

Little Bit Advance Labs

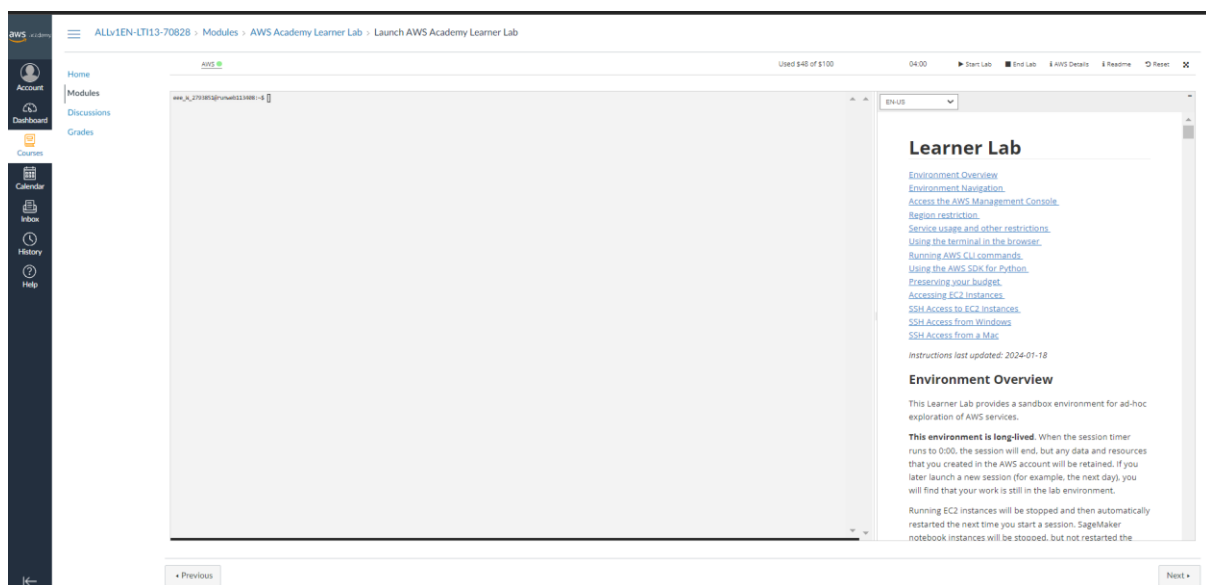
Part 1: EC2 with ELB and ASG

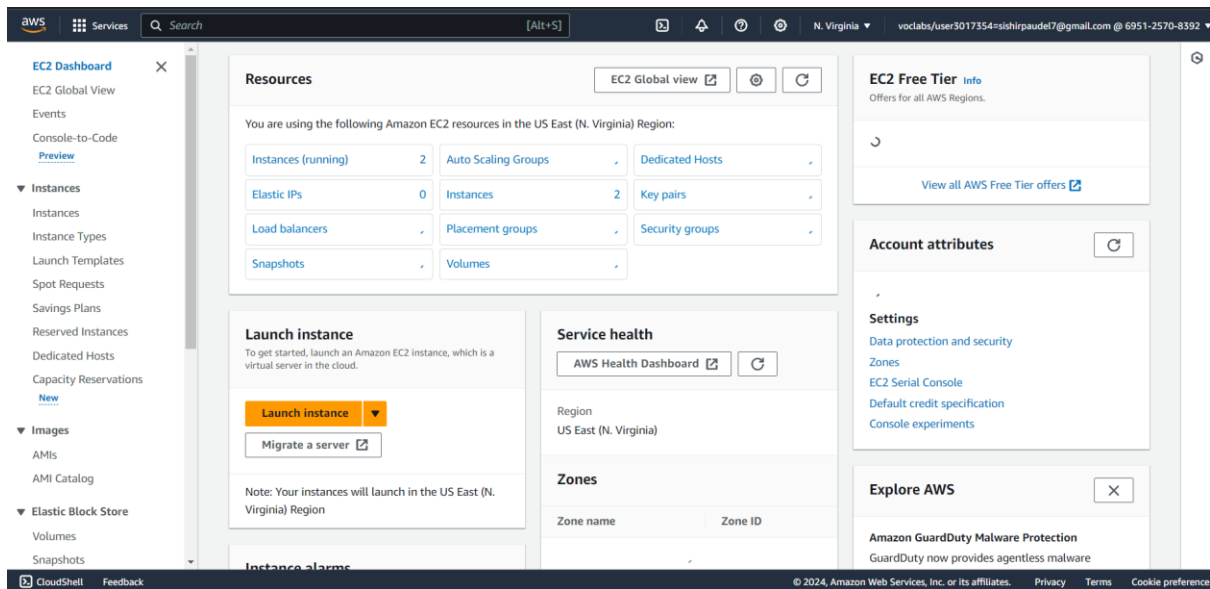
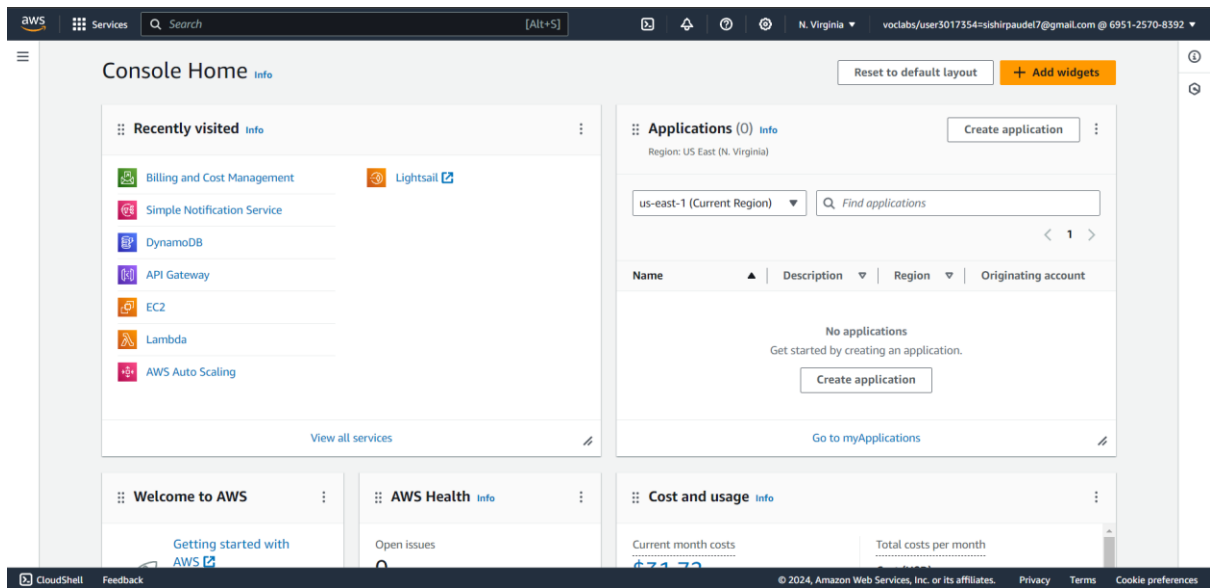
Objective: Learn how to create a scalable and highly available web application environment using Amazon EC2 instances, ELB, and ASG.

Approach:

1. **Launch EC2 Instances:** Start by launching two or more EC2 instances. These instances will run a simple web application (e.g., a "Hello World" page or any basic web service).
2. **Configure Load Balancer:** Set up an Elastic Load Balancer (ELB) to distribute incoming web traffic across your EC2 instances. This step ensures high availability and fault tolerance.
3. **Set Up Auto Scaling Group (ASG):** Create an ASG that uses the launched EC2 instances. Configure ASG policies to automatically scale the number of instances up or down based on criteria like CPU usage or network traffic.
4. **Test Your Setup:** Simulate traffic to test the scaling policies and the load balancer. Observe how ASG adds or removes instances and how ELB distributes traffic.
5. **Verify Website Functionality:** Ensure that the website hosted on EC2 instances remains accessible and functional during scaling operations.

Goal: By the end of this lab, students will have a hands-on understanding of setting up a load-balanced and auto-scaled web application using AWS services.





Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name

[Add additional tags](#)

▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Recents

[Quick Start](#)

Amazon

macOS

Ubuntu

Windows


Red Hat

SUSE Li



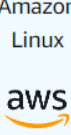
▼ Application and OS Images (Amazon Machine Image) [Info](#)

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 Search our full catalog including 1000s of application and OS images

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SUSE Linux



Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

Free tier eligible ▼

ami-0e731c8a588258d0d (64-bit (x86), uefi-preferred) / ami-0bbebc09f0a12d4d9 (64-bit (Arm), uefi)

Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Amazon Linux 2023 AMI 2023.3.20240205.2 x86_64 HVM kernel-6.1

Architecture

64-bit (x86) ▼

Boot mode

uefi-preferred

AMI ID

ami-0e731c8a588258d0d

Verified provider

Using amazon OS environment

▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.micro

Free tier eligible ▼

Family: t2 1 vCPU 1 GiB Memory Current generation: true

On-Demand Windows base pricing: 0.0162 USD per Hour

On-Demand SUSE base pricing: 0.0116 USD per Hour

On-Demand RHEL base pricing: 0.0716 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 - *required*

Select ▲
Q
Proceed without a key pair (Not recommended) Default value
Test Type: rsa
vockey Type: rsa

 [Create new key pair](#)


Edit

▼ 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 - *required*

Test ▼

 [Create new key pair](#)

Create key pair



Key pair name

Key pairs allow you to connect to your instance securely.

Enter key pair name

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type



RSA

RSA encrypted private and public key pair



ED25519

ED25519 encrypted private and public key pair

Private key file format



.pem

For use with OpenSSH



.ppk

For use with PuTTY



When prompted, store the private key in a secure and accessible location on your computer. **You will need it later to connect to your instance.** [Learn more](#)

Cancel

Create key pair

▼ Network settings [Info](#)

Edit

Network [Info](#)

vpc-0699b7ab8798d3d2e

Subnet [Info](#)

No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)

Enable

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.

☒ Create security group

☐ Select existing security group



We'll create a new security group called '**launch-wizard-3**' with the following rules:

☒ Allow SSH traffic from
Helps you connect to your instance

Anywhere
0.0.0.0/0

☐ Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server

☒ Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server

 Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. 

Metadata response hop limit [Info](#)


2

Allow tags in metadata [Info](#)

Select ▼

User data - *optional* [Info](#)

Upload a file with your user data or enter it in the field.

 Choose file

```
#!/bin/bash
yum update -y
yum install -y httpd
systemctl start httpd
systemctl enable httpd
echo "<h1> Hello from $(hostname -f)</h1>" > /var/www/html/index.html
```

☐ User data has already been base64 encoded

This script will be run when ec2 instances are activated

Because its amazon linux that's why we use yum command

EC2 > Instances > Launch an instance

Launch an instance

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags

Name

Myweb Server

Add additional tags

Application and OS Images (Amazon Machine Image)

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Q Search our full catalog including 1000s of application and OS images

Recents

Quick Start

Amazon Linux

aws

macOS

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

SUSE Li

Browse more AMIs

Including AMIs from AWS Marketplace and

Summary

Number of instances2

When launching more than 1 instance, consider EC2 Auto Scaling

Software Image (AMI)
Amazon Linux 2023 AMI 2023.3.2...read more
ami-0e731c8a588258d0d

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2

Cancel

Launch instance

Review commands

EC2 > Instances > Launch an instance

Launching instance

Launch initiation

79%

Details

Please wait while we launch your instance.
Do not close your browser while this is loading.

EC2 > Instances > Launch an instance

Success
Successfully initiated launch of instances (i-0543227535cf15149, i-0e04ce2946c0860bf)

Launch log

Next Steps
Q. What would you like to do next with these instances, for example "create alarm" or "create backup"

Create billing and free tier usage alerts
To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.
[Create billing alerts](#)

Connect to your instance
Once your instance is running, log into it from your local computer.
[Learn more](#)

Connect an RDS database
Configure the connection between an EC2 instance and a database to allow traffic flow between them.
[Connect an RDS database](#)
[Create a new RDS database](#)
[Learn more](#)

Create EBS snapshot policy
Create a policy that automates the creation, retention, and deletion of EBS snapshots.
[Create EBS snapshot policy](#)

Manage detailed monitoring
Enable or disable detailed monitoring for the instance. If you enable detailed monitoring, the Amazon EC2 console displays monitoring graphs with a 1-minute period.
[Manage detailed monitoring](#)

Create Load Balancer
Create an application, network gateway or classic Elastic Load Balancer.
[Create Load Balancer](#)

Create AWS budget
AWS Budgets allows you to create budgets, forecast spend, and take action on your costs and usage from a single location.
[Create AWS budget](#)

Manage CloudWatch alarms
Create or update Amazon CloudWatch alarms for the instance.
[Manage CloudWatch alarms](#)

Disaster recovery for your instances
Recover the instances you just launched into a different Availability Zone or a different Region using AWS Elastic Disaster Recovery (DRS).
[Disaster recovery for your instances](#)

Get instance screenshot
Capture a screenshot from the instance and view it as an image. This is useful for troubleshooting an unreachable instance.
[Get instance screenshot](#)

Get system log
View the instance's system log to troubleshoot issues.
[Get system log](#)

Change shutdown behavior
Change the behavior of the instance for when you initiate a shutdown from the operating system of the instance itself.
[Change shutdown behavior](#)

[View all instances](#)

2 instances that we created are listed like this

Instances (4) Info

Find Instance by attribute or tag (case-sensitive) Any state

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
<input type="checkbox"/>		i-00def1ddc2883918e	Running	t2.micro	2/2 checks passed	View alarms	us-east-1b	ec2-34-239-120-94.co...	34.239.120.94	—
<input type="checkbox"/>	Myweb Server	i-0543227535cf15149	Running	t2.micro	Initializing	View alarms	us-east-1b	ec2-54-197-19-217.co...	54.197.19.217	—
<input type="checkbox"/>	Myweb Server	i-0e04ce2946c0860bf	Running	t2.micro	Initializing	View alarms	us-east-1b	ec2-44-201-191-206.co...	44.201.191.206	—
<input type="checkbox"/>		i-074c66ba044746508	Running	t2.micro	2/2 checks passed	View alarms	us-east-1d	ec2-54-146-129-251.co...	54.146.129.251	—

EC2 > Instances > i-0543227535cf15149

Instance summary for i-0543227535cf15149 (Myweb Server) Info
Updated less than a minute ago

[Connect](#) [Instance state](#) [Actions](#)

Instance ID i-0543227535cf15149 (Myweb Server)	Public IPv4 address 54.197.19.217 open address	Private IPv4 addresses 172.31.95.123
IPv6 address —	Instance state Running	Public IPv4 DNS ec2-54-197-19-217.compute-1.amazonaws.com open address
Hostname type IP name: ip-172-31-95-123.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-95-123.ec2.internal	Elastic IP addresses —
Answer private resource DNS name IPv4 (A) Auto-assigned IP address 54.197.19.217 [Public IP]	Instance type t2.micro VPC ID vpc-0699b7ab8798d5d2e	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more
IAM Role —	Subnet ID subnet-0b12609d2aa408780	Auto Scaling Group name —
IMDSv2 Required		

Details | Status and alarms New | Monitoring | **Security** | Networking | Storage | Tags

▼ Security details

IAM Role —	Owner ID 695125708392	Launch time Sun Feb 18 2024 12:29:39 GMT+0545 (Nepal Time)
Security groups		

Inbound rules (1/2) [Manage tags](#) [Edit inbound rules](#)

Search

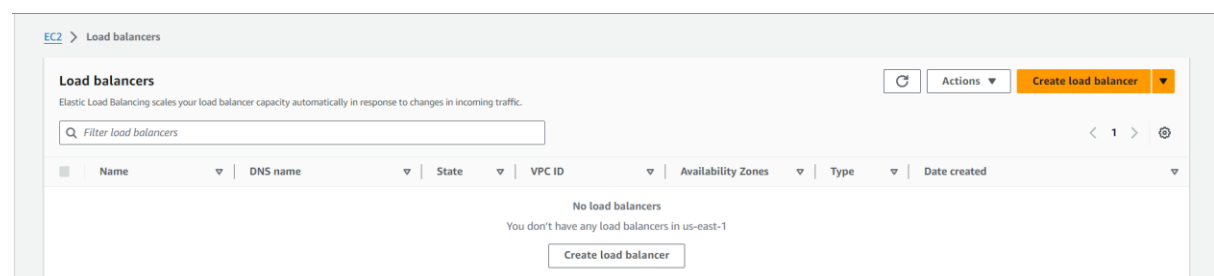
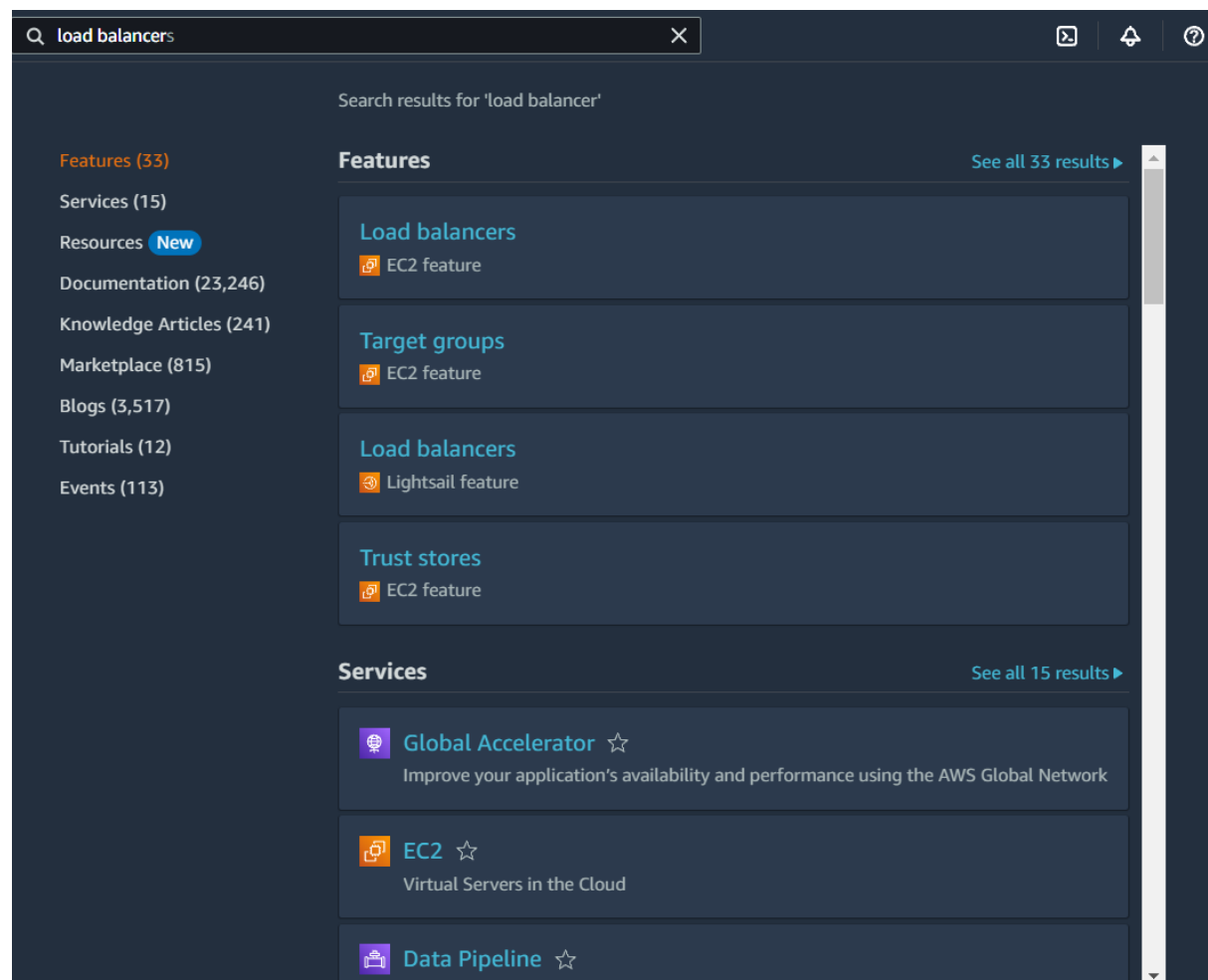
	Name	Security group rule...	IP version	Type	Protocol	Port range	Source
<input type="checkbox"/>	—	sgr-0c5c265d32ff346d	IPv4	HTTP	TCP	80	0.0.0.0/0
<input checked="" type="checkbox"/>	—	sgr-036154b82f89a24...	IPv4	HTTPS	TCP	443	0.0.0.0/0

When checking the public ip link we can get this output



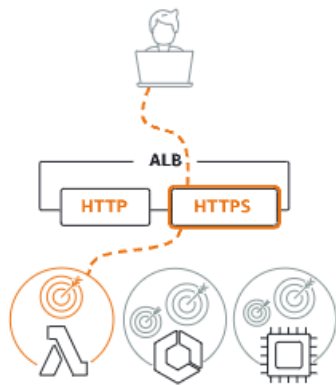
There are 2 instances with 2 different public ip so in order to minimize that ,and if we hit only 1 dns then we can access both the instances public ip.

Load Balancer



Load balancer types

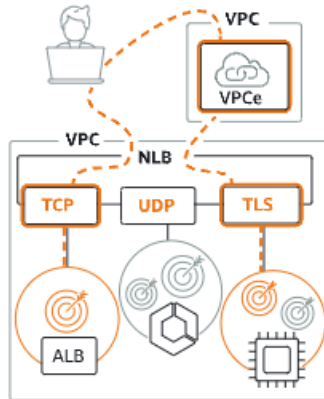
Application Load Balancer [Info](#)



Choose an Application Load Balancer when you need a flexible feature set for your applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers.

Create

Network Load Balancer [Info](#)



Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your applications. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies.

Create

Gateway Load Balancer [Info](#)



Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support GENEVE. These appliances enable you to improve security, compliance, and policy controls.

Create

► **Classic Load Balancer - previous generation**

Create Application Load Balancer [Info](#)

The Application Load Balancer distributes incoming HTTP and HTTPS traffic across multiple targets such as Amazon EC2 instances, microservices, and containers, based on request attributes. When the load balancer receives a connection request, it evaluates the listener rules in priority order to determine which rule to apply, and if applicable, it selects a target from the target group for the rule action.

► How Application Load Balancers work

Basic configuration

Load balancer name

Name must be unique within your AWS account and can't be changed after the load balancer is created.

MY_LB

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

An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#) [↗](#)

☐ Internal

An internal load balancer routes requests from clients to targets using private IP addresses.

IP address type [Info](#)

Select the type of IP addresses that your subnets use.

☒ IPv4

Recommended for internal load balancers.

☐ Dualstack

Includes IPv4 and IPv6 addresses.

Network mapping [Info](#)

The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings.

VPC [Info](#)

Select the virtual private cloud (VPC) for your targets or you can [create a new VPC](#). Only VPCs with an internet gateway are enabled for selection. The selected VPC can't be changed after the load balancer is created. To confirm the VPC for your targets, view your [target groups](#).

-
vpc-0699b7ab8798d3d2e
IPv4: 172.31.0.0/16



Mappings [Info](#)

Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.

☒ us-east-1a (use1-az1)

Subnet

subnet-0e94a790adc733376

IPv4 address

Assigned by AWS

☒ us-east-1b (use1-az2)

Subnet

subnet-0b12609d2aa408780

IPv4 address

Assigned by AWS

☒ us-east-1c (use1-az4)

Subnet

subnet-0cee20dfff6edfee1

IPv4 address

Assigned by AWS

☒ us-east-1d (use1-az6)

Subnet

subnet-0c287a95970240ef7

IPv4 address

Assigned by AWS

☒ us-east-1e (use1-az3)

Subnet

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

Q

- ☒ launch-wizard-1
sg-0e987eec17347967d VPC: vpc-0699b7ab8798d3d2e
- ☒ launch-wizard-2
sg-0461ea1c44092a0ce VPC: vpc-0699b7ab8798d3d2e
- ☒ launch-wizard-3
sg-0a00eb1a20dc90906 VPC: vpc-0699b7ab8798d3d2e
- ☒ default
sg-0d0c331ea8d500014 VPC: vpc-0699b7ab8798d3d2e

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

Now we have to make a target group

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

Default action

info

HTTP

:

80

Forward to

Select a target group

↻

1-65535

Create target group

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

Specify group details


Your load balancer routes requests to the targets in a target group and performs health checks on the targets.

Basic configuration

Settings in this section can't be changed after the target group is created.

Choose a target type

☒ Instances

- Supports load balancing to instances within a specific VPC.
- Facilitates the use of [Amazon EC2 Auto Scaling](#)  to manage and scale your EC2 capacity.

☐ IP addresses

- Supports load balancing to VPC and on-premises resources.
- Facilitates routing to multiple IP addresses and network interfaces on the same instance.
- Offers flexibility with microservice based architectures, simplifying inter-application communication.
- Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.

☐ Lambda function

- Facilitates routing to a single Lambda function.
- Accessible to Application Load Balancers only.

☐ Application Load Balancer

- Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
- Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

Target group name

my_TG

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Protocol : Port

Choose a protocol for your target group that corresponds to the Load Balancer type that will route traffic to it. Some protocols now include anomaly detection for the targets and you can set mitigation options once your target group is created. This choice cannot be changed after creation

HTTP



80

1-65535

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

Health check path

Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred.

/

Up to 1024 characters allowed.

Advanced health check settings

Attributes

Certain default attributes will be applied to your target group. You can view and edit them after creating the target group.

Tags - optional

Consider adding tags to your target group. Tags enable you to categorize your AWS resources so you can more easily manage them.

Cancel

Next

Available instances (2/4)

Filter instances

Instance ID

Name

State

Security groups

Zone

Private IPv4 address

Subnet ID

Launch time

☒

i-0543227535cf15149

Myweb Server

Running

launch-wizard-3

us-east-1b

172.31.95.123

subnet-0b12609d2aa408780

February 18, 2024, 12:29 (UTC+05:45)

☒

i-0e04ce2946c0860bf

Myweb Server

Running

launch-wizard-3

us-east-1b

172.31.82.76

subnet-0b12609d2aa408780

February 18, 2024, 12:29 (UTC+05:45)

☐

i-074c66ba044746508

Running

launch-wizard-2, launch-wizard-1, def...

us-east-1d

172.31.47.13

subnet-0c287a95970240ef7

February 18, 2024, 12:29 (UTC+05:45)

☐

i-00def1ddc2883918e

Running

launch-wizard-2, launch-wizard-1, def...

us-east-1b

172.31.81.94

subnet-0b12609d2aa408780

February 18, 2024, 12:29 (UTC+05:45)

2 selected

Ports for the selected instances

Ports for routing traffic to the selected instances.

80

1-65535 (separate multiple ports with commas)

Include as pending below

Review targets

Targets (2)

Filter targets

Show only pending

Instance ID

Name

Port

State

Security groups

Zone

Private IPv4 address

Subnet ID

Launch time

i-0e04ce2946c0860bf

Myweb Server

80

Running

launch-wizard-3

us-east-1b

172.31.82.76

subnet-0b12609d2aa408780

February 18, 2024, 12:29 (UTC+05:45)

i-0543227535cf15149

Myweb Server

80

Running

launch-wizard-3

us-east-1b

172.31.95.123

subnet-0b12609d2aa408780

February 18, 2024, 12:29 (UTC+05:45)

2 pending

Cancel

Previous

Create target group

Successfully created the target group: **my-TG**. Anomaly detection is automatically applied to all registered targets. Results can be viewed in the **Targets** tab.

EC2 > Target groups > my-TG

my-TG

Actions ▾

Introducing Automatic Target Weights (ATW) to increase application availability

Automatic Target Weights is achieved by turning on anomaly mitigation, which provides responsive, dynamic distribution of traffic to targets based on anomaly detection results. All HTTP/HTTPS target groups now include anomaly detection by default. [Learn more](#)

Details

arn:aws:elasticloadbalancing:us-east-1:695125708392:targetgroup/my-TG/8123c6d69e1a861d

Target type Instance	Protocol: Port HTTP: 80	Protocol version HTTP1	VPC vpc-0699b7ab8798d5d2e
IP address type IPv4	Load balancer None associated		

2 Total targets	0 Healthy	0 Unhealthy	2 Unused	0 Initial	0 Draining
--------------------	--------------	----------------	-------------	--------------	---------------

0 Anomalous

► **Distribution of targets by Availability Zone (AZ)**

Select values in this table to see corresponding filters applied to the Registered targets table below.

Now we will select the target group that we just created

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 HTTP ▾	Port 80 1-65535	Default action Forward to Select a target group	Info
Listener tags - <i>optional</i> Consider adding tags to your listener. Tags enable you to categorize your AWS resources. Add listener tag You can add up to 50 more tags.		Create target Q my-TG Target type: Instance, IPv4 HTTP newTG Target type: Instance, IPv4 HTTP newTG2 Target type: Instance, IPv4 HTTP	↺

[Add listener](#)

Successfully created load balancer: **MY-LB**

It might take a few minutes for your load balancer to fully set up and route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks.

EC2 > Load balancers > MY-LB

MY-LB

⌂ Actions ▾

▼ **Details**

Load balancer type Application	Status Provisioning	VPC vpc-0699b7ab8798d5d2e	IP address type IPv4
Scheme Internet-facing	Hosted zone Z35SXDDTRQ7XJK	Availability Zones subnet-0a94a7790ad6735376 us-east-1a (use1-az1) subnet-0a94a7790ad6735376 us-east-1c (use1-az4) subnet-0a287a95970240e77 us-east-1d (use1-az6) subnet-05f2248e4859484608 us-east-1e (use1-az3) subnet-09b4a044d4bfb614 us-east-1f (use1-az5) subnet-0b12609c2aa408790 us-east-1b (use1-az2)	Date created February 18, 2024, 12:52 (UTC-05:45)

Load balancer ARN
arn:aws:elasticloadbalancing:us-east-1:695125708392:loadbalancer/app/MY-LB/6bc2320f02b42b51

DNS name [Info](#)
MY-LB-1115583737.us-east-1.elb.amazonaws.com (A Record)

Listeners and rules [Info](#)

A listener checks for connection requests on its configured protocol and port. Traffic received by the listener is routed according to the default action and any additional rules.

Filter listeners

Protocol/Port	Default action	Rules	ARN	Security policy	Default SSL/TLS certificate	mTLS	Trust store	Tags
HTTP:80	Forward to target group my-TG 1 (100%) Group-level stickiness: Off	1 rule	ARN	Not applicable	Not applicable	Not applicable	Not applicable	0 tags

We have successfully created our load balancer

Browser screenshot showing a message: **Hello from ip-172-31-82-76.ec2.internal**

Browser screenshot showing a message: **Hello from ip-172-31-95-123.ec2.internal**

Now we can access both the public ip with a single DNS

Auto Scaling

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1
Choose launch template

Step 2
Choose instance launch options

Step 3 - optional
Configure advanced options

Step 4 - optional
Configure group size and scaling

Step 5 - optional
Add notifications

Step 6 - optional
Add tags

Step 7
Review

Choose launch template [Info](#)

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group.

Name

Auto Scaling group name
Enter a name to identify the group.

Must be unique to this account in the current Region and no more than 255 characters.

Launch template [Info](#)

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.

[Create a launch template](#)

Create launch template

Create launch template

Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions.

Launch template name and description

Launch template name - *required*

LaunchTemplate1

Must be unique to this account. Max 128 chars. No spaces or special characters like '&', '*', '@'.

Template version description

A prod webserver for MyApp

Max 255 chars

Auto Scaling guidance | [Info](#)

Select this if you intend to use this template with EC2 Auto Scaling

- ☒ Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

► Template tags

► Source template

▼ Application and OS Images (Amazon Machine Image) - required [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

 Search our full catalog including 1000s of application and OS images

Recents

Quick Start

☐ Recently launched

☒ Currently in use



Browse more AMIs

Including AMIs from
AWS, Marketplace and
the Community

Amazon Machine Image (AMI)

al2023-ami-2023.3.20240205.2-kernel-6.1-x86_64

ami-0e731c8a588258d0d

2024-02-06T17:41:03.000Z

Boot mode: uefi-preferred

Architecture: 64-bit (x86)

Virtualization: hvm

ENA enabled: true

Root device type: ebs



Description

Amazon Linux 2023 AMI 2023.3.20240205.2 x86_64 HVM kernel-6.1

Architecture

AMI ID

x86_64

ami-0e731c8a588258d0d

Verified provider

▼ Instance type [Info](#) | [Get advice](#)

[Advanced](#)

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true

On-Demand Windows base pricing: 0.0162 USD per Hour

On-Demand SUSE base pricing: 0.0116 USD per Hour

On-Demand RHEL base pricing: 0.0716 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

Test

Create new key pair

▼ 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.

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

launch-wizard-2 sg-0461ea1c44092a0ce X
VPC: vpc-0699b7ab8798d3d2e

Compare security group rules

Show all selected (+2)

► Advanced network configuration

```
#!/bin/bash
yum update -y
yum install -y httpd
systemctl start httpd
systemctl enable httpd
echo "<h1> Hello from $(hostname -f)<a/h1>" > /var/www/html/index.html
```

☐ User data has already been base64 encoded

Cancel

Create launch template

Launch Templates (2) Info

Create Actions Create launch template

Q Search

	Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	Created By
<input type="radio"/>	lt-0b41af54154cc2572	newTemplate	1	1	2024-01-22T10:58:05.000Z	arn:aws:sts::695125708392:assumed-role/voclabs/user3017354-sishirpaudel7@gmail.com
<input type="radio"/>	lt-03051deda1e2ec31e	LaunchTemplate1	1	1	2024-02-18T07:17:57.000Z	arn:aws:sts::695125708392:assumed-role/voclabs/user3017354-sishirpaudel7@gmail.com

Choose launch template [Info](#)

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group.

Name

Auto Scaling group name

Enter a name to identify the group.

Must be unique to this account in the current Region and no more than 255 characters.

Launch template [Info](#)

i 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.



newTemplate

LaunchTemplate1

Cancel

Next

Step 1

[Choose launch template](#)

Step 2

[Choose instance launch options](#)

Step 3 - optional

Configure advanced options

Step 4 - optional

[Configure group size and scaling](#)

Step 5 - optional

[Add notifications](#)

Step 6 - optional

[Add tags](#)

Step 7

[Review](#)

Configure advanced options - *optional* [Info](#)

Integrate your Auto Scaling group with other services to distribute network traffic across multiple servers using a load balancer or to establish service-to-service communications using VPC Lattice. You can also set options that give you more control over 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.

☒ **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.

VPC Lattice integration options [Info](#)

To improve networking capabilities and scalability, integrate your Auto Scaling group with VPC Lattice. VPC Lattice facilitates communications between AWS services and helps you connect and manage your applications across compute services in AWS.

Select VPC Lattice service to attach

☒ **No VPC Lattice service**

VPC Lattice will not manage your Auto Scaling group's network access and connectivity with other services.

☐ **Attach to VPC Lattice service**

Incoming requests associated with specified VPC Lattice target groups will be routed to your Auto Scaling group.

[Create new VPC Lattice service](#) [?](#)

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

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.

Configure advanced options - *optional* [Info](#)

Integrate your Auto Scaling group with other services to distribute network traffic across multiple servers using a load balancer or to establish service-to-service communications using VPC Lattice. You can also set options that give you more control over health check replacements and monitoring.

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☒ 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 that you want to attach to your Auto Scaling group.

☒ 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



my-TG | HTTP



Application Load Balancer: MY-LB

[EC2](#) > [Auto Scaling groups](#) > my-ASG

my-ASG

[Details](#) | [Activity](#) | [Automatic scaling](#) | [Instance management](#) | [Monitoring](#) | [Instance refresh](#)

Activity notifications (0)

Filter notifications



Actions

Create notification

< 1 > @

Send to On instance action

No notifications are currently specified

Create notification

Activity history (2)

Filter activity history



< 1 > @

Status	Description	Cause	Start time	End time
Successful	Launching a new EC2 instance: i-0585e08968247ad5a	At 2024-02-18T07:23:55Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2024-02-18T07:23:59Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.	2024 February 18, 01:09:01 PM +05:45	2024 February 18, 01:09:33 PM +05:45
Successful	Launching a new EC2 instance: i-06889424f4ef7b9ea	At 2024-02-18T07:23:55Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2024-02-18T07:23:59Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.	2024 February 18, 01:09:01 PM +05:45	2024 February 18, 01:09:33 PM +05:45