Lab: Install HAproxy Loadbalancer and configure the backend and frontend configuration

Pre-requisites: Create 3 ubuntu 20.04 instances in AWS i.e., first instance is for HAproxy installation (frontend) and other two for backend servers

Hostname: HAproxy, IP-address: 13.213.48.89 (Frontend servers)

Hostname: web-server1 ,IP-address: 54.255.241.255 (Backend servers)

Hostname: web-server2 , IP-address: 54.169.128.89 (Backend servers)

Task 1: Configure backend web-server1

Steps 1: SSH into the web-server1 and run the following command

1. sudo apt-get update

2. sudo apt-get upgrade

Step 2: sudo nano /etc/hosts and enter the following line:
HAproxy 13.213.48.89

Step 3: sudo apt install apach2 -y
Step 4: sudo systemctl enable apache2
Step 5: sudo systemctl start apache2
Step 6: echo "<H1>Hello! This is webserver1: 54.169.128.89 </H1> | sudo tee /var/www/html/index.html

Step 7: check your ip(54.169.128.89) in browser. It should show the above line mentioned in step 6

Step 8: Curl ip-address or localhost

Task 2: Configure backend web-server2

Steps 1: SSH into the web-server1 and run the following command

1. sudo apt-get update
2. sudo apt-get upgrade

Step 2: sudo nano /etc/hosts and enter the following line:
HAproxy 13.213.48.89

Step 3: sudo apt install apach2 -y
Step 4: sudo systemctl enable apache2
Step 5: sudo systemctl start apache2
Step 6: echo "<H1>Hello! This is webserver2: 54.255.241.255 </H1> | sudo tee /var/www/html/index.html

Step 7: check your ip(54.255.241.255) in browser. It should show the above line mentioned in step 6

Step 8: Curl ip-address or localhost

Task 3: Configure frontend instance HAproxy

Step1: sudo apt-get update

Step 2: sudo apt-get upgrade

Step3: sudo nano /etc/hosts and enter the below lines

HAproxy 13.213.48.89

web-server1 54.255.241.255

web-server2 54.169.128.89

Step 4: sudo apt install haproxy

Step 5: haproxy -v

Step 6: sudo nano /etc/haproxy/haproxy.cfg

Enter the following lines at the end of default section

```
#HAproxy for web servers
frontend haproxynode
        bind *:80
        mode http
        default_backend backendnodes

backend backendnodes
        balance roundrobin
        option forwardfor
        http-request set-header X-Forwarded-Port %[dst_port]
        http-request add-header X-Forwarded-Proto https if { ssl_fc }
        option httpchk HEAD / HTTP/1.1\r\nHost:localhost
        server web-server1 54.255.241.255:80 check
        server web-server2 54.169.128.89:80 check

listen stats
        bind :32700
        stats enable
        stats uri /
        stats hide-version
        stats auth someuser:password
```

Step 7: haproxy -c -f /etc/hproxy/haproxy.cfg

You should see Configuration file is valid

Step 8: sudo service haproxy restart

Step 9: sudo service haproxy status

Step 10: browse your frontend ip on any browser

http://13.213.48.89/

you will see the response one by one form both the backends while refereshing the page.

Step 11: Browse the url for checking the statsistics

http://13.213.48.89:32700/stats

It will prompt for username and password

Username: someuser

Password: password