



- 1.
2. Create the application load balancer security group
  - a. Allow HTTP inbound from every where
  - b. Allow HTTP outbound to the php server security group

EC2 > Security Groups > Create security group

Create security group info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

Security group name info

alb

Name cannot be edited after creation.

Description info

Allow HTTP to Alb

VPC info

vpc-0590e16401d2f18dc

Inbound rules info

Type info

HTTP

Protocol info

TCP

Port range info

80

Source info

Anywh...

0.0.0.0/0

0.0.0.0/0

Description - optional info

Delete

Add rule

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

Outbound rules info

Type info

HTTP

Protocol info

TCP

Port range info

80

Destination info

Custom

sg-092035bd472d0a58e

sg-092035bd472d0a58e

Description - optional info

Delete

Add rule

Tags - optional

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags

Cancel

Create security group

3. Create target group called php-servers
  - a. Add the php-server to it

# Create target group

A target group can be made up of one or more targets. Your load balancer routes requests to the targets in a target group and performs health checks on the targets.

## Settings - immutable

Choose a target type and the load balancer and listener will route traffic to your target. These settings can't be modified after target group creation.

### Target type

Indicate what resource type you want to target. Only the selected resource type can be registered to this target group.

☒ **Instances**

Supports load balancing to instances in a VPC. Integrate with Auto Scaling Groups or ECS services for automatic management.

Suitable for: ALB NLB GWLB

☐ **IP addresses**

Supports load balancing to VPC and on-premises resources. Facilitates routing to IP addresses and network interfaces on the same instance. Supports IPv6 targets.

Suitable for: ALB NLB GWLB

☐ **Lambda function**

Supports load balancing to a single Lambda function. ALB required as traffic source.

Suitable for: ALB

☐ **Application Load Balancer**

Allows use of static IP addresses and PrivateLink with an Application Load Balancer. NLB required as traffic source.

Suitable for: NLB

### Target group name

Name must be unique per Region per AWS account.

php-servers

Accepts: a-z, A-Z, 0-9, and hyphen (-). Can't begin or end with hyphen. 1-32 total characters; Count: 11/32

### Protocol

Protocol for communication between the load balancer and targets.

HTTP

### Port

Port number where targets receive traffic. Can be overridden for individual targets during registration.

80

1-65535

### IP address type

Only targets with the indicated IP address type can be registered to this target group.

☒ **IPv4**

Each instance has a default network interface (eth0) that is assigned the primary private IPv4 address. The instance's primary private IPv4 address is the one that will be applied to the target.

☐ **IPv6**

Each instance you register must have an assigned primary IPv6 address. This is configured on the instance's default network interface (eth0). [Learn more](#)

### VPC

Select the VPC with the instances that you want to include in the target group. Only VPCs that support the IP address type selected above are available in this list.

vpc-0590e16401d2f18dc  
10.0.0.0/16



Create VPC

### 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.

### Register targets - *recommended*

This is an optional step to create a target group. However, to ensure that your load balancer routes traffic to this target group you must register your targets.

#### Available instances (1/2)

1

<input checked="" type="checkbox"/>	Instance ID	Name	State	Security groups	Zone	Private IPv4 address
<input checked="" type="checkbox"/>	i-03d9a03acc46ea905		Running	allow_http	us-east-1a	10.0.3.19
<input type="checkbox"/>	i-023df78e8575b199b	NAT Instance	Running	nat_sg	us-east-1a	10.0.1.150

1 selected

Ports for the selected instances

Ports for routing traffic to the selected instances.

1-65535 (separate multiple ports with commas)

Include as pending below

1 selection is now pending below. Include more or register targets when ready.

#### Review targets

Targets (1)

Show only pending

1

Remove all pending

Instance ID	Name	Port	State	Security groups	Zone	Private IPv4 address	Subnet ID	Launch time
<a href="#">i-03d9a03acc46ea905</a>		80	Running	allow_http	us-east-1a	10.0.3.19	subnet-0da95a09ad1eca04b	November 29, 2025, 19:26

1 pending

Cancel

Previous

Next

4. Create internet facing alb in the correct vpc and correct **public** subnets and correct sg and select all public subnets, create a listener on port HTTP And add the php-server target group as a target for it
  - a. Wait until it's state is active

my-alb

Actions ▾

▼ Details

Load balancer type

Application

Status

⌚ Provisioning

VPC

[vpc-0590e16401d2f18dc](#)

Load balancer IP address type

IPv4

Scheme

Internet-facing

Hosted zone

Z35SXDOTRQ7X7K

Availability Zones

[subnet-0dca7e547d01266a1](#) us-east-1b (use1-az4)  
[subnet-0da95a09ad1eca04b](#) us-east-1a (use1-az2)

Date created

November 29, 2025, 19:50 (UTC+02:00)

Load balancer ARN

[arn:aws:elasticloadbalancing:us-east-1:017693695950:loadbalancer/app/my-alb/80a6c96bb9232ade](#)

DNS name [Info](#)

[my-alb-572130894.us-east-1.elb.amazonaws.com](#) (A Record)

Listeners and rules

Network mapping

Resource map

Security

Monitoring

Integrations

Attributes

Capacity

Tags

Listeners and rules (1) [Info](#)

Manage rules ▾

Manage listener ▾

Add listener

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.

< 1 >

<input type="checkbox"/>	Protocol:Port ▾	Default action ▾	Rules ▾	ARN ▾	Security policy ▾	Default SSL/TLS certificate ▾	mTLS
<input type="checkbox"/>	<a href="#">HTTP:80</a>	<div>• Forward to target group</div> <div><a href="#">php-servers</a> : 1 (100%)</div> <div>Target group stickiness: Off</div>	<a href="#">1 rule</a>	ARN	Not applicable	Not applicable	Not applicat

5. Create a subnet group with the third tier subnets (10.0.5.0/24, 10.0.6.0/24)
6. Create RDS database
  - a. Engine type: MYSQL
  - b. Template free tier ( single AZ DB )
  - c. DB identifier with your choice and master username “admin”
  - d. Choose a master password
  - e. Db.t3.micro db instance class
  - f. Connect to the php-server
  - g. Disable the public access



```
<?php
error_reporting(E_ALL);
ini_set('display_errors', 1);

$dbname = 'mysql'; // don't update this line
$dbuser = 'admin';
$dbpass = "";
$dbhost = "";

$link = mysqli_connect($dbhost, $dbuser, $dbpass) or die("Unable to Connect to '$dbhost'");
mysqli_select_db($link, $dbname) or die("Could not open the db '$dbname'");

$test_query = "SHOW TABLES FROM $dbname";
$result = mysqli_query($link, $test_query);

$tblCnt = 0;
while($tbl = mysqli_fetch_array($result)) {
    $tblCnt++;
}

if (!$tblCnt) {
    echo "Connected successfully<br />\n";
} else {
    echo "Connected successfully<br />\n";
}
?>
```