

APPLICATION LOAD BALANCER:

A *load balancer* serves as the single point of contact for clients. Clients send requests to the load balancer, and the load balancer sends them to targets, such as EC2 instances.

To configure your load balancer, you create target groups, and then register targets with your target groups.

You also create listeners to check for connection requests from clients, and listener rules to route requests from clients to the targets in one or more target groups.

- **APPLICATION LOAD BALANCER IS MICROSERVICE ARCHITECTURE**
- **IT WORK PATH BASED ROUTING.**

STEPS TO CREATE APPLICATION LOAD BALANCER:

STEP1:Create two linux instance(eg.orkut &facebook)



Create orkut instance (add security group http)



Advanced --->user data---->

```
#!/bin/bash
yum install httpd -y
service httpd start
mkdir /var/www/html/orkut
echo "This is my Orukut instance" > /var/www/html/orkut/index.html
```

Orkut instance created..

STEP2:Create two linux instance(eg.orkut &facebook)



Create facebook instance (add security group http)



Advanced --->user data----->

```
#!/bin/bash
```

```
yum install httpd -y
```

```
service httpd start
```

```
mkdir /var/www/html/facebook
```

```
echo "This is my facebook instance" > /var/www/html/facebook/index.html
```

facebook instance created..

Metadata accessible [Info](#)

Select

Metadata version [Info](#)

Select

Metadata response hop limit [Info](#)

Select

Allow tags in metadata [Info](#)

Select

User data [Info](#)

```
#!/bin/bash
yum install httpd -y
service httpd start
chkconfig httpd on
mkdir /var/www/html/facebook
echo "This is my facebook instance" > /var/www/html/facebook/index.html
```

Number of instances [Info](#)

1

Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...[read more](#)
ami-0cca134ec43cf708f

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

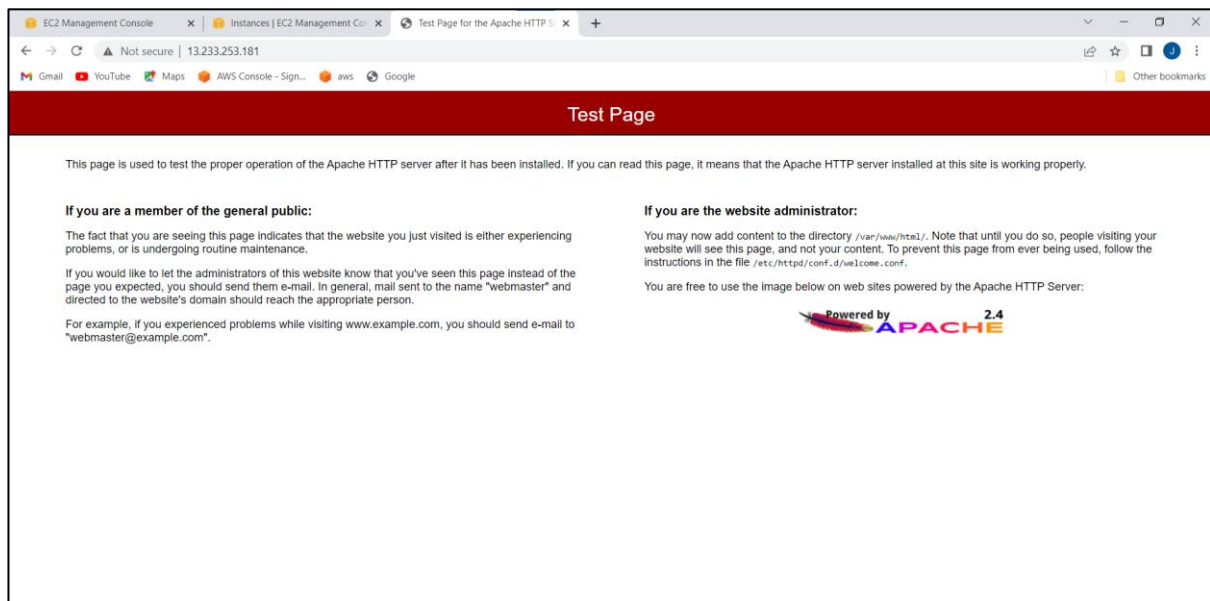
Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel **Launch Instance**

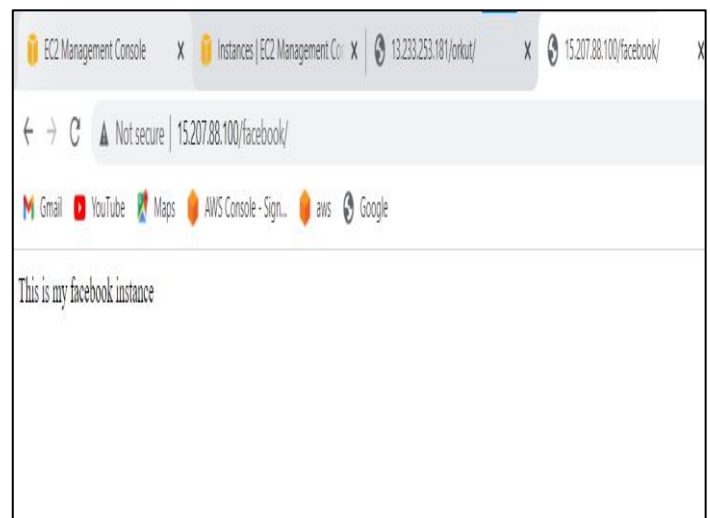
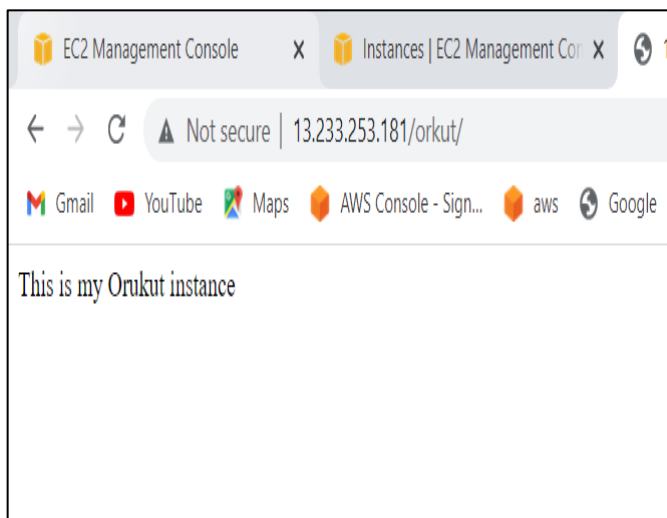
Two instance are created..

| Instances (2) Info | | | | | | | | | | |
|--|----------|---------------------|----------------|---------------|-------------------|--------------|-------------------|--------------------------|-----------------|------------|
| Find instance by attribute or tag (case-sensitive) | | | | | | | | | | |
| <input type="checkbox"/> | Name | Instance ID | Instance state | Instance t... | Status check | Alarm status | Availability Zone | Public IPv4 DNS | Public IPv4 ... | Elastic IP |
| <input type="checkbox"/> | orkut | i-0ffc393f9fc810967 | Running | t2.micro | 2/2 checks passed | No alarms | ap-south-1b | ec2-13-233-253-181.ap... | 13.233.253.181 | - |
| <input type="checkbox"/> | facebook | i-0d7bee65dfdebd4a2 | Running | t2.micro | 2/2 checks passed | No alarms | ap-south-1b | ec2-15-207-88-100.ap... | 15.207.88.100 | - |

STEP3: both instance public ip copy and put chrome text page--->text page open



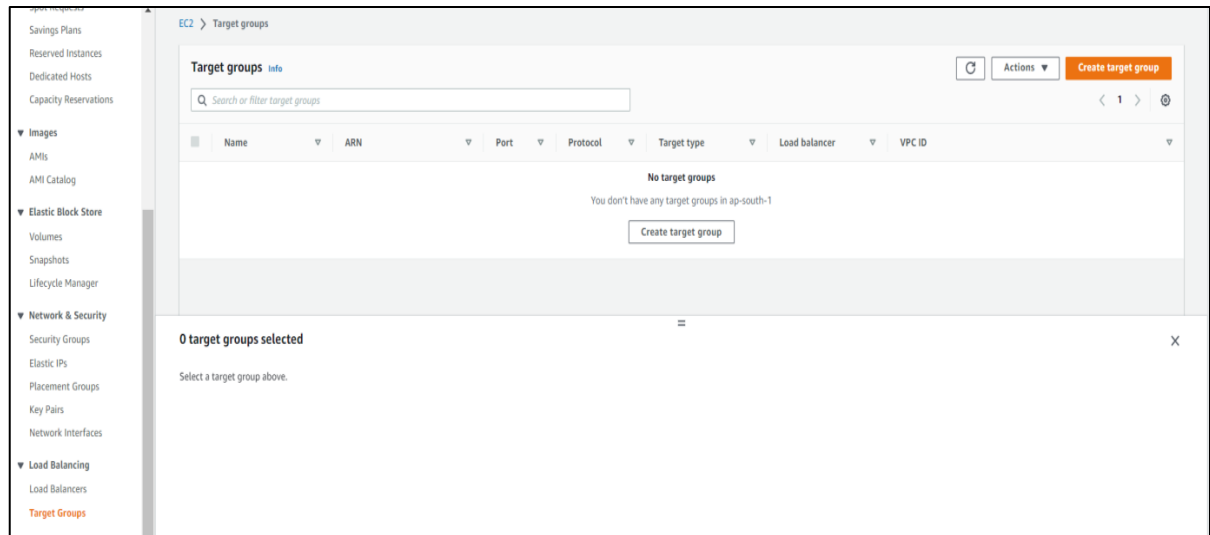
STEP4: now both instance public ip copy(eg: 13.233.253.181/orkut)and(eg: 13.233.253.181/facebook) and put chrome text page



Our given contents shown success..

STEP5:Create Target Group for orkut

Load balancer----->target group---->create target group



Specific group details--->basic configuration--->instance-->target
groupname(any name)---->Health checks(/orkut/index.html)
(health check default path--->var/www/html)

EC2 > Target groups > Create target group

Step 1
Specify group details

Step 2
Register targets

Specify group details

Your load balancer routes requests to the targets in a target group and performs health checks on the targets.

Basic configuration

Settings in this section cannot be changed after the target group is created.

Choose a target type

☒ Instances

- Supports load balancing to instances within a specific VPC.
- Facilitates the use of [Amazon EC2 Auto Scaling](#) to manage and scale your EC2 capacity.

☐ IP addresses

- Supports load balancing to VPC and on-premises resources.
- Facilitates routing to multiple IP addresses and network interfaces on the same instance.
- Offers flexibility with microservices based architectures, simplifying inter-application communication.
- Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.

☐ Lambda function

- Facilitates routing to a single Lambda function.
- Accessible to Application Load Balancers only.

☐ Application Load Balancer

- Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
- Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

Health checks

The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

Health check protocol

HTTP

Health check path

Use the default path of "/" to ping the root, or specify a custom path if preferred.

/orkut/index.html

Up to 1024 characters allowed.

▶ Advanced health check settings

Attributes

ⓘ

Certain default attributes will be applied to your target group. You can view and edit them after creating the target group.

▶ Tags - optional

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

Cancel

Next

Next...

Registrar targets---->select orkut instance --->includind pending below

Register targets

This is an optional step to create a target group. However, to ensure that your load balancer routes traffic to this target group you must register your targets.

Available instances (1/2)

Filter resources by property or value

< 1 >

| | Instance ID | Name | State | Security groups | Zone | Subnet ID |
|-------------------------------------|---------------------|----------|-------|-----------------|-------------|--------------------------|
| <input checked="" type="checkbox"/> | i-0ffc393f9fc810967 | orkut | | launch-wizard-3 | ap-south-1b | subnet-0391a184a9bd0a54b |
| <input type="checkbox"/> | i-0d7bee65dfdeb4a2 | facebook | | launch-wizard-4 | ap-south-1b | subnet-0391a184a9bd0a54b |

1 selected

Port for the selected instances
to route traffic to the selected instances

80

1-65535 (separate multiple ports with comma)

Include as pending below

Review targets

Ports for the selected instances
Ports for routing traffic to the selected instances.

1-65535 (separate multiple ports with comma)

Include as pending below

Review targets

Targets (0)

Remove all pending

All

Remove

Health status

Instance ID

Name

Port

State

Security groups

Zone

Subnet ID

No instances added yet
Specify instances above, or leave the group empty if you prefer to add targets later.

0 pending

Cancel

Previous

Create target group

Create target group...

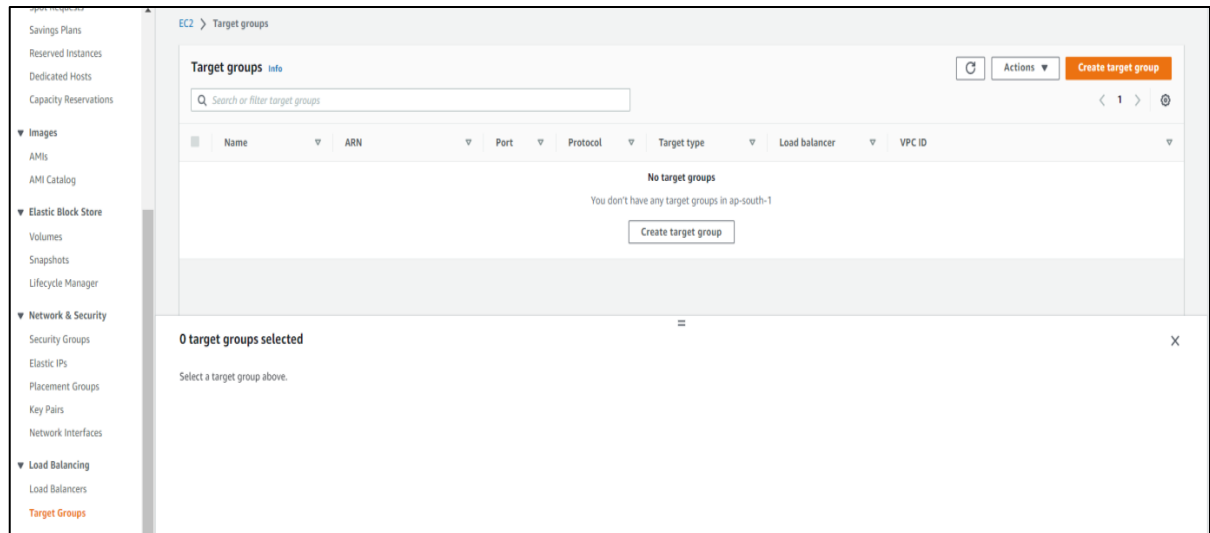
Target groups (1/1) [info](#)

| <input checked="" type="checkbox"/> | Name ▾ | ARN ▾ | Port ▾ | Protocol ▾ | Target type ▾ | Load balancer ▾ | VPC ID ▾ |
|-------------------------------------|--------|---------------------------------|--------|------------|---------------|---------------------------------|-----------------------|
| <input checked="" type="checkbox"/> | orkut | arn:aws:elasticloadbalancing... | 80 | HTTP | Instance | None associated | vpc-0f0767193d3df8800 |

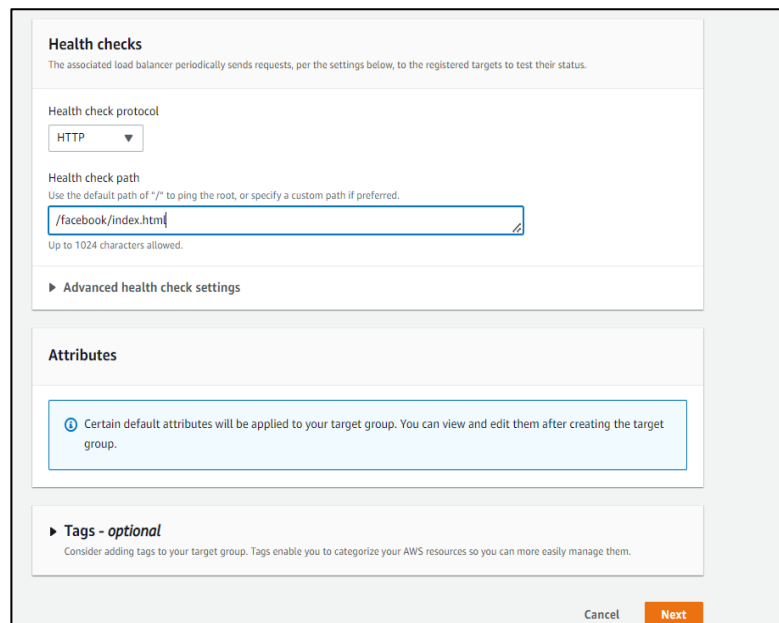
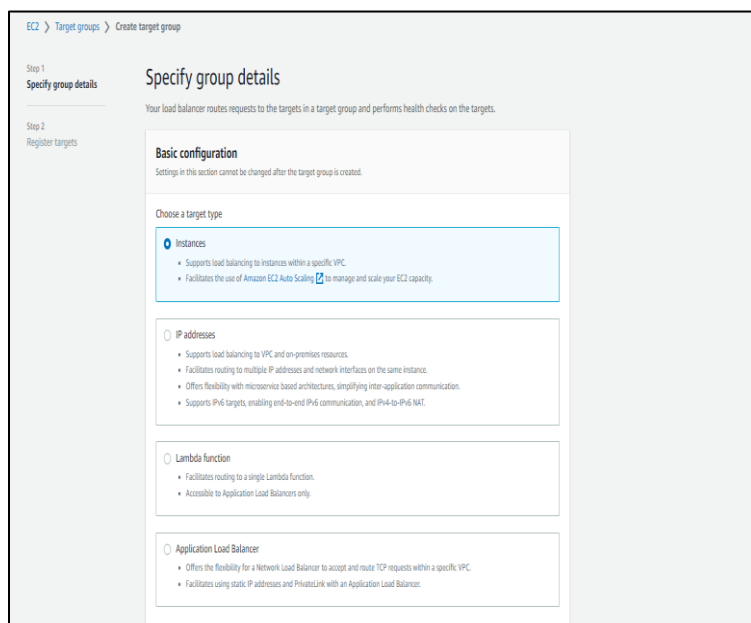
Orkut target group will created.

STEP6:Create Target Group forfacebook

Load balancer----->target group---->create target group



Specific group details--->basic configuration--->instance-->target
groupname(any name)---->Health checks(/facebook/index.html)



Next...

Registrar targets---->select facebook instance --->including pending below

The screenshot shows the 'Available instances' page in the AWS Management Console. A table lists two instances: 'orkut' and 'facebook'. The 'facebook' instance is selected. Below the table, a section titled '1 selected' shows the port '80' and a button 'Include as pending below' which is circled in black. Below this is a 'Review targets' section showing the selected instance and port.

| Instance ID | Name | State | Security groups | Zone | Subnet ID |
|---------------------|----------|---------|-----------------|-------------|--------------------------|
| i-Offc393f9fc810967 | orkut | running | launch-wizard-3 | ap-south-1b | subnet-0391a184a9bd0a54b |
| i-0d7bee65dfdeb4a2 | facebook | running | launch-wizard-4 | ap-south-1b | subnet-0391a184a9bd0a54b |

1 selected

Ports for the selected instances

Ports for routing traffic to the selected instances.

80

Include as pending below

1 selected is now pending below. Include more or register targets when ready.

Review targets

Targets (1)

All

Filter resources by property or value

| Remove | Health status | Instance ID | Name | Port | State | Security groups | Zone | Subnet ID |
|--------|---------------|--------------------|----------|------|---------|-----------------|-------------|--------------------------|
| X | Pending | i-0d7bee65dfdeb4a2 | facebook | 80 | running | launch-wizard-4 | ap-south-1b | subnet-0391a184a9bd0a54b |

1 pending

Cancel Previous Create target group

Create target group..

The screenshot shows the 'Target groups' page in the AWS Management Console. A green banner at the top says 'Successfully created target group: facebook'. Below, a table lists two target groups: 'facebook' and 'orkut'. The 'facebook' target group is selected.

| Name | ARN | Port | Protocol | Target type | Load balancer | VPC ID |
|----------|--|------|----------|-------------|-----------------|-----------------------|
| facebook | arn:aws:elasticloadbalancing:ap-south-1:123456789012:targetgroup/facebook/12345678 | 80 | HTTP | Instance | None associated | vpc-0f0767193d3df8800 |
| orkut | arn:aws:elasticloadbalancing:ap-south-1:123456789012:targetgroup/orkut/12345678 | 80 | HTTP | Instance | None associated | vpc-0f0767193d3df8800 |

facebook target group will created.

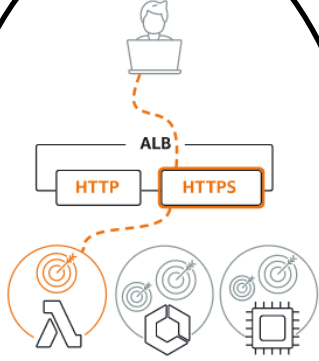
Orkut and facebook target group created...

STEP7:Create application load balancer

Create load balancer--->select application load balancer--->create.

Load balancer types

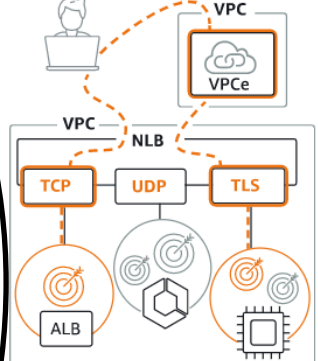
Application Load Balancer [Info](#)



Choose an Application Load Balancer when you need a flexible feature set for your applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers.

Create


Network Load Balancer [Info](#)



Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your applications. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies.

Create

Gateway Load Balancer [Info](#)



Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support GENEVE. These appliances enable you to improve security, compliance, and policy controls.

Create

Basic configuration---->load balancer name(any)

EC2 > Load balancers > Create Application Load Balancer

Create Application Load Balancer [Info](#)

The Application Load Balancer distributes incoming HTTP and HTTPS traffic across multiple targets such as Amazon EC2 instances, microservices, and containers, based on request attributes. When the load balancer receives a connection request, it evaluates the listener rules in priority order to determine which rule to apply, and if applicable, it selects a target from the target group for the rule action.

► How Elastic Load balancing works

Basic configuration

Load balancer name
Name must be unique within your AWS account and cannot be changed after the load balancer is created.

orkul

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

Scheme [Info](#)
Scheme cannot be changed after the load balancer is created.

☒ **Internet-facing**
An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)

☐ **Internal**
An internal load balancer routes requests from clients to targets using private IP addresses.

IP address type [Info](#)
Select the type of IP addresses that your subnets use.

☒ **IPv4**
Recommended for internal load balancers.

☐ **Dualstack**
Includes IPv4 and IPv6 addresses.

network mapping--->select 3 zone

Network mapping [Info](#)

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

VPC [Info](#)

Select the virtual private cloud (VPC) for your targets. Only VPCs with an internet gateway are enabled for selection. The selected VPC cannot be changed after the load balancer is created. To confirm the VPC for your targets, view your [target groups](#).

vpc-0f0767193d3df8800
IPv4: 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.

☐ ap-south-1a (aps1-az1)

☐ ap-south-1b (aps1-az3)

☐ ap-south-1c (aps1-az2)

security group --->select orkut instance security(eg:wizard3)

Security groups [Info](#)

A security group is a set of firewall rules that control the traffic to your load balancer.

Security groups

Select up to 5 security groups

Create new security group [Info](#)

launch-wizard-3 sg-03d390c39f902f4b2 X
VPC: vpc-0f0767193d3df8800

listening and routing ----->default action->(orkut)

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 Forward to orkut HTTP [Info](#)

1-65535 Target type: Instance, IPv4

Create target group [Info](#)

Listener tags - optional

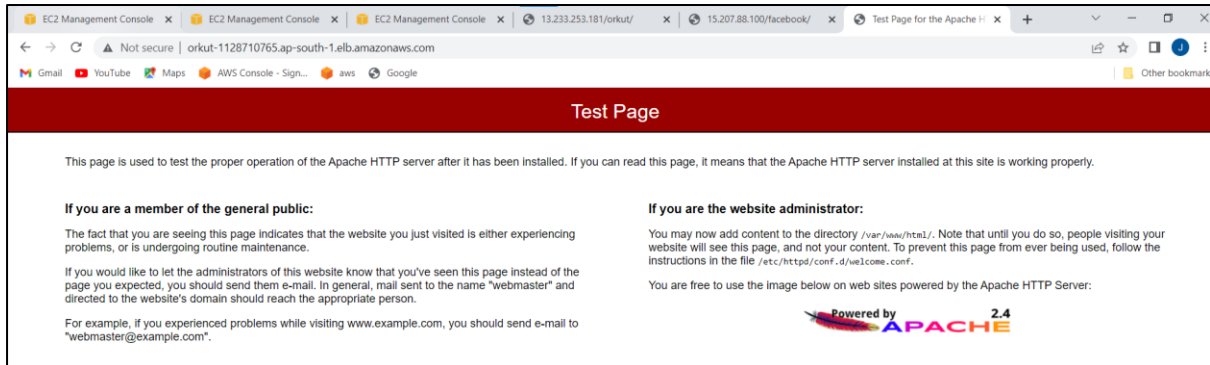
Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.

Add listener tag

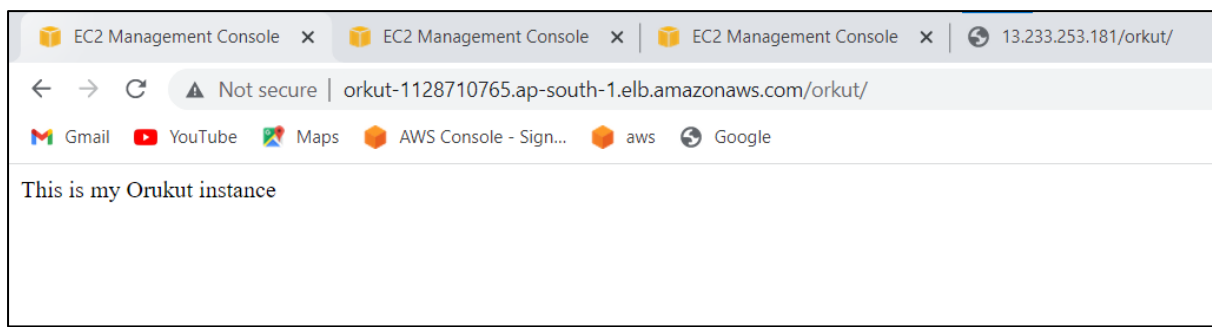
You can add up to 50 more tags.

Create load balancer

STEP8:load balancer dns copy and put google chrome text page---
>text page shown



Again put dns name(eg: orkut-1128710765.ap-south-1.elb.amazonaws.com/orkut/)



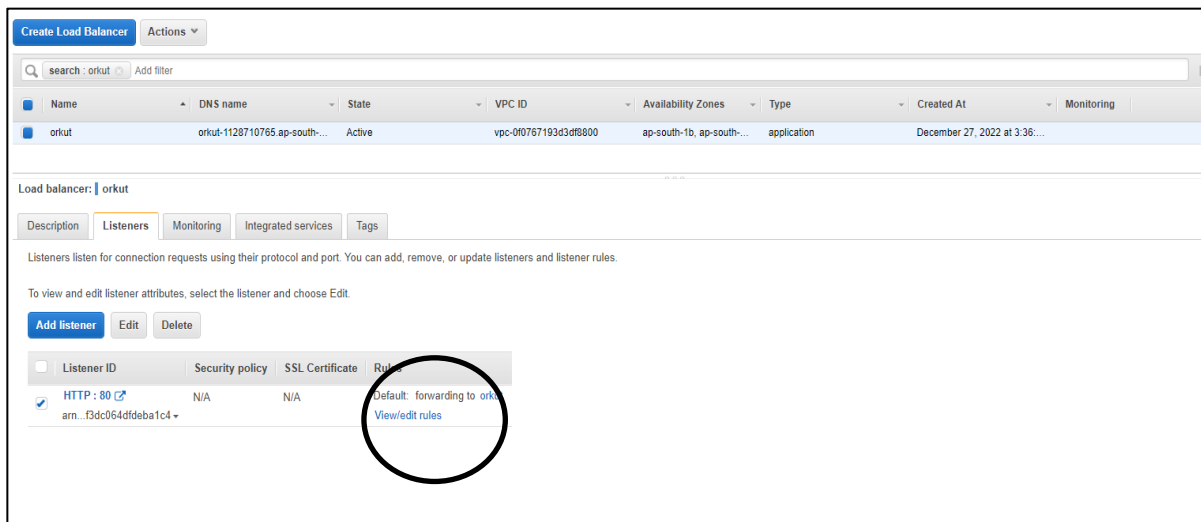
Shown succefully..

STEP9:now permission give to facebook

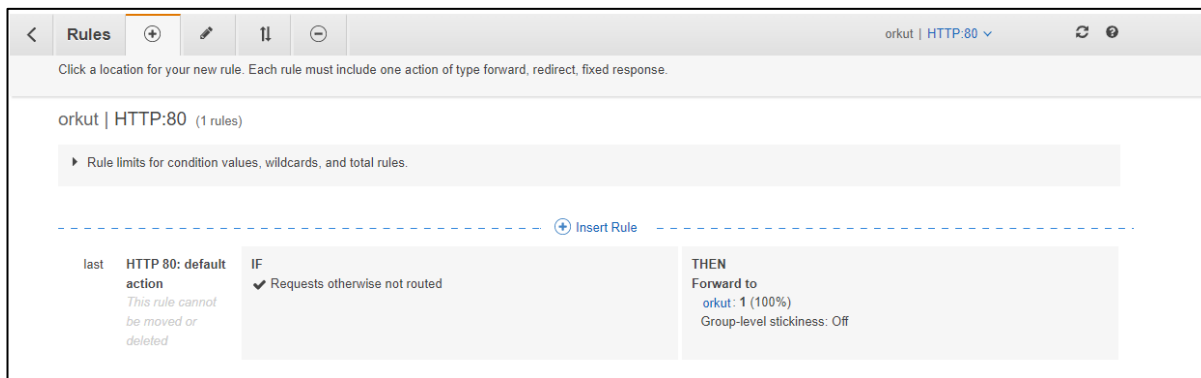
Create load balancer--->listners



Select:HTTP----->orkut view and edit rules

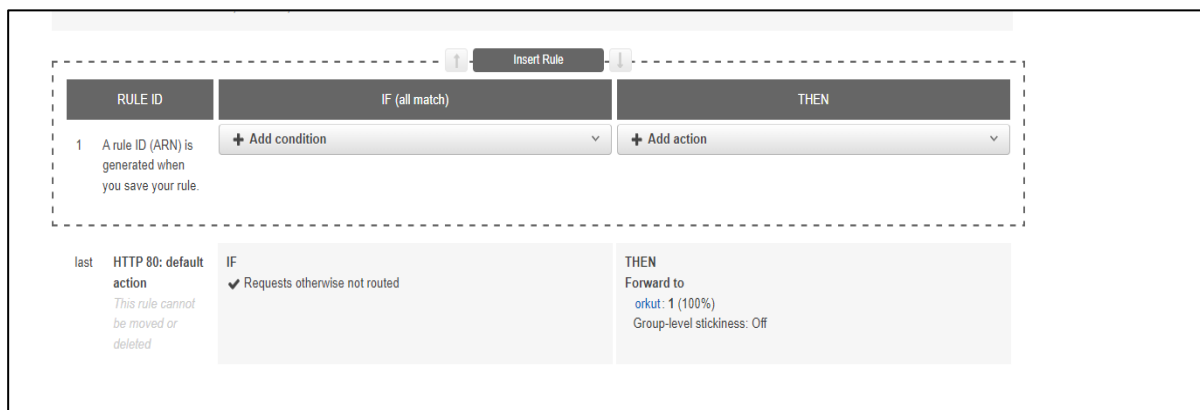


view and edit--->rules--->(+)--->(+)insert rules

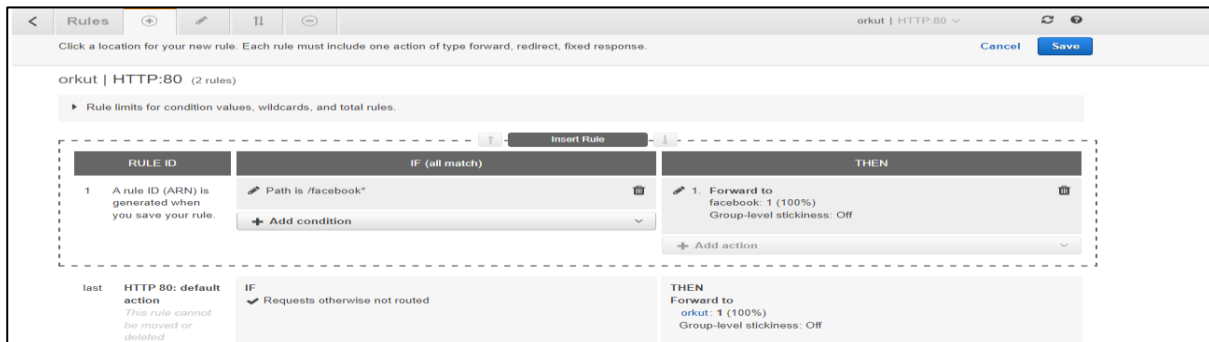


IF-->add condition-->path(/facebook*)

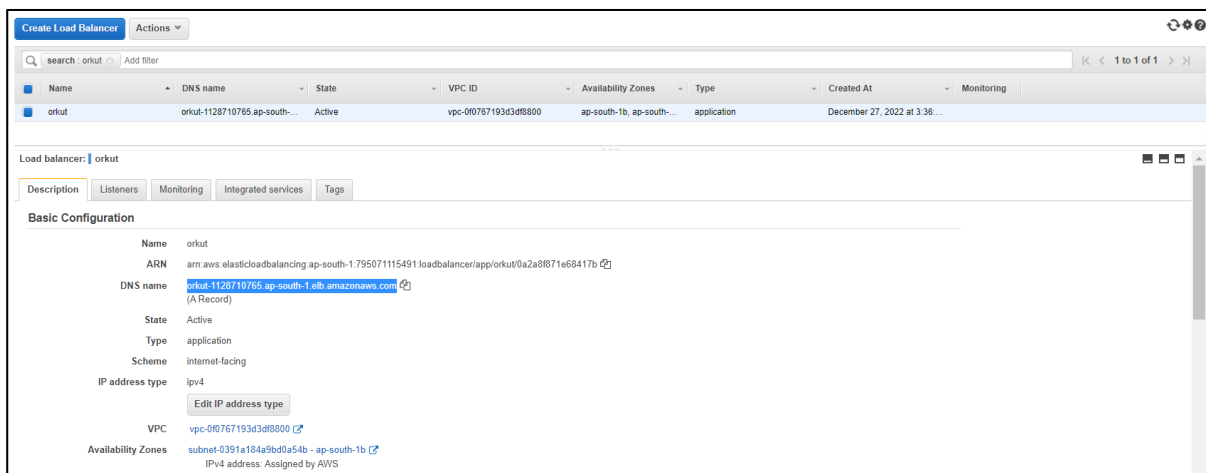
THEN--->add action-->forward to-->(facebook)



save...



load balancer home--->description --->copy DNS name/facebook
(eg: orkut-1128710765.ap-south-1.elb.amazonaws.com/facebook/)



Finally show..

