

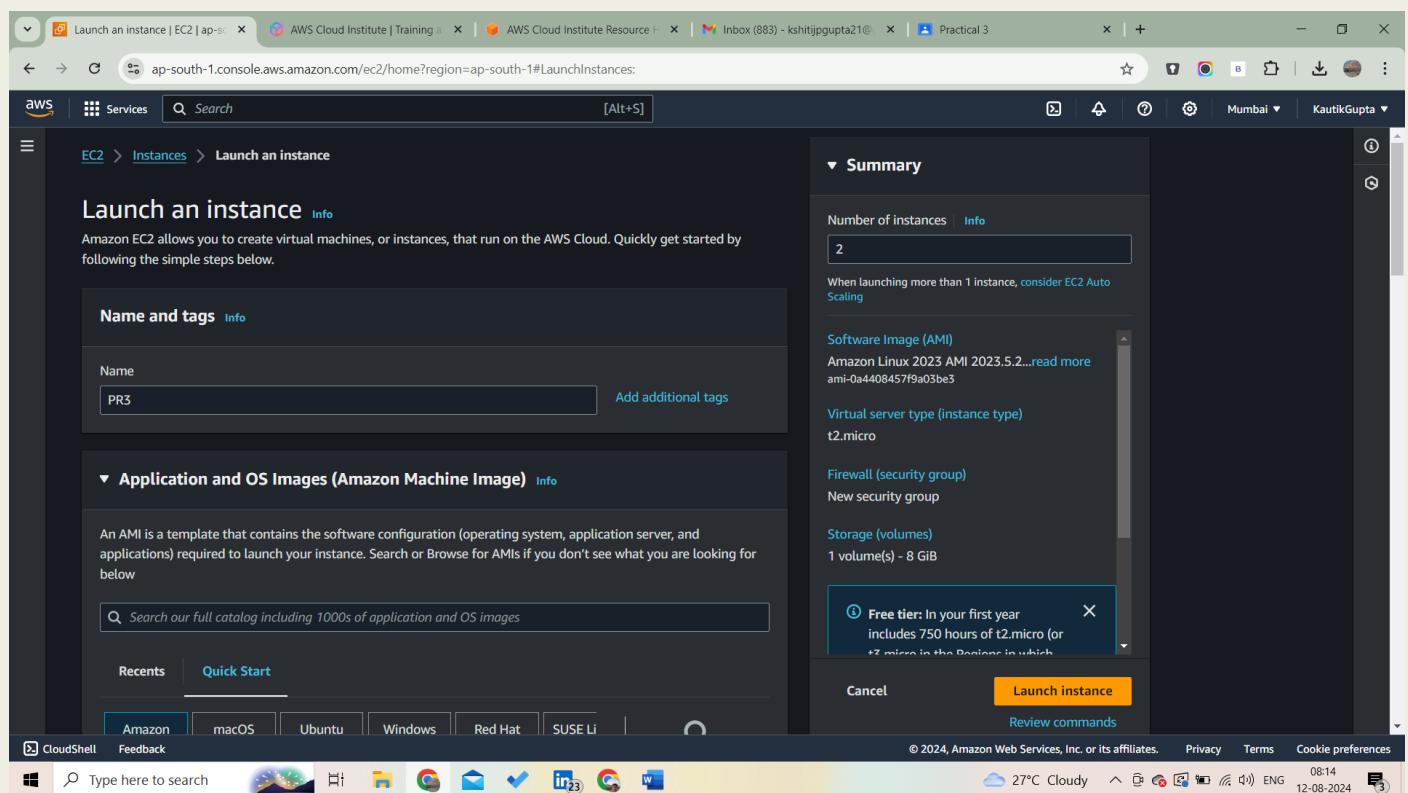
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Practical – 3[Batch-71]

Create two instance:



Launch an instance | EC2 | ap-south-1 | AWS Cloud Institute | Training | AWS Cloud Institute Resource | Inbox (883) - kshitijpgupta21@ | Practical 3

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:

Services Search [Alt+S]

Helps you connect to your instance 0.0.0.0/0

Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server

Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server

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

▼ Summary

Number of instances Info 2

When launching more than 1 instance, consider EC2 Auto Scaling

Software Image (AMI)
Amazon Linux 2023 AMI 2023.5.2...read more ami-0a4408457f9a03be3

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t2.micro in the Regions in which you launch)

Cancel Launch instance Review commands

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Instances | EC2 | ap-south-1 | AWS Cloud Institute | Training | AWS Cloud Institute Resource | Inbox (883) - kshitijpgupta21@ | Practical 3

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#Instances:

AWS Services Search [Alt+S]

EC2 Dashboard EC Global View Events Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations Images AMIs AMI Catalog Elastic Block Store Volumes Snapshots Lifecycle Manager Network & Security CloudShell Feedback Type here to search 27°C Cloudy 08:17 12-08-2024 © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Instances (2) Info

Find Instance by attribute or tag (case-sensitive)

All states ▾

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
PR3	i-04b213cd71abd4455	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	ec2-13-233-163-151.ap...
PR3	i-063efefaf7698e2864	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	ec2-65-2-150-213.ap...

Select an instance

Create Target Group:

Specify group details

Your load balancer routes requests to the targets in a target group and performs health checks on the targets.

Basic configuration

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

Choose a target type

Instances

- Supports load balancing to instances within a specific VPC.
- Facilitates the use of [Amazon EC2 Auto Scaling](#) to manage and scale your EC2 capacity.

IP addresses

- Supports load balancing to VPC and on-premises resources.
- Facilitates routing to multiple IP addresses and network interfaces on the same instance.
- Offers flexibility with microservice based architectures, simplifying inter-application communication.
- Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.

Lambda function

- Facilitates routing to a single Lambda function.
- Accessible to Application Load Balancers only.

Target group name

PR3

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 now include anomaly detection for the targets 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 selected above are available in this list.

vpc-075f109655381d042

IPv4 VPC CIDR: 172.31.0.0/16

Protocol version

HTTP1

Create application load balancer Step 1 Create target group AWS Cloud Institute | Train AWS Cloud Institute Resources Inbox (884) - kshitijpgupta Practical 3

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateTargetGroup:protocol=HTTP;vpc=vpc-075f109655381d042

Services Search [Alt+S]

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.

gRPC
Send requests to targets using gRPC. Supported when the request protocol is gRPC.

Health checks

The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

Health check protocol

HTTP

Health check path

/

Up to 1024 characters allowed.

Advanced health check settings

Attributes

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Create application load balancer Step 2 Create target group AWS Cloud Institute | Train AWS Cloud Institute Resources Inbox (884) - kshitijpgupta Practical 3

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateTargetGroup:protocol=HTTP;vpc=vpc-075f109655381d042

Services Search [Alt+S]

EC2 > Target groups > Create target group

Step 1 Specify group details

Step 2 Register targets

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 (2)

Instance ID	Name	State	Security groups
i-04b213cd71abd4455	PR3	Running	launch-wizard-1
i-063efefaf7698e2864	PR3	Running	launch-wizard-1

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

2 selections are now pending below. Include more or register targets when ready.

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Create application load balancer Step 2 Create target group AWS Cloud Institute | Train AWS Cloud Institute Resources Inbox (884) - kshitijgupta Practical 3

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateTargetGroup:protocol=HTTP;vpc=vpc-075f109655381d042

Services Search [Alt+S] Mumbai KautikGupta

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

2 selections are now pending below. Include more or register targets when ready.

Review targets

Targets (2)

Filter targets Show only pending < 1 > 🔍

Instance ID	Name	Port	State	Security groups	Zone	Private IPv4 address	Subnet ID
i-04b213cd71abd4455	PR3	80	Running	launch-wizard-1	ap-south-1b	172.31.3.23	subnet-06ccdc
i-063efefaf7698e2864	PR3	80	Running	launch-wizard-1	ap-south-1b	172.31.10.81	subnet-06ccdc

2 pending Cancel Previous Create target group

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Create application load balancer Target group details | EC2 AWS Cloud Institute | Train AWS Cloud Institute Resources Inbox (884) - kshitijgupta Practical 3

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#TargetGroup:targetGroupArn=arn:aws:elasticloadbalancing:ap-south-1:008971634001:targetgroup/...

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EC2 Dashboard Services Search [Alt+S] Mumbai KautikGupta

Successfully created the target group: PR3. Anomaly detection is automatically applied to all registered targets. Results can be viewed in the Targets tab.

EC2 > Target groups > PR3

PR3 Actions

Details arn:aws:elasticloadbalancing:ap-south-1:008971634001:targetgroup/PR3/e74eb74025d8765

Target type	Protocol : Port	Protocol version
Instance	HTTP: 80	HTTP1
IP address type	Load balancer	VPC
IPv4	None associated	vpc-075f109655381d042

2 Total targets 0 Healthy 0 Unhealthy 2 Unused 0 Initial 0 Draining 0 Anomalous

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

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The screenshot shows the AWS CloudWatch Metrics console. On the left, there's a sidebar with navigation links like EC2 Dashboard, EC2 Global View, Events, Instances, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, and Network & Security. The main area displays a table titled "Distribution of targets by Availability Zone (AZ)". The table has columns for Total targets (2), Healthy (0), Unhealthy (0), Unused (2), Initial (0), and Draining (0). Below the table, a section titled "Targets" lists two registered targets: "i-04b213cd71abd4455" and "i-063efea7698e2864", both named PR3, port 80, in the "ap-south-1b" zone, and marked as "Unused".

Create load balancer:

The screenshot shows the "Create Application Load Balancer" wizard. The top navigation bar includes links for "Create application load balancer", "Target group details | EC2", "AWS Cloud Institute | Train", "AWS Cloud Institute Resou", "Inbox (884) - kshitijgupta", and "Practical 3". The main content area shows the "Create Application Load Balancer" page with the sub-section "Basic configuration". It asks for a "Load balancer name" (PR3), "Scheme" (set to "Internet-facing"), and "Load balancer IP address type" (IPv4). A note states: "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 IP address types. Public IPv4 addresses have". The bottom of the screen shows the Windows taskbar with various pinned icons.

Create application load balancer

Create application load balancer

AWS Cloud Institute | Train

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Services

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[Alt+S]

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 in accordance with your IP address settings.

VPC [Info](#)

The load balancer will exist and scale within the selected VPC. The selected VPC is also where the load balancer targets must be hosted unless routing to Lambda or on-premises targets, or if using VPC peering. To confirm the VPC for your targets, view [target groups](#). For a new VPC, [create a VPC](#).

vpc-075f109655381d042
IPv4 VPC CIDR: 172.31.0.0/16

Mappings [Info](#)

Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.

Availability Zones

ap-south-1a (aps1-az1)

Subnet

subnet-019b7b8a818e13ef9
IPv4 subnet CIDR: 172.31.32.0/20

IPv4 address
Assigned by AWS

ap-south-1b (aps1-az3)

Subnet

subnet-06cccd33091dceb9b
IPv4 subnet CIDR: 172.31.0.0/20

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Create application load balancer

Create application load balancer

AWS Cloud Institute | Train

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Services

Search

[Alt+S]

Security groups [Info](#)

A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can [create a new security group](#).

Security groups

Select up to 5 security groups

launch-wizard-1
sg-02b958ed9712f6a9 VPC: vpc-075f109655381d042

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 determine how the load balancer routes requests to its registered targets.

▼ Listener HTTP:80

Protocol Port Default action

HTTP 80 Forward to PR3 Target type: Instance, IPv4

HTTP Remove

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.

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Create application load balancer | Create application load balancer | AWS Cloud Institute | Train | AWS Cloud Institute Resources | Inbox (884) - kshitijgupta | Practical 3

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateALBWizard:

aws Services Search [Alt+S]

Basic configuration Edit
PR3
• Internet-facing
• IPv4

Security groups Edit
launch-wizard-1 sg-02b938ed9712ff6a9

Network mapping Edit
VPC vpc-075f109655381d042
• ap-south-1a subnet-019b7b8a818e13ef9
• ap-south-1b subnet-06cccd433091dceb9b

Listeners and routing Edit
HTTP:80 defaults to PR3

Service integrations Edit
AWS WAF: None
AWS Global Accelerator: None

Tags Edit
None

Attributes

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

Creation workflow and status

▶ **Server-side tasks and status**
After completing and submitting the above steps, all server-side tasks and their statuses become available for monitoring.

Cancel Create load balancer

Create application load balancer | Load balancer details | EC2 | AWS Cloud Institute | Train | AWS Cloud Institute Resources | Inbox (884) - kshitijgupta | Practical 3

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LoadBalancer:loadBalancerArn=arn:aws:elasticloadbalancing:ap-south-1:008971634001:loadbalance...

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aws Services Search [Alt+S]

EC2 Dashboard
EC2 Global View
Events

Instances
Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations

Images
AMIs AMI Catalog

Elastic Block Store
Volumes Snapshots Lifecycle Manager

Network & Security

Listeners and rules **Network mapping** **Resource map - new** **Security** **Monitoring** **Integrations** **Attributes** **Tags**

PR3

Successfully created load balancer: PR3
It might take a few minutes for your load balancer to fully set up and route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks.

EC2 > Load balancers > PR3

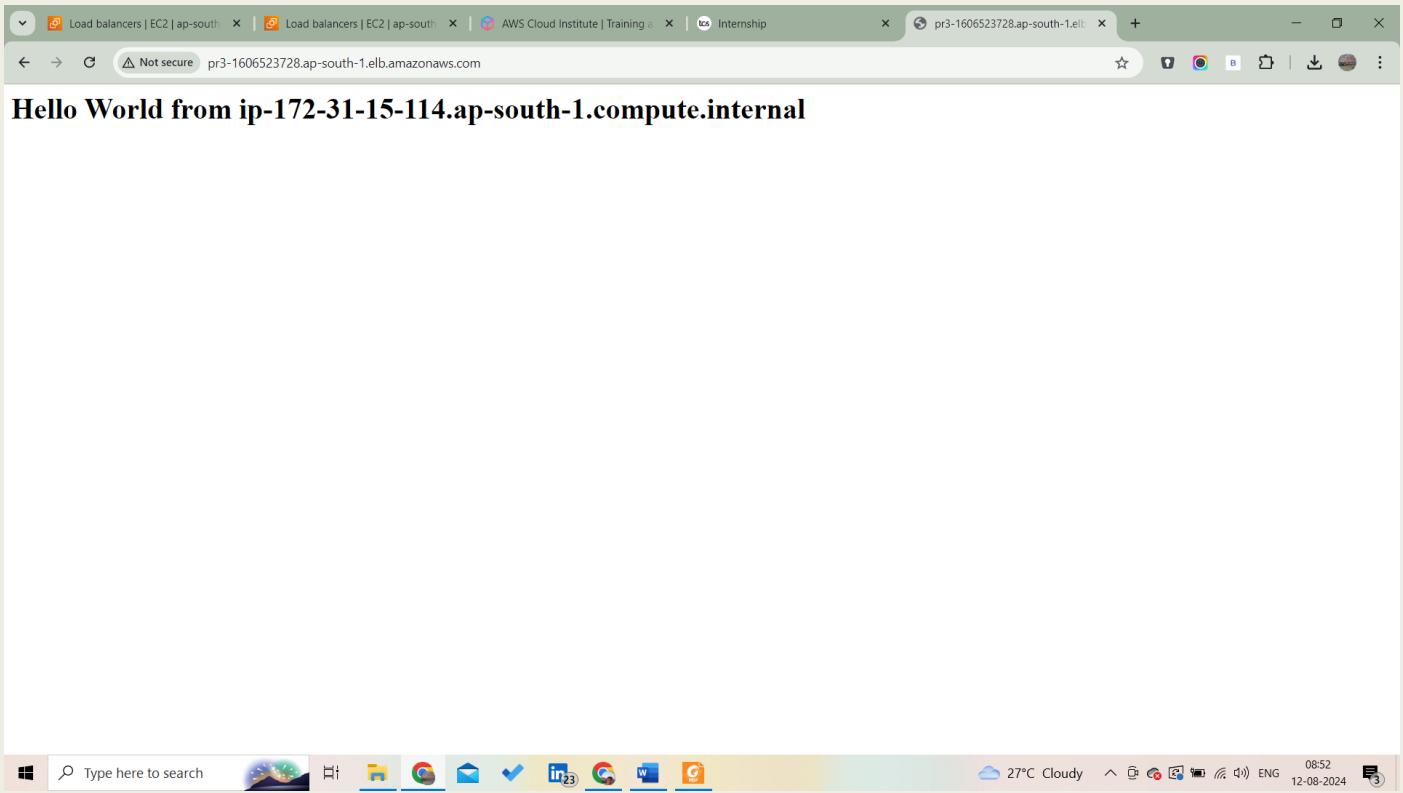
Details

Load balancer type Application	Status Provisioning	VPC vpc-075f109655381d042	Load balancer IP address type IPv4
Scheme Internet-facing	Hosted zone ZP97RAFLXTNZK	Availability Zones subnet-06cccd433091dceb9b ap-south-1b (aps1-az3) subnet-019b7b8a818e13ef9 ap-south-1a (aps1-az1)	Date created August 12, 2024, 08:24 (UTC+05:30)
Load balancer ARN arn:aws:elasticloadbalancing:ap-south-1:008971634001:loadbalancer/app/PR3/c1c413343e9048b9	DNS name Info PR3-51740540.ap-south-1.elb.amazonaws.com (A Record)		

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Output:



Sticky Session:

Edit target group attribute | Load balancers | EC2 | AWS Cloud Institute | Train | Internship | pr3-1606523728.ap-south-1 | Sticky sessions for your Application | +

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#TargetGroupEditAttributes:targetGroupArn=arn:aws:elasticloadbalancing:ap-south-1:008971634001...

Services Search [Alt+S]

30-900 seconds or 0 to disable. Not compatible with the Least outstanding requests and Weighted random routing algorithms.

Target selection configuration

Stickiness [Info](#)

Stickiness allows the load balancer to bind a user's session to a specific target within the target group. The stickiness type differs based on the type of cookie used.

Turn on stickiness

Not compatible with the Weighted random routing algorithm. Can't be turned on if Cross-zone load balancing is off.

Stickiness type

Load balancer generated cookie

Application-based cookie

Stickiness duration **Unit of time**

1 minutes ▾

1 second - 7 days

Cross-zone load balancing [Info](#)

Cross-zone load balancing can be configured for each target group or inherited from the load balancer.

Inherit settings from load balancer attributes

Uses the cross-zone settings from the Application Load Balancer attributes - On by default.

► Target group health requirements [Info](#)

Specify the target group health requirements and the resulting actions when the minimum is not met.

Target groups | EC2 | ap-south-1 | Load balancers | EC2 | ap-south-1 | AWS Cloud Institute | Train | Internship | pr3-1606523728.ap-south-1 | Sticky sessions for your Application | +

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#TargetGroups:

EC2 Dashboard | Services | Search | [Alt+S]

Attributes successfully updated.

EC2 > Target groups

Target groups (1/1) Info

Filter target groups

Name ARN Port Protocol Target type Load balancer

PR3 arn:aws:elasticloadbalancing:ap-south-1:123456789012:targetgroup/PR3 80 HTTP Instance None associated

Target group: PR3

Stickiness: On | Stickiness type: Load balancer generated cookie

Stickiness duration: 1 minute | Cross-zone load balancing: Inherit settings from load balancer attributes

Target group health requirements

DNS - Healthy state requirements: Minimum healthy target count: 1

Routing - Healthy state requirements: Minimum healthy target count: 1

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Target groups | EC2 | ap-south-1 | Load balancers | EC2 | ap-south-1 | AWS Cloud Institute | Train | Internship | pr3-1606523728.ap-south-1 | Sticky sessions for your Application | +

Not secure pr3-1606523728.ap-south-1.elb.amazonaws.com

Hello World from ip-172-31-10-40.ap-south-1.compute.internal

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