

Yeshwanth Chuahan

Application layer load balancer

Create two subnets in different AZ in a single VPC

Create two machines and download HTTPD

- Sudo yum install httpd
- Sudo yum start HTTPD
- Sudo systemctl status HTTPD

To put a file in the ec2 machine

Sudo vi /var/www/html/index.html

Create load balancer

- Internet-facing
- IPv4
- Select vpc
- Security groups
- Listeners and routing (now here create a target and select both the machines and attach)

Go to load balancer and launch and open the link and you'll be getting the link to login and you could see how the load balancer is spreading the traffic between two ec2s

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Instances (1/4)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IPv6 IPs
DefaultInstance	i-058a65ec1a0311c29	Terminated	t2.micro	-	No alarms	us-east-1a	-	-	-	-
<DEFAULT-MACHINE>	i-02a684fa30f53df0a	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a	ec2-3-88-71-150.comp...	3.88.71.150	-	-
<checkmachine>	i-02b79d1722ecf3310	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-44-212-52-180.co...	44.212.52.180	-	-
machine2	i-0472a6480f81d41c	Terminated	t2.micro	-	No alarms	us-east-1b	-	-	-	-

Instance: i-02a684fa30f53df0a (<DEFAULT-MACHINE>)

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

Instance summary

Instance ID: i-02a684fa30f53df0a (<DEFAULT-MACHINE>)

Public IPv4 address: 3.88.71.150 | [open address](#)

Instance state: **Running**

Private IP DNS name (IPv4 only): ip-172-32-0-110.ec2.internal

Instance type: t2.micro

VPC ID: vpc-080510ce70db5ada9 (VPC1)

Subnet ID: subnet-0b374219184e075a3 (Sub1)

Platform: Amazon Linux (Inferred)

AMI ID: ami-005f9685cb30f234b

Monitoring: disabled

Instances (1/4)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IPv6 IPs
DefaultInstance	i-058a65ec1a0311c29	Terminated	t2.micro	-	No alarms	us-east-1a	-	-	-	-
<checkmachine>	i-02b79d1722ecf3310	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-44-212-52-180.co...	44.212.52.180	-	-
machine2	i-0472a6480f81d41c	Terminated	t2.micro	-	No alarms	us-east-1b	-	-	-	-

Instance: i-02b79d1722ecf3310 (<checkmachine>)

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

Instance summary

Instance ID: i-02b79d1722ecf3310 (<checkmachine>)

Public IPv4 address: 44.212.52.180 | [open address](#)

Instance state: **Running**

Private IP DNS name (IPv4 only): ip-172-32-1-34.ec2.internal

Instance type: t2.micro

VPC ID: vpc-080510ce70db5ada9 (VPC1)

Subnet ID: subnet-088bee14f291a25c8 (sub02)

Platform: Amazon Linux (Inferred)

AMI ID: ami-005f9685cb30f234b

Monitoring: disabled

The image displays two screenshots from a desktop environment, likely a Windows machine, showing AWS management and terminal activities.

Top Screenshot: AWS Management Console - Security Groups

The browser window shows the AWS Management Console for the `us-east-1` region. The left sidebar lists various services, with **Network & Security** expanded and **Security Groups** selected. The main content area shows a list of Security Groups:

Name	Security group ID	Security group name	VPC ID	Description	Owner	Inbound rules count	Outbound rules count
default	sg-0c6dfb3d0b97073c9	default	vpc-080510ce70db5ada9	default VPC security gr...	471963814578	3 Permission entries	1 Permission entry

Below the list, the details for the `sg-0c6dfb3d0b97073c9 - default` Security Group are shown. The **Inbound rules** tab is active, displaying a table of inbound rules:

Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
-	sg-0869539fc8b846310	IPv4	HTTP	TCP	80	0.0.0.0/0	-
-	sg-0ae1e197bda7392...	IPv4	NFS	TCP	2049	0.0.0.0/0	-
-	sg-0335644a3ef965479	IPv4	SSH	TCP	22	0.0.0.0/0	-

Bottom Screenshot: AWS Management Console - Terminal

The browser window shows the AWS Management Console for the `us-east-1` region. The left sidebar lists various services, with **Network & Security** expanded and **Security Groups** selected. The main content area shows a terminal session for an Amazon Linux 2 AMI. The terminal output shows the user logging in, running `sudo systemctl start httpd`, and checking the status of the `httpd` service. The service is shown as loaded and active, with the status `active (running)`. The user then runs `man httpd.service(8)` and `ps aux | grep httpd`, showing the status of the `httpd` process.

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The screenshot displays the AWS Management Console interface. The top section shows a terminal window for an EC2 instance (i-02b79d1722ecf3310) in the us-east-1 region. The terminal output shows the user logging in, running 'systemctl start httpd' and 'systemctl status httpd', and then 'ss -tlnpt'. The output indicates that the Apache HTTP service is active and listening on port 80. Below the terminal, the instance's public IP is 44.212.52.180 and the private IP is 172.32.1.34.

The bottom section shows the 'Load balancers' page in the EC2 console. It lists one load balancer named 'application-lao-d-balancer' in the 'us-east-1' region. The load balancer is in an 'Active' state and is associated with the VPC 'vpc-080510ce70db5ada9'. The 'Details' tab is selected, showing the following information:

Property	Value
Load balancer type	Application
DNS name	application-lao-d-balancer-2074208565.us-east-1.elb.amazonaws.com (A Record)
Status	Active
VPC	vpc-080510ce70db5ada9
IP address type	IPv4
Scheme	Internet-facing
Availability Zones	subnet-0b374219184e075e1 (us-east-1a (use1-a26)) subnet-088bee14f291a25c6 (us-east-1b (use1-az1))
Hosted zone	Z355XD0TRQ7X7K
Date created	March 11, 2023, 15:03 (UTC+05:30)

Load balancers (1/1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Name	DNS name	State	VPC ID	Availability Zones	Type	Date created	Instance ID
application-lao-d-balancer	application-lao-d-balancer...	Active	vpc-080510ce70db5ada9	2 Availability Zones	application	March 11, 2023, 15:03 (UTC+05:30)	-

Load balancer: application-lao-d-balancer

Listeners (1/1)

A listener checks for connection requests on its port and protocol. Traffic received by the listener is routed according to its rules.

Protocol/Port	ARN	Security policy	Default SSL cert	Default routing rule	Rules	Tags
HTTP:80	ARN	Not applicable	Not applicable	1. Forward to target1 (100%) Group-level stickiness: Off	1	0

Load balancer: application-lao-d-balancer

Network mapping

Targets in the listed zones and subnets are available for traffic from the load balancer using the IP addresses shown.

VPC: vpc-080510ce70db5ada9
IPv4: 172.32.0.0/16
IPv6: -

IP address type: IPv4

Mappings

Selecting two or more Availability Zones and corresponding subnets increases the fault tolerance of your applications.

Zone	Subnet	IPv4 address	Private IPv4 address	IPv6 address
us-east-1a (use1-a2f)	subnet-0b574219184e075e3	Assigned by AWS	Assigned from CIDR 172.32.0.0/24	Not applicable
us-east-1b (use1-a21)	subnet-088bee14f291a25c8	Assigned by AWS	Assigned from CIDR 172.32.1.0/24	Not applicable

Load balancers (1/1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter by property or value

Name	DNS name	State	VPC ID	Availability Zones	Type	Date created	Instance ID
application-lao-d-balancer	application-lao-d-balancer...	Active	vpc-080510ce70db5ada9	2 Availability Zones	application	March 11, 2023, 15:03 (UTC+05:30)	-

Load balancer: application-lao-d-balancer

Details | Listeners | Network mapping | **Security** | Monitoring | Integrations | Attributes | Tags

Security groups (1)

A security group is a set of firewall rules that control the traffic to your load balancer.

Edit

Security Group ID	Name	Description
sg-0c6f83d0b97073c9	default	default VPC security group

Target groups (1/1) info

Search or filter target groups

Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
target1	arn:aws:elasticloadbalancing...	80	HTTP	Instance	application-lao-d-balancer	vpc-080510ce70db5ada9

Target group: target1

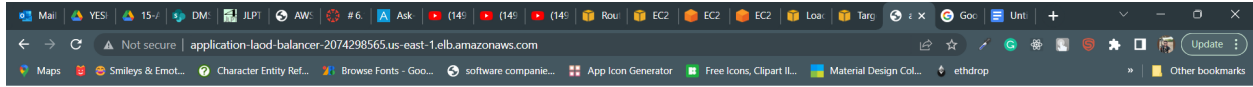
Details | **Targets** | Monitoring | Health checks | Attributes | Tags

Registered targets (2)

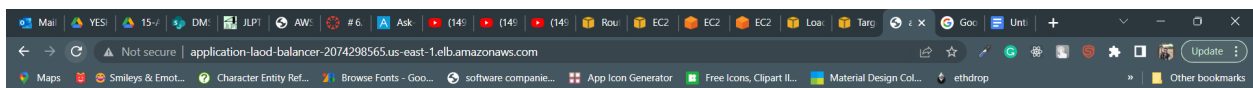
Filter resources by property or value

Instance ID	Name	Port	Zone	Health status	Health status details
i-02a684fa30f53df0a	<DEFAULT-MACHINE>	80	us-east-1a	healthy	
i-02b79d1722ecf3310	<checkmachine>	80	us-east-1b	healthy	

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Hi yesh welcome to Instance 1



Hello yesh this is machin 2

