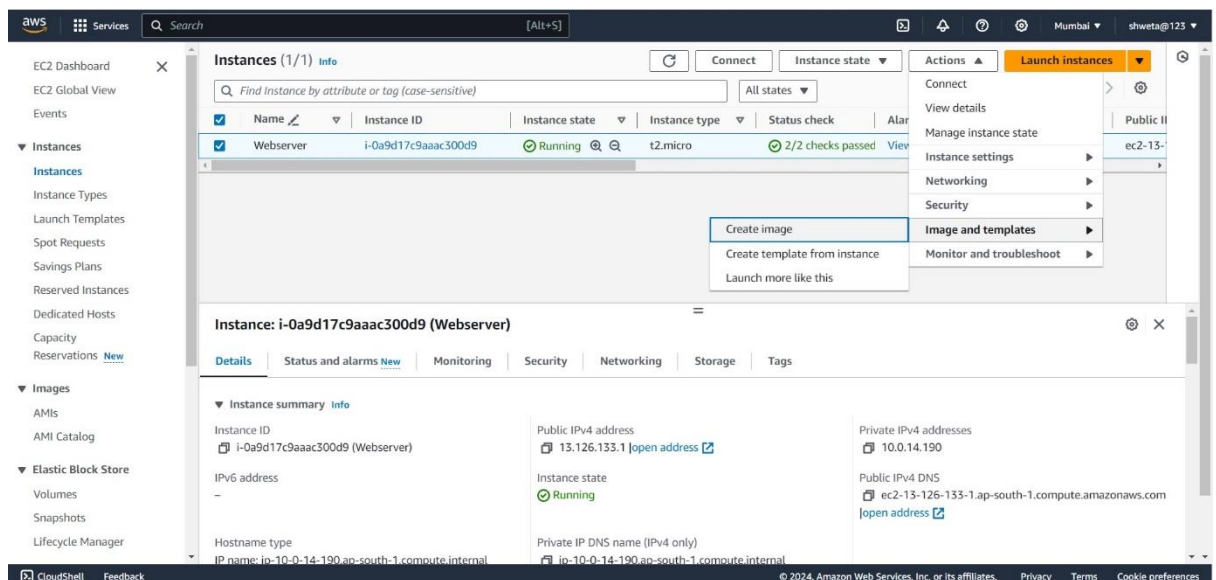
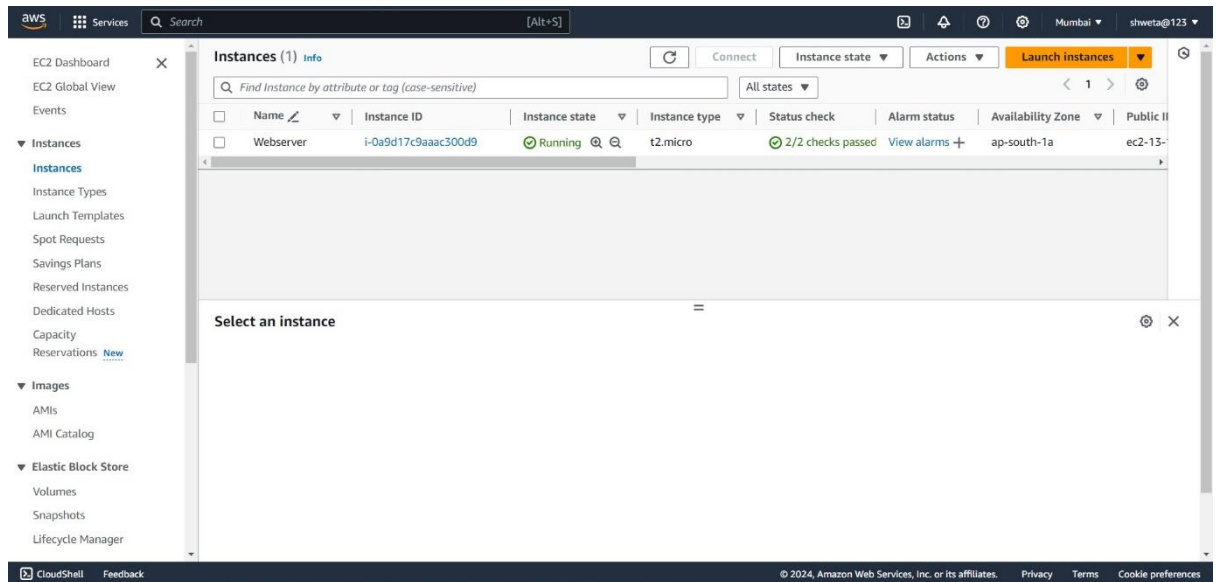


DEPLOY HIGHLY AVAILABLE AND AUTO SCALABLE WEBSITE.

- Launch an EC2 instance and install nginx and then go to actions and select image and template and create image.



- Create an AMI template and a target group in IPV4.

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.

Instance ID: **i-0a9d17c9aac300d9 (Websvener)**

Image name:

Image description - optional:

No reboot: ☐ Enable

Instance volumes

Storage type	Device	Snapshot	Size	Volume type	IOPS	Throughput	Delete on termination	Encrypted
EBS	/dev/...	Create new snapshot fr...	8	EBS General Purpose S...	100		<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.

Amazon Machine Images (AMIs) (1/1) Info

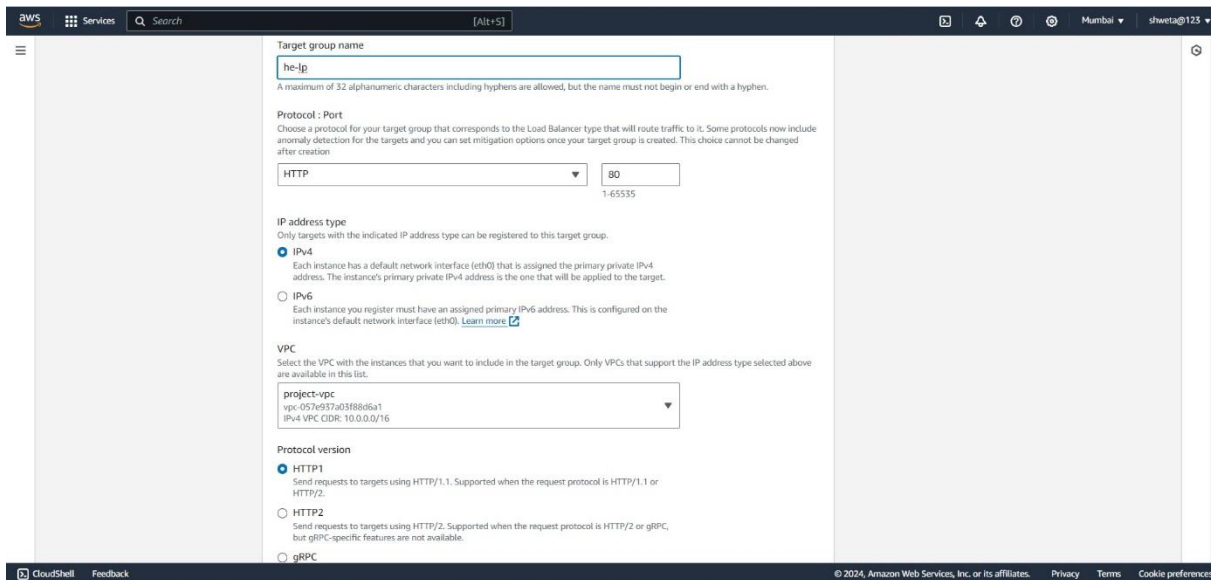
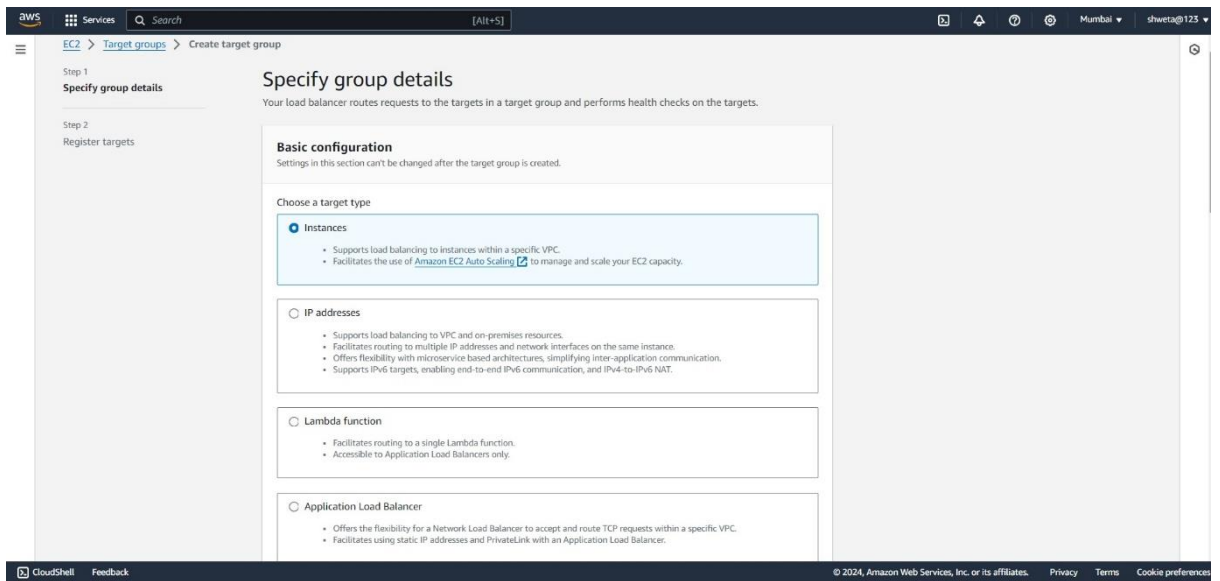
Owned by me

AMI ID = ami-0b2c80b66bc0b0b0d

<input checked="" type="checkbox"/>	Name	AMI name	AMI ID	Source	Owner	Visibility	Status
<input checked="" type="checkbox"/>	Web-test		ami-0b2c80b66bc0b0b0d	73033537813/Web-test	73033537813	Private	Available

AMI ID: ami-0b2c80b66bc0b0b0d

Details	Permissions	Storage	Tags
AMI ID ami-0b2c80b66bc0b0b0d AMI name Web-test Root device name /dev/sda1 Boot mode uefi-preferred	Image type machine Owner account ID 73033537813 Status Available State reason -	Platform details Linux/UNIX Architecture x86_64 Source 73033537813/Web-test Creation date Mon Apr 15 2024 19:27:25 GMT+0530 (India Standard Time)	Root device type EBS Usage operation RunInstances Virtualization type hvm Kernel ID -



The screenshot shows the 'Health checks' configuration page in the AWS Management Console. The page is titled 'Health checks' and includes a sub-header: 'The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.'

Health check protocol: A dropdown menu is set to 'HTTP'.

Health check path: A text input field contains the value '/'. Below the field, a note states: 'Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred. Up to 1024 characters allowed.'

Advanced health check settings: A link to expand more settings.

Attributes: A blue box contains a note: 'Certain default attributes will be applied to your target group. You can view and edit them after creating the target group.'

Tags - optional: A note states: 'Consider adding tags to your target group. Tags enable you to categorize your AWS resources so you can more easily manage them.'

At the bottom right, there are 'Cancel' and 'Next' buttons.

- Then register the target group and include as pending below and create target group.

The screenshot shows the 'Register targets' page in the AWS Management Console. The page is titled 'Register targets' and includes a sub-header: '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 (1/1): A table lists available instances. The first instance is selected.

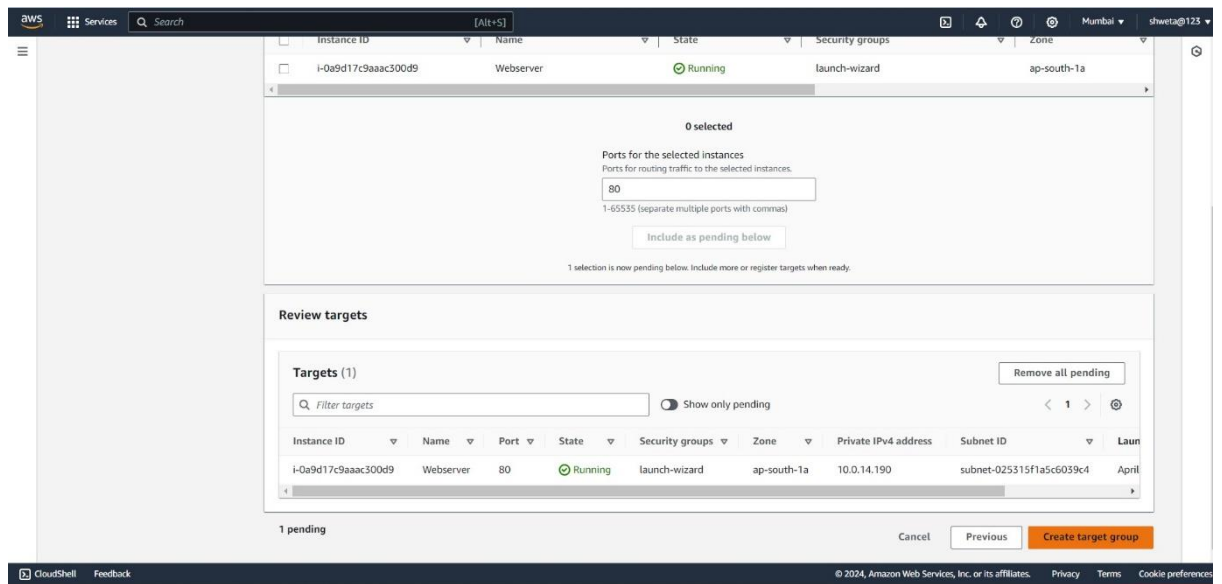
Instance ID	Name	State	Security groups	Zone
i-0a9d17c9aac300d9	Webserver	Running	launch-wizard	ap-south-1a

1 selected

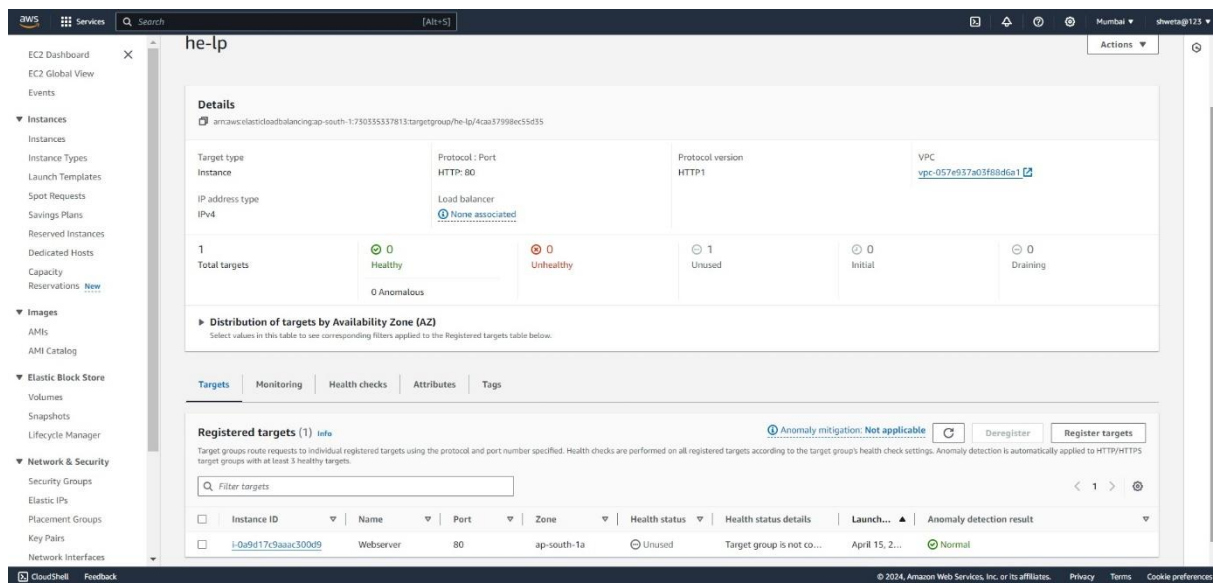
Ports for the selected instances: A text input field contains the value '80'. Below the field, a note states: 'Ports for routing traffic to the selected instances. 1-65535 (separate multiple ports with commas)'.

Include as pending below: A button to add the selected instance to the pending list.

Review targets: A section titled 'Targets (0)' with a 'Remove all pending' button.



- Then create a load balancer and select application load balancer and select a VPC.



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 Application Load Balancers work

Basic configuration

Load balancer name [Info](#)
Name must be unique within your AWS account and can't be changed after the load balancer is created.

hello

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
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
Includes only IPv4 addresses.

☐ Dualstack
Includes IPv4 and IPv6 addresses.

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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 or you can [create a new VPC](#). Only VPCs with an internet gateway are enabled for selection. The selected VPC can't be changed after the load balancer is created. To confirm the VPC for your targets, view your [target groups](#).

project-vpc
vpc-037e937ad3f88d6c1
IPv4 VPC CIDR: 10.0.0.0/16

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)
Subnet
subnet-025315f1a5c6039c4 project-subnet-public1-ap-south-1a
IPv4 address
Assigned by AWS

☒ ap-south-1b (aps1-az3)
Subnet
subnet-0aa87a3ff0067d54b project-subnet-public2-ap-south-1b
IPv4 address
Assigned by AWS

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](#).

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- Select the security group and the load balancer is ready and copy the DNS and paste it to a new tab you can see

the page of a welcome to nginx.

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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

launch-wizard

sg-00a4370e7b92253c6

VPC: vpc-057e937a03f88d6a1

X

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

HTTP

Port

80

1-65535

Default action

Forward to

he-lp

Target type: Instance, IPv4

HTTP

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.

Add listener tag

You can add up to 50 more tags.

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EC2 Dashboard

EC2 Global View

Events

▼ Instances

Instances

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Reserved Instances

Dedicated Hosts

Capacity

Reservations

▼ Images

AMIs

AMI Catalog

▼ Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

▼ Network & Security

Security Groups

Elastic IPs

Successfully created load balancer: hello

It might take a few minutes for your load balancer to fully set up and route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks.

EC2 > Load balancers > hello

hello

Details

Load balancer type

Application

Status

Provisioning

VPC

vpc-057e937a03f88d6a1

IP address type

IPv4

Scheme

Internet-facing

Hosted zone

ZP97RAFLXTNZK

Availability Zones

subnet-0a987a3ff0067d54b ap-south-1b (aps1-a23)

subnet-025315f1a5c6039c4 ap-south-1a (aps1-a21)

Date created

April 15, 2024, 19:41 (UTC+05:30)

Load balancer ARN

arn:aws:elasticloadbalancing:ap-south-1:730355337813:loadbalancer/app/hello/fda59c71eb39cdc3

DNS name

hello-117495072.ap-south-1.elb.amazonaws.com (A Record)

Listeners and rules

Network mapping

Resource map - new

Security

Monitoring

Integrations

Attributes

Tags

Listeners and rules (1)

Info

A listener checks for connection requests on its configured protocol and port. Traffic received by the listener is routed according to the default action and any additional rules.

Manage rules

Manage listener

Add listener

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Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

- Create a template and in my AMI select owned by me and create a template and attach to a existing load balancer.

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EC2 > Launch templates > Create launch template

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

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](#) [help](#)
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
▶ Source template

Summary

Software Image (AMI)
Web-test
ami-0b2c80b66b0b0b0d

Virtual server type (instance type)
t2.micro

Firewall (security group)
test

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, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

✕

Cancel **Create launch template**

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.

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▼ Application and OS Images (Amazon Machine Image) - required

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

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

Recents

My AMIs

Quick Start

Owned by me

Shared with me

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Web-test
ami-0b2c80b66bc0b0b0d
2024-04-15T13:57:25.000Z
Virtualization: hvm ENA enabled: true Root device type: ebs

Description
Web-test

Architecture
x86_64

AMI ID
ami-0b2c80b66bc0b0b0d

▼ Summary

Software Image (AMI)
Web-test
ami-0b2c80b66bc0b0b0d

Virtual server type (instance type)
t2.micro

Firewall (security group)
test

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, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

Create launch template

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EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1
Choose launch template

Step 2
Choose instance launch options

Step 3 - optional
Configure advanced options

Step 4 - optional
Configure group size and scaling

Step 5 - optional
Add notifications

Step 6 - optional
Add tags

Step 7
Review

Choose launch template

Info

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group.

Name

Auto Scaling group name
Enter a name to identify the group.
Testscale
Must be unique to this account in the current Region and no more than 255 characters.

Launch template

Info

For accounts created after May 31, 2023, the EC2 console only supports creating Auto Scaling groups with launch templates. Creating Auto Scaling groups with launch configurations is not recommended but still available via the CLI and API until December 31, 2023.

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.

temp100

Create a launch template

Version
Default (1)

Create a launch template version

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Step 1

Choose launch template

Step 2

Choose instance launch options

Step 3 - optional

Configure advanced options

Step 4 - optional

Configure group size and scaling

Step 5 - optional

Add notifications

Step 6 - optional

Add tags

Step 7

Review

Choose instance launch options

info

Choose the VPC network environment that your instances are launched into, and customize the instance types and purchase options.

Instance type requirements

info

Override launch template

You can keep the same instance attributes or instance type from your launch template, or you can choose to override the launch template by specifying different instance attributes or manually adding instance types.

Launch template	Version	Description
temp100	Default	-
lt-0b68a8ba0cf45b460		

Instance type

t2.micro

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-057e937a03f88d6a1 (project-vpc)

10.0.0.0/16

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-1a | subnet-025315f1a5c6039c4 (project-subnet-public1-ap-south-1a)

10.0.0.0/29

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Step 1

Choose launch template

Step 2

Choose instance launch options

Step 3 - optional

Configure advanced options

Step 4 - optional

Configure group size and scaling

Step 5 - optional

Add notifications

Step 6 - optional

Add tags

Step 7

Review

Configure advanced options - optional

info

Choose a load balancer to distribute incoming traffic for your application across instances to make it more reliable and easily scalable. You can also set options that give you more control over health check replacements and monitoring.

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

he-lp | HTTP Application Load Balancer: hello

he-lp | HTTP Application Load Balancer: hello

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EC2 > Auto Scaling groups

Auto Scaling groups (1) Info

Launch configurations

Launch templates

Actions

Create Auto Scaling group

Search your Auto Scaling groups

<input type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
<input type="checkbox"/>	Testscale	temp100 Version Default	1	-	1	1	3	ap-south-1a

0 Auto Scaling groups selected

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Currently creating AMI ami-0b2c80b65bc0b0d from instance i-0a9d17c9aaac300d9. Check that the AMI status is 'Available' before deleting the instance or carrying out other actions related to this AMI.

Instances (2) Info

Connect

Instance state

Actions

Launch instances

Find Instance by attribute or tag (case-sensitive)

All states

Instance state = running

Clear filters

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public
<input type="checkbox"/>	autoscale-ec2	i-0540c16aec0499955	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1a	-	-
<input type="checkbox"/>	Webserver	i-0a9d17c9aaac300d9	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1a	ec2-13-126-133-1.ap-s...	13.12

Select an instance

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- Configure the group size and scaling and create a autoscaling group. The scaling is ready.

The screenshot shows the AWS Management Console interface for configuring an Auto Scaling group. The page is titled "Configure group size and scaling - optional" and includes a sidebar with navigation steps. The main content area is divided into three sections: "Group size", "Desired capacity type", and "Scaling".

Group size Info
Define your group's desired capacity and scaling limits. You can optionally add automatic scaling to adjust the size of your group.

Desired capacity type
Choose the unit of measurement for the desired capacity value. vCPUs and Memory(GiB) are only supported for mixed instances groups configured with a set of instance attributes.
Units (number of instances) ▼

Desired capacity
Specify your group size.
1

Scaling Info
You can resize your Auto Scaling group manually or automatically to meet changes in demand.

Scaling limits
Set limits on how much your desired capacity can be increased or decreased.

Min desired capacity	Max desired capacity
1	3

Equal or less than desired capacity Equal or greater than desired capacity

Automatic scaling - optional
Choose whether to use a target tracking policy. Info

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