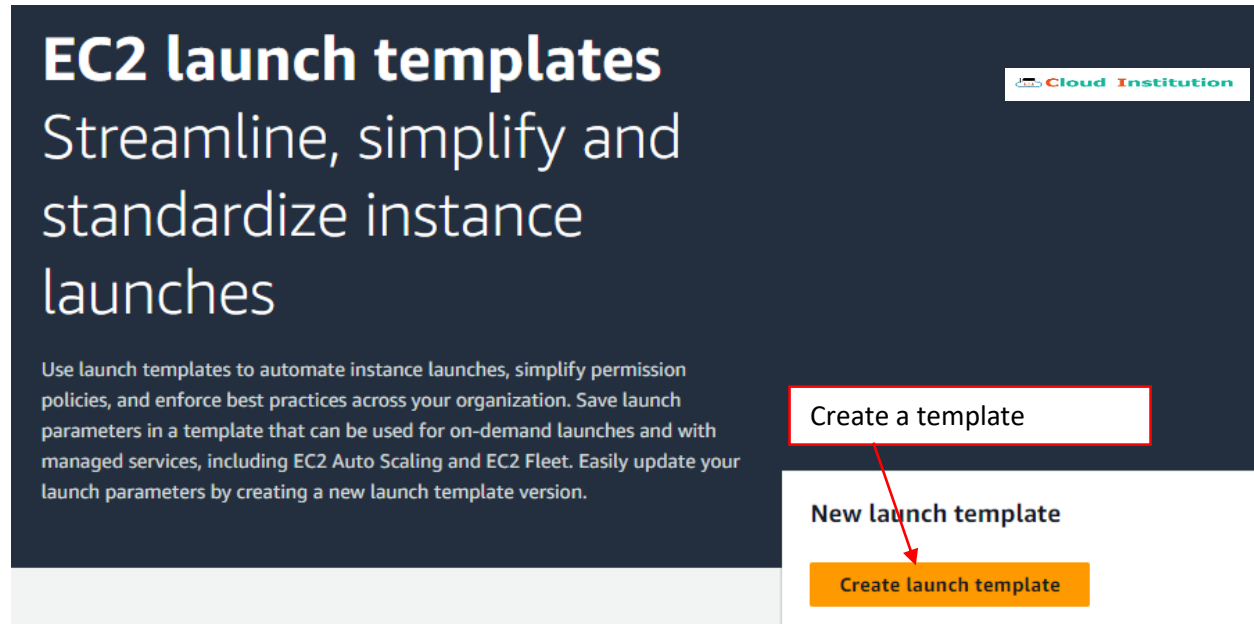


AUTO SCALING

Step 1: Create a launch template



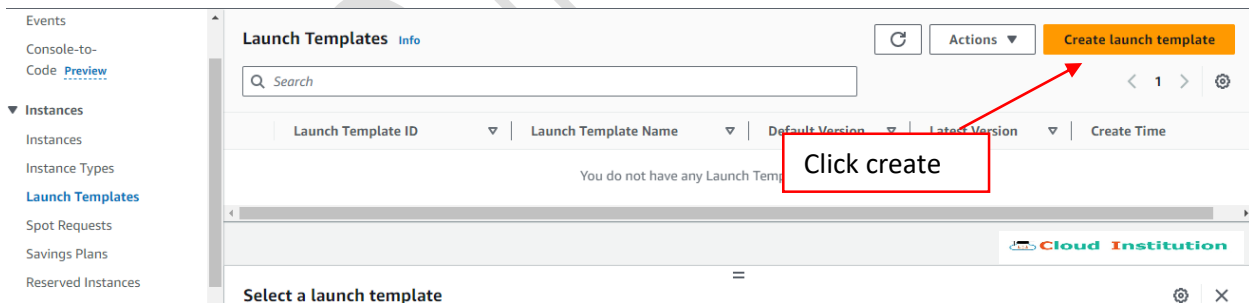
EC2 launch templates
Streamline, simplify and standardize instance launches

Use launch templates to automate instance launches, simplify permission policies, and enforce best practices across your organization. Save launch parameters in a template that can be used for on-demand launches and with managed services, including EC2 Auto Scaling and EC2 Fleet. Easily update your launch parameters by creating a new launch template version.

Create a template

New launch template

Create launch template



Events
Console-to-Code **Preview**

▼ Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances

Launch Templates Info

Search

Launch Template ID | Launch Template Name | Default Version | Latest Version | Create Time

You do not have any Launch Templates

Create launch template

Click create

Select a 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*

Give a name to the template

Cloud-Temp

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

Template version description

A prod webserver for MyApp

Max 255 chars

Give description

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

▼ Application and OS Images (Amazon Machine Image) - required [Info](#) Cloud Institution

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

Quick Start

Select the Ubuntu OS

Amazon
Linux



macOS



Ubuntu



Windows



Red Hat




SUSE Linux



Browse more AMIs

Including AMIs from
AWS, Marketplace and
the Community

▼ Instance type [Info](#)

 Cloud Institution
Advanced

Instance type

Select an instance type

t2.micro Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand RHEL base pricing: 0.0716 USD per Hour
On-Demand Linux base pricing: 0.0116 USD per Hour

☐ All generations

[Compare instance types](#)

Additional costs apply for AMIs with pre-installed software

▼ Key pair (login) [Info](#)

 Cloud Institution

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.

Select a Key pair

Key pair name

APR-29

[Create new key pair](#)

▼ Network settings [Info](#)

 Cloud Institution

Subnet [Info](#)

Don't include in launch template

[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

Select a security group that include
All icmp v4, HTTP, HTTPS, ssh

Security groups [Info](#)

Select security groups

test-SG sg-01c18befaaadf2c22 ×
VPC: vpc-02e9d3e8a6a20edf0

[Compare security group rules](#)

Click on advanced network configuration

► Advanced network configuration

▼ Advanced network configuration

Cloud Institution

Network interface 1

Remove

Device index Info

0

Network interface Info

New interface ▼

Existing network
recommended
for auto-scalingEnable auto
assign IP address

Subnet Info

Don't include in launch template

Not applicable for EC2 Auto Scaling

Security groups Info

Select security groups ▼

+ Show all selected (1)

Primary IP Info

Not applicable for EC2 Auto Scaling

Secondary IP Info

Don't include in launch tem... ▼

Not applicable for EC2 Auto Scaling

IPv4 Prefixes Info

Don't include in launch tem... ▼

The selected instance type does not
support IPv4 prefixes.

IPv6 Prefixes Info

Don't include in launch tem... ▼

The selected instance type does not
support IPv6 prefixes.

Description Info

Auto-assign public IP Info

Enable ▲

Don't include in launch template

Enable ✓

Disable

Assign Primary IPv6 IP Info

Don't include in launch tem... ▼

▼ Resource tags Info

No resource tags are currently included in this template. Add a resource tag to include it in the launch template.

Add new tag

You can add up to 50 more tags.

► Advanced details Info

Click advanced
details

Firewall (security group)

test-SG

Cloud Institution

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


Cancel

Create launch template

Scroll down and find USER DATA

User data - optional | [Info](#)

Upload a file with your user data or enter it in the field.

 **Cloud Institution** **Choose file**

```
#!/bin/bash
yes | sudo apt update
yes | sudo apt install apache2
echo "<h1>Server Details</h1><p><strong>Hostname:</strong> $(hostname)
</p><p><strong>IP Address:</strong> $(hostname -I | cut -d" " -f1)</p>" >
/var/www/html/index.html
sudo systemctl restart apache2
```

▼ Resource tags [Info](#)

No resource tags are currently included in this template. Add a resource tag to include it in the launch template.

Add new tag

You can add up to 50 more tags.

Create a template**► Advanced details** [Info](#)**Firewall (security group)**

test-SG

 **Cloud Institution****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

Cancel**Create launch template**

Template Created

Launch Templates (1) Info					Create launch template
<input type="text" value="Search"/>					< 1 > ⚙️
Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	
lt-04a7b68b22034b7e9	Temp-Cloud	1	1	2024-04-29T09:38:38.00	

Step 2 : Create auto scaling group

Amazon EC2 Auto Scaling

helps maintain the availability of your applications

Auto Scaling groups are collections of Amazon EC2 instances that enable automatic scaling and fleet management features. These features help you maintain the health and availability of your applications.

Create Auto Scaling group

Get started with EC2 Auto Scaling by creating an Auto Scaling group.

[Create Auto Scaling group](#)

Click on Create

[EC2](#) > [Auto Scaling groups](#) > Create Auto Scaling group

Choose launch template [Info](#)

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

Name

Auto Scaling group name

Enter a name to identify the group.

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

Give a name to the group

Launch template [Info](#) Cloud Institution

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.

Q Search launch templates

Cloud-Temp

Select a launch template ▲

Instance type, key pair, and

[Create a launch template](#)

Select the created template

Launch template

 Cloud Institution

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

Temp-Cloud ▼

[Create a launch template](#)

Version

Default (1) ▼

[Create a launch template version](#)

Description

practice for temp

Launch template

Temp-Cloud [↗](#)

lt-04a7b68b22034b7e9

Instance type

t2.micro

AMI ID

ami-04e5276ebb8451442

Security groups

-

Request Spot Instances

No

Key pair name

APR-29

Security group IDs

sg-01c18befa0adf2c22 [↗](#)

Additional details

Storage (volumes)

-

Date created

Mon Apr 29 2024 15:08:38
GMT+0530 (India Standard Time)

Click Next

Cancel

Next

Network [Info](#)

 Cloud Institution

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-02e9d3e8a6a20edf0 (test-VPC)
10.0.0.0/24



[Create a VPC](#)

Choose the 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



us-east-1b | subnet-09960a2fb97ce54ea (test-SN2)
10.0.0.32/28



us-east-1a | subnet-0201d5a5a0a209d80 (test-SN1)
10.0.0.16/28



[Create a subnet](#)

Select the subnets and availability zones

Click Next

Cancel

Skip to review

Previous

Next

Configure advanced options - *optional* [Info](#)

 Cloud Institution

Integrate your Auto Scaling group with other services to distribute network traffic across multiple servers using a load balancer or to establish service-to-service communications using VPC Lattice. You can also set options that give you more control over health check replacements and monitoring.

Load balancing [Info](#)

If you have an existing LB then attach it

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

 Cloud Institution

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

Q |

- ☐ test-TG | HTTP
Application Load Balancer: test-LB

Select the target group of LB

VPC Lattice integration options [Info](#)

 Cloud Institution

To improve networking capabilities and scalability, integrate your Auto Scaling group with VPC Lattice. VPC Lattice facilitates communications between AWS services and helps you connect and manage your applications across compute services in AWS.

Select VPC Lattice service to attach

- ☒ No VPC Lattice service
VPC Lattice will not manage your Auto Scaling group's network access and connectivity with other services.

- ☐ Attach to VPC Lattice service
Incoming requests associated with specified VPC Lattice target groups will be routed to your Auto Scaling group.

[Create new VPC Lattice service](#)

Health checks

 Cloud Institution

Health checks increase availability by replacing unhealthy instances. When you use multiple health checks, all are evaluated, and if at least one fails, instance replacement occurs.

EC2 health checks



 Always enabled

Enable it

Additional health check types - optional [Info](#)

☒ Turn on Elastic Load Balancing health checks **Recommended**

Elastic Load Balancing monitors whether instances are available to handle requests. When it reports an unhealthy instance, EC2 Auto Scaling can replace it on its next periodic check.

 EC2 Auto Scaling will start to detect and act on health checks performed by Elastic Load Balancing. To avoid unexpected terminations, first verify the settings of these health checks in the [Load Balancer console](#) 

☐ Turn on VPC Lattice health checks

VPC Lattice can monitor whether instances are available to handle requests. If it considers a target as failed a health check, EC2 Auto Scaling replaces it after its next periodic check.

Give any value

Health check grace period [Info](#)

This time period delays the first health check until your instances finish initializing. It doesn't prevent an instance from terminating when placed into a non-running state.

20 seconds

Additional settings

 Cloud Institution

Monitoring [Info](#)

☐ Enable group metrics collection within CloudWatch

Default instance warmup [Info](#)

The amount of time that CloudWatch metrics for new instances do not contribute to the group's aggregated instance metrics, as their usage data is not reliable yet.

☐ Enable default instance warmup

Click Next

Cancel

Skip to review

Previous

Next

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

Configure group size and scaling - optional [Info](#)

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

Group size [Info](#)

Set the initial size of the Auto Scaling group. After creating the group, you can change its size to meet demand, either manually or by using automatic scaling.

Desired capacity type

Choose the unit of measurement for the desired capacity value. vCPUs are the default unit of measurement for instances groups configured with a set of instance attributes.

Units (number of instances) ▼

Desired capacity

Specify your group size.

2

Enter how many instances you need

Scaling

Enter min and max instances

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

1

Equal or less than desired capacity

Max desired capacity

3

Equal or greater than desired capacity

Automatic scaling - optional

Choose whether to use a target tracking policy [Info](#)

You can set up other metric-based scaling policies and scheduled scaling after creating your Auto Scaling group.

☒ No scaling policies

Your Auto Scaling group will remain at its initial size and will not dynamically resize to meet demand.

☐ Target tracking scaling policy

Choose a CloudWatch metric and target value and let the scaling policy adjust the desired capacity in proportion to the metric's value.

Choose a replacement behavior depending on your availability requirements

Mixed behavior

☒ **No policy**

For rebalancing events, new instances will launch before terminating others. For all other events, instances terminate and launch at the same time.

Prioritize availability

☐ **Launch before terminating**

Launch new instances and wait for them to be ready before terminating others. This allows you to go above your desired capacity by a given percentage and may temporarily increase costs.

Control costs

☐ **Terminate and launch**

Terminate and launch instances at the same time. This allows you to go below your desired capacity by a given percentage and may temporarily reduce availability.

Flexible

☐ **Custom behavior**

Set custom values for the minimum and maximum amount of available capacity. This gives you greater flexibility in setting how far below and over your desired capacity EC2 Auto Scaling goes when replacing instances.

Instance scale-in protection

Scale-in protection prevents newly launched instances from being terminated by scaling activities. Make sure to enable scale-in protection for the group or individual instances when instances are ready to be terminated.

Click Next

☐ Enable instance scale-in protection

Cancel

Skip to review

Previous

Next

Add notifications - optional [Info](#)

Send notifications to SNS topics whenever Amazon EC2 Auto Scaling launches or terminates the EC2 instances in your Auto Scaling group.

Add notification

Click Next

Cancel

Skip to review



Previous

Next

Add tags - optional [Info](#)

 Cloud Institution

Add tags to help you search, filter, and track your Auto Scaling group across AWS. You can also choose to automatically add these tags to instances when they are launched.

 You can optionally choose to add tags to instances (and their attached EBS volumes) by specifying tags in your launch template. We recommend caution, however, because the tag values for instances from your launch template will be overridden if there are any duplicate keys specified for the Auto Scaling group. 

Tags (0)

Add tag

50 remaining

Click Next

Cancel

Previous

Next

Step 5: Add notifications

Edit

Notifications

No notifications

 Cloud Institution

Step 6: Add tags

Edit

Tags (0)

Key

Value

Tag new instances

Click create

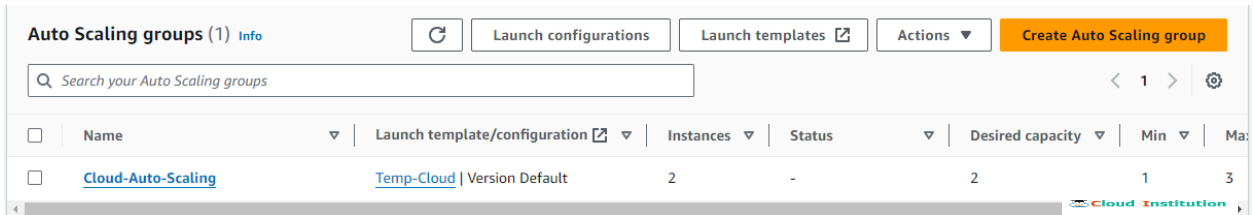
No tags

Cancel

Previous

Create Auto Scaling group

Auto Scaling group created

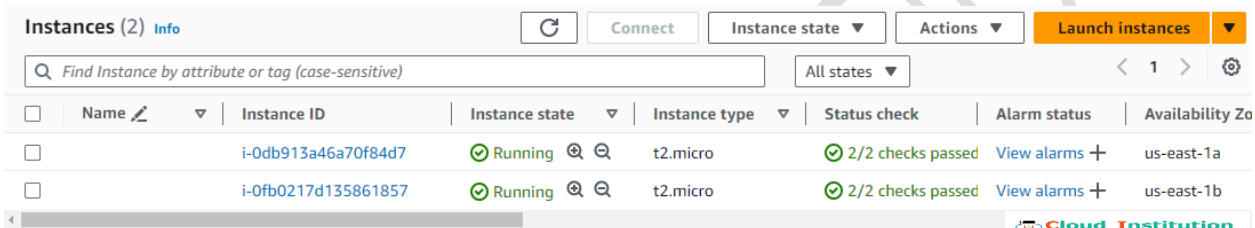


Auto Scaling groups (1) Info

Search your Auto Scaling groups

<input type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max
<input type="checkbox"/>	Cloud-Auto-Scaling	Temp-Cloud Version Default	2	-	2	1	3

Now you can see the desired number of instances running



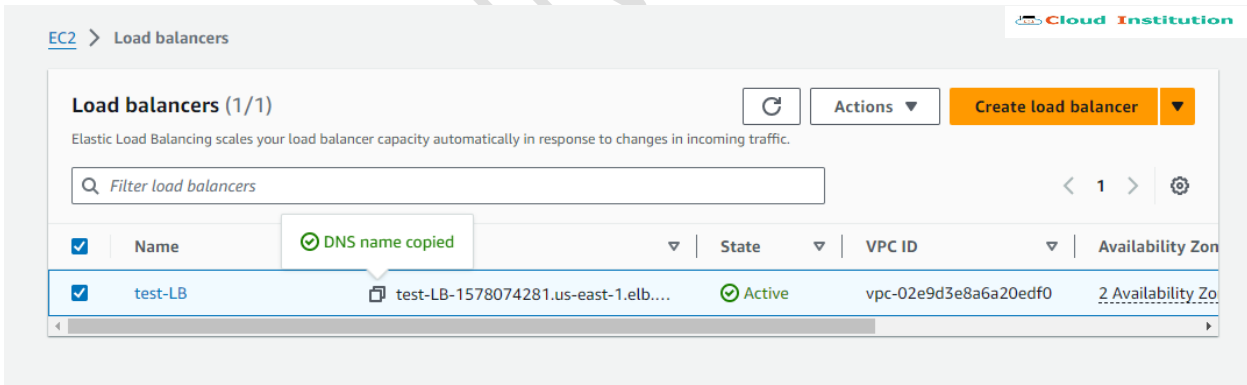
Instances (2) Info

Find Instance by attribute or tag (case-sensitive)

All states

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>		i-0db913a46a70f84d7	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a
<input type="checkbox"/>		i-0fb0217d135861857	Running	t2.micro	2/2 checks passed	View alarms	us-east-1b

Go to the Load Balancers -> Copy the DNS name and paste it in the browser



EC2 > Load balancers

Load balancers (1/1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter load balancers

<input checked="" type="checkbox"/>	Name	State	VPC ID	Availability Zone
<input checked="" type="checkbox"/>	test-LB	Active	vpc-02e9d3e8a6a20edf0	2 Availability Zones

DNS name copied

test-LB-1578074281.us-east-1.elb...

Result :

Server Details

Hostname: ip-12-0-3-127

IP Address: 12.0.3.127

 **Cloud Institution**

CLOUD INSTITUTION