-project-private-nacl
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Endpoint services
Service networks
You have successfully updated subnet associations for acl-09793c38a4a75a062 / mini-project-private-nacl.
Details
acl-09793c38a4a75a062 / mini-project-private-nacl
Actions
Details Info
Network ACL ID
acl-09793c38a4a75a062
Associated with
2 Subnets
Default
No
VPC ID
vpc-0c32270a23e57f69c / mini-project-vpc
Owner
203081517573
Inbound rules
Outbound rules
Subnet associations
Tags
Subnet associations (2)
Edit subnet associations
Filter subnet associations
Name
Subnet ID
Associated with
Availability Zone
IPv4 CIDR
IPv6 CIDR
private-myproject-01
subnet-04beaade7f37b8...
acl-09793c38a4a75a062 / mini-project...
use1-az1 (us-east-1a)
10.0.3.0/24
private-myproject-02
subnet-09f8c62830bc40...
acl-09793c38a4a75a062 / mini-project...
use1-az2 (us-east-1b)
10.0.4.0/24
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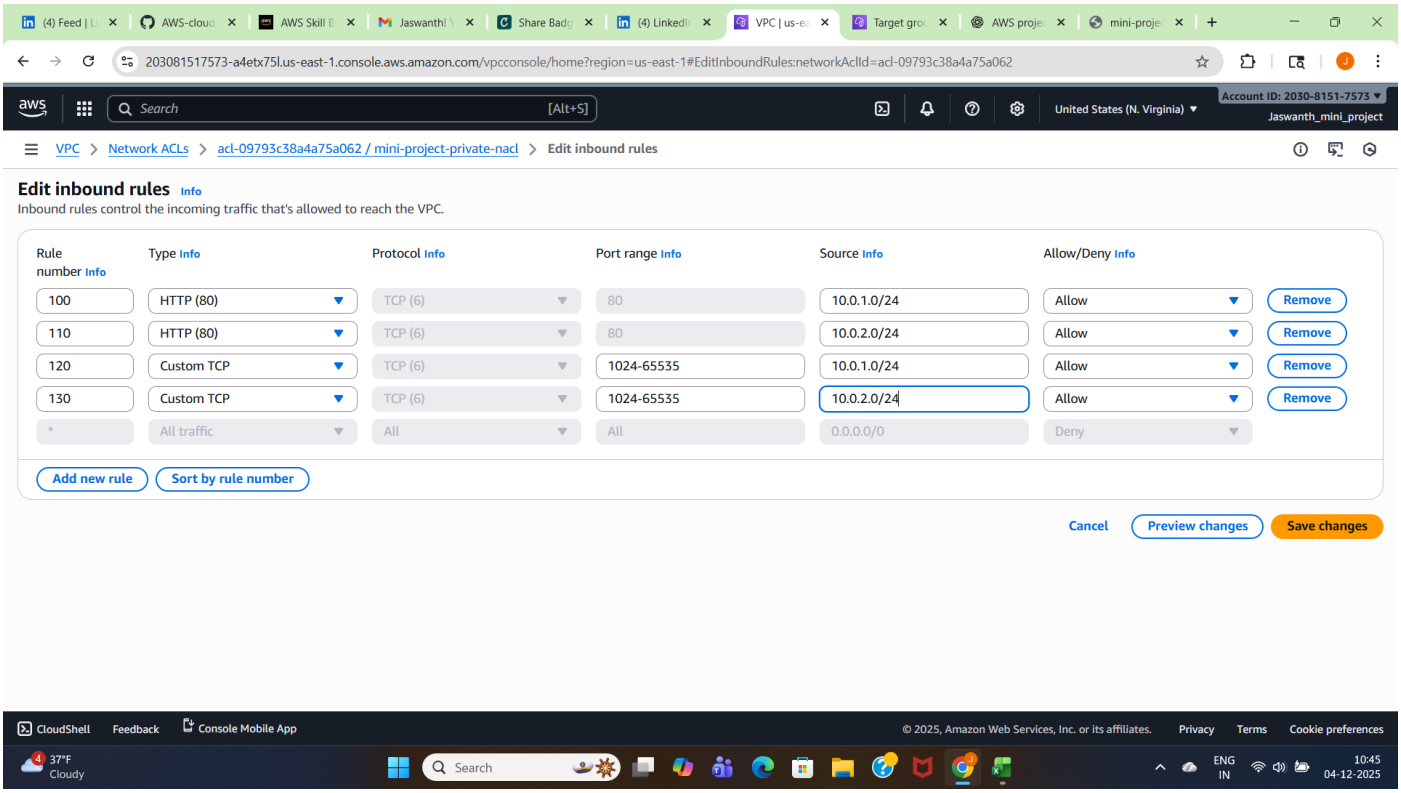
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#EditInboundRules:networkAclId=acl-09793c38a4a75a062
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-09793c38a4a75a062 / mini-project-private-nacl > Edit inbound rules
Edit inbound rules Info
Inbound rules control the incoming traffic that's allowed to reach the VPC.
Rule number Info
Type Info
Protocol Info
Port range Info
Source Info
Allow/Deny Info
100 HTTP (80) TCP (6) 80 10.0.1.0/24 Allow Remove
110 HTTP (80) TCP (6) 80 10.0.2.0/24 Allow Remove
120 Custom TCP TCP (6) 1024-65535 10.0.1.0/24 Allow Remove
130 Custom TCP TCP (6) 1024-65535 10.0.2.0/24 Allow Remove
* All traffic All All 0.0.0.0/0 Deny
Add new rule
Sort by rule number
Cancel
Preview changes
Save changes
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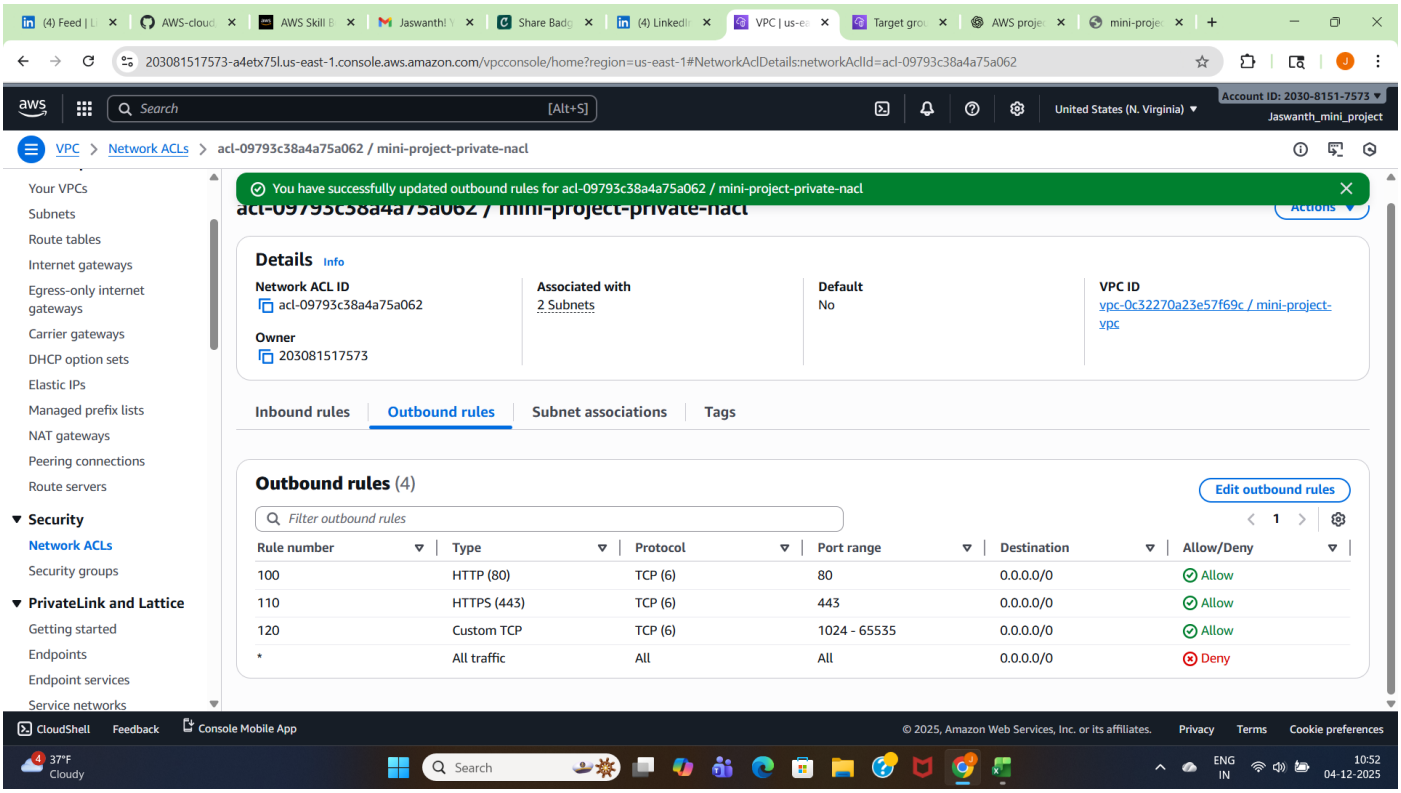
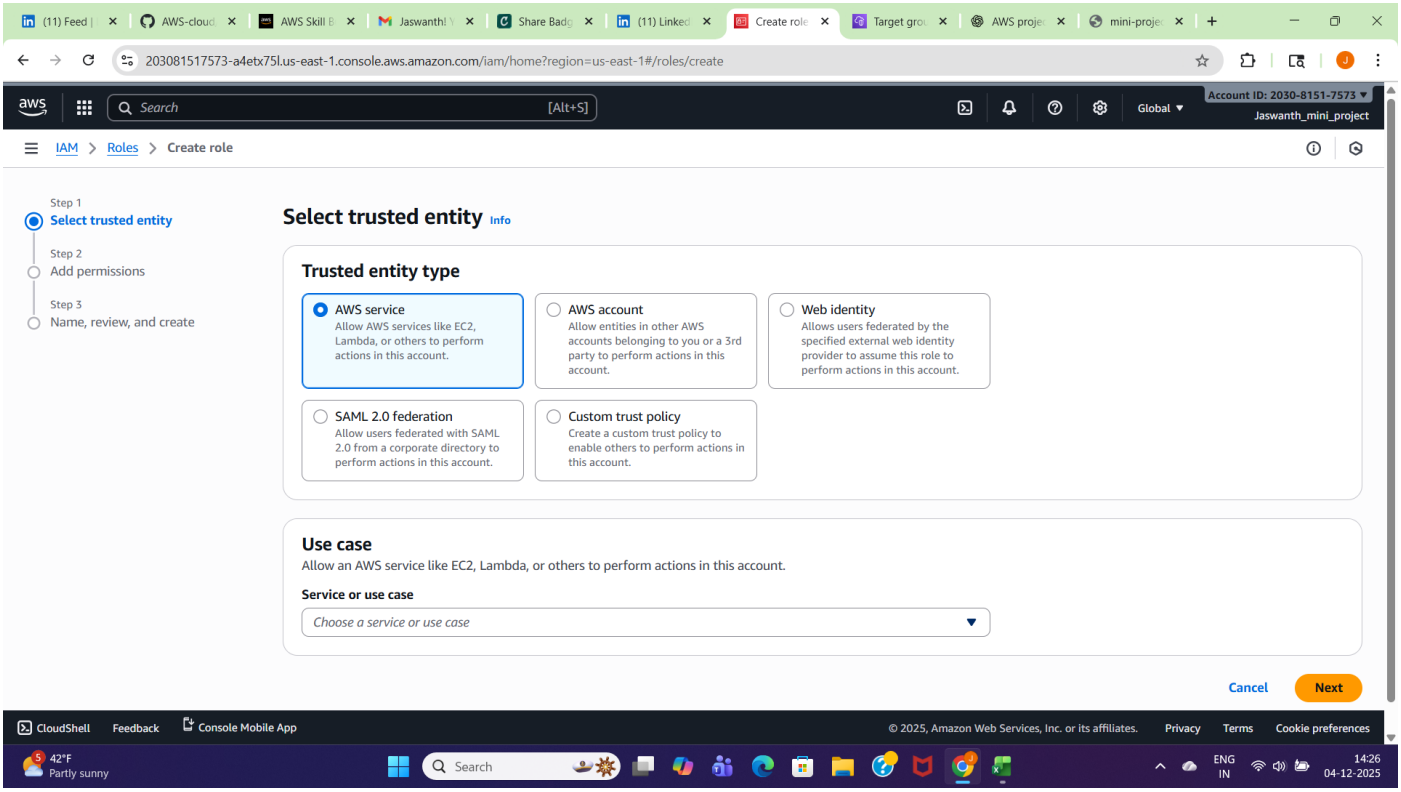
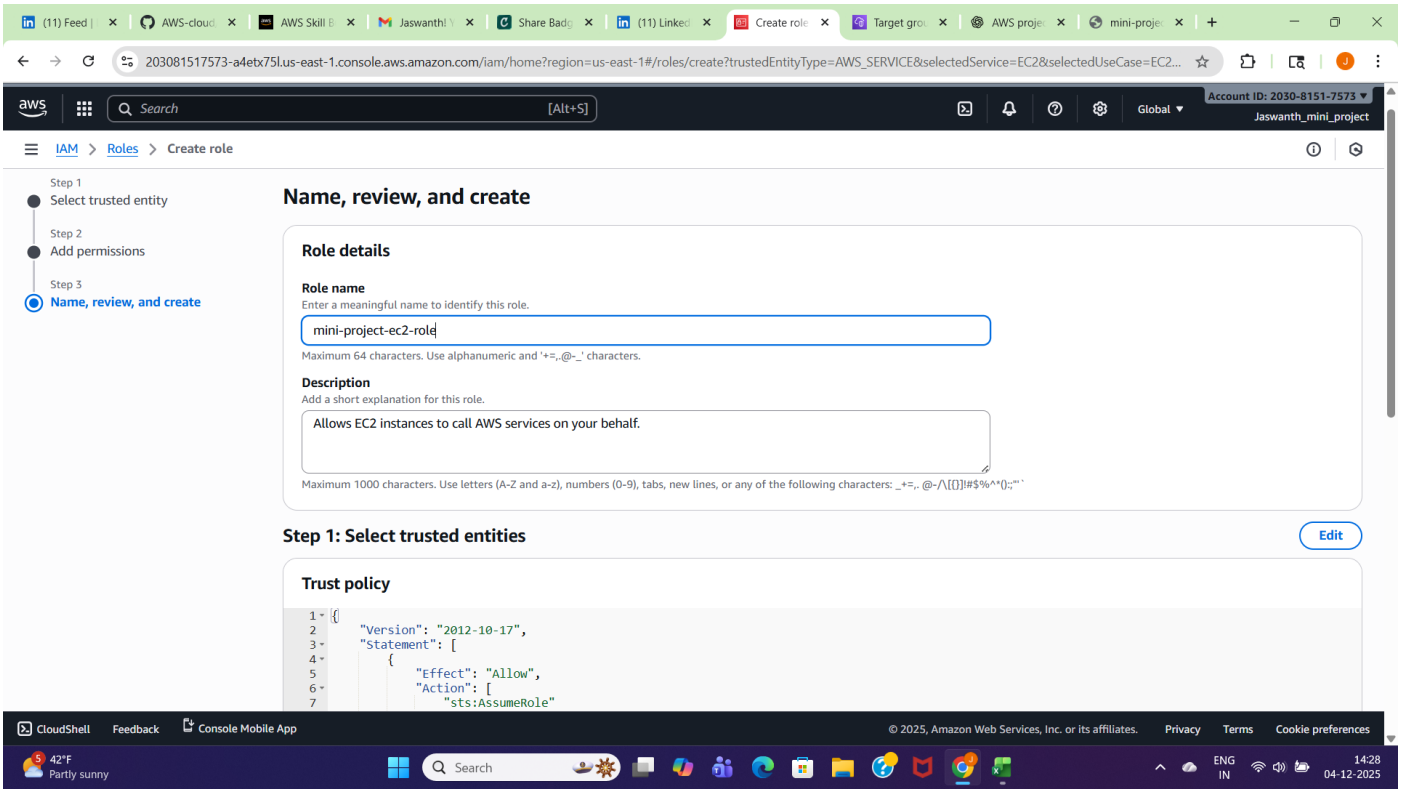


IAM Role for EC2

Created an IAM role (mini-project-ec2-role) with the necessary permissions and attached it as an instance profile so EC2 can securely access required AWS services.




Create role
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/roles/create?trustedEntityType=AWS_SERVICE&selectedService=EC2&selectedUseCase=EC2...
Search [Alt+S]
Global
Account ID: 2030-8151-7573
Jaswanth_mini_project
IAM > Roles > Create role
Step 1
Select trusted entity
Step 2
Add permissions
Step 3
Name, review, and create
Name, review, and create
Role details
Role name
Enter a meaningful name to identify this role.
mini-project-ec2-role
Maximum 64 characters. Use alphanumeric and '+=,.@-_' characters.
Description
Add a short explanation for this role.
Allows EC2 instances to call AWS services on your behalf.
Maximum 1000 characters. Use letters (A-Z and a-z), numbers (0-9), tabs, new lines, or any of the following characters: _+=,. @-/\[{}]!#$%^*();"' `
Step 1: Select trusted entities
Edit
Trust policy
{
"Version": "2012-10-17",
"Statement": [
{
"Effect": "Allow",
"Action": [
"sts:AssumeRole"
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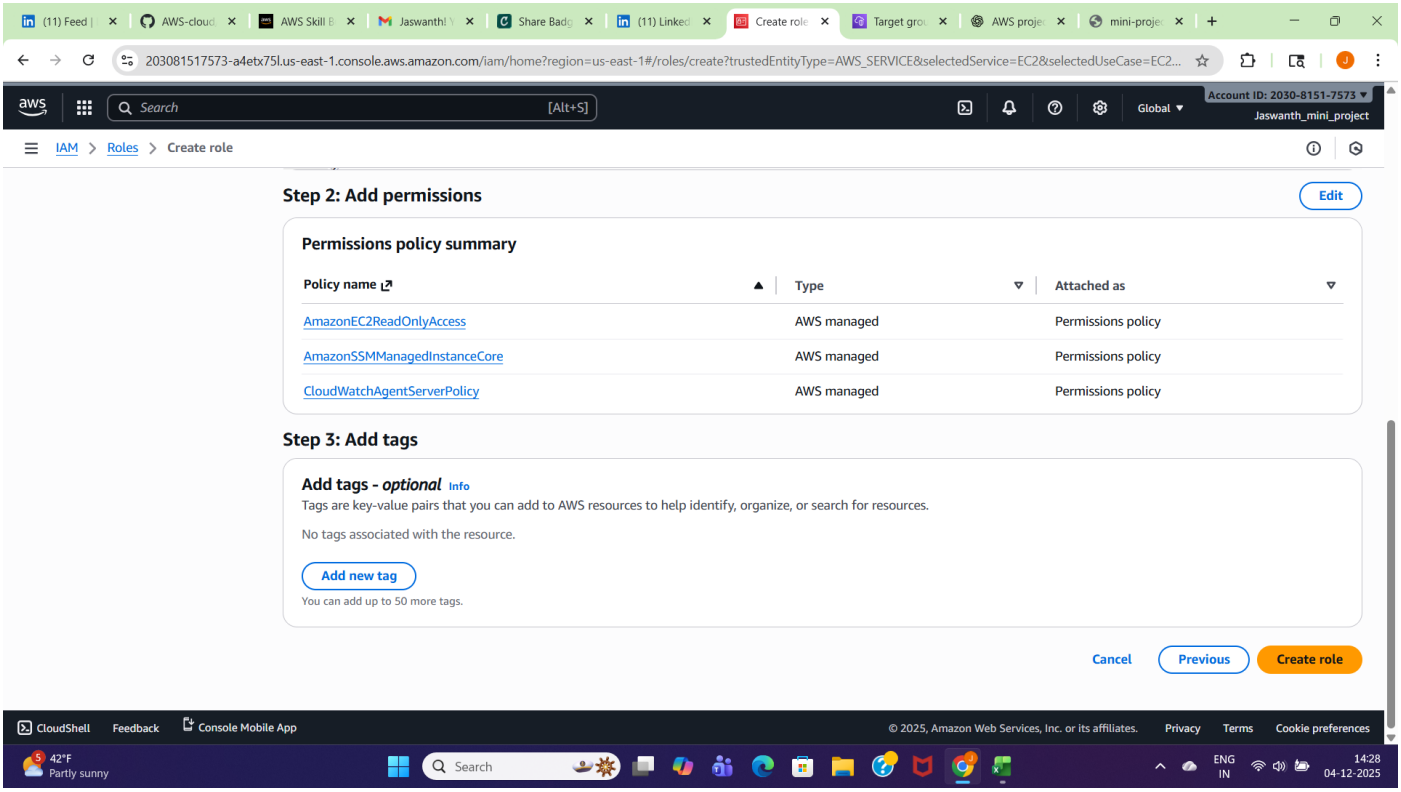
Create role
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/roles/create?trustedEntityType=AWS_SERVICE&selectedService=EC2&selectedUseCase=EC2...
Search [Alt+S]
Global
Account ID: 2030-8151-7573
Jaswanth_mini_project
IAM > Roles > Create role
Step 2: Add permissions
Edit
Permissions policy summary
Policy name
Type
Attached as
AmazonEC2ReadOnlyAccess
AWS managed
Permissions policy
AmazonSSMManagedInstanceCore
AWS managed
Permissions policy
CloudWatchAgentServerPolicy
AWS managed
Permissions policy
Step 3: Add tags
Add tags - optional Info
Tags are key-value pairs that you can add to AWS resources to help identify, organize, or search for resources.
No tags associated with the resource.
Add new tag
You can add up to 50 more tags.
Cancel
Previous
Create role
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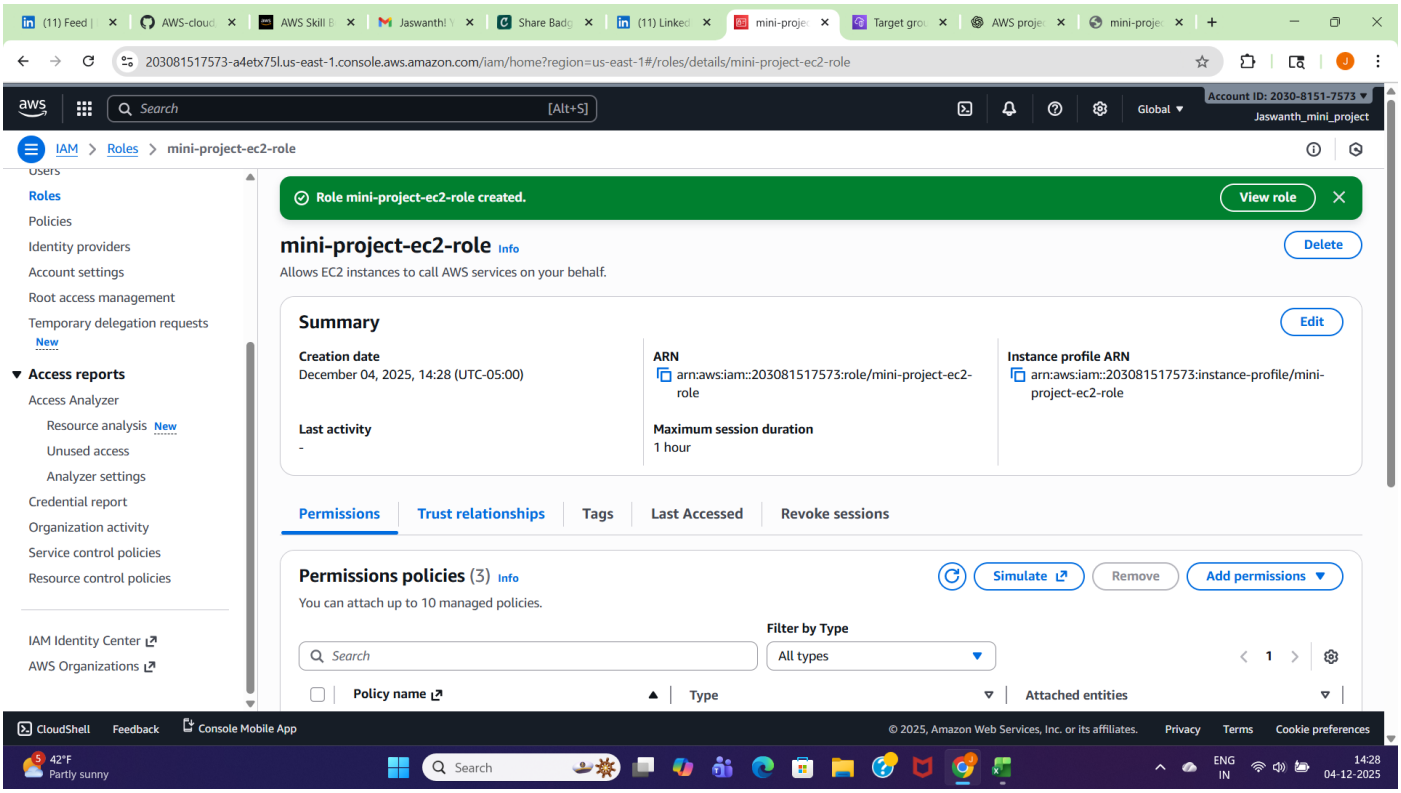
04-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/roles/details/mini-project-ec2-role
Search [Alt+S]
Account ID: 2030-8151-7573
Jaswanth_mini_project
IAM > Roles > mini-project-ec2-role
Roles
Policies
Identity providers
Account settings
Root access management
Temporary delegation requests
New
Access reports
Access Analyzer
Resource analysis New
Unused access
Analyzer settings
Credential report
Organization activity
Service control policies
Resource control policies
IAM Identity Center
AWS Organizations
Role mini-project-ec2-role created.
View role
mini-project-ec2-role Info
Allows EC2 instances to call AWS services on your behalf.
Delete
Summary
Edit
Creation date
December 04, 2025, 14:28 (UTC-05:00)
ARN
arn:aws:iam::203081517573:role/mini-project-ec2-role
Instance profile ARN
arn:aws:iam::203081517573:instance-profile/mini-project-ec2-role
Last activity
-
Maximum session duration
1 hour
Permissions
Trust relationships
Tags
Last Accessed
Revoke sessions
Permissions policies (3) Info
You can attach up to 10 managed policies.
Simulate
Remove
Add permissions
Filter by Type
Search
All types
Policy name
Type
Attached entities
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Feedback
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14:28
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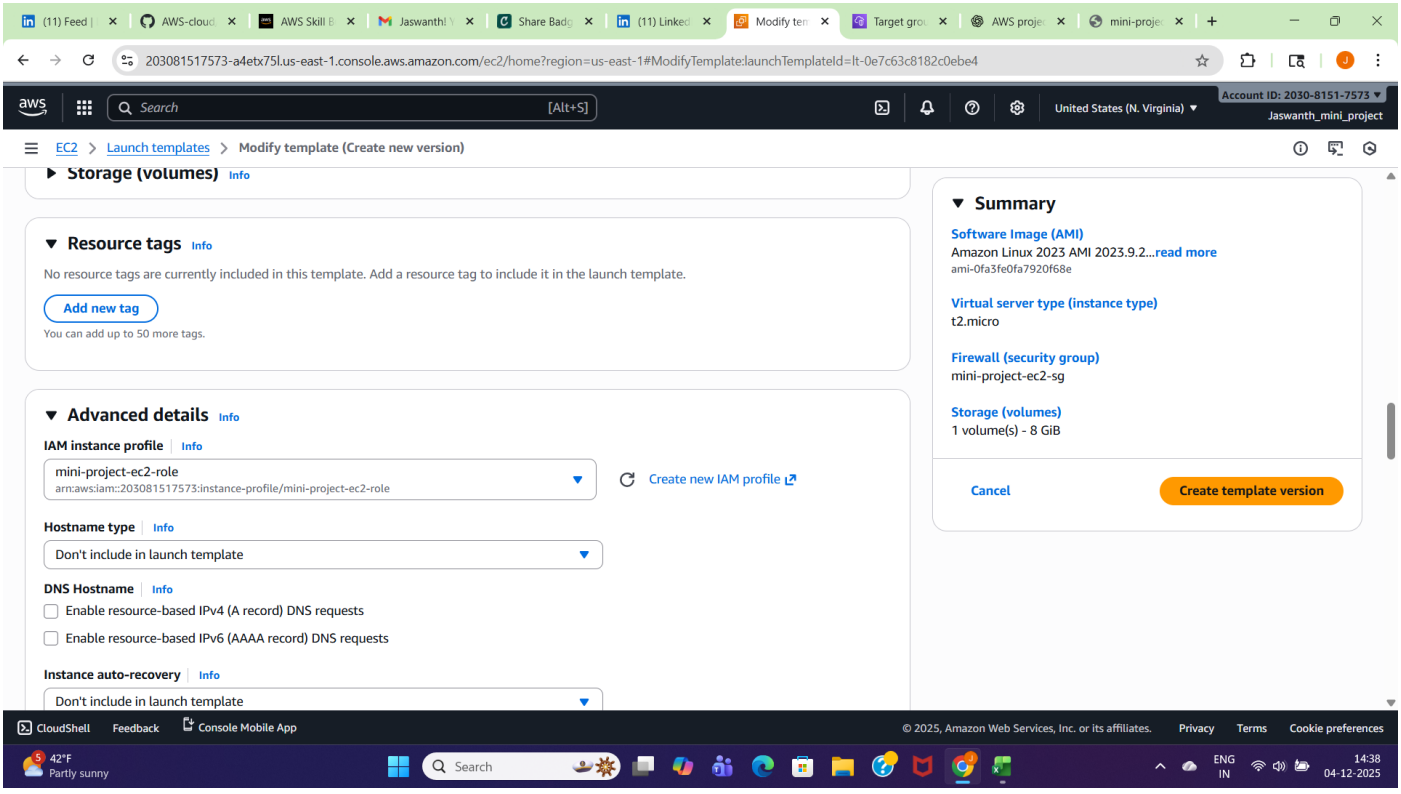
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyTemplate:launchTemplateId=lt-0e7c63c8182c0ebe4
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Launch templates > Modify template (Create new version)
Storage (volumes) Info
Resource tags Info
No resource tags are currently included in this template. Add a resource tag to include it in the launch template.
Add new tag
You can add up to 50 more tags.
Advanced details Info
IAM instance profile Info
mini-project-ec2-role
arn:aws:iam::203081517573:instance-profile/mini-project-ec2-role
Create new IAM profile
Hostname type Info
Don't include in launch template
DNS Hostname Info
Enable resource-based IPv4 (A record) DNS requests
Enable resource-based IPv6 (AAAA record) DNS requests
Instance auto-recovery Info
Don't include in launch template
Summary
Software Image (AMI)
Amazon Linux 2023 AMI 2023.9.2...read more
ami-0fa3fe0fa7920f68e
Virtual server type (instance type)
t2.micro
Firewall (security group)
mini-project-ec2-sg
Storage (volumes)
1 volume(s) - 8 GiB
Cancel
Create template version
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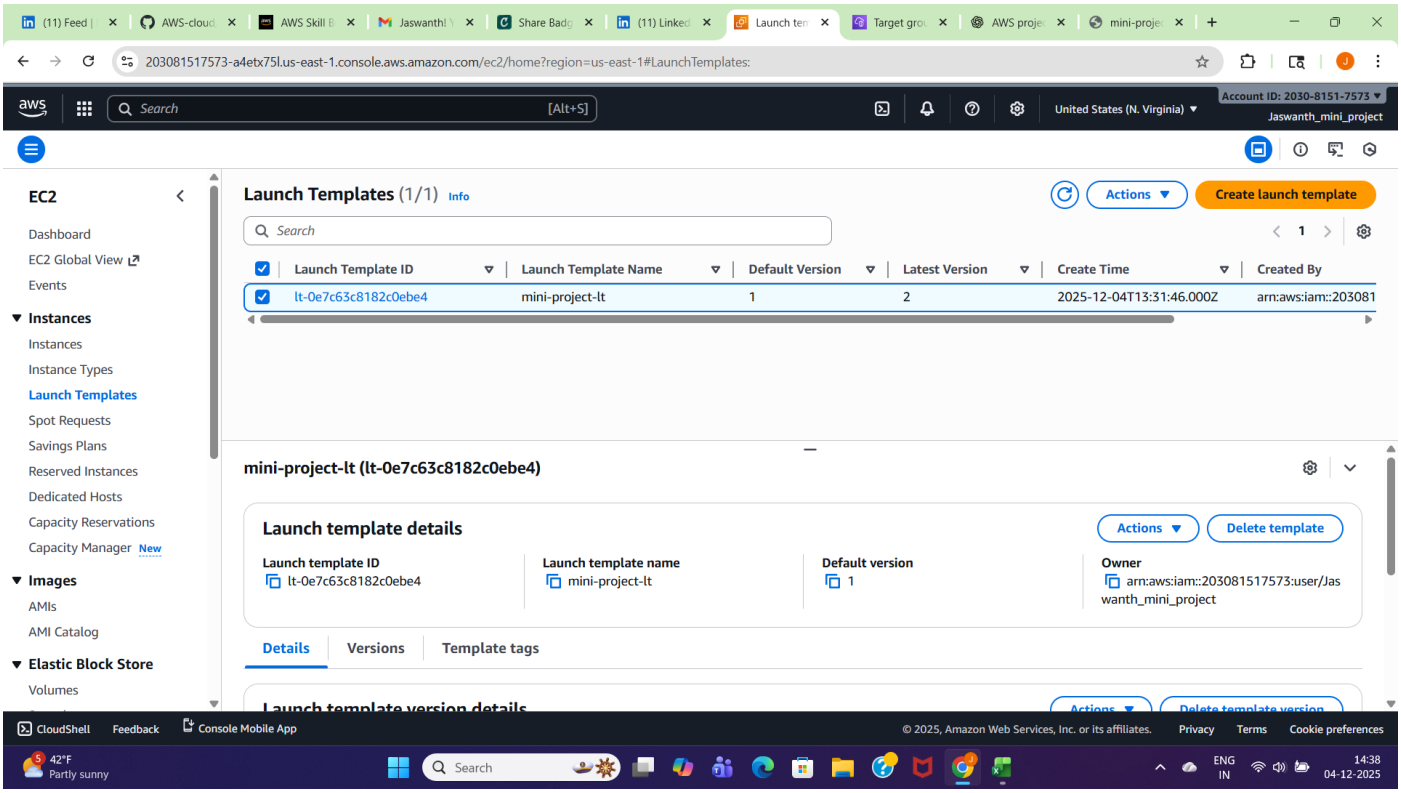
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchTemplates:
Search
[Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2
Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Capacity Manager New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Launch Templates (1/1) Info
Actions
Create launch template
Launch Template ID
Launch Template Name
Default Version
Latest Version
Create Time
Created By
lt-0e7c63c8182c0ebe4
mini-project-lt
1
2
2025-12-04T13:31:46.000Z
arn:aws:iam::203081
mini-project-lt (lt-0e7c63c8182c0ebe4)
Launch template details
Actions
Delete template
Launch template ID
lt-0e7c63c8182c0ebe4
Launch template name
mini-project-lt
Default version
1
Owner
arn:aws:iam::203081517573:user/Jaswanth_mini_project
Details
Versions
Template tags
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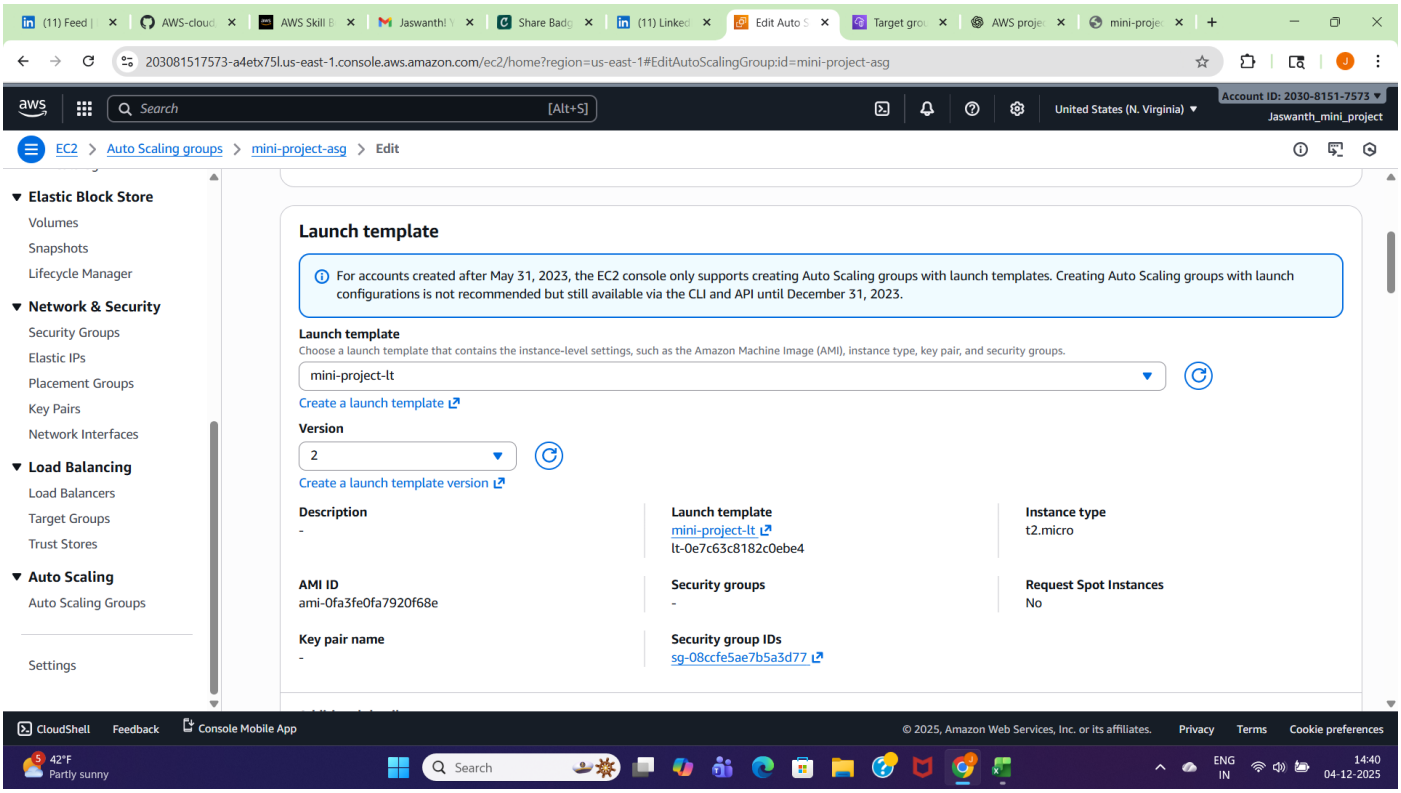
14:38
04-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#EditAutoScalingGroup:id=mini-project-asg
Search
[Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Auto Scaling groups > mini-project-asg > Edit
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups
Trust Stores
Auto Scaling
Auto Scaling Groups
Settings
Launch template
For accounts created after May 31, 2023, the EC2 console only supports creating Auto Scaling groups with launch templates. Creating Auto Scaling groups with launch configurations is not recommended but still available via the CLI and API until December 31, 2023.
Launch template
Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.
mini-project-lt
Create a launch template
Version
2
Create a launch template version
Description
-
Launch template
mini-project-lt
lt-0e7c63c8182c0ebe4
Instance type
t2.micro
AMI ID
ami-0fa3fe0fa7920f68e
Security groups
-
Request Spot Instances
No
Key pair name
-
Security group IDs
sg-08ccfe5ae7b5a3d77
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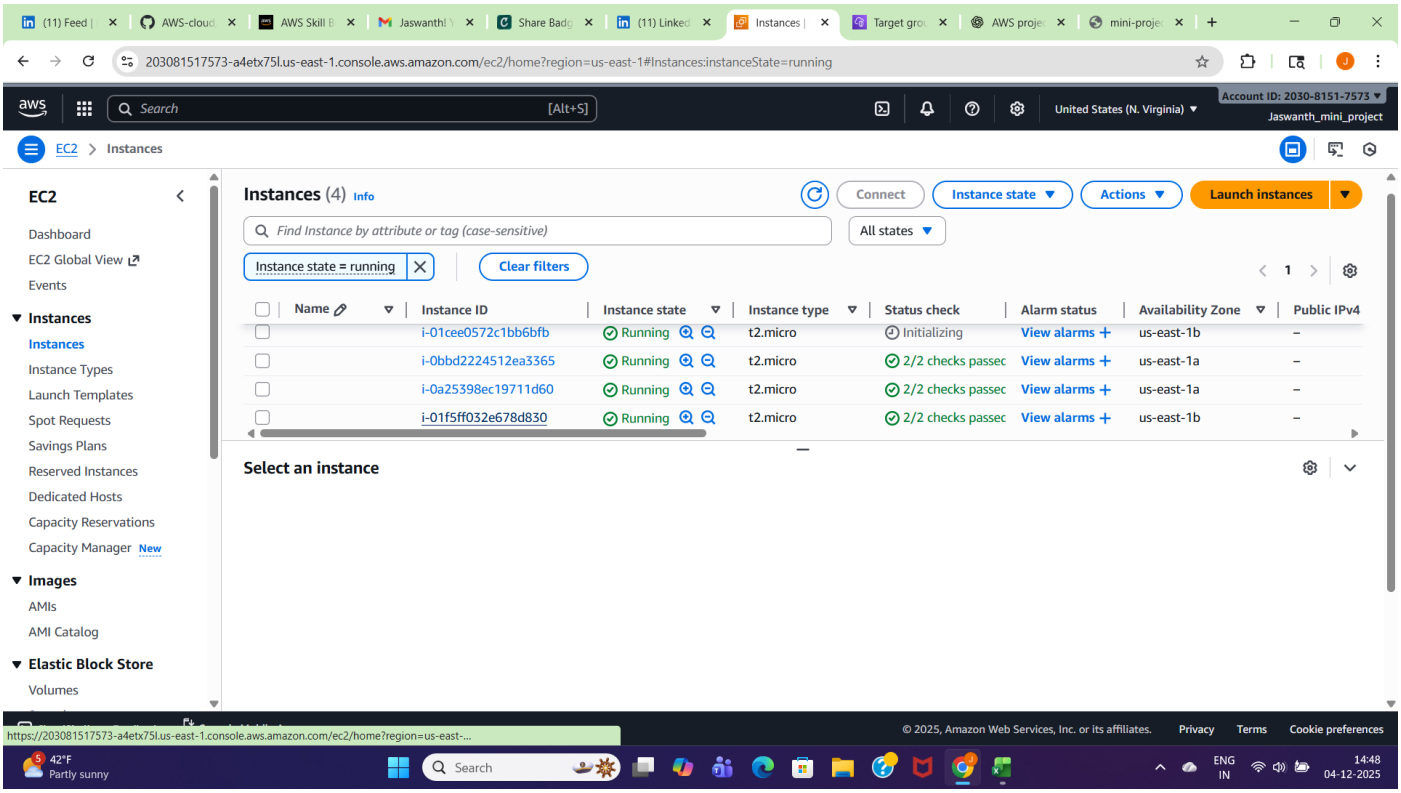
Search
ENG
IN
14:40
04-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:instanceState=running
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Instances
EC2
Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Capacity Manager New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Instances (4) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Instance state = running
Clear filters
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4
i-01cee0572c1bb6bfb Running t2.micro Initializing View alarms us-east-1b
i-0bbd2224512ea3365 Running t2.micro 2/2 checks passed View alarms us-east-1a
i-0a25398ec19711d60 Running t2.micro 2/2 checks passed View alarms us-east-1a
i-01f5ff032e678d830 Running t2.micro 2/2 checks passed View alarms us-east-1b
Select an instance
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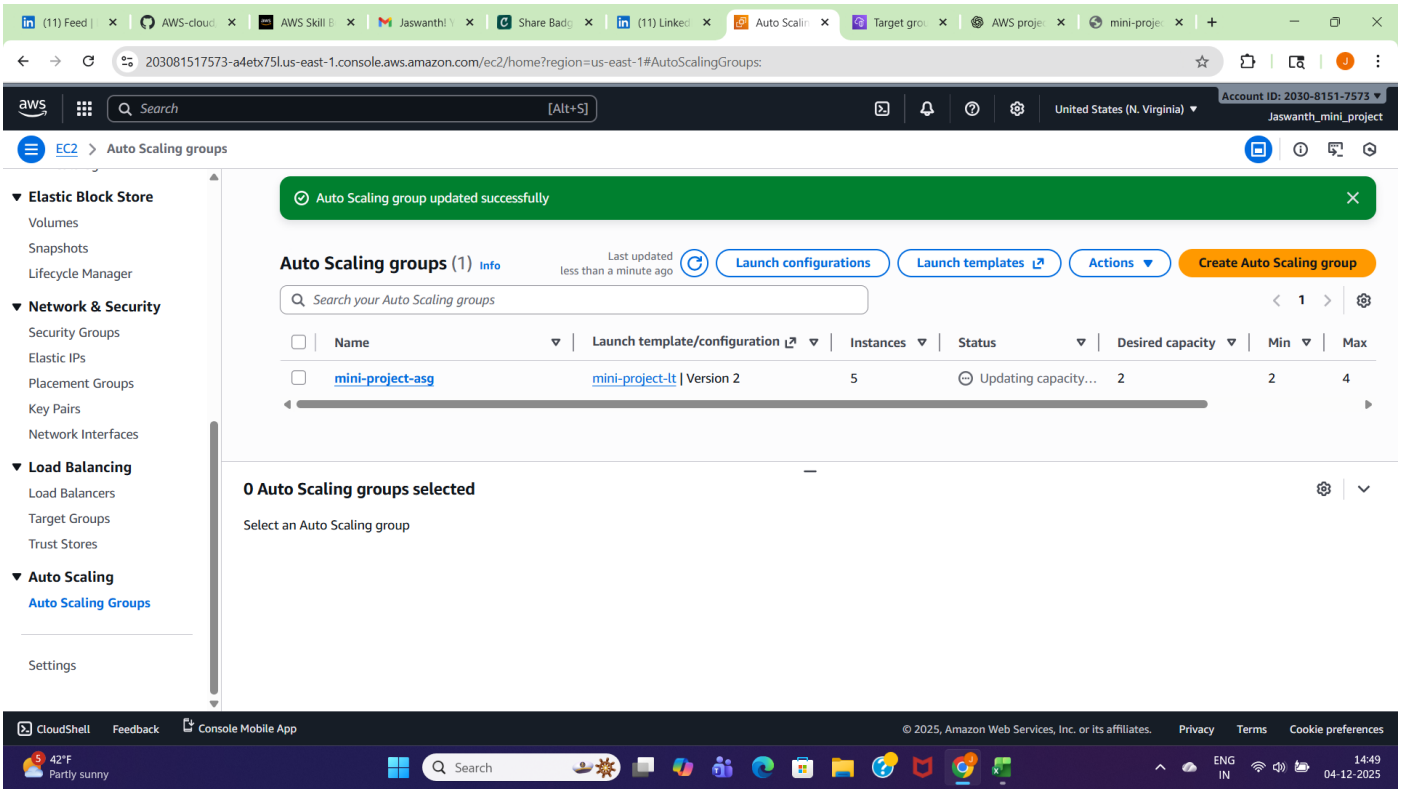
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AutoScalingGroups:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Auto Scaling groups
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups
Trust Stores
Auto Scaling
Auto Scaling Groups
Settings
Auto Scaling group updated successfully
Auto Scaling groups (1) Info
Last updated less than a minute ago
Launch configurations
Launch templates
Actions
Create Auto Scaling group
Search your Auto Scaling groups
Name
Launch template/configuration
Instances
Status
Desired capacity
Min
Max
mini-project-asg
mini-project-lt | Version 2
5
Updating capacity...
2
2
4
0 Auto Scaling groups selected
Select an Auto Scaling group
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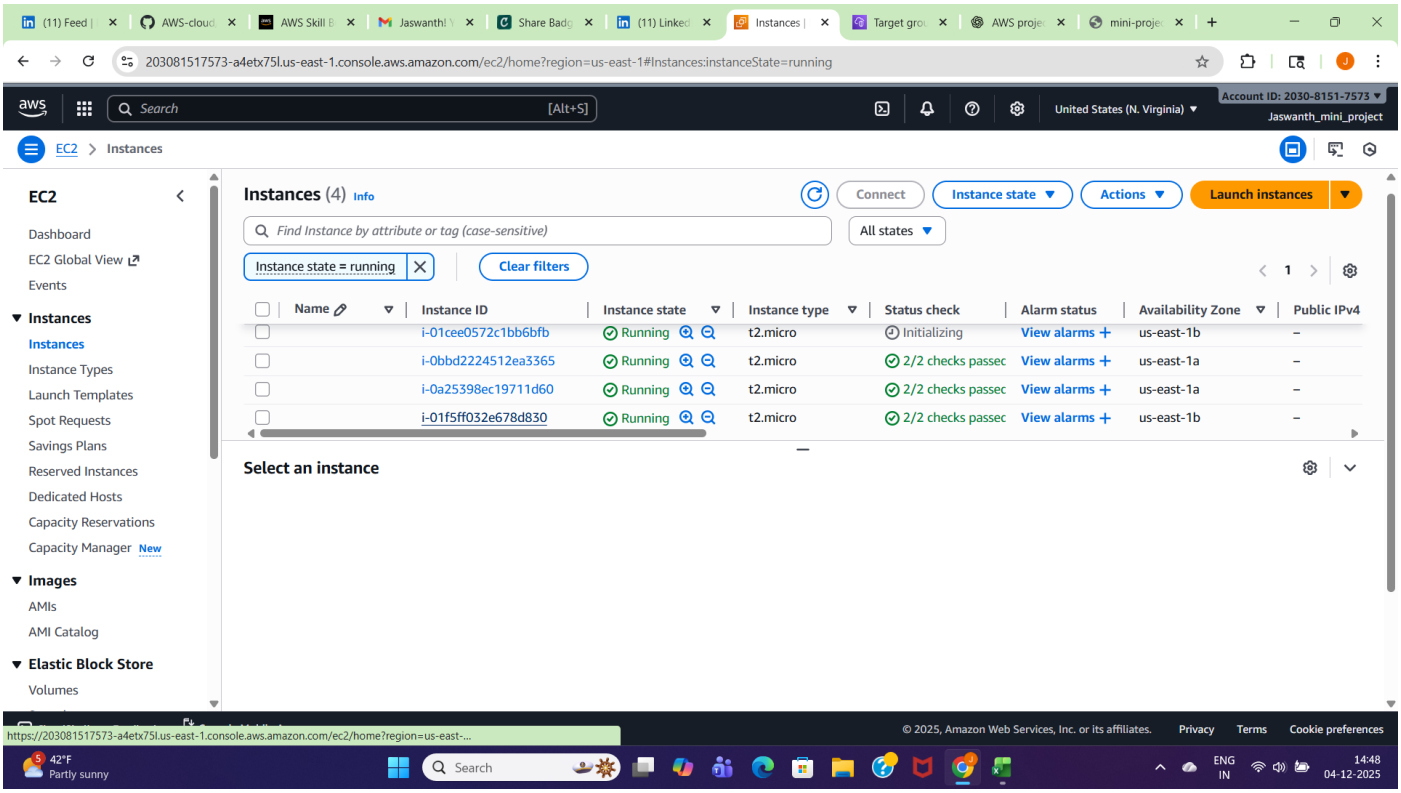
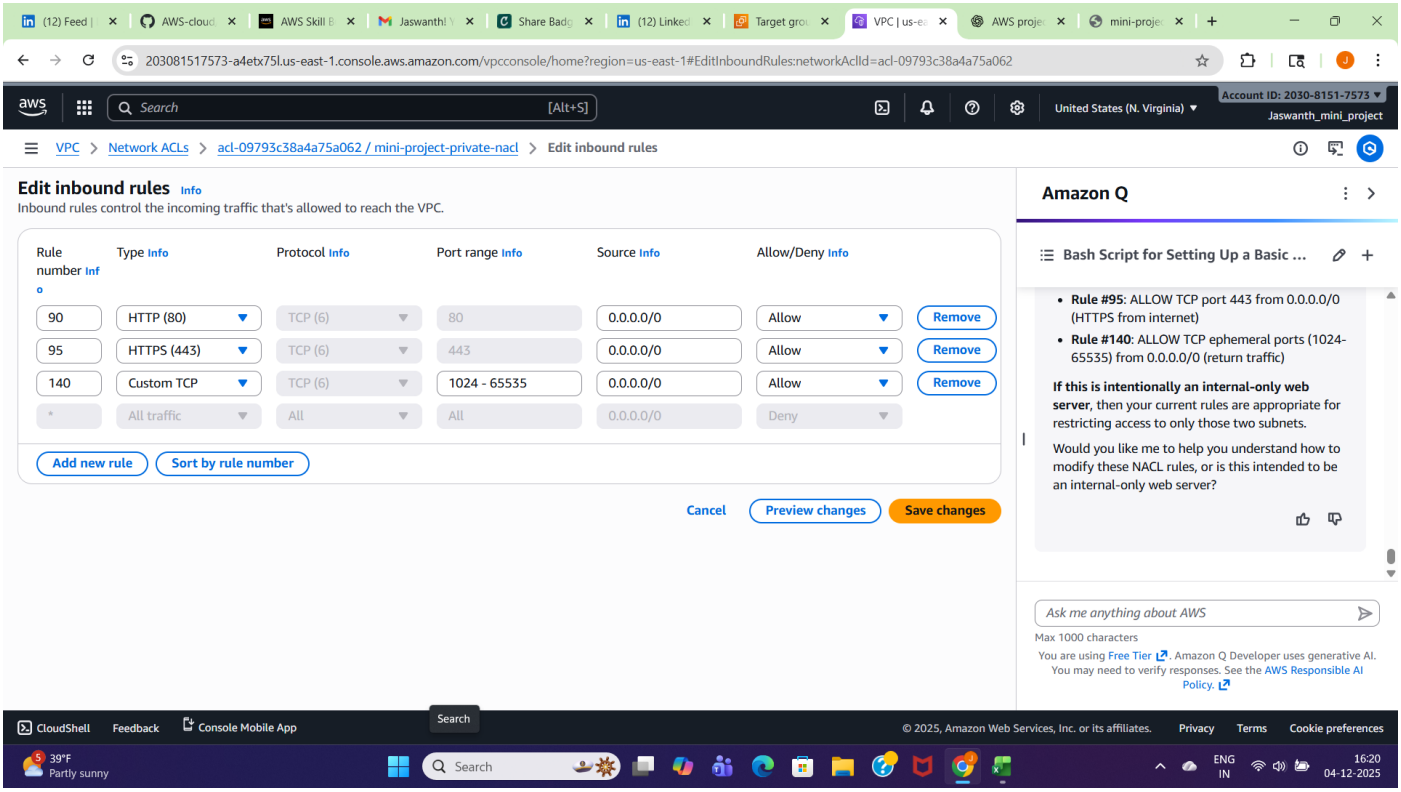
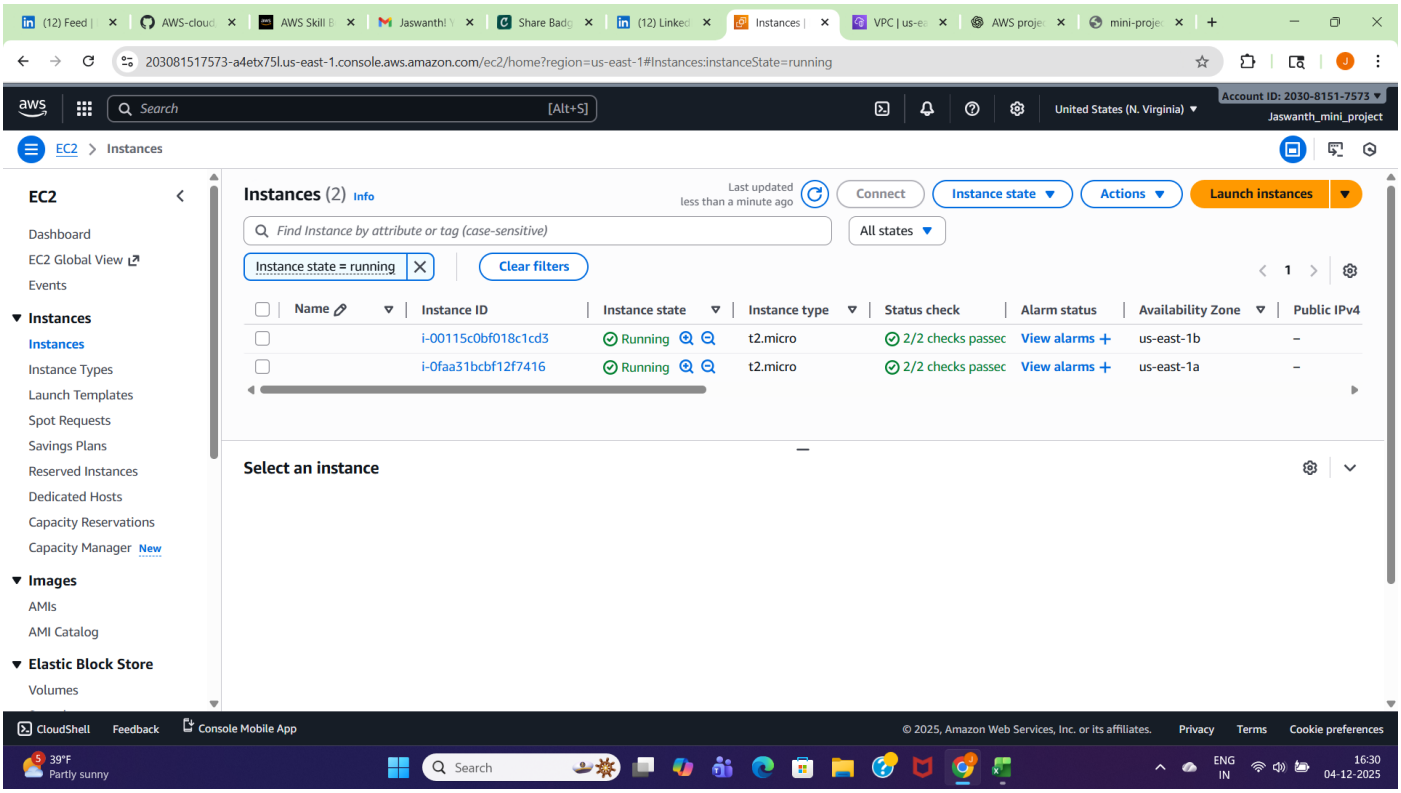


NACL Troubleshooting and Fix

Initially, the Auto Scaling Group was failing because the private NACL only allowed subnet-to-subnet traffic, blocking required inbound return traffic for the instances. Using Amazon Q Developer, I identified the missing ephemeral port rules and updated the NACL to allow ports 1024–65535, enabling proper instance communication. After this fix, the Auto Scaling Group stabilized and began launching healthy instances across both Availability Zones.




203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:instanceState=running
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Instances
EC2
Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Capacity Manager New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Instances (2) Info
Last updated less than a minute ago
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Instance state = running
Clear filters
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4
i-00115c0bf018c1cd3
Running
t2.micro
2/2 checks passed
View alarms
us-east-1b
i-0faa31bcbf12f7416
Running
t2.micro
2/2 checks passed
View alarms
us-east-1a
Select an instance
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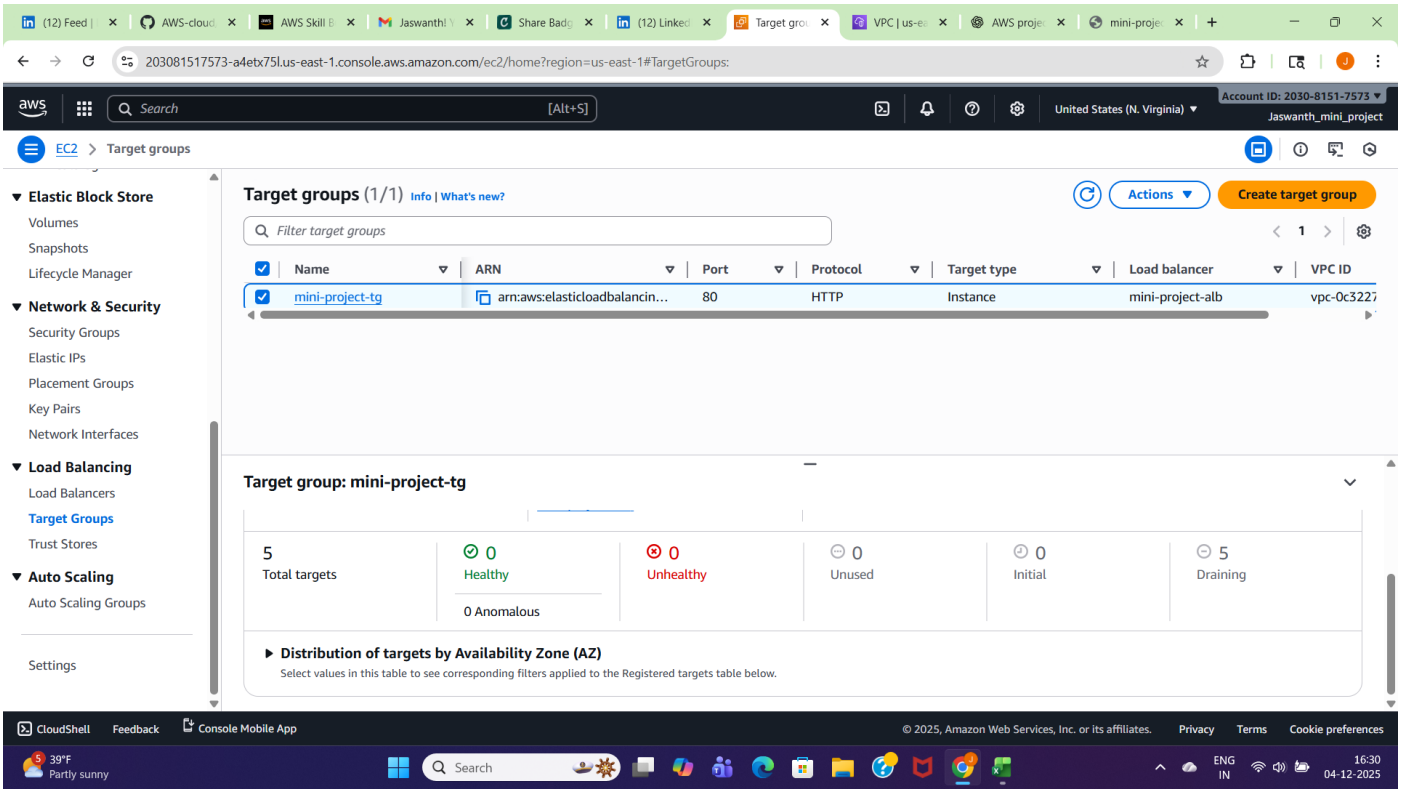
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#TargetGroups:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Target groups
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups
Trust Stores
Auto Scaling
Auto Scaling Groups
Settings
Target groups (1/1) Info | What's new?
Actions
Create target group
Filter target groups
Name
ARN
Port
Protocol
Target type
Load balancer
VPC ID
mini-project-tg
arn:aws:elasticloadbalancin...
80
HTTP
Instance
mini-project-alb
Target group: mini-project-tg
5
Total targets
0
Healthy
0 Anomalous
0
Unhealthy
0
Unused
0
Initial
5
Draining
Distribution of targets by Availability Zone (AZ)
Select values in this table to see corresponding filters applied to the Registered targets table below.
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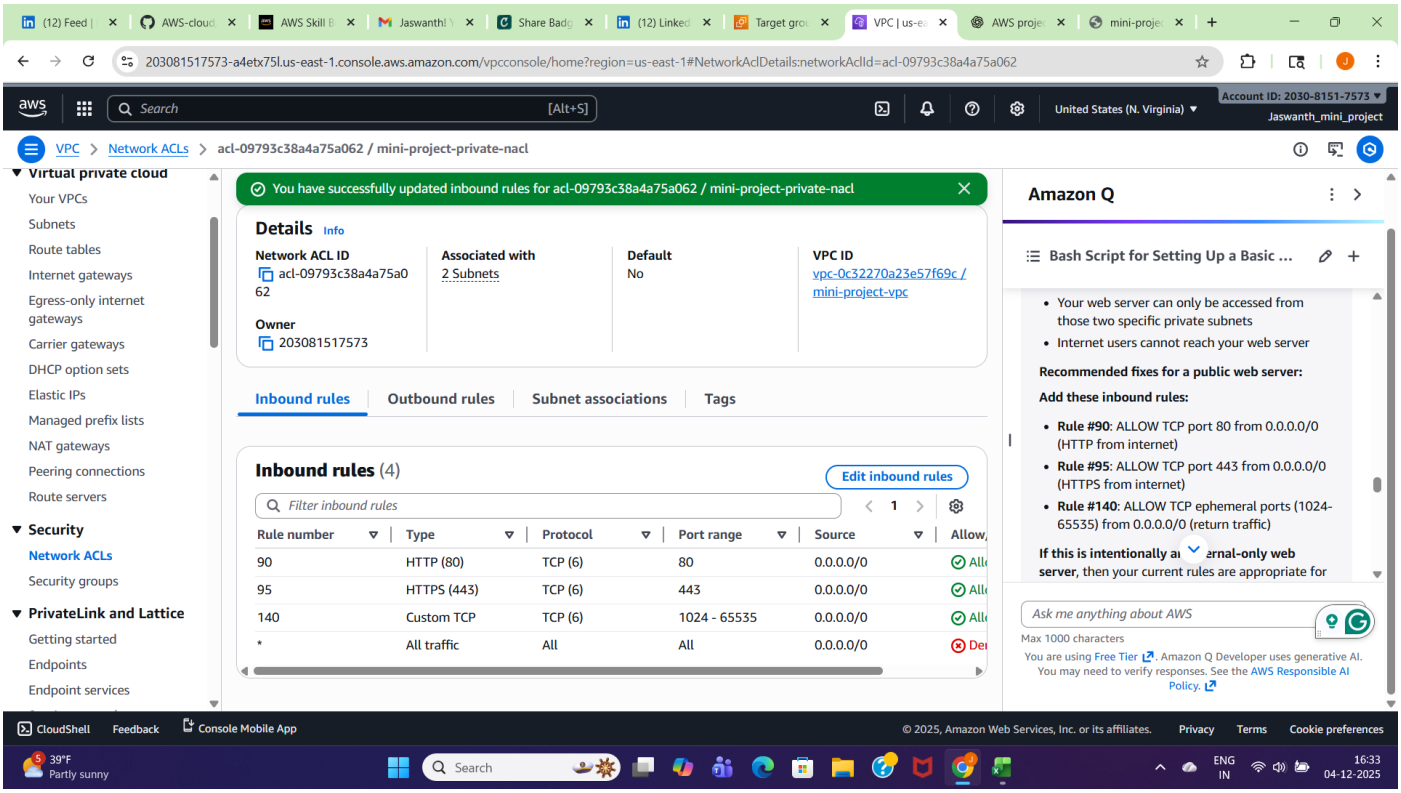
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#NetworkAclDetails:networkAclId=acl-09793c38a4a75a062
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-09793c38a4a75a062 / mini-project-private-nacl
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Endpoint services
You have successfully updated inbound rules for acl-09793c38a4a75a062 / mini-project-private-nacl
Details Info
Network ACL ID
acl-09793c38a4a75a062
Associated with
2 Subnets
Default
No
VPC ID
vpc-0c32270a23e57f69c / mini-project-vpc
Owner
203081517573
Inbound rules
Outbound rules
Subnet associations
Tags
Inbound rules (4)
Edit inbound rules
Filter inbound rules
Rule number
Type
Protocol
Port range
Source
90 HTTP (80) TCP (6) 80 0.0.0.0/0
95 HTTPS (443) TCP (6) 443 0.0.0.0/0
140 Custom TCP TCP (6) 1024 - 65535 0.0.0.0/0
* All traffic All All 0.0.0.0/0
Amazon Q
Bash Script for Setting Up a Basic ...
Your web server can only be accessed from those two specific private subnets
Internet users cannot reach your web server
Recommended fixes for a public web server:
Add these inbound rules:
Rule #90: ALLOW TCP port 80 from 0.0.0.0/0 (HTTP from internet)
Rule #95: ALLOW TCP port 443 from 0.0.0.0/0 (HTTPS from internet)
Rule #140: ALLOW TCP ephemeral ports (1024-65535) from 0.0.0.0/0 (return traffic)
Ask me anything about AWS
Max 1000 characters
You are using Free Tier. Amazon Q Developer uses generative AI. You may need to verify responses. See the AWS Responsible AI Policy.
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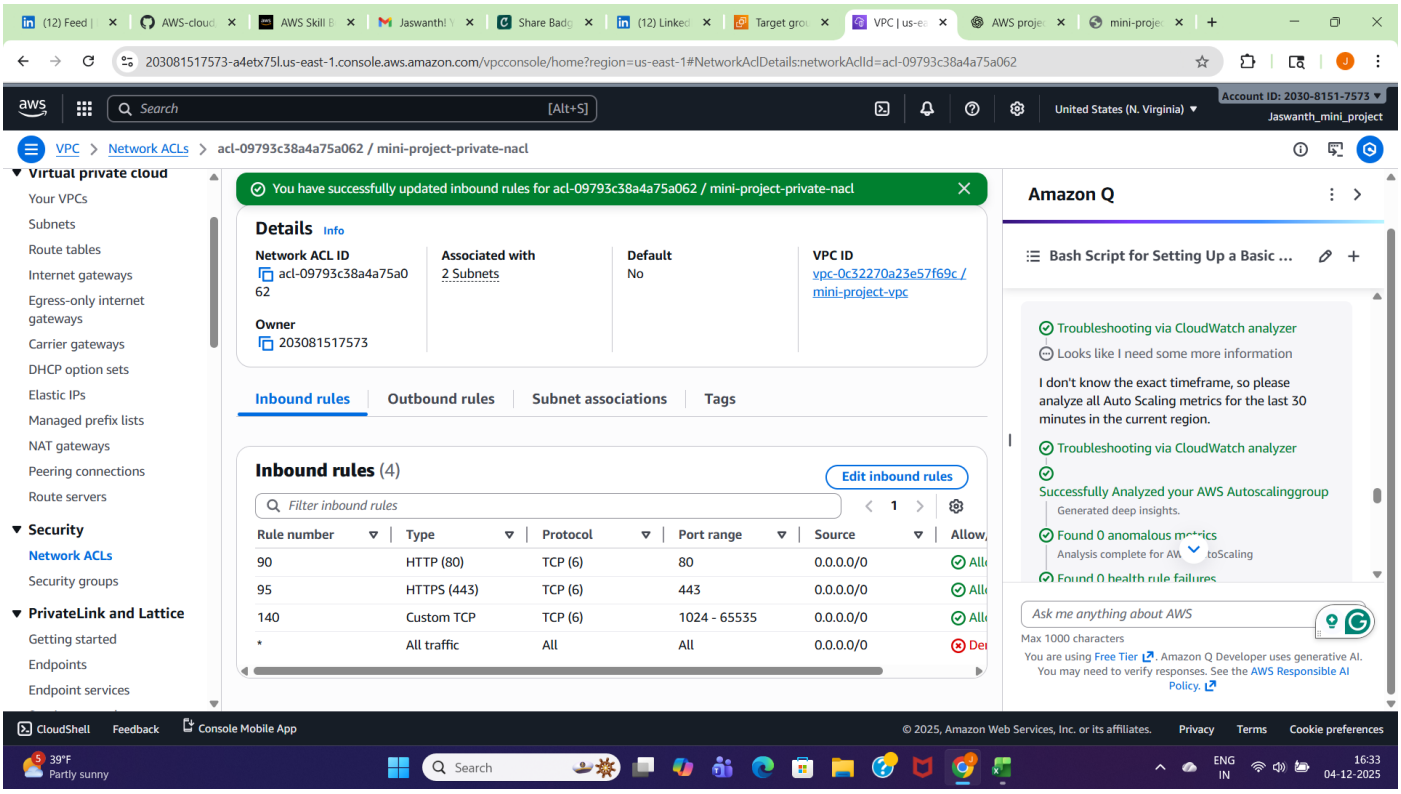
ENG IN
16:33 04-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#NetworkAclDetails:networkAclId=acl-09793c38a4a75a062
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-09793c38a4a75a062 / mini-project-private-nacl
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
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Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Endpoint services
You have successfully updated inbound rules for acl-09793c38a4a75a062 / mini-project-private-nacl
Details Info
Network ACL ID
acl-09793c38a4a75a062
Associated with
2 Subnets
Default
No
VPC ID
vpc-0c32270a23e57f69c / mini-project-vpc
Owner
203081517573
Inbound rules
Outbound rules
Subnet associations
Tags
Inbound rules (4)
Edit inbound rules
Filter inbound rules
Rule number
Type
Protocol
Port range
Source
90 HTTP (80) TCP (6) 80 0.0.0.0/0
95 HTTPS (443) TCP (6) 443 0.0.0.0/0
140 Custom TCP TCP (6) 1024 - 65535 0.0.0.0/0
* All traffic All All 0.0.0.0/0
Amazon Q
Bash Script for Setting Up a Basic ...
Troubleshooting via CloudWatch analyzer
Looks like I need some more information
I don't know the exact timeframe, so please analyze all Auto Scaling metrics for the last 30 minutes in the current region.
Troubleshooting via CloudWatch analyzer
Successfully Analyzed your AWS Autoscalinggroup
Generated deep insights.
Found 0 anomalous metrics
Found 0 health rule failures
Ask me anything about AWS
Max 1000 characters
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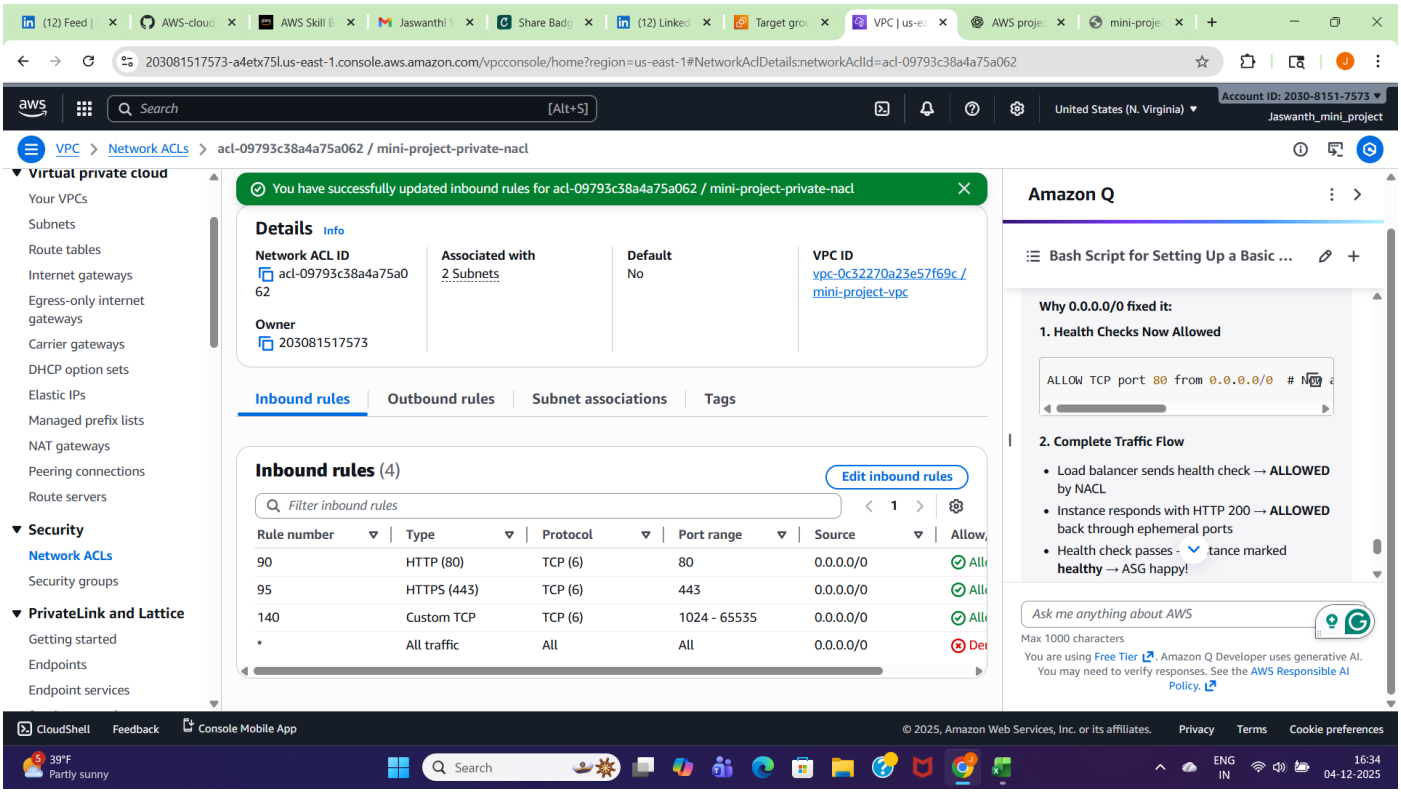
16:33 04-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#NetworkAclDetails:networkAclId=acl-09793c38a4a75a062
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
VPC > Network ACLs > acl-09793c38a4a75a062 / mini-project-private-nacl
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Security groups
PrivateLink and Lattice
Getting started
Endpoints
Endpoint services
You have successfully updated inbound rules for acl-09793c38a4a75a062 / mini-project-private-nacl
Details Info
Network ACL ID
acl-09793c38a4a75a062
Associated with
2 Subnets
Default
No
VPC ID
vpc-0c32270a23e57f69c / mini-project-vpc
Owner
203081517573
Inbound rules
Outbound rules
Subnet associations
Tags
Inbound rules (4)
Edit inbound rules
Filter inbound rules
Rule number
Type
Protocol
Port range
Source
90 HTTP (80) TCP (6) 80 0.0.0.0/0
95 HTTPS (443) TCP (6) 443 0.0.0.0/0
140 Custom TCP TCP (6) 1024 - 65535 0.0.0.0/0
* All traffic All All 0.0.0.0/0
Amazon Q
Bash Script for Setting Up a Basic ...
Why 0.0.0.0/0 fixed it:
1. Health Checks Now Allowed
ALLOW TCP port 80 from 0.0.0.0/0
2. Complete Traffic Flow
Load balancer sends health check → ALLOWED by NACL
Instance responds with HTTP 200 → ALLOWED back through ephemeral ports
Health check passes → ALLOWED → instance marked healthy → ASG happy!
Ask me anything about AWS
Max 1000 characters
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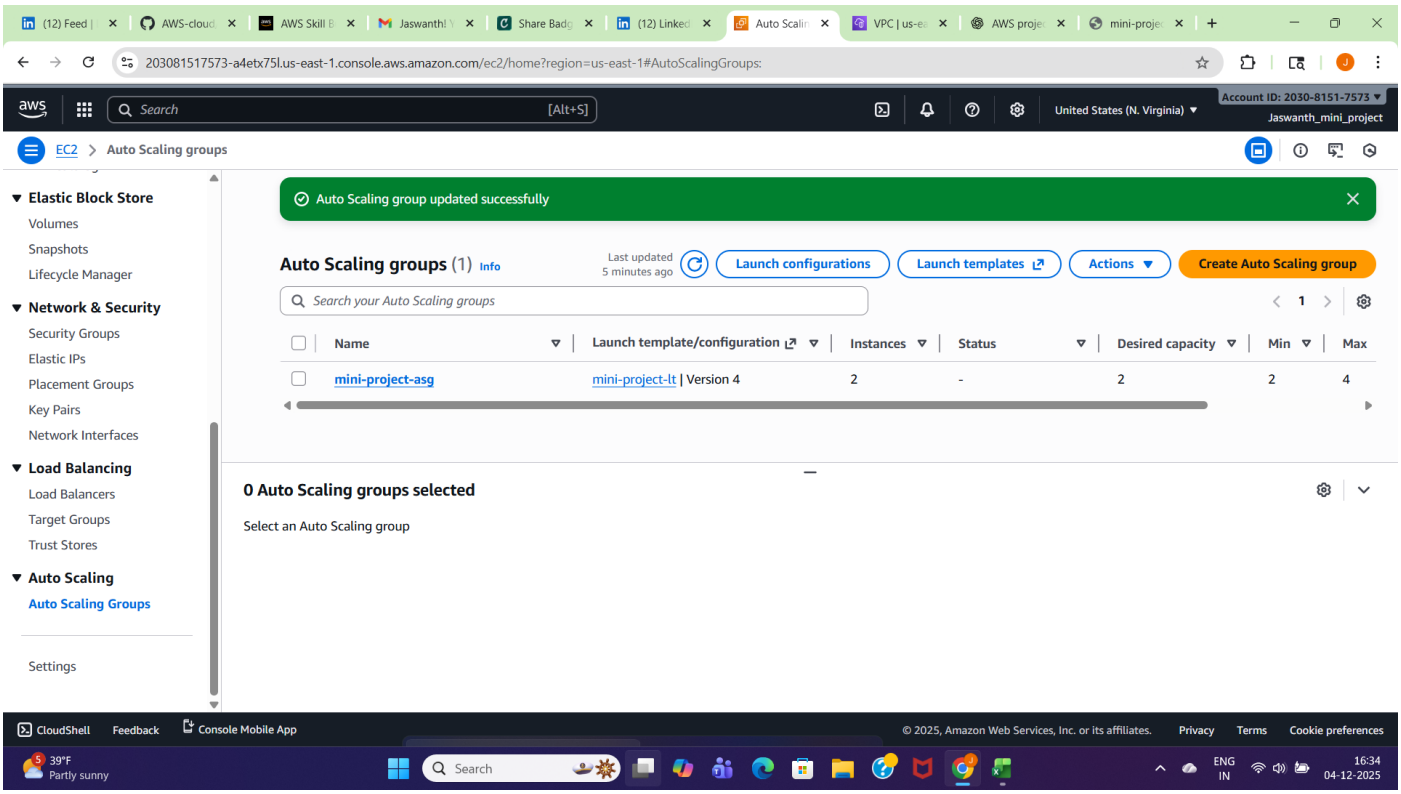
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AutoScalingGroups:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
EC2 > Auto Scaling groups
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups
Trust Stores
Auto Scaling
Auto Scaling Groups
Settings
Auto Scaling group updated successfully
Auto Scaling groups (1) Info
Last updated 5 minutes ago
Launch configurations
Launch templates
Actions
Create Auto Scaling group
Search your Auto Scaling groups
Name
Launch template/configuration
Instances
Status
Desired capacity
Min
Max
mini-project-asg
mini-project-lt | Version 4
2
-
2
2
4
0 Auto Scaling groups selected
Select an Auto Scaling group
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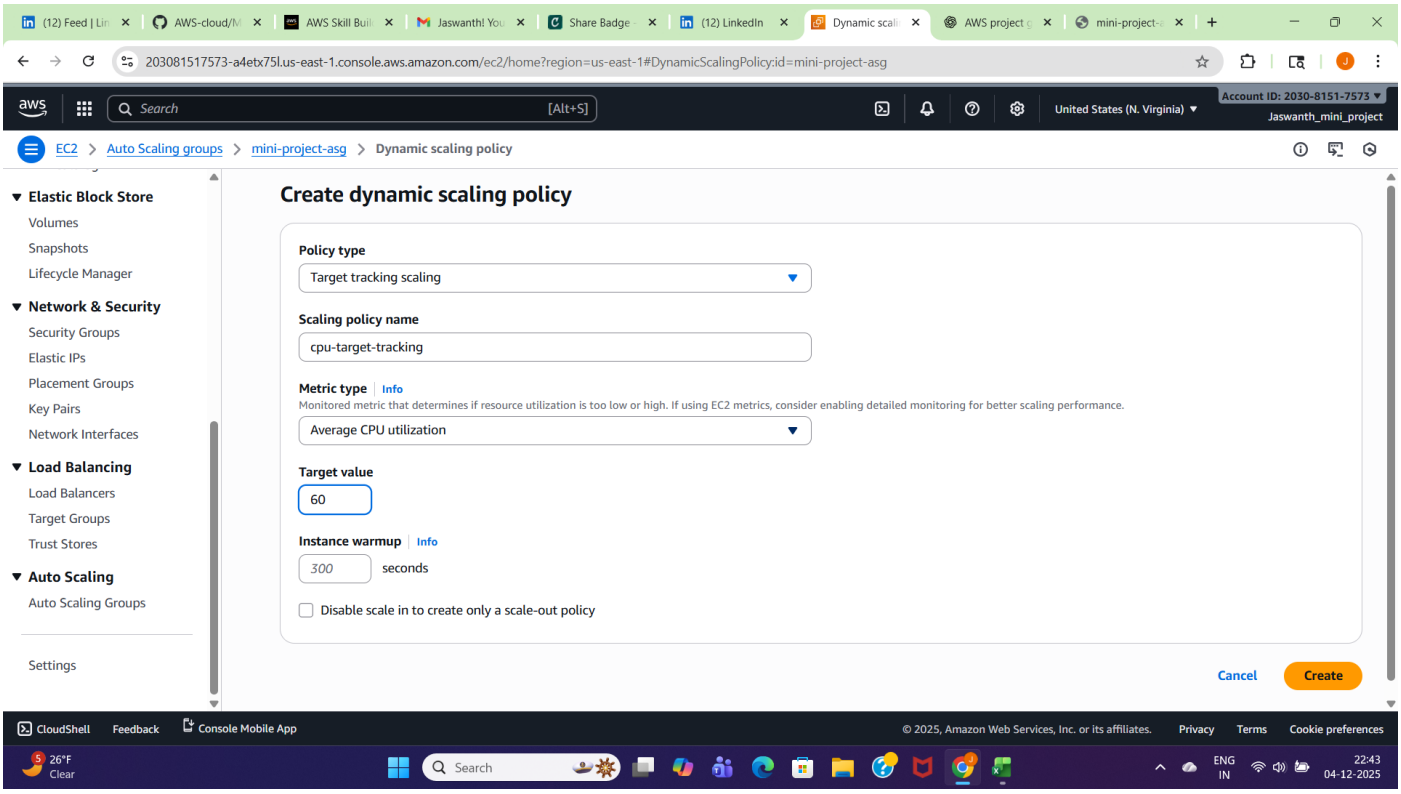
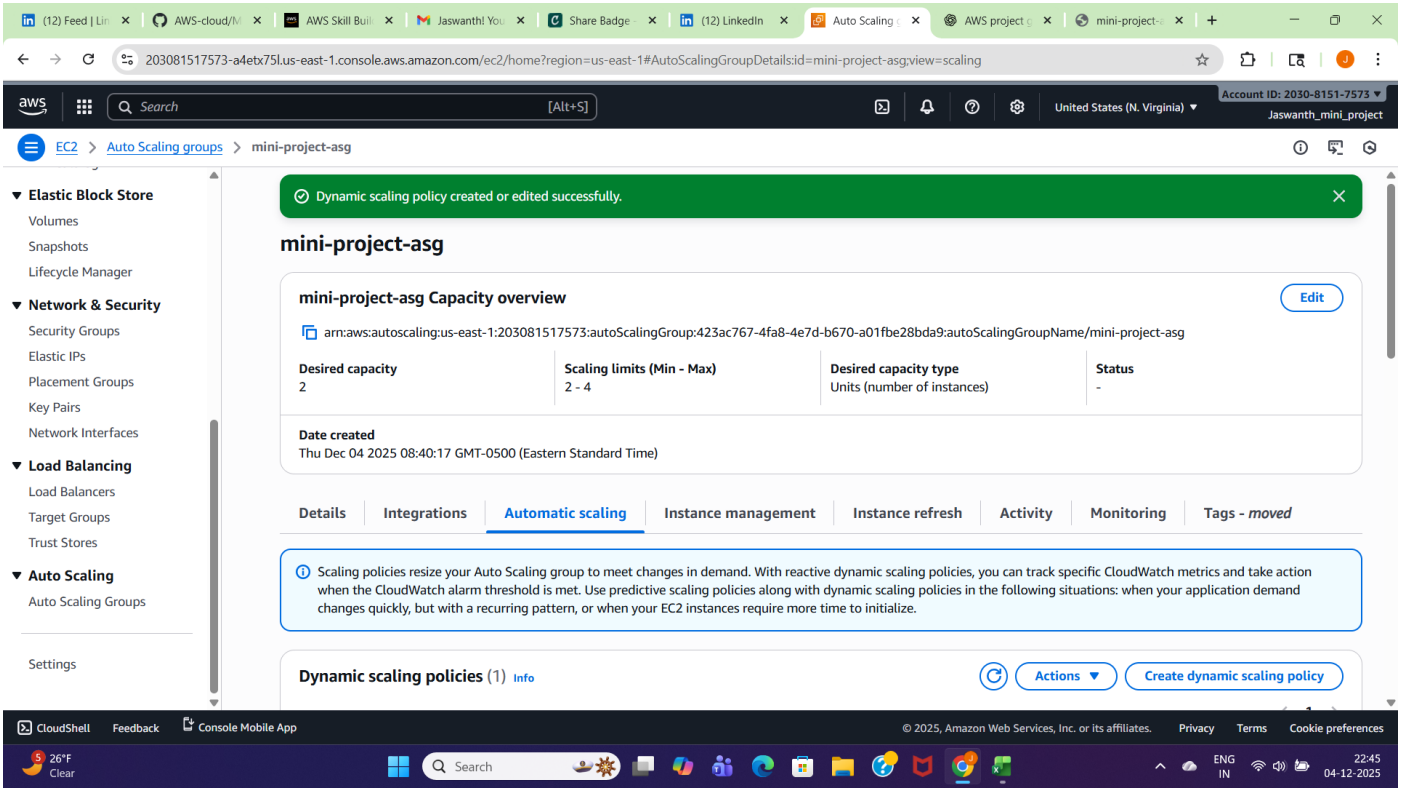
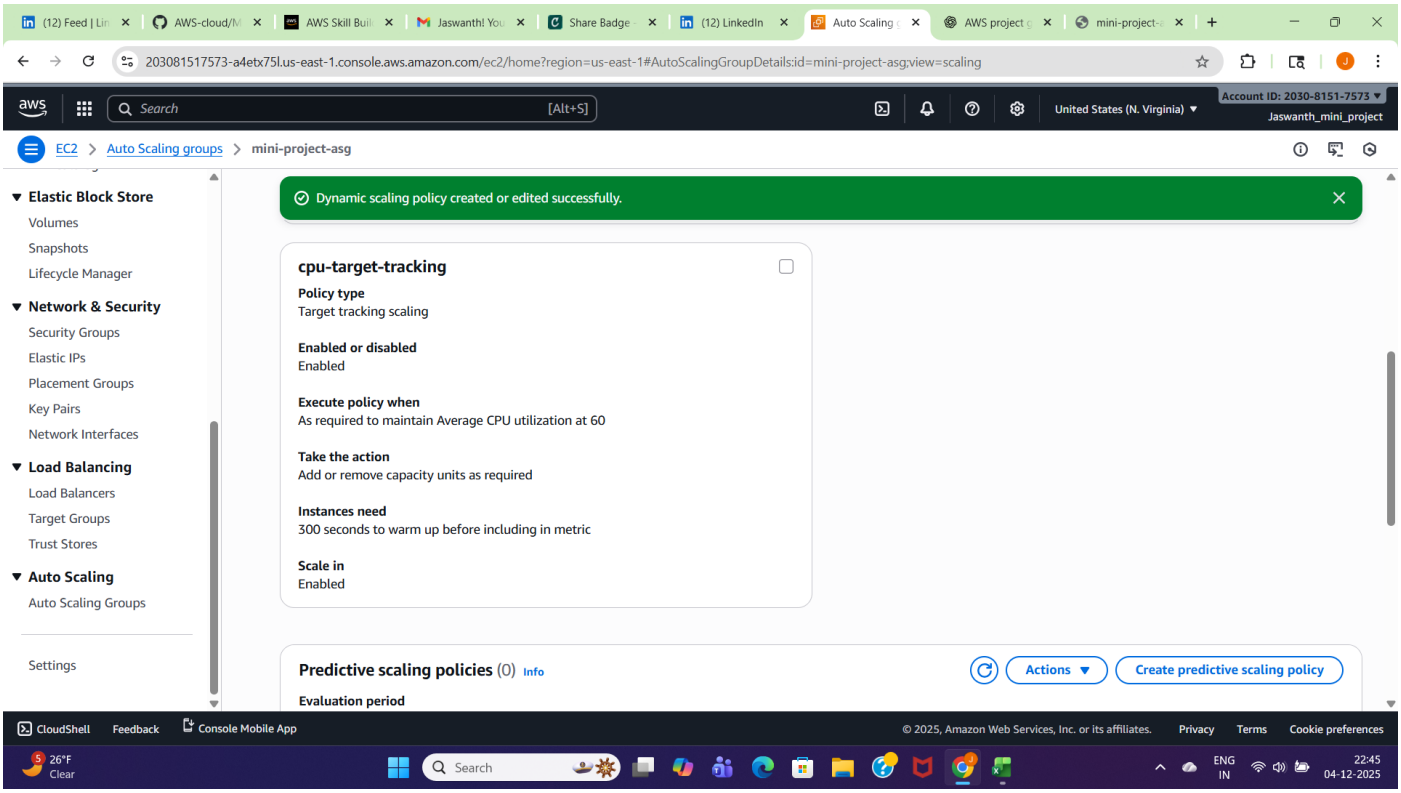
Auto Scaling – Dynamic Scaling Policy

Configured a CPU-based target tracking policy that maintains 60% average CPU utilization, automatically scaling EC2 instances out or in based on demand to ensure performance and cost efficiency.

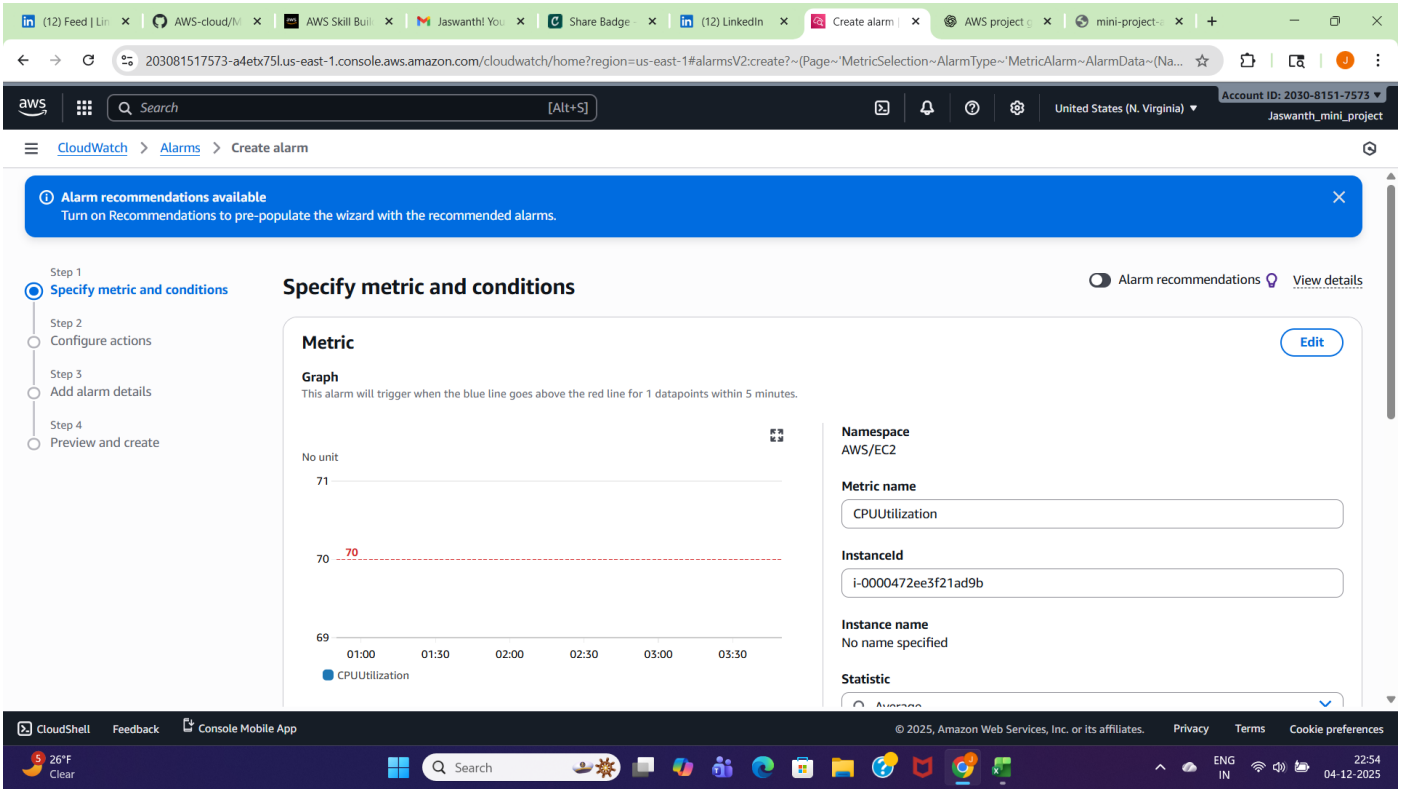


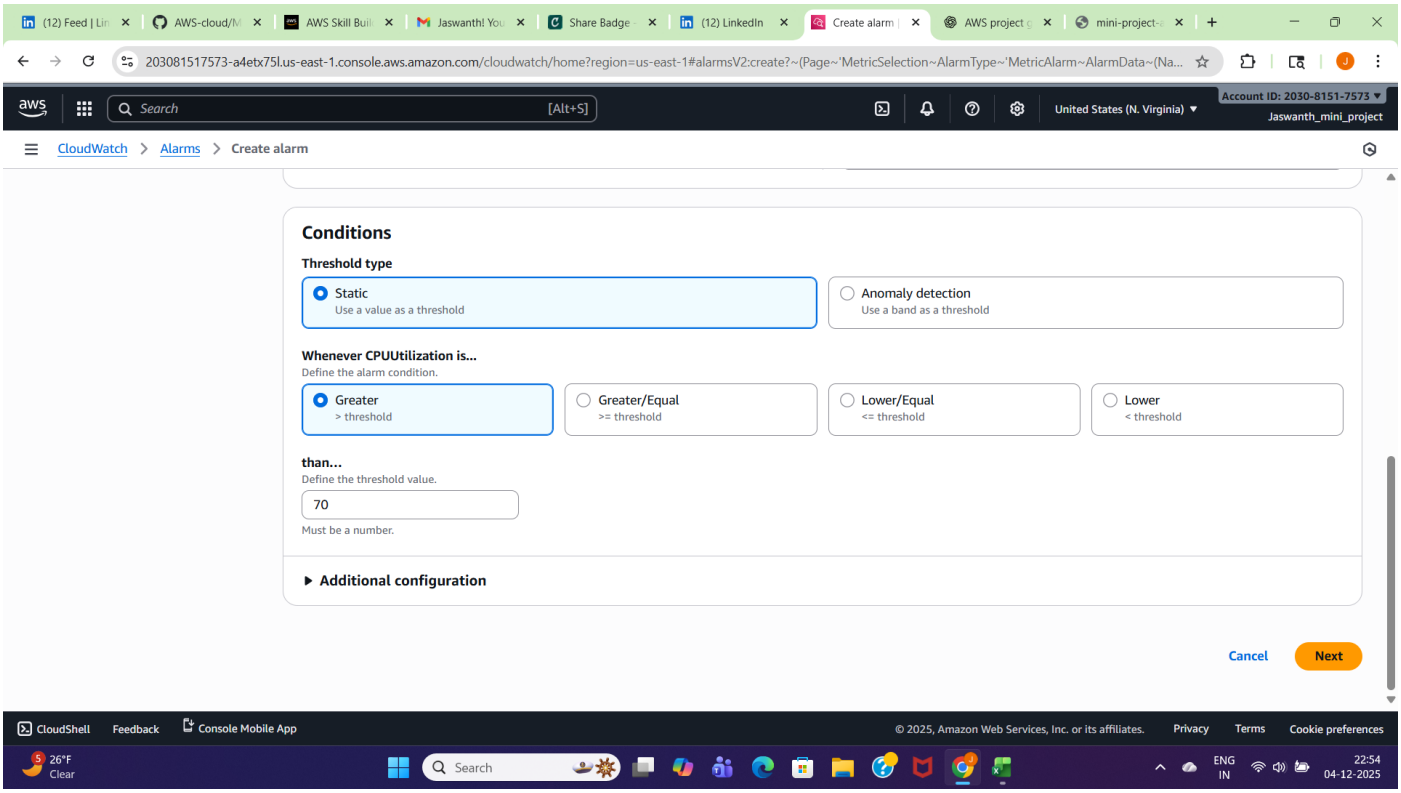


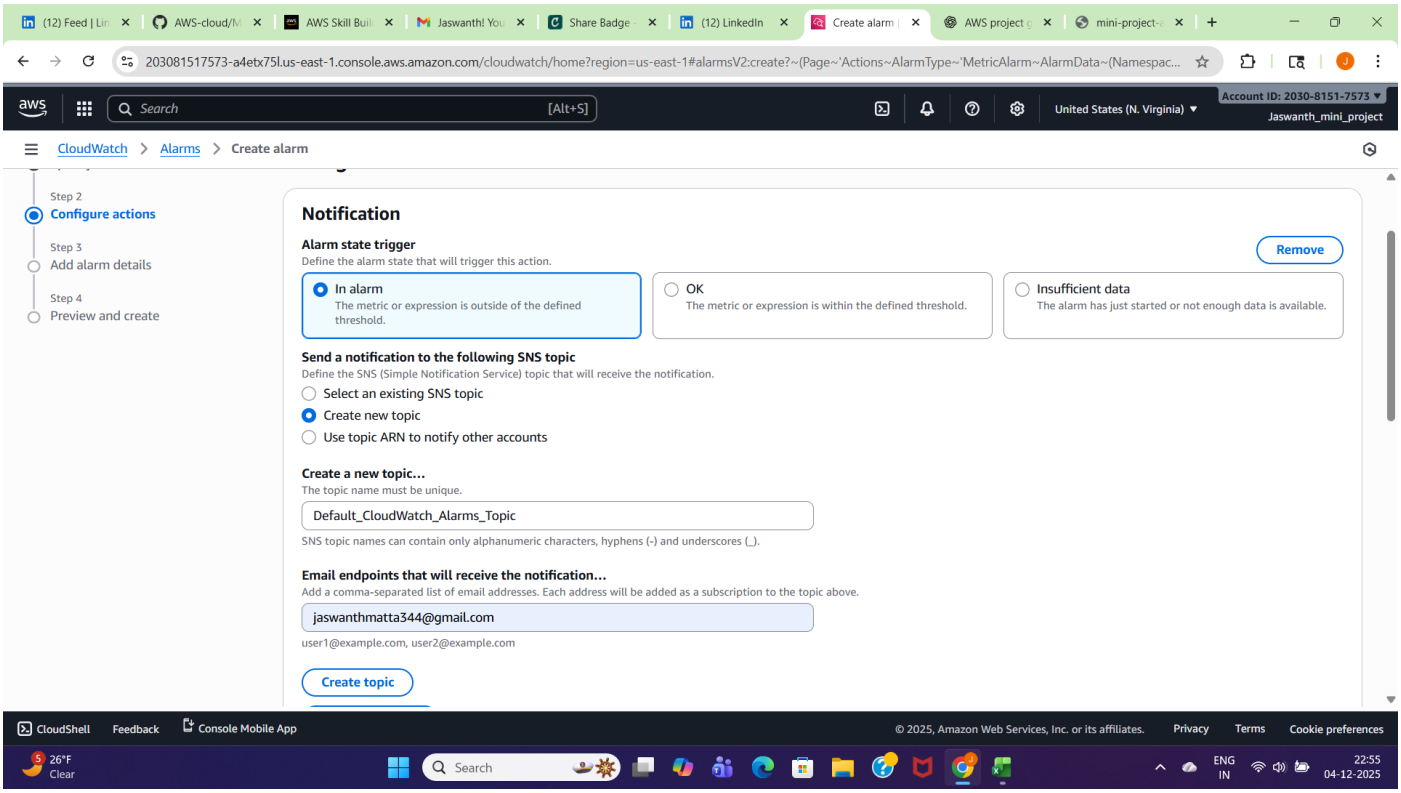


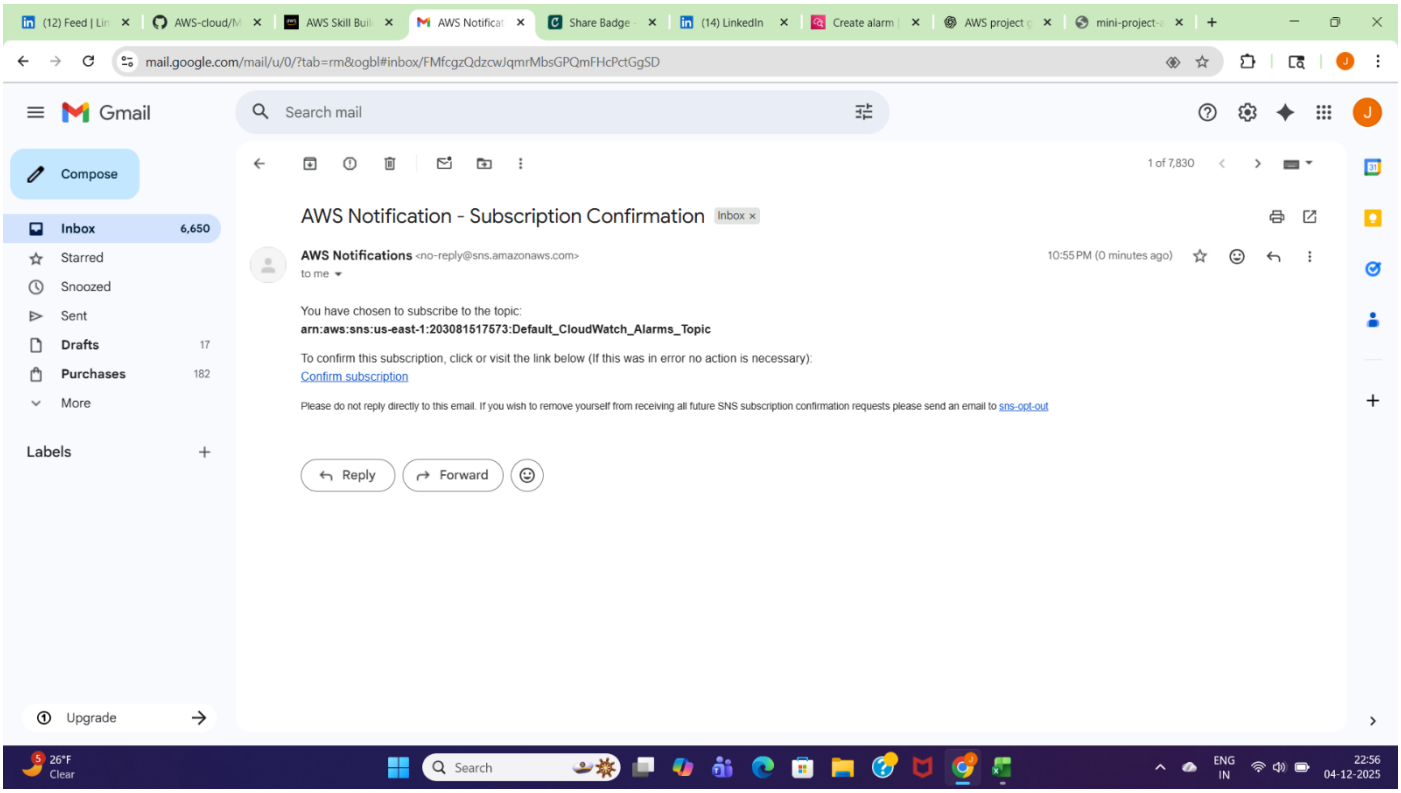
CloudWatch Alarms Configuration

I created multiple CloudWatch alarms to monitor the health, performance, and stability of the architecture. These alarms track CPU utilization thresholds, ALB healthy host count, and HTTP 5xx errors. Each alarm triggers an SNS notification, enabling proactive response to performance issues and ensuring high availability.




CloudWatch > Alarms > Create alarm
Conditions
Threshold type
Static
Use a value as a threshold
Anomaly detection
Use a band as a threshold
Whenever CPUUtilization is...
Define the alarm condition.
Greater
> threshold
Greater/Equal
>= threshold
Lower/Equal
<= threshold
Lower
< threshold
than...
Define the threshold value.
70
Must be a number.
Additional configuration
Cancel
Next


CloudWatch > Alarms > Create alarm
Step 2
Configure actions
Step 3
Add alarm details
Step 4
Preview and create
Notification
Alarm state trigger
Define the alarm state that will trigger this action.
Remove
In alarm
The metric or expression is outside of the defined threshold.
OK
The metric or expression is within the defined threshold.
Insufficient data
The alarm has just started or not enough data is available.
Send a notification to the following SNS topic
Define the SNS (Simple Notification Service) topic that will receive the notification.
Select an existing SNS topic
Create new topic
Use topic ARN to notify other accounts
Create a new topic...
The topic name must be unique.
Default_CloudWatch_Alarms_Topic
SNS topic names can contain only alphanumeric characters, hyphens (-) and underscores (_).
Email endpoints that will receive the notification...
Add a comma-separated list of email addresses. Each address will be added as a subscription to the topic above.
jaswanthmatta344@gmail.com
user1@example.com, user2@example.com
Create topic


mail.google.com/mail/u/0/?tab=rm&ogbl#inbox/FMfcgzQdzcwJqmrMbsGPQmFHcPctGgSD
Gmail
Search mail
Compose
Inbox 6,650
Starred
Snoozed
Sent
Drafts 17
Purchases 182
More
Labels
Upgrade
1 of 7,830
AWS Notification - Subscription Confirmation
Inbox ×
AWS Notifications <no-reply@sns.amazonaws.com>
to me
10:55 PM (0 minutes ago)
You have chosen to subscribe to the topic:
arn:aws:sns:us-east-1:203081517573:Default_CloudWatch_Alarms_Topic
To confirm this subscription, click or visit the link below (If this was in error no action is necessary):
Confirm subscription
Please do not reply directly to this email. If you wish to remove yourself from receiving all future SNS subscription confirmation requests please send an email to sns-opt-out
Reply
Forward
26°F Clear
Search
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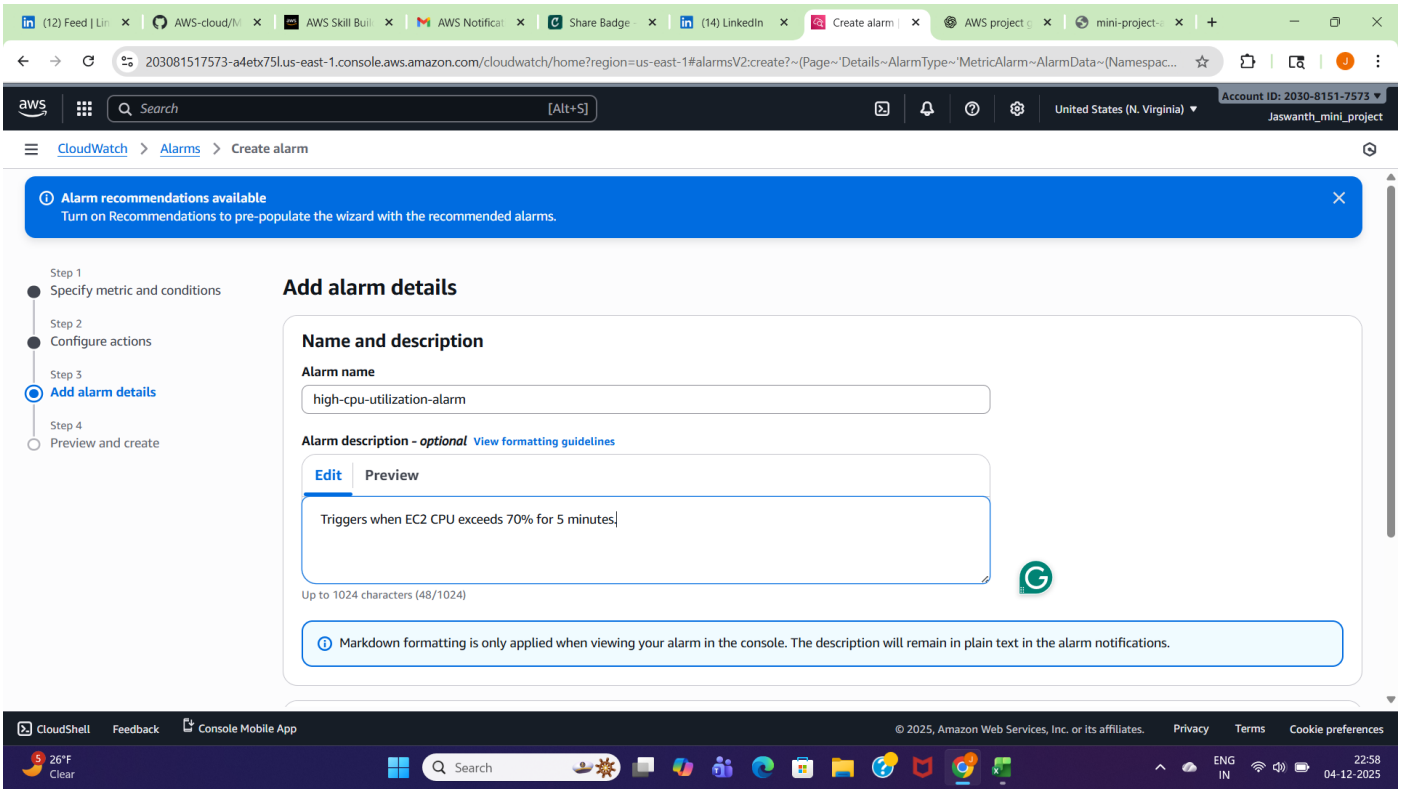
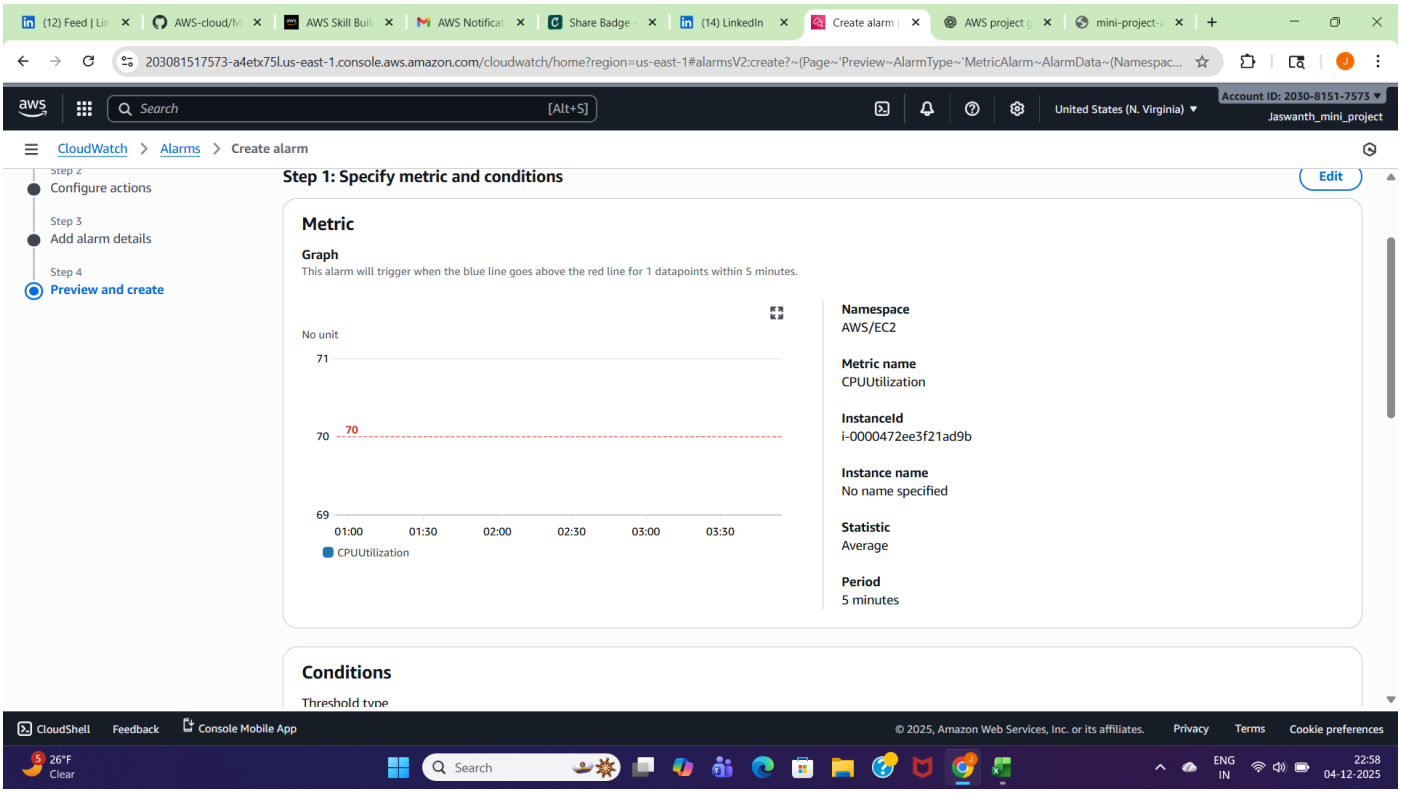
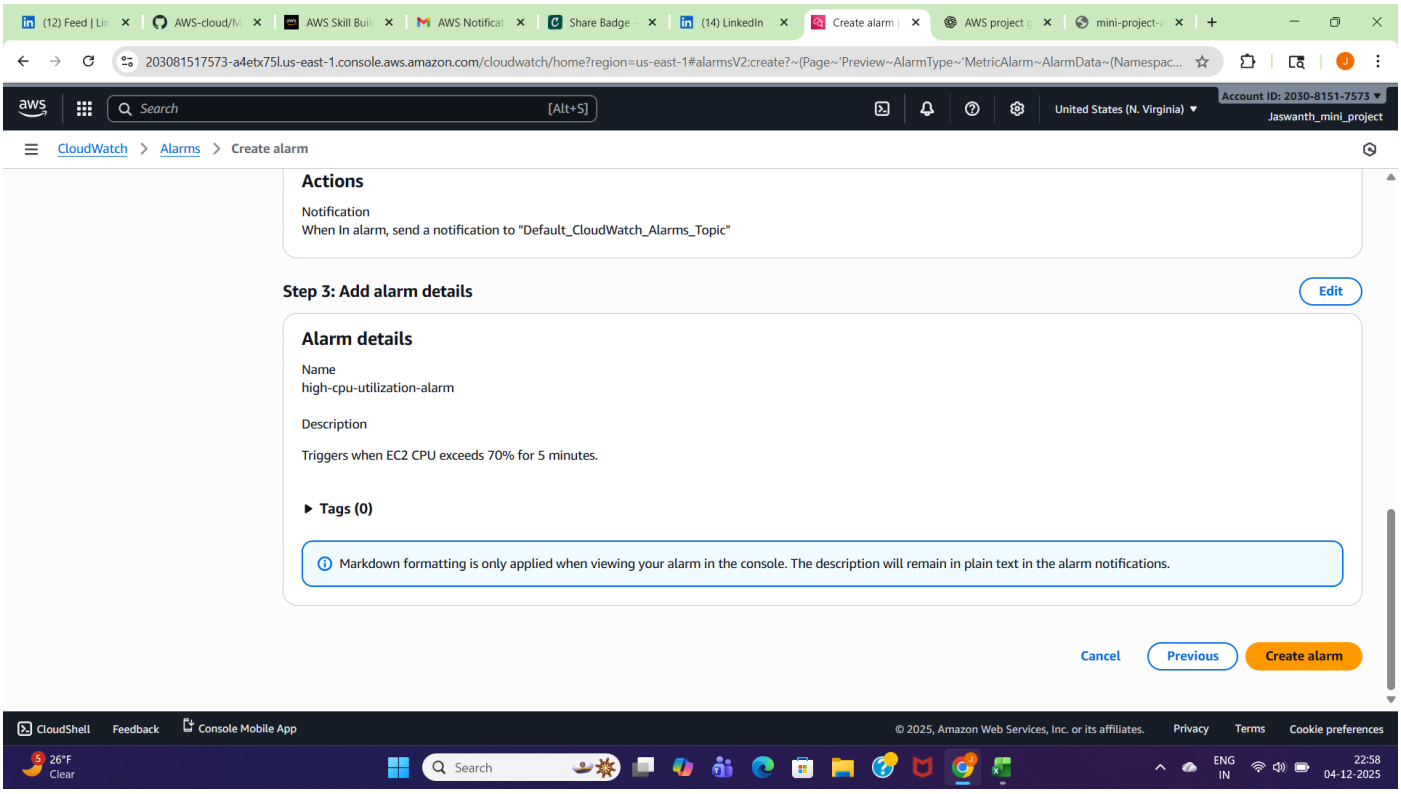
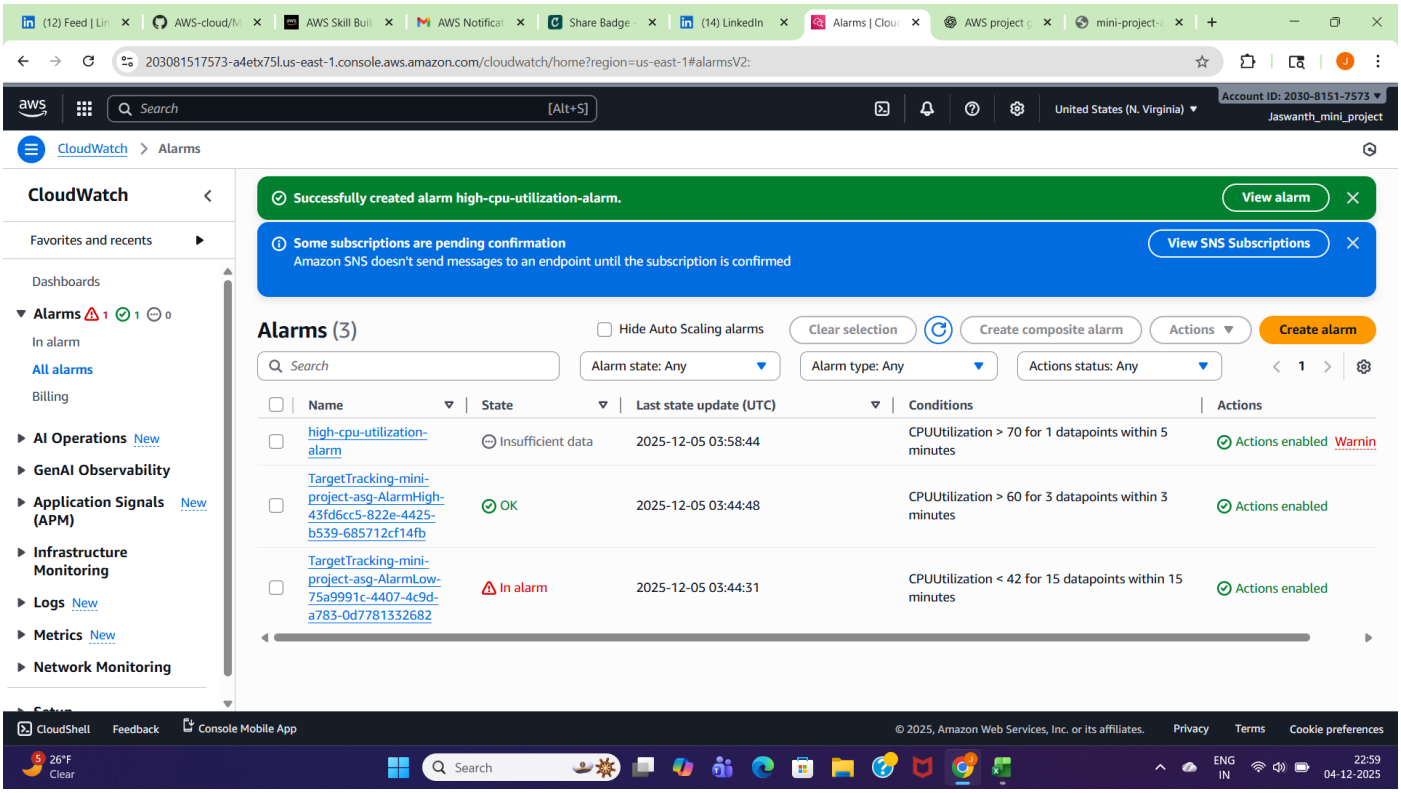
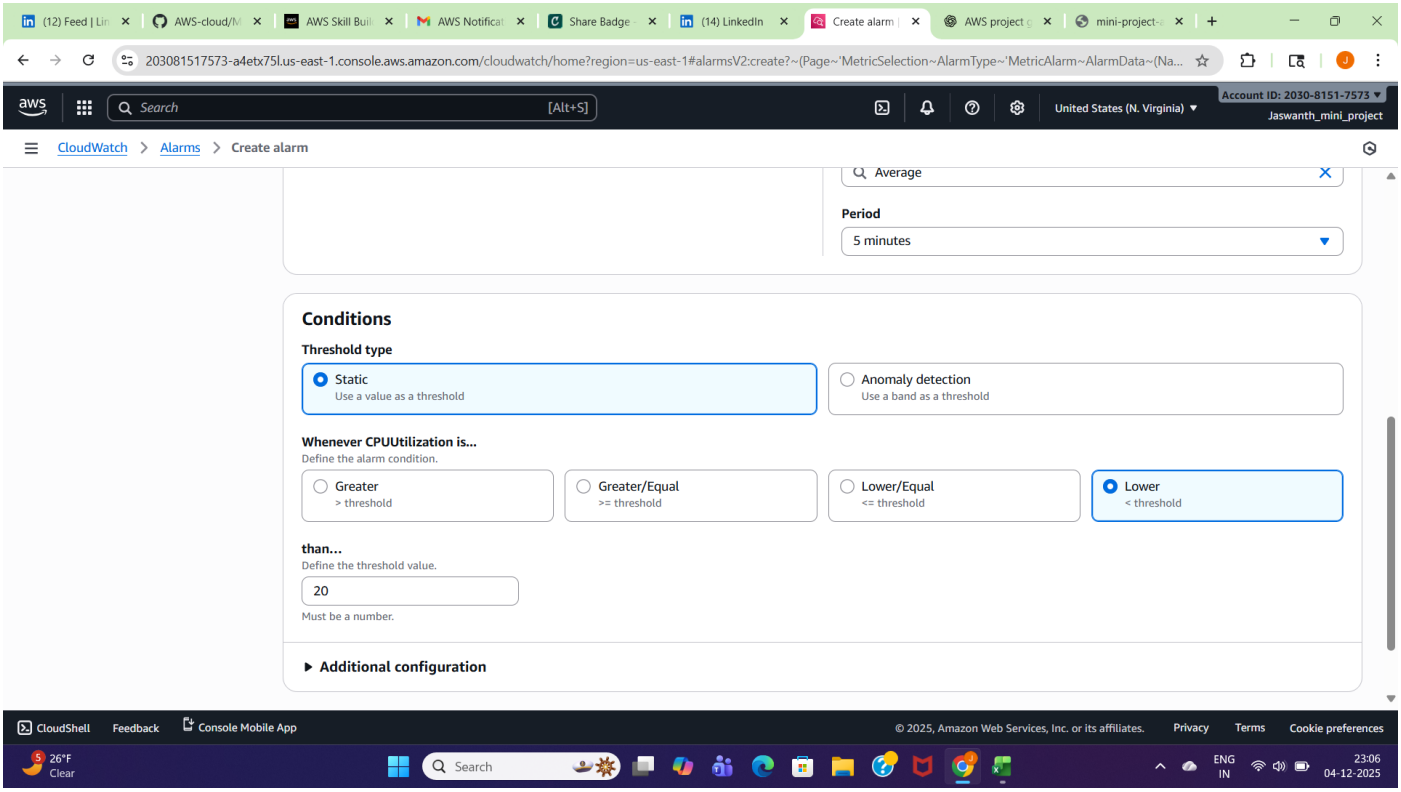
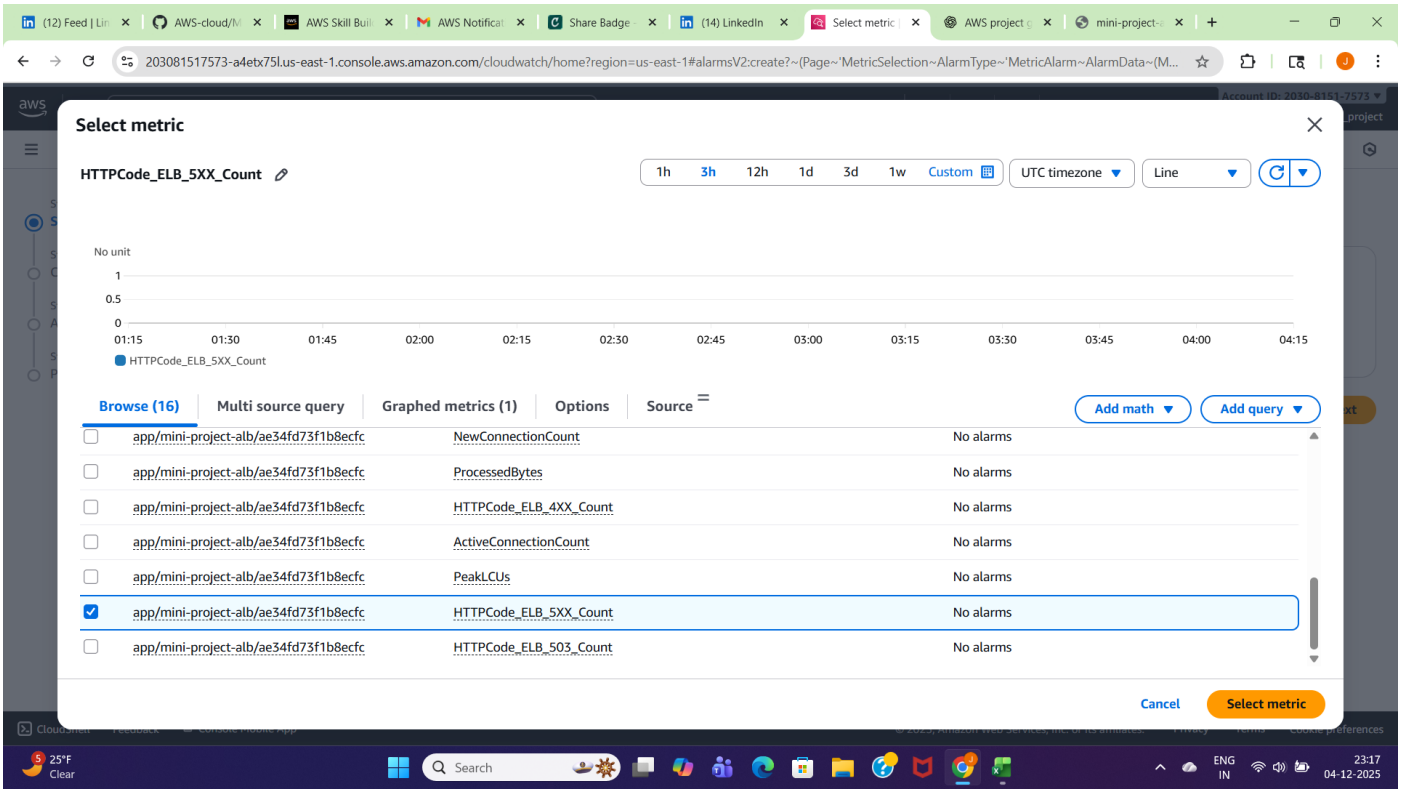

203081517573-a4etx75l.us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#alarmsV2:create?~(Page~'Details~AlarmType~'MetricAlarm~AlarmData~(Namespac...
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
CloudWatch > Alarms > Create alarm
Alarm recommendations available
Turn on Recommendations to pre-populate the wizard with the recommended alarms.
Step 1 Specify metric and conditions
Step 2 Configure actions
Step 3 Add alarm details
Step 4 Preview and create
Add alarm details
Name and description
Alarm name
high-cpu-utilization-alarm
Alarm description - optional View formatting guidelines
Edit
Preview
Triggers when EC2 CPU exceeds 70% for 5 minutes.
Up to 1024 characters (48/1024)
Markdown formatting is only applied when viewing your alarm in the console. The description will remain in plain text in the alarm notifications.
CloudShell
Feedback
Console Mobile App
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
26°F Clear
Search
ENG IN
22:58 04-12-2025

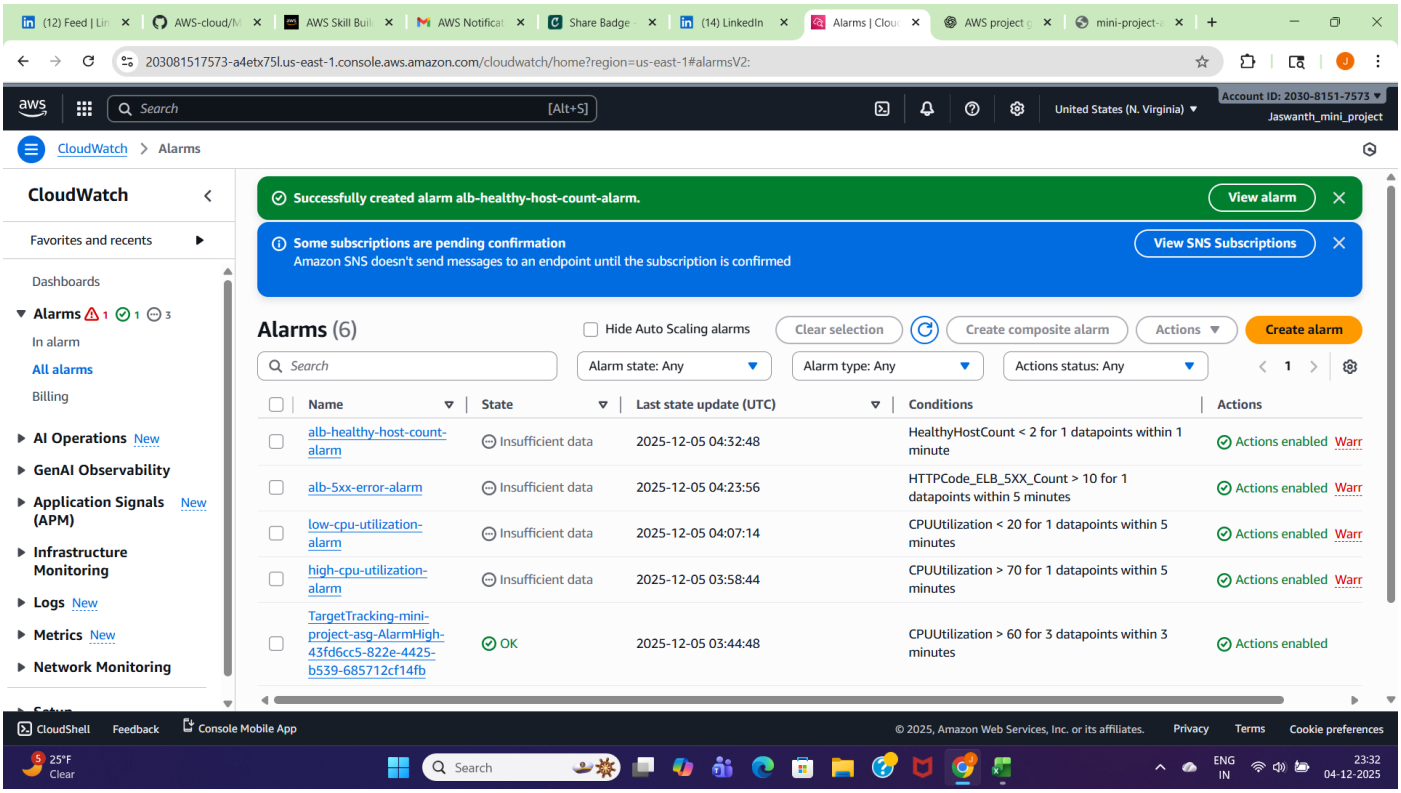

CloudWatch > Alarms > Create alarm
Step 2
Configure actions
Step 3
Add alarm details
Step 4
Preview and create
Step 1: Specify metric and conditions
Edit
Metric
Graph
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 5 minutes.
No unit
71
70
69
01:00
01:30
02:00
02:30
03:00
03:30
CPUUtilization
Namespace
AWS/EC2
Metric name
CPUUtilization
InstanceId
i-0000472ee3f21ad9b
Instance name
No name specified
Statistic
Average
Period
5 minutes
Conditions
Threshold type


CloudWatch > Alarms > Create alarm
Actions
Notification
When In alarm, send a notification to "Default_CloudWatch_Alarms_Topic"
Step 3: Add alarm details
Edit
Alarm details
Name
high-cpu-utilization-alarm
Description
Triggers when EC2 CPU exceeds 70% for 5 minutes.
Tags (0)
Markdown formatting is only applied when viewing your alarm in the console. The description will remain in plain text in the alarm notifications.
Cancel
Previous
Create alarm


CloudWatch
Alarms
Successfully created alarm high-cpu-utilization-alarm.
View alarm
Some subscriptions are pending confirmation
Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed
View SNS Subscriptions
Alarms (3)
Hide Auto Scaling alarms
Clear selection
Create composite alarm
Actions
Create alarm
Search
Alarm state: Any
Alarm type: Any
Actions status: Any
Name
State
Last state update (UTC)
Conditions
Actions
high-cpu-utilization-alarm
Insufficient data
2025-12-05 03:58:44
CPUUtilization > 70 for 1 datapoints within 5 minutes
Actions enabled
TargetTracking-mini-project-asg-AlarmHigh-43fd6cc5-822e-4425-b539-685712cf14fb
OK
2025-12-05 03:44:48
CPUUtilization > 60 for 3 datapoints within 3 minutes
Actions enabled
TargetTracking-mini-project-asg-AlarmLow-75a9991c-4407-4c9d-a783-0d7781332682
In alarm
2025-12-05 03:44:31
CPUUtilization < 42 for 15 datapoints within 15 minutes
Actions enabled

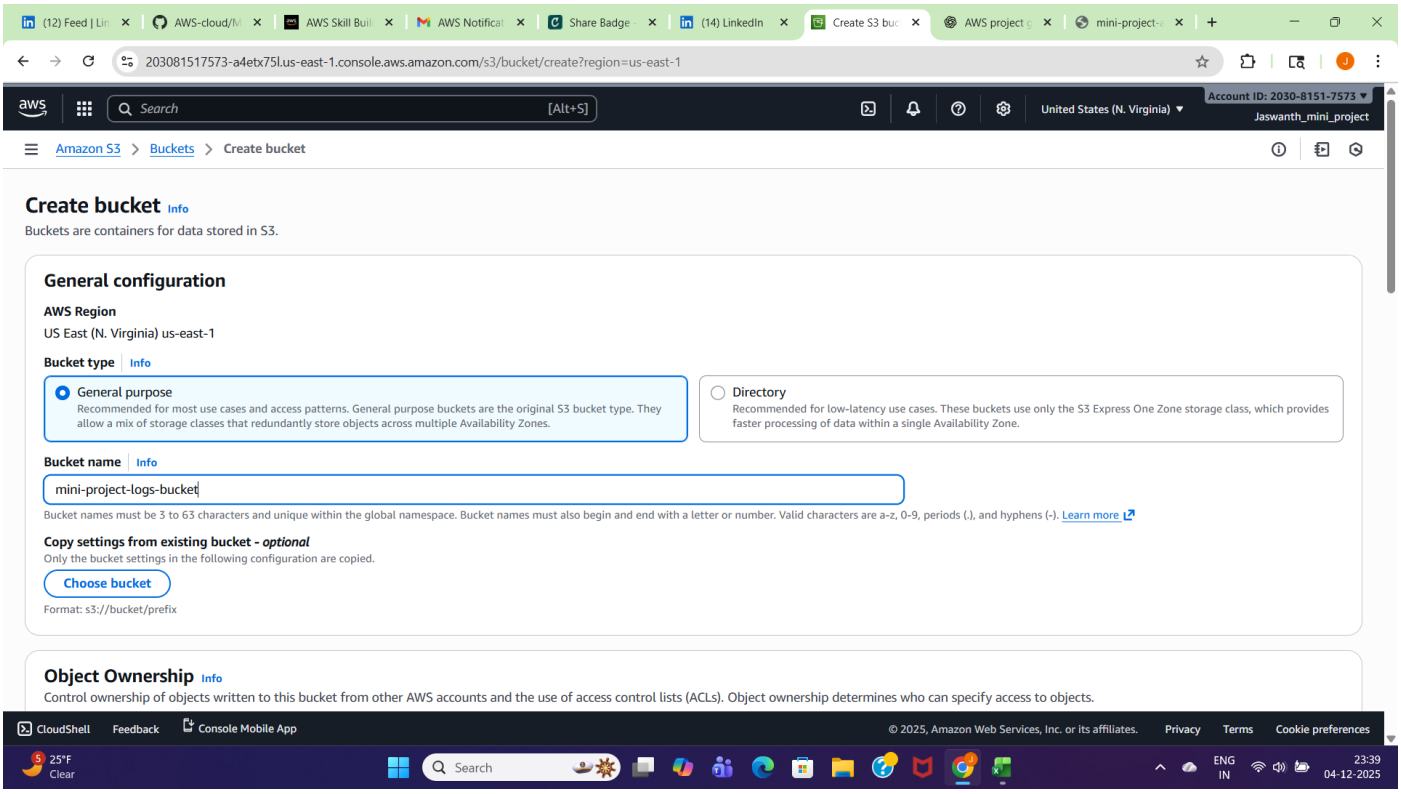

CloudWatch
Alarms
Create alarm
Average
Period
5 minutes
Conditions
Threshold type
Static
Use a value as a threshold
Anomaly detection
Use a band as a threshold
Whenever CPUUtilization is...
Define the alarm condition.
Greater
> threshold
Greater/Equal
>= threshold
Lower/Equal
<= threshold
Lower
< threshold
than...
Define the threshold value.
20
Must be a number.
Additional configuration

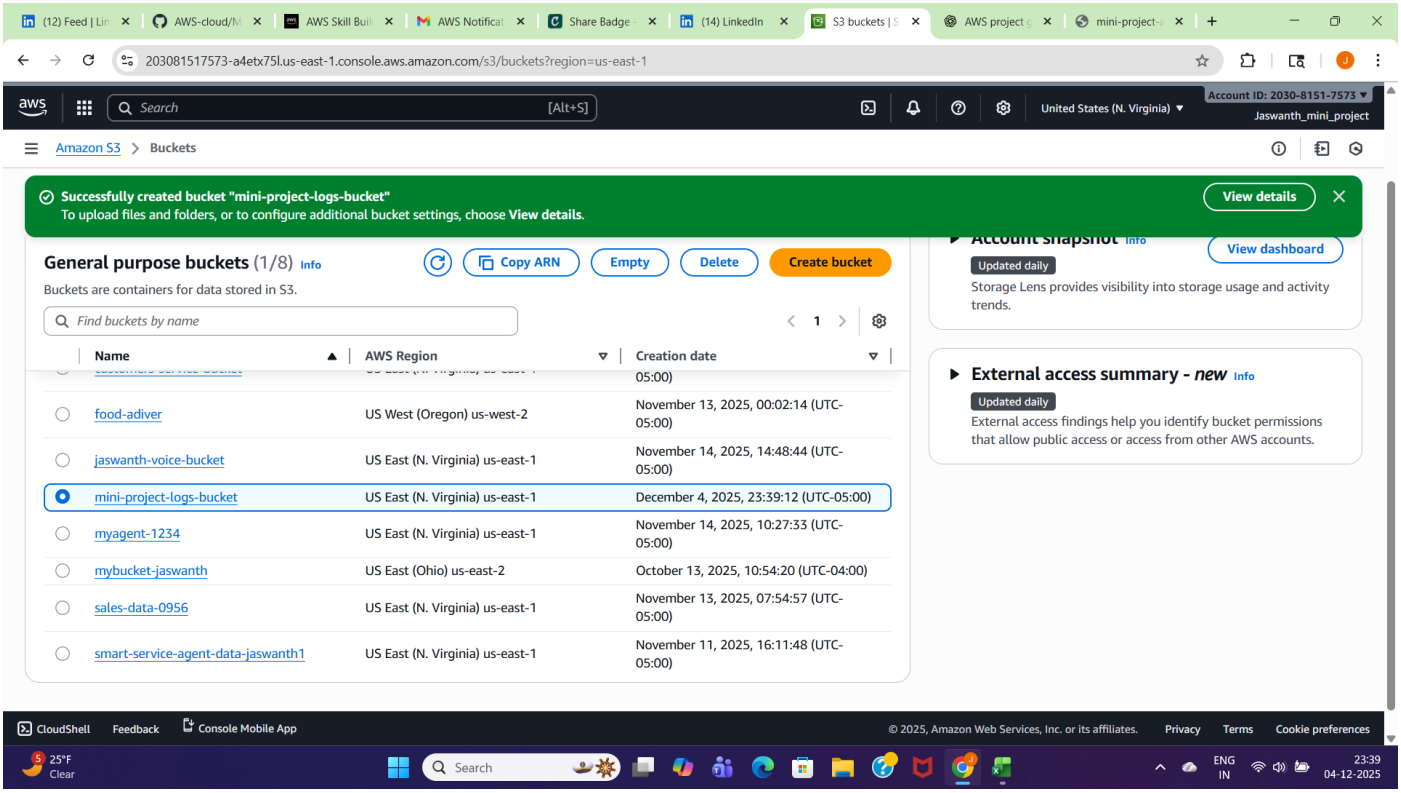

Select metric
HTTPCode_ELB_5XX_Count
1h 3h 12h 1d 3d 1w Custom
UTC timezone
Line
No unit
1
0.5
0
01:15 01:30 01:45 02:00 02:15 02:30 02:45 03:00 03:15 03:30 03:45 04:00 04:15
HTTPCode_ELB_5XX_Count
Browse (16)
Multi source query
Graphed metrics (1)
Options
Source
Add math
Add query
app/mini-project-alb/ae34fd73f1b8ecfc NewConnectionCount No alarms
app/mini-project-alb/ae34fd73f1b8ecfc ProcessedBytes No alarms
app/mini-project-alb/ae34fd73f1b8ecfc HTTPCode_ELB_4XX_Count No alarms
app/mini-project-alb/ae34fd73f1b8ecfc ActiveConnectionCount No alarms
app/mini-project-alb/ae34fd73f1b8ecfc PeakLCUs No alarms
app/mini-project-alb/ae34fd73f1b8ecfc HTTPCode_ELB_5XX_Count No alarms
app/mini-project-alb/ae34fd73f1b8ecfc HTTPCode_ELB_503_Count No alarms
Cancel
Select metric

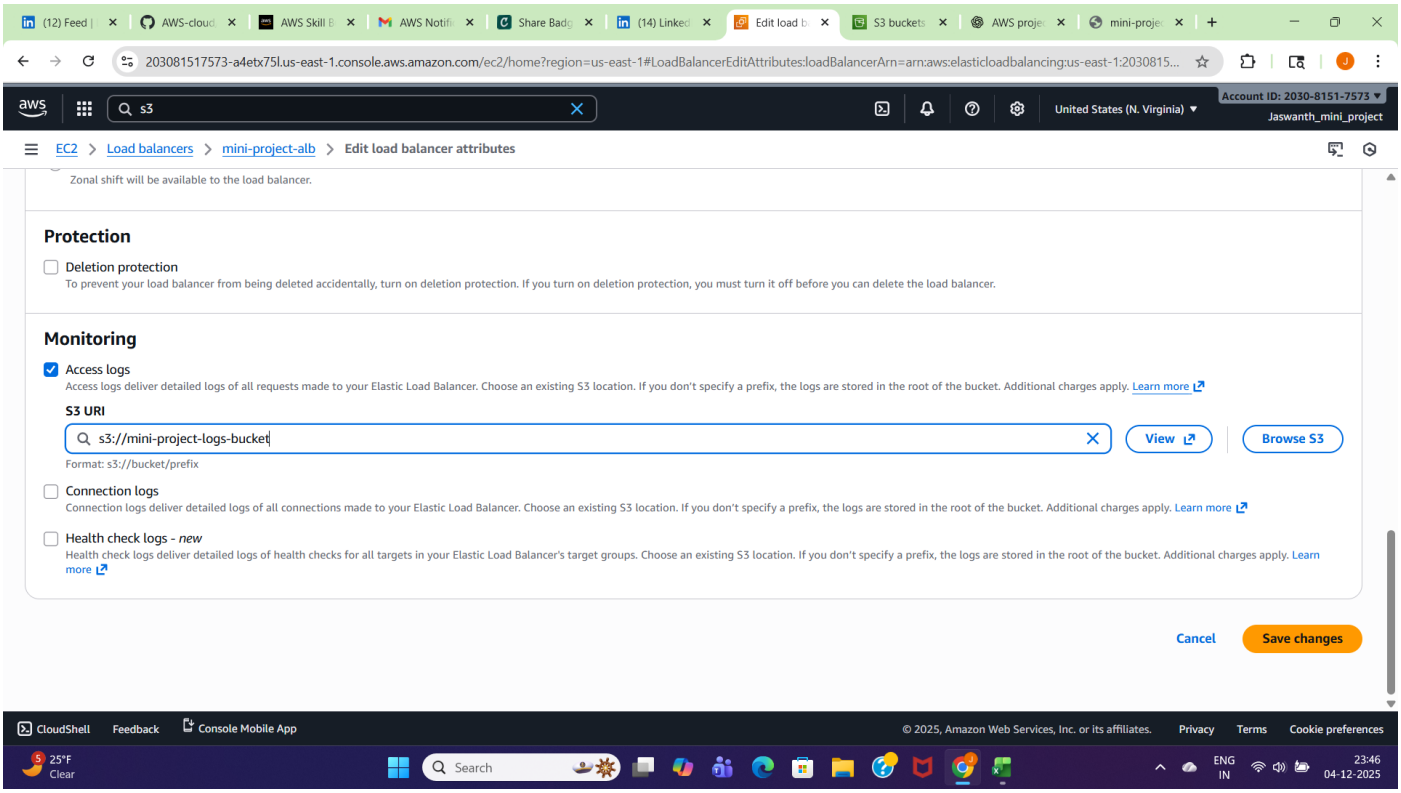

Successfully created alarm alb-healthy-host-count-alarm.
View alarm
Some subscriptions are pending confirmation
Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed
View SNS Subscriptions
Alarms (6)
Hide Auto Scaling alarms
Clear selection
Create composite alarm
Actions
Create alarm
Alarm state: Any
Alarm type: Any
Actions status: Any
Name
State
Last state update (UTC)
Conditions
Actions
alb-healthy-host-count-alarm Insufficient data 2025-12-05 04:32:48 HealthyHostCount < 2 for 1 datapoints within 1 minute Actions enabled
alb-5xx-error-alarm Insufficient data 2025-12-05 04:23:56 HTTPCode_ELB_5XX_Count > 10 for 1 datapoints within 5 minutes Actions enabled
low-cpu-utilization-alarm Insufficient data 2025-12-05 04:07:14 CPUUtilization < 20 for 1 datapoints within 5 minutes Actions enabled
high-cpu-utilization-alarm Insufficient data 2025-12-05 03:58:44 CPUUtilization > 70 for 1 datapoints within 5 minutes Actions enabled
TargetTracking-mini-project-asg-AlarmHigh-43fd6cc5-822e-4425-b539-685712cf14fb OK 2025-12-05 03:44:48 CPUUtilization > 60 for 3 datapoints within 3 minutes Actions enabled

ALB Access Logging Setup

I configured Application Load Balancer access logs by enabling logging, creating a dedicated S3 bucket for log storage, and applying a bucket policy that allows the ALB service to securely deliver log files.






EC2 > Load balancers > mini-project-alb > Edit load balancer attributes
Zonal shift will be available to the load balancer.
Protection
Deletion protection
To prevent your load balancer from being deleted accidentally, turn on deletion protection. If you turn on deletion protection, you must turn it off before you can delete the load balancer.
Monitoring
Access logs
Access logs deliver detailed logs of all requests made to your Elastic Load Balancer. Choose an existing S3 location. If you don't specify a prefix, the logs are stored in the root of the bucket. Additional charges apply. Learn more
S3 URI
s3://mini-project-logs-bucket
View
Browse S3
Format: s3://bucket/prefix
Connection logs
Connection logs deliver detailed logs of all connections made to your Elastic Load Balancer. Choose an existing S3 location. If you don't specify a prefix, the logs are stored in the root of the bucket. Additional charges apply. Learn more
Health check logs - new
Health check logs deliver detailed logs of health checks for all targets in your Elastic Load Balancer's target groups. Choose an existing S3 location. If you don't specify a prefix, the logs are stored in the root of the bucket. Additional charges apply. Learn more
Cancel
Save changes
CloudShell
Feedback
Console Mobile App
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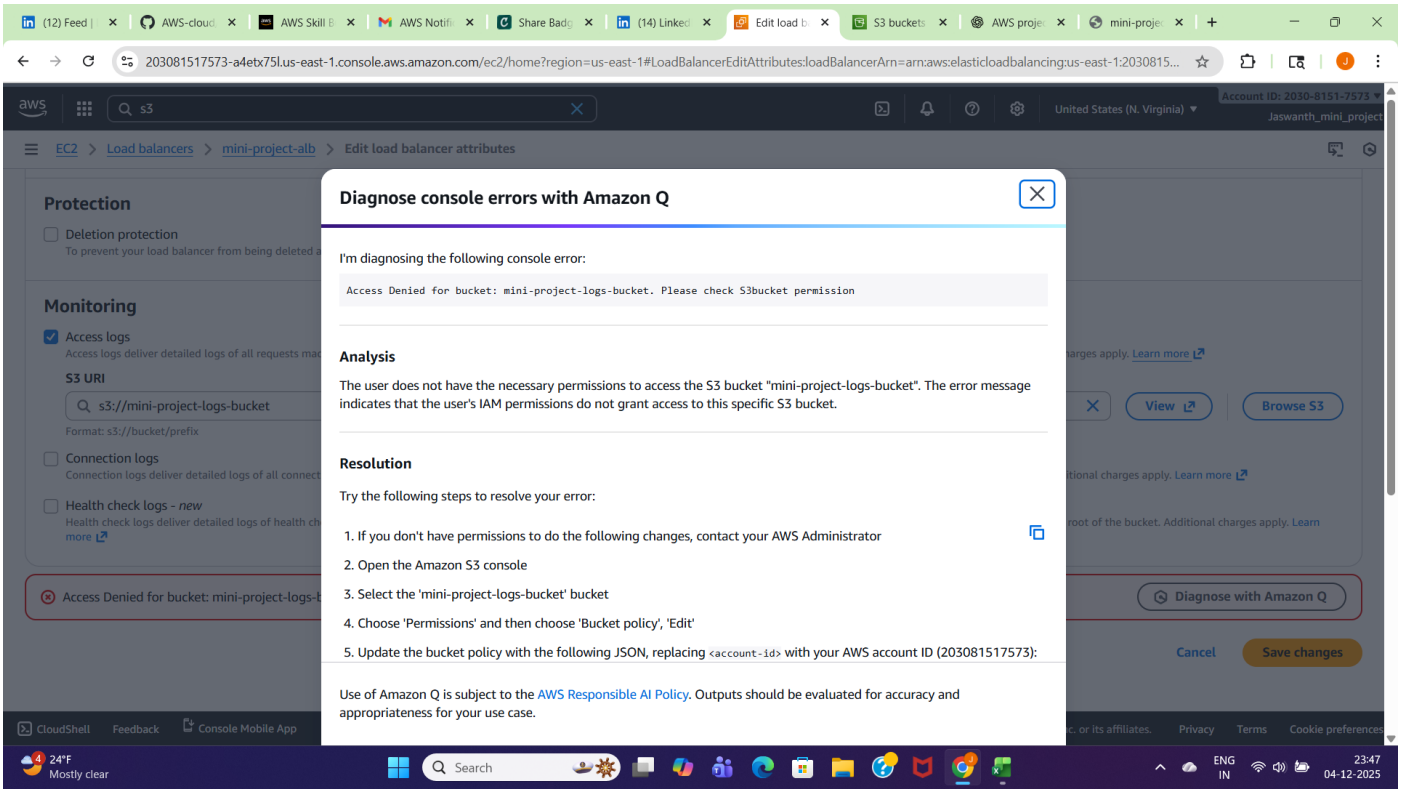
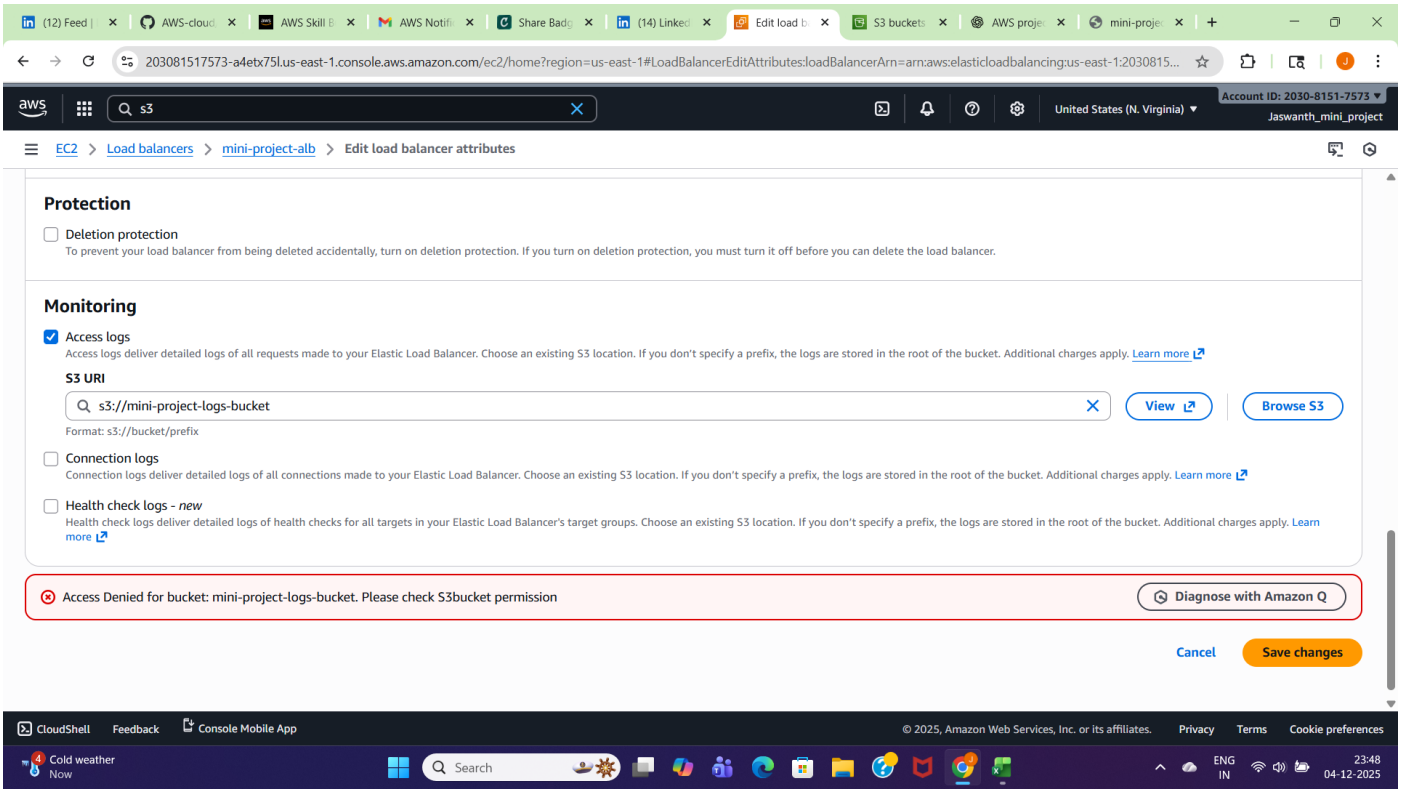
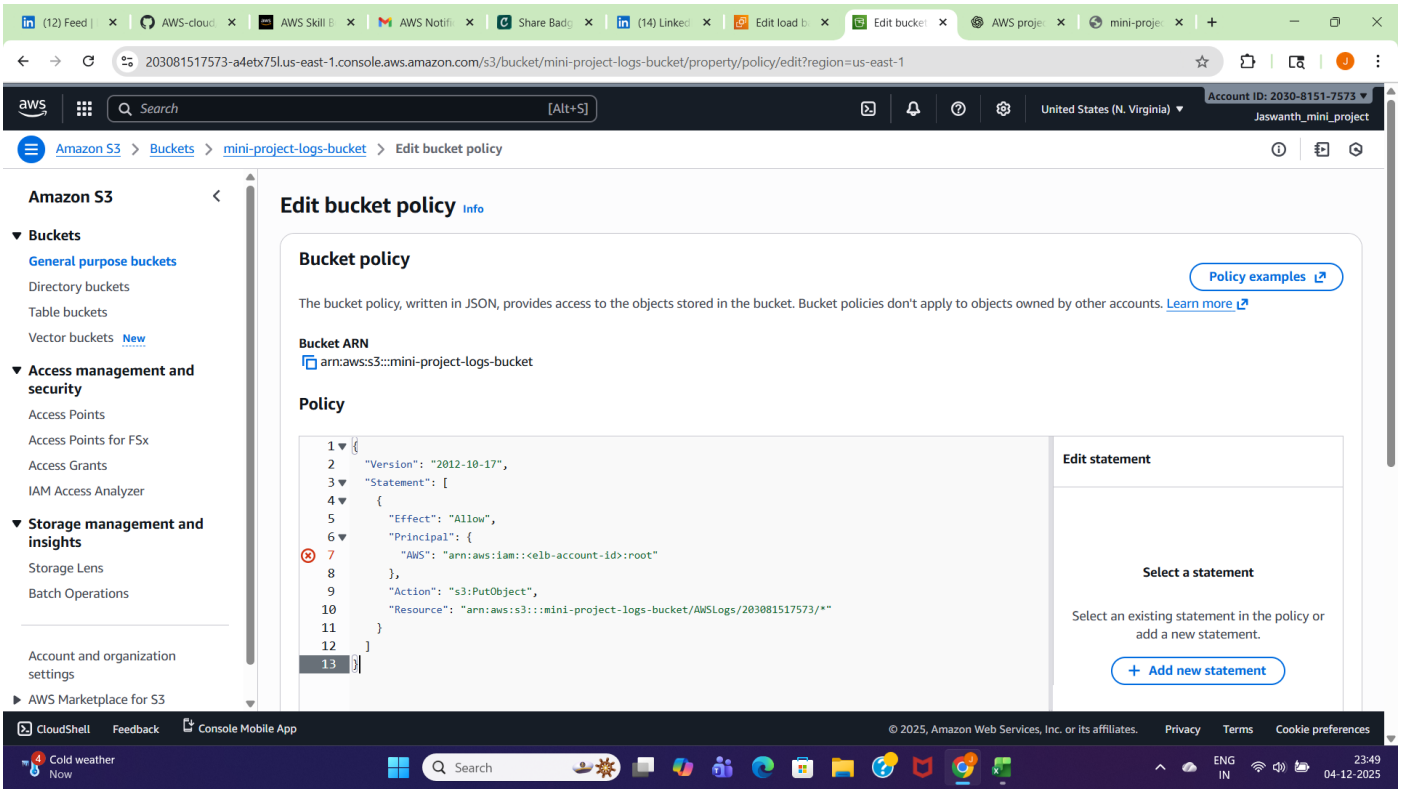
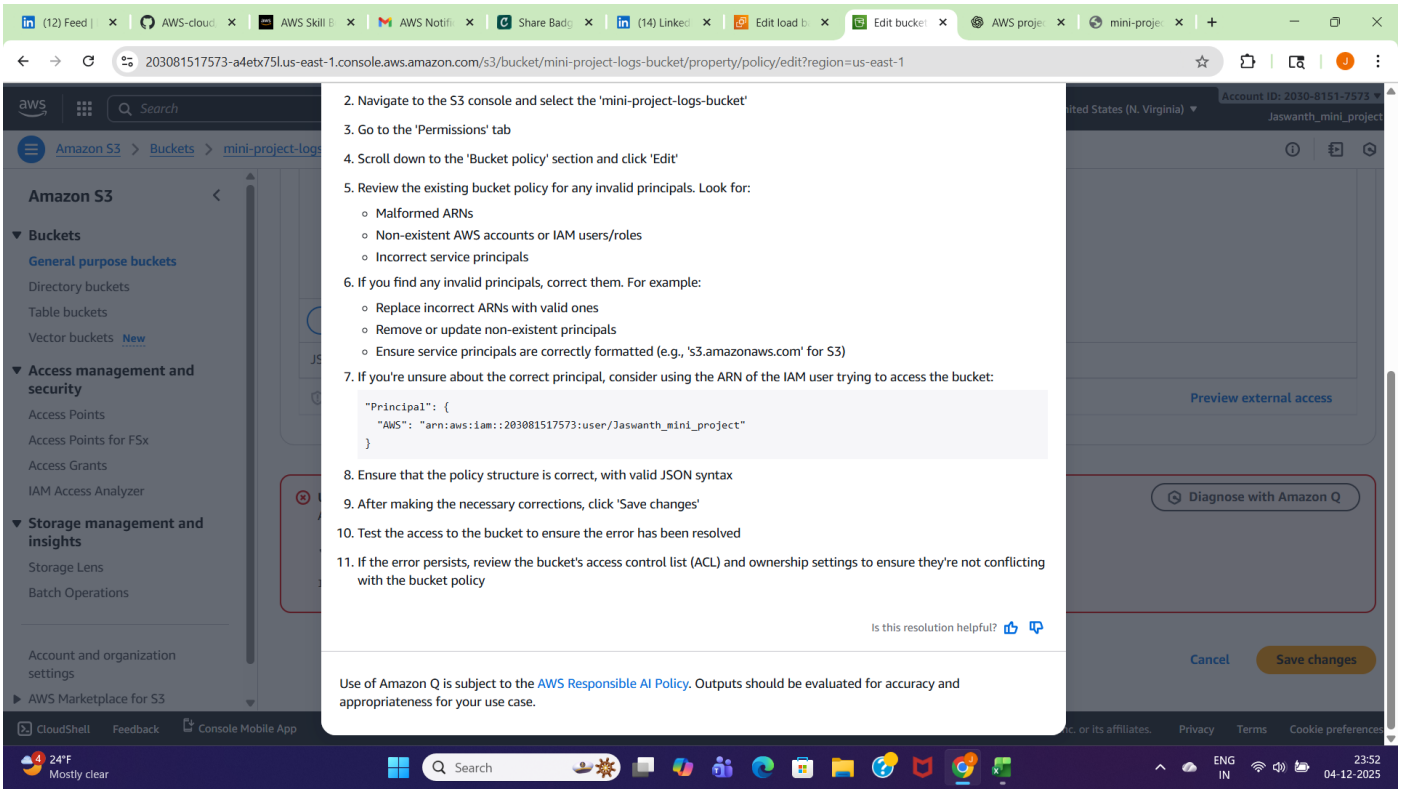
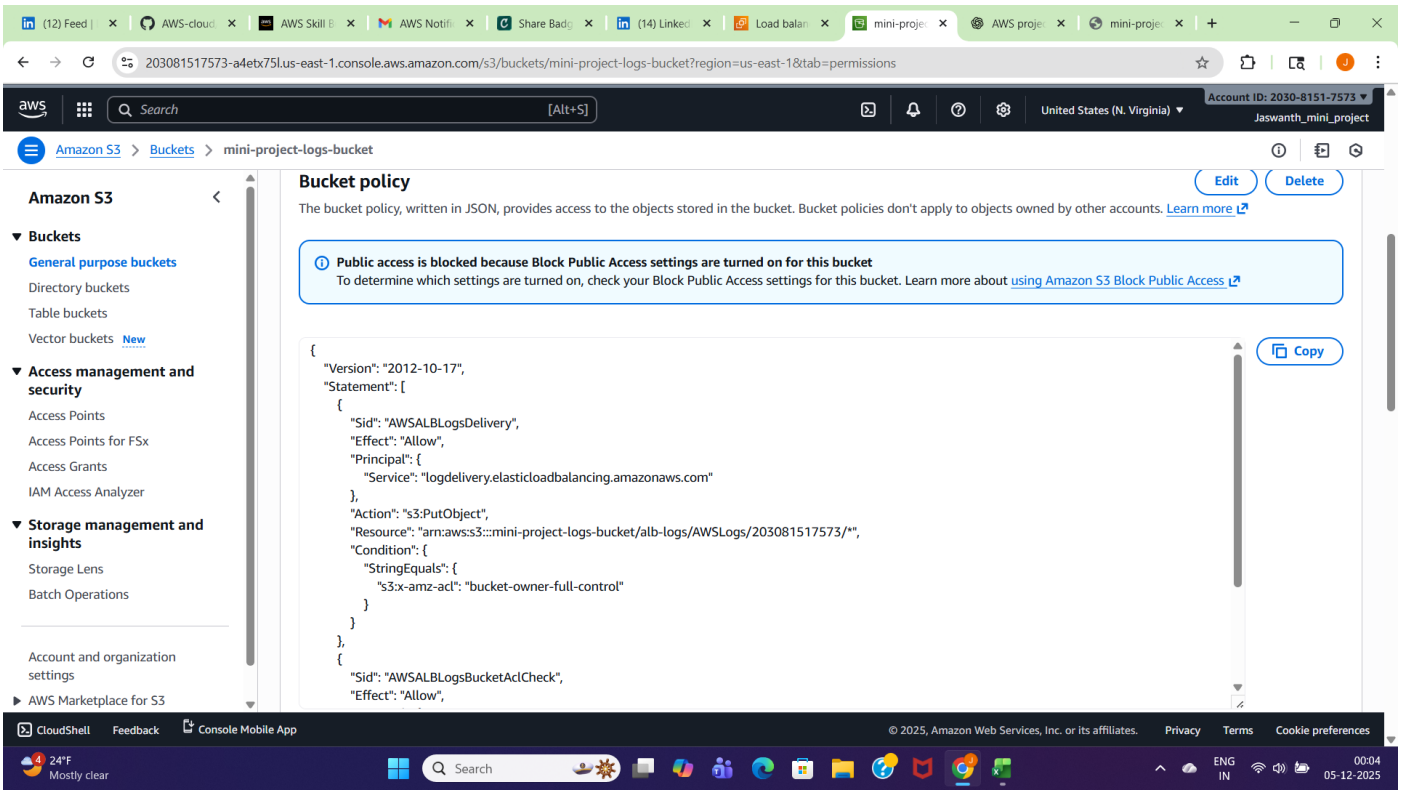
Cookie preferences

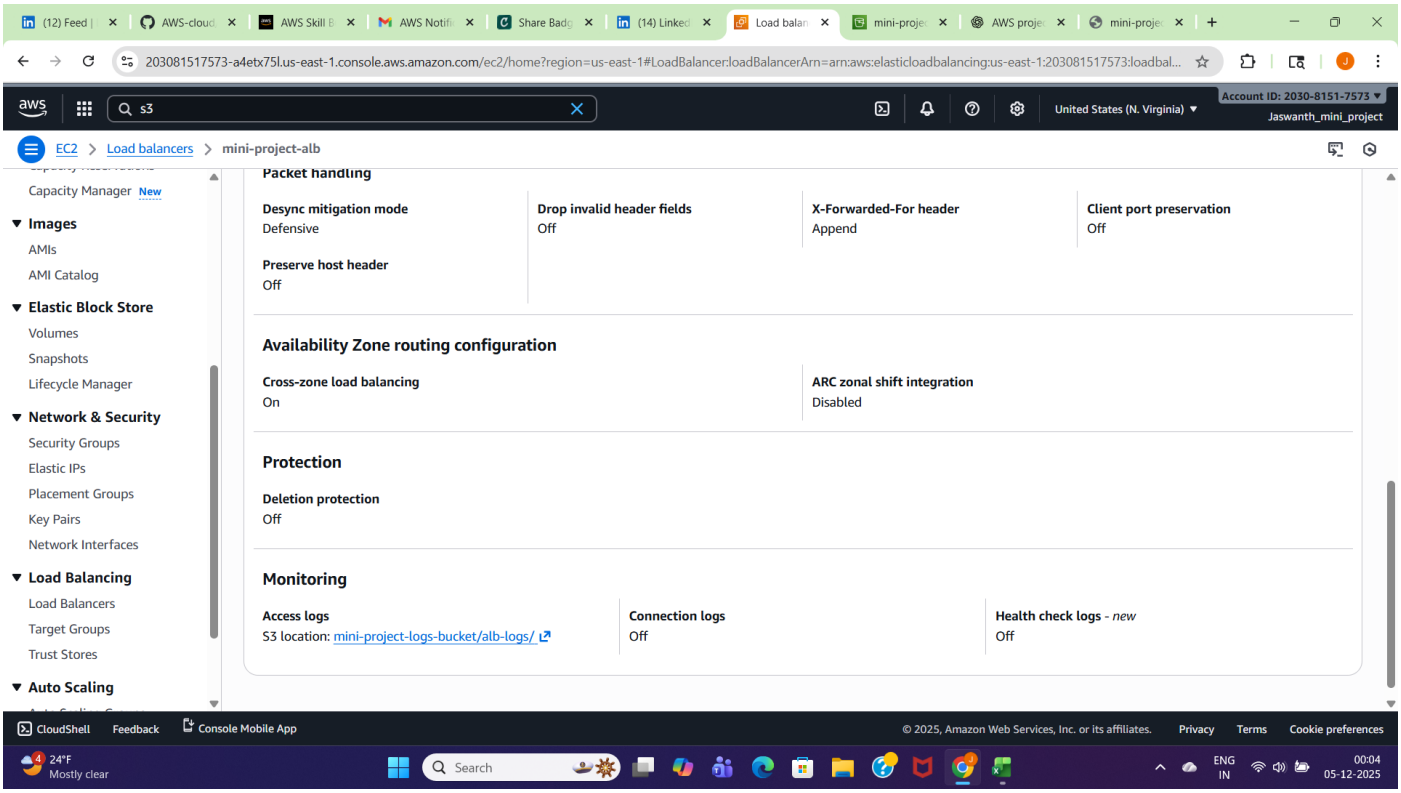

Diagnose console errors with Amazon Q
I'm diagnosing the following console error:
Access Denied for bucket: mini-project-logs-bucket. Please check S3bucket permission
Analysis
The user does not have the necessary permissions to access the S3 bucket "mini-project-logs-bucket". The error message indicates that the user's IAM permissions do not grant access to this specific S3 bucket.
Resolution
Try the following steps to resolve your error:
1. If you don't have permissions to do the following changes, contact your AWS Administrator
2. Open the Amazon S3 console
3. Select the 'mini-project-logs-bucket' bucket
4. Choose 'Permissions' and then choose 'Bucket policy', 'Edit'
5. Update the bucket policy with the following JSON, replacing <account-id> with your AWS account ID (203081517573):
Use of Amazon Q is subject to the AWS Responsible AI Policy. Outputs should be evaluated for accuracy and appropriateness for your use case.


EC2 > Load balancers > mini-project-alb > Edit load balancer attributes
Protection
Deletion protection
To prevent your load balancer from being deleted accidentally, turn on deletion protection. If you turn on deletion protection, you must turn it off before you can delete the load balancer.
Monitoring
Access logs
Access logs deliver detailed logs of all requests made to your Elastic Load Balancer. Choose an existing S3 location. If you don't specify a prefix, the logs are stored in the root of the bucket. Additional charges apply. Learn more
S3 URI
s3://mini-project-logs-bucket
View
Browse S3
Format: s3://bucket/prefix
Connection logs
Connection logs deliver detailed logs of all connections made to your Elastic Load Balancer. Choose an existing S3 location. If you don't specify a prefix, the logs are stored in the root of the bucket. Additional charges apply. Learn more
Health check logs - new
Health check logs deliver detailed logs of health checks for all targets in your Elastic Load Balancer's target groups. Choose an existing S3 location. If you don't specify a prefix, the logs are stored in the root of the bucket. Additional charges apply. Learn more
Access Denied for bucket: mini-project-logs-bucket. Please check S3bucket permission
Diagnose with Amazon Q
Cancel
Save changes


Amazon S3 > Buckets > mini-project-logs-bucket > Edit bucket policy
Edit bucket policy Info
Bucket policy
Policy examples
The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. Learn more
Bucket ARN
arn:aws:s3:::mini-project-logs-bucket
Policy
{
"Version": "2012-10-17",
"Statement": [
{
"Effect": "Allow",
"Principal": {
"AWS": "arn:aws:iam::<elb-account-id>:root"
},
"Action": "s3:PutObject",
"Resource": "arn:aws:s3:::mini-project-logs-bucket/AWSLogs/203081517573/*"
}
]
}
Edit statement
Select a statement
Select an existing statement in the policy or add a new statement.
Add new statement

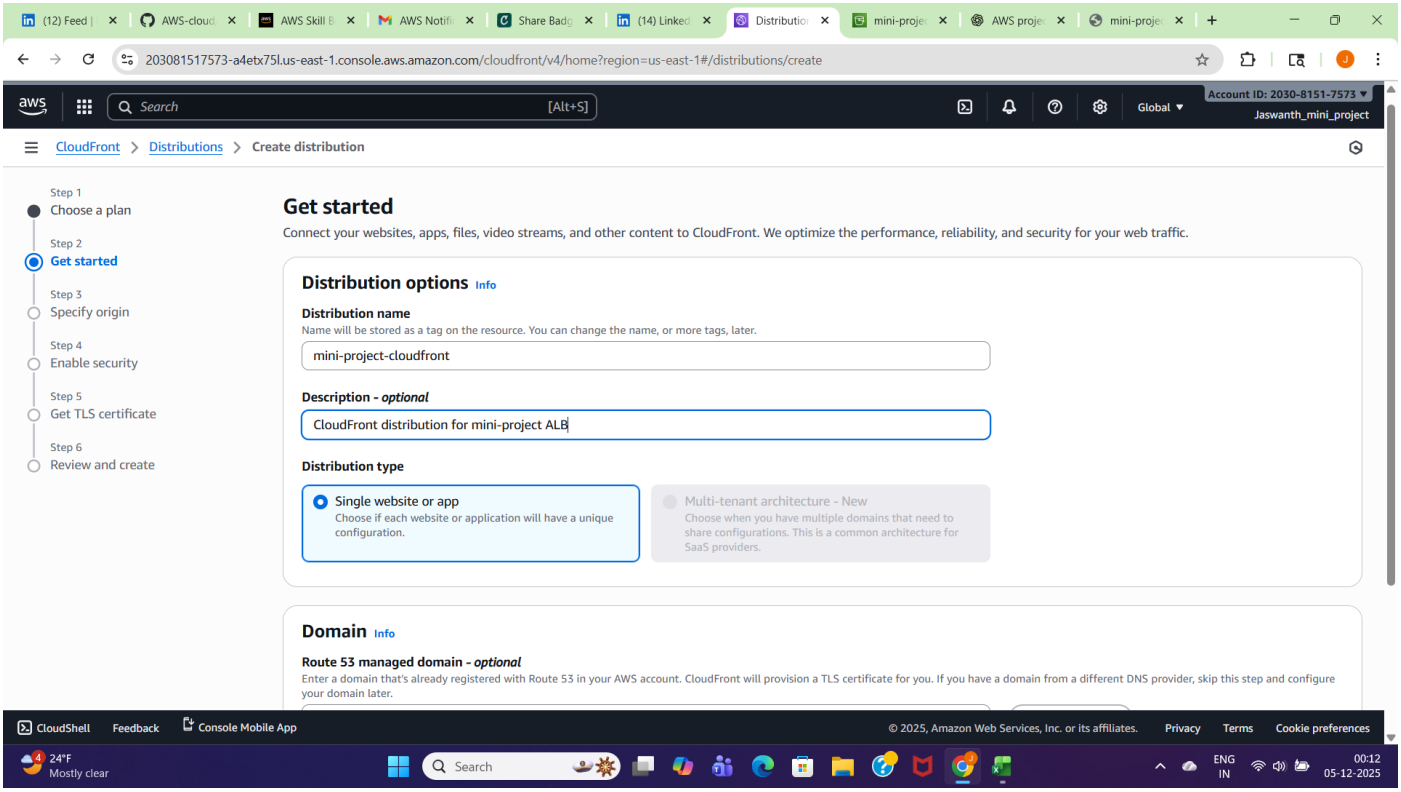

2. Navigate to the S3 console and select the 'mini-project-logs-bucket'
3. Go to the 'Permissions' tab
4. Scroll down to the 'Bucket policy' section and click 'Edit'
5. Review the existing bucket policy for any invalid principals. Look for:
Malformed ARNs
Non-existent AWS accounts or IAM users/roles
Incorrect service principals
6. If you find any invalid principals, correct them. For example:
Replace incorrect ARNs with valid ones
Remove or update non-existent principals
Ensure service principals are correctly formatted (e.g., 's3.amazonaws.com' for S3)
7. If you're unsure about the correct principal, consider using the ARN of the IAM user trying to access the bucket:
"Principal": {
"AWS": "arn:aws:iam::203081517573:user/Jaswanth_mini_project"
}
8. Ensure that the policy structure is correct, with valid JSON syntax
9. After making the necessary corrections, click 'Save changes'
10. Test the access to the bucket to ensure the error has been resolved
11. If the error persists, review the bucket's access control list (ACL) and ownership settings to ensure they're not conflicting with the bucket policy
Is this resolution helpful?
Use of Amazon Q is subject to the AWS Responsible AI Policy. Outputs should be evaluated for accuracy and appropriateness for your use case.

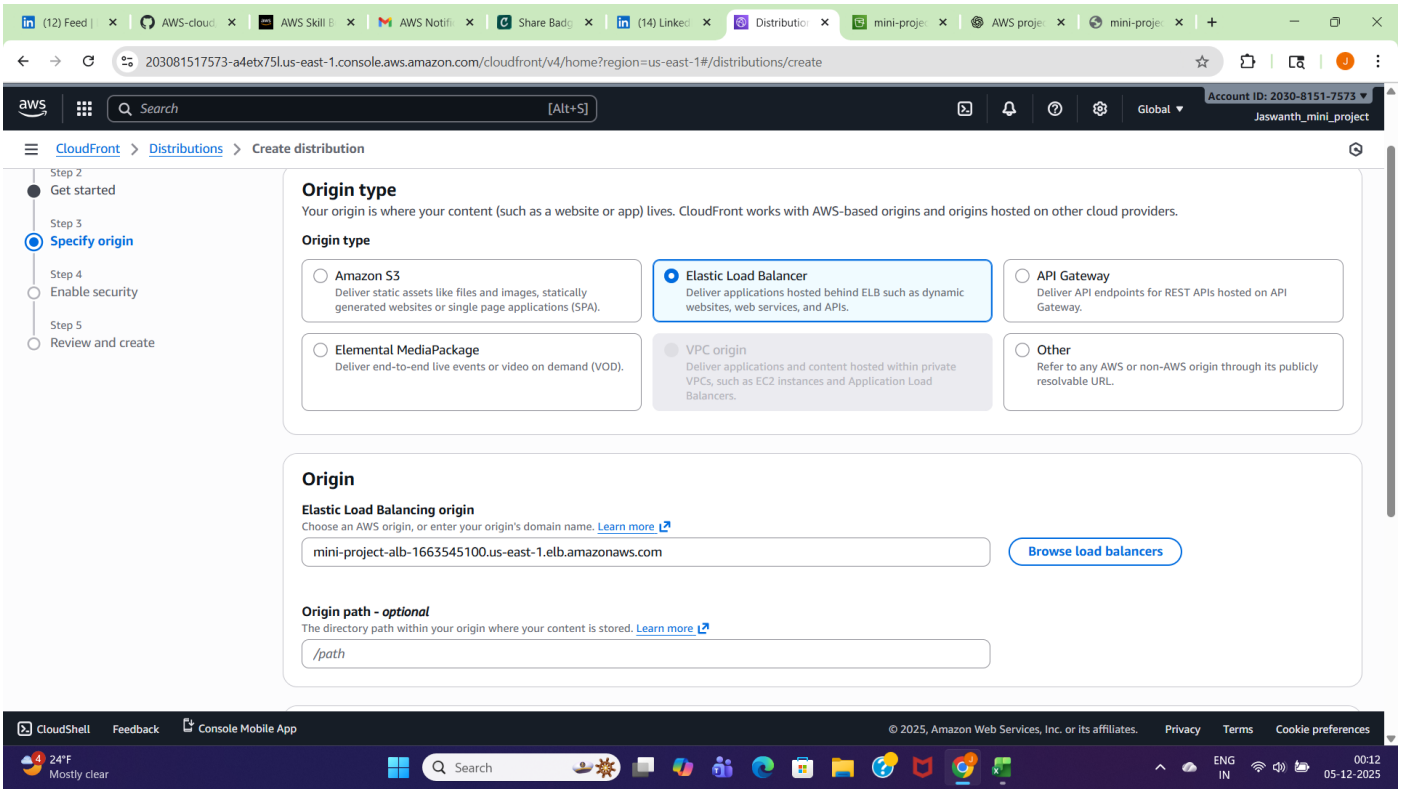

Bucket policy
Edit
Delete
The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. Learn more
Public access is blocked because Block Public Access settings are turned on for this bucket
To determine which settings are turned on, check your Block Public Access settings for this bucket. Learn more about using Amazon S3 Block Public Access
Copy
{
"Version": "2012-10-17",
"Statement": [
{
"Sid": "AWSALBLogsDelivery",
"Effect": "Allow",
"Principal": {
"Service": "logdelivery.elasticloadbalancing.amazonaws.com"
},
"Action": "s3:PutObject",
"Resource": "arn:aws:s3:::mini-project-logs-bucket/alb-logs/AWSLogs/203081517573/*",
"Condition": {
"StringEquals": {
"s3:x-amz-acl": "bucket-owner-full-control"
}
}
},
{
"Sid": "AWSALBLogsBucketAclCheck",
"Effect": "Allow",

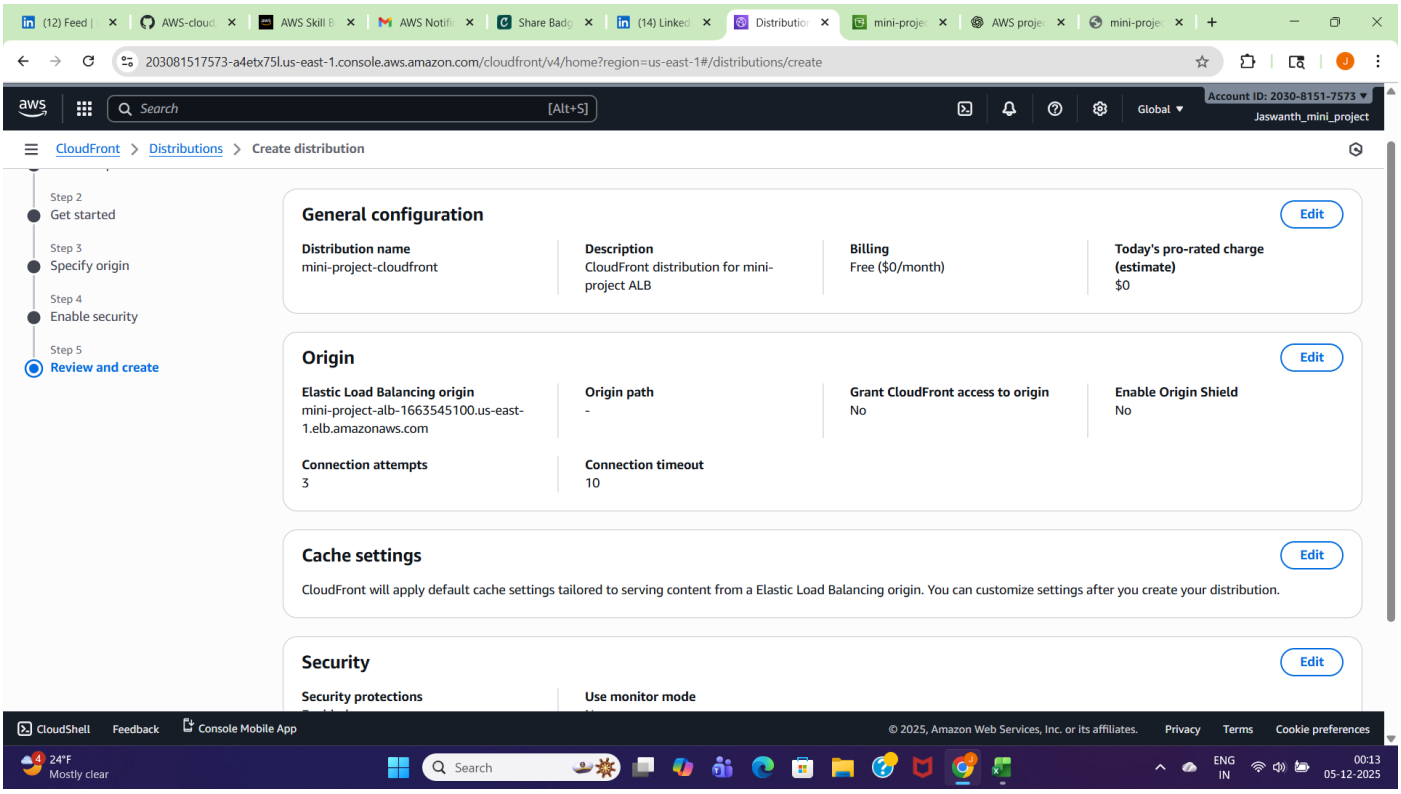


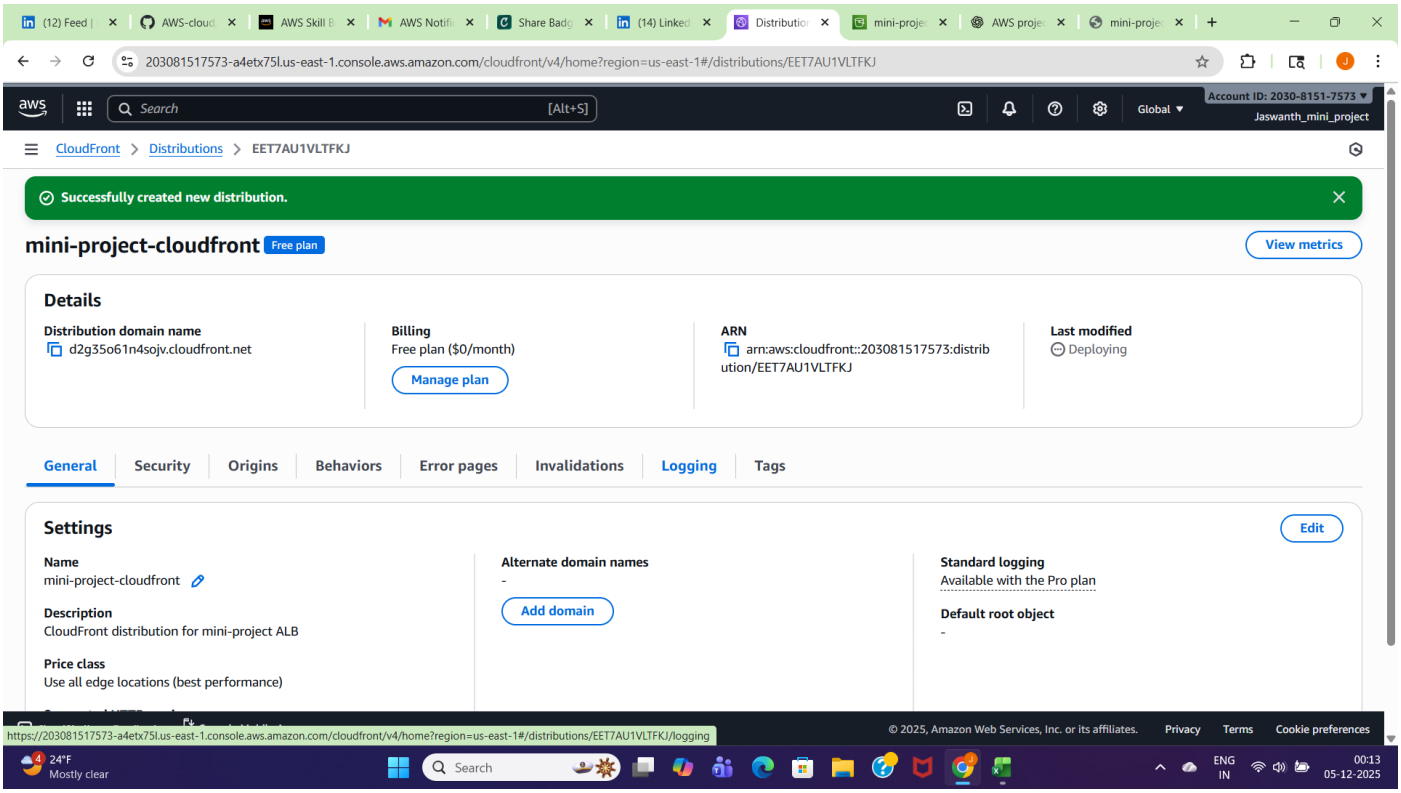
CloudFront Distribution Setup

Configured CloudFront to sit in front of the ALB for faster global delivery and improved performance through edge caching.



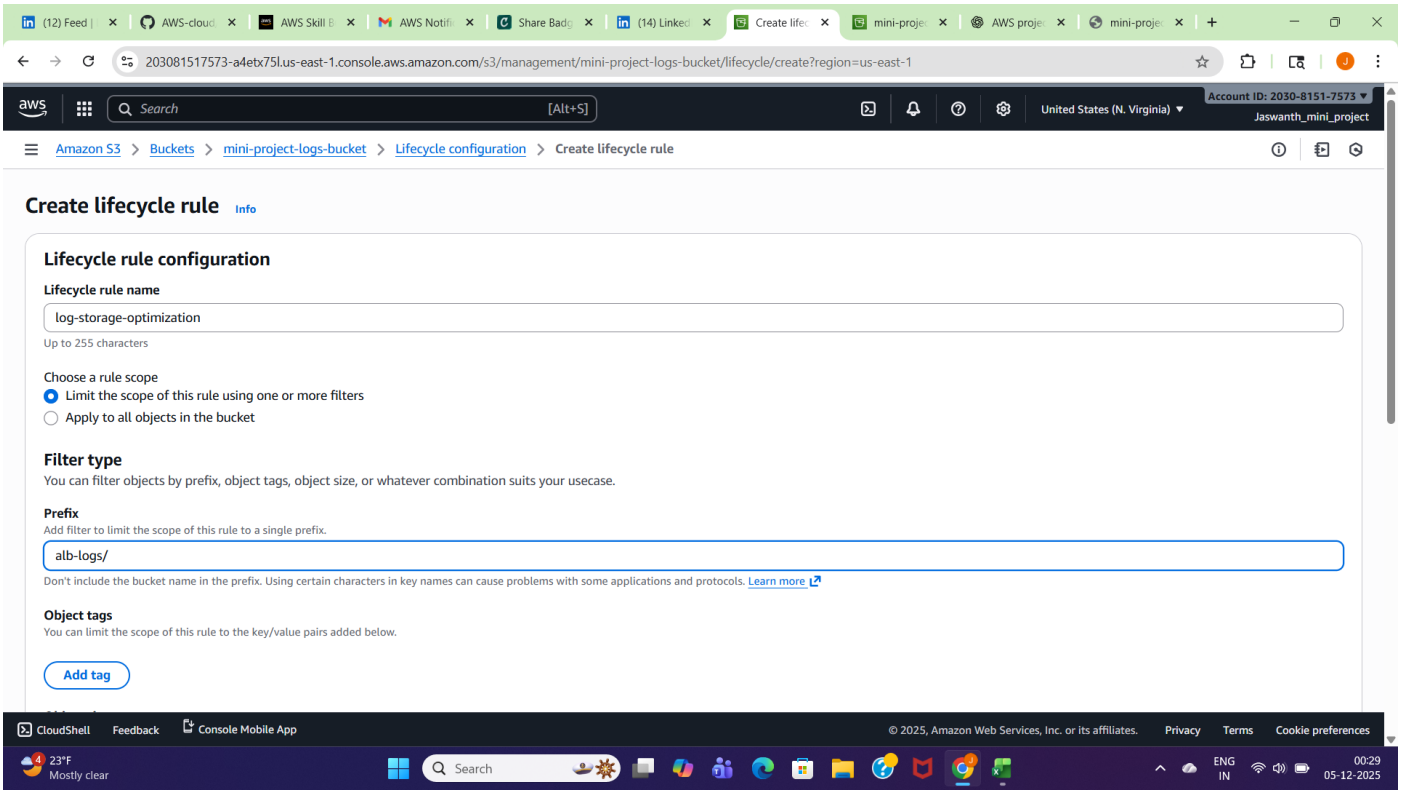

203081517573-a4etx75l.us-east-1.console.aws.amazon.com/cloudfront/v4/home?region=us-east-1#/distributions/create
Search [Alt+S]
Global
Account ID: 2030-8151-7573
Jaswanth_mini_project
CloudFront > Distributions > Create distribution
Step 2
Get started
Step 3
Specify origin
Step 4
Enable security
Step 5
Review and create
Origin type
Your origin is where your content (such as a website or app) lives. CloudFront works with AWS-based origins and origins hosted on other cloud providers.
Origin type
Amazon S3
Deliver static assets like files and images, statically generated websites or single page applications (SPA).
Elastic Load Balancer
Deliver applications hosted behind ELB such as dynamic websites, web services, and APIs.
API Gateway
Deliver API endpoints for REST APIs hosted on API Gateway.
Elemental MediaPackage
Deliver end-to-end live events or video on demand (VOD).
VPC origin
Deliver applications and content hosted within private VPCs, such as EC2 instances and Application Load Balancers.
Other
Refer to any AWS or non-AWS origin through its publicly resolvable URL.
Origin
Elastic Load Balancing origin
Choose an AWS origin, or enter your origin's domain name. Learn more
mini-project-alb-1663545100.us-east-1.elb.amazonaws.com
Browse load balancers
Origin path - optional
The directory path within your origin where your content is stored. Learn more
/path
CloudShell
Feedback
Console Mobile App
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
24°F
Mostly clear
Search
ENG
IN
00:12
05-12-2025

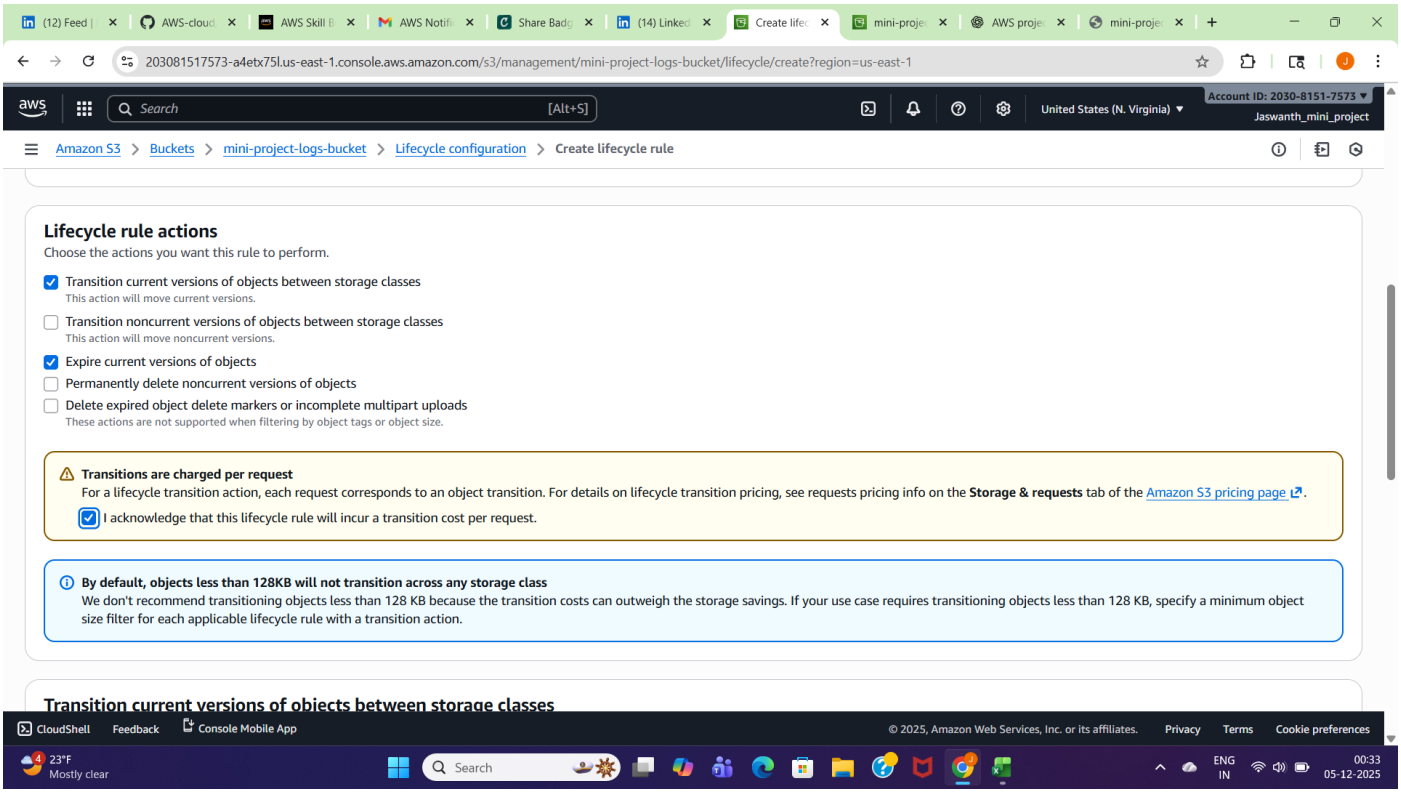

203081517573-a4etx75l.us-east-1.console.aws.amazon.com/cloudfront/v4/home?region=us-east-1#/distributions/create
Search [Alt+S]
Global
Account ID: 2030-8151-7573
Jaswanth_mini_project
CloudFront > Distributions > Create distribution
Step 2
Get started
Step 3
Specify origin
Step 4
Enable security
Step 5
Review and create
General configuration
Edit
Distribution name
mini-project-cloudfront
Description
CloudFront distribution for mini-project ALB
Billing
Free ($0/month)
Today's pro-rated charge (estimate)
$0
Origin
Edit
Elastic Load Balancing origin
mini-project-alb-1663545100.us-east-1.elb.amazonaws.com
Origin path
-
Grant CloudFront access to origin
No
Enable Origin Shield
No
Connection attempts
3
Connection timeout
10
Cache settings
Edit
CloudFront will apply default cache settings tailored to serving content from a Elastic Load Balancing origin. You can customize settings after you create your distribution.
Security
Edit
Security protections
Use monitor mode
CloudShell
Feedback
Console Mobile App
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
24°F
Mostly clear
Search
ENG
IN
00:13
05-12-2025

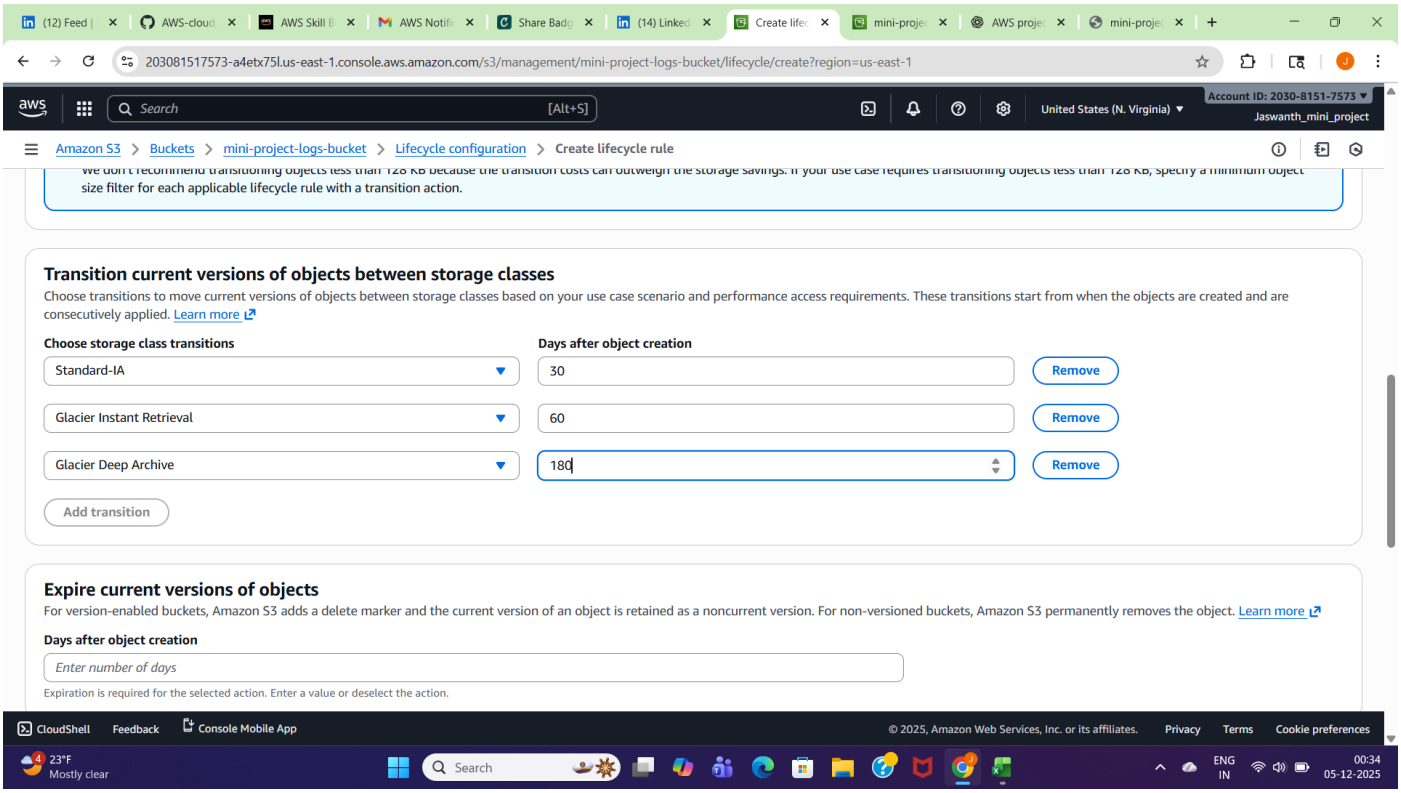


S3 Lifecycle Policy

Configured lifecycle rules to automatically transition log files to cheaper storage tiers (Standard-IA → Glacier tiers) and expire them after 1 year to optimize long-term storage costs.




203081517573-a4etx75l.us-east-1.console.aws.amazon.com/s3/management/mini-project-logs-bucket/lifecycle/create?region=us-east-1
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
Amazon S3 > Buckets > mini-project-logs-bucket > Lifecycle configuration > Create lifecycle rule
Lifecycle rule actions
Choose the actions you want this rule to perform.
Transition current versions of objects between storage classes
This action will move current versions.
Transition noncurrent versions of objects between storage classes
This action will move noncurrent versions.
Expire current versions of objects
Permanently delete noncurrent versions of objects
Delete expired object delete markers or incomplete multipart uploads
These actions are not supported when filtering by object tags or object size.
Transitions are charged per request
For a lifecycle transition action, each request corresponds to an object transition. For details on lifecycle transition pricing, see requests pricing info on the Storage & requests tab of the Amazon S3 pricing page.
I acknowledge that this lifecycle rule will incur a transition cost per request.
By default, objects less than 128KB will not transition across any storage class
We don't recommend transitioning objects less than 128 KB because the transition costs can outweigh the storage savings. If your use case requires transitioning objects less than 128 KB, specify a minimum object size filter for each applicable lifecycle rule with a transition action.
Transition current versions of objects between storage classes
CloudShell
Feedback
Console Mobile App
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
23°F
Mostly clear
Search
ENG
IN
00:33
05-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/s3/management/mini-project-logs-bucket/lifecycle/create?region=us-east-1
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
Amazon S3 > Buckets > mini-project-logs-bucket > Lifecycle configuration > Create lifecycle rule
size filter for each applicable lifecycle rule with a transition action.
Transition current versions of objects between storage classes
Choose transitions to move current versions of objects between storage classes based on your use case scenario and performance access requirements. These transitions start from when the objects are created and are consecutively applied. Learn more
Choose storage class transitions
Days after object creation
Standard-IA
30
Remove
Glacier Instant Retrieval
60
Remove
Glacier Deep Archive
180
Remove
Add transition
Expire current versions of objects
For version-enabled buckets, Amazon S3 adds a delete marker and the current version of an object is retained as a noncurrent version. For non-versioned buckets, Amazon S3 permanently removes the object. Learn more
Days after object creation
Enter number of days
Expiration is required for the selected action. Enter a value or deselect the action.
CloudShell
Feedback
Console Mobile App
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23°F
Mostly clear
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ENG
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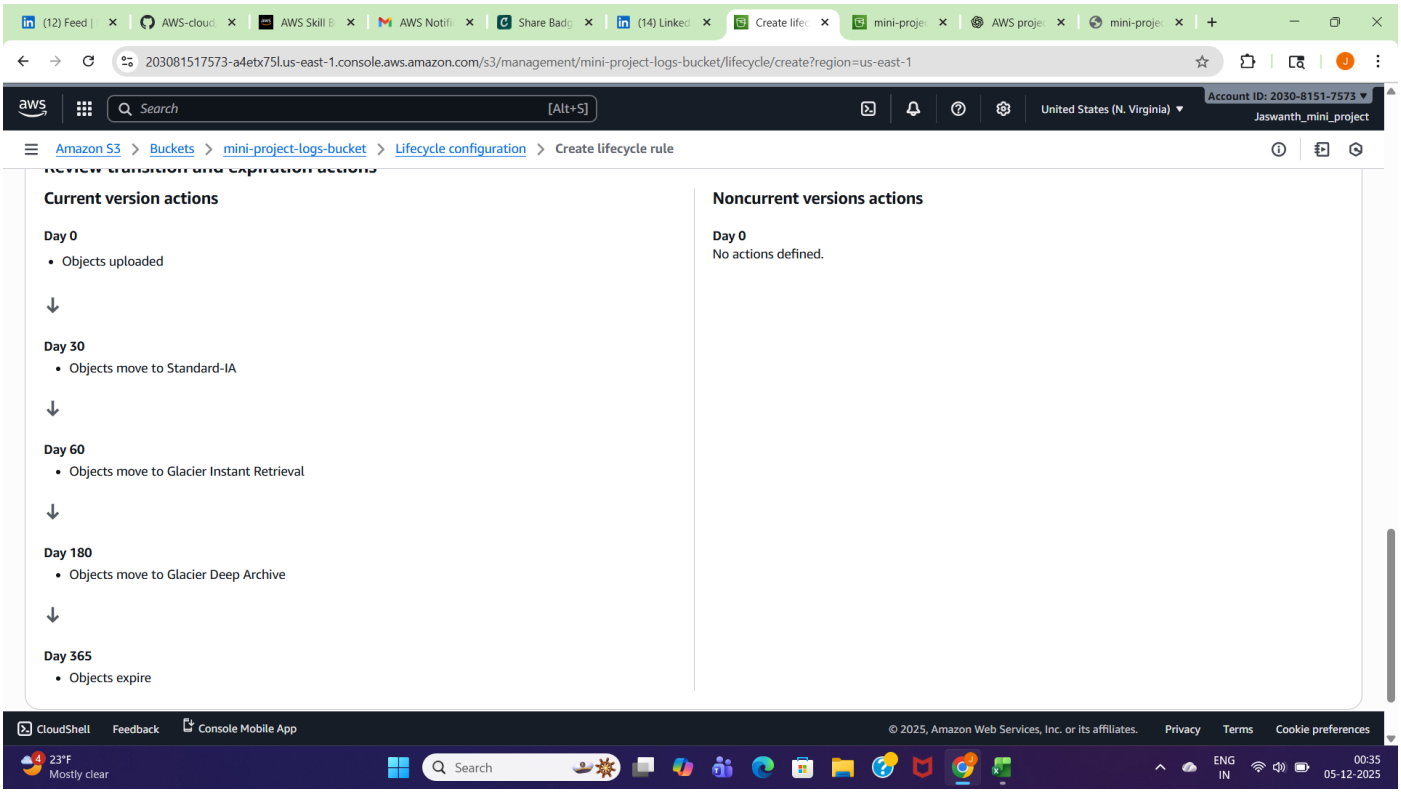
00:34
05-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/s3/management/mini-project-logs-bucket/lifecycle/create?region=us-east-1
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
Amazon S3 > Buckets > mini-project-logs-bucket > Lifecycle configuration > Create lifecycle rule
Current version actions
Day 0
• Objects uploaded
Day 30
• Objects move to Standard-IA
Day 60
• Objects move to Glacier Instant Retrieval
Day 180
• Objects move to Glacier Deep Archive
Day 365
• Objects expire
Noncurrent versions actions
Day 0
No actions defined.
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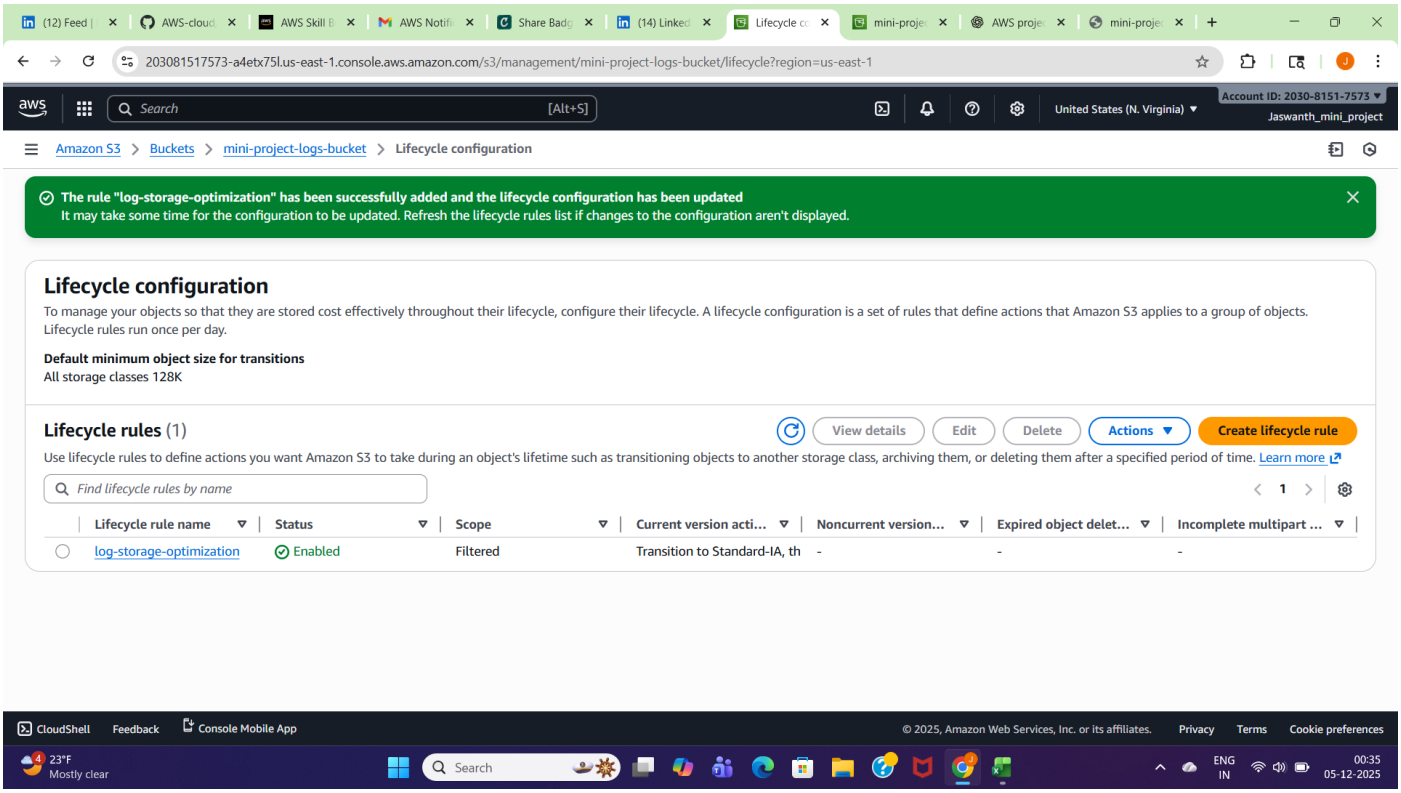
203081517573-a4etx75l.us-east-1.console.aws.amazon.com/s3/management/mini-project-logs-bucket/lifecycle?region=us-east-1
Search [Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
Amazon S3 > Buckets > mini-project-logs-bucket > Lifecycle configuration
The rule "log-storage-optimization" has been successfully added and the lifecycle configuration has been updated
It may take some time for the configuration to be updated. Refresh the lifecycle rules list if changes to the configuration aren't displayed.
Lifecycle configuration
To manage your objects so that they are stored cost effectively throughout their lifecycle, configure their lifecycle. A lifecycle configuration is a set of rules that define actions that Amazon S3 applies to a group of objects. Lifecycle rules run once per day.
Default minimum object size for transitions
All storage classes 128K
Lifecycle rules (1)
View details
Edit
Delete
Actions
Create lifecycle rule
Use lifecycle rules to define actions you want Amazon S3 to take during an object's lifetime such as transitioning objects to another storage class, archiving them, or deleting them after a specified period of time. Learn more
Find lifecycle rules by name
Lifecycle rule name
Status
Scope
Current version acti...
Noncurrent version...
Expired object delet...
Incomplete multipart ...
log-storage-optimization
Enabled
Filtered
Transition to Standard-IA, th
-
-
-
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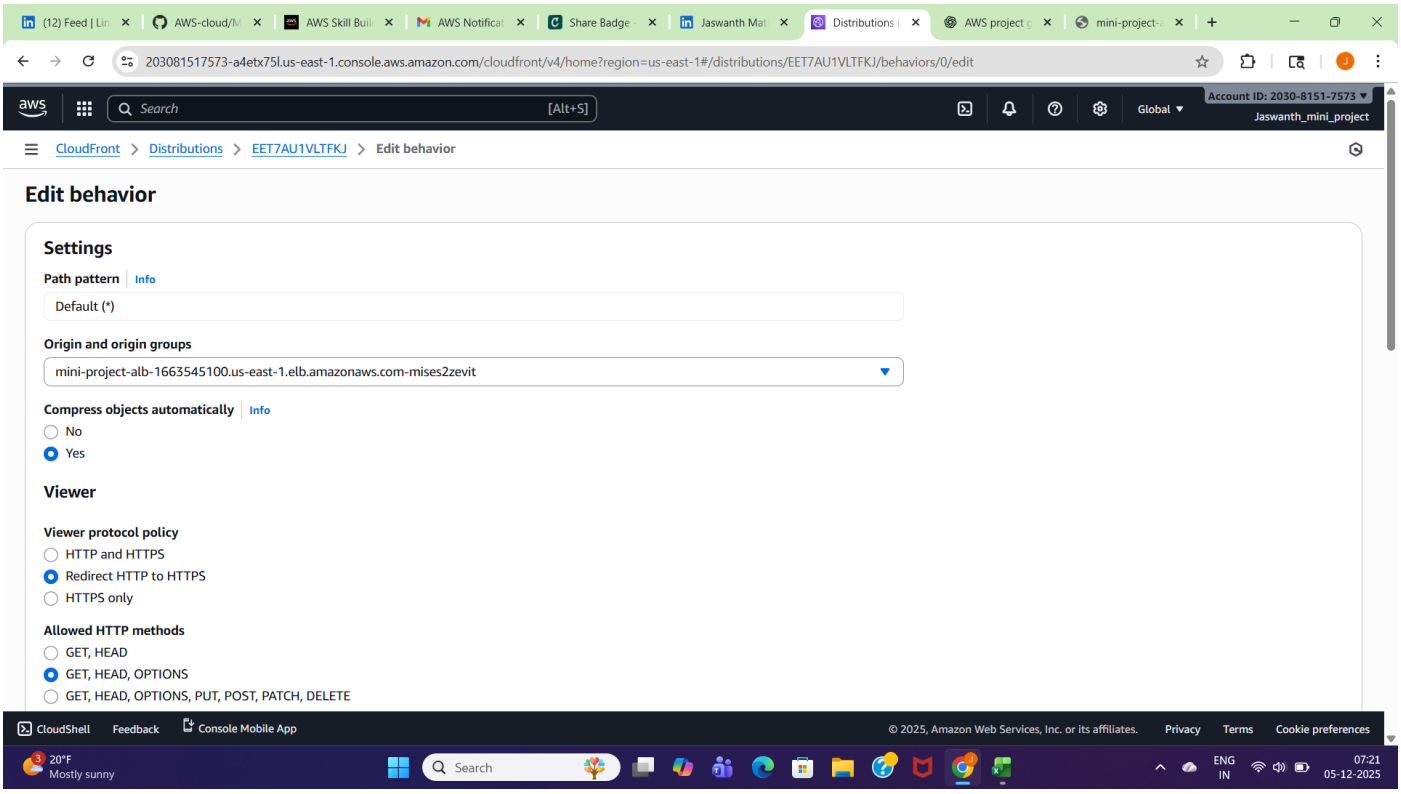
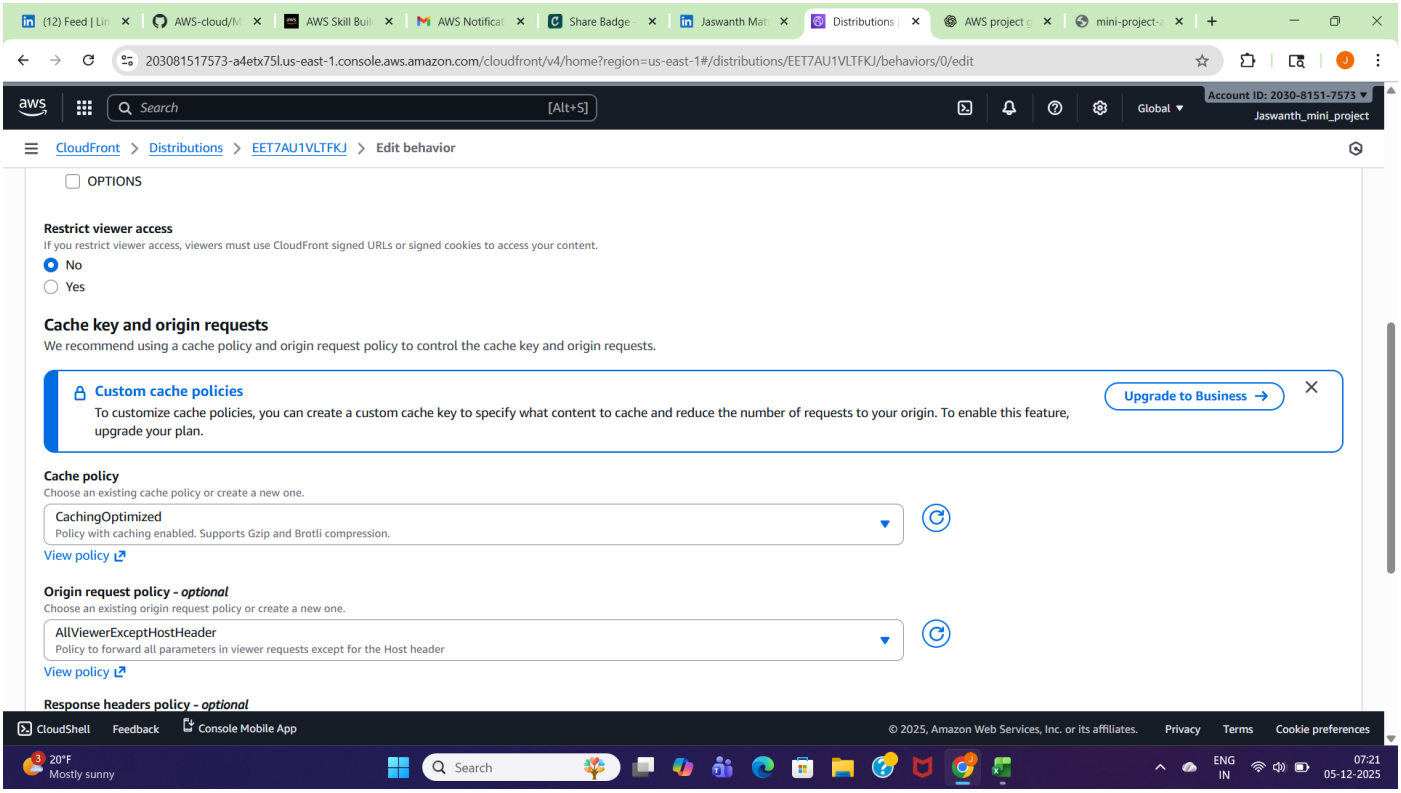
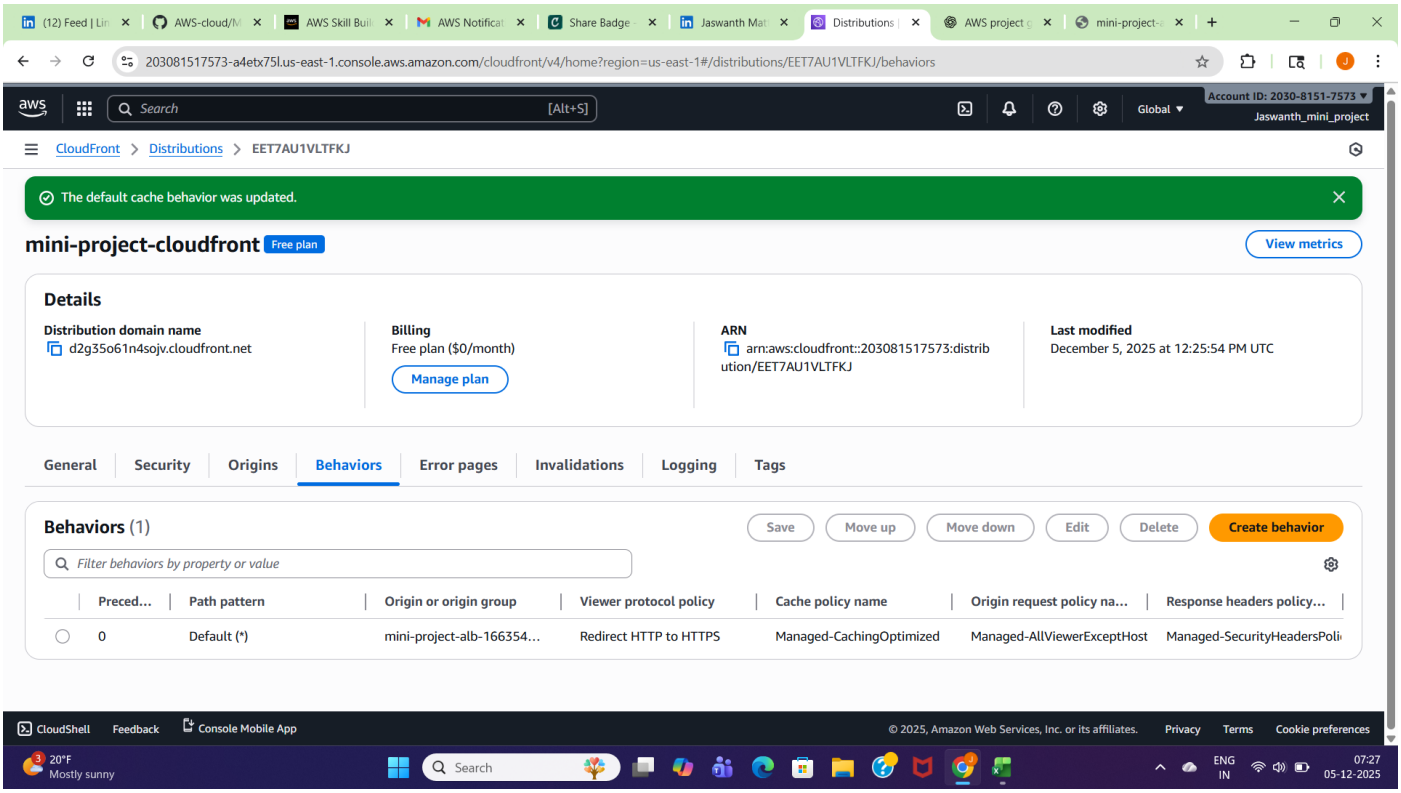
CloudFront Behavior Configuration

Configured default behavior to route all requests to the ALB origin, enforce HTTPS for security, and enable compression to improve performance and reduce bandwidth usage.






203081517573-a4etx75l.us-east-1.console.aws.amazon.com/cloudfront/v4/home?region=us-east-1#/distributions/EET7AU1VLTFKJ/behaviors
Search [Alt+S]
Global
Account ID: 2030-8151-7573
Jaswanth_mini_project
CloudFront > Distributions > EET7AU1VLTFKJ
The default cache behavior was updated.
mini-project-cloudfront Free plan
View metrics
Details
Distribution domain name
d2g35o61n4sojv.cloudfront.net
Billing
Free plan ($0/month)
Manage plan
ARN
arn:aws:cloudfront::203081517573:distribution/EET7AU1VLTFKJ
Last modified
December 5, 2025 at 12:25:54 PM UTC
General
Security
Origins
Behaviors
Error pages
Invalidations
Logging
Tags
Behaviors (1)
Save
Move up
Move down
Edit
Delete
Create behavior
Filter behaviors by property or value
Preced...
Path pattern
Origin or origin group
Viewer protocol policy
Cache policy name
Origin request policy na...
Response headers policy...
0
Default (*)
mini-project-alb-166354...
Redirect HTTP to HTTPS
Managed-CachingOptimized
Managed-AllViewerExceptHost
Managed-SecurityHeadersPoli
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20°F
Mostly sunny
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07:27
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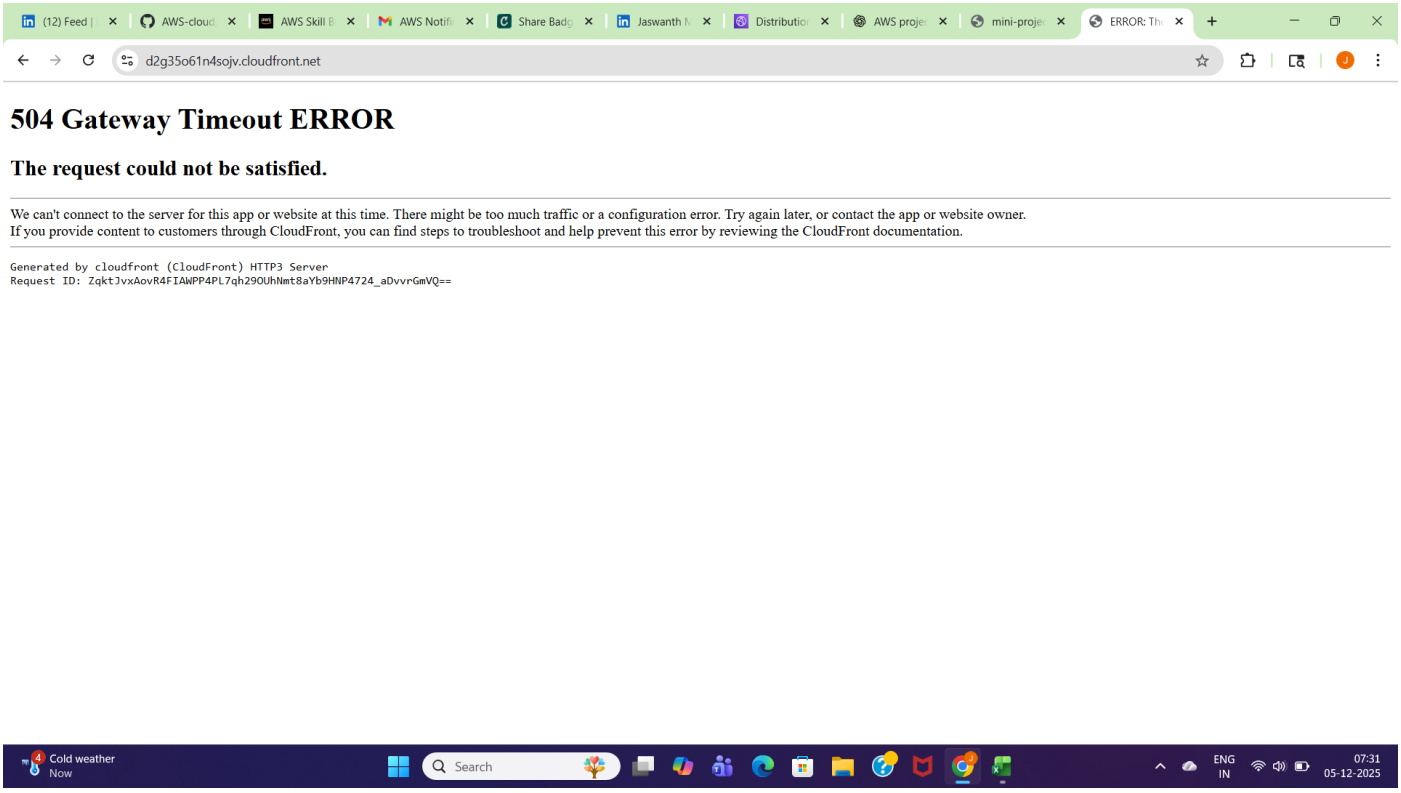
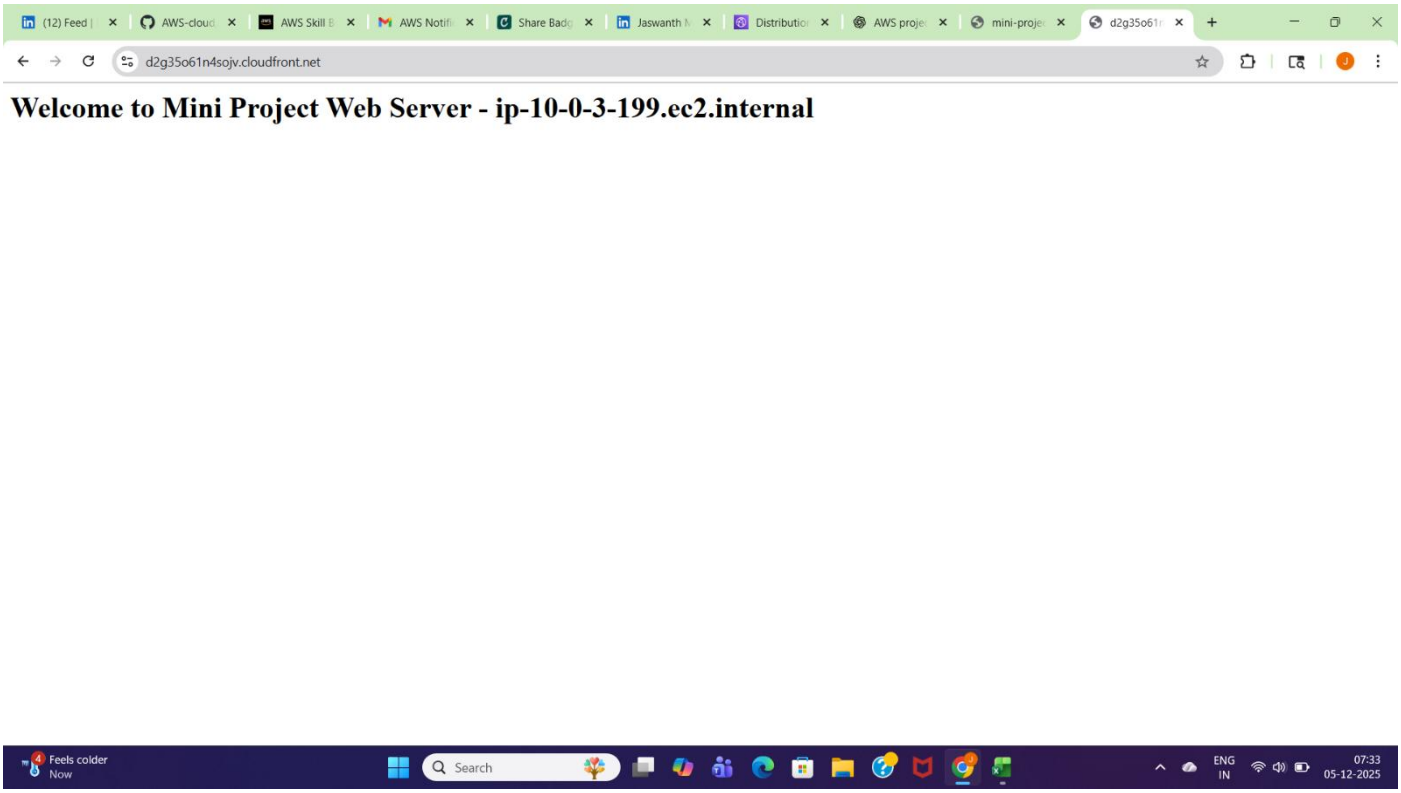
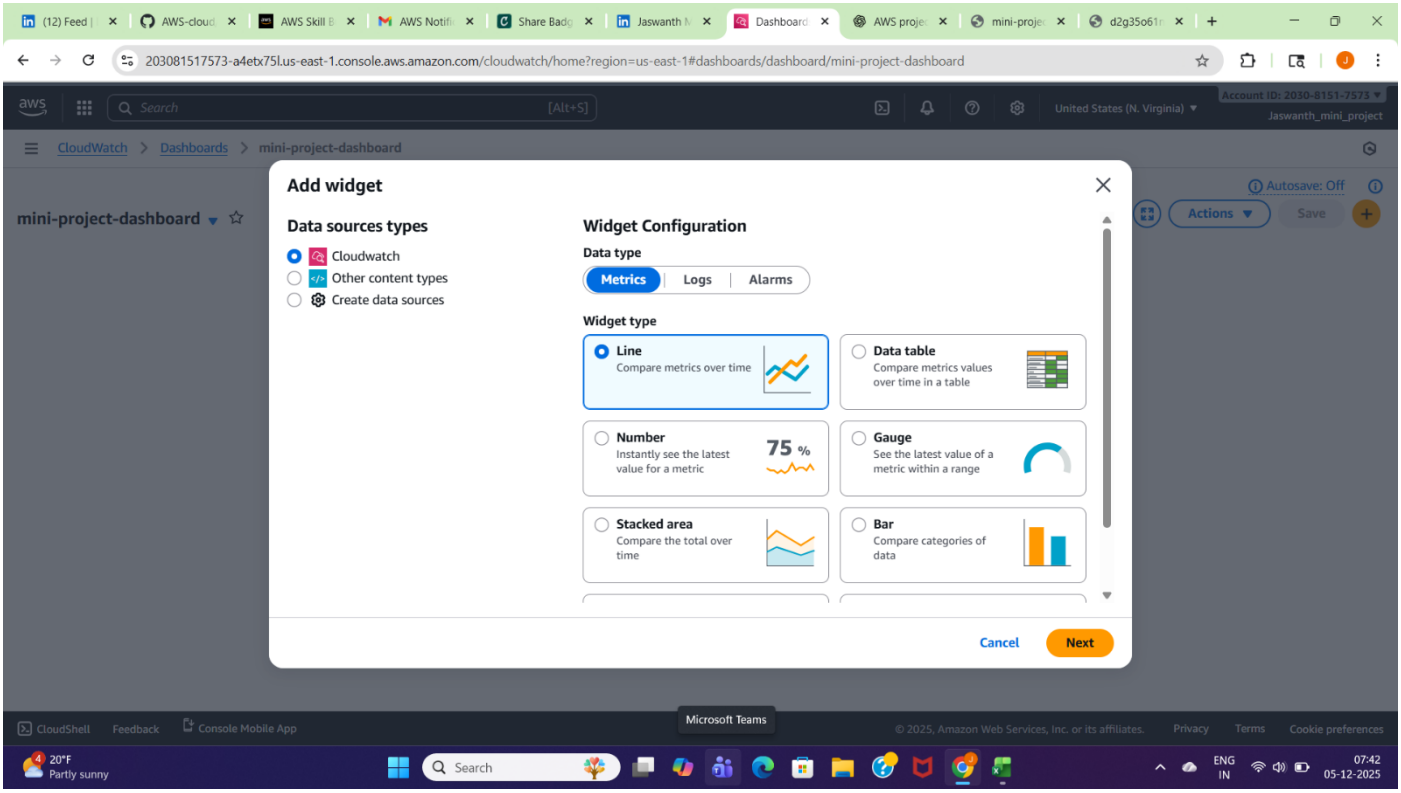
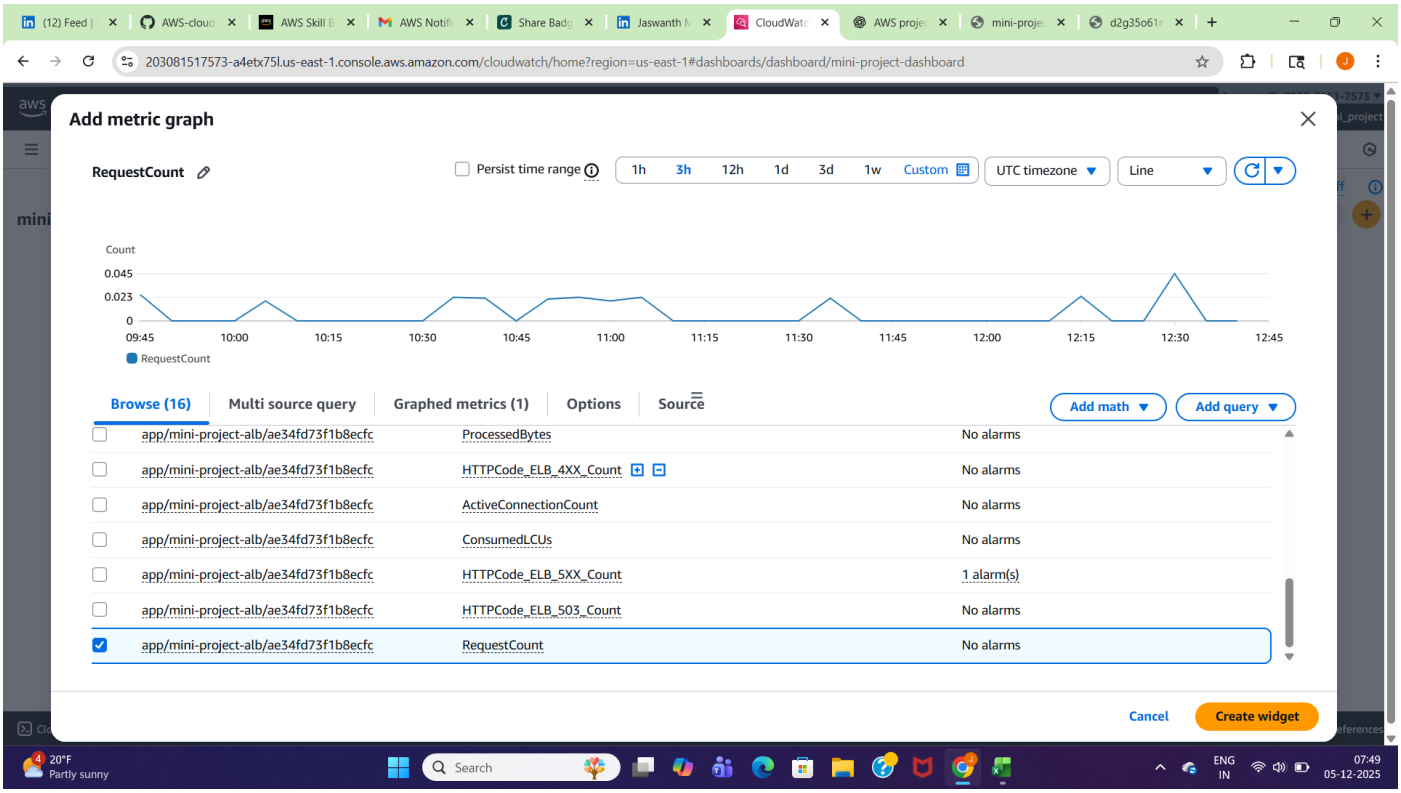

d2g35o61n4sojv.cloudfront.net
504 Gateway Timeout ERROR
The request could not be satisfied.
We can't connect to the server for this app or website at this time. There might be too much traffic or a configuration error. Try again later, or contact the app or website owner.
If you provide content to customers through CloudFront, you can find steps to troubleshoot and help prevent this error by reviewing the CloudFront documentation.
Generated by cloudfront (CloudFront) HTTP3 Server
Request ID: ZqktJvxAovR4FIAWPP4PL7qh29OUhNmt8aYb9HNP4724_aDvvrGmVQ==
Cold weather
Now
Search
ENG
IN
07:31
05-12-2025

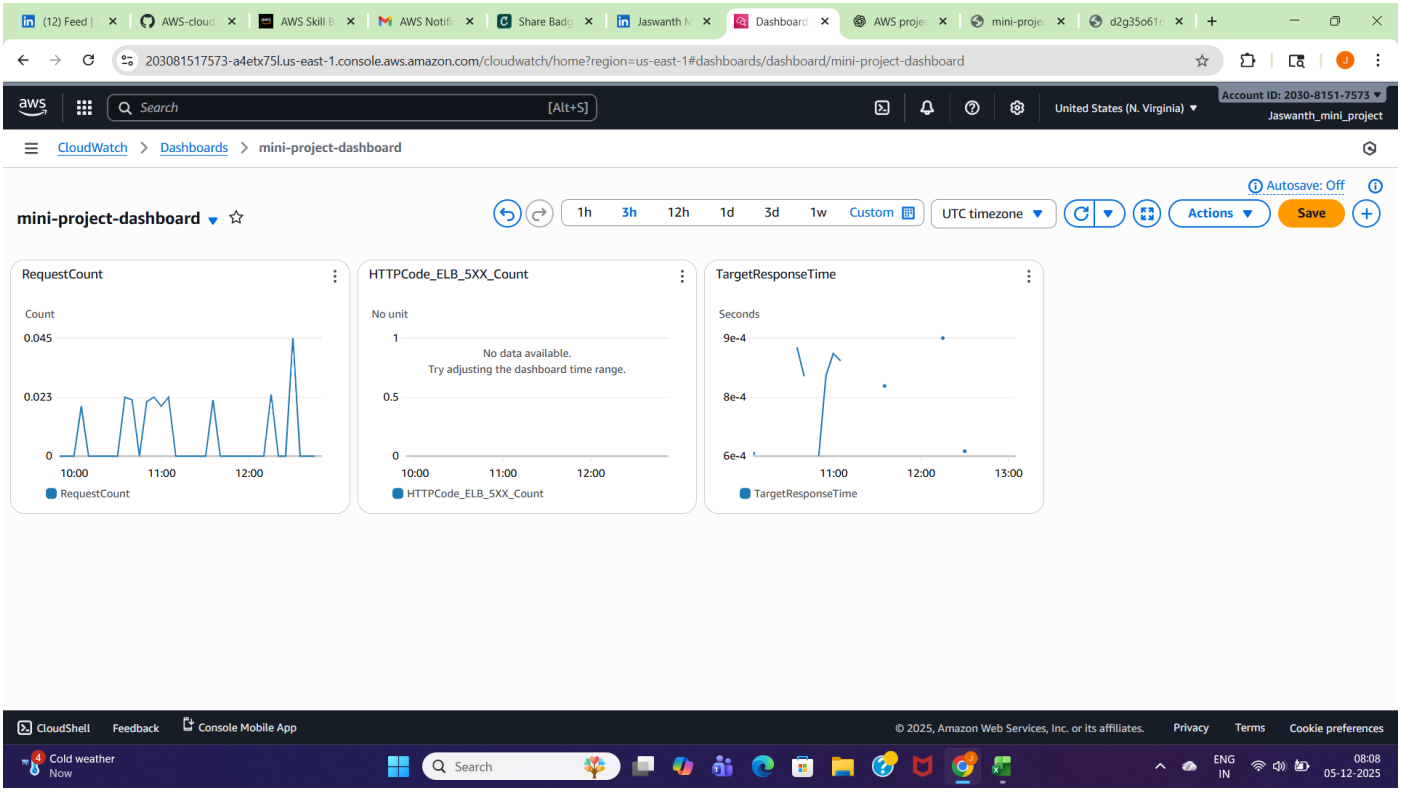


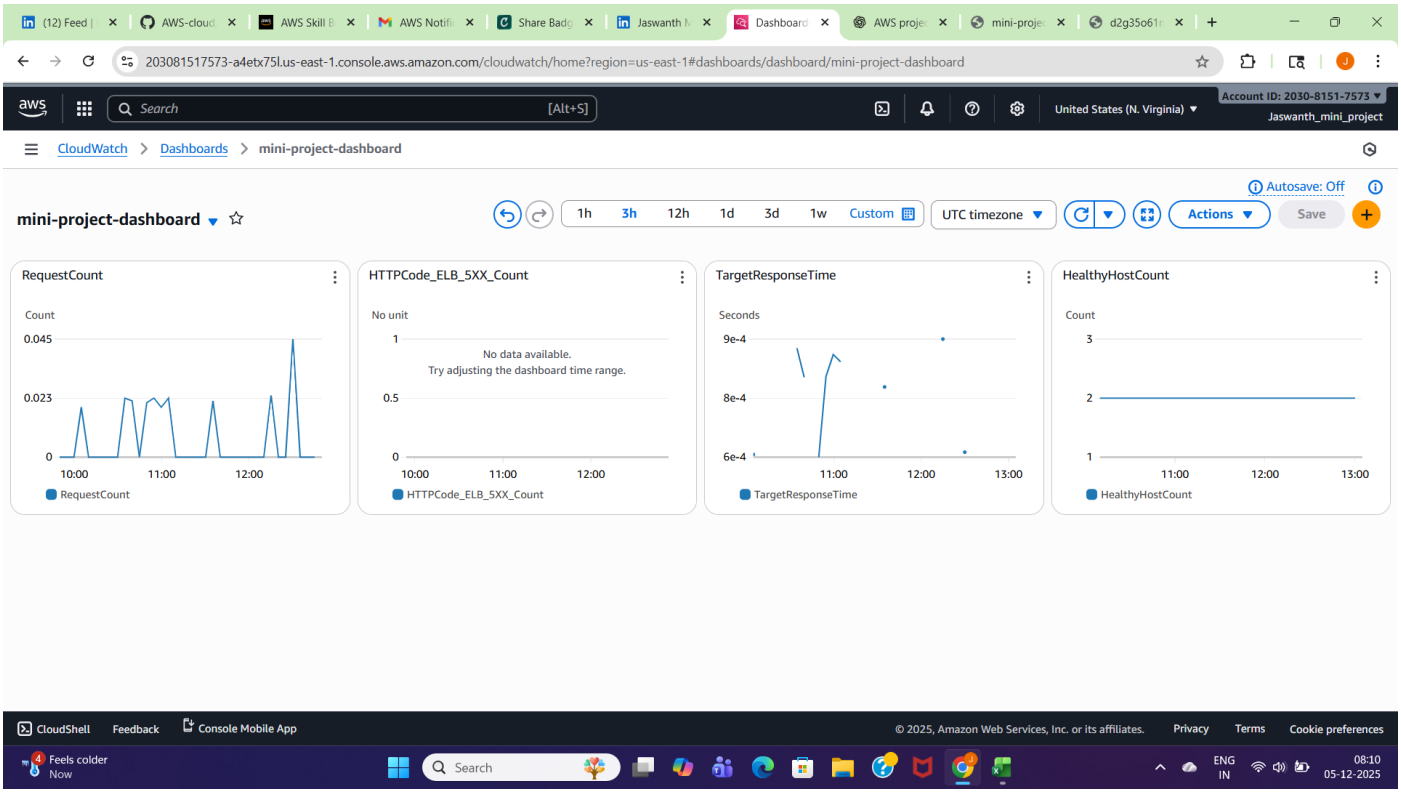
CloudWatch Monitoring Dashboard

Built a custom CloudWatch dashboard to monitor key metrics such as request count, error rates, response time, CPU utilization, and healthy host count for real-time visibility into application performance.




Add metric graph
RequestCount
Persist time range
1h 3h 12h 1d 3d 1w Custom
UTC timezone
Line
Count
0.045
0.023
0
09:45 10:00 10:15 10:30 10:45 11:00 11:15 11:30 11:45 12:00 12:15 12:30 12:45
RequestCount
Browse (16)
Multi source query
Graphed metrics (1)
Options
Source
Add math
Add query
app/mini-project-alb/ae34fd73f1b8ecfc ProcessedBytes No alarms
app/mini-project-alb/ae34fd73f1b8ecfc HTTPCode_ELB_4XX_Count No alarms
app/mini-project-alb/ae34fd73f1b8ecfc ActiveConnectionCount No alarms
app/mini-project-alb/ae34fd73f1b8ecfc ConsumedLCUs No alarms
app/mini-project-alb/ae34fd73f1b8ecfc HTTPCode_ELB_5XX_Count 1 alarm(s)
app/mini-project-alb/ae34fd73f1b8ecfc HTTPCode_ELB_503_Count No alarms
app/mini-project-alb/ae34fd73f1b8ecfc RequestCount No alarms
Cancel
Create widget


mini-project-dashboard
CloudWatch > Dashboards > mini-project-dashboard
Autosave: Off
1h 3h 12h 1d 3d 1w Custom
UTC timezone
Actions
Save
RequestCount
Count
0.045
0.023
0
10:00 11:00 12:00
RequestCount
HTTPCode_ELB_5XX_Count
No unit
No data available.
Try adjusting the dashboard time range.
HTTPCode_ELB_5XX_Count
TargetResponseTime
Seconds
9e-4
8e-4
6e-4
11:00 12:00 13:00
TargetResponseTime


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#dashboards/dashboard/mini-project-dashboard
Search
[Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
CloudWatch
Dashboards
mini-project-dashboard
Autosave: Off
1h
3h
12h
1d
3d
1w
Custom
UTC timezone
Actions
Save
RequestCount
Count
0.045
0.023
0
10:00
11:00
12:00
RequestCount
HTTPCode_ELB_5XX_Count
No unit
No data available.
Try adjusting the dashboard time range.
HTTPCode_ELB_5XX_Count
TargetResponseTime
Seconds
9e-4
8e-4
6e-4
13:00
TargetResponseTime
HealthyHostCount
3
2
1
HealthyHostCount
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Now
ENG
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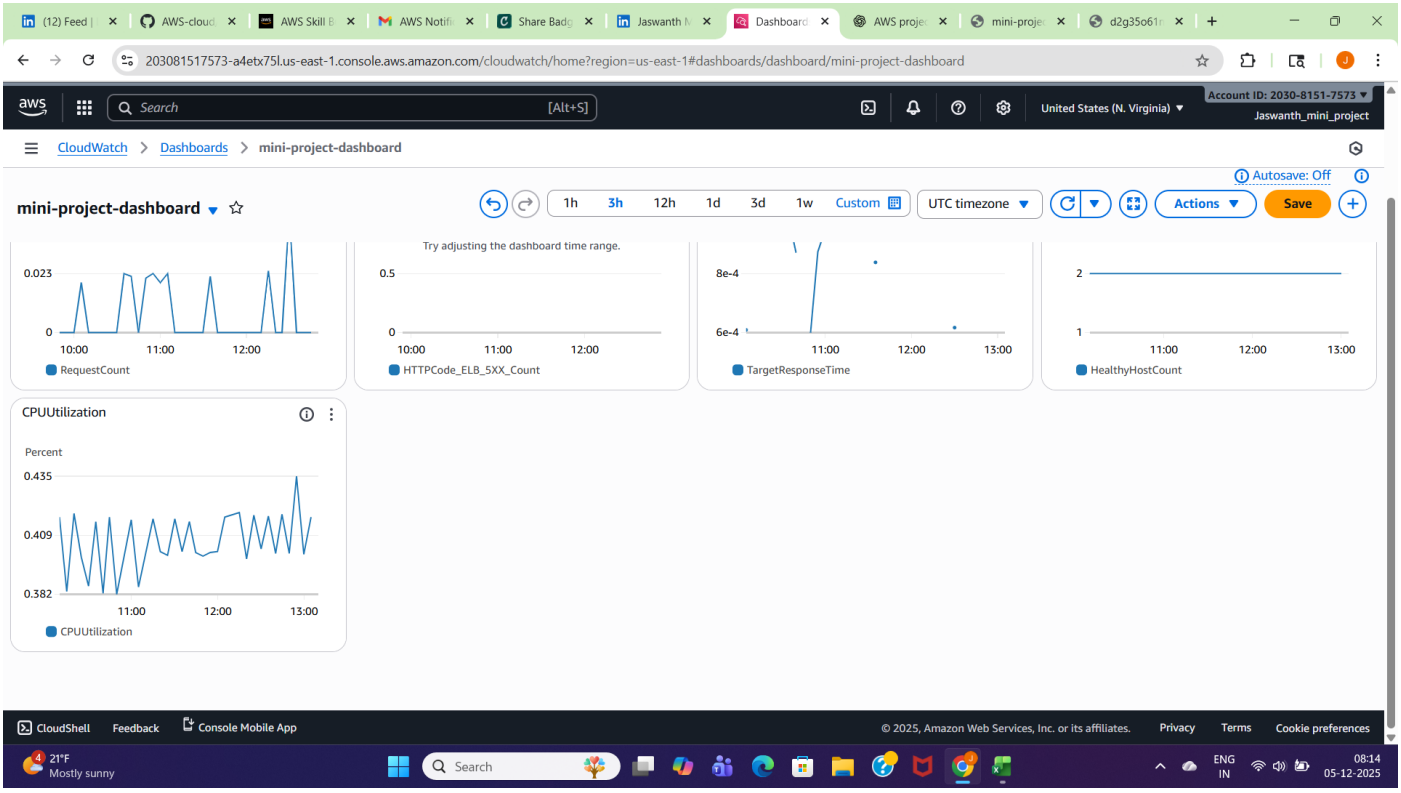
08:10
05-12-2025


203081517573-a4etx75l.us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#dashboards/dashboard/mini-project-dashboard
Search
[Alt+S]
United States (N. Virginia)
Account ID: 2030-8151-7573
Jaswanth_mini_project
CloudWatch
Dashboards
mini-project-dashboard
Autosave: Off
1h
3h
12h
1d
3d
1w
Custom
UTC timezone
Actions
Save
0.023
0
10:00
11:00
12:00
RequestCount
Try adjusting the dashboard time range.
0.5
0
HTTPCode_ELB_5XX_Count
8e-4
6e-4
13:00
TargetResponseTime
2
1
HealthyHostCount
CPUUtilization
Percent
0.435
0.409
0.382
11:00
12:00
13:00
CPUUtilization
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IN
08:14
05-12-2025

Key Components (Short bullets)

- Networking: VPC, public/private subnets, Internet Gateway, NAT Gateway, route tables
- Security: ALB security groups, EC2 SG, custom NACLs, IAM role for EC2, AWS WAF on ALB
- Compute & Scaling: Launch Template + Auto Scaling Group with CPU Target Tracking
- Load Balancing: Highly available Application Load Balancer with health checks
- Monitoring: CloudWatch alarms, SNS notifications, and custom performance dashboard
- S3 Logging: Centralized ALB access logs with lifecycle rules (IA → Glacier → Deep Archive → Expire)
- Content Delivery: CloudFront distribution integrated with ALB + HTTPS redirect
- Troubleshooting: Fixed ASG loop by correcting NACL inbound rules using Amazon Q Developer

Outcome

This setup mimics a real-world production architecture, demonstrating strong skills in AWS networking, security, scalability, monitoring, and operational excellence.