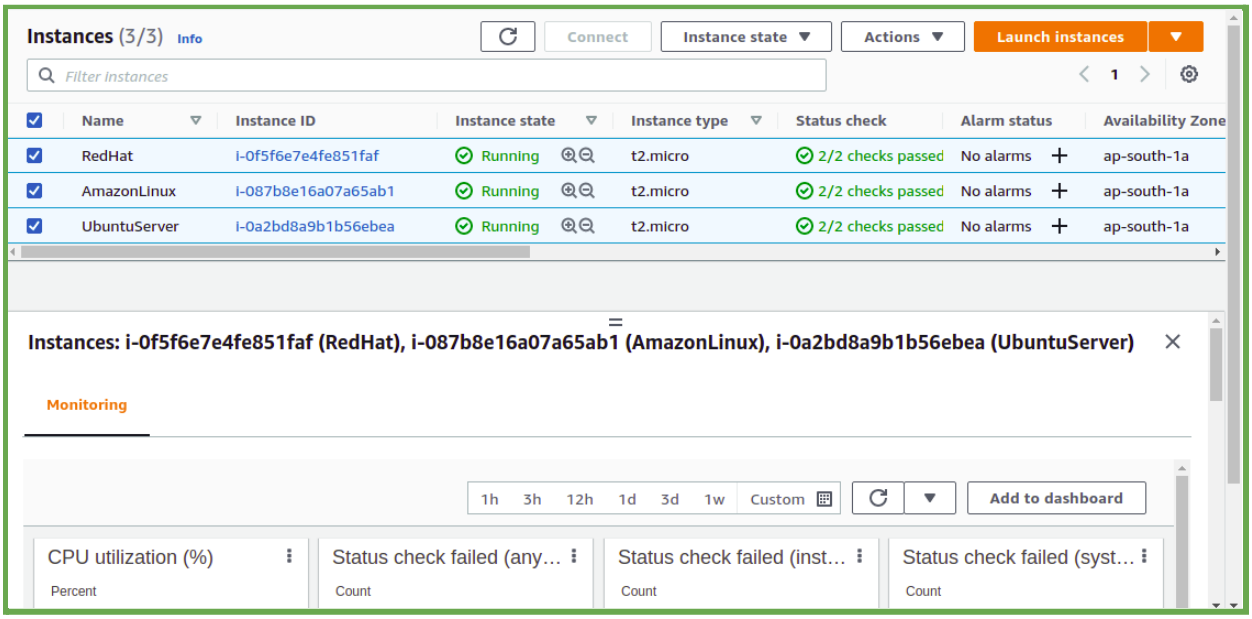
Module-3: ELB Assignment -1

1. **Create a classic load balancer and register 3 EC2 instance with different web pages running in them**
2. **Migrate the classic load balancer into an application load balancer**

Create three instances

1. Red Hat
2. Amazon Linux
3. Ubuntu



Now take remote of every instance

1. **Take remote of Red Hat by using php with apache2**

   Now get the permission of private key
   Using command: **chmod 400 Key name.pem**
   This is the explanation of the SSH command:

   - ssh: Command to use SSH protocol
   - -i: Flag that specifies an alternate identification file to use for public key authentication.
   - username: Username that uses your instance
   - ip-address: IP address given to your instance

   Using command **ssh i key name.pem username@Public-ip-address**

```
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads# chmod 400 Mymumbaikey.pem
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads# ssh -i "Mymumbaikey.pem" ec2-user@ec2-6
5-2-30-229.ap-south-1.compute.amazonaws.com
The authenticity of host 'ec2-65-2-30-229.ap-south-1.compute.amazonaws.com (65
.2.30.229)' can't be established.
ECDSA key fingerprint is SHA256:gQWva7g8WmIMpngU3m9ErkZVU8jG+7y5tME/BHbe1vA.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-65-2-30-229.ap-south-1.compute.amazonaws.com,6
5.2.30.229' (ECDSA) to the list of known hosts.
```

Switch to the Super user by using: **sudo su**
Connect to your EC2 instance and install the Apache web server
Command: **sudo yum install httpd**

```
[ec2-user@ip-172-31-33-229 ~]$
[ec2-user@ip-172-31-33-229 ~]$ sudo su
[root@ip-172-31-33-229 ec2-user]#
[root@ip-172-31-33-229 ec2-user]#
[root@ip-172-31-33-229 ec2-user]#
[root@ip-172-31-33-229 ec2-user]# yum install httpd
Updating Subscription Management repositories.
Unable to read consumer identity
```

```
[root@ip-172-31-33-229 ec2-user]#
[root@ip-172-31-33-229 ec2-user]# yum install httpd --disablerepo=jbappplatfor
m-6-*
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered to Red Hat Subscription Management. You can use
subscription-manager to register.

No repository match: jbappplatform-6-*
Last metadata expiration check: 0:00:18 ago on Wednesday 10 November 2021 05:3
0:39 AM UTC.
Package httpd-2.4.37-43.module+el8.5.0+13064+c4b14997.x86_64 is already instal
led.
```

Checking your Web server

1. **systemctl start httpd.service**
2. **systemctl enable httpd.service**
3. **systemctl status httpd.service**

Install php in Red Hat by using command: **sudo dnf install php php-cli php-common**

```
[root@ip-172-31-33-229 ec2-user]#
[root@ip-172-31-33-229 ec2-user]# systemctl start httpd.service
[root@ip-172-31-33-229 ec2-user]#
[root@ip-172-31-33-229 ec2-user]#
[root@ip-172-31-33-229 ec2-user]#
[root@ip-172-31-33-229 ec2-user]# sudo dnf install php php-cli php-common
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered to Red Hat Subscription Management. You can use
subscription-manager to register.

Last metadata expiration check: 0:00:53 ago on Wednesday 10 November 2021 05:3
0:39 AM UTC.
Dependencies resolved.
```

Make php file

```
[root@ip-172-31-33-229 ec2-user]#
[root@ip-172-31-33-229 ec2-user]# cd /var/www/html
[root@ip-172-31-33-229 html]# vi index.php
[root@ip-172-31-33-229 html]#
```

Restart apache2 service using command: **systemctl restart httpd.service**

```
[root@ip-172-31-33-229 html]#
[root@ip-172-31-33-229 html]# systemctl restart httpd.service
```

2. Take remote of Amazon Linux by using php with apache2

Now get the permission of private key
Using command: **chmod 400 Key name.pem**
This is the explanation of the SSH command:

- ssh: Command to use SSH protocol
- -i: Flag that specifies an alternate identification file to use for public key authentication.
- username: Username that uses your instance
- ip-address: IP address given to your instance

Using command **ssh i key name.pem username@Public-ip-address**

```
root@Varonica:/home/aayushi/Downloads# chmod 400 Mymumbaikey.pem
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads# ssh -i "Mymumbaikey.pem" ec2-user@ec2-13-
233-174-31.ap-south-1.compute.amazonaws.com
The authenticity of host 'ec2-13-233-174-31.ap-south-1.compute.amazonaws.com (13
.233.174.31)' can't be established.
ECDSA key fingerprint is SHA256:jfBZTLkyahbBzkLBW3854lhwvjd2CmPdPWy2U5kHUG0.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-13-233-174-31.ap-south-1.compute.amazonaws.com,1
3.233.174.31' (ECDSA) to the list of known hosts.

       __|  __|_  )
       _|  (     /   Amazon Linux 2 AMI
      ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
1 package(s) needed for security, out of 14 available
Run "sudo yum update" to apply all updates.
```

Go to super user by using: **sudo su**
Connect to your EC2 instance and install the Apache web server
Command: **sudo yum install httpd**

```
[ec2-user@ip-172-31-42-7 ~]$ sudo su
[root@ip-172-31-42-7 ec2-user]#
[root@ip-172-31-42-7 ec2-user]#
[root@ip-172-31-42-7 ec2-user]# yum install httpd
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
---> Package httpd.x86_64 0:2.4.51-1.amzn2 will be installed
```

Checking your Web server

1. **systemctl start httpd.service**
2. **systemctl enable httpd.service**
3. **systemctl status httpd.service**

```
[root@ip-172-31-42-7 ec2-user]# systemctl start httpd.service
[root@ip-172-31-42-7 ec2-user]#
```

```
[root@ip-172-31-42-7 ec2-user]# systemctl enable httpd.service
Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service t
o /usr/lib/systemd/system/httpd.service.
[root@ip-172-31-42-7 ec2-user]#
```

```
[root@ip-172-31-42-7 ec2-user]# systemctl status httpd.service
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor prese
t: disabled)
   Active: active (running) since Wed 2021-11-10 05:13:45 UTC; 11s ago
     Docs: man:httpd.service(8)
 Main PID: 3400 (httpd)
   Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes se
rved/sec:   0 B/sec"
   CGroup: /system.slice/httpd.service
           ├─3400 /usr/sbin/httpd -DFOREGROUND
           ├─3401 /usr/sbin/httpd -DFOREGROUND
           ├─3402 /usr/sbin/httpd -DFOREGROUND
           ├─3403 /usr/sbin/httpd -DFOREGROUND
           ├─3404 /usr/sbin/httpd -DFOREGROUND
           └─3405 /usr/sbin/httpd -DFOREGROUND
```

Install php in Amazon Linux by using command: **yum install libapache2-mod-php php**

```
[root@ip-172-31-42-7 ec2-user]# yum install libapache2-mod-php php
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
No package libapache2-mod-php available.
Resolving Dependencies
--> Running transaction check
---> Package php.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
```

Restart apache2 service using command: **systemctl restart httpd.service**
Now create php file

```
[root@ip-172-31-42-7 ec2-user]# systemctl restart httpd.service
[root@ip-172-31-42-7 ec2-user]#
[root@ip-172-31-42-7 ec2-user]#
[root@ip-172-31-42-7 ec2-user]#
[root@ip-172-31-42-7 ec2-user]#
[root@ip-172-31-42-7 ec2-user]# cd /var/www/html
[root@ip-172-31-42-7 html]#
[root@ip-172-31-42-7 html]#
[root@ip-172-31-42-7 html]#
[root@ip-172-31-42-7 html]# vi index.php
[root@ip-172-31-42-7 html]#
```

1. **Take remote of ubuntu by using php with apache2**

Now get the permission of private key
Using command: **chmod 400 Key name.pem**
This is the explanation of the SSH command:

- ssh: Command to use SSH protocol
- -i: Flag that specifies an alternate identification file to use for public key authentication.

- username: Username that uses your instance
- ip-address: IP address given to your instance

Using command **ssh i key name.pem username@Public-ip-address**

```
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads# chmod 400 Mymumbaikey.pem
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads#
root@Varonica:/home/aayushi/Downloads# ssh -i "Mymumbaikey.pem" ubuntu@ec2-3-10
8-40-207.ap-south-1.compute.amazonaws.com
The authenticity of host 'ec2-3-108-40-207.ap-south-1.compute.amazonaws.com (3.
108.40.207)' can't be established.
ECDSA key fingerprint is SHA256:UCnYAtyPEfEHdmkDFRdJDlJmwjoNtVt5ZZw02DFnSwo.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-3-108-40-207.ap-south-1.compute.amazonaws.com,3
.108.40.207' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.11.0-1020-aws x86_64)
```

Check the status of apache2 by using command: **dpkg -s apache2**

```
ubuntu@ip-172-31-40-149:~$ dpkg -s apache2
dpkg-query: package 'apache2' is not installed and no information is available
Use dpkg --info (= dpkg-deb --info) to examine archive files.
```

Go to super user by using: **sudo su**
Install apache2 in ubuntu using command: **apt-get install apache2**

```
ubuntu@ip-172-31-40-149:~$ sudo su
root@ip-172-31-40-149:/home/ubuntu#
root@ip-172-31-40-149:/home/ubuntu#
root@ip-172-31-40-149:/home/ubuntu#
root@ip-172-31-40-149:/home/ubuntu#
root@ip-172-31-40-149:/home/ubuntu#
root@ip-172-31-40-149:/home/ubuntu#
root@ip-172-31-40-149:/home/ubuntu# apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap libjansson4 liblua5.2-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
  openssl-blacklist
The following NEW packages will be installed:
```

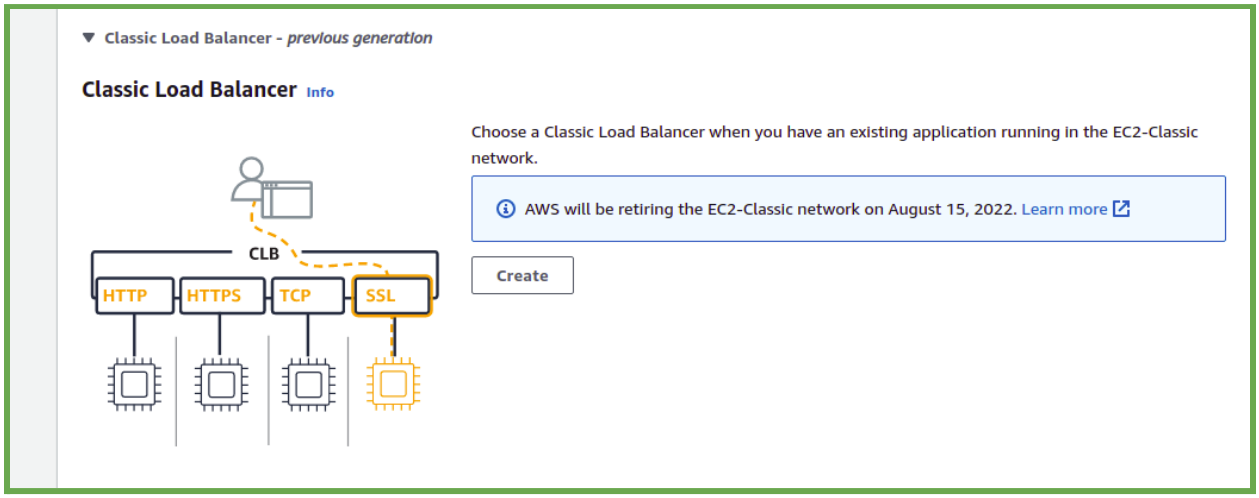
Install php in ubuntu by using command: **yum install libapache2-mod-php php**

```
root@ip-172-31-40-149:/home/ubuntu#
root@ip-172-31-40-149:/home/ubuntu# sudo apt install php libapache2-mod-php
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php7.4 php-common php7.4 php7.4-cli php7.4-common php7.4-json
  php7.4-opcache php7.4-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php libapache2-mod-php7.4 php php-common php7.4 php7.4-cli
  php7.4-common php7.4-json php7.4-opcache php7.4-readline
0 upgraded, 10 newly installed, 0 to remove and 18 not upgraded.
Need to get 4022 kB of archives.
After this operation, 18.0 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

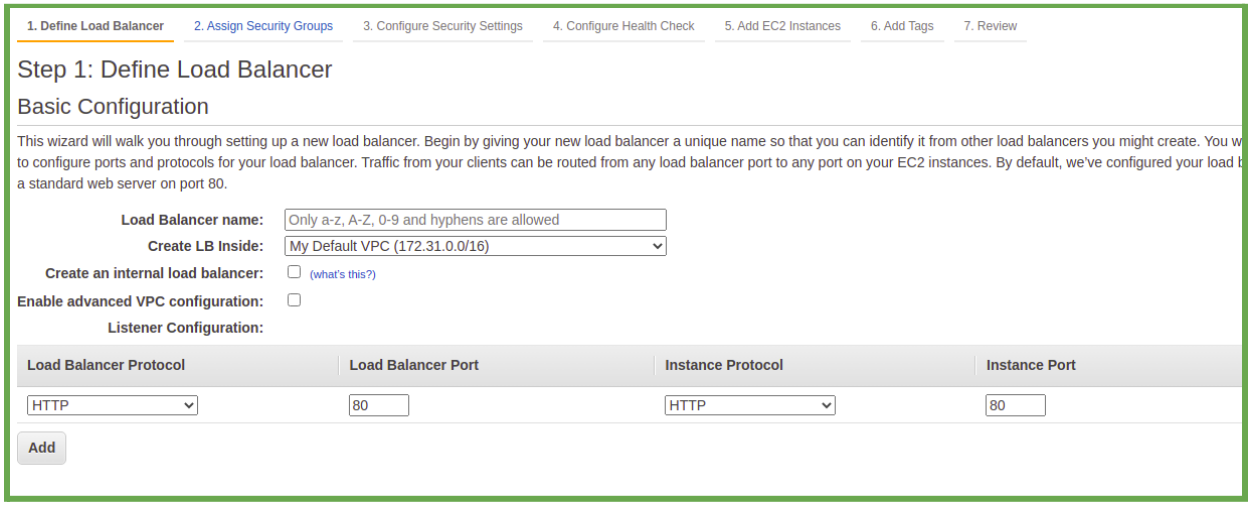
Now create php file
Restart apache2 service using command: **systemctl restart httpd.service**

```
root@ip-172-31-40-149:/home/ubuntu# cd /var/www/html
root@ip-172-31-40-149:/var/www/html#
root@ip-172-31-40-149:/var/www/html#
root@ip-172-31-40-149:/var/www/html#
root@ip-172-31-40-149:/var/www/html# vi indev.php
root@ip-172-31-40-149:/var/www/html#
root@ip-172-31-40-149:/var/www/html#
root@ip-172-31-40-149:/var/www/html#
root@ip-172-31-40-149:/var/www/html# sudo systemctl restart apache2
root@ip-172-31-40-149:/var/www/html#
```

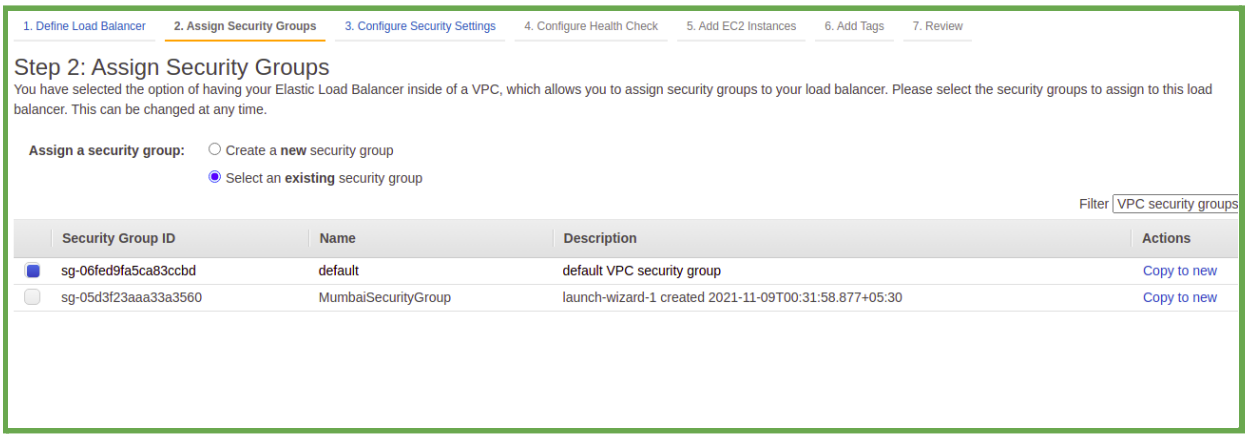
Create Classic Load Balancer



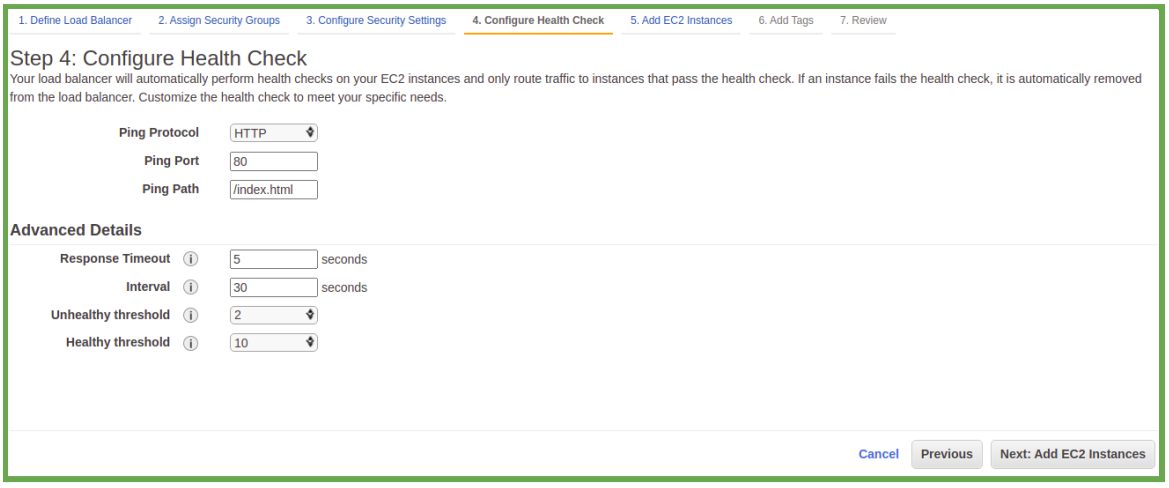
1. Define load balancer



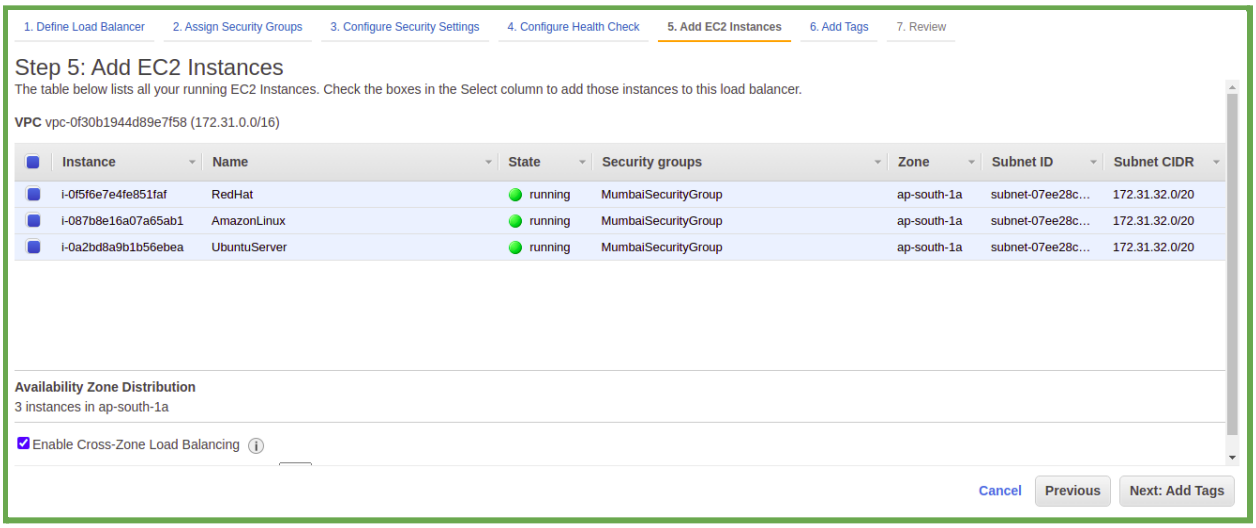
2. Assign security group



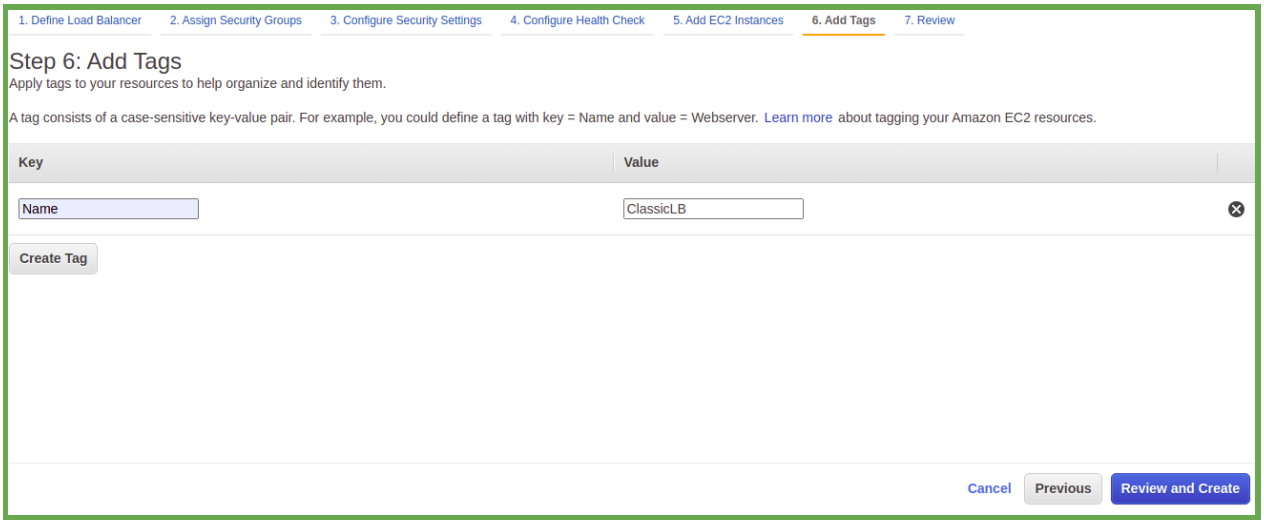
3. Configure health check



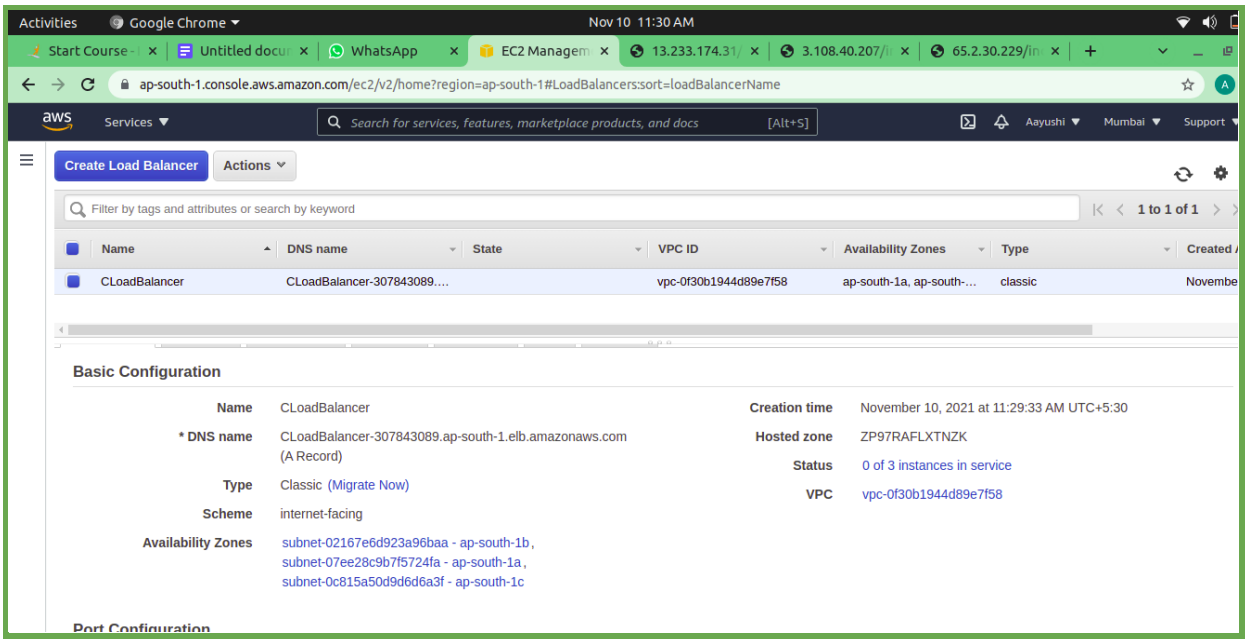
4. Add EC2 instance



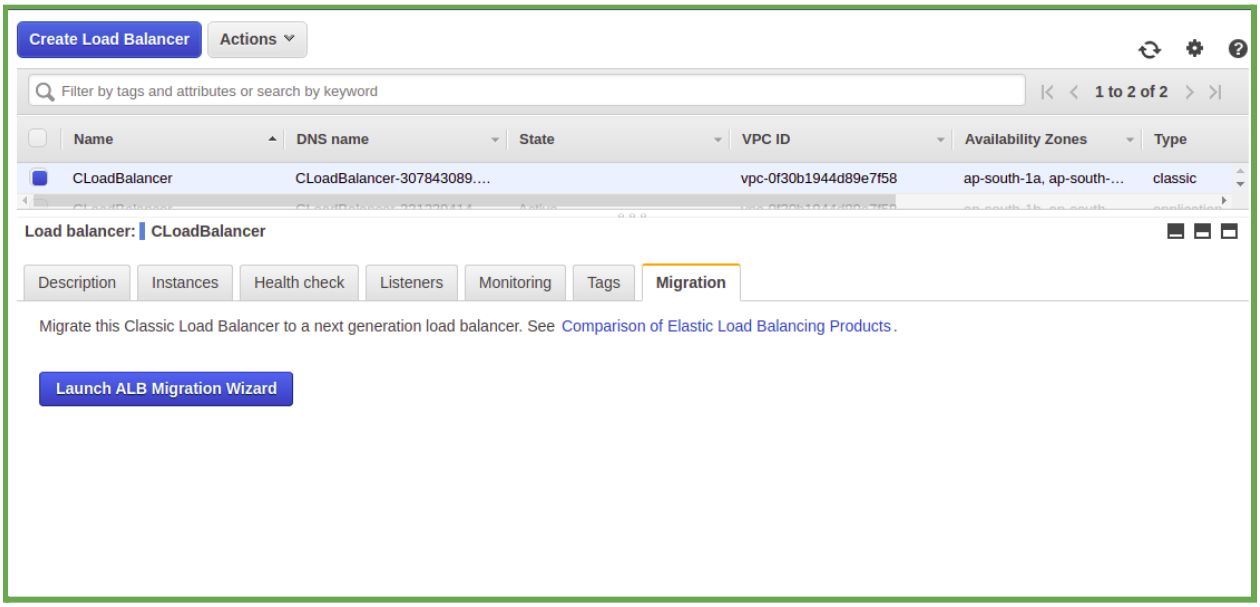
5. Add tags



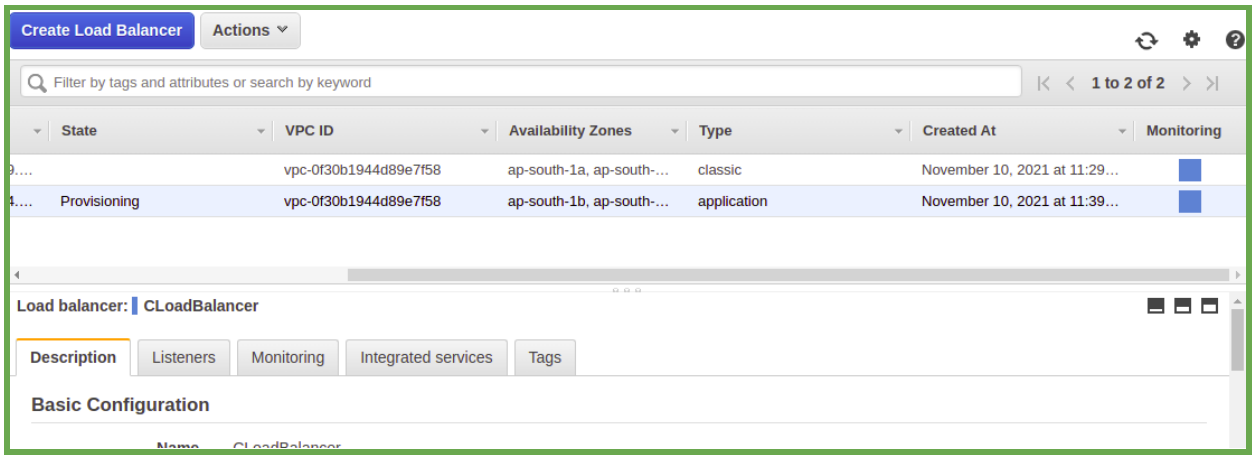
6. Create load balancer



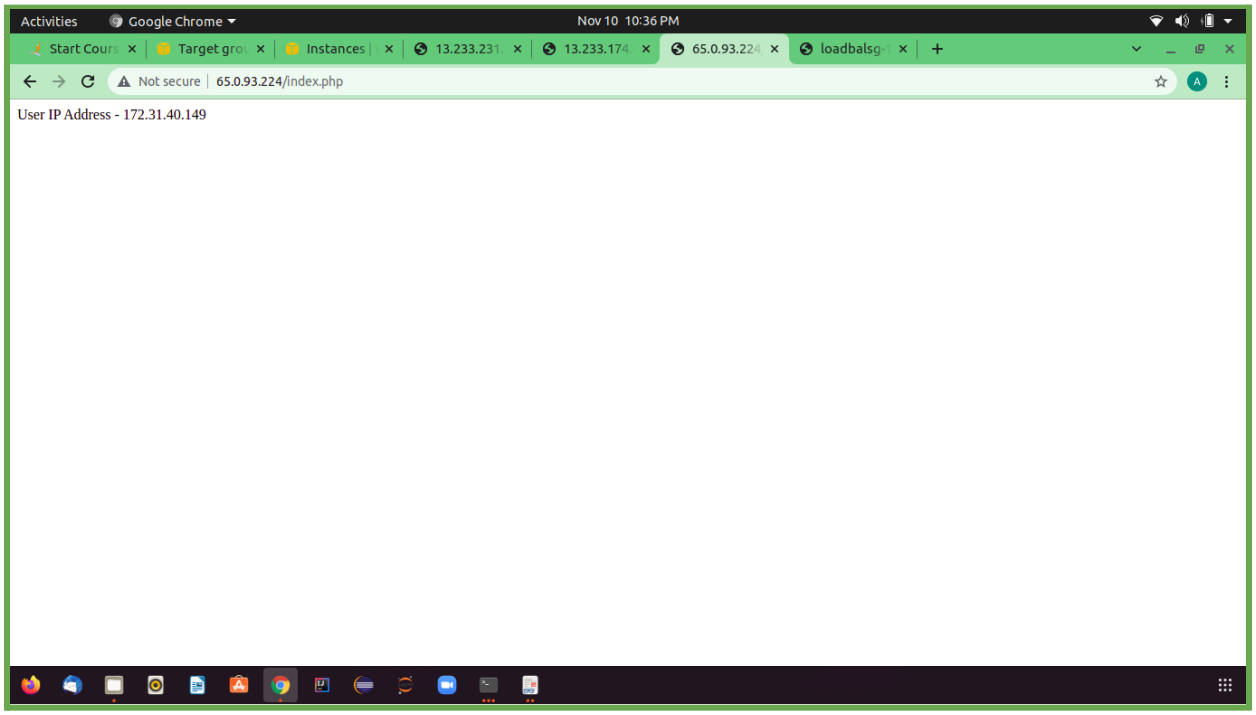
Launch ALB migration

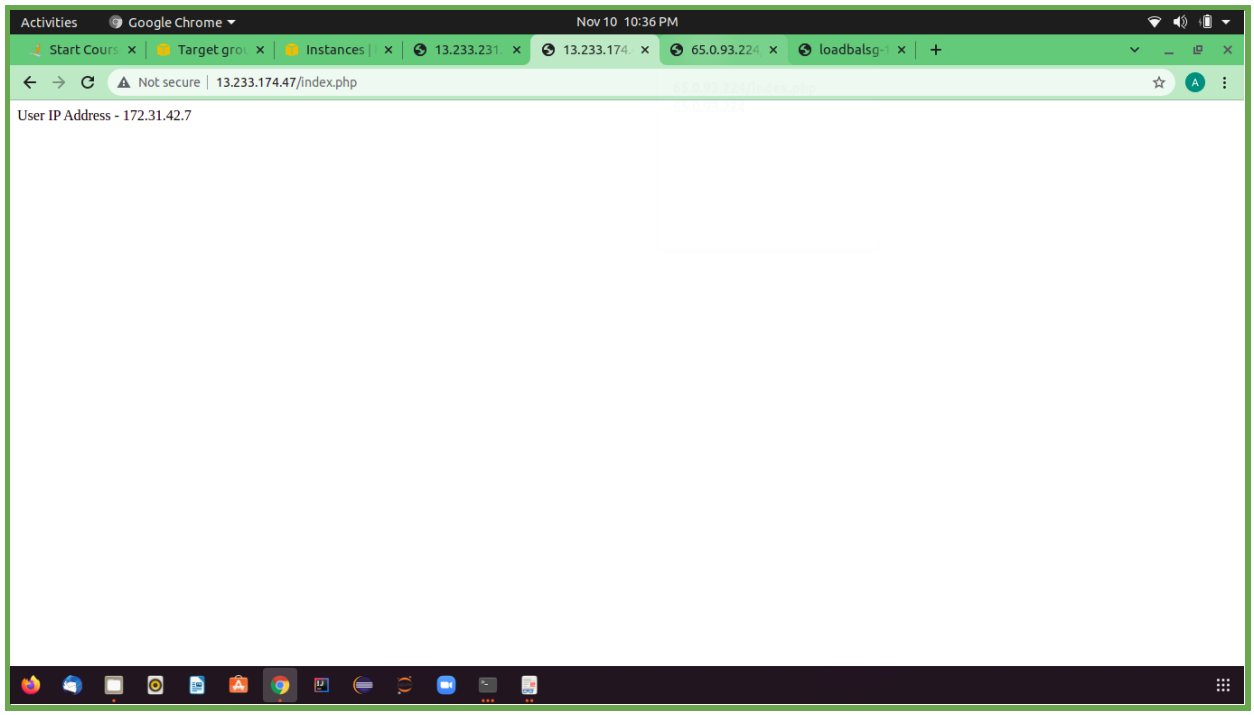


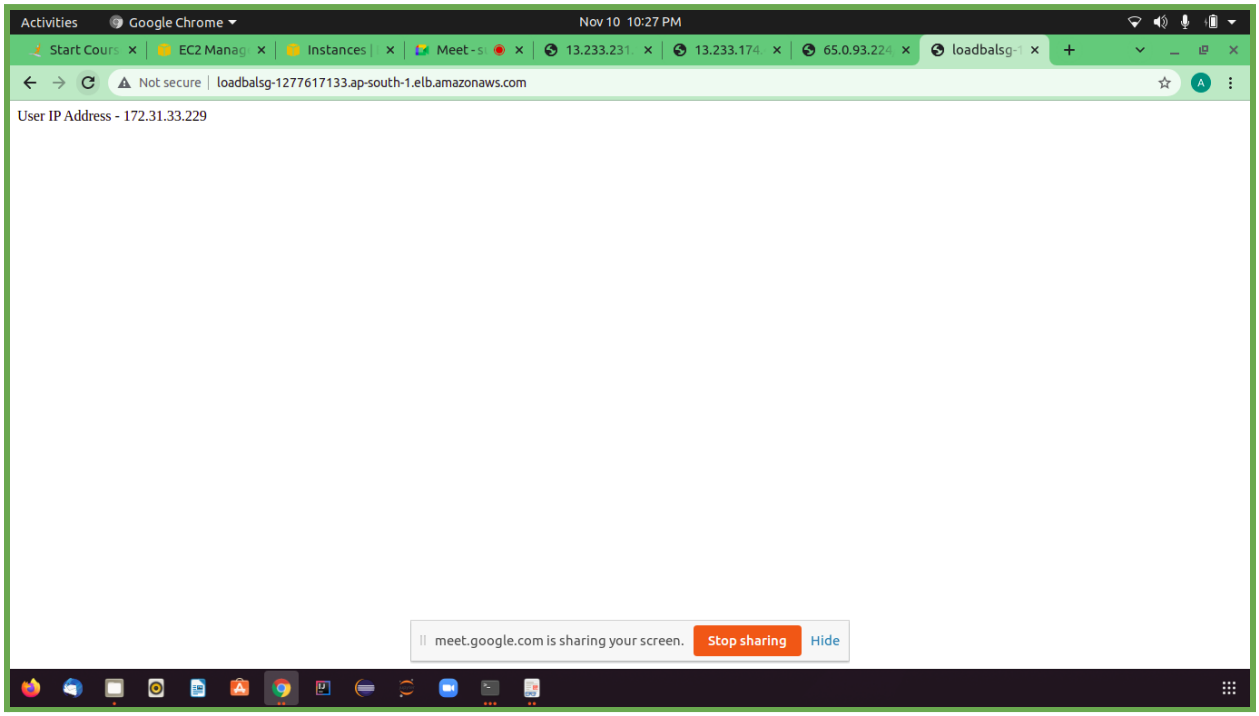
Application Load Balancer



Now check the browser and click again and again and you find the result




Activities
Google Chrome
Nov 10 10:36 PM
Not secure | 13.233.174.47/index.php
User IP Address - 172.31.42.7


Activities
Google Chrome
Nov 10 10:27 PM
Not secure | loadbalsg-1277617133.ap-south-1.elb.amazonaws.com
User IP Address - 172.31.33.229
meet.google.com is sharing your screen.
Stop sharing
Hide