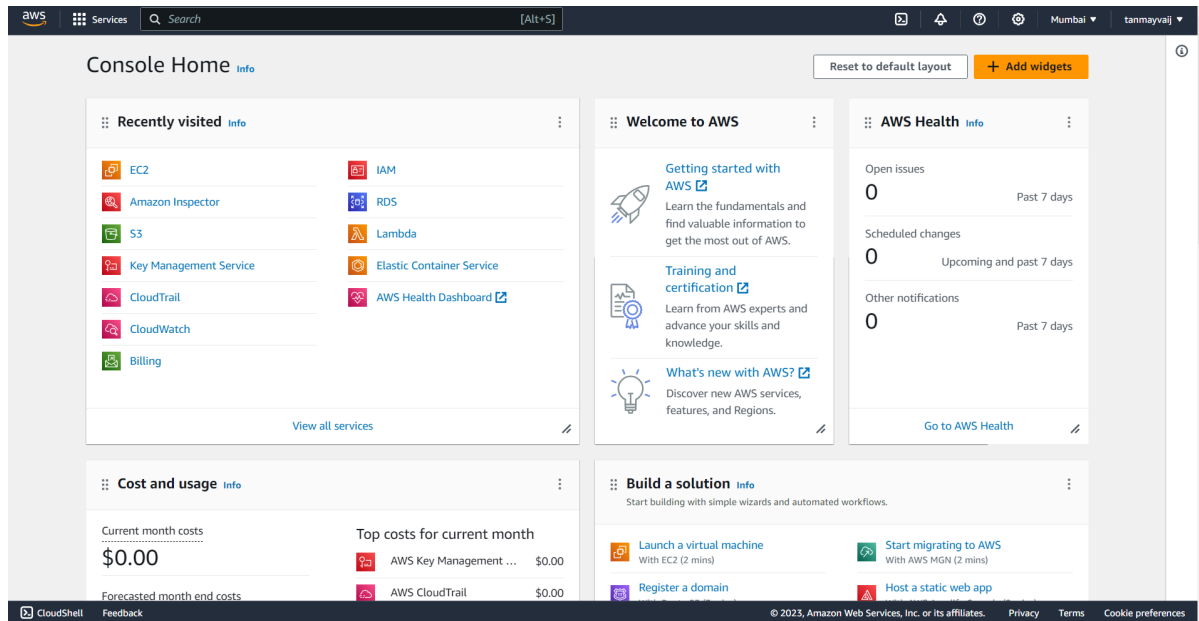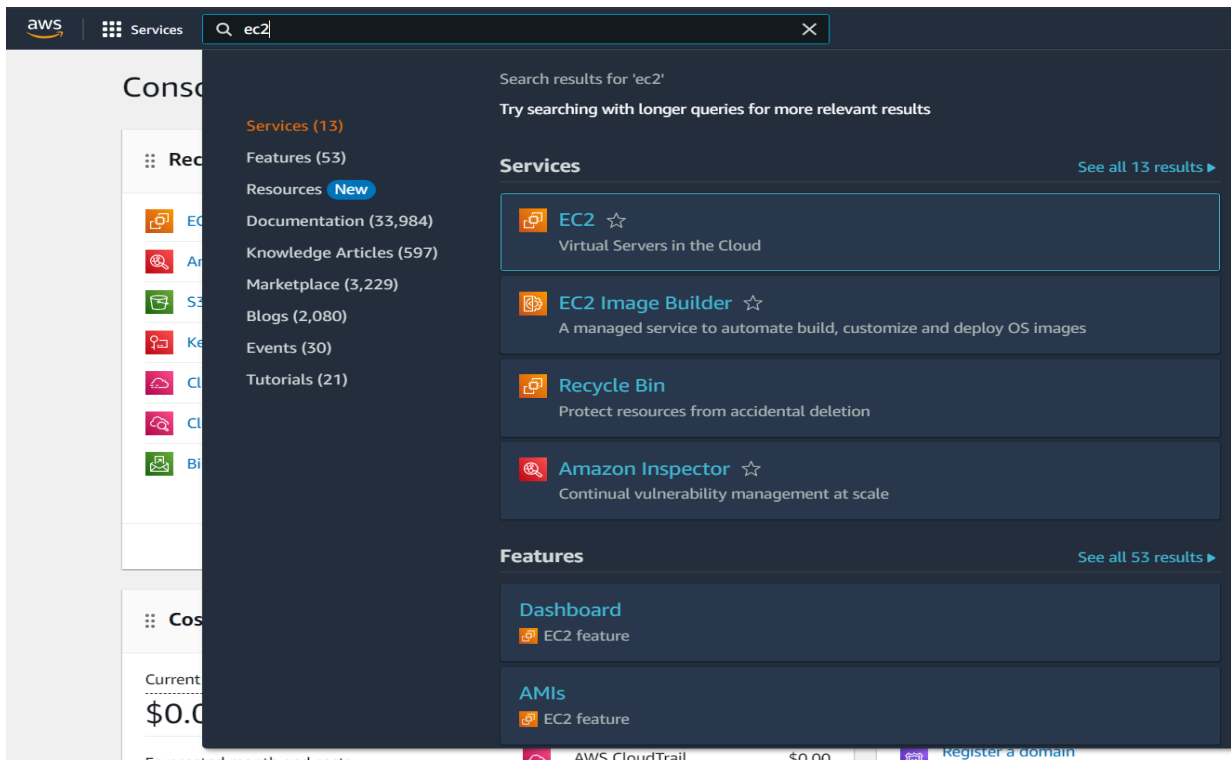# Application Load Balancer with Auto Scaling Group
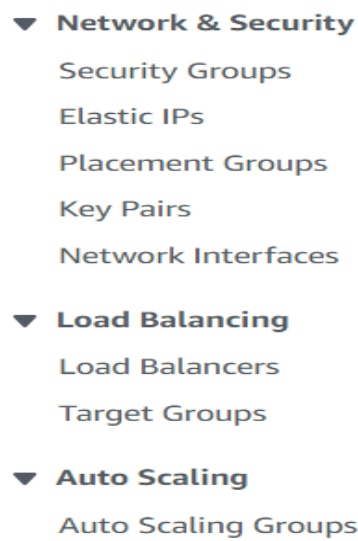
1. Sign in to the AWS Console.
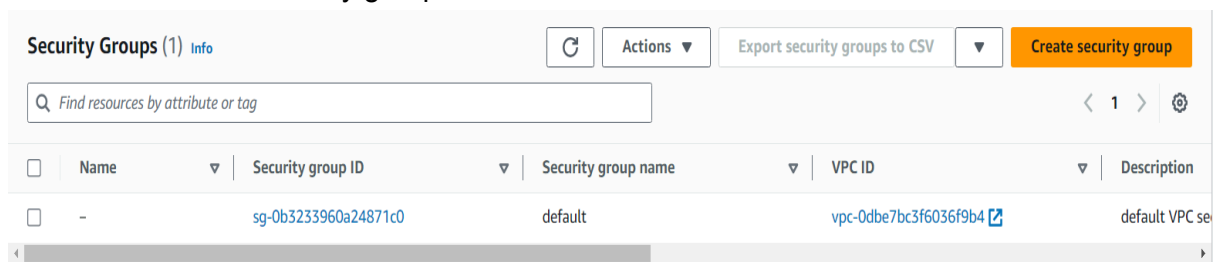

2. Search and select EC2.

3. In the side menu select "Security Groups".

4. Click on "Create security group".

5. Give a name and description for the load balancer security group.

6. In the "Inbound rules" add two rules, "HTTP" and "HTTPS" and give their sources as "Anywhere".

7. Now create a security group for the launch template.

8. Add SSH and set its source as "Anywhere", then add HTTP and HTTPS and set their source as the security group of the load balancer.

Inbound rules Info

Type Info	Protocol Info	Port range Info	Source Info	
SSH ▼	TCP	22	Anyw... ▼	🔍 0.0.0.0/0
				0.0.0.0/0 ✕
HTTP ▼	TCP	80	Custom ▼	🔍 sg-0485b6e21070796! ✕
				sg-0485b6e2107079698 ✕
HTTPS ▼	TCP	443	Custom ▼	🔍 sg-0485b6e21070796! ✕
				sg-0485b6e2107079698 ✕

Add rule

9. Now, from the side menu click on "Launch Templates"

▼ **Instances**

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations
New

10. Give a name and description to the launch template.

Launch template name and description

Launch template name - *required*

my-lt

Must be unique to this account. Max 128 chars. No spaces or special characters like '&', '*', '@'.

Template version description

a launch template

Max 255 chars

11. Select "Ubuntu" as the OS Image.

▼ **Application and OS Images (Amazon Machine Image)** Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Q Search our full catalog including 1000s of application and OS images

Recents | **Quick Start**

| Don't include in launch template | Amazon Linux aws | macOS Mac | Ubuntu ubuntu | Windows Microsoft | Red H Red | Browse more AMIs Including AMIs from AWS, Marketplace and the Community |

Amazon Machine Image (AMI)

Ubuntu Server 22.04 LTS (HVM), SSD Volume Type   Free tier eligible
ami-0287a05f0ef0e9d9a (64-bit (x86)) / ami-0b6581fde9e6e7779 (64-bit (Arm))
Virtualization: hvm   ENA enabled: true   Root device type: ebs

Description

Canonical, Ubuntu, 22.04 LTS, amd64 jammy image build on 2023-09-19

Architecture   AMI ID

64-bit (x86) ▼   ami-0287a05f0ef0e9d9a   Verified provider

12. Select "t2.micro" as the instance type.

▼ **Instance type** Info

Advanced

Instance type

t2.micro	Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true	
On-Demand Linux base pricing: 0.0124 USD per Hour	
On-Demand Windows base pricing: 0.017 USD per Hour	
On-Demand RHEL base pricing: 0.0724 USD per Hour	
On-Demand SUSE base pricing: 0.0124 USD per Hour	

▼

⬤ All generations

Compare instance types

Additional costs apply for AMIs with pre-installed software

13. Select a key pair name or create if it doesn't exist.

▼ **Key pair (login)** Info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name

root ▼   C Create new key pair

14. Select the security group created for the launch template.

▼ **Network settings** Info

Subnet Info

Don't include in launch template ▼   C Create new subnet ↗

When you specify a subnet, a network interface is automatically added to your template.

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

⬤ Select existing security group   ◯ Create security group

Security groups Info

Select security groups ▼

my-lt-grp   sg-0193aa1357ffc9995 ✕
VPC: vpc-0dbe7bc3f6036f9b4

C Compare security group rules

▶ **Advanced network configuration**

15. Now click on advance settings, and scroll down till end, and add the following code. Then click on "Create launch template".

```bash
#!/bin/bash
sudo apt update -y
sudo apt install apache2 -y
sudo echo "<h1>Instance $(hostname -f)</h1>" | sudo tee
/var/www/html/index.html
```

16. Inside the menu, click on the target group and then click on "Create target group".

Target groups Info   Actions ▼   **Create target group**

Q Filter target groups   ‹ 1 › ⚙

☐	Name	▽	ARN	▽	Port	▽	Protocol	▽	Target type	▽	Load balancer	▽

No target groups
You don't have any target groups in ap-south-1

Create target group

17. Choose "Instances" as the target type and give a name to the target group. Then click next and click on "Create target group".

18. Now in the side menu click on load balancers, and then click on "Create load balancer".

19. Give a name to the load balancer.

Basic configuration

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

```
my-lb
```

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

20. Select at least 2 zones.

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. Availabi
balancer or the VPC are not available for selection.

☑ **ap-south-1a (aps1-az1)**
Subnet

```
subnet-0e7d41dc412c388cd                                    ▼
```

IPv4 address
Assigned by AWS

☑ **ap-south-1b (aps1-az3)**
Subnet

```
subnet-040e0fac65e6a4617                                    ▼
```

IPv4 address
Assigned by AWS

☑ **ap-south-1c (aps1-az2)**
Subnet

```
subnet-018c2b387a7b91b47                                    ▼
```

IPv4 address
Assigned by AWS

21. Select the security group created for load balancer.

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   ✕ | my-lb-grp   ✕ |
| sg-0b3233960a24871c0   VPC: vpc-0dbe7bc3f6036f9b4 | sg-0485b6e2107079698   VPC: vpc-0dbe7bc3f6036f9b4 |

22. Here select the target group which we created already and at the end click on "Create load balancer".

Default action | Info

| Forward to | my-tg | HTTP ▼ | ⟳ |
| | Target type: Instance, IPv4 | | |

Create target group ⤴

23. Then in the side menu click on Auto Scaling Group, give a name and select the launch template which we created previously.

Name

Auto Scaling group name
Enter a name to identify the group.

my-asg

Must be unique to this account in the current Region and no more than 255 characters.

Launch template Info   Switch to launch configuration

Launch template
Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.

my-lt   ▼   ⟳

Create a launch template ⤴

24. Select all the 3 zones and then click on "Next".

Network Info

For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly.

VPC
Choose the VPC that defines the virtual network for your Auto Scaling group.

vpc-0dbe7bc3f6036f9b4
172.31.0.0/16   Default

Create a VPC ↗

Availability Zones and subnets
Define which Availability Zones and subnets your Auto Scaling group can use in the chosen VPC.

Select Availability Zones and subnets

ap-south-1c | subnet-018c2b387a7b91b47 ✕
172.31.16.0/20   Default

ap-south-1b | subnet-040e0fac65e6a4617 ✕
172.31.0.0/20   Default

ap-south-1a | subnet-0e7d41dc412c388cd ✕
172.31.32.0/20   Default

Create a subnet ↗

25. Select "Attach to an existing load balancer" and select the load balancer.

Load balancing Info

Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define.

◯ No load balancer
Traffic to your Auto Scaling group will not be fronted by a load balancer.

● Attach to an existing load balancer
Choose from your existing load balancers.

◯ Attach to a new load balancer
Quickly create a basic load balancer to attach to your Auto Scaling group.

Attach to an existing load balancer
Select the load balancers that you want to attach to your Auto Scaling group.

● Choose from your load balancer target groups
This option allows you to attach Application, Network, or Gateway Load Balancers.

◯ Choose from Classic Load Balancers

Existing load balancer target groups
Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups

my-tg | HTTP   ✕
Application Load Balancer: my-lb

26.Turn on Elastic Load Balancing health checks, and set the Health check grace period to 60 seconds.

27. Set the "Max desired capacity" to 4. Select a target tracking scaling policy with the metric type: Average CPU utilisation. Set target value to 30 and instance warmup to 60 seconds. Then click on "Create auto scaling group".

28. An instance will start running after creating auto scaling group, connect to the instance and fire the command "sudo apt update -y && sudo apt install stress -y && sudo stress –cpu 8 –timeout 200".

29. After a few minutes all the 4 instances will start running due to stress.

30. Then put the load balancer dns name in the browser and it will start showing different ip addresses on every reload.