



- 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 <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>	Delete
HTTP	TCP	80	Anywhere...	0.0.0.0/0	X

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 <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Destination <small>Info</small>	Description - optional <small>Info</small>	Delete
HTTP	TCP	80	Custom	sg-092035bd472d0a58e	X

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)

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.

80
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)

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

1 pending

Remove all 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

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 (1) Info

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.

<input type="checkbox"/> Protocol:Port	<input type="checkbox"/> Default action	<input type="checkbox"/> Rules	<input type="checkbox"/> ARN	<input type="checkbox"/> Security policy	<input type="checkbox"/> Default SSL/TLS certificate	<input type="checkbox"/> mTLS
<input type="checkbox"/> HTTP:80	<ul style="list-style-type: none"> Forward to target group php-servers: 1 (100%) <small>Target group stickiness: Off</small>	1 rule	ARN	Not applicable	Not applicable	Not applicable

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

The screenshot shows the AWS RDS console for the database instance 'moustafa'. The top navigation bar includes 'Actions' and 'Modify' buttons. Below the summary, there are tabs for Connectivity & security, Monitoring, Logs & events, Configuration, Zero-ETL integrations, Maintenance & backups, Data migrations, and Tags. The Connectivity & security tab is selected.

Summary

DB identifier moustafa	Status Backing-up	Role Instance	Engine MySQL Community	Recommendations
CPU <div style="width: 16.30%;"></div>	Class db.t3.micro	Current activity <div style="width: 0%;"></div> 0 Connections	Region & AZ us-east-1a	

Connectivity & security

Endpoint & port	Networking	Security
Endpoint moustafa.ctwktvmb7a6i.us-east-1.rds.amazonaws.com	Availability Zone us-east-1a	VPC security groups rds-ec2-1 (sg-08baccc811dce44cb) Active
Port 3306	VPC vpc-0590e16401d2f18dc	Publicly accessible No
	Subnet group rds-ec2-db-subnet-group-1	Certificate authority Info rds-ca-rsa2048-g1
	Subnets subnet-0d417d7d66d8be026 subnet-07ef98778483dcae subnet-05c1fab24f0012bcd subnet-06ba1da71faaba437 subnet-0db91bc6589a9bdaf	Certificate authority date May 26, 2061, 02:34 (UTC+03:00)
	Network type IPv4	DB instance certificate expiration date November 29, 2026, 20:25 (UTC+02:00)

Connected compute resources (1) [Info](#)

Connections to compute resources that were created automatically by RDS are shown here. Connections to compute resources that were created manually aren't shown.

Resource identifier	Resource type	Availability Zone	VPC security group	Compute resource security group	Connected proxy
i-03d9a03acc46ea905	EC2 instance	us-east-1a	rds-ec2-1	ec2-rds-1	-

Proxies (0)

[Create proxy](#)

7. Connect to the php server
 - a. Switch to the root user (`sudo -i`)
 - b. Move to `/var/www/html`
 - c. Update the `php.index` file with the content below
 - d. Update the password and the hostname

```
<?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";
}
?>
```