Amazon-ELB 4: Create ALB & create an rule Task1

Problem Statement:

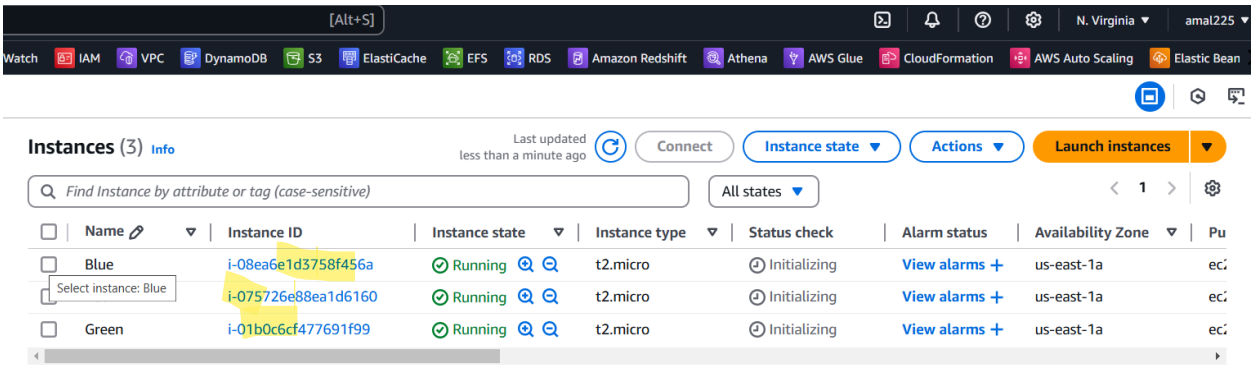
You work for XYZ Corporation that uses on premise solutions and some limited number of systems. With the increase in requests in their application, the load also increases. So, to handle the load the corporation has to buy more systems almost on a regular basis. Realizing the need to cut down the expenses on systems, they decided to move their infrastructure to AWS.

Tasks To Be Performed:

1. Create a Application Load Balancer and register 3 EC2 instances with different web pages running in them.
2. Change the path of one instance and create rule in ALB for that instance.

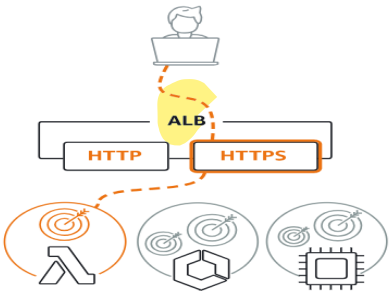
Solution:

1. Create an 3 EC2 instance .



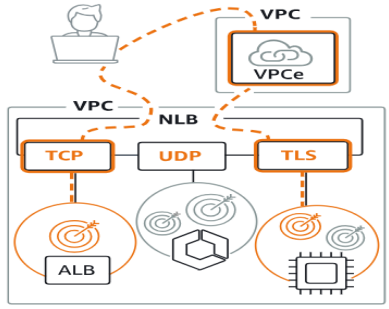
2. Create an ALB and register 3 EC2 instance .

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

Network Load Balancer Info



Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your applications. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per

Gateway Load Balancer Info

Choose a Gateway Load Balancer whe need to deploy and manage a fleet of party virtual appliances that support These appliances enable you to impro security, compliance, and policy contr

Create

Basic configuration

Load balancer name

Name must be unique within your AWS account and can't be changed after the load balancer is created.

ALB

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
  - Serves internet-facing traffic.
  - Has public IP addresses.
  - DNS name is publicly resolvable.
  - Requires a public subnet.
- ( ) Internal
  - Serves internal traffic.
  - Has private IP addresses.
  - DNS name is not publicly resolvable.
  - Compatible with the **IPv4** and **Dualstack** IP address types

Load balancer IP address type | Info

Select the front-end IP address type to assign to the load balancer. The VPC and subnets mapped to this load balancer must include the selected

- (•) IPv4
  Includes only IPv4 addresses.
- ( ) Dualstack
  Includes IPv4 and IPv6 addresses.
- ( ) Dualstack without public IPv4
  Includes a public IPv6 address, and private IPv4 and IPv6 addresses. Compatible with **internet-facing** load balancers only.

Network mapping Info

The load balancer routes traffic to targets in the selected subnets, and

VPC | Info

The load balancer will exist and scale within the selected VPC. The selected VPC is VPC for your targets, view target groups. For a new VPC, create a VPC.

–
vpc-067409b5122bc64b5
IPv4 VPC CIDR: 172.31.0.0/16

Mappings | Info

Select at least two Availability Zones and one subnet per zone. The load balancer available for selection.

Availability Zones

- [x] **us-east-1a (use1-az4)**
  Subnet
  subnet-0fdc5ebe24470e0f6
  IPv4 subnet CIDR: 172.31.16.0/20
  IPv4 address
  Assigned by AWS
- [x] **us-east-1b (use1-az6)**
  Subnet
  subnet-08111d730b4302696
  IPv4 subnet CIDR: 172.31.32.0/20

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 determ registered targets.

▼ Listener **HTTP:80**

Protocol	Port	Default action Info
HTTP	80 (1-65535)	Forward to: Select a target group

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

You can add up to 50 more tags.

Add listener

Basic configuration

Settings in this section can't be changed after the target group

Choose a target type

- (●) **Instances**
  - Supports load balancing to instances within a specific VPC
  - Facilitates the use of Amazon EC2 Auto Scaling to mar
- ( ) **IP addresses**
  - Supports load balancing to VPC and on-premises resource
  - Facilitates routing to multiple IP addresses and network in
  - Offers flexibility with microservice based architectures, sin
  - Supports IPv6 targets, enabling end-to-end IPv6 commun
- ( ) **Lambda function**
  - Facilitates routing to a single Lambda function.
  - Accessible to Application Load Balancers only.
- ( ) **Application Load Balancer**
  - Offers the flexibility for a Network Load Balancer to accep
  - Facilitates using static IP addresses and PrivateLink with a

Target group name

TG1

A maximum of 32 alphanumeric characters including hyphens are allowed, bu

Protocol : Port

Choose a protocol for your target group that corresponds to the Load Balanc and you can set mitigation options once your target group is created. This ch

HTTP

IP address type

Only targets with the indicated IP address type can be registered to this targ

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

( ) **IPv6**
Each instance you register must have an assigned primary IPv6 address. default network interface (eth0). Learn more

VPC

Select the VPC with the instances that you want to include in the target grou

–
vpc-067409b5122bc64b5
IPv4 VPC CIDR: 172.31.0.0/16

Protocol version

HTTP1

Health check protocol

HTTP

Health check path

Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred.

/

Up to 1024 characters allowed.

▶ **Advanced health check settings**

Attributes

Certain default attributes will be applied to your target group. You can view and edit them after creating the target group.

▶ **Tags - *optional***

Consider adding tags to your target group. Tags enable you to categorize your AWS resources so you can more easily manage them.

Cancel Next

Register targets

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 (3)

Filter instances

1

Instance ID	Name	State	Security groups	Zone
i-075726e88ea1d6160	Red	Running	launch-wizard-54	us-east-1a
i-01b0c6cf477691f99	Green	Running	launch-wizard-54	us-east-1a
i-08ea6e1d3758f456a	Blue	Running	launch-wizard-54	us-east-1a

0 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

Review targets

Targets (3)

Remove all pending

Filter targets

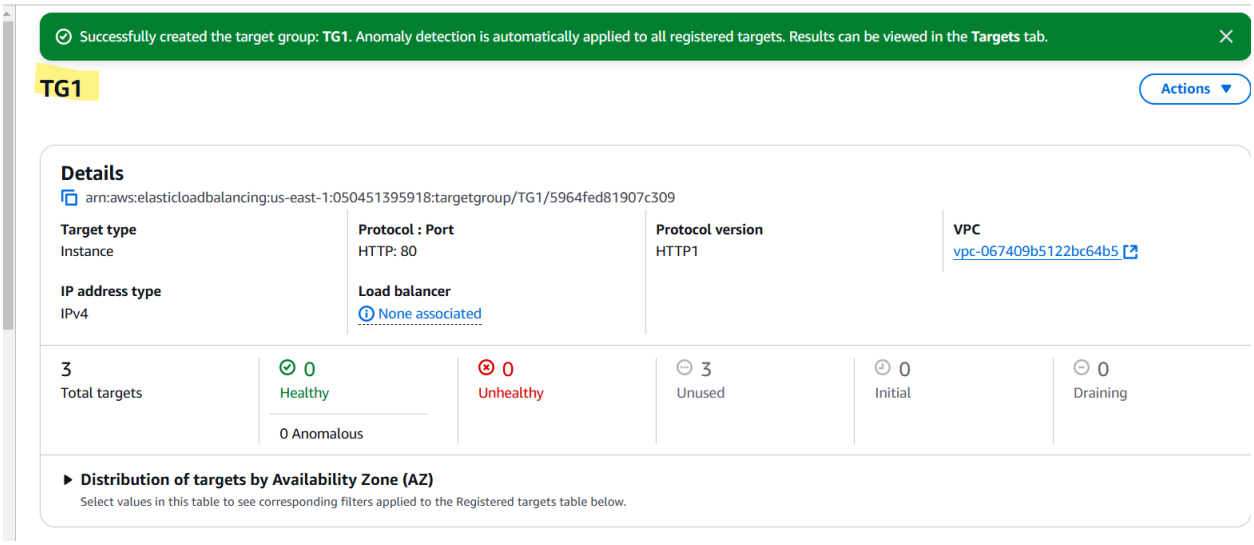
Show only pending

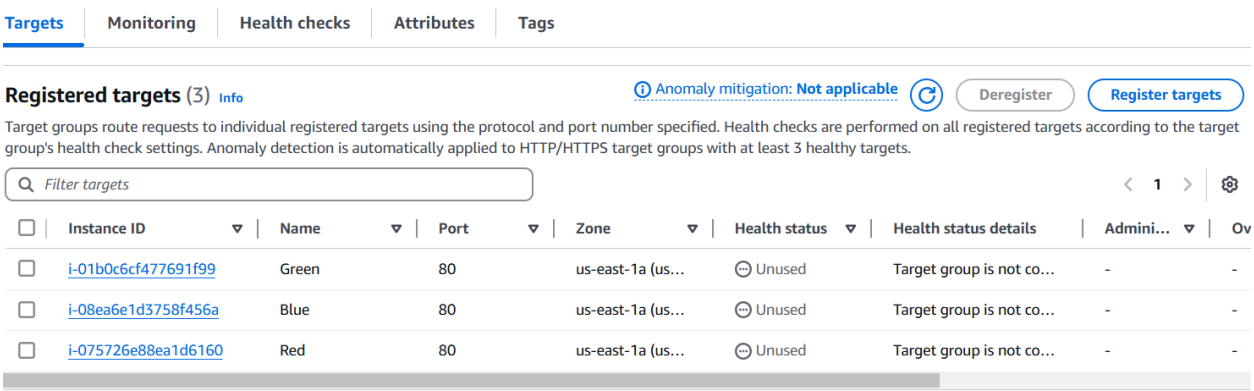
1

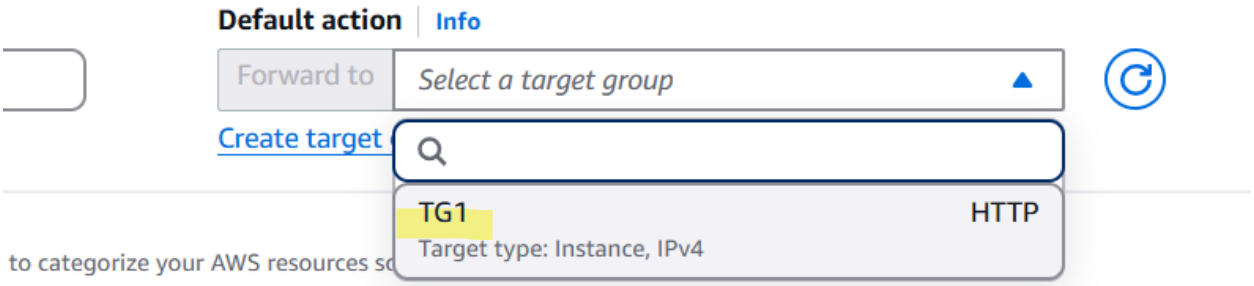
Instance ID	Name	Port	State	Security groups	Zone	Private IPv4 address	Subnet ID
i-075726e88ea1d6160	Red	80	Running	launch-wizard-54	us-east-1a	172.31.19.99	subnet-0fdc5ebe24470e0f6
i-01b0c6cf477691f99	Green	80	Running	launch-wizard-54	us-east-1a	172.31.30.167	subnet-0fdc5ebe24470e0f6
i-08ea6e1d3758f456a	Blue	80	Running	launch-wizard-54	us-east-1a	172.31.18.6	subnet-0fdc5ebe24470e0f6

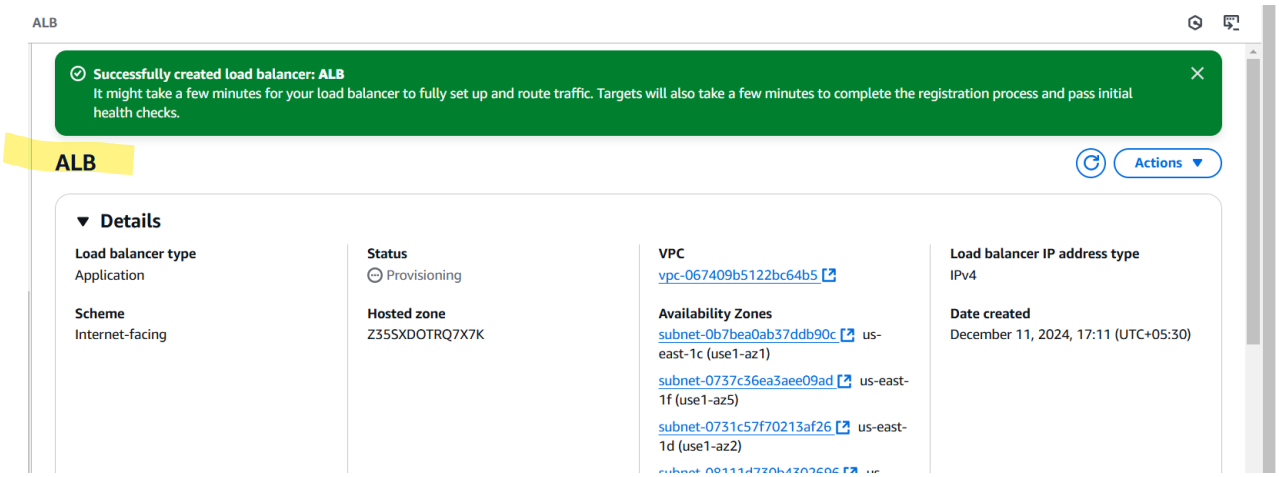
3 pending

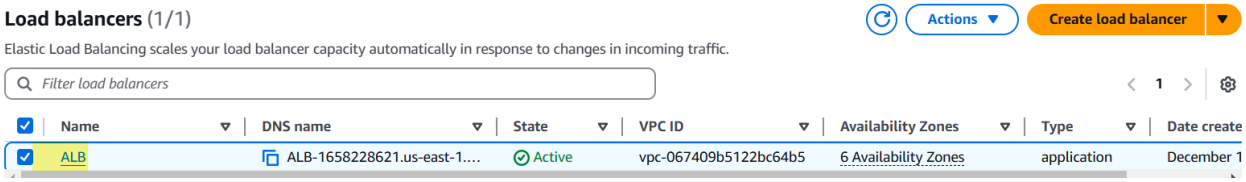
Cancel Previous Create target group

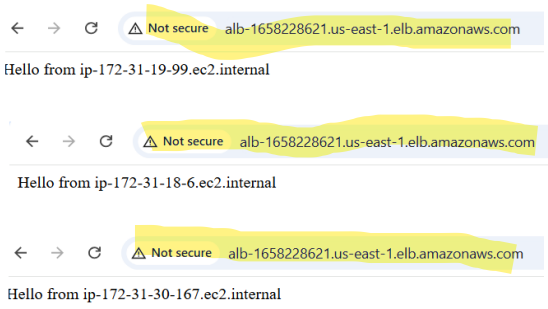

Successfully created the target group: TG1. Anomaly detection is automatically applied to all registered targets. Results can be viewed in the Targets tab.
TG1
Actions
Details
arn:aws:elasticloadbalancing:us-east-1:050451395918:targetgroup/TG1/5964fed81907c309
Target type
Instance
Protocol : Port
HTTP: 80
Protocol version
HTTP1
VPC
vpc-067409b5122bc64b5
IP address type
IPv4
Load balancer
None associated
3
Total targets
0
Healthy
0 Anomalous
0
Unhealthy
3
Unused
0
Initial
0
Draining
Distribution of targets by Availability Zone (AZ)
Select values in this table to see corresponding filters applied to the Registered targets table below.


Targets
Monitoring
Health checks
Attributes
Tags
Registered targets (3) Info
Anomaly mitigation: Not applicable
Deregister
Register targets
Target groups route requests to individual registered targets using the protocol and port number specified. Health checks are performed on all registered targets according to the target group's health check settings. Anomaly detection is automatically applied to HTTP/HTTPS target groups with at least 3 healthy targets.
Filter targets
1
Instance ID
Name
Port
Zone
Health status
Health status details
Admini...
Ov
i-01b0c6cf477691f99
Green
80
us-east-1a (us...
Unused
Target group is not co...
-
-
i-08ea6e1d3758f456a
Blue
80
us-east-1a (us...
Unused
Target group is not co...
-
-
i-075726e88ea1d6160
Red
80
us-east-1a (us...
Unused
Target group is not co...
-
-


Default action
Info
Forward to
Select a target group
Create target
TG1
HTTP
Target type: Instance, IPv4
to categorize your AWS resources







3. Change the path of one instance and create rule in ALB for that instance.

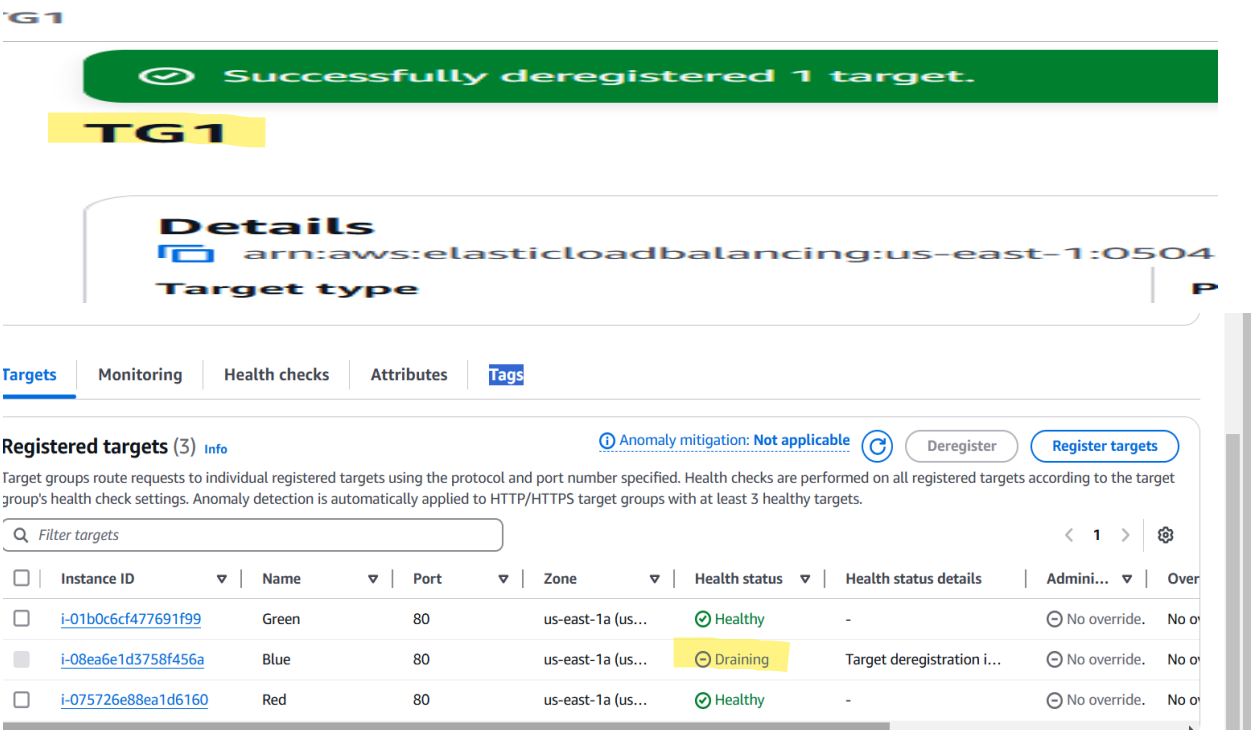
Change the path of instance .

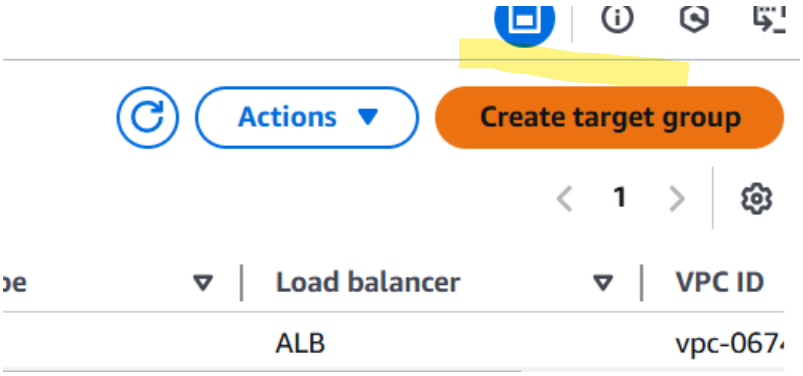
```
   _/ _/
 _/m/'
ser@ip-172-31-18-6 ~]$ sudo su
ip-172-31-18-6 ec2-user]#
ip-172-31-18-6 ec2-user]#
ip-172-31-18-6 ec2-user]#
ip-172-31-18-6 ec2-user]# cd /var/www/html
ip-172-31-18-6 html]# ll
4
-r--. 1 root root 39 Dec 11 11:21 index.html
ip-172-31-18-6 html]# sudo mkdir file
ip-172-31-18-6 html]# cd file
ip-172-31-18-6 file]# cd ..
ip-172-31-18-6 html]# sudo mv index.html /var/www/html/file/
ip-172-31-18-6 html]# ll
0
xr-x. 2 root root 24 Dec 11 12:03 file
ip-172-31-18-6 html]# cd file
ip-172-31-18-6 file]# ll
4
-r--. 1 root root 39 Dec 11 11:21 index.html
ip-172-31-18-6 file]#
```

ea6e1d3758f456a (Blue)

cIPs: 54.235.32.32 PrivateIPs: 172.31.18.6

Create a rule for this instance .





Target group name

TGT2

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Protocol : Port

Choose a protocol for your target group that corresponds to the Load Balancer type that will route traffic to it. Some protocols n
and you can set mitigation options once your target group is created. This choice cannot be changed after creation

HTTP | 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 select

Health check protocol

HTTP

Health check path

Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred.

/file/

Up to 1024 characters allowed.

▶ **Advanced health check settings**

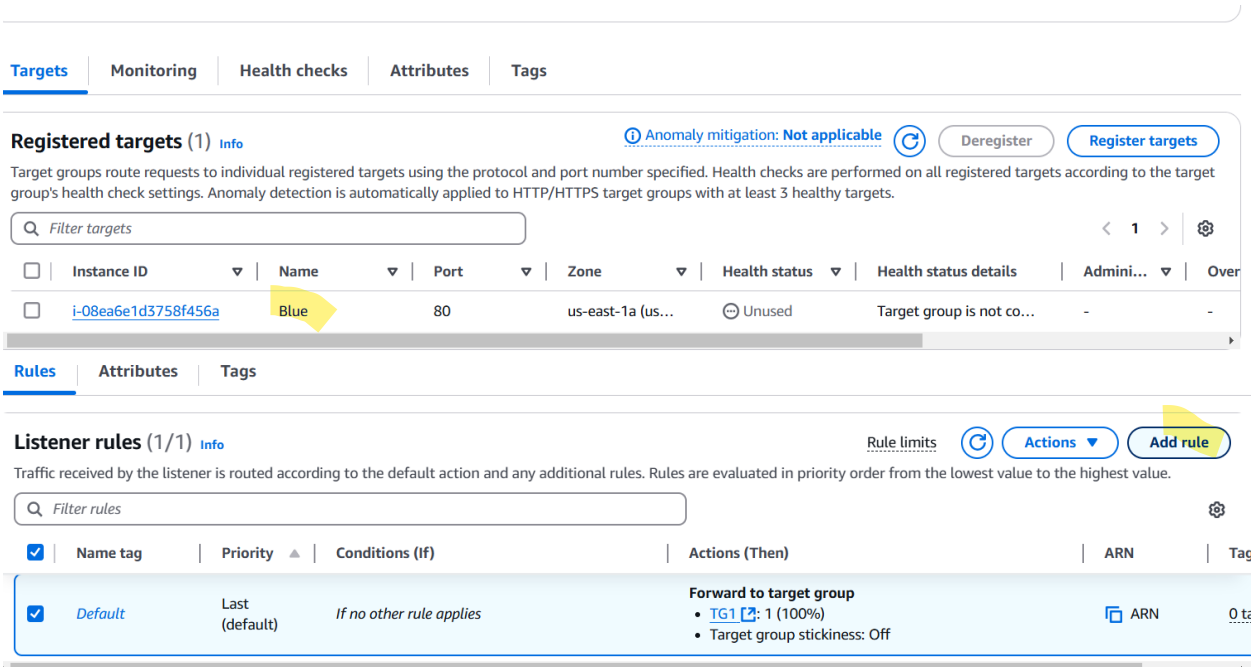
Attributes

Certain default attributes will be applied to your target group. You can view and edit them after creating the target group.

▶ **Tags - *optional***

Consider adding tags to your target group. Tags enable you to categorize your AWS resources so you can more easily manage them.

Cancel Next



Add rule Info

Define the rule and then review it in the context of the other rules on this listener.

▶ **Listener details:** HTTP:80

Name and tags Info

Tags can help you manage, identify, organize, search for and filter resources.

Name

blue

Add additional tags

Cancel Next

Define rule conditions Info

Requests reaching this rule must match all specified conditions for the rule to apply. At least 1 condition is required.

▶ **Listener details:** HTTP:80

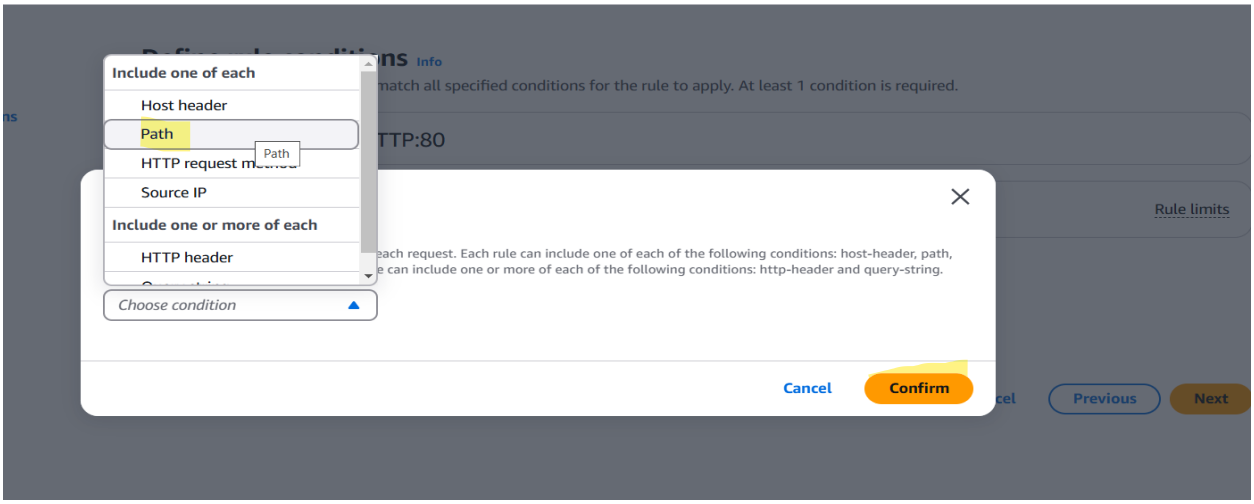
Conditions (0) Rule limits

No conditions

No conditions to display.

Add condition

Cancel Previous Next



Define rule conditions Info

Requests reaching this rule must match all specified conditions for the rule to apply. At least 1 condition is required.

▶ **Listener details:** HTTP:80

Conditions (1) Rule limits | Edit | Delete | Add condition

Path (1) Info

If
Path

is
/file/

Cancel | Previous | Next

Actions

Action types

Routing actions

(•) Forward to target groups | ( ) Redirect to URL | ( ) Return fixed response

Forward to target group | Info
Choose a target group and specify routing weight or Create target group.

Target group	Weight	Percent
TGT2 HTTP Target type: Instance, IPv4	1 0-999	100%

Add target group
You can add up to 4 more target groups.

Target group stickiness | Info
Enables the load balancer to bind a user's session to a specific target group. To use stickiness the client must support cookies. If you want to bind a user's session to a specific target, turn on the Target Group attribute Stickiness.

☐ Turn on target group stickiness

Cancel | Previous | Next

Set rule priority Info

Each rule has a priority. The default rule is evaluated last. You can change the priority of a non-default rule at any time. You can't change the priority of the default rule.

▶ **Listener details:** HTTP:80

Listener rules (2) Info

Rule limits | Reset priorities | Add gap between priorities

Traffic received by the listener is routed according to the default action and any additional rules. Rules are evaluated in priority order from the lowest value to the highest value.

Name tag	Priority	Conditions (If)	Actions (Then)
blue	1 Priority value must be 1-50,000.	**Path Pattern** is /file/	**Forward to target group** • TGT2: 1 (100%) • Target group stickiness: Off
Default	Last (default)	*If no other rule applies*	**Forward to target group** • TG1: 1 (100%) • Target group stickiness: Off

Cancel | Previous | Next

Rules | Attributes | Tags

Listener rules (2) Info

Rule limits | Actions | Add rule

Traffic received by the listener is routed according to the default action and any additional rules. Rules are evaluated in priority order from the lowest value to the highest value.

Filter rules

Name tag	Priority	Conditions (If)	Actions (Then)	ARN	Tag
blue	1	**Path Pattern** is /file/	**Forward to target group** • TGT2: 1 (100%) • Target group stickiness: Off	ARN	1 ta
Default	Last (default)	*If no other rule applies*	**Forward to target group** • TG1: 1 (100%) • Target group stickiness: Off	ARN	0 ta

Hello from ip-172-31-18-6.ec2.internal