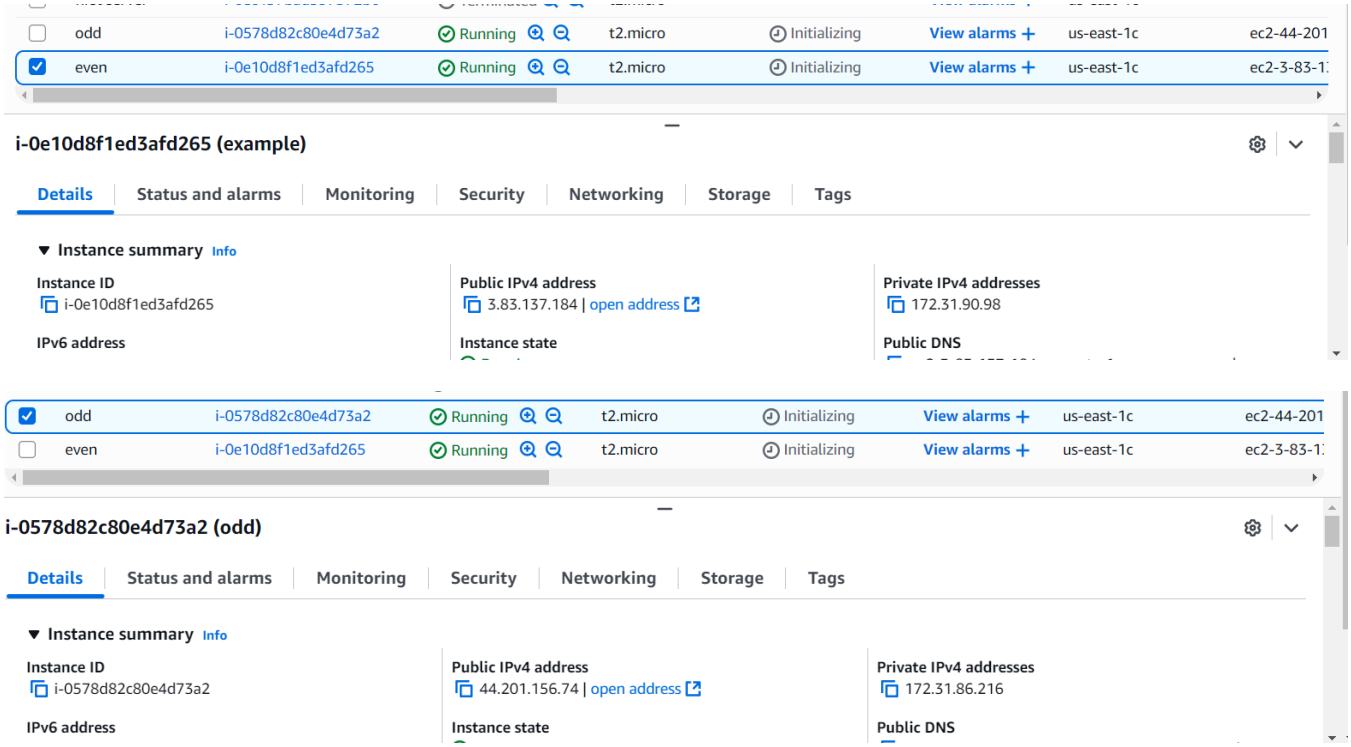
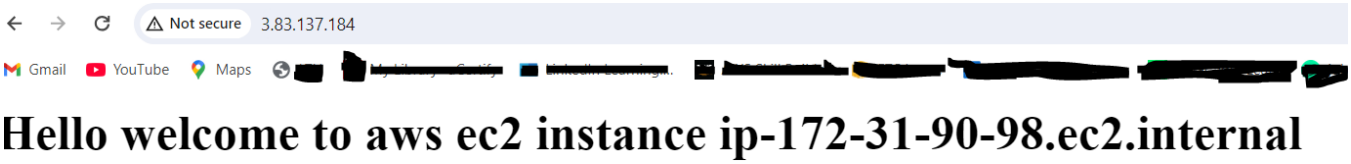
Building a Scalable Web Setup with AWS ALB and EC2

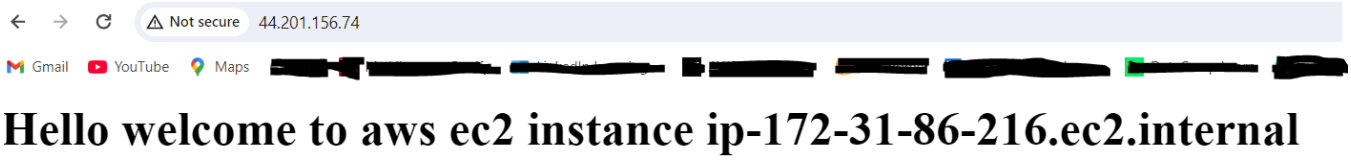
Hands-on project to learn ALB-based routing, EC2 setup, and security best practices on AWS.

Step1: launching two ec2 servers and checking their status by using public ip address



Checking the working of instances by public ip



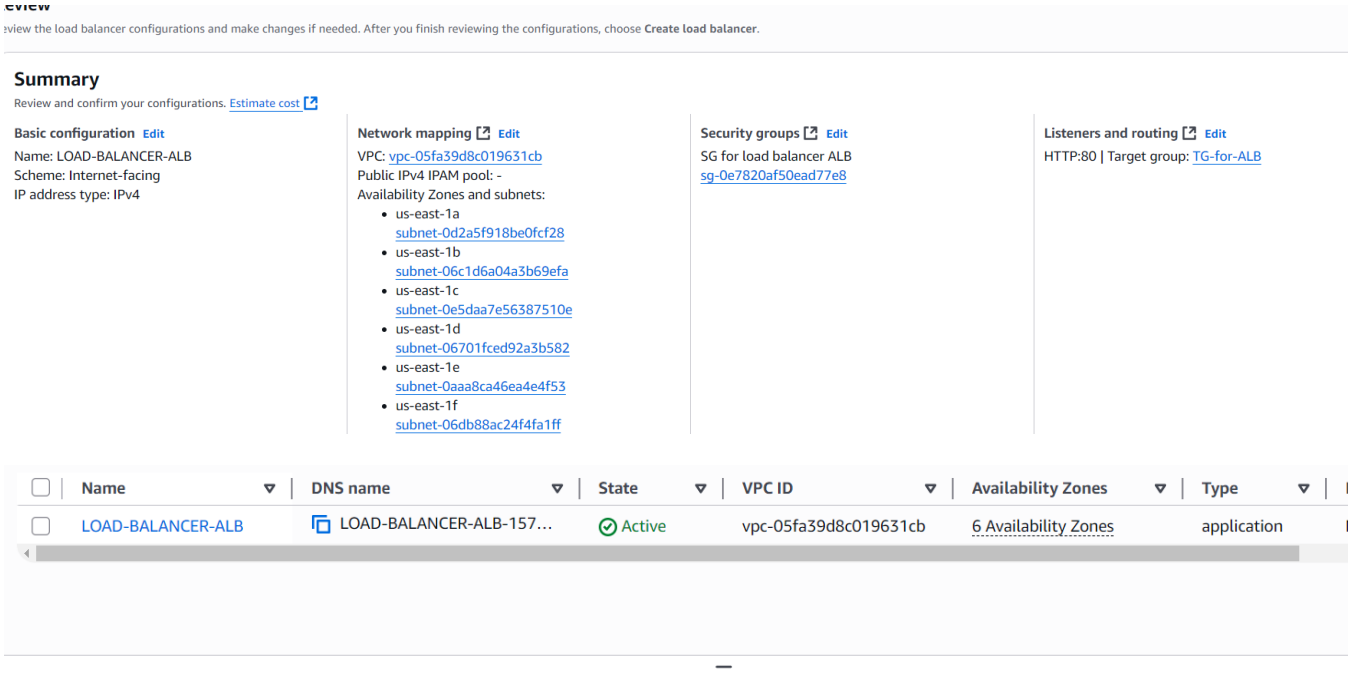


As we can see from the screenshots, that two ec2 instances had two different ip addresses to access them or the application. Our goal is to have one ip address for their two servers to access them and to balance the load between the two servers with the help of Application Load balancer.

Step 2: create ALB (Application load balancer) handles traffic of HHTP and HTTPS

Define security group: inbound HTTP from anywhere and outbound: anywhere

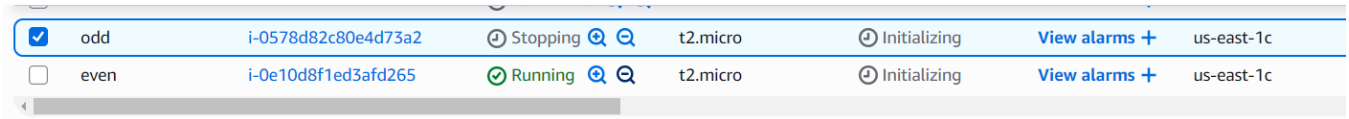
Create Target Group for EC2 instances:

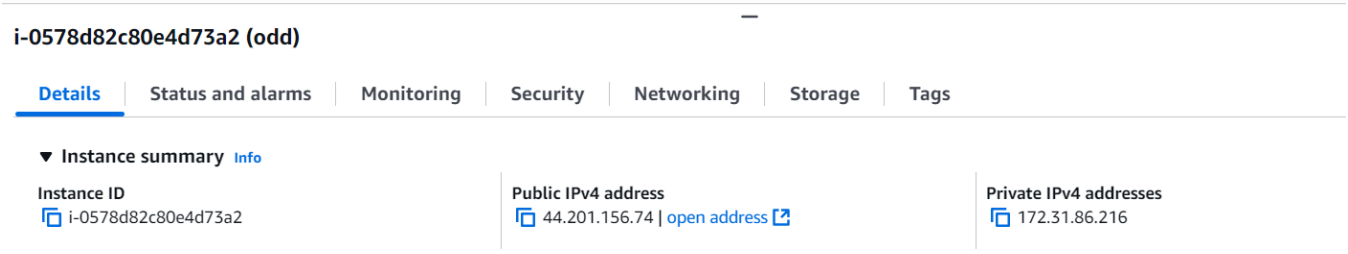


I also got a DNS name for my load balancer as single point of Access and it is accessible too. We can see below of accessing two servers with one DNS name. Therefore our ALB is distributing load between them.

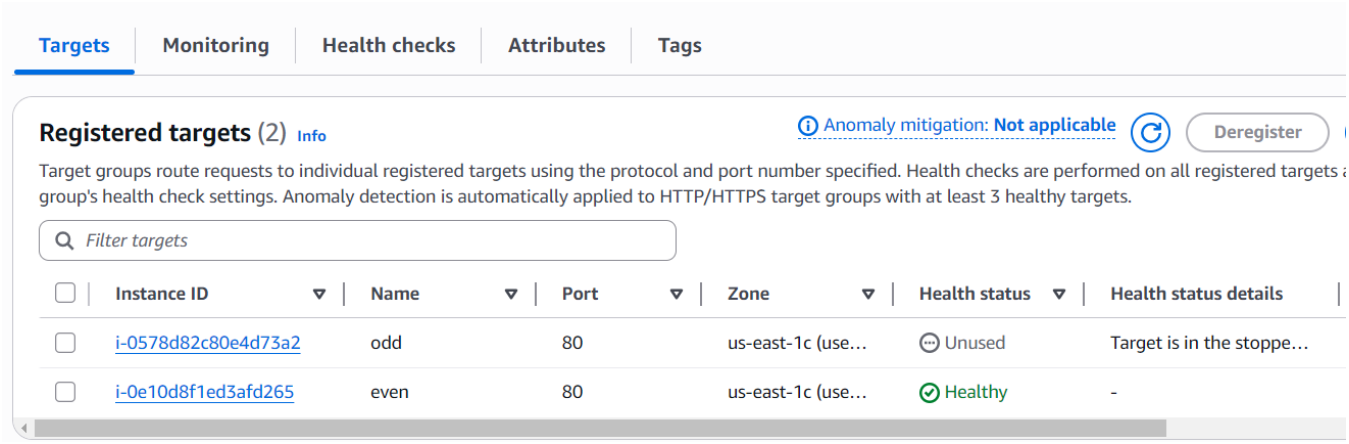
Step 3: now check the target group, it checks the health of each ec2 server by sending health checks now we will see the working of it by one server.

Let us stop the server of: 172.31.86.216





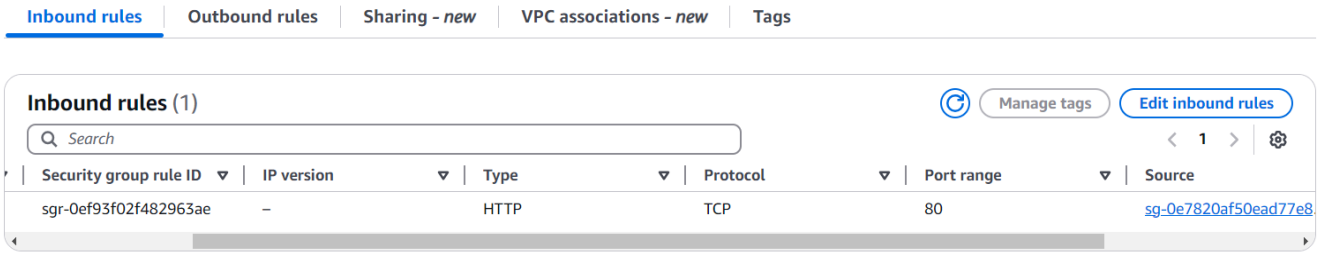
We can able to access only one server :



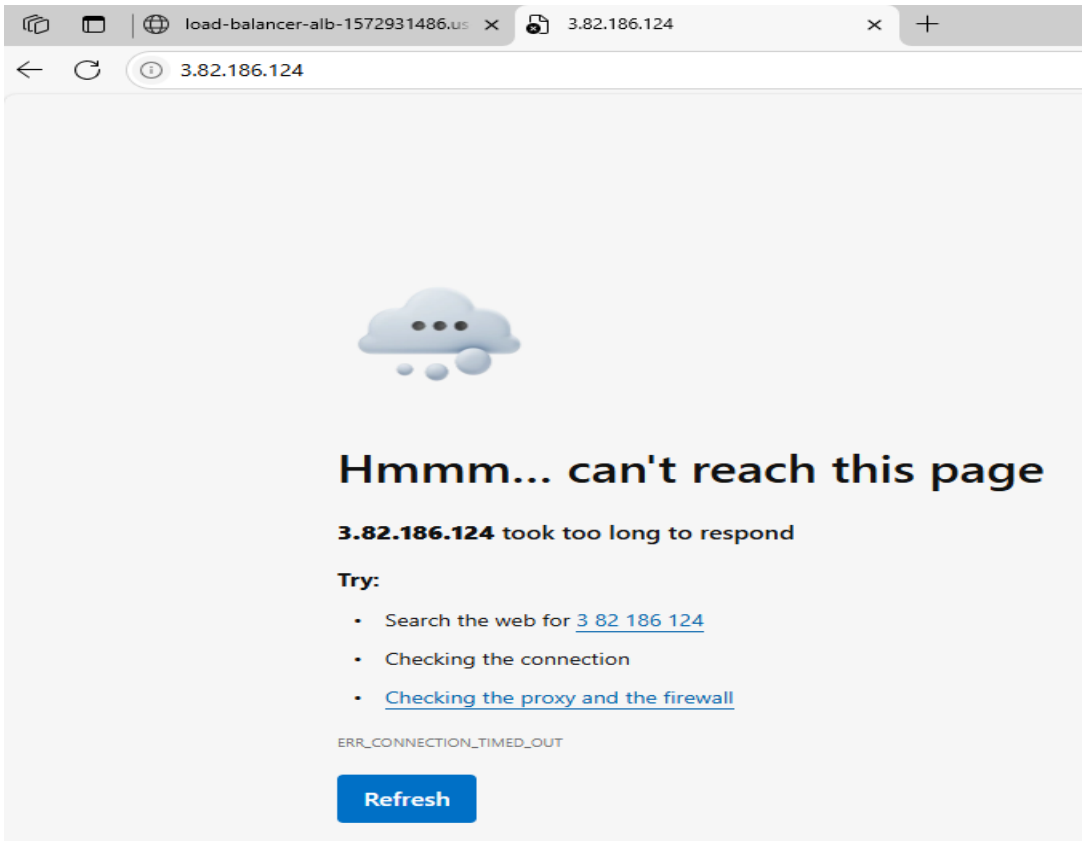
If I recover the stooped server and I can able access to both servers.

One improvement feature : I can able to access the servers from ALB DNS URL and also EC2 instance public IP, but this is not recommended in terms of security, we need to access the servers only from ALB DNS url only not from servers individual public ip address. Let us implement it.

Step 1: change the security group of ec2 instances as its inbound rule should only allow traffic from ALB only



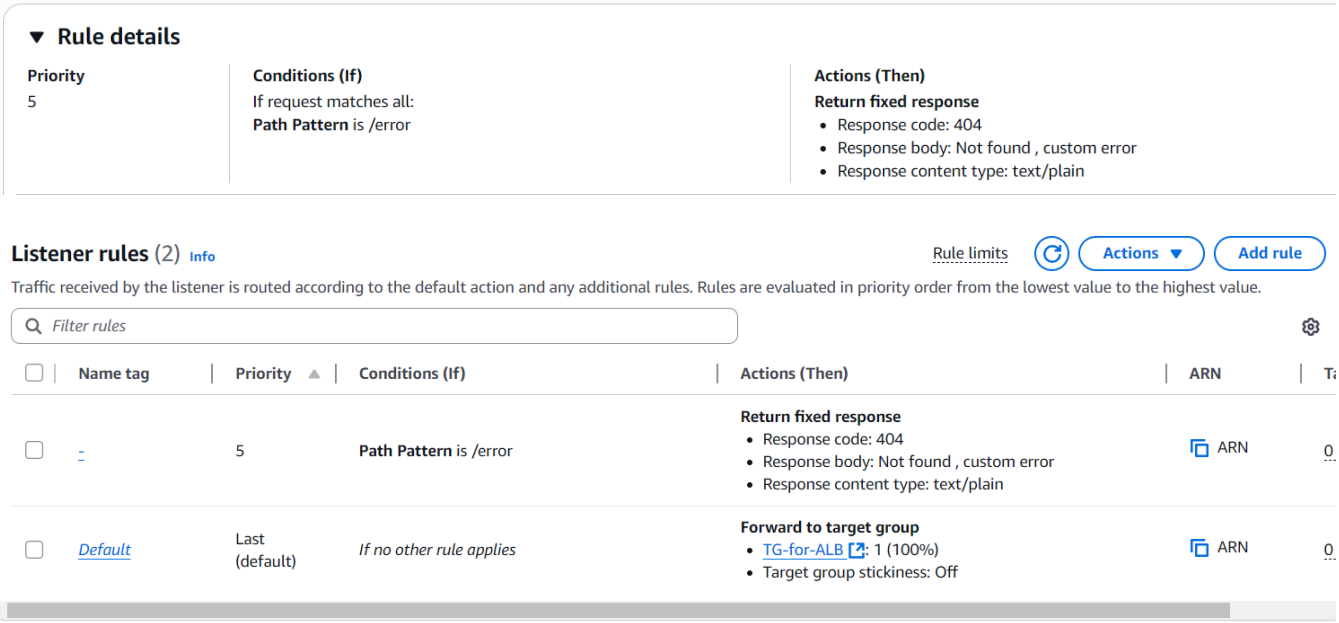
Now try to access from servers public ip, and we should not able to access it



But if we access through DNS URL we can able see the working of ALB that forwards traffic for both the servers.

And we achieved preventing traffic directly accessing our servers, now only through ALB traffic can able to reach servers.

One more additional feature we can use in ALB is to edit its rules as of now the current rule define that the traffic should goes to the servers and now we are going to add a rule for error url as path condition, also we can to define the rules on various conditions such as path ,Query string , source ip, http request mode etc



We have two rules one is default that allows traffic to servers and the other one is error rule with least priority as 5.

Now we will check with /error: