AWS Lab 34

Application Load Balancer - Path Based Routing

Overview of the lab

In this lab you will learn how to create path based routing with application load balancer.

Application Load Balancer

It is a layer 7 load-balancer

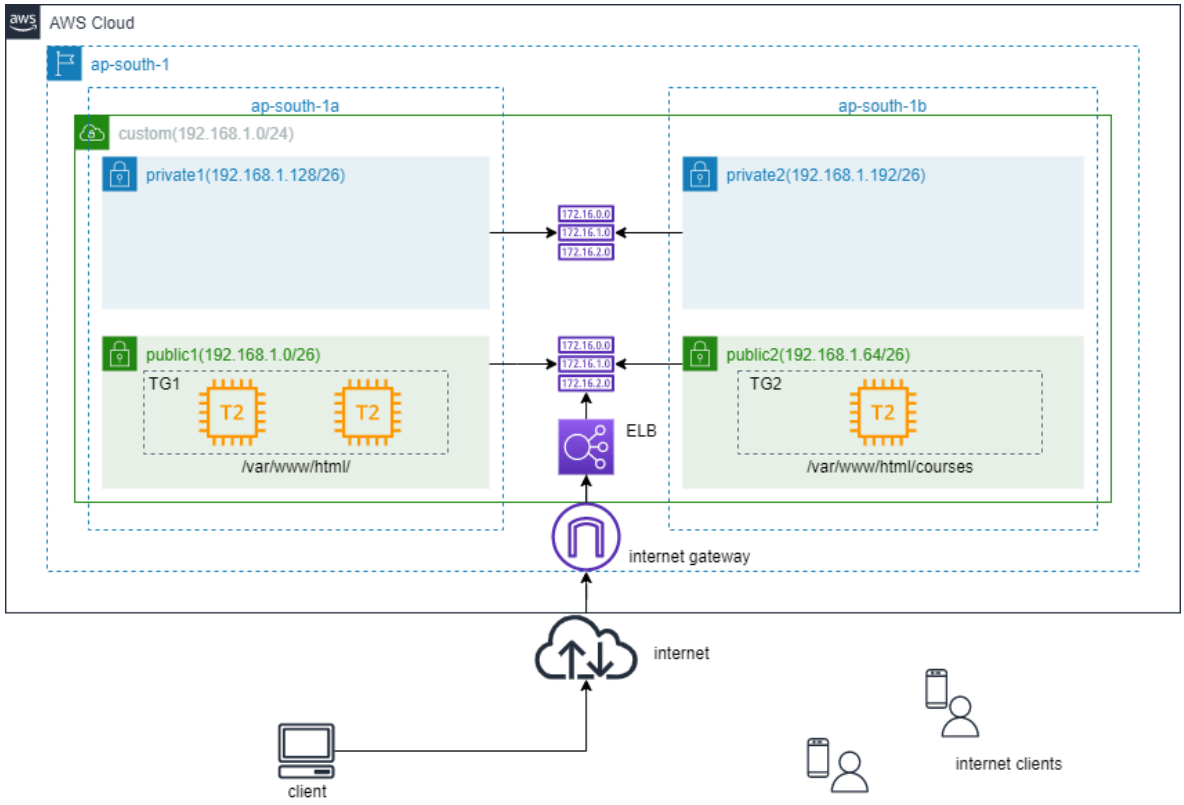
It supports advanced routing like (path , query string, source ip, host header) based routing

Network Load Balancer

It is a layer 4 load-balancer

It will not support advanced routing

Architecture



Step by Step Lab

Launch instance(s)

1. In EC2 management console, launch instances
   1.1. Number of instances - 2
   1.2. Name and tag – (tag later as linux-webserver1 & linux-webserver2)
   1.3. Application and OS Images – RedHat Linux
   1.4. Instance type - t2.micro
   1.5. Key pair – select the existing keypair

1.6. Edit Network settings

1.6.1. VPC - custom-vpc

1.6.2. Subnet – custom-vpc-public1(ap-south-1a)

1.6.3. Auto-assign public IP - Enable

1.6.4. Firewall - Select existing security group

1.7. In Advanced Details(scroll down to bottom), copy the below bash script in userdata section

```
#!/bin/bash
dnf install httpd -y
systemctl start httpd
systemctl enable httpd
echo $HOSTNAME is running in ap-south-1a > /var/www/html/index.html
```

1.8. Click on Launch instance

2. Launch instance

2.1. Name and tag – linux-webserver3

2.2. Application and OS Images – Redhat Linux

2.3. Instance type - t2.micro

2.4. Key pair – select the existing keypair

2.5. Edit Network settings

2.5.1. VPC - custom-vpc

2.5.2. Subnet – custom-vpc-public2(ap-south-1b)

2.5.3. Auto-assign public IP - Enable

2.5.4. Firewall - Select existing security group

2.6. In Advanced Details(scroll down to bottom), copy the below bash script in userdata section

```
#!/bin/bash
dnf install httpd -y
systemctl start httpd
systemctl enable httpd
echo $HOSTNAME is running in ap-south-1b > /var/www/html/index.html
mkdir /var/www/html/courses
echo aws > /var/www/html/courses/index.html
```

2.7. Number of instances - 1

2.8. Click on Launch instance

Create Target Group1

3. Click on Target Groups and Click on Create target group
4. Basic Configuration
   - 4.1. Choose a target type - Instances
   - 4.2. Target group name - tg1
   - 4.3. Vpc - custom-vpc
5. Health checks
   - 5.1. Click on Advanced health check settings
   - 5.2. Healthy threshold - 2
   - 5.3. Click on Next
6. Register targets
   - 6.1. Select the instances(linux-webserver1 & linux-webserver2) and Click on Include as pending below
7. Click on Create target group

Create Target Group2

8. Click on Target Groups and Click on Create target group
9. Basic Configuration
    9.1. Choose a target type - Instances
    9.2. Target group name - tg2
    9.3. Vpc - custom-vpc
10. Health checks
    10.1. Click on Advanced health check settings
    10.2. Healthy threshold - 2
    10.3. Click on Next
11. Register targets
    11.1. Select the instance(linux-webserver3) and Click on Include as pending below
12. Click on Create target group

Create ELB - Application Load Balancer (default path)

13. Click on Load Balancers and Click on Create load balancer
14. Application Load Balancer - Create
15. Basic configuration
    15.1. Load balancer name - demo-alb
    15.2. Scheme - Internet-facing
16. Network mapping
    16.1. VPC - custom-vpc
    16.2. Mappings

16.2.1. ap-south-1a - custom-vpc-public1

16.2.2. ap-south-1b - custom-vpc-public2

17. Security groups - select the existing(custom-vpc-sg)
18. Listeners and routing
    18.1. Protocol - HTTP
    18.2. Port - 80
    18.3. Default action - select tg1
19. Click on Create load balancer

(Once the load balancer is created accessing the web page using DNS name of the load balancer - it will route to tg1 - linux-webserver1 & linux-webserver2)

Path based routing to target group2

20. Click on the load balancer - In Listeners and rules
21. Click on 1 rule then Add rule
22. Add rule
    22.1. Name and tags - path-based
    22.2. Add condition - choose path - /courses* and confirm
23. Click on Next
24. Actions - Forward to target groups - tg2
25. Click on Next
26. Priority - 1
27. Click on Next and Create

(now dns name of the loadbalancer forwards to tg1 & dnsname/courses will forward it to tg2)

Clean Up Step

1. Select the instances and terminate it
2. Click on Load balancers - Select the demo-alb (load balancer) and in Actions - Click on Delete load balancer and confirm
3. Click on Target groups - select the tg1 & tg2 (target groups) and in Actions - Click on Delete