Lab_3

Lab3

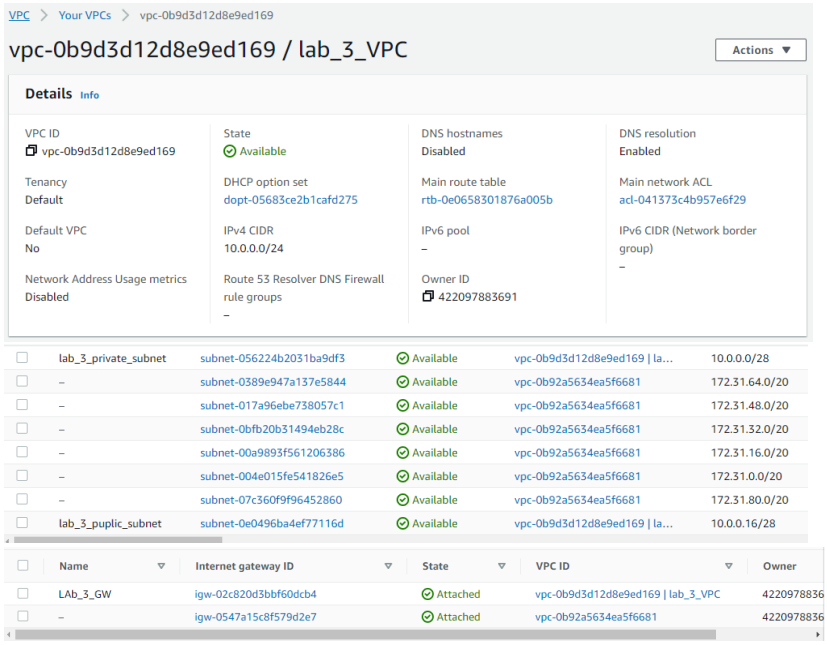
1- Launch a jump host

Take a screen while you are ssh to the jumphost

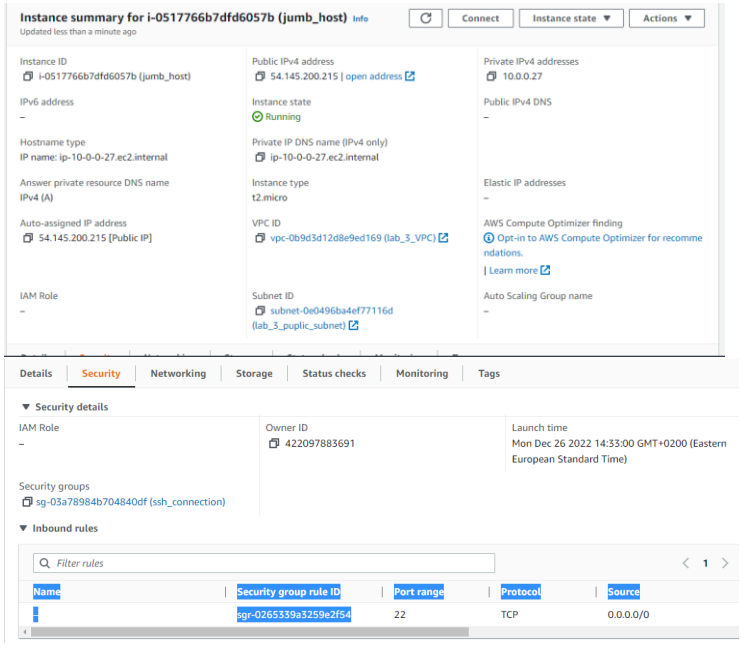
Also When you ssh from bastion to the private machine

Screenshot from the console showing the instances Ips

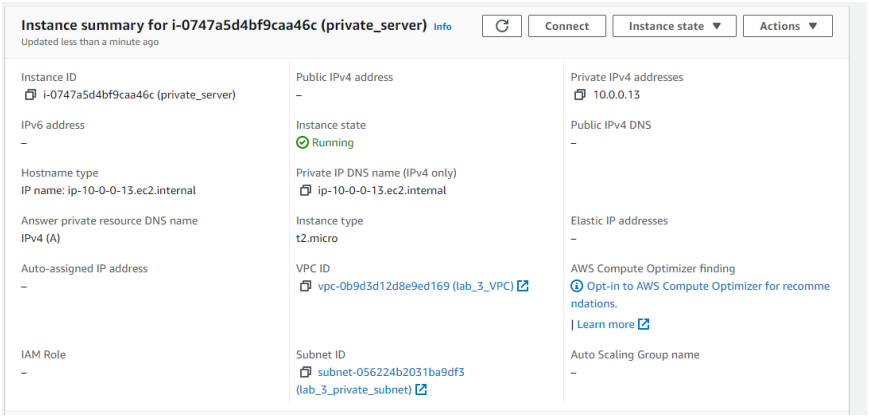
1) Create vpc, Private subnet, public, subnet ,two route table and internet GW

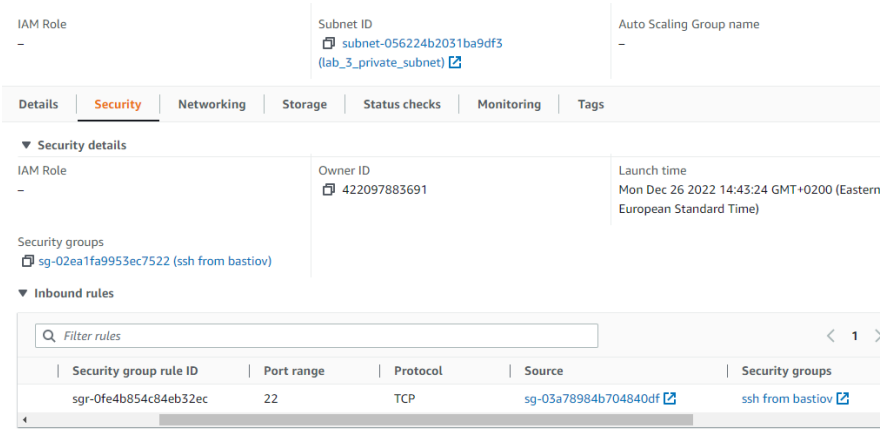


2)create jumb-host instance in public subnet and allow ssh connection only using security group



3)create private instance in the private subnet and allow only ssh from jumb_host 's security group





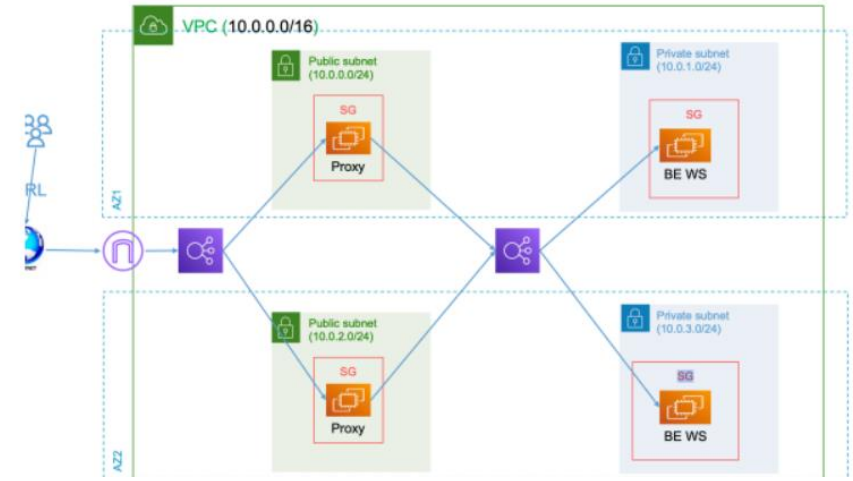
4)ssh to jumb_host , copy pem file and from jumb_host ssh on private instance:

```
Islam@DESKTOP-G8INB1G MINGW64 /d/safa/Devops Sprints/labs
$ ssh -i "EC2.pem" ubuntu@54.145.200.215
The authenticity of host '54.145.200.215 (54.145.200.215)' can't be established.
ED25519 key fingerprint is SHA256:HzrEJ61GOj9PTXhhi7odsZNsFSDYwI8gVCdoAl25fpM.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '54.145.200.215' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1026-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Mon Dec 26 12:40:12 UTC 2022

  System load:  0.0               Processes:             97
  Usage of /:   19.8% of 7.57GB   Users logged in:       0
  Memory usage: 21%               IPv4 address for eth0: 10.0.0.27
  Swap usage:   0%

0 updates can be applied immediately.


The list of available updates is more than a week old.
To check for new updates run: sudo apt update


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
```

```
ubuntu@ip-10-0-0-27:~$ exit
logout
Connection to 54.145.200.215 closed.

Islam@DESKTOP-G8INB1G MINGW64 /d/safa/Devops Sprints/labs
$ scp -i EC2.pem EC2.pem ubuntu@54.145.200.215:/home/ubuntu/
EC2.pem

Islam@DESKTOP-G8INB1G MINGW64 /d/safa/Devops Sprints/labs
$ ssh -i "EC2.pem" ubuntu@54.145.200.215
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1026-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Mon Dec 26 12:50:59 UTC 2022

  System load:  0.0               Processes:             98
  Usage of /:   20.0% of 7.57GB   Users logged in:       0
  Memory usage: 22%               IPv4 address for eth0: 10.0.0.27
  Swap usage:   0%


0 updates can be applied immediately.


The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Mon Dec 26 12:40:13 2022 from 105.40.50.251
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-0-0-27:~$ ls
EC2.pem
ubuntu@ip-10-0-0-27:~$ ssh -i EC2.pem ubuntu@10.0.0.13
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1026-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Mon Dec 26 12:53:43 UTC 2022

  System load:  0.0               Processes:             97
  Usage of /:   19.7% of 7.57GB   Users logged in:       0
  Memory usage: 20%               IPv4 address for eth0: 10.0.0.13
  Swap usage:   0%

0 updates can be applied immediately.


The list of available updates is more than a week old.
To check for new updates run: sudo apt update


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-0-0-13:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils bzip2 libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0 mailcap
```

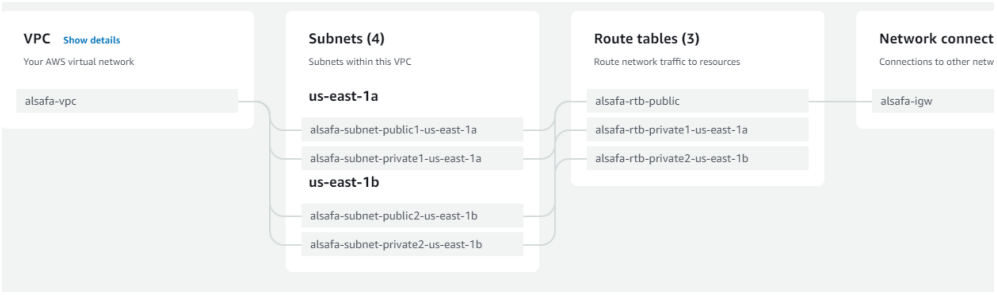
2-

Implement the below diagram then take a screenshot while you put dns of the load balancer into the browser and it returns a response from the 2 apache instatnces
Also Screenshot from the console showing the machines BE WS have private Ips
And finally a screenshot showing the targets of the 2 loadbalancers target groups are healthy

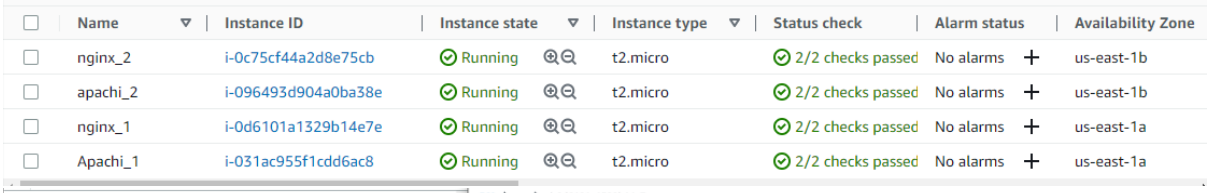


Part 2

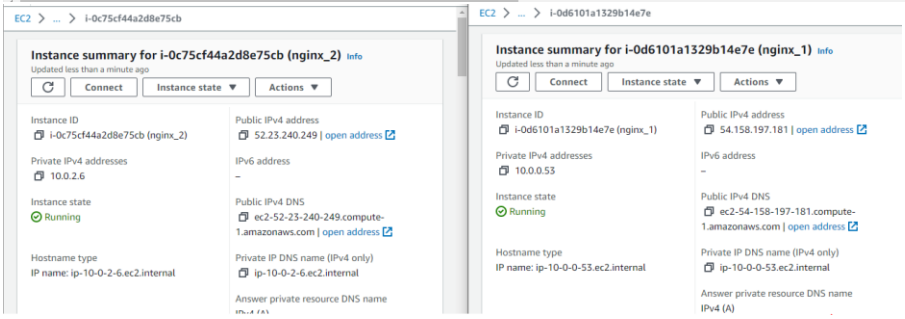
1) create vpc, subnets, and then create nat and attach it to the two private route table:

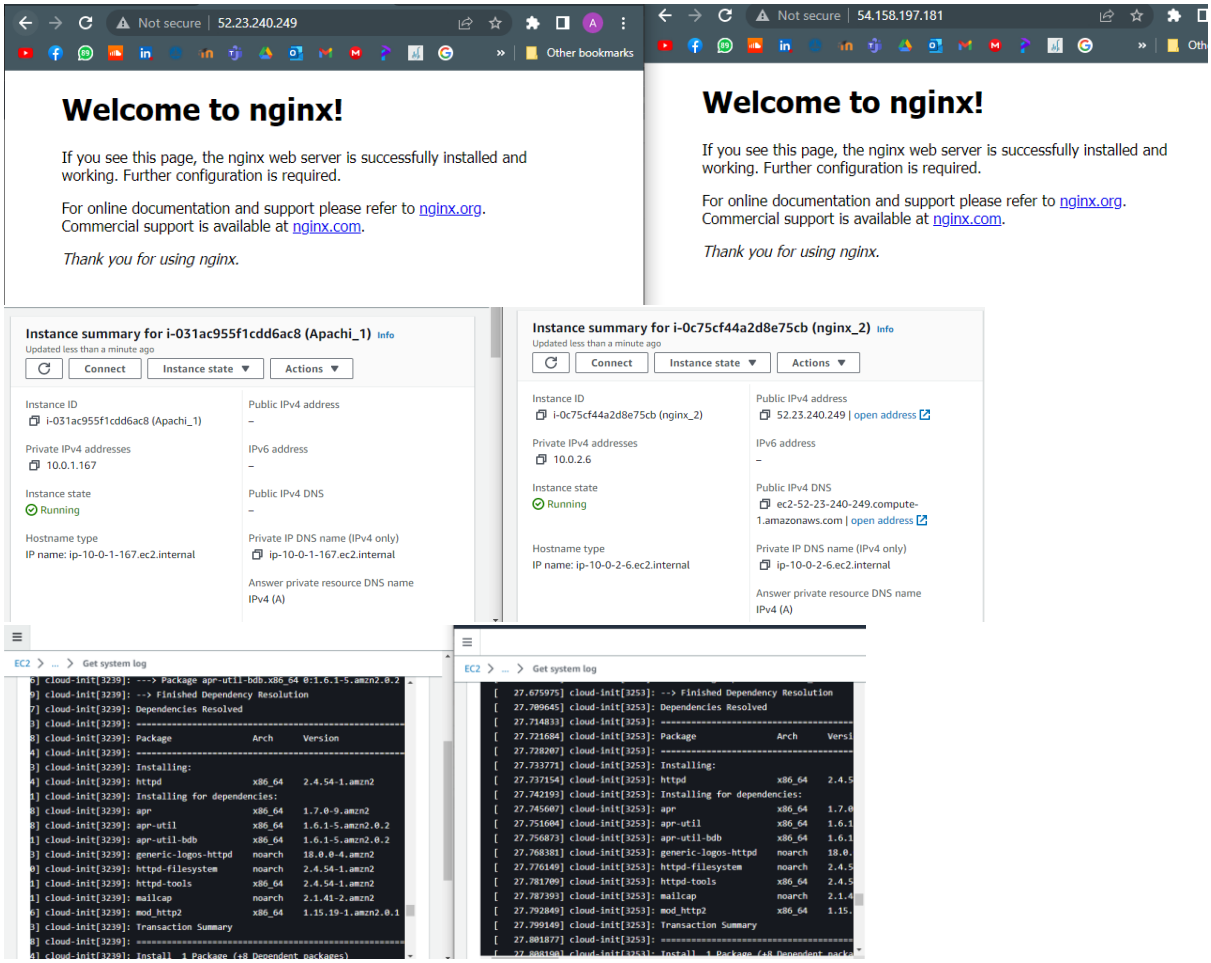


2)create two nginx instance in public subnets and two apachi in private subnet then check the nginx and apachi servers:

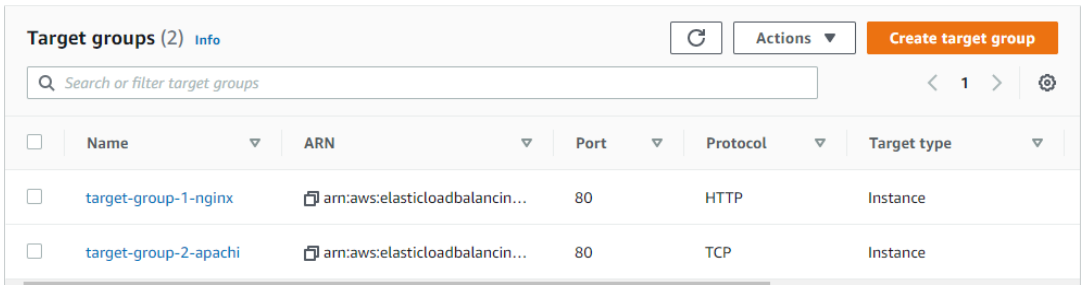


Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
nginx_2	i-0c75cf44a2d8e75cb	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b
apachi_2	i-096493d904a0ba38e	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b
nginx_1	i-0d6101a1329b14e7e	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a
Apachi_1	i-031ac955f1cdd6ac8	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a

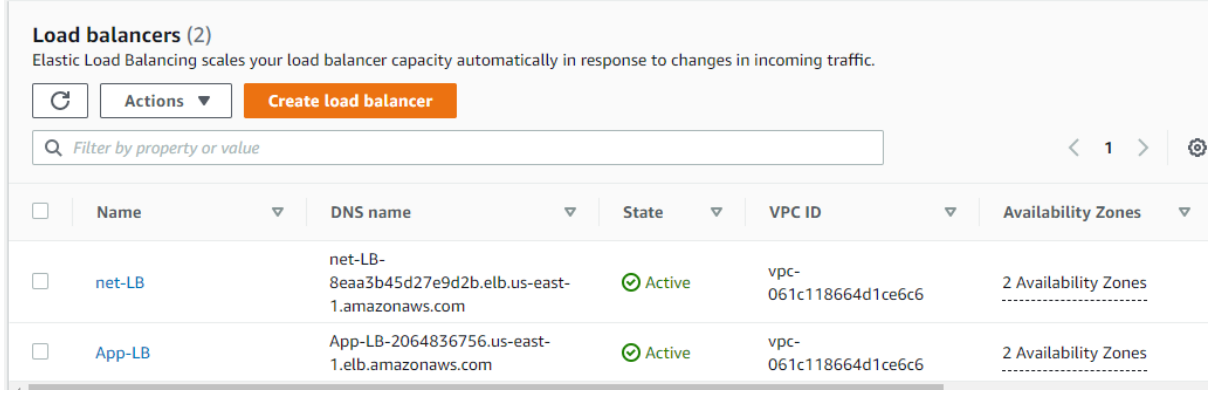




3)create two target group:



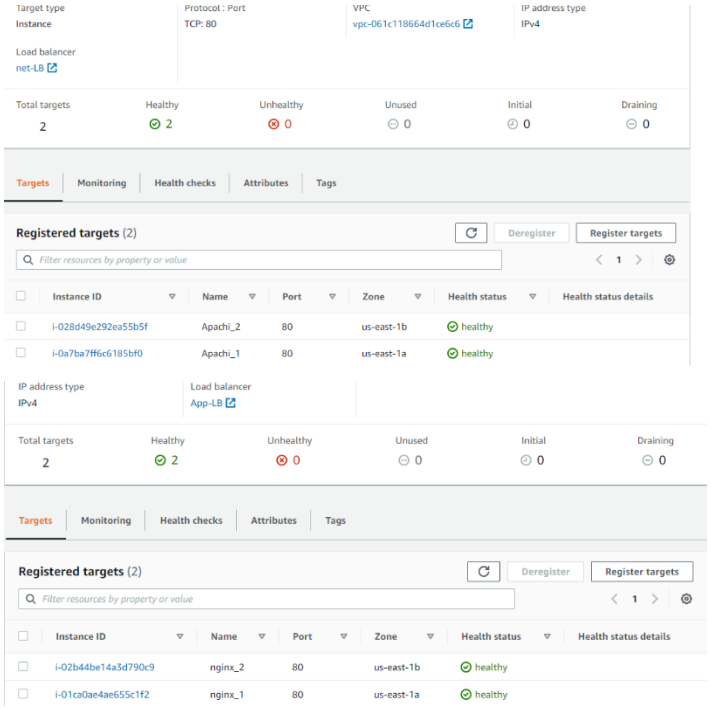
4)create application load balancer and net:

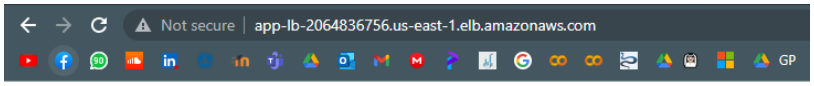


5) configure each nginx servers:

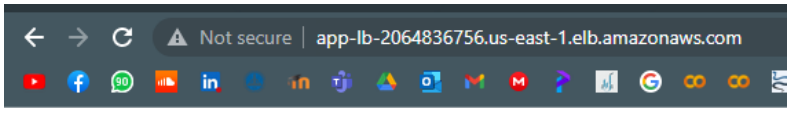
```
cd /etc/nginx/sites-available/
sudo vim reverse-apache.conf
        server {
                listen 80;
                location / {
                        proxy_pass http://net-LB-8eaa3b45d27e9d2b.elb.us-east-1.amazonaws.com;
                }
        }
sudo cp reverse-apache.conf  /etc/nginx/conf.d/lb.conf
sudo ln -s /etc/nginx/sites-available/reverse-apache.conf /etc/nginx/sites-enabled/reverse-apache.conf
sudo rm /etc/nginx/sites-enabled/default
sudo ufw allow http/tcp
sudo ufw enable
sudo systemctl restart nginx
```

6)check healthy and load balancer





â€œHello World from ip-10-0-1-95.ec2.internal apachi_1â€



â€œHello World from ip-10-0-3-92.ec2.internal apachi_2â€