

HOW TO CREATE AUTO SCALING GROUP

Step1: create a vpc (virtual private cloud)

- Go to vpc console -----> create vpc
STEPS
- 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 -----

The screenshot shows the AWS VPC creation process. On the left, the configuration interface includes fields for Name tag auto-generation (set to 'Auto-generate' with 'project-demo'), IPv4 CIDR block (10.0.0.0/16), IPv6 CIDR block (No IPv6 CIDR block selected), Tenancy (Default), Number of Availability Zones (AZs) (3 selected), Number of public subnets (3 selected), Number of private subnets (6 selected), NAT gateways (None selected), and VPC endpoints (None selected). On the right, the summary view shows a VPC named 'project-demo-vpc' with 3 Subnets (ap-south-1a, ap-south-1b, ap-south-1c) and 1 Route table (project-demo-rtb-public).

Step 2: set up the security groups

➤ Go to security groups -----> first choose the vpcid then -----> set the inbounded and outbounded rules and save it

INBOUNDED RULES : image

INBOUNDED RULES

OUT BOUNDED RULES

The screenshot shows two side-by-side AWS VPC rule configuration pages. The left page is titled 'Edit inbound rules' and the right page is titled 'Edit outbound rules'. Both pages have similar layouts with columns for Security group rule ID, Type, Protocol, Port range, Source, and Destination. Each row represents a rule with fields for Type (All traffic, SSH, HTTP), Protocol (All, TCP), Port range (All, 22, 80), and Source/Destination (Custom, Anywhere). Below each table is an 'Add rule' button and a row of buttons: 'Cancel', 'Preview changes', and 'Save rules'.

Inbound rules info

| Security group rule ID | Type | Protocol | Port range | Source | Description - optional |
|------------------------|-------------|----------|------------|----------|------------------------|
| sgr-0e2a8bdf7a906d58 | All traffic | All | All | Custom | sg-05a0197a58f53565d |
| - | SSH | TCP | 22 | Anywhere | 0.0.0.0/0 |
| - | HTTP | TCP | 80 | Anywhere | 0.0.0.0/0 |

Outbound rules info

| Security group rule ID | Type | Protocol | Port range | Destination | Description - optional |
|------------------------|-------------|----------|------------|-------------|------------------------|
| sgr-02b46f227084a7cea | All traffic | All | All | Custom | 0.0.0.0/0 |
| - | All TCP | TCP | 0 - 65535 | Anywhere | 0.0.0.0/0 |
| - | HTTP | TCP | 80 | Anywhere | 0.0.0.0/0 |

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 EC2 'Launch an instance' wizard. The current step is 'Application and OS Images (Amazon Machine Image)'. The 'Quick Start' tab is selected. A search bar at the top of the list allows for searching across 1000s of application and OS images. Below the search bar, there are two tabs: 'Recent' and 'Quick Start'. Under 'Quick Start', there are seven categories: Amazon Linux, macOS, Ubuntu, Windows, Red Hat, SUSE Linux, and Debian. To the right of these categories is a 'Browse more AMIs' link, which includes a note about including AMIs from AWS, Marketplace, and the Community. Below the categories, the 'Amazon Machine Image (AMI)' section displays the 'Amazon Linux 2023 kernel-6.12 AMI' (ami-068af95af805265b0). This AMI is marked as 'Free tier eligible'. The 'Description' section provides details about the AMI, stating it is a modern, general purpose Linux-based OS with 5 years of support. The 'Architecture' is listed as '64-bit (x86)', 'Boot mode' as 'uefi-preferred', 'AMI ID' as 'ami-068af95af805265b0', 'Publish Date' as '2025-10-23', 'Username' as 'ec2-user', and 'Verified provider'. The 'Instance type' section shows the 't3.micro' instance type, which is 'Free tier eligible'. It lists the family as 't3', with 2 vCPUs, 1 GiB Memory, and current generation status. On-Demand Linux base pricing is 0.0112 USD per Hour. Other options like On-Demand SUSE, Windows, Ubuntu Pro, and RHEL are also listed. The 'Additional costs apply for AMIs with pre-installed software' note is present. The 'Summary' section on the right shows 1 instance selected, the software image as 'Amazon Linux 2023 AMI 2023.9.2...', the virtual server type as 't3.micro', and the firewall as 'default'. The storage volume is listed as 1 volume(s) - 8 GiB. The 'Launch instance' button is prominently displayed.

AWS | Search [Alt+S] Account ID: 3952-9878-6993 Asia Pacific (Mumbai) SVA

EC2 > Instances > Launch an instance

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 - required

linuxx [Create new key pair](#)

Network settings [Info](#)

VPC - required [Info](#)

vpc-071584914d3038d9 (project-demo-vpc)
10.0.0.0/16

Subnet [Info](#)

subnet-0a7e6d72e986a87cd project-demo-subnet-public2-ap-south-1b
VPC: vpc-071584914d3038d9 Owner: 395298786993 Availability Zone: ap-south-1b (aps1-az3)
Zone type: Availability Zone IP addresses available: 4091 CIDR: 10.0.16.0/20

Create new subnet

Auto-assign public IP [Info](#)

Enable

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.

Create security group Select existing security group

Common security groups [Info](#)

Select security groups

default sg-09fc4fd62c6b50f X
VPC: vpc-071584914d3038d9

Compare security group rules

Advanced network configuration

Configure storage [Info](#)

Advanced

1x 8 GiB gp3 Root volume, 3000 IOPS, Not encrypted

Add new volume

Click refresh to view backup information

The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

0 x File systems [Edit](#)

Advanced details [Info](#)

Default instance networking

[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

Create image Info

An image (also referred to as an AMI) defines the programs and settings that are applied when you launch an EC2 instance. You can create an image from the configuration of an existing instance.

Image details

Instance ID
[i-0818ca099dc155b98 \(SIVA\)](#)
Image name

Maximum 127 characters. Can't be modified after creation.

Image description - optional

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

AWS | Search [Alt+S] Account ID: 3952-9878-6993 Asia Pacific (Mumbai) SIVA

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

Template version description: this is my template
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)

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](#).

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

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

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Screenshot of the AWS EC2 'Create template from instance' wizard.

Instance Details:

- 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

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

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

Subnet Info
subnet-0a7e6d72e986a87cd project-demo-subnet-public-ap-south-1b
VPC: vpc-0715884914d3038d9 Owner: 395298786993 Availability Zone: ap-south-1b (aps1-az5) Zone type: Availability Zone
IP addresses available: 4090 CIDR: 10.0.16.0/20

Availability Zone Info
ap-south-1b aps1-az3

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

Storage (volumes)
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

Summary

Software image (AMI)
backup purpose
ami-04a8f0dd3864b3fb4

Virtual server type (instance type)
t3.micro

Firewall (security group)
default

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

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

AWS | Search [Alt+S] EC2 Asia Pacific (Mumbai) Account ID: 3952-98

EC2 > Load balancers > Create Classic Load Balancer

Create Classic Load Balancer Info

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.
 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 resolves to public IPs.
- Requires a public subnet.

 Internal

- Serves internal traffic.
- Has private IP addresses.
- DNS name resolves to private IPs.

Network mapping Info

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

VPC Info
loadBalancers.vpcDescription.ClbInternetFacing [Learn more](#)

vpc-0715884914d3058d9 (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.
 IPv4 subnet CIDR: 10.0.0.0/20 project-demo-subnet-public1-ap-south-1a

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.
 IPv4 subnet CIDR: 10.0.16.0/20 project-demo-subnet-public2-ap-south-1b

IPv4 address
Assigned by AWS

IPv4 address
Assigned by AWS

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EC2 > Load balancers > Create Classic Load Balancer

Security groups
Select up to 5 security groups

default sg-094fc4fad62c6b50f VPC: vpc-0715884914d3038d9

Listeners and routing Info
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

1-65535 1-65535

Add listener You can add up to 99 more listeners.

Health checks Info
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

1-65535

► 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

< 1 > ⚙️

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Screenshot of the AWS EC2 Load Balancers "Create Classic Load Balancer" configuration page.

Attributes

Creating your load balancer using the console gives you the opportunity to 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.
300 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 | | | |
| Basic configuration Edit Name: CLB Scheme: Internet-facing | Network mapping Edit VPC: vpc-0715884914d3058d9 Availability Zones and subnets: <ul style="list-style-type: none">ap-south-1a<ul style="list-style-type: none">subnet-098b7c8305d095cf3 project-demo-subnet-public1-ap-south-1aap-south-1b<ul style="list-style-type: none">subnet-0a7e6d72e986a87cd project-demo-subnet-public2-ap-south-1bap-south-1c<ul style="list-style-type: none">subnet-0a39fc98cf132f05 project-demo-subnet-public3-ap-south-1c | Security groups Edit default sg-094fc4fad62c6b50f | Listeners and routing Edit HTTP:80 |
| Health checks Edit HTTP:80/index.html <ul style="list-style-type: none">Timeout: 2 secondsInterval: 5 secondsUnhealthy threshold: 2Healthy threshold: 10 | Instances Edit No instances added yet | Attributes Edit <ul style="list-style-type: none">Cross-zone load balancing: OnConnection draining: OnConnection draining timeout: 300 seconds | Tags Edit - |

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

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

Step 7 : create an auto scaling group

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

- 1) Auto scaling 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

aws | Search [Alt+S] | Account ID: 3952-9878-6993 | root | EC2 | Auto Scaling groups | Create Auto Scaling group

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 [Edit](#)
Version: Default
Description: this is my template

Step 2: Choose instance launch options [Edit](#)

Network
VPC: vpc-0715884914d3038d9 [Edit](#)

Availability Zones and subnets

| Availability Zone | Subnet | Subnet CIDR range |
|------------------------|--|-------------------|
| aps1-az1 (ap-south-1a) | subnet-098b7c8305d095cf5 | 10.0.0.0/20 |
| aps1-az2 (ap-south-1c) | subnet-0a3f9fc98cf132f05 | 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 | Type | Target group |
|--------------------------|---------|--------------|
| CLB Edit | Classic | - |

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aws Search [Alt+S] Account ID: 3952-9878-6993 Asia Pacific (Mumbai) root

EC2 > Auto Scaling groups > Create Auto Scaling 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

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Screenshot of the AWS Management Console EC2 Instances page. The browser tabs show the EC2 Instances page for three different regions: ap-south-1, ap-south-1, and ap-south-1. The main content shows four EC2 instances listed:

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

Below the table, it says "4 instances selected". The "Monitoring" tab is active, showing monitoring metrics like CPU utilization, Network in, Network out, and Network packets in. There are also links for "Configure CloudWatch agent" and "Explore related".

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 scaling groups

