

# HOW TO CREATE AUTO SCALLING GROUP

## Step1: Create a VPC (virtual private cloud)

- Go to vpc console -----> create vpc
- Name tag auto-generation : add name    ex → project-demo
- Number of Availability Zones : 3
- Number of public subnets        :3
- Number of private subnets        : 0
- Nat gateway                         : None
- Vpc endpoints                        : None

-----click create vpc -----

VPC > Your VPCs > Create VPC

☐ VPC only ☒ VPC and more

**Name tag auto-generation** [Info](#)  
Enter a value for the Name tag. This value will be used to auto-generate Name tags for all resources in the VPC.

☒ Auto-generate  
project-demo

**IPv4 CIDR block** [Info](#)  
Determine the starting IP and the size of your VPC using CIDR notation.  
10.0.0.0/16 65,536 IPs  
CIDR block size must be between /16 and /28.

**IPv6 CIDR block** [Info](#)  
☒ No IPv6 CIDR block  
☐ Amazon-provided IPv6 CIDR block

**Tenancy** [Info](#)  
Default

**Number of Availability Zones (AZs)** [Info](#)  
Choose the number of AZs in which to provision subnets. We recommend at least two AZs for high availability.  
1 | 2 | **3**

► **Customize AZs**

**Number of public subnets** [Info](#)  
The number of public subnets to add to your VPC. Use public subnets for web applications that need to be publicly accessible over the internet.  
0 | **3**

**Number of private subnets** [Info](#)  
The number of private subnets to add to your VPC. Use private subnets to secure backend resources that don't need public access.  
**0** | 3 | 6

► **Customize subnets CIDR blocks**

**NAT gateways (\$)** [Info](#)  
Choose the number of Availability Zones (AZs) in which to create NAT gateways. Note that there is a charge for each NAT gateway.  
**None** | In 1 AZ | 1 per AZ

**VPC endpoints** [Info](#)  
Endpoints can help reduce NAT gateway charges and improve security by accessing S3 directly from the VPC. By default, full access policy is used. You can customize this policy at any time.  
**None** | S3 Gateway

**VPC** [Show details](#)  
Your AWS virtual network  
project-demo-vpc

**Subnets (3)**  
Subnets within this VPC  
ap-south-1a project-demo-subnet-public1-ap-  
ap-south-1b project-demo-subnet-public2-ap-  
ap-south-1c project-demo-subnet-public3-ap-

**Route tables (1)**  
Route network traffic to resources  
project-demo-rtb-public

## Step 2: set up the security groups:

### Steps :

- Go to security groups -----> first choose the vpcid
- then -----> set the inbound and outbound rules and save it

# INBOUNDED RULES

# OUT BOUNDED RULES

The image displays two side-by-side screenshots of the AWS Management Console, specifically the 'Edit inbound rules' and 'Edit outbound rules' pages for a security group.

**Left Screenshot: Edit inbound rules**

- Page Title:** Edit inbound rules
- Sub-header:** Inbound rules control the incoming traffic that's allowed to reach the instance.
- Table:** A table with columns: Security group rule ID, Type, Protocol, Port range, Source, and Description - optional. It lists three rules: 'All traffic', 'SSH', and 'HTTP'. The 'Source' column for the 'All traffic' rule is set to 'Custom' and shows a dropdown menu with 'sg-05a0197a58f53565d' selected. The 'SSH' and 'HTTP' rules have 'Anywh...' selected in the Source dropdown.
- Buttons:** 'Add rule', 'Cancel', 'Preview changes', and 'Save rules'.

**Right Screenshot: Edit outbound rules**

- Page Title:** Edit outbound rules
- Sub-header:** Outbound rules control the outgoing traffic that's allowed to leave the instance.
- Table:** A table with columns: Security group rule ID, Type, Protocol, Port range, Destination, and Description - optional. It lists three rules: 'All traffic', 'All TCP', and 'HTTP'. The 'Destination' column for the 'All traffic' rule is set to 'Custom' and shows a dropdown menu with '0.0.0.0/0' selected. The 'All TCP' and 'HTTP' rules have 'Anywh...' selected in the Destination dropdown.
- Buttons:** 'Add rule', 'Cancel', 'Preview changes', and 'Save rules'.

step3: create an one instance and attach image and template

1. Create a instance

- ❖ Go to EC2 ----> launch instance
- ❖ Give Name ----> EX:siva
- ❖ Choose Amazon Machine Image (AMI ) :amazon linux 2023 kernal-6.12AMI
- ❖ Instance type :type3.micro
- ❖ Select you keypair : linuxxx
- ❖ Select your vpc : project-demo

- ❖ Auto-assign public IP : enable
- ❖ Attach the security group : default
- ❖ advanced detail ----->user data , paste

Now we create one instance and go to chrome browser then paste ip address

The screenshot shows the AWS Management Console interface for launching an EC2 instance. The breadcrumb navigation at the top indicates the path: EC2 > Instances > Launch an instance. The main content area is divided into several sections:

- Name and tags:** The 'Name' field is set to 'SIVA'. There is a link to 'Add additional tags'.
- Application and OS Images (Amazon Machine Image):** This section includes a search bar and a grid of AMIs. The 'Amazon Linux 2023 kernel-6.12 AMI' is selected. Below the grid, there is a description of the AMI and a table with details:
 

Architecture	Boot mode	AMI ID	Publish Date	Username
64-bit (x86)	uefi-preferred	ami-068af95af805265b0	2025-10-23	ec2-user
- Instance type:** The 't3.micro' instance type is selected. A note indicates it is 'Free tier eligible'. There is a link to 'Compare instance types'.
- Summary:** This section provides a overview of the configuration:
  - Number of instances:** 1
  - Software Image (AMI):** Amazon Linux 2023 AMI 2023.9.2... (link to read more)
  - Virtual server type (instance type):** t3.micro
  - Firewall (security group):** default
  - Storage (volumes):** 1 volume(s) - 8 GiB

At the bottom right of the 'Summary' section, there are two buttons: 'Cancel' and 'Launch instance'. A 'Preview code' link is also present.

▼ Summary

Number of instances | Info

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.9.2...[read more](#)

ami-06ba9f9fa1805265b0d

Virtual server type (instance type)

t3.micro


Firewall (security group)

default

Storage (volumes)

1 volume(s) - 8 GiB

Launch instance

 [Preview code](#)

▼ Summary

Number of instances

Info

1

Software Image (AMI)

Amazon Linux 2023 AMI [read more](#)  
ami-068af95af80526560

Virtual server type (instance type)

t3.micro

Firewall (security group)


default

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

Launch Instance

 Preview code

## Step 4: create an AMI from the instance:

Go to EC2 instance ----> actions ----> image ----> create image

- Image name : siva image
- Image description : backup purpose
- Click : create image

The screenshot shows the 'Create image' page in the AWS Management Console. The breadcrumb trail at the top is 'EC2 > Instances > i-0818ca099dc155b98 > Create image'. The page title is 'Create image' with an 'info' link. A subtitle explains that an image (AMI) defines programs and settings for launching EC2 instances and can be created from an existing instance configuration.

**Image details**

**Instance ID**  
i-0818ca099dc155b98 (SIVA)

**Image name**  
SIVA IMAGE  
Maximum 127 characters. Can't be modified after creation.

**Image description - optional**  
backup purpose  
Maximum 255 characters

☒ **Reboot instance**  
When selected, Amazon EC2 reboots the instance so that data is at rest when snapshots of the attached volumes are taken. This ensures data consistency.

**Instance volumes**

Storage type	Device	Snapshot	Size	Volume type	IOPS	Throughput	Delete on termination	Encrypted
EBS	/dev/xv...	Create new snapshot from v...	8	EBS General Purpose SSD - g...	3000		<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable

[Add volume](#)

During the image creation process, Amazon EC2 creates a snapshot of each of the above volumes.

**Tags - optional**  
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

☒ **Tag image and snapshots together**  
Tag the image and the snapshots with the same tag.

☐ **Tag image and snapshots separately**  
Tag the image and the snapshots with different tags.

No tags associated with the resource.

[Add new tag](#)  
You can add up to 50 more tags.

[Cancel](#) [Create image](#)

## Step 5: create a launch template

Go to EC2 ----> launch template ---> create launch template

1. Launch template name : ex : siva template
2. Template version description : this my template
3. Choose your AMI :siva image
4. Select Instance type :t3micro
5. Select your Key pair name : linuxx
6. Select Network settings

Click template create

EC2 > Launch templates > Create template from instance

The Volume initialization rate and ENA queues settings of the source instance have not been automatically included. If they are required, you must manually set them.

### Create launch template

Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions.

#### Launch template name and description

Source instance  
i-0818ca099dc155b98

Launch template name - *required*

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

Template version description

Max 255 chars

**Auto Scaling guidance** [Info](#)  
Select this if you intend to use this template with EC2 Auto Scaling.  
☐ Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

► Template tags

#### Launch template contents

Specify the details of your launch template below. Leaving a field blank will result in the field not being included in the launch template.

##### ▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI contains the operating system, application server, and applications for your instance. If you don't see a suitable AMI below, use the search field or choose [Browse more AMIs](#).

AMI from catalog

Recents

My AMIs

Quick Start

☐ Don't include in launch template

☒ Owned by me

☐ Shared with me

[Browse more AMIs](#)  
Including AMIs from AWS, Marketplace and the Community

##### Amazon Machine Image (AMI)

SIVA IMAGE  
ami-04a8f0dd3864b3f84  
2025-11-03T10:29:40.000Z    Virtualization: hvm    ENA enabled: true    Root device type: ebs    Boot mode: uefi-preferred

##### Description

backup purpose

#### ▼ Summary

**Software Image (AMI)**  
backup purpose  
ami-04a8f0dd3864b3f84

**Virtual server type (instance type)**  
t3.micro

**Firewall (security group)**  
default

**Storage (volumes)**  
1 volume(s) - 8 GiB

[Cancel](#)[Create launch template](#)

EC2 > Launch templates > Create template from instance

t3.micro  
Family: t3 2 vCPU 1 GiB Memory Current generation: true On-Demand Linux base pricing: 0.0112 USD per Hour  
On-Demand SUSE base pricing: 0.0112 USD per Hour On-Demand Windows base pricing: 0.0204 USD per Hour  
On-Demand Ubuntu Pro base pricing: 0.0147 USD per Hour On-Demand RHEL base pricing: 0.04 USD per Hour  
Free tier eligible

Additional costs apply for AMIs with pre-installed software

▼ 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  
linuxx Template value Create new key pair

▼ Network settings info

Subnet info  
subnet-0a7e6d72e986a87cd project-demo-subnet-public2-ap-south-1b  
VPC: vpc-0715884914d503b89 Owner: 595298786993 Availability Zone: ap-south-1b (aps1-az3) Zone type: Availability Zone  
IP addresses available: 4090 CIDR: 10.0.16.0/20  
Create new subnet

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

Availability Zone info  
ap-south-1b aps1-az3 Enable additional zones

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

Common security groups info  
Select security groups  
default sg-094fc4fad62c6b50f  
VPC: vpc-0715884914d503b89  
Compare security group rules

Security groups that you add or remove here will be added to or removed from all your network interfaces.

► Advanced network configuration

▼ Storage (volumes) info  
EBS Volumes Hide details

► Volume 1 (Template and AMI Root) : 8 GiB, EBS, General purpose SSD (gp3), 3000 IOPS  
AMI Volumes are not included in the template unless modified

Add new volume

▼ Summary

Software image (AMI)  
backup purpose  
ami-04a8f0dd3864b3f84

Virtual server type (instance type)  
t3.micro

Firewall (security group)  
default

Storage (volumes)  
1 volume(s) - 8 GiB

Cancel Create launch template

## Step 6 : create a load balancer :

### Steps :

Go to EC2 ----> load balancer -----> create a load balancer

A. Create a classic load balancer ---> load balancer name ---> CLB

B. Edit network mapping :

Select your vpc

Availability zones and subnets : ap-south-1a (aps1-az1) ap-south-1b (aps1-az3) , ap-south-1c (aps1-az2)



# Select security groups

EC2 > Load balancers > Create Classic Load Balancer

Create Classic Load Balancer

The Classic Load Balancer distributes incoming application traffic across multiple EC2 instance targets in multiple Availability Zones. This increases the fault tolerance of your applications. Elastic Load Balancing detects unhealthy instances and routes traffic only to healthy instances.

How Classic Load Balancers work

Basic configuration

Load balancer name

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

CLB

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

Scheme

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

Internet-facing

Serves internet-facing traffic.

Has public IP addresses.

DNS name resolves to public IPs.

Requires a public subnet.

Internal

Serves internal traffic.

Has private IP addresses.

DNS name resolves to private IPs.

Network mapping

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

VPC

loadBalancers.vpcDescription.CbInternetFacing Learn more

vpc-0715884914d3038d9 (project-demo-vpc)

10.0.0.0/16

Create VPC

Availability Zones and subnets

Select at least one Availability Zone and one subnet for each zone. We recommend selecting at least two Availability Zones. The load balancer will route traffic only to targets in the selected Availability Zones. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.

ap-south-1a (aps1-az1)

Subnet

Only CIDR blocks corresponding to the load balancer IP address type are used. At least 8 available IP addresses are required for your load balancer to scale efficiently.

subnet-098b7c8305d095cf3

IPv4 subnet CIDR: 10.0.0.0/20

project-demo-subnet-public1-ap-south-1a

IPv4 address

Assigned by AWS

ap-south-1b (aps1-az3)

Subnet

Only CIDR blocks corresponding to the load balancer IP address type are used. At least 8 available IP addresses are required for your load balancer to scale efficiently.

subnet-0a7e6d72e986a87cd

IPv4 subnet CIDR: 10.0.16.0/20

project-demo-subnet-public2-ap-south-1b

IPv4 address

Assigned by AWS

EC2 > Load balancers > Create Classic Load Balancer

A security group is a set of 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-d946c49d52c6b50f VPC: vpc-0715884914d3038d9

Listeners and routing

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

Listener HTTP:80

Instance HTTP:80

Listener protocol

HTTP

Instance protocol

HTTP

Listener port

80

Instance port

80

Add listener

You can add up to 99 more listeners.

Health checks

Your load balancer automatically performs health checks to test the availability of all registered instances. Traffic is only routed to healthy instances, which is determined on their response to the health check.

Ping target

The health check ping is sent using the protocol and port you specify. If using HTTP/HTTPS protocol, you must also provide the destination path.

Ping protocol

HTTP

Ping path

/index.html

Ping port

80

Advanced health check settings

Instances (0)

You can add instances to register as targets of the load balancer. Alternatively, after your load balancer is created, you can add it to an Amazon EC2 Auto Scaling group to ensure you maintain the correct number of instances to handle the load for your application. For maximum fault tolerance, we recommend maintaining approximately equivalent numbers of instances in each Availability Zone.

Filter instances

Remove

Add instances

EC2 > Load balancers > Create Classic Load Balancer

### Attributes

Creating your load balancer using the console gives you the opportunity specify additional features at launch. You can also find and adjust these settings in the load balancer's "Attributes" section after your load balancer is created.

☒ **Enable cross-zone load balancing**  
 With cross-zone load balancing, each load balancer node for your Classic Load Balancer distributes requests evenly across the registered instances in all enabled Availability Zones. If cross-zone load balancing is disabled, each load balancer node distributes requests evenly across the registered instances in its Availability Zone only. Classic Load Balancers created with the API or CLI have cross-zone load balancing disabled by default. After you create a Classic Load Balancer, you can enable or disable cross-zone load balancing at any time.

☒ **Enable connection draining**  
 Applicable to instances that are deregistering, this feature allows existing connections to complete (during a specified draining interval) before reporting the instance as deregistered. [Learn more](#)

**Timeout (draining interval)**  
 The maximum time for the load balancer to allow existing connections to complete. When the maximum time limit is reached, the load balancer forcibly closes any remaining connections and reports the instance as deregistered.

seconds  
 Valid values: 1-3600 (integers only)

► **Load balancer tags - optional**  
 Consider adding tags to your load balancer. Tags enable you to categorize your AWS resources so you can more easily manage them. The 'Key' is required, but 'Value' is optional. For example, you can have Key = production-webserver, or Key = webserver, and Value = production.

### Review

Review the load balancer configurations and make changes if needed. After you finish reviewing the configurations, choose **Create load balancer**.

#### Summary

Review and confirm your configurations. [Estimate cost](#)

<b>Basic configuration</b> <a href="#">Edit</a> Name: CLB Scheme: Internet-facing	<b>Network mapping</b> <a href="#">Edit</a> VPC: <a href="#">vpc-0715884914d3038d9</a> Availability Zones and subnets: <ul style="list-style-type: none"> <li>ap-south-1a  <a href="#">subnet-098b7c8305d095cf3</a>            project-demo-subnet-public1-ap-south-1a</li> <li>ap-south-1b  <a href="#">subnet-0a7e6d72e986a87cd</a>            project-demo-subnet-public2-ap-south-1b</li> <li>ap-south-1c  <a href="#">subnet-0a3f9fc98cf132f05</a>            project-demo-subnet-public3-ap-south-1c</li> </ul>	<b>Security groups</b> <a href="#">Edit</a> default: <a href="#">sg-094fc4fad62c6b50f</a>	<b>Listeners and routing</b> <a href="#">Edit</a> HTTP:80
<b>Health checks</b> <a href="#">Edit</a> HTTP:80/index.html <ul style="list-style-type: none"> <li>Timeout: 2 seconds</li> <li>Interval: 5 seconds</li> <li>Unhealthy threshold: 2</li> <li>Healthy threshold: 10</li> </ul>	<b>Instances</b> <a href="#">Edit</a> No instances added yet	<b>Attributes</b> <a href="#">Edit</a> <ul style="list-style-type: none"> <li>Cross-zone load balancing: On</li> <li>Connection draining: On</li> <li>Connection draining timeout: 300 seconds</li> </ul>	<b>Tags</b> <a href="#">Edit</a> -

[Cancel](#) [Create load balancer](#)

After creater a classic load balancer check DNS name :CLB-923948916.ap-south-1.elb.amazonaws.com

## Step 7 : create an auto scaling group:

## Steps :

Go to EC2 ---> auto scalling groups ---> create an auto scalling group

1) Auto scalling groups name : alg

2) Select your template : siva-template

NEXT PAGE

3) Network : select your vpc

4) Select availability zones : 3 1a.1b.1c

NEXT PAGE

5) Attach to an existing load balancer ---->choose from classic load balancer -----> select your classic load balancer

NEXT PAGE

6) Desired capacity :3

7) Scaling limits---> min desired capacity : 3---->max desired capacity--->5

8) Select monitoring : enable (it is optional)

9) Simple notification service (sns) ---> create topic -->name : siva-->

Create subscription ---> select protocol---> Email -->end point enter email address

- Step 1: Choose launch template
- Step 2: Choose instance launch options
- Step 3 - optional: Integrate with other services
- Step 4 - optional: Configure group size and scaling
- Step 5 - optional: Add notifications
- Step 6 - optional: Add tags
- Step 7: Review

Review Info

Step 1: Choose launch template

Edit

Group details

Auto Scaling group name  
alg

Launch template

Launch template  
siva-template  
lt-049acec6997863ce0

Version  
Default

Description  
this is my template

Step 2: Choose instance launch options

Edit

Network

VPC  
vpc-0715884914d5038d9

Availability Zones and subnets

Availability Zone	Subnet	Subnet CIDR range
aps1-az1 (ap-south-1a)	subnet-098b7c8305d095cf3	10.0.0.0/20
aps1-az2 (ap-south-1c)	subnet-0a3f9cf98cf132f05	10.0.32.0/20
aps1-az3 (ap-south-1b)	subnet-0a7e6d72e986a87cd	10.0.16.0/20

Availability Zone distribution  
Balanced best effort

Instance type requirements

This Auto Scaling group will adhere to the launch template.

Step 3: Integrate with other services

Edit

Load balancing

Load balancer 1

Name  
CLB

Type  
Classic

Target group  
-

VPC Lattice integration options

VPC Lattice target groups  
-

Application Recovery Controller (ARC) zonal shift

ARC zonal shift  
Disabled

Health checks

Health check type  
EC2

Health check grace period  
300 seconds

Step 4: Configure group size and scaling policies

Edit

Group size

Desired capacity  
3

Desired capacity type  
Units (number of instances)

Scaling

Minimum desired capacity  
1

Maximum desired capacity  
5

Target tracking policy  
-

Instance maintenance policy

Replacement behavior  
No policy

Min healthy percentage  
-

Max healthy percentage  
-

Additional settings

Instance scale-in protection  
Disabled

Monitoring  
Enabled

Default instance warmup  
Disabled

Capacity Reservation preference

EC2 > Instances

Instances (4/4) [Info](#)

Find Instance by attribute or tag (case-sensitive)  All states [▼](#)

Last updated 1 minute ago [Refresh](#) [Connect](#) [Instance state ▼](#) [Actions ▼](#) [Launch instances](#) [▼](#)

<input checked="" type="checkbox"/>	Name <a href="#">↗</a> ▼	Instance ID	Instance state ▼	Instance type ▼	Status check	Alarm status	Availability Zone ▼	Public IPv4 DNS ▼	Public IPv4 ...
<input checked="" type="checkbox"/>	SIVA	i-0818ca099dc155b98	Running <a href="#">🔍</a> <a href="#">🔍</a>	t3.micro	3/3 checks passed	<a href="#">View alarms +</a>	ap-south-1b	ec2-3-108-53-34.ap-so...	3.108.53.34
<input checked="" type="checkbox"/>	SIVAmain	i-0dce8e0097b05f9ea	Running <a href="#">🔍</a> <a href="#">🔍</a>	t3.micro	Initializing	<a href="#">View alarms +</a>	ap-south-1b	ec2-3-111-33-2.ap-sout...	3.111.33.2
<input checked="" type="checkbox"/>	SIVA	i-08fdec80ac90a68ca	Running <a href="#">🔍</a> <a href="#">🔍</a>	t3.micro	Initializing	<a href="#">View alarms +</a>	ap-south-1a	ec2-13-235-133-3.ap-s...	13.235.133.3
<input checked="" type="checkbox"/>	SIVA	i-09b1169564f64eb32	Running <a href="#">🔍</a> <a href="#">🔍</a>	t3.micro	Initializing	<a href="#">View alarms +</a>	ap-south-1c	ec2-65-1-128-202.ap-s...	65.1.128.202

4 instances selected [Settings](#) [▼](#)

[Monitoring](#)

[Configure CloudWatch agent](#)

☐ Alarm recommendations [🔍](#) [Investigate with AI - new](#) [1h](#) [3h](#) [12h](#) [1d](#) [3d](#) [1w](#) [Custom](#) [UTC timezone ▼](#) [Refresh](#) [Explore related](#) [⋮](#)

CPU utilization (%) [🔍](#) [⋮](#) Network in (bytes) [🔍](#) [⋮](#) Network out (bytes) [🔍](#) [⋮](#) Network packets in (count) [🔍](#) [⋮](#)

## Step 8 create an another application load balancer :

First we create an target group

Target group---> t.g name : ssa --->select your vpc ---> health checks path: index.html

Go to load balancer ----> create application load balancer

→Create application load balance name ---> select your vpc

→Select availability zones

→Attach target group

→Create application load balancer

→ Attach to auto scalling groups

