

Problem Statement:

You work for XYZ Corporation which uses on-premise solutions and a 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 on the expenses of systems, they decided to move their infrastructure to AWS.

Tasks To Be Performed:

1. Create a Classic Load Balancer and register 3 EC2 instances with different web pages running in them.
2. Migrate the Classic Load Balancer into an Application Load Balancer.

Solution

A load Balancer is a service that uniformly distributes the network traffic and workload across multiple servers or a cluster of servers. The load balancer increases the availability and fault tolerance of an application. The load balancer will distribute the traffic only to the instances which are healthy.

The load balancer is the single point of contact for clients means if any of the requests are coming to or going out from the architecture, then it has to first reach the load balancer then only it can either go out or it can come in, Elastic Load Balancer scales itself to handle the load.

Classic Load Balancer resembles the traditional load balancing, but virtual devices replace the physical hardware, it is not available right now. (retired by AWS) It distributes incoming application traffic across EC2 instances in multiple availability zones and functions at Layer 7 of OSI, it routes traffic to healthy instances only, and it is evenly distributed.

In this assignment, we need to create 3 instances and install an Apache2 webserver on that instances (Ubuntu). Allow SSH and HTTP while creating the Security group.

Commands to install Apache2

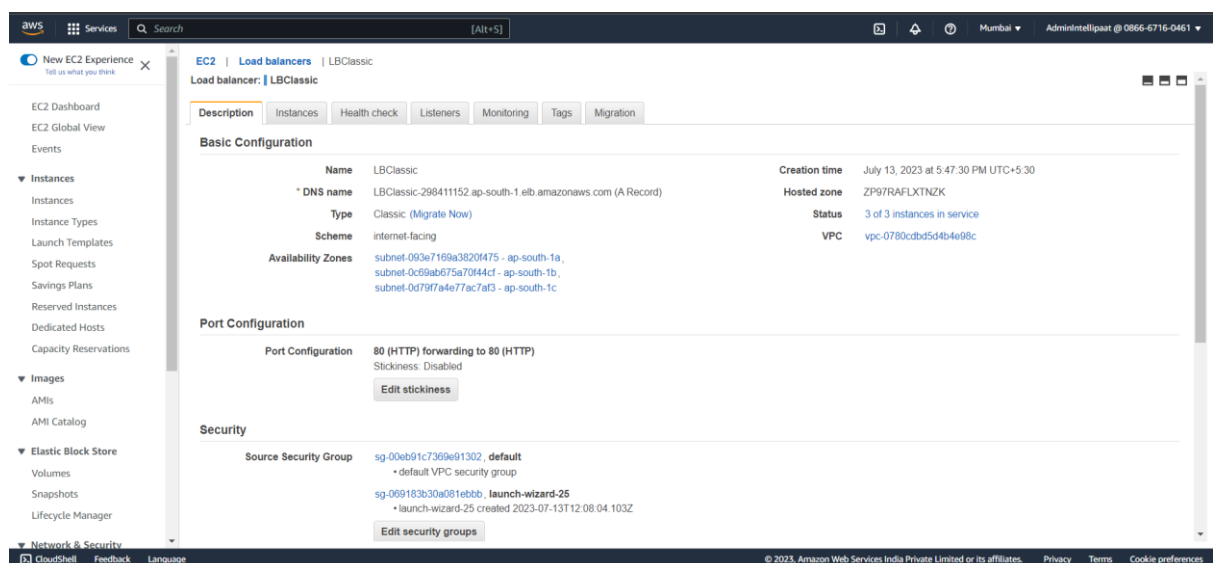
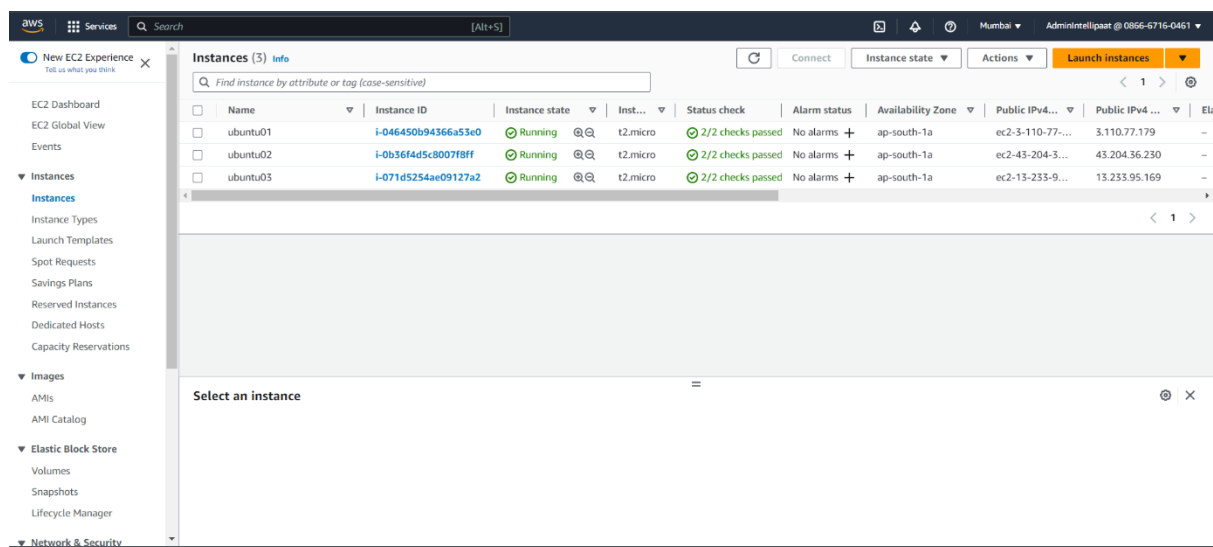
\$ sudo apt-get update -y	(update the instance)
\$ sudo apt-get install apache2 -y	(install the webserver)
\$ cd /var/www/html/	(in this directory we will get index.html file, we will change the content of this file)
\$ sudo rm index.html	(removed the index.html file)
\$ sudo nano index.html	(press CTRL+ C, Enter then CTRL+X)

Steps to Create Classic Load Balancer

Go to Management console → search EC2 instance → Load balancer → Create load balancer → Select the classic load balancer and then click on Create → Give LB name → Select the VPC (my case - default) → Now load balancer protocol and instance protocol must be same, in this case, port-80 for both the case → Security group must have SSH and HTTP. → Configure health check → Add the EC2 instances → Next → Create Load Balancer.

Now wait for the instances to be in “in service” then copy the DNS name from the load balancer and then paste it on the web browser, LB will send its traffic to the healthy instances in Round Robin manner.

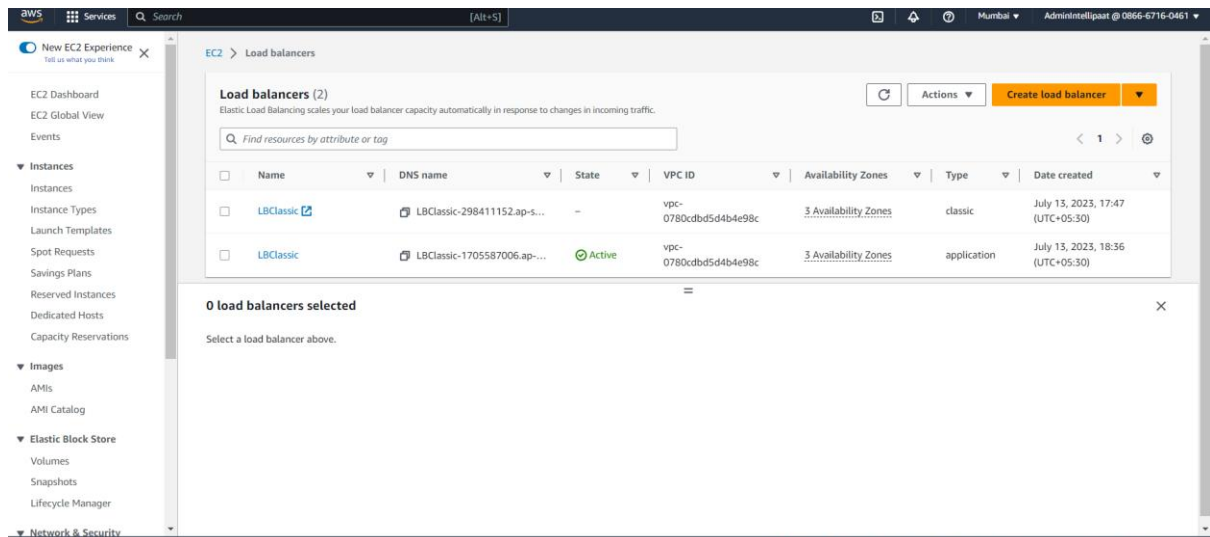
RESULTS



Steps to Migrate Classic LB to Application LB

Select the classic load balancer → Click on Migration → Launch ALB migration Wizard → Create → close

Now we will have two load balancers with the same name, now scroll towards the right you will get an option called type, there one is classic and another is application. Now wait for some time to activate the ALB, now copy the DNS name from the ALB, and then paste it on the web browser, the load will be distributed by the ALB in the round robin manner.



The screenshot shows the AWS Management Console interface for the 'Load balancers' page. The left sidebar contains a navigation menu with categories: '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), and 'Network & Security'. The main content area is titled 'Load balancers (2)' and includes a search bar and a table of load balancers. The table has columns: Name, DNS name, State, VPC ID, Availability Zones, Type, and Date created. Two load balancers are listed: 'LBClassic' (classic) and 'LBClassic' (application). The application load balancer is marked as 'Active'. Below the table, there is a section titled '0 load balancers selected' with a message 'Select a load balancer above.' and a close button.

Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
LBClassic	LBClassic-298411152.ap-s...	—	vpc-0780cdbd5d4b4e98c	3 Availability Zones	classic	July 13, 2023, 17:47 (UTC+05:30)
LBClassic	LBClassic-1705587006.ap-...	Active	vpc-0780cdbd5d4b4e98c	3 Availability Zones	application	July 13, 2023, 18:36 (UTC+05:30)