Setting Up a Elastic Load Balancer (ELB) - Classic Load Balancer (CLB)
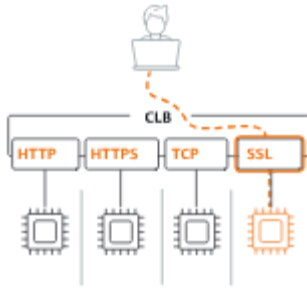
Step 1: Launch EC2 Instances

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.

Step 2: Configure a Security Group

1. 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.

2. Ensure the Security Group for the Load Balancer allows **inbound HTTP traffic** from all sources **(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.

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.

Ping target	**Healthy threshold**	**Unhealthy threshold**	**Timeout**
HTTP:80/index.html	4 consecutive health check successes	2 consecutive health check failures	2 seconds

Interval
5 seconds
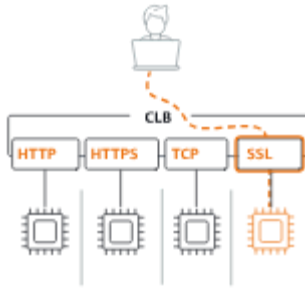
Step 5: Register EC2 Instances

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 ⬀

	Registration status	Instance ID	Name	State	Security groups
☑	⊘ Registered	i-03f98a54a0db89eab	instance-3	⊘ Running	launch-wizard-5
☑	⊘ Registered	i-073aba66090d43b44	instance-2	⊘ Running	launch-wizard-4
☑	⊘ 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

Load balancer type	**Status**	**VPC**
Classic	3 of 3 instances in service	vpc-086c1882be991b39e ⬀
Availability Zones	**Scheme**	**Hosted zone**
subnet-0bd5e57209d2e5943 ⬀ us-east-1e (use1-az3)	Internet-facing	Z35SXDOTRQ7X7K
subnet-0bb5d397b3bf8cb51 ⬀ us-east-1d (use1-az4)		
subnet-0a2fd496038b5cddb ⬀ us-east-1c (use1-az2)	**Date created**	
	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 ✕	launch-wizard-3 ✕
sg-073cec2e09f454fd7 VPC: vpc-086c1882be991b39e	sg-0d4238daf6f509f98 VPC: vpc-086c1882be991b39e
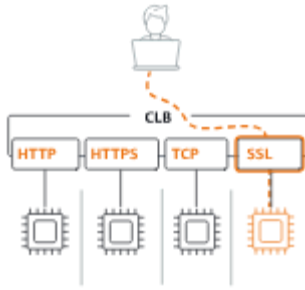
Step 7: Test the Load Balancer

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