

# Ec2, Load balancer, EIP & AMI exercise

## Create 1 ec2 instance with centos 6 AMI.

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start

My AMIs

AWS Marketplace

Community AMIs

Categories

All Categories

Software Infrastructure (155)

Developer Tools (7)

Business Software (5)

Operating System

All Linux/Unix

Amazon Linux (6)

CentOS (150)

CentOS 7 (x86\_64) - with Updates HVM

★★★★★ (44) | 1602 | Sold by CentOS.org

\$0.00/hr for software + AWS usage fees

Linux/Unix, CentOS 7 | 64-bit Amazon Machine Image (AMI) | Updated: 2/26/16

This is the Official CentOS 7 x86\_64 HVM image that has been built with a minimal profile, suitable for use in HVM instance types only. The image contains just enough packages to ...

More info

CentOS 6 (x86\_64) - with Updates HVM

★★★★★ (32) | 1602 | Sold by CentOS.org

\$0.00/hr for software + AWS usage fees

Linux/Unix, CentOS 6 | 64-bit Amazon Machine Image (AMI) | Updated: 2/26/16

This is the Official CentOS 6 x86\_64 HVM image that has been built with a minimal profile. The image contains just enough packages to run within AWS, bring up an SSH Server and ...

More info

CentOS 6.5 (x86\_64) - Release Media

★★★★★ (55) | 6.5 - 2013-12-01 | Sold by CentOS.org

Select

Select

Select

Feedback English

EC2 Managerer

Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types Current generation Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

Note: The vendor recommends using a t2.micro instance (or larger) for the best experience with this product.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input checked="" type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

Feedback English

EC2 Managerer

Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Review and Launch

**Step 3: Configure Instance Details**

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances	<input type="text" value="1"/>	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot Instances	
Network	<input type="text" value="vpc-9610c2f2 (default)"/>	<input type="button" value="Create new VPC"/>
Subnet	<input type="text" value="No preference (default subnet in any Availability Zone)"/>	<input type="button" value="Create new subnet"/>
Auto-assign Public IP	<input type="checkbox"/> Use subnet setting (Enable)	
IAM role	<input type="text" value="None"/>	
Shutdown behavior	<input type="checkbox"/> Stop	
Enable termination protection	<input type="checkbox"/> Protect against accidental termination	
Monitoring	<input type="checkbox"/> Enable CloudWatch detailed monitoring Additional charges apply.	
Tenancy	<input type="text" value="Shared - Run a shared hardware instance"/>	

[Advanced Details](#)

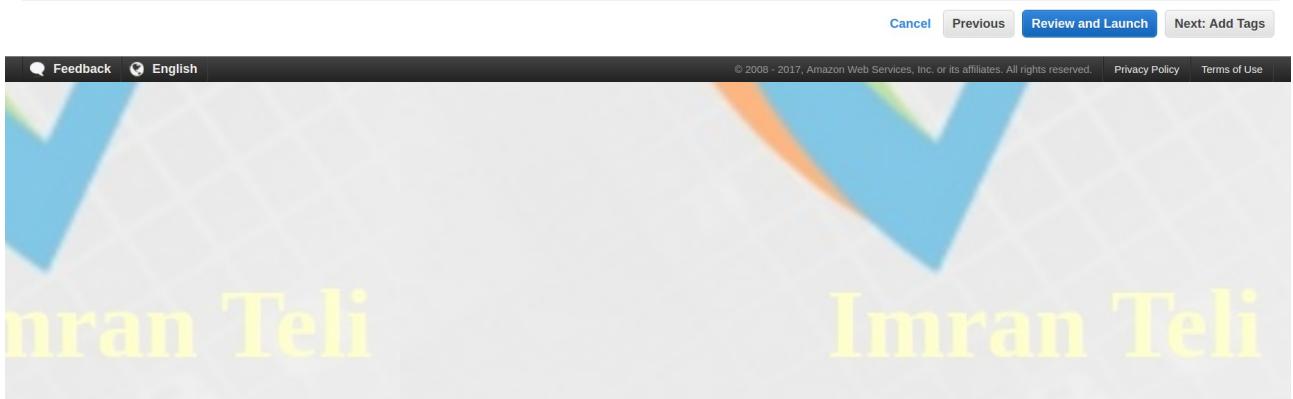
**Step 4: Add Storage**

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	snap-f711c830	<input type="text" value="8"/>	<input type="text" value="General Purpose SSD (GP2)"/>	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.





EC2 Management Console

https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard:

Services Resource Groups

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

**Step 5: Add Tags**

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. [Learn more](#) about tagging your Amazon EC2 resources.

Key	(127 characters maximum)	Value	(255 characters maximum)
Name		elbtestproj-web1	x

Add another tag (Up to 50 tags maximum)

Cancel Previous Review and Launch Next: Configure Security Group

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EC2 Management Console https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard:

Services Resource Groups

Imran N. California Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

**Step 6: Configure Security Group**

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group:  Create a new security group  Select an existing security group

Security group name: elbtestproj-SG

Description: elbtestproj-SG

Type (i)	Protocol (i)	Port Range (i)	Source (i)
SSH	TCP	22	My IP 183.82.216.42/32
HTTP	TCP	80	Anywhere 0.0.0.0/:/0

Add Rule

Cancel Previous Review and Launch

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**Step 7: Review Instance Launch**

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

**AMI Details**

**CentOS 6 (x86\_64) - with Updates HVM**  
Free tier eligible  
CentOS Linux 6 x86\_64 HVM EBS 1602  
Root Device Type: ebs Virtualization type: hvm

**Hourly Software Fees:** \$0.00 per hour on t2.micro instance (Additional taxes may apply.)  
Software charges will begin once you launch this AMI and continue until you terminate the instance.

By launching this product, you will be subscribed to this software and agree that your use of this software is subject to the pricing terms and the seller's End User License Agreement.

**Instance Type**

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

**Security Groups**

elbtestproj-SG  
elbtestproj-SG

Type Protocol Port Range Source

**Launch**

**Step 7: Review Instance Launch**

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

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**Instance Type**

Instance Type	ECUs	vCPUs
t2.micro	Variable	1

**Security Groups**

elbtestproj-SG  
elbtestproj-SG

**Select an existing key pair or create a new key pair**

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair  
Key pair name: elbtestproj-ncalifornia  
**Download Key Pair**

You have to download the **private key file (\*.pem file)** before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

**Launch Instances**

The screenshot shows the AWS EC2 Instances page. On the left sidebar, under the 'INSTANCES' section, 'Instances' is selected. The main content area displays a table with one row for the instance 'elbtestproj-web1'. The columns include Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS (IPv4), and IPv4 Pub. The instance details show it's an i2.micro type in us-west-1a, running, and initializing. Its public DNS is ec2-54-241-145-82.us-west-1.compute.amazonaws.com and its private IP is 54.241.145.82.

## Assign Elastic IP

Refer to above screenshot, the instance got a public IP but this IP is dynamic and changes after every reboot of the instance. We need to assign an Elastic IP to this instance which is static and does not change.

The screenshot shows the AWS Elastic IPs page. On the left sidebar, under the 'NETWORK & SECURITY' section, 'Elastic IPs' is selected. The main content area displays a message stating 'You do not have any Addresses in this region' and 'Click the Create Address button to create your first Address'. A large blue button labeled 'Allocate new address' is prominently displayed.

EC2 Management Home EC2 Management

https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#AllocateAddress:

Services Resource Groups

Addresses > Allocate new address

New address request succeeded

Elastic IP 52.8.24.26

Close

This screenshot shows the AWS EC2 Management console. A success message box is displayed, stating 'New address request succeeded' with an icon of a checkmark. Below it, the allocated Elastic IP is listed as 'Elastic IP 52.8.24.26'. At the bottom right of the message box is a 'Close' button.

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elbstest...pem

Show all

EC2 Management Home EC2 Management

https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#Addresssort=Publicip

Services Resource Groups

EC2 Dashboard

Events

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Volumes

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NETWORK & SECURITY

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LOAD BALANCING

Load Balancers

Target Groups

Allocate new address Actions

Release addresses

Associate address

Disassociate address

Move to VPC scope

Restore to EC2 scope

Instance Private IP address Scope Public DNS Network Interface ID

vpc

Elastic IP: 52.8.24.26

Description

Elastic IP 52.8.24.26 Allocation ID eipalloc-8a3d18b0

Feedback English

elbstest...pem

Show all

This screenshot shows the AWS EC2 Management console. On the left, a sidebar lists various services like EC2 Dashboard, Instances, and Security Groups. In the center, a table displays an allocated Elastic IP (52.8.24.26) with its details: Instance (vpc), Scope (Private IP address), Public DNS (eipalloc-8a3d18b0), and Network Interface ID (eipalloc-8a3d18b0). A context menu is open over the IP address, showing options: Release addresses, Associate address, Disassociate address, Move to VPC scope, and Restore to EC2 scope. At the bottom, a detailed view of the Elastic IP is shown with fields for Description, Elastic IP (52.8.24.26), Allocation ID (eipalloc-8a3d18b0), and Network Interface ID (eipalloc-8a3d18b0).

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https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#AssociateAddressPublicIp=52.8.24.26

Services Resource Groups

Addresses > Associate address

### Associate address

Select the instance OR network interface to which you want to associate this Elastic IP address (52.8.24.26)

Resource type  Instance  Network interface

Instance

Private IP	Instance ID	Name	State
i-0e240d9ab028759f1	i-0e240d9ab028759f1	elbtestproj-web1	running

Reassociation  Allow Elastic IP to be reassociated if already attached

**Warning**  
If you associate an Elastic IP address with your instance, your current public IP address is released. [Learn more.](#)

\* Required

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elbtest....pem

### Login to the instance

```
imran@DevOps:~/keys$ ssh -i elbtestproj-nocalifornia.pem centos@52.8.24.26
^C
imran@DevOps:~/keys$ ssh -i elbtestproj-nocalifornia.pem centos@52.8.24.26
The authenticity of host '52.8.24.26 (52.8.24.26)' can't be established.
RSA key fingerprint is SHA256:5UighbWQvFCVNtynq2oJgMCeL+n3ewbnG3AArnU6PaQo.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '52.8.24.26' (RSA) to the list of known hosts.
oooooooooooooooooooooooooooooooooooooooooooo
@         WARNING: UNPROTECTED PRIVATE KEY FILE!          @
oooooooooooooooooooooooooooooooooooooooooooo
Permissions 0664 for 'elbtestproj-nocalifornia.pem' are too open.
It is required that your private key files are NOT accessible by others.
This private key will be ignored.
Load key "elbtestproj-nocalifornia.pem": bad permissions
Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
imran@DevOps:~/keys$ chmod 400 elbtestproj-nocalifornia.pem
imran@DevOps:~/keys$ ssh -i elbtestproj-nocalifornia.pem centos@52.8.24.26
[centos@ip-172-31-4-195 ~]$ sudo -i
[root@ip-172-31-4-195 ~]#
```

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#### Install apache

```
yum install httpd
```

#### Start apache

```
service httpd start
```

#### Enable apache

```
chkconfig httpd on
```

#### Stop & Disable firewall

```
service iptables stop
```

```
chkconfig iptables off
```

#### Create a test webpage for apache.

```
cd /var/www/html/
```

```
vi index.html
```

```
<html>
  <head>
    <body>
      <h1>This is a test webpage.</h1>
    </body>
  </head>
</html>
```

#### Test the webpage

Enter the ec2 inst public IP in browser.

<http://52.8.24.26/>

#### AMI Creation

Create AMI of the instance which we will use to spin web02 instance.

Web02 instance is exactly similar to web01, so instead to creating new instance from scratch and setting up apache, we can create a AMI (image) of web01 instance and can spin as many as web instances we want.

EC2 Managerer EC2 Managerer

https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#instanceid=

Services Resource Groups

Launch Instance Connect Actions

Filter by tags and attributes or search

Name elbtestproj-web1

Instance Type t2.micro Availability Zone us-west-1a Instance State running Status Checks 2/2 checks p... Alarm Status None Public DNS (IPv4) ec2-52-8-24-26.us-west-1.compute.amazonaws.com IPv4 Pub

Connect Get Windows Password Launch More Like This Instance State Instance Settings Image Networking CloudWatch Monitoring Create Image Bundle Instance (instance store AMI)

Instances

Spot Requests Reserved Instances Dedicated Hosts

Images AMIs Bundle Tasks

Elastic Block Store Volumes Snapshots

Network & Security Security Groups Elastic IPs Placement Groups Key Pairs Network Interfaces

Load Balancing Load Balancers Target Groups

Feedback English

Instance: i-0e240d9ab028759f1 (elbtestproj-web1) Elastic IP: 52.8.24.26

Description Status Checks Monitoring Tags Usage Instructions

Instance ID i-0e240d9ab028759f1 Instance state running Instance type t2.micro Instance IP 52.8.24.26\* Availability zone us-west-1a Security groups elbtestproj-SG, view inbound rules Scheduled events No scheduled events AMI ID CentOS Linux 6 x86\_64 HVM EBS 1602-74e73035-3435-48d6-88e0-89cc02ad83ee-ami-21e6d54b.3 (ami-0f711c830)

Public DNS (IPv4) ec2-52-8-24-26.us-west-1.compute.amazonaws.com IPv4 Public IP 52.8.24.26 IPv6 IPs - Private DNS ip-172-31-4-195.us-west-1.compute.internal Private IPs 172.31.4.195 Secondary private IPs VPC ID vpc-9610c2f2 Subnet ID subnet-6e19a436

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EC2 Managerer EC2 Managerer

https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#instanceid=

Services Resource Groups

Launch Instance Connect Actions

Create Image

Instance ID i-0e240d9ab028759f1 Image name elbtestproj-web-ami Image description elbtestproj-web-ami No reboot

Instance Volumes

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	snapshot-f711c830	8	General Purpose SSD (GP2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

Total size of EBS Volumes: 8 GiB When you create an EBS image, an EBS snapshot will also be created for each of the above volumes.

Scheduled Events 100 scheduled events AMI ID CentOS Linux 6 x86\_64 HVM EBS 1602-74e73035-3435-48d6-88e0-89cc02ad83ee-ami-21e6d54b.3 (ami-0f711c830) Subnet ID subnet-6e19a436

Feedback English

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The screenshot shows the AWS EC2 Management Console. On the left, there's a navigation sidebar with links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Spot Requests, Reserved Instances, Dedicated Hosts, AMIs, and more. The main area displays a table of AMIs under the heading 'Owned by me'. One row is selected, showing the following details:

Name	AMI Name	AMI ID	Source	Owner	Visibility	Status	Creation Date	Platform	Root Device
elbtestproj-web...	ami-11015871	171225278948/el...	171225278948	Private	Pending	March 5, 2017 at 2:19:38 PM ...	Other Linux	ebs	

Below the table, a modal window titled 'Image: ami-11015871' is open, showing the 'Details' tab. It contains the following information:

AMI ID	AMI Name	Source
ami-11015871	elbtestproj-web-ami	171225278948/elbtestprojami

At the bottom of the page, there are links for Feedback, English, Privacy Policy, Terms of Use, and Show all.

### **Create web02 instance from elbtestproj-web-ami.**

Click on Launch instance --> My AMI --> Select our AMI --> Follow the wizard and create the instance similar to web01.

Tag Name: elbtestproj-web2

Security: Select existing security group --> elbtestproj-SG

Select an exiting key pair --> <same key used for web01>

Assign Elastic IP

### **Test the webpage**

Enter the ec2 inst public IP in browser.

<http://54.215.191.250/>

### **Load Balancer setup**

Click on Target group --> Create target Group --> Give a name --> click on Create

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https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#TargetGroups:

Services Resource Groups

IMAGES AMIs Bundle Tasks

ELASTIC BLOCK STORE Volumes Snapshots

NETWORK & SECURITY Security Groups Elastic IPs Placement Groups Key Pairs Network Interfaces

LOAD BALANCING Load Balancers Target Groups

AUTO SCALING Launch Configurations Auto Scaling Groups

SYSTEMS MANAGER SERVICES Run Command State Manager Automations Patch Baselines

SYSTEMS MANAGER SHARED RESOURCES

Create target group Actions

**Create target group**

Your load balancer routes requests to the targets in a target group using the protocol and port that you specify, and performs health checks on the targets using the health check settings that you specify.

**Target group name** elbtestproj-web-TG

**Protocol** HTTP

**Port** 80

**VPC** vpc-9610c2f2 (172.31.0.0/16) (My Default v)

**Health check settings**

**Protocol** HTTP

**Path** /

**Advanced health check settings**

Cancel Create

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Click Targets --> Edit --> Select web01 & web02 instance --> Add to registered --> Save

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https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#TargetGroups:

Services Resource Groups

IMAGES AMIs Bundle Tasks

ELASTIC BLOCK STORE Volumes Snapshots

NETWORK & SECURITY Security Groups Elastic IPs Placement Groups Key Pairs Network Interfaces

LOAD BALANCING Load Balancers Target Groups

AUTO SCALING Launch Configurations Auto Scaling Groups

SYSTEMS MANAGER SERVICES Run Command State Manager Automations Patch Baselines

SYSTEMS MANAGER SHARED RESOURCES

Create target group Actions

Filter: Search

Name	Port	Protocol	VPC ID	Monitoring
elbtestproj-web-TG	80	HTTP	vpc-9610c2f2	

**Target group: elbtestproj-web-TG**

Description Targets Health checks Monitoring Tags

The load balancer starts routing requests to a newly registered instance as soon as the registration process completes and the instance passes the initial health checks. If demand on your instances increases, you can register additional instances. If demand on your instances decreases, you can deregister instances.

Edit

**Registered instances**

Instance ID	Name	Port	Availability Zone	Status
i-01234567890abcdef	web01	80	us-west-2a	Up

There are no instances registered to this target group

**Availability Zones**

Availability Zone	Instance Count	Healthy?
us-west-2a	1	Healthy

There are no instances registered to this target group

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EC2 Management Console

EC2 Management Console

EC2 Management Console

https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#TargetGroups:

Services Resource Groups Actions

Register and deregister instances

Registered instances

To deregister instances, select one or more registered instances and then click Remove.

Remove

Instance	Name	Port	State	Security groups	Zone	Subnet ID	Subnet CIDR
i-0ad2a814386e38ab3	elbtestproj-web2	80	running	elbtestproj-SG	us-west-1a	subnet-6e19a436	172.31.0.0/20
i-0e240d9ab028759f1	elbtestproj-web1	80	running	elbtestproj-SG	us-west-1a	subnet-6e19a436	172.31.0.0/20

No instances available.

Instances

To register additional instances, select one or more running instances, specify a port, and then click Add. The default port is the port specified for the target group. If the instance is already registered on the specified port, you must specify a different port.

Add to registered on port 80

Search Instances

Instance	Name	State	Security groups	Zone	Subnet ID	Subnet CIDR
i-0ad2a814386e38ab3	elbtestproj-web2	running	elbtestproj-SG	us-west-1a	subnet-6e19a436	172.31.0.0/20
i-0e240d9ab028759f1	elbtestproj-web1	running	elbtestproj-SG	us-west-1a	subnet-6e19a436	172.31.0.0/20

Cancel Save

SYSTEMS MANAGER SHARED RESOURCES

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EC2 Management Console

EC2 Management Console

EC2 Management Console

https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#TargetGroups:

Services Resource Groups Actions

Register and deregister instances

Registered instances

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Remove

Instance	Name	Port	State	Security groups	Zone	Subnet ID	Subnet CIDR
i-0ad2a814386e38ab3	elbtestproj-web2	80	running	elbtestproj-SG	us-west-1a	subnet-6e19a436	172.31.0.0/20
i-0e240d9ab028759f1	elbtestproj-web1	80	running	elbtestproj-SG	us-west-1a	subnet-6e19a436	172.31.0.0/20

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Add to registered on port 80

Search Instances

Instance	Name	State	Security groups	Zone	Subnet ID	Subnet CIDR
i-0ad2a814386e38ab3	elbtestproj-web2	running	elbtestproj-SG	us-west-1a	subnet-6e19a436	172.31.0.0/20
i-0e240d9ab028759f1	elbtestproj-web1	running	elbtestproj-SG	us-west-1a	subnet-6e19a436	172.31.0.0/20

Cancel Save

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Click on Load Balancers in Left Pane  
Create Load Balancer

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Welcome to Elastic Load Balancing

Select load balancer type

Elastic Load Balancing supports two types of load balancers: Application Load Balancers (new) and Classic Load Balancers. Choose the load balancer type that meets your needs. [Learn more.](#)

Application Load Balancer       Classic Load Balancer

**Preferred for HTTP/HTTPS**

An Application Load Balancer makes routing decisions at the application layer (HTTP/HTTPS), supports path-based routing, and can route requests to one or more ports on each EC2 instance or container instance in your VPC.

**Classic Load Balancer**

A Classic Load Balancer makes routing decisions at either the transport layer (TCP/SSL) or the application layer (HTTP/HTTPS), and supports either EC2-Classic or a VPC.

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**Step 1: Configure Load Balancer**

### Basic Configuration

To configure your load balancer, provide a name, select a scheme, specify one or more listeners, and select a network. The default configuration is an Internet-facing load balancer in the selected network with a listener that receives HTTP traffic on port 80.

Name	<input type="text" value="elbtestproj-web-elb"/>
Scheme	<input checked="" type="radio"/> internet-facing <input type="radio"/> internal
IP address type	<input type="text" value="ipv4"/>

### Listeners

A listener is a process that checks for connection requests, using the protocol and port that you configured.

Load Balancer Protocol	Load Balancer Port
HTTP	80

[Add listener](#)

### Availability Zones

Specify the Availability Zones to enable for your load balancer. The load balancer routes traffic to the targets in these Availability Zones only. You can specify only one subnet per Availability Zone. You must specify subnets from at least two Availability Zones to increase the availability of your load balancer.

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**Step 1: Configure Load Balancer**

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Add listener

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VPC	vpc-9610c2f2 (172.31.0.0/16) (default)
<input type="checkbox"/>	Availability Zone
<input checked="" type="checkbox"/>	us-west-1a
<input checked="" type="checkbox"/>	us-west-1b
<input type="checkbox"/>	Subnet ID
<input checked="" type="checkbox"/>	subnet-6e19a436
<input checked="" type="checkbox"/>	subnet-8c264ae8
	Subnet IPv4 CIDR
	172.31.0.0/20
	172.31.16.0/20
Name	

At least two subnets must be specified

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**Step 2: Configure Security Settings**

**⚠ Improve your load balancer's security. Your load balancer is not using any secure listener.**

If your traffic to the load balancer needs to be secure, use the HTTPS protocol for your front-end connection. You can go back to the first step to add/configure secure listeners under Basic Configuration section. You can also continue with current settings.

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**Step 3: Configure Security Groups**

A security group is a set of firewall rules that control the traffic to your load balancer. On this page, you can add rules to allow specific traffic to reach your load balancer. First, decide whether to create a new security group or select an existing one.

Assign a security group:  Create a **new** security group  Select an **existing** security group

Security group name: elbtestproj-elb-SG

Description: elbtestproj-elb-SG

Type	Protocol	Port Range	Source
Custom TCP Rule	TCP	80	Anywhere 0.0.0.0/:/0

**Add Rule**

**Step 4: Configure Routing**

Your load balancer routes requests to the targets in this target group using the protocol and port that you specify, and performs health checks on the targets using these health check settings. Note that each target group can be associated with only one load balancer.

**Target group**

Target group	Existing target group
Name	elbtestproj-web-TG
Protocol	HTTP
Port	80

**Health checks**

Protocol	HTTP
Path	/

► Advanced health check settings

**Step 5: Register Targets**

Register targets with your target group. If you register an instance running in an enabled Availability Zone, the load balancer starts routing requests to the instance as soon as the registration process completes and the instance passes the initial health checks.

**Registered instances**

The following instances are registered with the target group that you selected. You can only modify this list after you create the load balancer.

Instance	Port
i-0ad2a814386e38ab3	80
i-0e240d9ab028759f1	80

**Step 6: Review**

Please review the load balancer details before continuing

**Load balancer**

- Name: elbtestproj-web-elb
- Scheme: internet-facing
- Listeners: Port:80 - Protocol:HTTP
- IP address type: VPC
- Subnets:
- Tags:

**Security settings**

- Certificate name:
- Security policy name:

**Security groups**

- Security groups:

**Routing**

- Target group: Existing target group
- Target group name: elbtestproj-web-TG
- Port: 80
- Protocol:
- Health check protocol:
- Path:

**Validate the Load Balancer:**  
Enter Load Balancers DNS name in the browser to test the connection  
<http://elbtestproj-web-elb-289295805.us-west-1.elb.amazonaws.com/>

If everything is good you will see webpages from web01 and web02 instances.

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