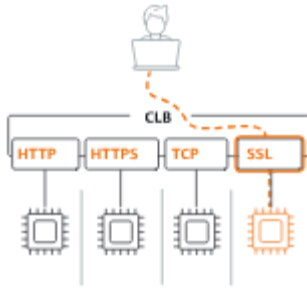


## Setting Up a Elastic Load Balancer (ELB) - Classic Load Balancer (CLB)

### Step 1: Launch EC2 Instances

1. Log in to AWS Console: Navigate to [AWS Management Console](#).
2. Navigate to EC2: From the Services menu, choose **EC2**.
3. **Launch EC2 Instances:**
  - Create at least **two** EC2 instances.
  - Ensure the instances are in the same VPC.
  - Install a web server (e.g., Apache, Nginx) and set up a basic webpage.



<div> <div>aws</div> <div>Search</div> <div>[Alt+S]</div> </div> <div> <div>EC2</div> <div>Load balancers</div> <div>Compare and select load balancer type</div> </div> <div> <div>N. Virginia</div> <div>voclabs/user3312069=Ruturaj_Sonone @ 5256-2052-5649</div> </div>										
<div> <div>Instances (1/3)</div> <div>Info</div> </div> <div> <div>Last updated less than a minute ago</div> <div>Connect</div> <div>Instance state</div> <div>Actions</div> <div>Launch instances</div> </div> <div> <div>Find Instance by attribute or tag (case-sensitive)</div> <div>All states</div> </div>										
<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elast
<input checked="" type="checkbox"/>	instance-2	i-073aba66090d43b44	Running	t2.micro	2/2 checks passed	View alarms	us-east-1d	ec2-34-229-152-28.co...	34.229.152.28	-
<input type="checkbox"/>	instance-3	i-03f98a54a0db89eab	Running	t2.micro	2/2 checks passed	View alarms	us-east-1e	ec2-54-197-83-181.co...	54.197.83.181	-
<input type="checkbox"/>	instance-1	i-08f62e83e975c6364	Running	t2.micro	2/2 checks passed	View alarms	us-east-1c	ec2-18-233-155-142.co...	18.233.155.142	-

## Step 2: Configure a Security Group

- Create or Update a **Security Group for EC2 Instances**:
  - Allow inbound **HTTP traffic** on port **80**.
  - Allow traffic from the Load Balancer's security group.
- Ensure the Security Group for the Load Balancer allows **inbound HTTP traffic** from all sources (**0.0.0.0/0**).

sg-071c1e02d21a594f5 - launch-wizard-4

Actions

### Details

Security group name  
launch-wizard-4

Security group ID  
sg-071c1e02d21a594f5

Description  
launch-wizard-4 created 2024-12-30T06:16:24.155Z

VPC ID  
vpc-086c1882be991b39e

Owner  
525620525649

Inbound rules count  
3 Permission entries

Outbound rules count  
1 Permission entry

### Inbound rules

### Outbound rules

### Sharing - new

### VPC associations - new

### Tags

### Inbound rules (3)



Manage tags

Edit inbound rules

<input type="checkbox"/>	Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description
<input type="checkbox"/>	-	sgr-020460b782b835fef	IPv4	SSH	TCP	22	0.0.0.0/0	-
<input type="checkbox"/>	-	sgr-0570b34ee5d7678e6	IPv4	HTTPS	TCP	443	0.0.0.0/0	-
<input type="checkbox"/>	-	sgr-0e08fd4c3aeb410ef	IPv4	HTTP	TCP	80	0.0.0.0/0	-

## Step 3: Create a Classic Load Balancer



1. **Go to the EC2 Dashboard:** Under **Load Balancing**, click **Load Balancers**.
2. **Click "Create Load Balancer":**
  - Choose **Classic Load Balancer**.
3. **Basic Configuration:**
  - Provide a name for the load balancer.
  - Select the **VPC** where your EC2 instances are located.
  - **Listeners:** Add HTTP on port 80 (or HTTPS on port 443 if needed).
4. **Subnets:** Choose at least **two subnets** in different availability zones for high availability.

**aws** Search [Alt+S] N. Virginia voclabs/user3312069=Ruturaj\_Sonone @ 5256-2052-5649

EC2 > Load balancers

**Load balancers (1/1)** Actions Create load balancer

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

Filter load balancers

Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
classicLB	classicLB-1634661109.us-e...	-	vpc-086c1882be991b39e	3 Availability Zones	classic	December 30, 2024, 12:25 (UTC+05:30)

**Load balancer: classicLB**

Details Listeners Network mapping Security Health checks Target instances Monitoring Attributes Tags

**Details**

<b>Load balancer type</b> Classic	<b>Status</b> 3 of 3 instances in service	<b>VPC</b> vpc-086c1882be991b39e	<b>Date created</b> December 30, 2024, 12:25 (UTC+05:30)
<b>Scheme</b> Internet-facing	<b>Hosted zone</b> Z35SXDOTRQ7X7K	<b>Availability Zones</b> subnet-0bd5e57209d2e5943 us-east-1e (use1-az3) subnet-0bb5d397b3bf8cb51 us-east-1d (use1-az4) subnet-0a2fd496038b5cddb us-east-1c (use1-az2)	

## Step 4: Configure Health Checks



## 1. Set Health Check Parameters:

- Protocol: HTTP.
- Ping Path: / (or specify a custom health check path).
- Response Timeout: 5 seconds.
- Interval: 30 seconds.
- Healthy/Unhealthy Threshold: Set the number of successful or failed checks required to mark an instance healthy or unhealthy.

## 2. Save the Health Check configuration.

Load balancer: classicLB

Details | Listeners | Network mapping | Security | **Health checks** | Target instances | Monitoring | Attributes | Tags

### Health check settings

Your load balancer automatically performs health checks to test the availability of all registered instances. Traffic is only routed to healthy instances, which is determined on their response to the health check.

<b>Ping target</b> HTTP:80/index.html	<b>Healthy threshold</b> 4 consecutive health check successes	<b>Unhealthy threshold</b> 2 consecutive health check failures	<b>Timeout</b> 2 seconds
<b>Interval</b> 5 seconds			

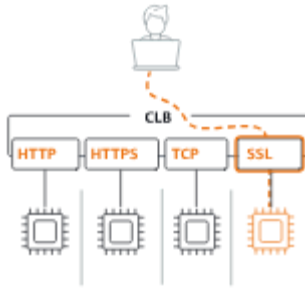
## Step 5: Register EC2 Instances

### 1. Select Instances:

- Choose the EC2 instances you launched earlier.

### 2. Add Instances to the load balancer.

### 3. Review and confirm the registration.



**Available instances (3/3)**

Choose from the instances currently available to the load balancer. Selecting an unregistered instance queues it for registration, while deselecting a registered instance queues it for deregistration. Once an instance is queued for deregistration, its details are only displayed here. [Learn more](#).

Filter available instances

<input checked="" type="checkbox"/>	Registration status	Instance ID	Name	State	Security groups
<input checked="" type="checkbox"/>	Registered	i-03f98a54a0db89eab	instance-3	Running	launch-wizard-5
<input checked="" type="checkbox"/>	Registered	i-073aba66090d43b44	instance-2	Running	launch-wizard-4
<input checked="" type="checkbox"/>	Registered	i-08f62e83e975c6364	instance-1	Running	launch-wizard-3

## Step 6: Configure Security Settings (Optional for HTTPS)

### 1. Enable HTTPS:

- Use AWS Certificate Manager (ACM) to get an SSL certificate.
- Add an HTTPS listener and attach the SSL certificate.

### 2. Update Security Group:

- Allow inbound traffic on port 443 for HTTPS.

## Edit security groups

▼ **Load balancer details: classicLB**

<b>Load balancer type</b> Classic	<b>Status</b> 3 of 3 instances in service	<b>VPC</b> <a href="#">vpc-086c1882be991b39e</a>
<b>Availability Zones</b> <a href="#">subnet-0bd5e57209d2e5943</a> us-east-1e (use1-az3) <a href="#">subnet-0bb5d397b3bf8cb51</a> us-east-1d (use1-az4) <a href="#">subnet-0a2fd496038b5cddb</a> us-east-1c (use1-az2)	<b>Scheme</b> Internet-facing	<b>Hosted zone</b> Z35SXDOTRQ7X7K
<b>Date created</b> December 30, 2024, 12:25 (UTC+05:30)		

**DNS name** [Info](#)  
[classicLB-1634661109.us-east-1.elb.amazonaws.com](#) (A Record)

**Security groups**

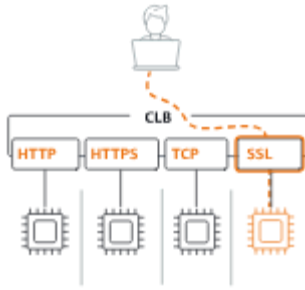
A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can [create a new security group](#).

**Security groups**

Select up to 5 security groups

default  
sg-073cec2e09f454fd7 VPC: vpc-086c1882be991b39e

launch-wizard-3  
sg-0d4238daf6f509f98 VPC: vpc-086c1882be991b39e



## Step 7: Test the Load Balancer

1. Get the DNS Name:
  - Go to the CLB details page and **copy the DNS name**.
2. Test in a Browser:
  - Paste the DNS name into a **browser to ensure traffic is distributed** between the instances.
3. As we refresh the browser we can observe that **traffic is distributed** between the instances.

this is ip-172-31-62-186

this is ip-172-31-81-28

this is ip-172-31-26-224