

EC2 with ELB and ASG

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

1. First of all we create a new EC2 instance with these security groups options

▼ **Network settings** [Info](#)

Edit

Network [Info](#)

vpc-09def53eb1315ff84

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

Common security groups [Info](#)

Select security groups ▼

launch-wizard-4 sg-05211595e749df26c ✕

VPC: vpc-09def53eb1315ff84


 [Compare security group rules](#)

Security groups that you add or remove here will be added to or removed from all your network interfaces.

2. Use these code for a simple web page in User data option of advanced details.

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 World !!!!!!! $(hostname -f)</h1>" >
/var/www/html/index.html
```

3. I launched 3 instances for load balancer

[EC2](#) > ... > **Launch an instance**

Number of instances
Info

3

When launching more than 1 instance, [consider EC2 Auto Scaling](#)

Virtual server type (instance type)

t2.micro

Firewall (security group)

launch-wizard-4

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

×

Cancel

Launch instance

[Review commands](#)

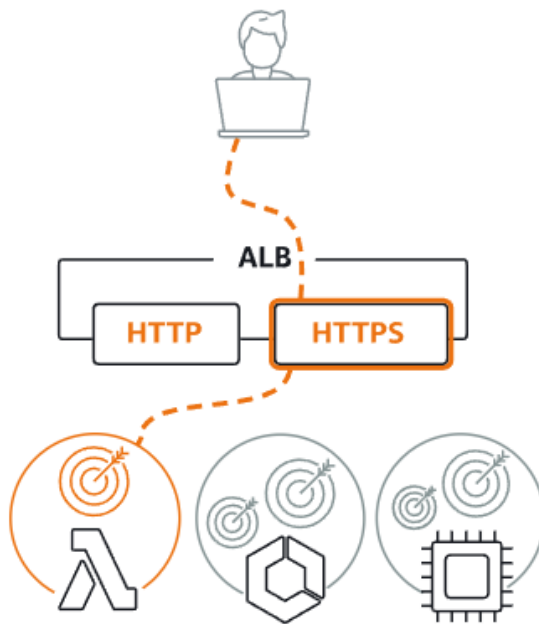
4. Now we can see that our instance is on pending state. It runs itself in a while.

Instances (6) Info							
<div> <input type="text"/> Find Instance by attribute or tag (case-sensitive) </div>							
<div> Any state </div>							
<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>		i-058abd7acd33aece9	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1c
<input type="checkbox"/>	Advancelabtest	i-0da1165230ecf43e6	Pending	t2.micro	–	View alarms +	us-east-1c
<input type="checkbox"/>	Advancelabtest	i-0ca74a91ec712f6c8	Pending	t2.micro	–	View alarms +	us-east-1c
<input type="checkbox"/>	Advancelabtest	i-0012ad7a0374d459a	Pending	t2.micro	–	View alarms +	us-east-1c
<input type="checkbox"/>	VPC WEB SER...	i-0c75ca4e3bb75b767	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a

5. On the left we can see load balancer option in the control panel. So we have to choose ALB and create that.

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

6. These are the steps to create the 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.

Advance_Lab_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-09def53eb1315ff84
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-az6)**

Subnet

subnet-032ed79b60b21f5b5

IPv4 address


Assigned by AWS

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 

default 

sg-0c43c1c9e3730ef60 VPC: vpc-09def53eb1315ff84



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

1-65535

Forward to

Test

HTTP ▼

Target type: Instance, IPv4



[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](#)

6. Now we can see that our load balancer is created.

☑ **Successfully created load balancer: Advance-Lab-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](#) > Advance-Lab-LB

Advance-Lab-LB



Actions ▼

▼ Details

Load balancer type
Application

Status
🔄 Provisioning

VPC
[vpc-09def53eb1315ff84](#)

IP address type
IPv4

Scheme
Internet-facing

Hosted zone
Z35SXDOTRQ7X7K

Availability Zones
[subnet-07039442c117720b2](#) us-east-1f (use1-az5)
[subnet-0bb13e5ea1d69729f](#) us-

Date created
February 23, 2024, 08:51 (UTC+05:45)

7. After this whenever we click on the dns. We get the following results. Also with each refresh we can see that the IP address keeps changing.

Hello World from ip-172-31-43-203.ec2.internal

This way Aws load balancer works on the requests and changes servers accordingly.