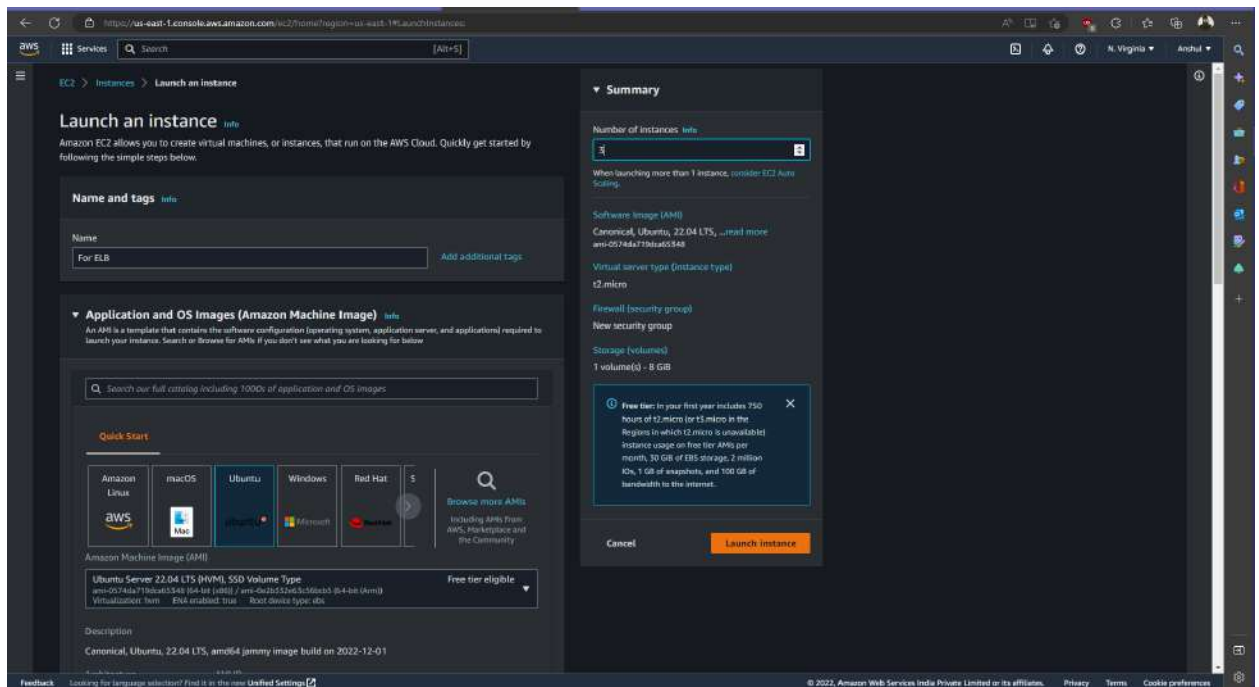


## Module-3: ELB Assignment - 1

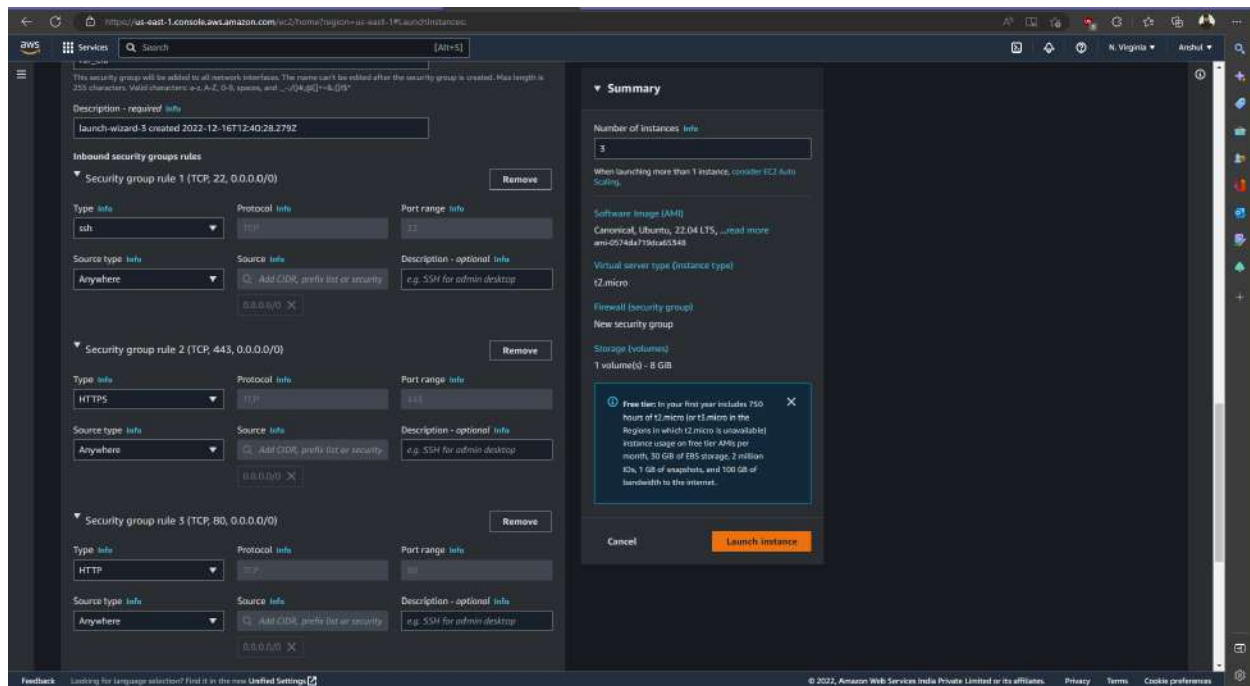
You have been asked to:

1. Create a Classic Load Balancer and register 3 EC2 instances with different web pages running in them
2. Migrate the Classic Load Balancer into an Application Load Balancer.

**Launch 3 instances at the same time with ubuntu as our AMI.**



## Create security for the instance with allowing traffic for ssh,http,https.



### Step3:Follow these steps to all three instances.

First: Update using 'sudo apt-get update'

Install apache2 for hosting website using 'apt-get install apache2'

Now change directory to edit html file to be displayed on web server.

```
cd /var/www/html
```

```
rm index.html
```

```
nano index.html
```

```
0 updates can be applied immediately.

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*-copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-88-144:~$ sudo su
root@ip-172-31-88-144:/home/ubuntu# apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [114 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [99.8 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security InRelease [119 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8972 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [769 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [172 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [11.5 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [498 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [76.3 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [532 B]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [762 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [130 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [14.3 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [7300 B]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [2432 B]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [420 B]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [3326 B]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [1260 B]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [272 B]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [c740 B]

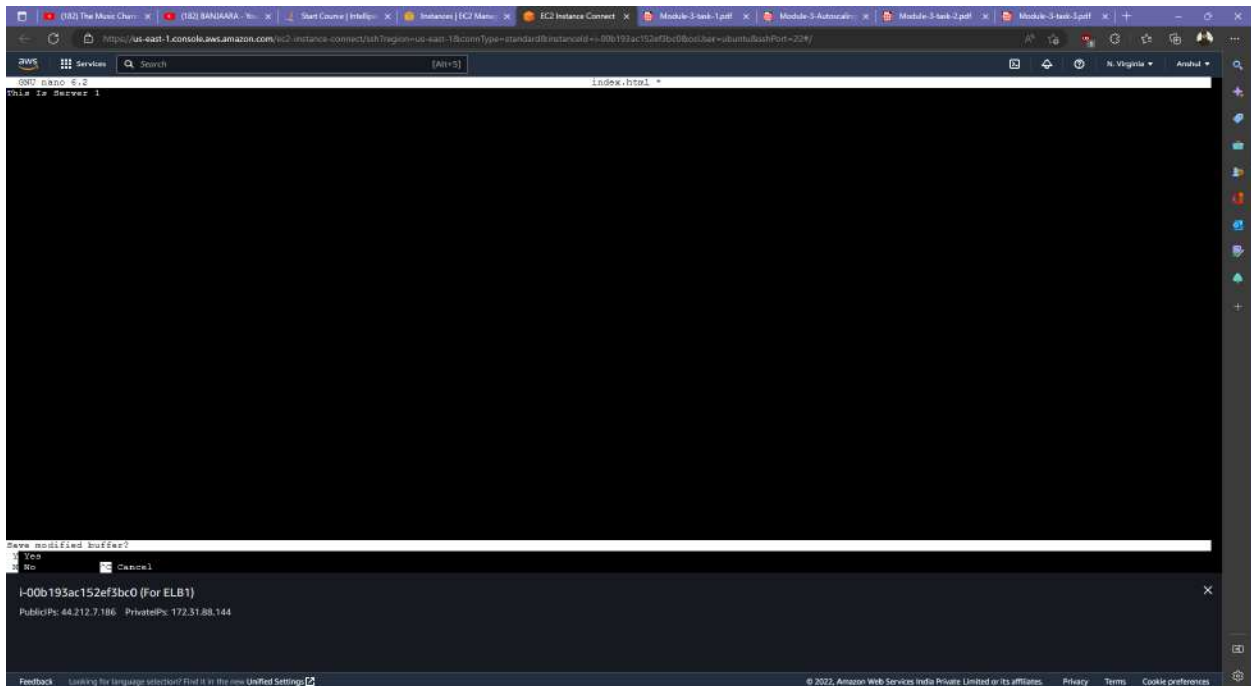
I-00b193ac152ef3bc0 (For ELB1)
PublicPv: 44.212.7.186 PrivatePv: 172.31.88.144
```

```
Get:31 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [522 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [114 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [7908 B]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [460 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [70.3 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [532 B]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [622 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [62.3 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [11.0 kB]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [4268 B]
Get:41 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [972 B]
Get:42 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [228 B]
Fetched 25.1 MB in 4s (5834 KB/s)
Reading package lists... Done
root@ip-172-31-88-144:/home/ubuntu# cd /var/www/html
root@ip-172-31-88-144:/home/ubuntu# apt-get install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E! Unable to locate package apache2
root@ip-172-31-88-144:/home/ubuntu# apt-get install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils httpd libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0 mailcap mime-support ssl-cert
Suggested packages:
  apache2-doc apache2-ssl-modules libapache2-mod-php libapache2-mod-perl2
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils httpd libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0 mailcap mime-support ssl-cert
0 upgraded, 13 newly installed, 0 to remove and 26 not upgraded.
Need to get 2136 kB of archives.
After this operation, 8503 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libapr1 amd64 1.7.0-0ubuntu1 [107 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libaprutil1 amd64 1.6.1-0ubuntu4 [90.4 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-0ubuntu4 [11.3 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libaprutil1-ldap amd64 1.6.1-0ubuntu4 [9162 B]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liblua5.3-0 amd64 5.3.6-1build1 [140 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-bin amd64 2.4.52-1ubuntu4.2 [1344 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-data all 2.4.52-1ubuntu4.2 [165 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-utils amd64 2.4.52-1ubuntu4.2 [89.3 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mailcap all 3.70ubuntu1 [23.8 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mime-support all 3.66 [3696 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2 amd64 2.4.52-1ubuntu4.2 [97.9 kB]

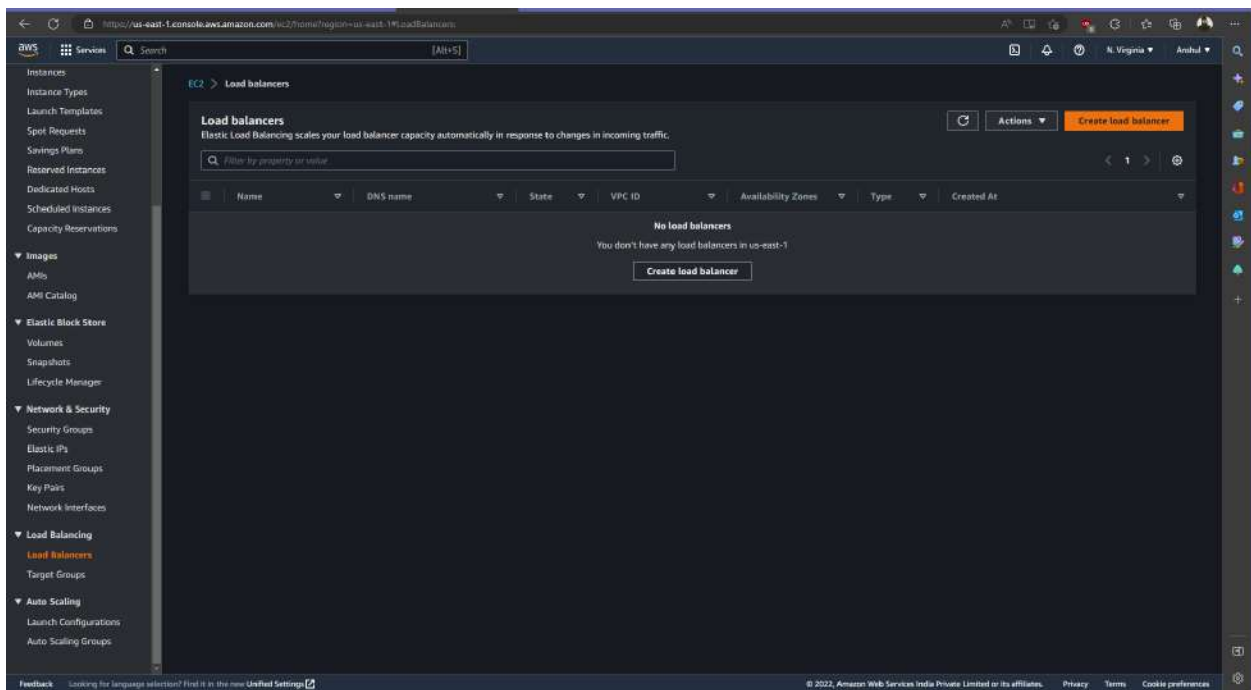
I-00b193ac152ef3bc0 (For ELB1)
PublicPv: 44.212.7.186 PrivatePv: 172.31.88.144
```



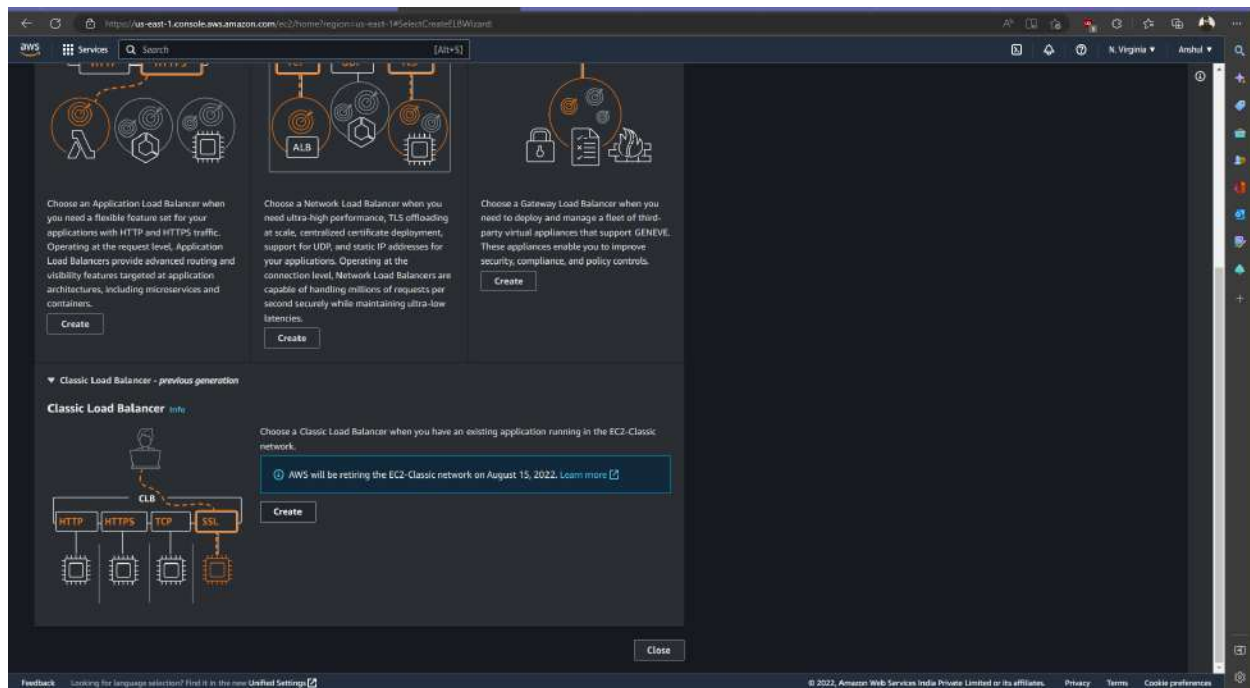
Here edit as “This Is Server <respective server number>”. This is index.html file being edited.



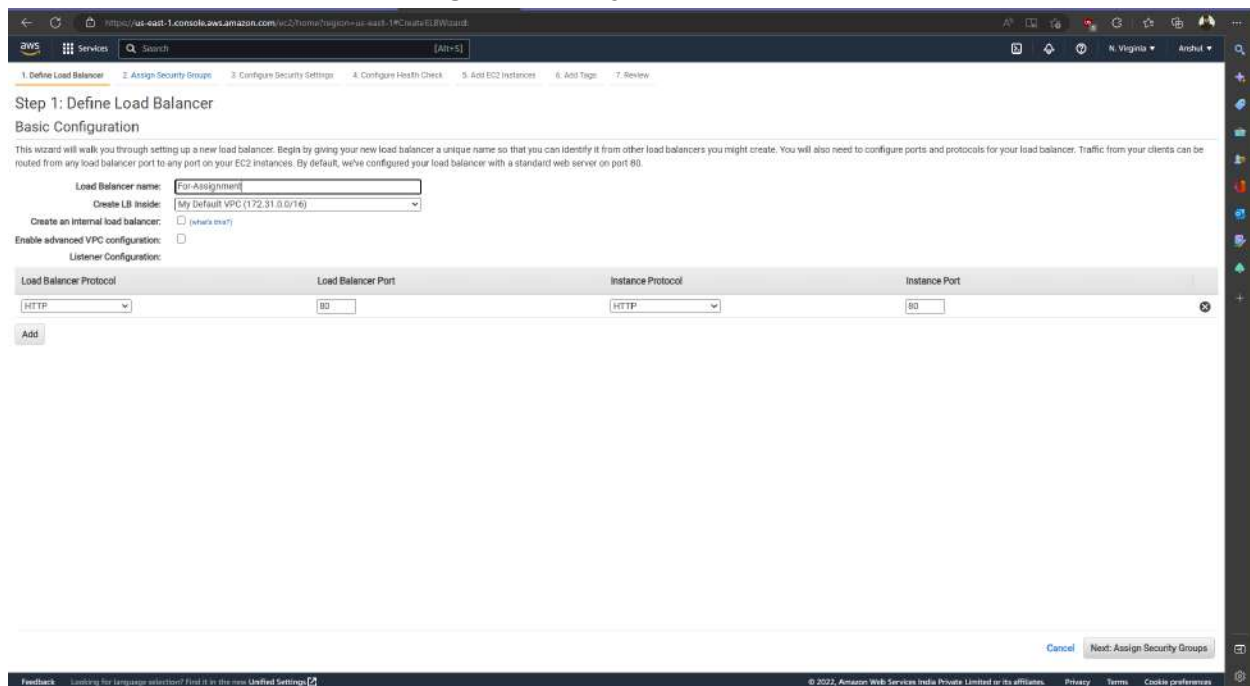
Now lets create a load balancer



Select classic load balancer for this assignment.



Assign name to your load balancer





## Assign security group. Make sure to allow all HTTP traffic in selected security group.

The screenshot displays the AWS Management Console interface for creating an Elastic Load Balancing (ELB) instance. The console is in the 'us-east-1' region, and the user is logged in as 'Anshul'.

**Step 2: Assign Security Groups**

You have selected the option of having your Elastic Load Balancer inside of a VPC, which allows you to assign security groups to your load balancer. Please select the security groups to assign to this load balancer. This can be changed at any time.

Assign a security group: ☐ Create a new security group ☒ Select an existing security group

Filter: VPC security groups

Security Group ID	Name	Description	Actions
sg-002a34027f5a8957	default	default VPC security group	Copy to new
sg-06c729216396f14b2	FOR-ELB	launch-wizard created 2022-12-16T12:30:19-106Z	Copy to new
sg-00f8ca9411b0122bc	for_elb	launch-wizard-3 created 2022-12-15T12:40:28-279Z	Copy to new
sg-02b27d86bcb09561	launch-wizard-1	launch-wizard-1 created 2022-12-15T16:30:29-950Z	Copy to new
sg-0711143311832caba	launch-wizard-2	launch-wizard-2 created 2022-12-15T16:55:37-350Z	Copy to new
sg-0cb671e6d5ba4c9d	rds-launch-wizard	Created from the RDS Management Console: 2022/12/15 09:00:00	Copy to new

[Cancel](#) [Previous](#) [Next: Configure Security Settings](#)

**Step 3: Configure Security Settings**

**Improve your load balancer's security. Your load balancer is not using any secure listener.**  
If your traffic to the load balancer needs to be secure, use either the HTTPS or the SSL protocol for your front-end connection. You can go back to the first step to add/configure secure listeners under Basic Configuration section. You can also continue with current settings.

[Cancel](#) [Previous](#) [Next: Configure Health Check](#)

Feedback Looking for language selection? Find it in the new Unified Settings. © 2022, Amazon Web Services India Private Limited or its affiliates. [Privacy](#) [Terms](#) [Cookie preferences](#)

For health check it will ping index.html file.

The screenshot shows the 'Step 4: Configure Health Check' page in the AWS Management Console. The breadcrumb trail at the top indicates the steps: 1. Define Load Balancer, 2. Assign Security Groups, 3. Configure Security Settings, 4. Configure Health Check (current), 5. Add EC2 Instances, 6. Add Tags, and 7. Review. The page title is 'Step 4: Configure Health Check'. Below the title, a note states: 'Your load balancer will automatically perform health checks on your EC2 instances and only route traffic to instances that pass the health check. If an instance fails the health check, it is automatically removed from the load balancer. Customize the health check to meet your specific needs.' The configuration fields are as follows: 'Ping Protocol' is set to 'HTTP', 'Ping Port' is '80', and 'Ping Path' is '/index.html'. Under 'Advanced Details', 'Response Timeout' is '5 seconds', 'Interval' is '30 seconds', 'Unhealthy threshold' is '2', and 'Healthy threshold' is '10'. At the bottom right, there are buttons for 'Cancel', 'Previous', and 'Next: Add EC2 Instances'. A footer bar contains a 'Feedback' link, a note about language selection, and copyright information for Amazon Web Services India Private Limited.

Step 4: Configure Health Check

Your load balancer will automatically perform health checks on your EC2 instances and only route traffic to instances that pass the health check. If an instance fails the health check, it is automatically removed from the load balancer. Customize the health check to meet your specific needs.

Ping Protocol: HTTP  
Ping Port: 80  
Ping Path: /index.html

Advanced Details

Response Timeout: 5 seconds  
Interval: 30 seconds  
Unhealthy threshold: 2  
Healthy threshold: 10

Cancel Previous Next: Add EC2 Instances

Feedback Looking for language selection? Find it in the new Unified Settings.

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Add all 3 instances

The screenshot shows the 'Step 5: Add EC2 Instances' page in the AWS Management Console. The breadcrumb trail at the top indicates the steps: 1. Define Load Balancer, 2. Assign Security Groups, 3. Configure Security Settings, 4. Configure Health Check, 5. Add EC2 Instances (current), 6. Add Tags, and 7. Review. The page title is 'Step 5: Add EC2 Instances'. Below the title, a note states: 'The table below lists all your running EC2 instances. Check the boxes in the Select column to add those instances to this load balancer.' A table lists three EC2 instances: 'i-00b193ac152ef3bc0' (For ELB1), 'i-08ea29ca3f900446' (For ELB2), and 'i-05fcd9b5f6144595' (For ELB3). All three instances are in the 'running' state and belong to the 'for\_elb' security group. They are located in the 'us-east-1b' zone and 'subnet-03a1bc49...' subnet. Below the table, the 'Availability Zone Distribution' section shows '3 instances in us-east-1b'. There are checkboxes for 'Enable Cross-Zone Load Balancing' and 'Enable Connection Draining' (set to 300 seconds). At the bottom right, there are buttons for 'Cancel', 'Previous', and 'Next: Add Tags'. A footer bar contains a 'Feedback' link, a note about language selection, and copyright information for Amazon Web Services India Private Limited.

Step 5: Add EC2 Instances

The table below lists all your running EC2 instances. Check the boxes in the Select column to add those instances to this load balancer.

VPC: vpc-077b06a7f3ae1c93a (172.31.0.0/16)

Instance	Name	State	Security groups	Zone	Subnet ID	Subnet CIDR
<input checked="" type="checkbox"/>	i-00b193ac152ef3bc0 For ELB1	running	for_elb	us-east-1b	subnet-03a1bc49...	172.31.8.0/20
<input checked="" type="checkbox"/>	i-08ea29ca3f900446 For ELB2	running	for_elb	us-east-1b	subnet-03a1bc49...	172.31.8.0/20
<input checked="" type="checkbox"/>	i-05fcd9b5f6144595 For ELB3	running	for_elb	us-east-1b	subnet-03a1bc49...	172.31.8.0/20

Availability Zone Distribution

3 instances in us-east-1b

☒ Enable Cross-Zone Load Balancing  
☒ Enable Connection Draining (300) seconds

Cancel Previous Next: Add Tags

Feedback Looking for language selection? Find it in the new Unified Settings.

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Step 7: Review

Please review the load balancer details before continuing

Define Load Balancer [Edit load balancer definition](#)

Load Balancer name: For-Assignment  
 Scheme: Internet-facing  
 Port Configuration: 80 (HTTP) forwarding to 80 (HTTP)

Configure Health Check [Edit health check](#)

Ping Target: HTTP-80/index.html  
 Timeout: 5 seconds  
 Interval: 30 seconds  
 Unhealthy threshold: 2  
 Healthy threshold: 10

Add EC2 Instances [Edit instances](#)

Cross-zone load balancing: Enabled  
 Connection Draining: Enabled, 300 seconds  
 Instances: i-00b193ac192ef3bc0 (For ELB1), i-08ea29ca3ff9024e6 (For ELB2), i-05f0c4956f449d5 (For ELB3)

VPC Information [Edit subnets](#)

VPC: vpc-077006a78ea1c93a  
 Subnets: subnet-033eaffab4e67883, subnet-03a1bc49f981cd057, subnet-02790e9f0ccc18ad7, subnet-0a768f01c76663b55, subnet-02779ccfb611d943c, subnet-020b2bde3d9f7da2a

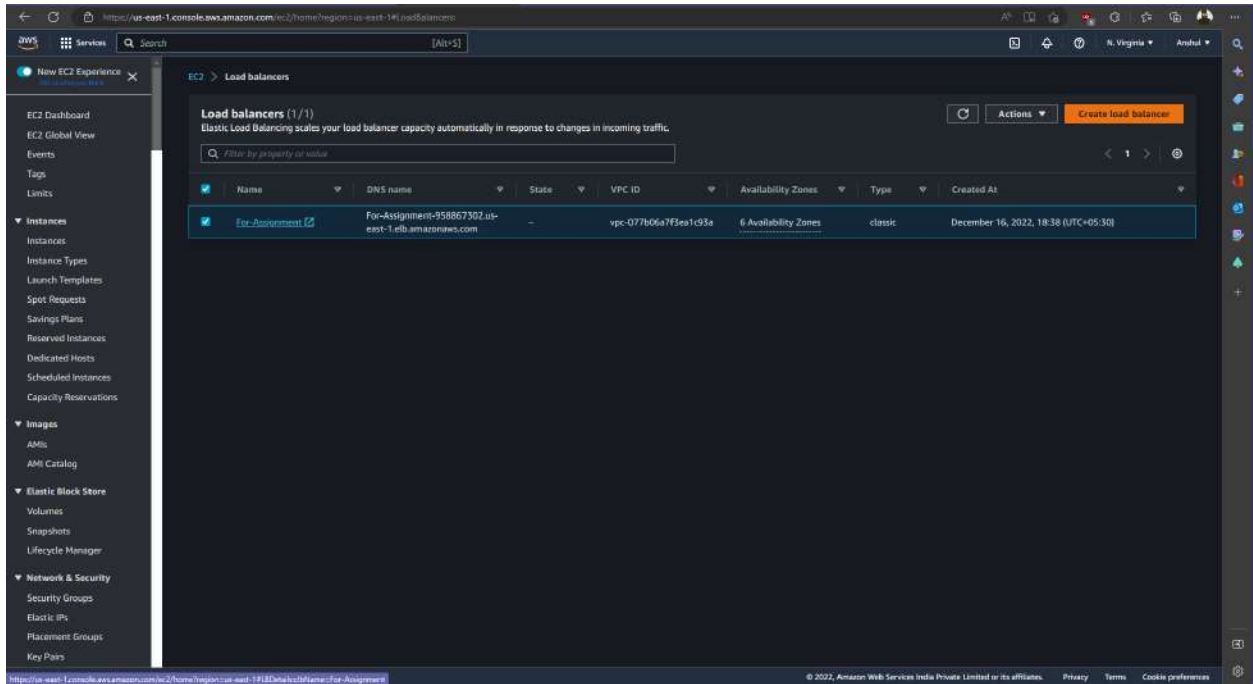
Security groups [Edit security groups](#)

Security groups: sg-052a3402f7d6a8957

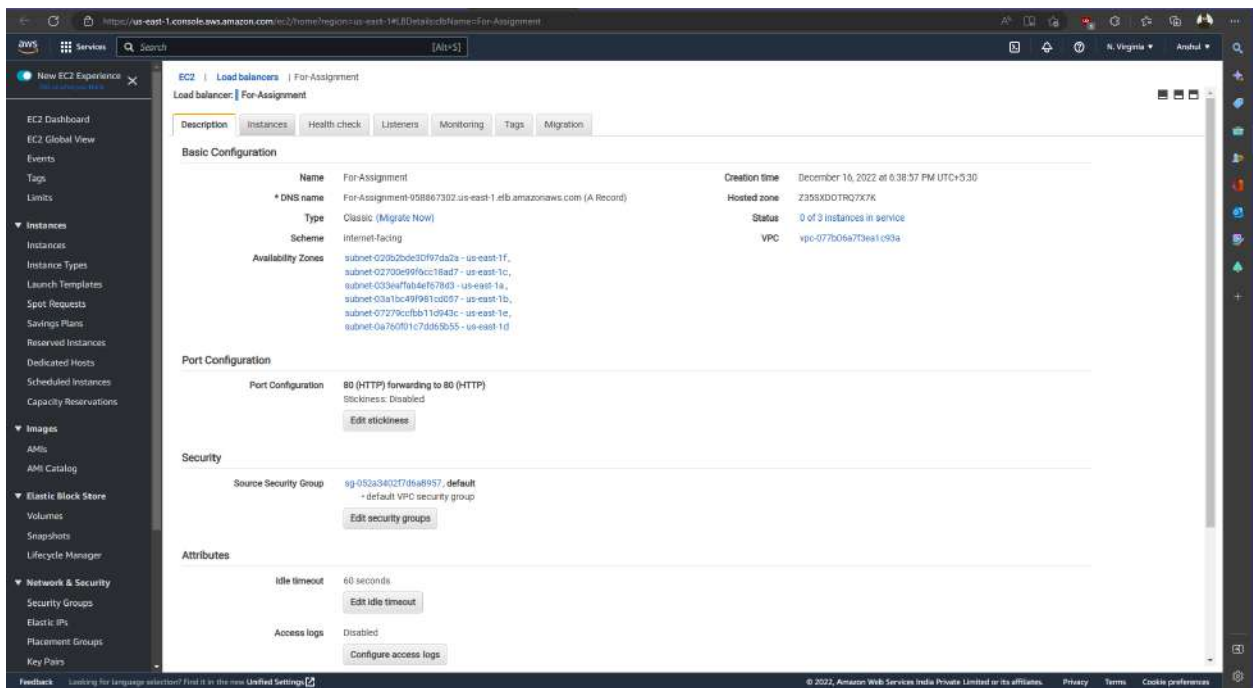
Add Tags [Edit tags](#)

name: for-elb

[Cancel](#) [Previous](#) [Create](#)



Click on created load balancer check if instances are ready.



They are in service

EC2 | Load balancers | For-Assignment

Load balancer: For-Assignment

Description Instances Health check Listeners Monitoring Tags Migration

Connection Draining: Enabled, 300 seconds (Edit)

Edit Instances

Instance ID	Name	Availability Zone	Status	Actions
i06b193ac152af5bc0	For ELB1	us-east-1b	InService (1)	Remove from Load Balancer
i08a29ca3f9f024a6	For ELB2	us-east-1b	InService (1)	Remove from Load Balancer
i05fc9cb5b0f449d5	For ELB3	us-east-1b	InService (1)	Remove from Load Balancer

Edit Availability Zones

Availability Zone	Subnet ID	Subnet CIDR	Instance Count	Healthy?	Actions
us-east-1f	subnet-028b2bdc30f97da2a	172.31.44.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer
us-east-1a	subnet-07279ccfb911d949c	172.31.48.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer
us-east-1d	subnet-0a76f0d1c73b65b55	172.31.32.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer
us-east-1c	subnet-02700e9f9f6cc1bad7	172.31.16.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer
us-east-1b	subnet-02a1bc4f9f1c0b757	172.31.80.0/20	3	Yes	Remove from Load Balancer
us-east-1a	subnet-032eaf8b4ef67bd3	172.31.8.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer

Copy the dns of load balancer and check after pasting it as url in browser

EC2 | Load balancers

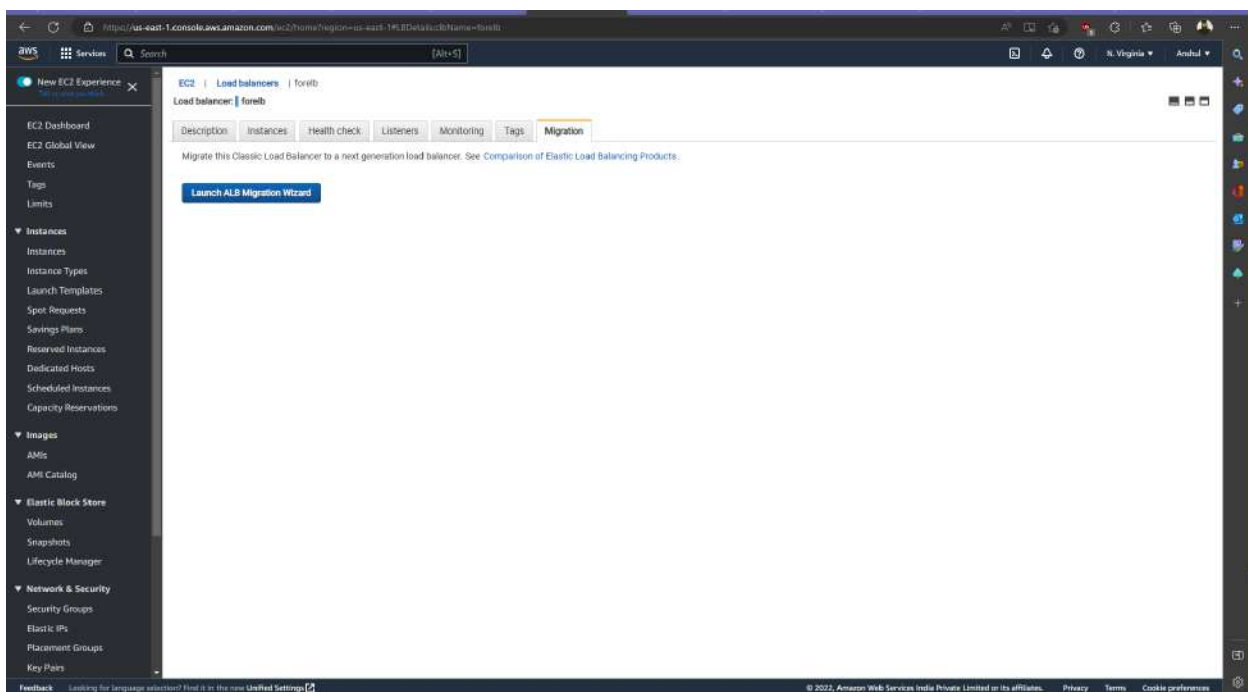
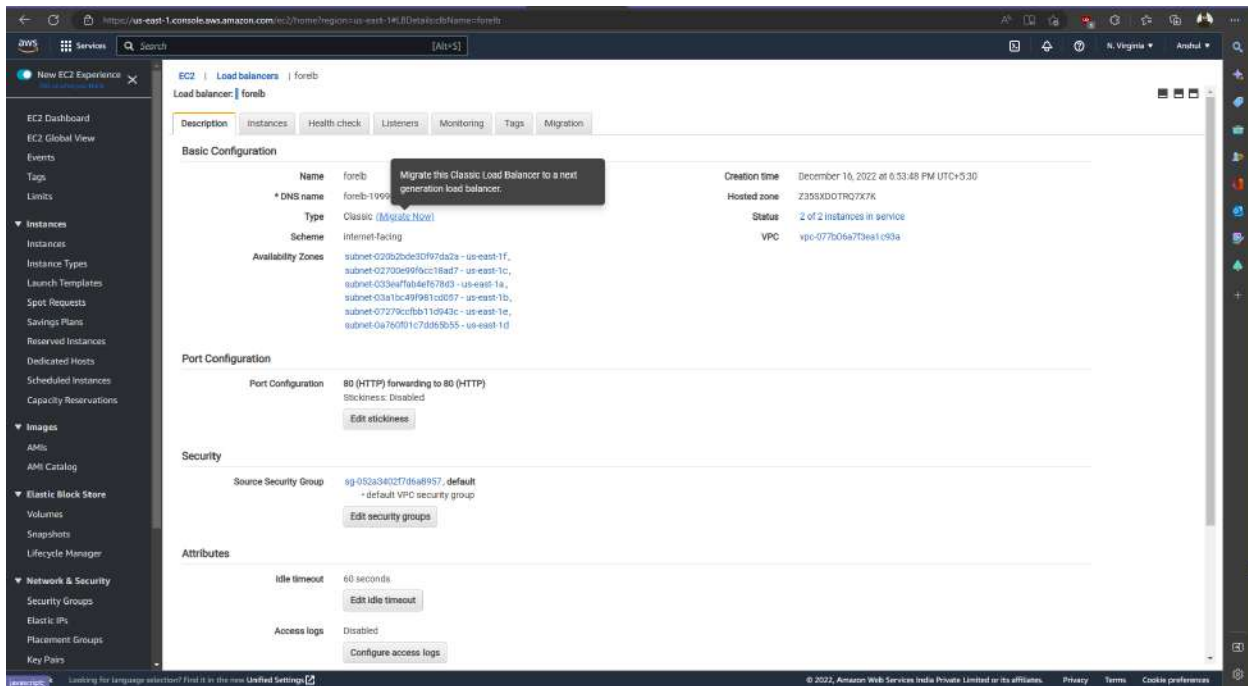
Load balancers (1/1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter by property or value

Name	DNS name	State	VPC ID	Availability Zones	Type	Created At
For-Assignment	For-Assignment-958867302-1.elb.amazonaws.com	InService	vpc-077b06a7f3ea1c93a	6 Availability Zones	classic	December 16, 2022, 18:38 (UTC+05:30)

To change classic load balancer to application load balancer click on load balancer and then choose migrate now.



Click on create to migrate finally.

Step 6: Review

The highlighted fields below indicate the new values (green) and the original values (grey).

**Load balancer**

- Name: forelb
- Scheme: internet-facing
- Listeners: Port:80 - Protocol:HTTP
- IP address type: ipv4
- VPC: vpc-077b06a7f3ea1c93a
- Subnets: subnet-020b2bde30f97da2a, subnet-0270e99f9cc18ad7, subnet-033eaffab4ef978d3, subnet-03a1bc49f981cd057, subnet-07279ccfb811d943c, subnet-0a760f01c7dd65b05
- Tags:

**Security groups**

- Security groups: sg-052a3402f7d6a8957

**Routing**

- Target group: New target group
- Target group name: forelb
- Port: 80
- Target type: instance
- Protocol: HTTP
- Health check protocol: HTTP
- Path: /index.html
- Health check port: 80
- Healthy threshold: 10
- Unhealthy threshold: 2
- Timeout: 5
- Interval: 30
- Success codes: 200

**Targets**

- Instances: i-06ea29ca3ff02446 (For ELB2) 80, i-00b193ac152ef30c0 (For ELB1) 80

**Add-on services**

- AWS Global Accelerator: Disabled

[Cancel](#) [Previous](#) [Create](#)

Your load balancer has been migrated from classic load balancer to application load balancer.

**Load balancers (2)**

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter by property or value

	Name	DNS name	State	VPC ID	Availability Zones	Type	Created At
<input type="checkbox"/>	forelb	forelb-1999024545.us-east-1.elb.amazonaws.com	Provisioning	vpc-077b06a7f3ea1c93a	6 Availability Zones	classic	December 16, 2022, 18:53 (UTC+05:30)
<input type="checkbox"/>	forelb	forelb-520147664.us-east-1.elb.amazonaws.com	Provisioning	vpc-077b06a7f3ea1c93a	6 Availability Zones	application	December 16, 2022, 19:00 (UTC+05:30)

**Optional:** Since we created an Application load balancer let's apply load accordingly. First create 3 target groups for 34 instances separately.

Then go to load balancer, select the listener, go to the actions drop down menu and select edit listeners.

Add 3 target groups with load assigned according to you.

Here I applied equal load i.e 1 1 1 i.e 33.33 percent.

The screenshot shows the AWS Management Console for the 'forelb' target group. The details section indicates it is an Amazon Elastic Load Balancing target group. The target type is 'Instance', the protocol is 'HTTP', and the port is '80'. The VPC is 'vpc-077b06a7f3ca1c83a'. The target group has 3 total targets, all of which are healthy. The 'Registered targets' section shows a table with 3 entries:

Instance ID	Name	Port	Zone	Health status	Health status details
i-08ea29ca3f9024e6	For ELB2	80	us-east-1b	healthy	
i-00b193ac152ef3bc0	For ELB1	80	us-east-1b	healthy	
i-05cfc3b5f6449d5	For ELB3	80	us-east-1b	healthy	

The screenshot shows the 'Register targets' page in the AWS Management Console. It displays a table of available instances for registration:

Instance ID	Name	State	Security groups	Zone	IPv4 address	Subnet ID
i-00b193ac152ef3bc0	For ELB1	running	for_elb	us-east-1b	44.212.7.186	subnet-03a1bc49f981cd057
i-08ea29ca3f9024e6	For ELB2	running	for_elb	us-east-1b	34.238.154.132	subnet-03a1bc49f981cd057
i-05cfc3b5f6449d5	For ELB3	running	for_elb	us-east-1b	3.95.234.223	subnet-03a1bc49f981cd057

Below the table, there is a section for 'Ports for the selected instances' with a text input field containing '80'. The 'Review targets' section shows a table with 3 targets, all of which are healthy:

Targets (3)	Health status	Instance ID	Name	Port	State	Security groups	Zone	IPv4 address	Subnet ID
healthy	healthy	i-08ea29ca3f9024e6	For ELB2	80	running	for_elb	us-east-1b	34.238.154.132	subnet-03a1bc49f981cd057



https://us-east-1.console.aws.amazon.com/v2/home?region=us-east-1#createTargetGroup

Services Search [Alt+S]

**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**

forelb2

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

**Protocol** **Port**

HTTP 80

**VPC**

Select the VPC with the instances that you want to include in the target group.

us-east-1-vpc-1fba7c3da  
IPv4: 172.31.0.0/16

**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.

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https://us-east-1.console.aws.amazon.com/v2/home?region=us-east-1#createTargetGroup

Services Search [Alt+S]

**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

**Health check path**

/index.html

Use the default path of "/" to ping the root, or specify a custom path if preferred.

Up to 300A 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

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Step 2: Register targets

### Available instances (1/3)

Filter resources by property or value

Instance ID	Name	State	Security groups	Zone	Subnet ID
i-00b193ac152e3bc0	For ELB1	running	for_elb	us-east-1b	subnet-03a1bc49981ca057
i-06ba29ca3ff902465	For ELB2	running	for_elb	us-east-1b	subnet-03a1bc49981ca057
i-054c9b5f64449d5	For ELB3	running	for_elb	us-east-1b	subnet-03a1bc49981ca057

1 selected

Ports for the selected instances  
Ports for routing traffic to the selected instances.

80

1-55555 (separate multiple ports with comma)

Include as pending below

### Review targets

Targets (0)

Remove all pending

Remove	Health status	Instance ID	Name	Port	State	Security groups	Zone	Subnet ID
--------	---------------	-------------	------	------	-------	-----------------	------	-----------

No instances added yet

Specify instances above, or leave the group empty if you prefer to add targets later.

0 pending

Cancel Previous **Create target group**

Created At: December 16, 2022, 19:00 (UTC+05:30)

Listeners Network mapping Security Monitoring Integrations Attributes Tags

### Listeners (1/1)

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

Search

Protocol/Port	ARN	Security policy	Default SSL cert	Rules
HTTP/80	ARN	Not Applicable	Not Applicable	1. Forward to → forest 1 (100%) → Group-level stickiness: Off

Actions

- View listener details
- Edit listener
- Add SSL certificates for SNI
- Manage rules
- Manage tags
- Delete listener

Screenshot of the AWS Management Console showing the configuration of an Elastic Load Balancing listener. The console is in the us-east-1 region.

**Listeners (1/1)**

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

Protocol	Port	ARN	Security policy	Default SSL cert	Default routing rule	Rules
HTTP	80	ARN	Not Applicable	Not Applicable	1. Forward to Foreb (100%)	1

**Actions**

- View listener details
- Edit listener
- Add SSL certificates for SNI
- Manage rules
- Manage tags
- Delete listener

Screenshot of the AWS Management Console showing the configuration of an Elastic Load Balancing listener rule. The console is in the us-east-1 region.

**Default actions**

Specify the default actions for traffic on this listener. Default actions apply to traffic that does not meet the conditions of rules on your listener. Rules can be configured after the listener is created.

**1. Forward to**

Target group: Foreb (Target type: Instance, IPv4)

Weight (0-999): 1

Traffic distribution: 100%

**Tags - optional**

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

**Cancel** **Save changes**

https://us-east-1.console.aws.amazon.com/elasticloadbalancing/home?region=us-east-1#/loadbalancing/targetgroups/for-attb5

Services Search [All+5]

HTTP 80 1-40535

**Default actions** [info](#)  
Specify the default actions for traffic on this listener. Default actions apply to traffic that does not meet the conditions of rules on your listener. Rules can be configured after the listener is created.

▼ 1. Forward to [info](#) [Remove](#)

Target group		Weight (0-999)	
for-attb5 Target type: Instance, IPv4	HTTP	1	X
Traffic distribution: 33.33%			
forelb Target type: Instance, IPv4	HTTP	1	X
Traffic distribution: 33.33%			
forelb-2 Target type: Instance, IPv4	HTTP	1	X
Traffic distribution: 33.33%			
Select a target group		0	X
<a href="#">Create target group</a>			

☐ **Enable group-level stickiness** [info](#)  
If you enable stickiness for your target group, requests routed to it remain in the same group for the duration you specify.

[Add action](#)

► **Tags - optional**  
Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.

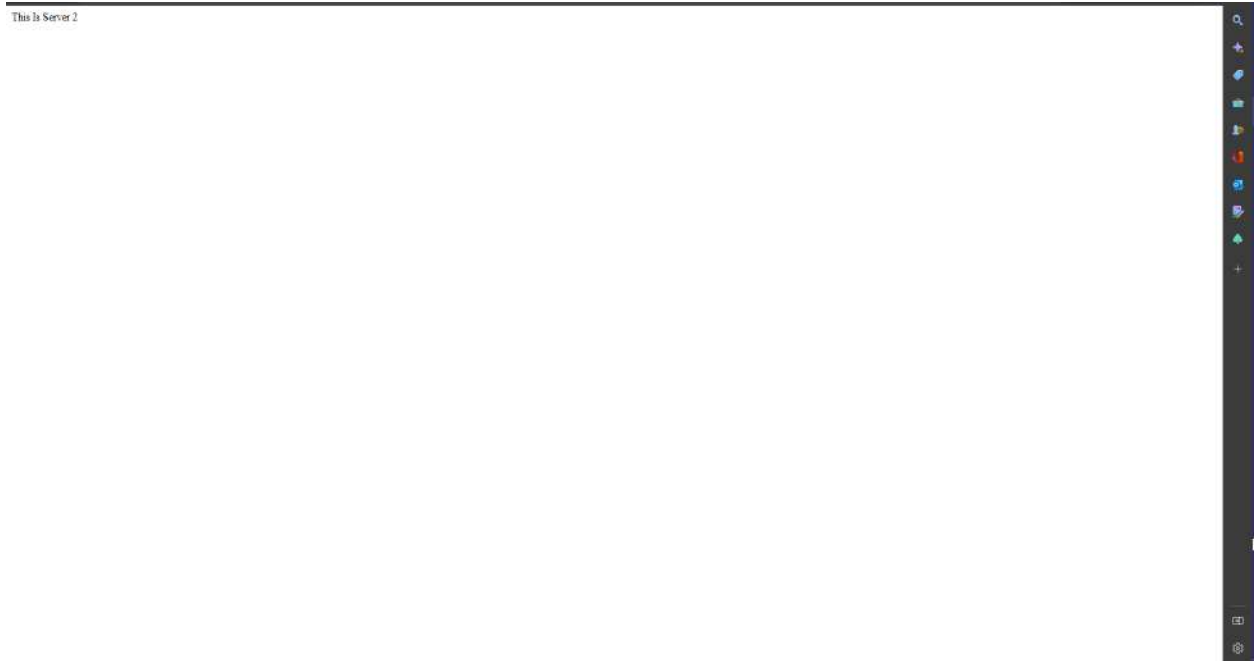
[Cancel](#) [Save changes](#)

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← 🔒 Not secure | forassignment-597951386-us-east-1.elb.amazonaws.com

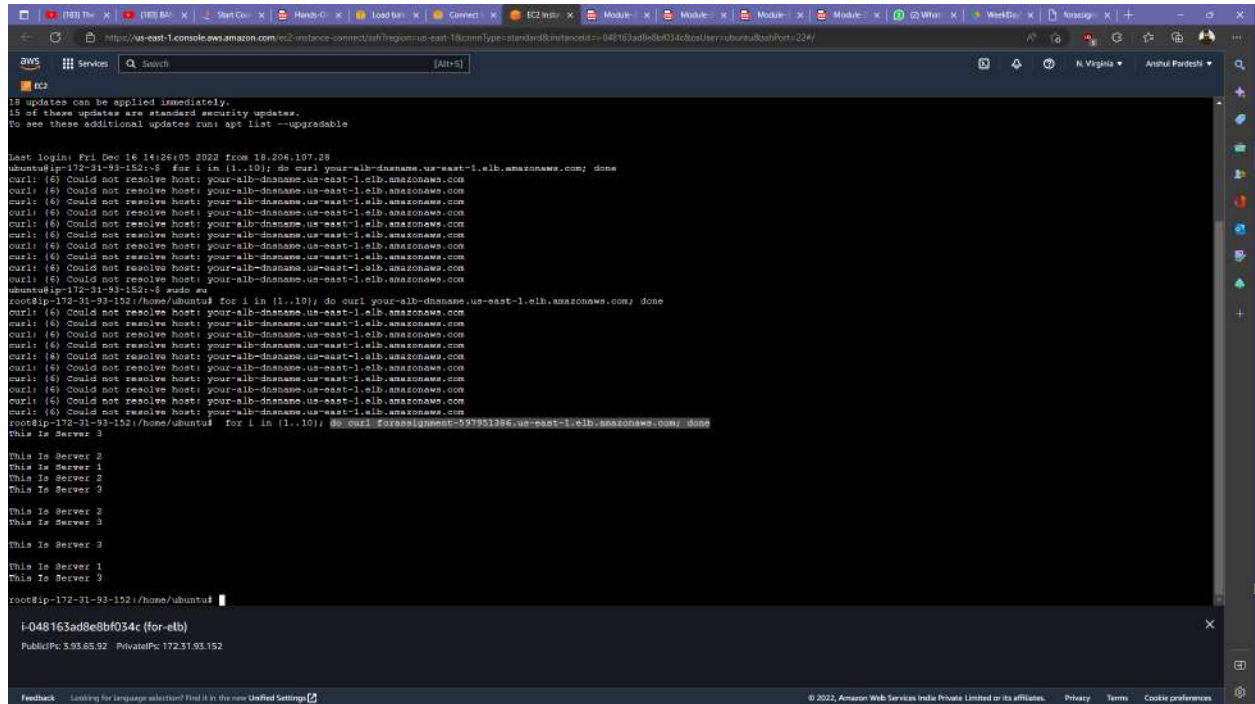
This is Server 1



## Final Result:

**Use:** “for i in {1..10}; do curl your-alb-dnsname.us-east-1.elb.amazonaws.com; done”  
to test the traffic distribution.

Result in our case is as follows.



```
1: updates can be applied immediately.
15 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Last login: Fri Dec 16 14:26:05 2022 from 18.206.197.28
ubuntu@ip-172-31-93-152:~$ for i in {1..10}; do curl your-alb-dnsname.us-east-1.elb.amazonaws.com; done
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
ubuntu@ip-172-31-93-152:~$ sudo su
root@ip-172-31-93-152:/home/ubuntu# for i in {1..10}; do curl your-alb-dnsname.us-east-1.elb.amazonaws.com; done
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
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curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
curl: (6) Could not resolve host: your-alb-dnsname.us-east-1.elb.amazonaws.com
root@ip-172-31-93-152:/home/ubuntu# for i in {1..10}; do curl i-048163ad9e8bf034c.us-east-1.elb.amazonaws.com; done
This is Server 3
This is Server 2
This is Server 1
This is Server 2
This is Server 3
This is Server 2
This is Server 3
This is Server 3
This is Server 1
This is Server 3
root@ip-172-31-93-152:/home/ubuntu#
```

i-048163ad9e8bf034c (for elb)  
PublicPc: 3.93.65.92 PrivatePc: 172.31.93.152

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