Establishing highly available and reliable infrastructure for running web application on AWS

[Activity 03]

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Batch: CCF1

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Problem Statement

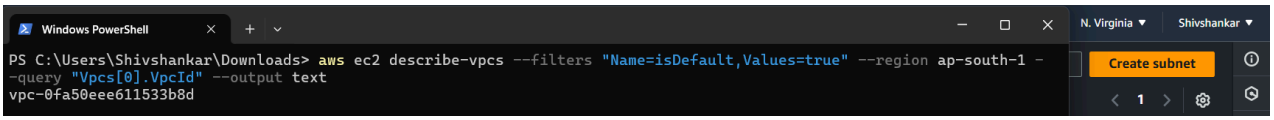
Set up an Application Load Balancer (ALB) on AWS to distribute incoming HTTP traffic between two EC2 instances running a web server, ensuring high availability and efficient load distribution.

Case 1: Using AWS CLI

Initial Setups:

➔ **Get Default VPC ID**

command: aws ec2 describe-vpcs --filters "Name=isDefault,Values=true" --region ap-south-1 --query "Vpcs[0].VpcId" --output text



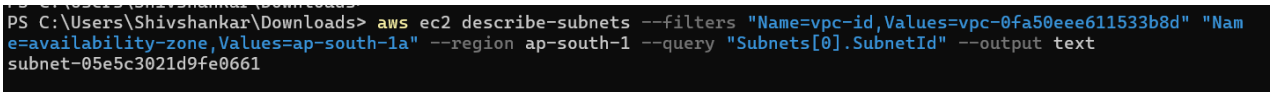
=>vpc-0fa50eee611533b8d

➔ **Get Default Subnet IDs**

For ap-south-1a:

command: aws ec2 describe-subnets --filters

"Name=vpc-id,Values=vpc-0fa50eee611533b8d" "Name=availability-zone,Values=ap-south-1a" --region ap-south-1 --query "Subnets[0].SubnetId" --output text



=> subnet-05e5c3021d9fe0661

For ap-south-1b:

command: aws ec2 describe-subnets --filters "Name=vpc-id,Values=vpc-0fa50eee611533b8d" "Name=availability-zone,Values=ap-south-1b" --region ap-south-1 --query "Subnets[0].SubnetId" --output text

```
PS C:\Users\Shivshankar\Downloads>
PS C:\Users\Shivshankar\Downloads> aws ec2 describe-subnets --filters "Name=vpc-id,Values=vpc-0fa50eee611533b8d" "Nam
e=availability-zone,Values=ap-south-1b" --region ap-south-1 --query "Subnets[0].SubnetId" --output text
subnet-032f010c61e243cf5
```

=> subnet-032f010c61e243cf5

➔ **Get Amazon Linux AMI ID**

command: aws ec2 describe-images --region ap-south-1 --owners amazon --filters "Name=name,Values=amzn2-ami-hvm-*-x86_64-gp2" --query "Images[0].ImageId" --output text

```
PS C:\Users\Shivshankar\Downloads> aws ec2 describe-images --region ap-south-1 --owners amazon --filters "Name=name,V
alues=amzn2-ami-hvm-*-x86_64-gp2" --query "Images[0].ImageId" --output text
ami-00748aef8eb583e02
```

=>ami-00748aef8eb583e02

➔ **Get Default Security Group ID**

command: aws ec2 describe-security-groups --filters "Name=vpc-id,Values=vpc-0fa50eee611533b8d" "Name=group-name,Values=default" --region ap-south-1 --query "SecurityGroups[0].GroupId" --output text

```
PS C:\Users\Shivshankar\Downloads> aws ec2 describe-security-groups --filters "Name=vpc-id,Values=vpc-0fa50eee611533b
8d" "Name=group-name,Values=default" --region ap-south-1 --query "SecurityGroups[0].GroupId" --output text
sg-0a4e4a5a02dc5ec50
```

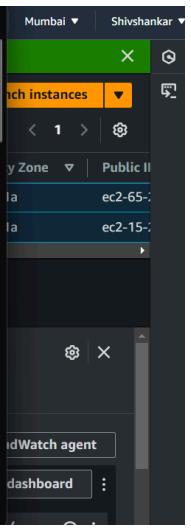
=>sg-0a4e4a5a02dc5ec50

Step 1: Launch Two EC2 Instances

Instance1

command:aws ec2 run-instances --image-id ami-00748aef8eb583e02 --instance-type t2.micro --key-name new-key-pair --subnet-id subnet-05e5c3021d9fe0661 --security-group-ids sg-0a4e4a5a02dc5ec50 --tag-specifications "ResourceType=instance,Tags=[{Key=Name,Value=cli-instance-1}]" --region ap-south-1

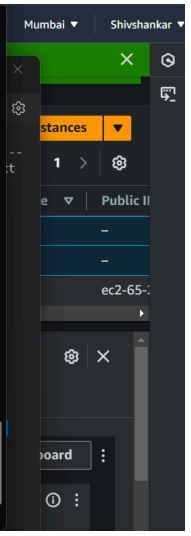
```
PS C:\Users\Shivshankar> aws ec2 run-instances --image-id ami-00748aef8eb583e02 --instance-type t2.micro --key-name new-
key-pair --subnet-id subnet-05e5c3021d9fe0661 --security-group-ids sg-0a4e4a5a02dc5ec50 --tag-specifications "ResourceTy
pe=instance,Tags=[{Key=Name,Value=cli-instance-1}]" --region ap-south-1
{
    "ReservationId": "r-07ae0eaf8e71b385c",
    "OwnerId": "715841363442",
    "Groups": [],
    "Instances": [
        {
            "Architecture": "x86_64",
            "BlockDeviceMappings": [],
            "ClientToken": "10762e33-d40e-483a-b5d7-783dd1c5d1ab",
            "EbsOptimized": false,
            "EnaSupport": true,
            "Hypervisor": "xen",
            "NetworkInterfaces": [
                {
                    "Attachment": {
                        "AttachTime": "2024-11-17T14:02:53+00:00",
                        "AttachmentId": "eni-attach-02c4615cc31bb28ad",
                        "DeleteOnTermination": true,
                        "DeviceIndex": 0,
                        "Status": "attaching",
                        "NetworkCardIndex": 0
                    },
                    "Description": "",
                    "Groups": [
                        {
                            "GroupId": "sg-0a4e4a5a02dc5ec50",
                            "GroupName": "default"
```



Instance2

command:aws ec2 run-instances --image-id ami-00748aef8eb583e02 --instance-type t2.micro --key-name new-key-pair --subnet-id subnet-032f010c61e243cf5 --security-group-ids sg-0a4e4a5a02dc5ec50 --tag-specifications "ResourceType=instance,Tags=[{Key=Name,Value=cli-instance-2}]" --region ap-south-1

```
PS C:\Users\Shivshankar> aws ec2 run-instances --image-id ami-00748aef8eb583e02 --instance-type t2.micro --key-name new-
key-pair --subnet-id subnet-032f010c61e243cf5 --security-group-ids sg-0a4e4a5a02dc5ec50 --tag-specifications "ResourceTy
pe=instance,Tags=[{Key=Name,Value=cli-instance-2}]" --region ap-south-1
{
    "ReservationId": "r-03397c5d02272826d",
    "OwnerId": "715841363442",
    "Groups": [],
    "Instances": [
        {
            "Architecture": "x86_64",
            "BlockDeviceMappings": [],
            "ClientToken": "0649dab4-21dc-4e6b-874f-faa4be32fb2f",
            "EbsOptimized": false,
            "EnaSupport": true,
            "Hypervisor": "xen",
            "NetworkInterfaces": [
                {
                    "Attachment": {
                        "AttachTime": "2024-11-17T14:07:11+00:00",
                        "AttachmentId": "eni-attach-0c51498fd5f5d24ce",
                        "DeleteOnTermination": true,
                        "DeviceIndex": 0,
                        "Status": "attaching",
                        "NetworkCardIndex": 0
                    },
                    "Description": "",
                    "Groups": [
                        {
                            "GroupId": "sg-0a4e4a5a02dc5ec50",
                            "GroupName": "default"
```



Get IPs of both launched Instances

command: aws ec2 describe-instances --filters "Name=tag:Name,Values=cli-instance-1,cli-instance-2" --query "Reservations[*].Instances[*].PublicIpAddress" --region ap-south-1

```
PS C:\Users\Shivshankar> aws ec2 describe-instances --filters "Name=tag:Name,Values=cli-instance-1,cli-instance-2" --que
ry "Reservations[*].Instances[*].PublicIpAddress" --region ap-south-1
[
    [
        "65.2.182.172"
    ],
    [
        "43.204.96.2"
    ]
]
```

IPs

cli-instance-1: 65.2.182.172

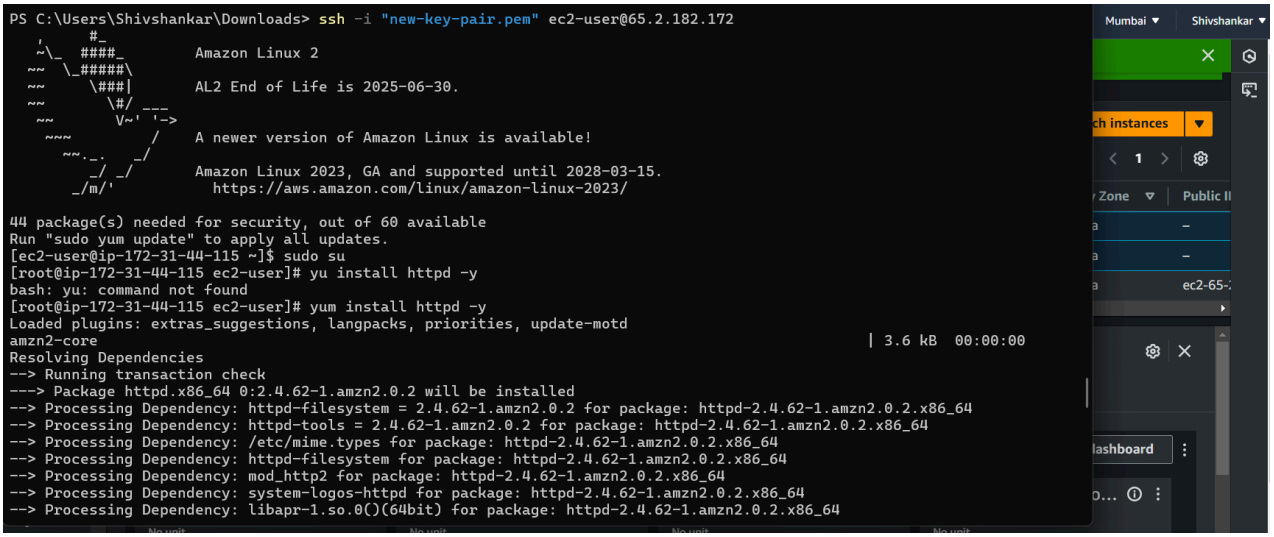
cli-instance-2: 43.204.96.2

Step 2: Connect to EC2 Instances

Instance1

command:

- ssh -i "new-key-pair.pem" ec2-user@65.2.182.172
- sudo su
- yum install httpd -y
- service httpd start
- service httpd status



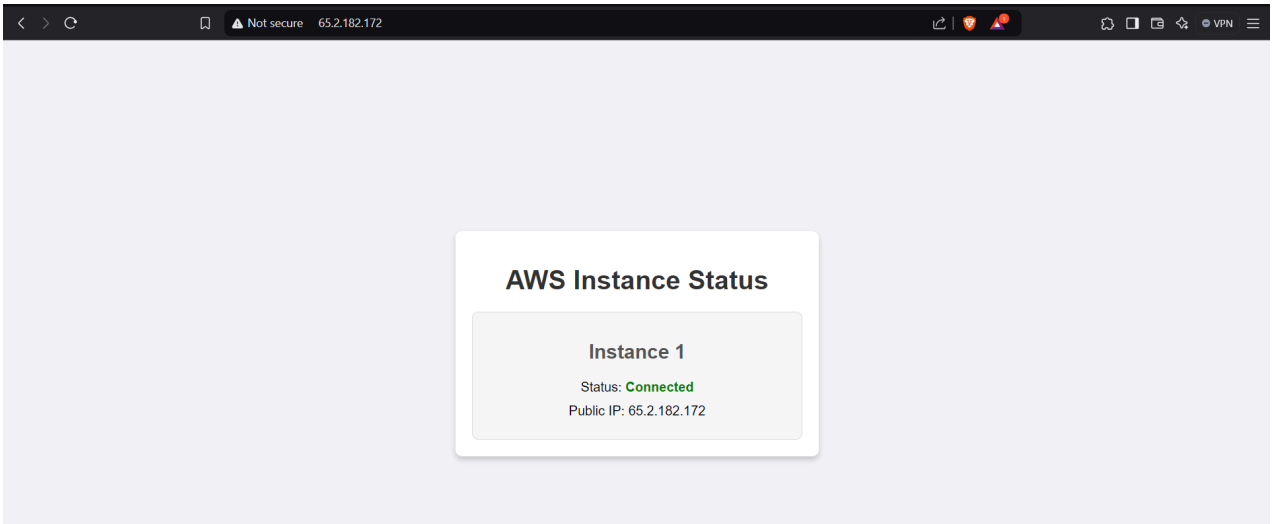
command:

- ssh -i "new-key-pair.pem" ec2-user@43.204.96.2
- sudo su
- yum install httpd -y
- service httpd start
- service httpd status

```
PS C:\Users\Shivshankar\Downloads> ssh -i "new-key-pair.pem" ec2-user@43.204.96.2
The authenticity of host '43.204.96.2 (43.204.96.2)' can't be established.
ED25519 key fingerprint is SHA256:6M3zM8lCCLW1JNqZjSur3ZOm/tTcDT3YZwrVXQQ+YM8.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '43.204.96.2' (ED25519) to the list of known hosts.
       #_
   ~\_  ####_        Amazon Linux 2
  ~~  \_#####\
  ~~     \###|       AL2 End of Life is 2025-06-30.
  ~~       \#/ ___
   ~~       V~' '->
    ~~~         /    A newer version of Amazon Linux is available!
      ~~._.   _/
         _/ _/       Amazon Linux 2023, GA and supported until 2028-03-15.
       _/m/'           https://aws.amazon.com/linux/amazon-linux-2023/

44 package(s) needed for security, out of 60 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-1-163 ~]$ sudo su
[root@ip-172-31-1-163 ec2-user]# yum install httpd -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                                               | 3.6 kB  00:00:00
Resolving Dependencies
--> Running transaction check
---> Package httpd.x86_64 0:2.4.62-1.amzn2.0.2 will be installed
--> Processing Dependency: httpd-filesystem = 2.4.62-1.amzn2.0.2 for package: httpd-2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: httpd-tools = 2.4.62-1.amzn2.0.2 for package: httpd-2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: /etc/mime.types for package: httpd-2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: httpd-filesystem for package: httpd-2.4.62-1.amzn2.0.2.x86_64
```

```
Installed:
  httpd.x86_64 0:2.4.62-1.amzn2.0.2

Dependency Installed:
  apr.x86_64 0:1.7.2-1.amzn2                          apr-util.x86_64 0:1.6.3-1.amzn2.0.1
  apr-util-bdb.x86_64 0:1.6.3-1.amzn2.0.1             generic-logos-httpd.noarch 0:18.0.0-4.amzn2
  httpd-filesystem.noarch 0:2.4.62-1.amzn2.0.2        httpd-tools.x86_64 0:2.4.62-1.amzn2.0.2
  mailcap.noarch 0:2.1.41-2.amzn2                     mod_http2.x86_64 0:1.15.19-1.amzn2.0.2

Complete!
[root@ip-172-31-44-115 ec2-user]# service httpd start
Redirecting to /bin/systemctl start httpd.service
[root@ip-172-31-44-115 ec2-user]# service httpd status
Redirecting to /bin/systemctl status httpd.service
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Sun 2024-11-17 14:30:58 UTC; 10s ago
     Docs: man:httpd.service(8)
 Main PID: 7240 (httpd)
   Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec:   0 B/sec"
   CGroup: /system.slice/httpd.service
           ├─7240 /usr/sbin/httpd -DFOREGROUND
           ├─7241 /usr/sbin/httpd -DFOREGROUND
           ├─7242 /usr/sbin/httpd -DFOREGROUND
           ├─7243 /usr/sbin/httpd -DFOREGROUND
           ├─7244 /usr/sbin/httpd -DFOREGROUND
           └─7245 /usr/sbin/httpd -DFOREGROUND

Nov 17 14:30:58 ip-172-31-44-115.ap-south-1.compute.internal systemd[1]: Starting The Apache HTTP Server...
Nov 17 14:30:58 ip-172-31-44-115.ap-south-1.compute.internal systemd[1]: Started The Apache HTTP Server.
```

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>AWS Instance 1</title>

    <style>
body {
    font-family: Arial, sans-serif;
    background-color: #f4f4f9;
    margin: 0;
    padding: 0;
    display: flex;
    justify-content: center;
    align-items: center;
    height: 100vh;
}

.container {
    text-align: center;
    background: #fff;
    border-radius: 8px;
    box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);
    padding: 20px;
    max-width: 400px;
    width: 90%;
}

-- INSERT --                                                    2,1           Top
```



Instance2

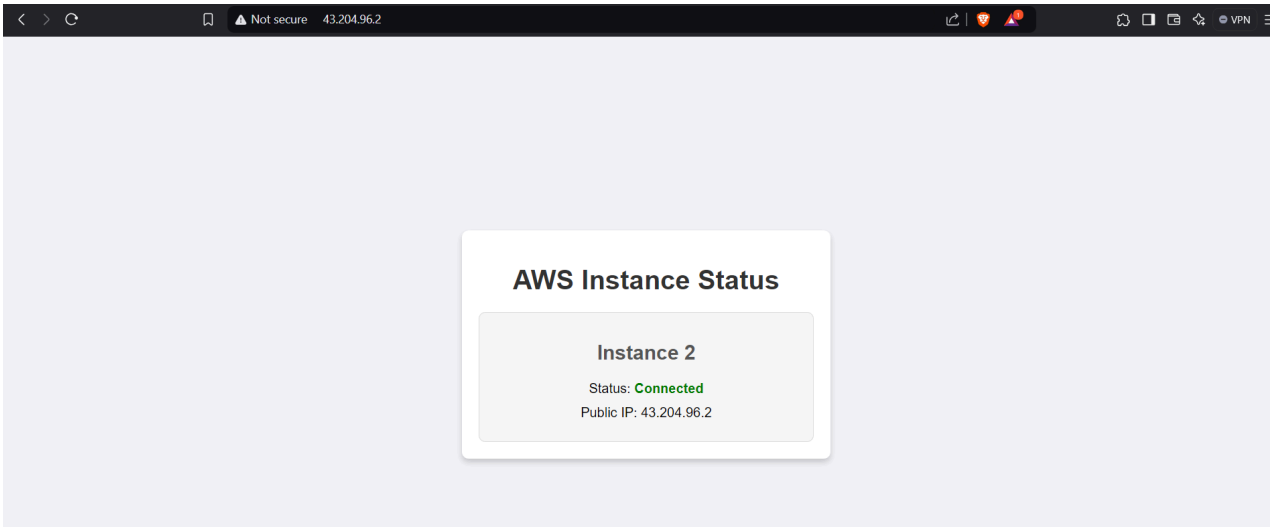
command:

- ssh -i "new-key-pair.pem" ec2-user@43.204.96.2
- sudo su
- yum install httpd -y
- service httpd start
- service httpd status

```
PS C:\Users\Shivshankar\Downloads> ssh -i "new-key-pair.pem" ec2-user@43.204.96.2
The authenticity of host '43.204.96.2 (43.204.96.2)' can't be established.
ED25519 key fingerprint is SHA256:6M3zM8lCCLW1JNqZjSur3ZOm/tTcDT3YZwrVXQQ+YM8.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '43.204.96.2' (ED25519) to the list of known hosts.
       #_
   ~\_  ####_        Amazon Linux 2
  ~~  \_#####\
  ~~     \###|       AL2 End of Life is 2025-06-30.
  ~~       \#/ ___
   ~~       V~' '->
    ~~~         /    A newer version of Amazon Linux is available!
      ~~._.   _/
         _/ _/       Amazon Linux 2023, GA and supported until 2028-03-15.
       _/m/'           https://aws.amazon.com/linux/amazon-linux-2023/

44 package(s) needed for security, out of 60 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-1-163 ~]$ sudo su
[root@ip-172-31-1-163 ec2-user]# yum install httpd -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                                                          | 3.6 kB  00:00:00
Resolving Dependencies
--> Running transaction check
---> Package httpd.x86_64 0:2.4.62-1.amzn2.0.2 will be installed
--> Processing Dependency: httpd-filesystem = 2.4.62-1.amzn2.0.2 for package: httpd-2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: httpd-tools = 2.4.62-1.amzn2.0.2 for package: httpd-2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: /etc/mime.types for package: httpd-2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: httpd-filesystem for package: httpd-2.4.62-1.amzn2.0.2.x86_64
```

```
  httpd.x86_64 0:2.4.62-1.amzn2.0.2

Dependency Installed:
  apr.x86_64 0:1.7.2-1.amzn2                          apr-util.x86_64 0:1.6.3-1.amzn2.0.1
  apr-util-bdb.x86_64 0:1.6.3-1.amzn2.0.1             generic-logos-httpd.noarch 0:18.0.0-4.amzn2
  httpd-filesystem.noarch 0:2.4.62-1.amzn2.0.2        httpd-tools.x86_64 0:2.4.62-1.amzn2.0.2
  mailcap.noarch 0:2.1.41-2.amzn2                     mod_http2.x86_64 0:1.15.19-1.amzn2.0.2

Complete!
[root@ip-172-31-1-163 ec2-user]# service httpd start
Redirecting to /bin/systemctl start httpd.service
[root@ip-172-31-1-163 ec2-user]# service httpd status
Redirecting to /bin/systemctl status httpd.service
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Sun 2024-11-17 14:36:34 UTC; 12s ago
     Docs: man:httpd.service(8)
 Main PID: 7241 (httpd)
   Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec:   0 B/sec"
   CGroup: /system.slice/httpd.service
           ├─7241 /usr/sbin/httpd -DFOREGROUND
           ├─7242 /usr/sbin/httpd -DFOREGROUND
           ├─7243 /usr/sbin/httpd -DFOREGROUND
           ├─7244 /usr/sbin/httpd -DFOREGROUND
           ├─7245 /usr/sbin/httpd -DFOREGROUND
           └─7246 /usr/sbin/httpd -DFOREGROUND

Nov 17 14:36:34 ip-172-31-1-163.ap-south-1.compute.internal systemd[1]: Starting The Apache HTTP Server...
Nov 17 14:36:34 ip-172-31-1-163.ap-south-1.compute.internal systemd[1]: Started The Apache HTTP Server.
[root@ip-172-31-1-163 ec2-user]#
```

```
.connected {
    color: green;
}

.disconnected {
    color: red;
}

p {
    margin: 10px 0;
}

    </style>
</head>
<body>
    <div class="container">
        <h1>AWS Instance Status</h1>
        <div class="status-card">
            <h2>Instance 2</h2>
            <p>Status: <span class="status connected">Connected</span></p>
            <p>Public IP: <span id="public-ip">Loading...</span></p>
        </div>
    </div>
    <script>
        document.getElementById('public-ip').textContent = "43.204.96.2";
    </script>
</body>
</html>

-- INSERT --                                                          72,1          Bot
```

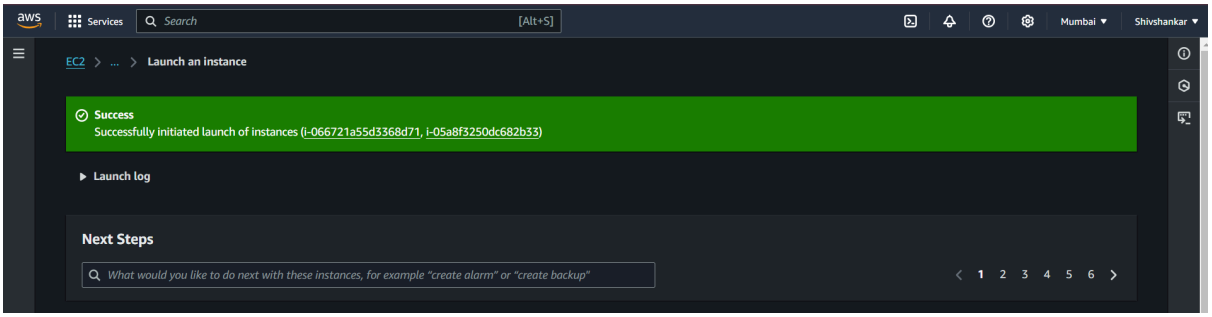


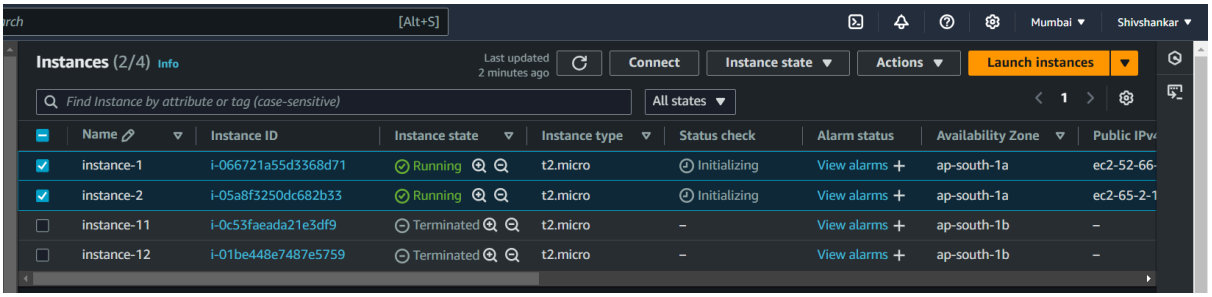
cli-instance-1: i-0e1ef13467b7c2c1f

cli-instance-2: i-0877c31df6730b5d4

Case 2: Using AWS Console

Step 1: Launch Two Instances





Step2: Connect to the EC2 instances

- ssh -i "new-key-pair.pem" ec2-user@52.66.147.145
- ssh -i "new-key-pair.pem" ec2-user@65.2.189.243
- sudo su
- yum install httpd -y
- service httpd start
- service httpd status

```
PS C:\Users\Shivshankar\Downloads> ssh -i "new-key-pair.pem" ec2-user@52.66.147.145
       #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
Last login: Sat Nov 16 08:59:27 2024 from 223.185.41.248
[ec2-user@ip-172-31-35-92 ~]$ sudo su
[root@ip-172-31-35-92 ec2-user]# yum install httpd
Last metadata expiration check: 0:16:03 ago on Sat Nov 16 08:46:15 2024.
Package httpd-2.4.62-1.amzn2023.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-35-92 ec2-user]#
```

Instance2

```
root@ip-172-31-35-92:/home/ ×   root@ip-172-31-38-141:/home ×   +
PS C:\Users\Shivshankar\Downloads> ssh -i "new-key-pair.pem" ec2-user@65.2.189.243
The authenticity of host '65.2.189.243 (65.2.189.243)' can't be established.
ED25519 key fingerprint is SHA256:U6HwsCvk5PyBuHYirN+0ubq9PmH6L2XbvMlXm+8fILg.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '65.2.189.243' (ED25519) to the list of known hosts.
       #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
[ec2-user@ip-172-31-38-141 ~]$ sudo su
[root@ip-172-31-38-141 ec2-user]#
[root@ip-172-31-38-141 ec2-user]# yum install httpd
Last metadata expiration check: 0:18:25 ago on Sat Nov 16 08:46:13 2024.
Dependencies resolved.
=================================================================================================================
 Package                        Architecture       Version                              Repository          Size
=================================================================================================================
Installing:
 httpd                          x86_64             2.4.62-1.amzn2023                    amazonlinux          48 k
Installing dependencies:
 apr                            x86_64             1.7.2-2.amzn2023.0.2                 amazonlinux         129 k
 apr-util                       x86_64             1.6.3-1.amzn2023.0.1                 amazonlinux          98 k
 generic-logos-httpd            noarch             18.0.0-12.amzn2023.0.3               amazonlinux          19 k
```

```
[root@ip-172-31-35-92 ec2-user]# yum install httpd
Last metadata expiration check: 0:16:03 ago on Sat Nov 16 08:46:15 2024.
Package httpd-2.4.62-1.amzn2023.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-35-92 ec2-user]# service httpd start
Redirecting to /bin/systemctl start httpd.service
[root@ip-172-31-35-92 ec2-user]# service httpd status
Redirecting to /bin/systemctl status httpd.service
● httpd.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: active (running) since Sat 2024-11-16 09:07:17 UTC; 12s ago
       Docs: man:httpd.service(8)
   Main PID: 26605 (httpd)
     Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec:   0 B/sec"
      Tasks: 177 (limit: 1113)
     Memory: 12.9M
        CPU: 69ms
     CGroup: /system.slice/httpd.service
             ├─26605 /usr/sbin/httpd -DFOREGROUND
             ├─26606 /usr/sbin/httpd -DFOREGROUND
             ├─26607 /usr/sbin/httpd -DFOREGROUND
             ├─26608 /usr/sbin/httpd -DFOREGROUND
             └─26609 /usr/sbin/httpd -DFOREGROUND

Nov 16 09:07:17 ip-172-31-35-92.ap-south-1.compute.internal systemd[1]: Starting httpd.service - The Apache HTTP Server>
Nov 16 09:07:17 ip-172-31-35-92.ap-south-1.compute.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Nov 16 09:07:17 ip-172-31-35-92.ap-south-1.compute.internal httpd[26605]: Server configured, listening on: port 80
[root@ip-172-31-35-92 ec2-user]#
```

```
root@ip-172-31-35-92:/home,    root@ip-172-31-38-141:/home/

<html>
        <head>
        </head>
        <body>
                <h1>Shivshankar here ..</h1>
                <h2>This is Instance1</h2>
        </body>
</html>
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
-- INSERT --                                    6,29-43       All
```

Mumbai ▾ Shivshankar ▾

Launch instances ▾

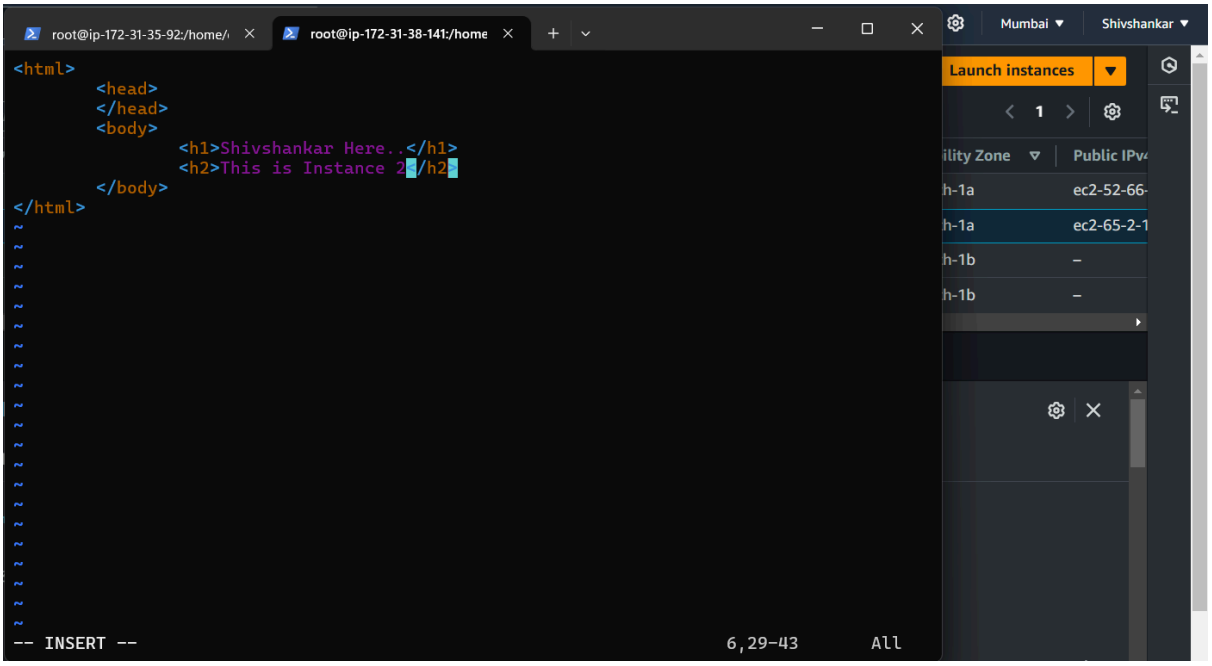
1

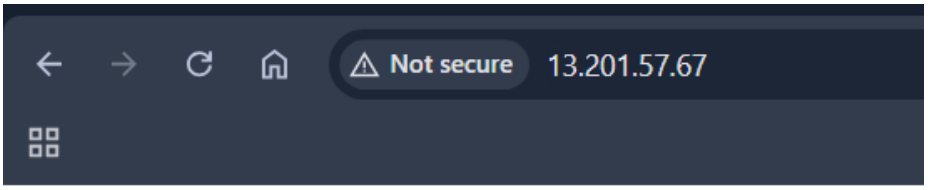
ility Zone	Public IPv4
h-1a	ec2-52-66-
h-1a	ec2-65-2-1
h-1b	–
h-1b	–

Not secure 13.234.115.20

Shivshankar Here..

This is Instance 1

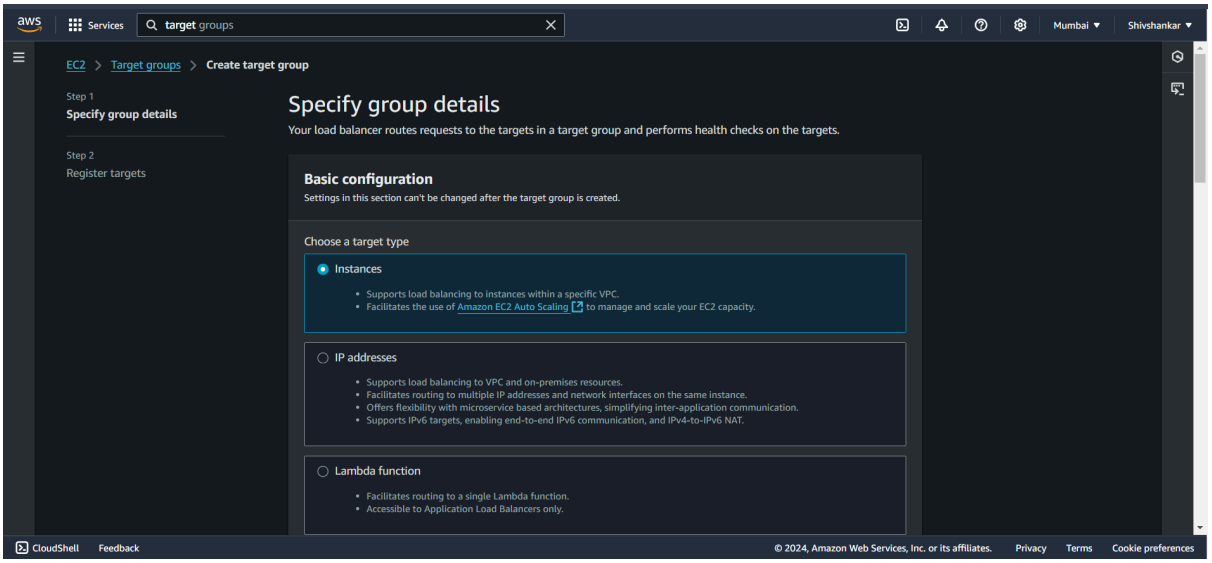


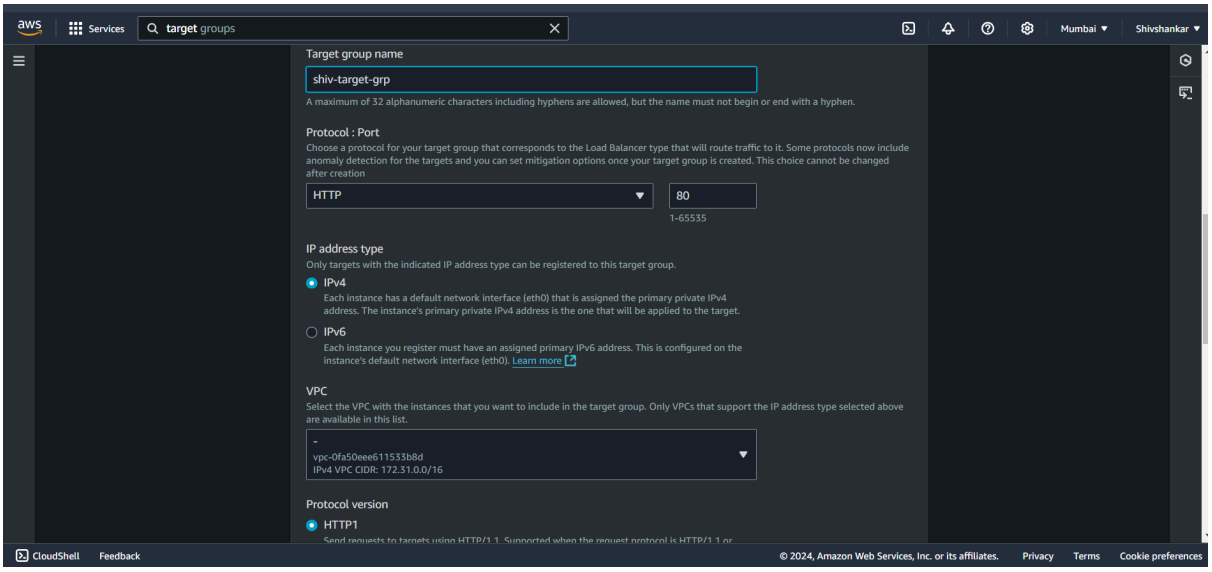


Shivshankar Here..

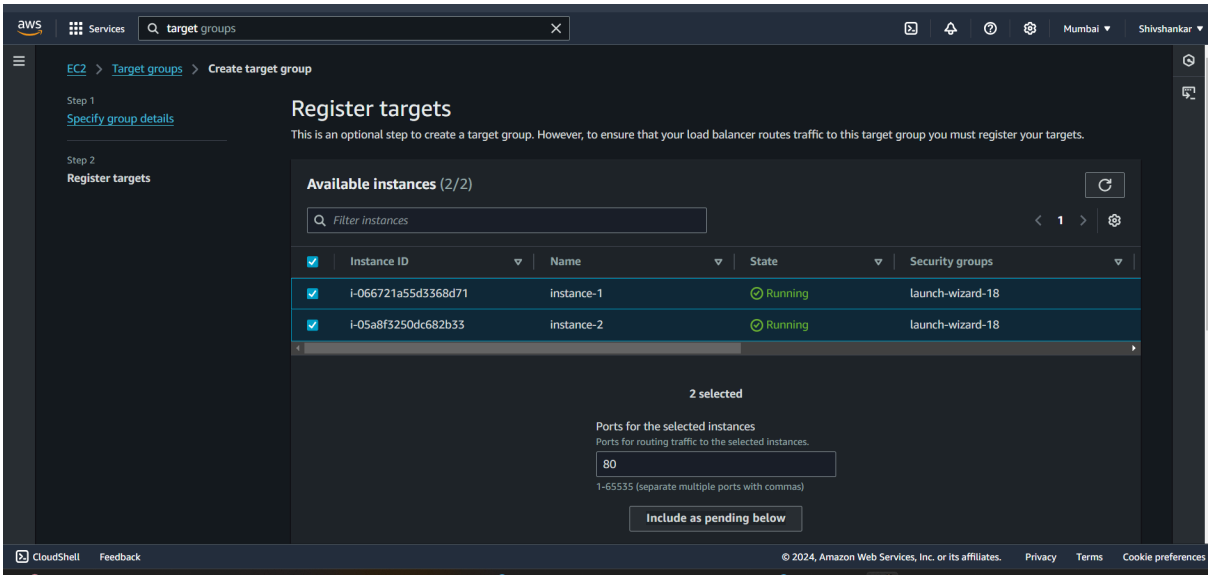
This is Instance 2

Step 3: Create Target Group

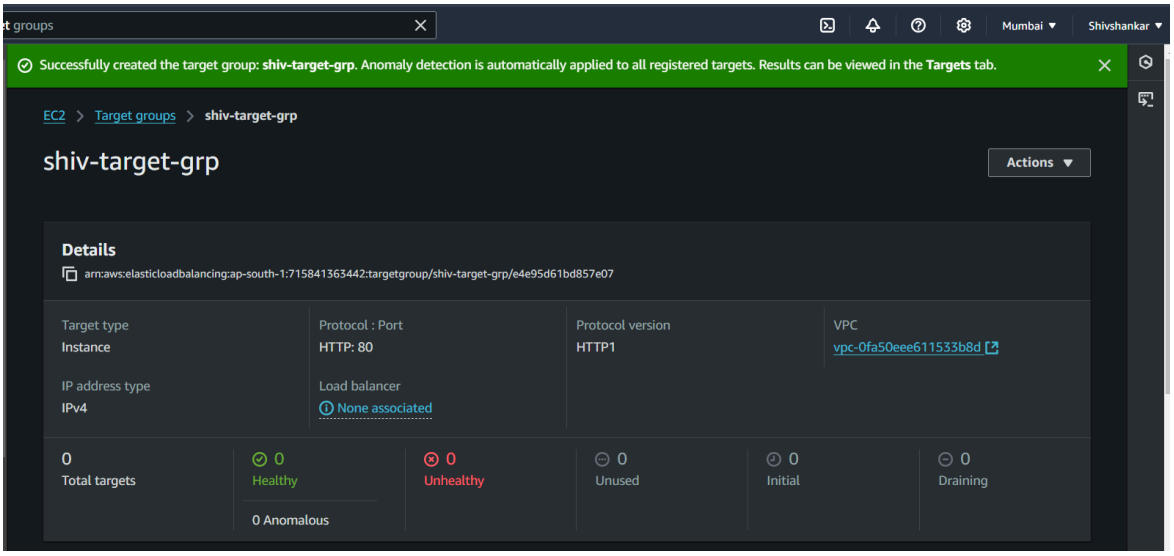




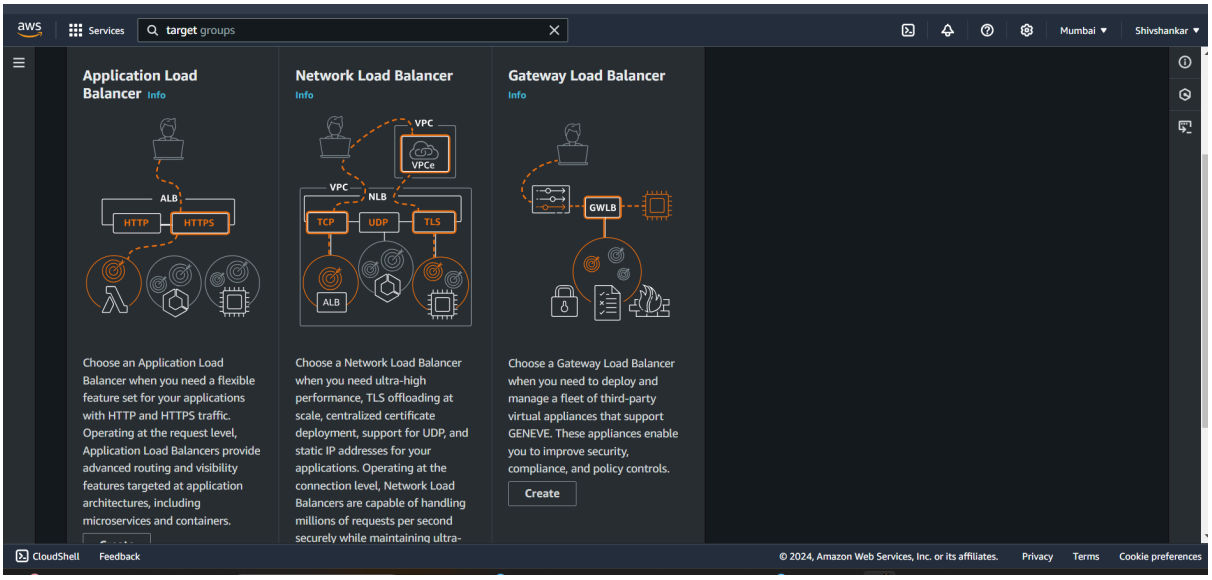
❖ Register instances into the target group



❖ Target group created



Step 4: Create Load Balancer



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Load balancer name

Name must be unique within your AWS account and can't be changed after the load balancer is created.

shiv-load-bal

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme Info

Scheme can't be changed after the load balancer is created.

- Internet-facing
  - Serves internet-facing traffic.
  - Has public IP addresses.
  - DNS name is publicly resolvable.
  - Requires a public subnet.
- Internal
  - Serves internal traffic.
  - Has private IP addresses.
  - DNS name is not publicly resolvable.

Load balancer IP address type Info

Select the front-end IP address type to assign to the load balancer. The VPC and subnets mapped to this load balancer must include the selected IP address types. Public IPv4 addresses have an additional cost.

- IPv4
  Includes only IPv4 addresses.
- Dualstack
  Includes IPv4 and IPv6 addresses.
- Dualstack without public IPv4
  Includes a public IPv6 address, and private IPv4 and IPv6 addresses. Compatible with **internet-facing** load balancers only.

Network mapping Info

The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings.

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VPC Info

The load balancer will exist and scale within the selected VPC. The selected VPC is also where the load balancer targets must be hosted unless routing to Lambda or on-premises targets, or if using VPC peering. To confirm the VPC for your targets, view target groups. For a new VPC, create a VPC.

-
vpc-0fa50eee611533b8d
IPv4 VPC CIDR: 172.31.0.0/16

Mappings Info

Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.

Availability Zones

- [ ] ap-south-1a (aps1-az1)
- [x] ap-south-1b (aps1-az3)
  Subnet
  subnet-032f010c61e243cf5
  IPv4 subnet CIDR: 172.31.0.0/20
  IPv4 address
  Assigned by AWS
- [x] ap-south-1c (aps1-az2)
  Subnet
  subnet-0385f0fdc39ad699f
  IPv4 subnet CIDR: 172.31.16.0/20
  IPv4 address
  Assigned by AWS

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Security groups Info

A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can create a new security group.

Security groups

Select up to 5 security groups

default
sg-0a4e4a5a02dc5ec50 VPC: vpc-0fa50eee611533b8d

Listeners and routing Info

A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.

Listener HTTP:80 | Remove

Protocol	Port	Default action Info
HTTP	80 (1-65535)	Forward to: shiv-target-grp, HTTP, Target type: Instance, IPv4

Create target group

Listener tags - *optional*

Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.

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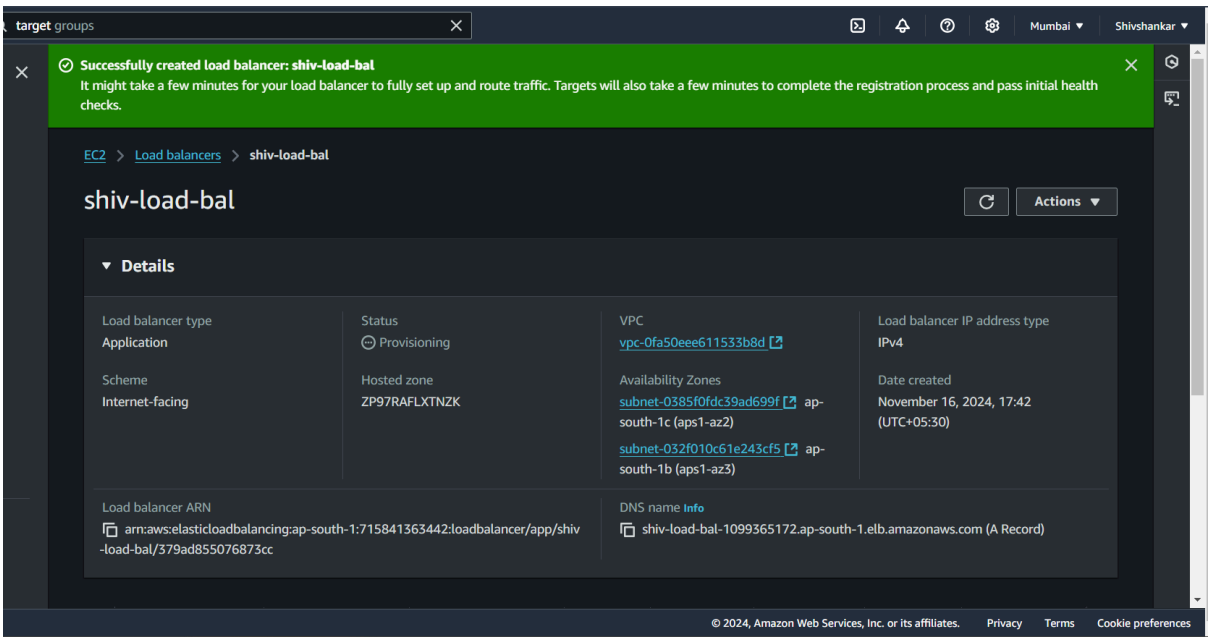
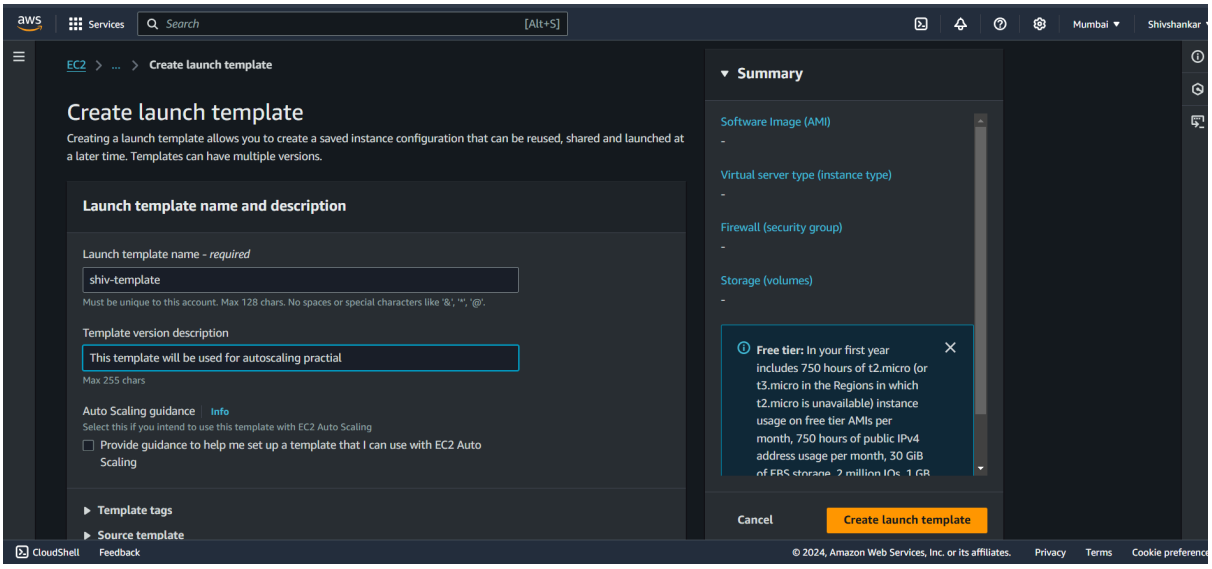
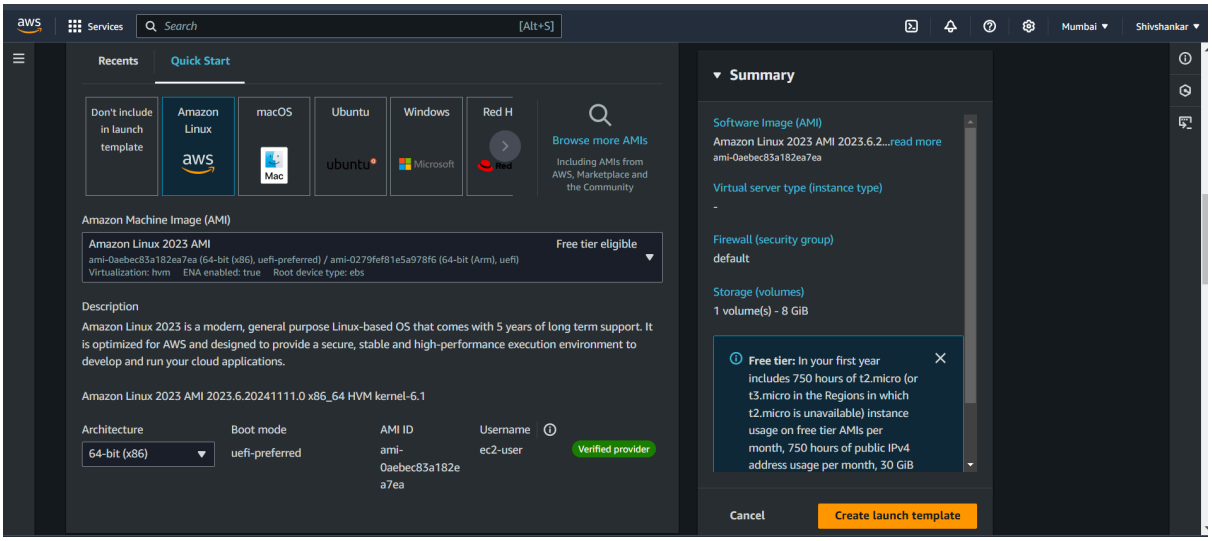


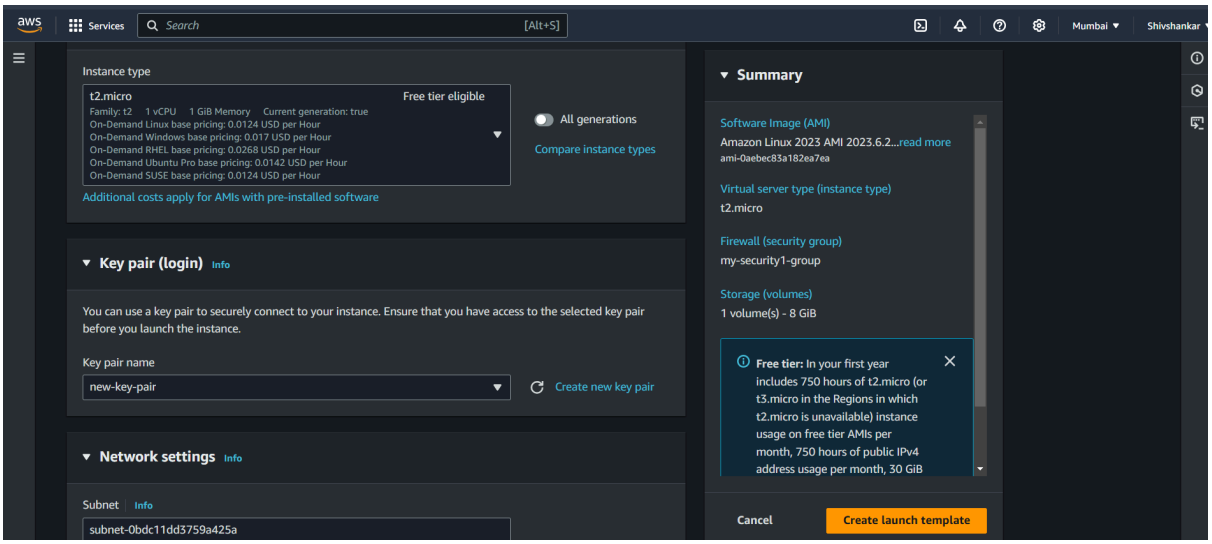
- After it comes to active state, copy DNS name and paste on browser.

Step5: Create Launch Template

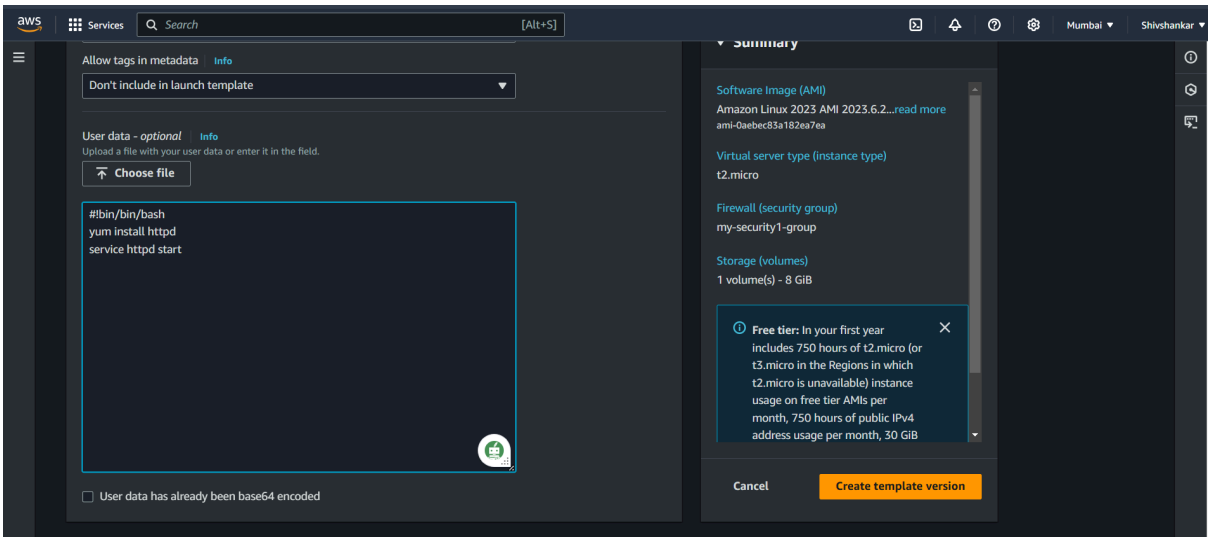
- Goto EC2 instances → go to instances→ launch template → Create template





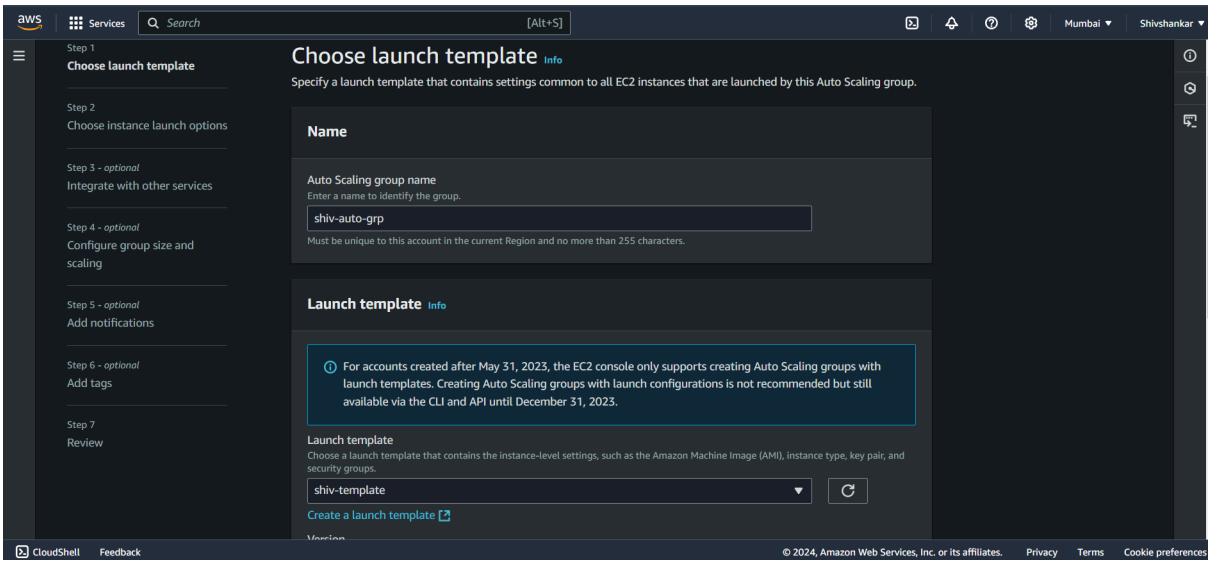


❖ Write the bash code in the User data

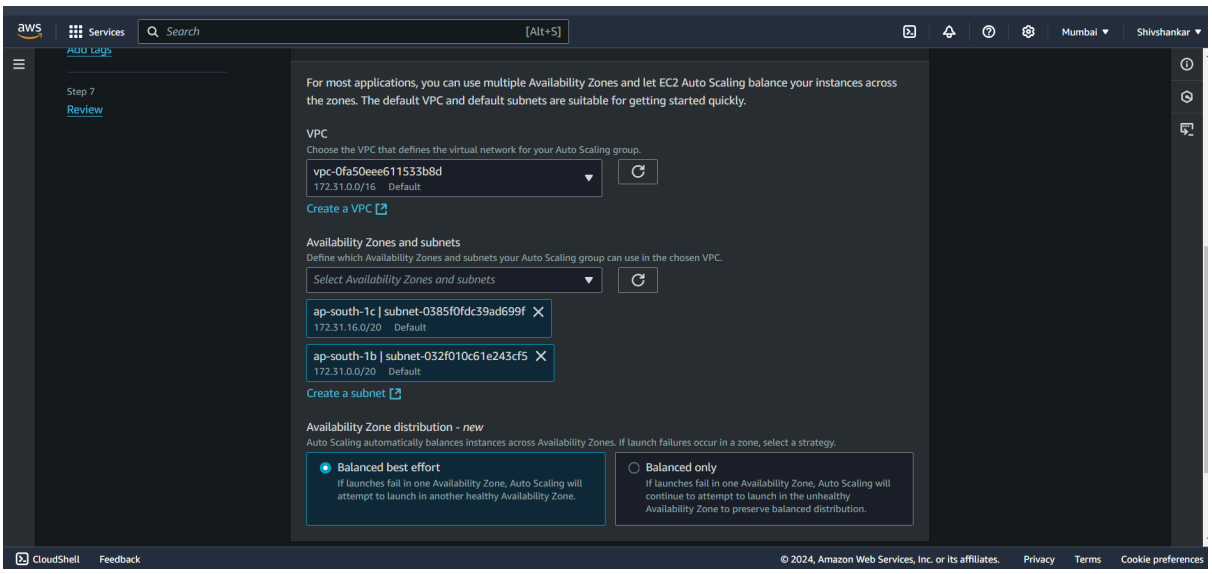


Step 6: Create Auto Scaling Group

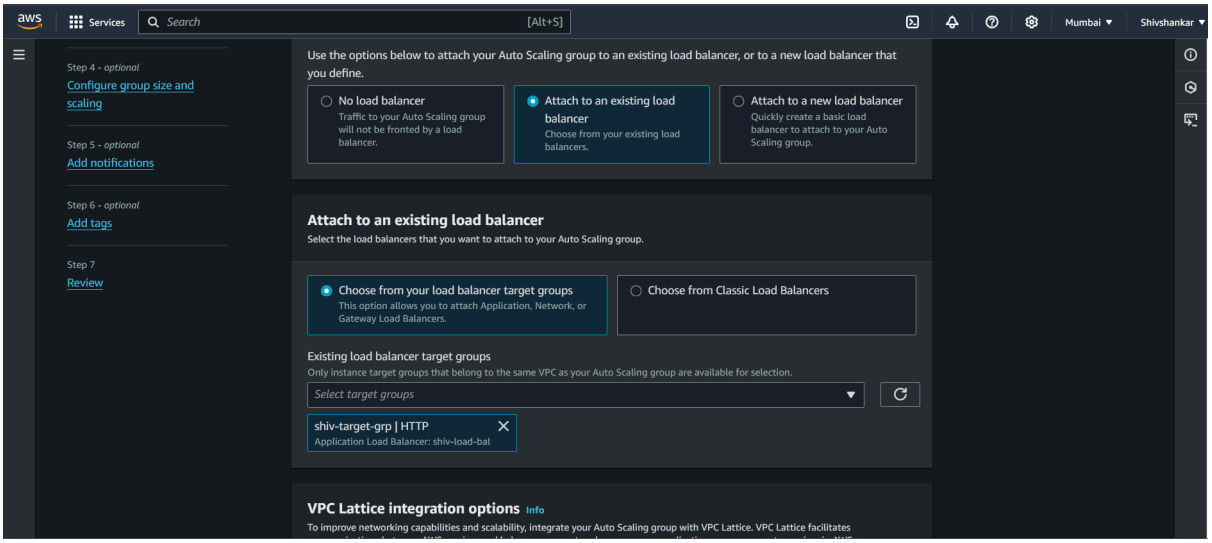
- ❖ Go to EC2⟶ go to Auto scaling group ⟶ create ASG
- ❖ Give name and select the launch template



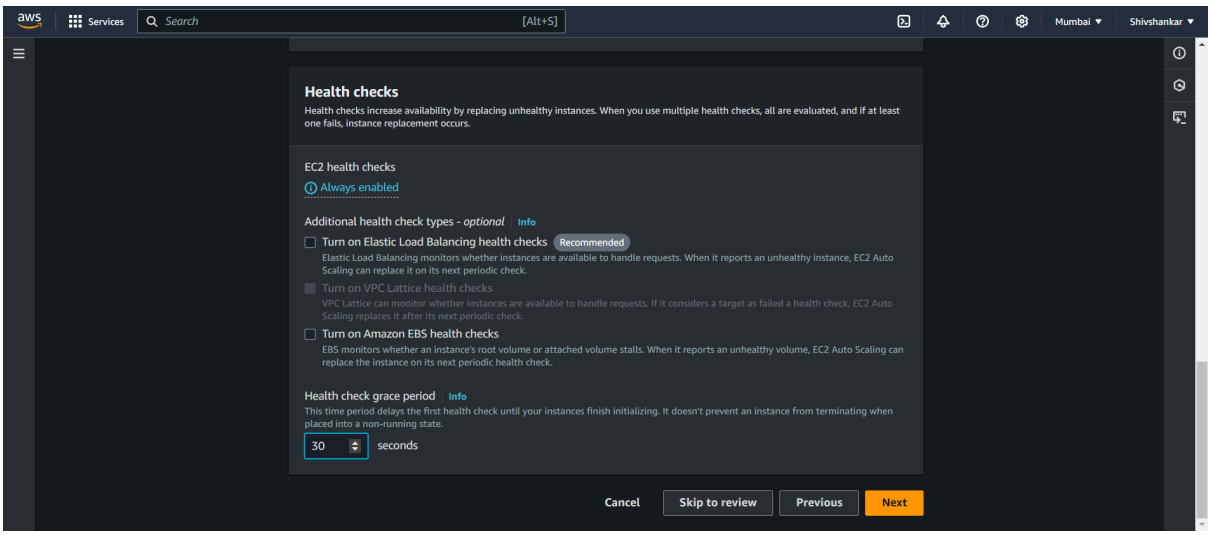
- ❖ Select VPC and minimum 2 subnets (preferred 1a & 1b AZs)



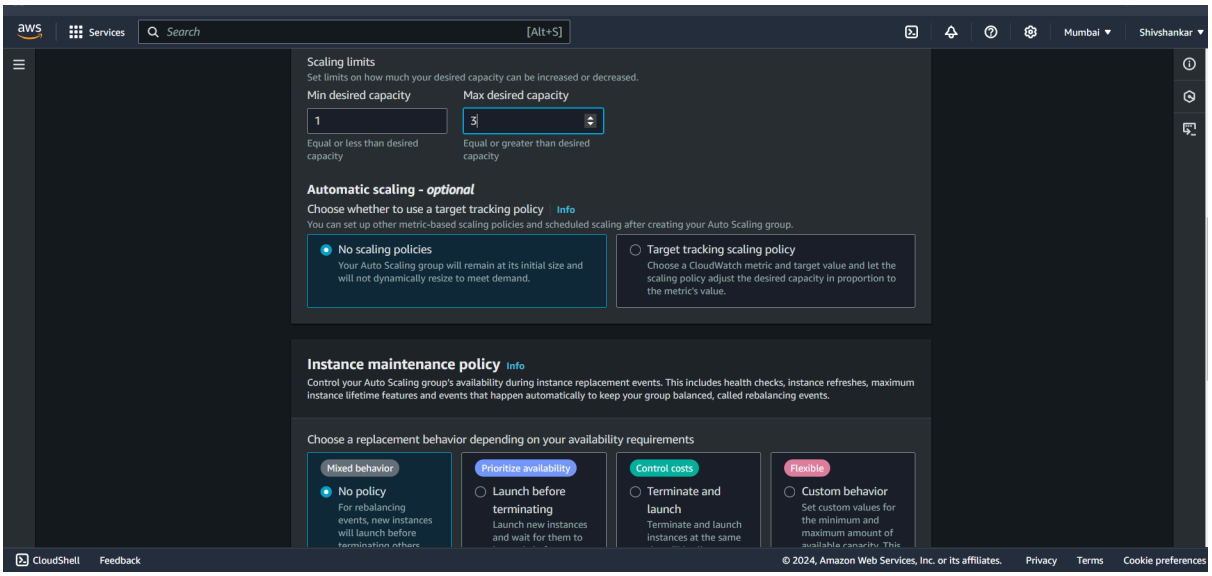
❖ Select existing load balancer & and no vpc lattice

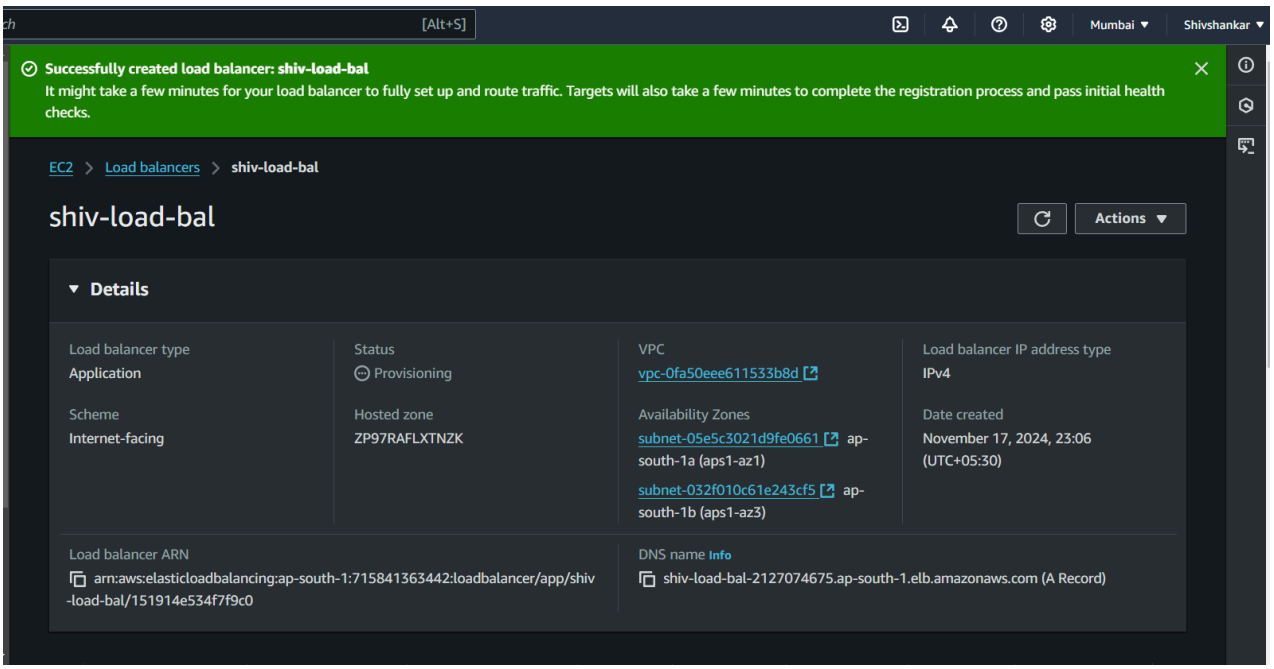


❖ Keep health check time as: 30 seconds

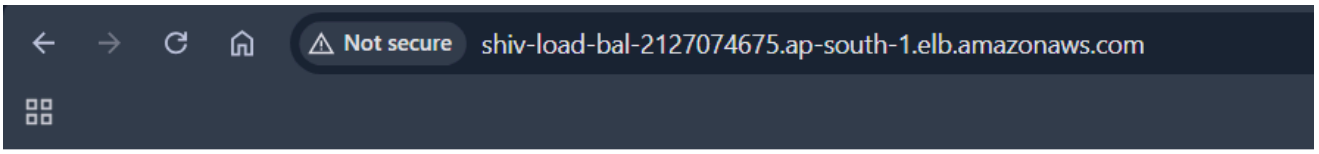


❖ Set scaling policy as 1(minimum) and 3(maximum)



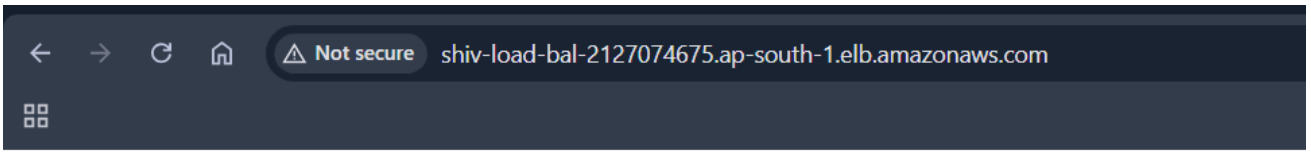


Step8: Verify Load Distribution



Shivshankar Here..

This is Instance 1



Shivshankar Here..

This is Instance 2