

Lesson 03 Demo 11

Setting Up Auto Scaling Using Launch Templates

Objective: To set up an Auto Scaling group using a launch template in AWS for automated instance scaling and optimal resource management

Tools required: AWS Workspace

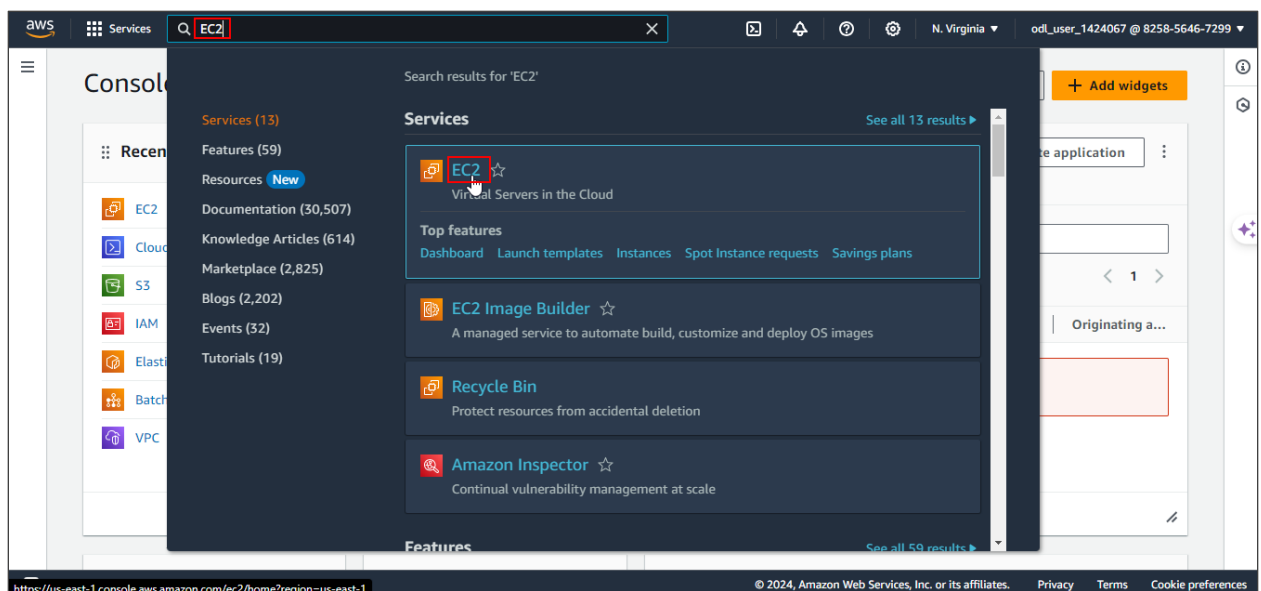
Prerequisites: Create a launch template and ensure you have IAM permissions to create an Auto Scaling group using that launch template

Steps to be followed:

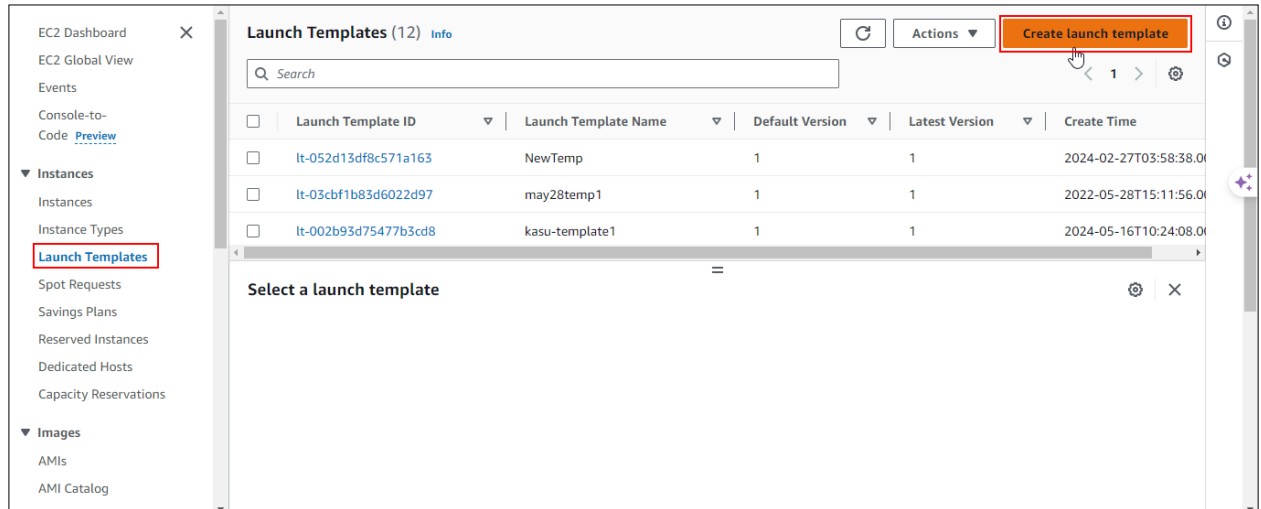
1. Create a launch template in EC2
2. Create a launch configuration
3. Create an Auto Scaling group

Step 1: Create a launch template in EC2

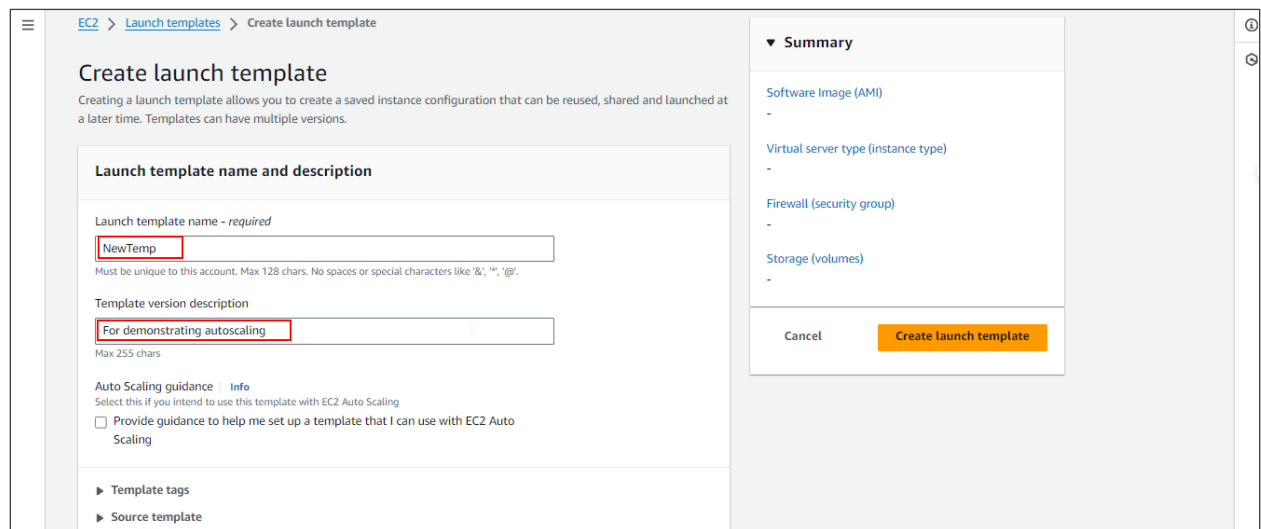
1.1 Navigate to the AWS console home dashboard, search for and click on **EC2**



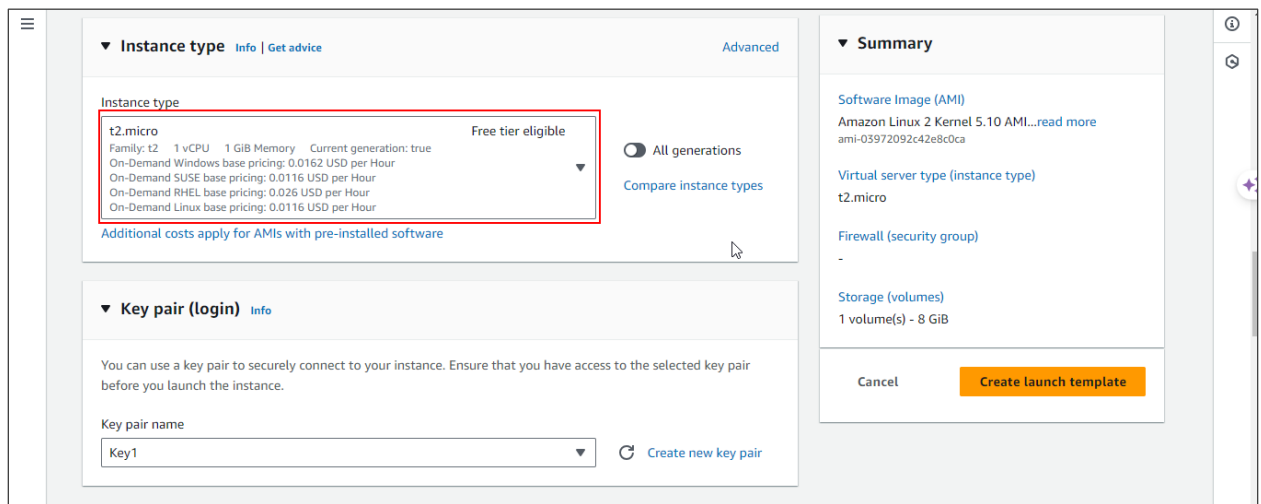
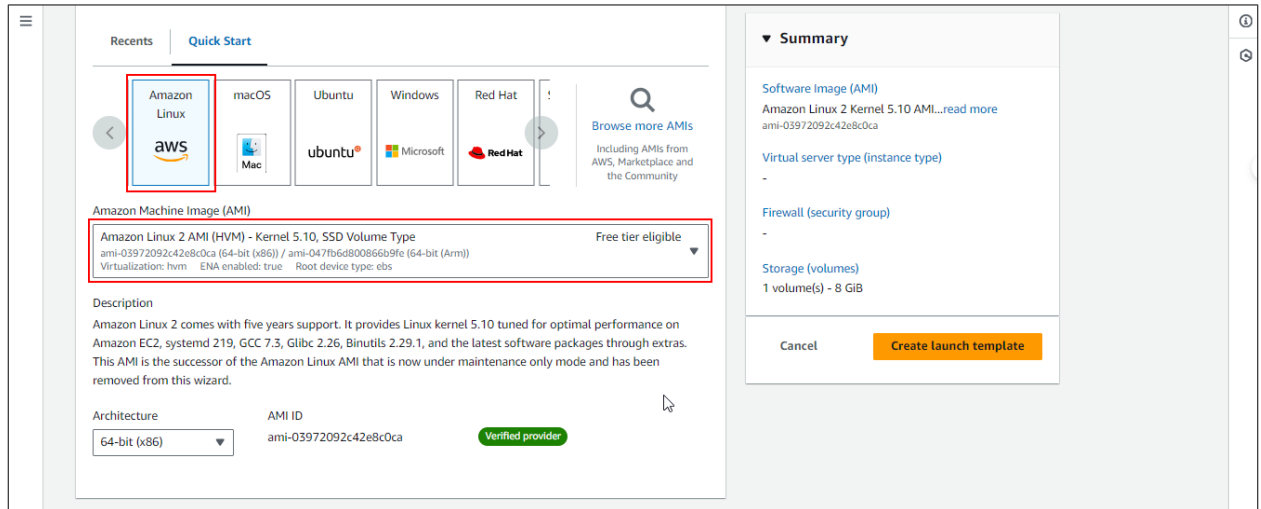
1.2 Select **Launch Templates** in the left navigation pane and click the **Create launch template** button



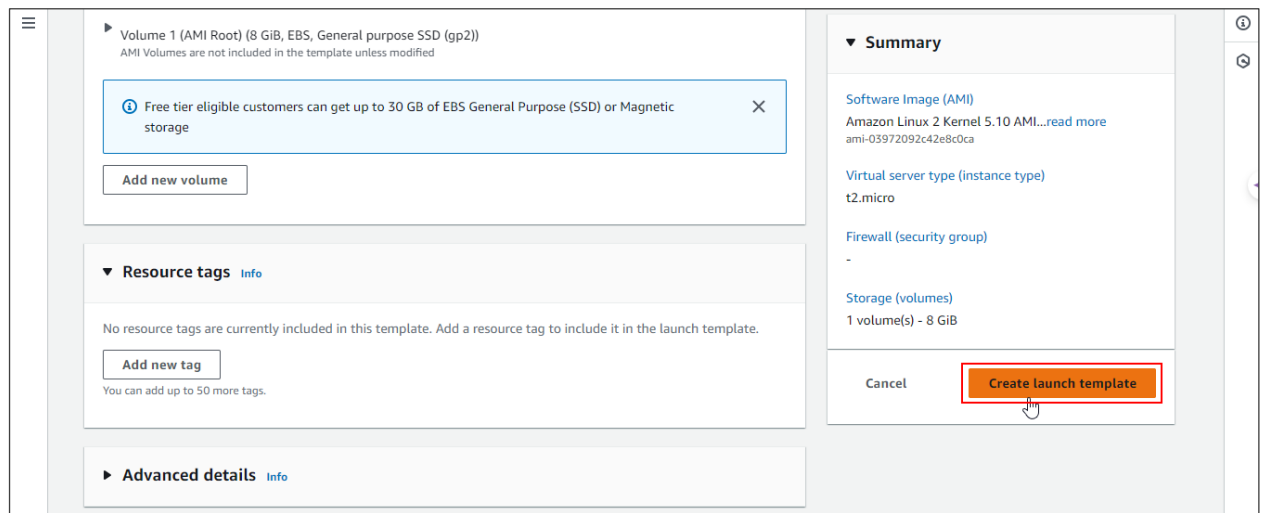
1.3 Name the launch template, **NewTemp**, and provide a description such as **For demonstrating autoscaling**



1.4 Select **Amazon Linux** and **Amazon Linux 2 AMI (HVM)** for the Amazon Machine Image (AMI), and choose **t2.micro** for the instance type



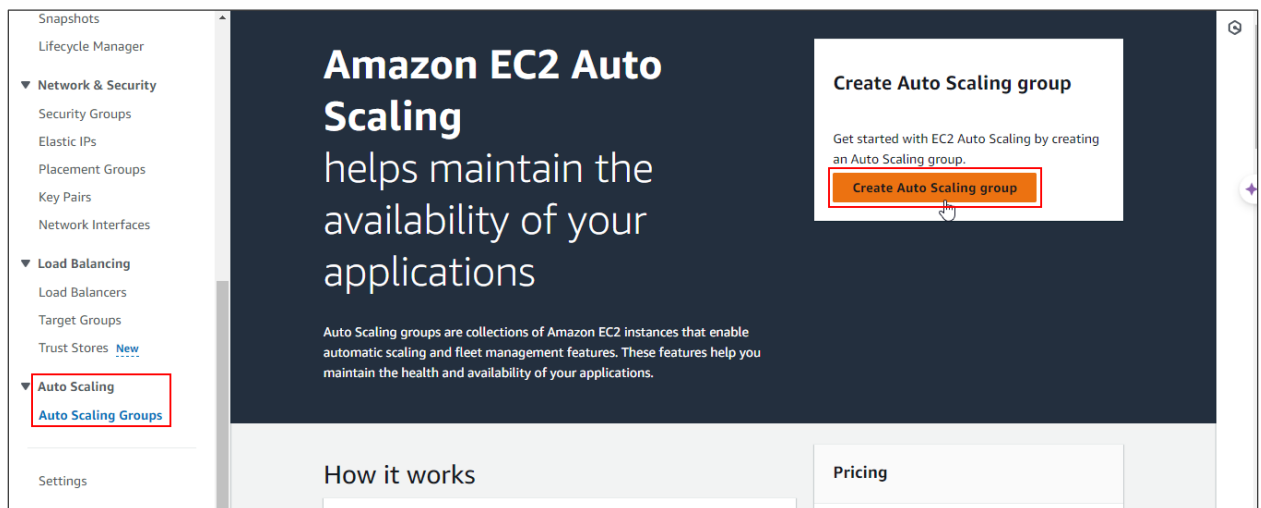
1.5 Click on **Create launch template**



The launch template has been created successfully.

Step 2: Create a launch configuration

2.1 Navigate to the **Auto Scaling** section, and click on **Create Auto Scaling group**



2.2 Click on **Switch to launch configuration**

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1
Choose launch template or configuration

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

Choose launch template or configuration Info

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group. If you currently use launch configurations, you might consider migrating to launch templates.

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.

Launch template Info

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.

Switch to launch configuration

2.3 Click on **Create a launch configuration**

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

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.

Launch configuration Info

[Switch to launch template](#)

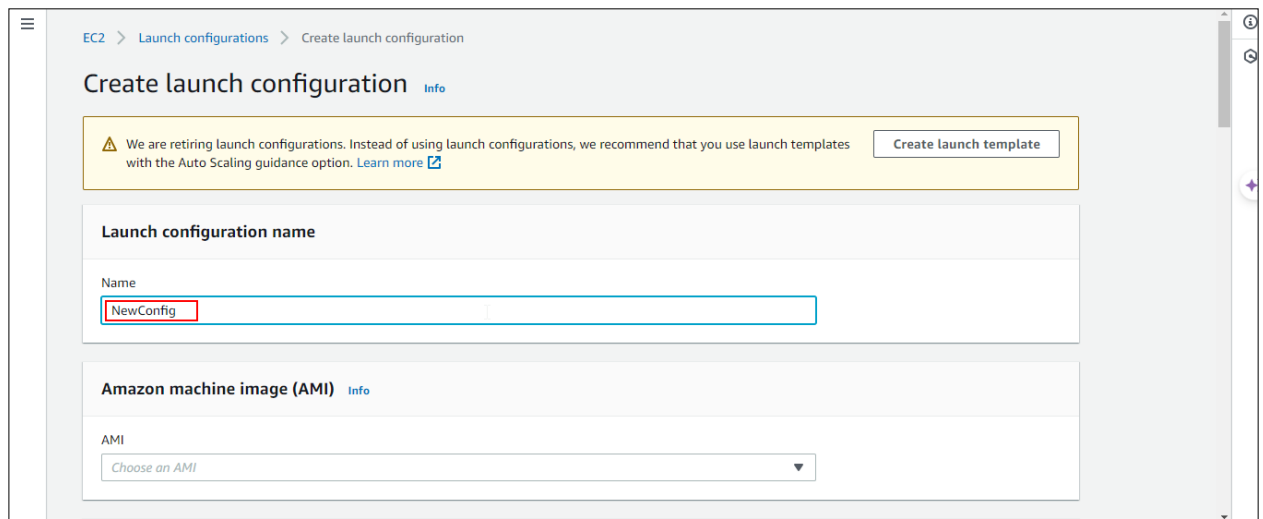
⚠ Instead of using launch configurations to create your EC2 Auto Scaling groups, we recommend that you use launch templates and make use of the Auto Scaling guidance option. For more information on migrating launch configurations and using launch templates, [see the documentation](#).

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

Create a launch configuration ?

Cancel

2.4 Set **NewConfig** as the name for the configuration



EC2 > Launch configurations > Create launch configuration

Create launch configuration [Info](#)

⚠️ We are retiring launch configurations. Instead of using launch configurations, we recommend that you use launch templates with the Auto Scaling guidance option. [Learn more](#) [Create launch template](#)

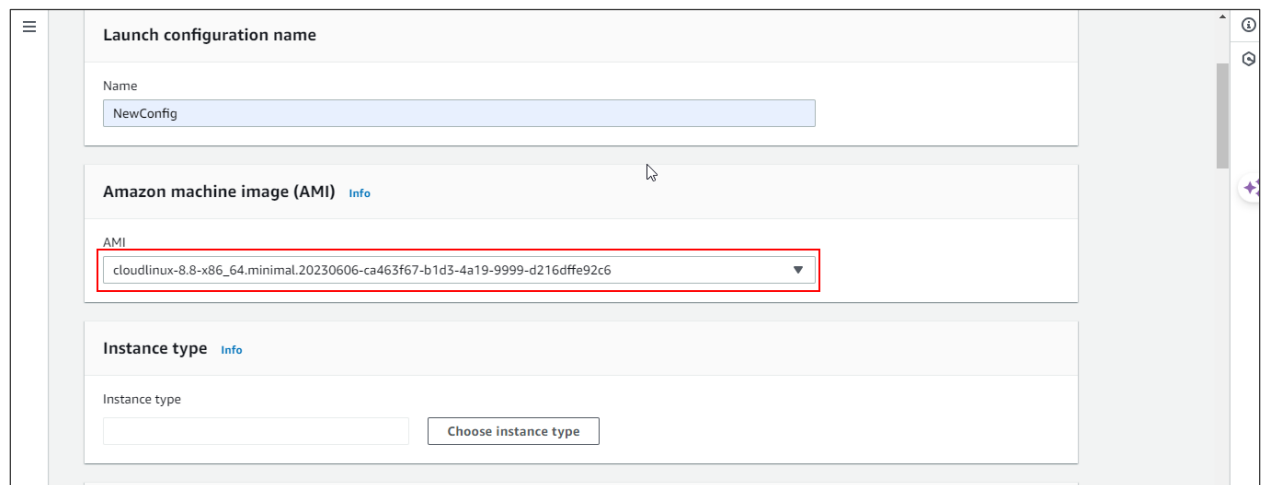
Launch configuration name

Name

Amazon machine image (AMI) [Info](#)

AMI

2.5 Select the desired **AMI** as shown:



Launch configuration name

Name

Amazon machine image (AMI) [Info](#)

AMI

Instance type [Info](#)

Instance type

2.6 Click on **Choose instance type**, search for and select **t2.micro**, and click on **Choose**

Launch configuration name

Name
NewConfig

Amazon machine image (AMI) [Info](#)

AMI
cloudlinux-8.8-x86_64.minimal.20230606-ca463f67-b1d3-4a19-9999-d216dffe92c6

Instance type [Info](#)

Instance type

Choose instance type

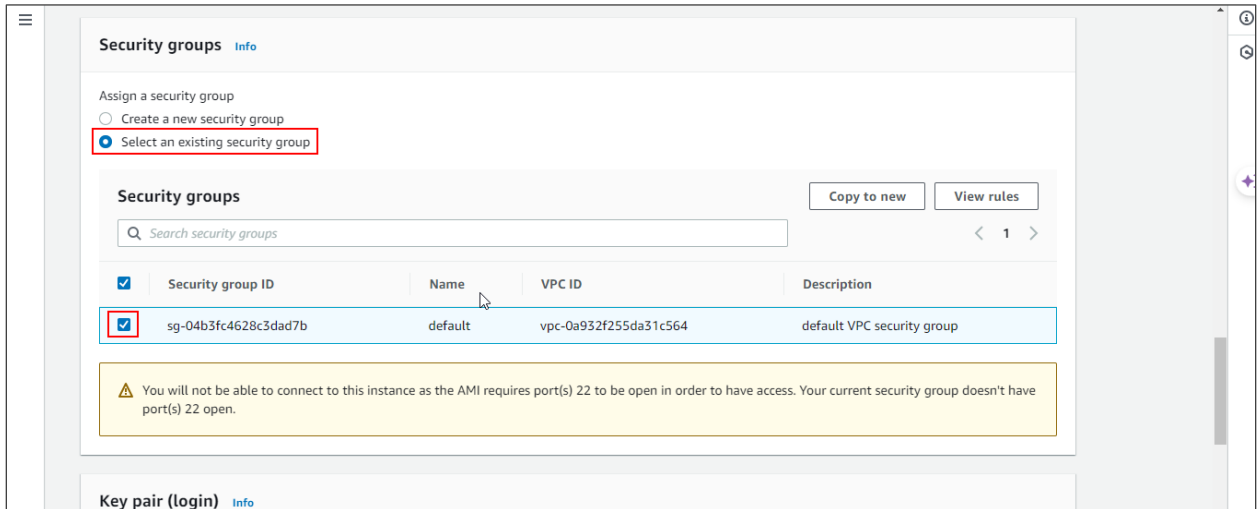
Choose instance type

Search:

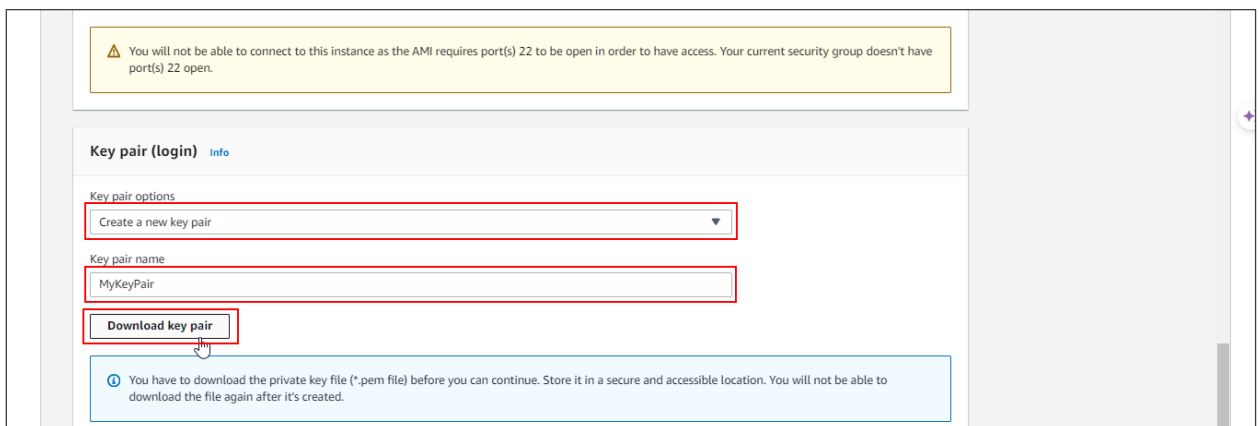
Instance type	vCPUs	Memory (GiB)	Storage (GB)	EBS optimized available	Network performance
<input type="radio"/> t2.xlarge	8	32	EBS Only	-	Moderate
<input type="radio"/> t2.large	2	8	EBS Only	-	Low to Moderate
<input checked="" type="radio"/> t2.micro	1	1	EBS Only	-	Low to Moderate
<input type="radio"/> t2.medium	2	4	EBS Only	-	Low to Moderate
<input type="radio"/> t2.small	1	2	EBS Only	-	Low to Moderate
<input type="radio"/> t2.xlarge	4	16	EBS Only	-	Moderate

Close **Choose**

2.7 Navigate to the **Security groups** section, click **Select an existing security group**, and choose the **default** security group



2.8 Select the **Create a new key pair** option, enter a desired **key pair** name, and click **Download key pair**



2.9 Click on **Create launch configuration**

Key pair (login) [Info](#)

Key pair options

Create a new key pair

Key pair name

MyKeyPair

Download key pair

You have to download the private key file (*.pem file) before you can continue. Store it in a secure and accessible location. You will not be able to download the file again after it's created.

Cancel **Create launch configuration**

Launch configurations (1) [Info](#)

Search launch configurations

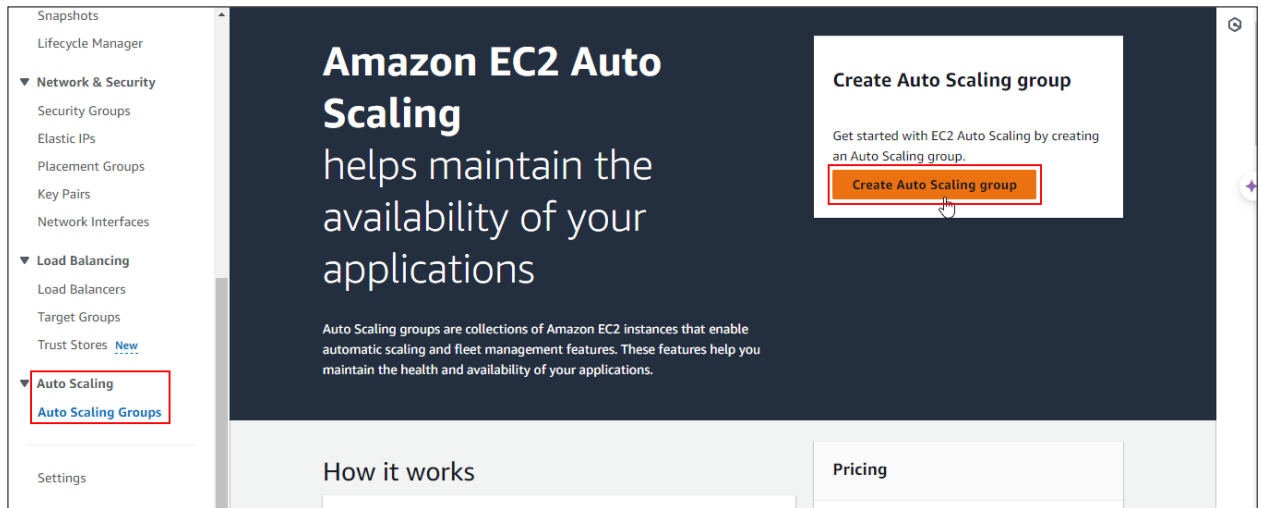
	Name	AMI ID	Instance type	Spot price	Creation time
<input type="checkbox"/>	NewConfig	ami-00a32e01c0...	t2.micro	-	Wed Aug 14 2024 02:12:40 GMT+0530 (India Stan...)

Select a launch configuration above

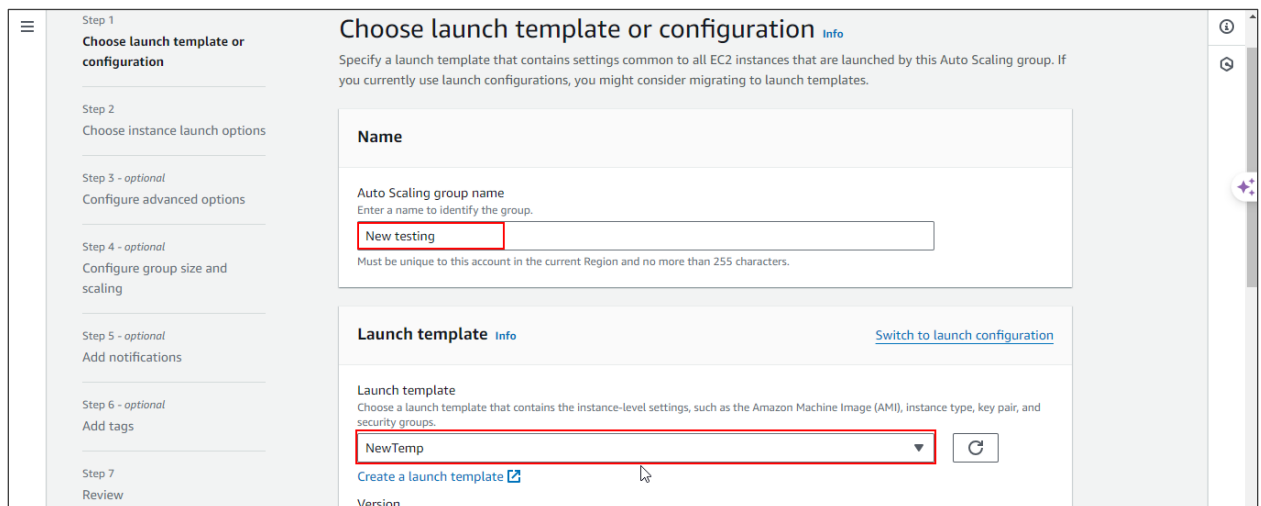
The launch configuration has been created successfully.

Step 3: Create an Auto Scaling group

3.1 In the left navigation pane, click **Create Auto Scaling group**



3.2 Name the **Auto Scaling group New testing** and select the Launch template **NewTemp**



3.3 Click on **Next**

Review

Version: Default (1) [Create a launch template version](#)

Description: For demonstrating autoscaling

Launch template: NewTemp [lt-085713c2e7d063d9c](#)

Instance type: t2.micro

AMI ID: ami-03972092c42e8c0ca

Security groups: -

Request Spot Instances: No

Key pair name: Key1

Security group IDs: -

Additional details

Storage (volumes): -

Date created: Wed Aug 14 2024 02:04:22 GMT+0530 (India Standard Time)

Cancel **Next**

3.4 Click on **Availability Zones and subnets**, and select all the **Zones**

Network [Info](#)

us-east-1a | subnet-00fbfaa6ac36ee470
172.31.80.0/20 Default ☒

us-east-1b | subnet-0b804d121aaf44da3
172.31.16.0/20 Default ☒

us-east-1c | subnet-02357aca411eba83a
172.31.32.0/20 Default ☒

us-east-1d | subnet-0e323cbb0bc92e1d0
172.31.0.0/20 Default ☒

us-east-1e | subnet-057cd418cf9d135b
172.31.48.0/20 Default ☒

us-east-1f | subnet-02cac49916b0b6840
172.31.64.0/20 Default ☒

Select Availability Zones and subnets [Info](#)

us-east-1a | subnet-00fbfaa6ac36ee470 ☒

us-east-1b | subnet-0b804d121aaf44da3 ☒

us-east-1c | subnet-02357aca411eba83a ☒

us-east-1d | subnet-0e323cbb0bc92e1d0 ☒

us-east-1e | subnet-057cd418cf9d135b ☒

3.5 Click on **Next**

vpcc-0a932f255da31c564
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

- us-east-1a | subnet-00fbfaa6ac36ee470 172.31.80.0/20 Default
- us-east-1b | subnet-0b804d121aaf44da3 172.31.16.0/20 Default
- us-east-1c | subnet-02357aca411eba83a 172.31.32.0/20 Default
- us-east-1d | subnet-0e323cbb0bc92e1d0 172.31.0.0/20 Default
- us-east-1e | subnet-057cd418cf9d135b 172.31.48.0/20 Default
- us-east-1f | subnet-02cac49916b0b6840 172.31.64.0/20 Default

Create a subnet

Cancel Skip to review Previous **Next**

3.6 Click on **Attach to a new load balancer**, select **Application Load Balancer**, and enter a desired name for the load balancer

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

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 a new load balancer
Define a new load balancer to create for attachment to this Auto Scaling group.

Load balancer type
Choose from the load balancer types offered below. Type selection cannot be changed after the load balancer is created. If you need a different type of load balancer than those offered here, visit the Load Balancing console.

- ☒ **Application Load Balancer**
HTTP, HTTPS
- ☐ Network Load Balancer
TCP, UDP, TLS

Load balancer name
Name cannot be changed after the load balancer is created.

NewLoadBalancer

3.7 Click on **Create a target group**, and name it **Newtesting**

us-east-1e subnet-057cd418cf9d135b

us-east-1f subnet-02cac49916b0b6840

us-east-1d subnet-0e323cbb0bc92e1d0

us-east-1b subnet-0b804d121aaf44da3

us-east-1a subnet-00fbfaa6ac36ee470

Listeners and routing
If you require secure listeners, or multiple listeners, you can configure them from the [Load Balancing console](#) after your load balancer is created.

Protocol: HTTP Port: 80

Default routing (forward to): Select new or existing target group

Tags - optional
Consider adding tags to your load balancer. Tags enable you to categorize your AWS resources so you can more easily manage them.

Add tag 50 remaining

Create a target group

us-east-1e subnet-057cd418cf9d135b

us-east-1f subnet-02cac49916b0b6840

us-east-1d subnet-0e323cbb0bc92e1d0

us-east-1b subnet-0b804d121aaf44da3

us-east-1a subnet-00fbfaa6ac36ee470

Listeners and routing
If you require secure listeners, or multiple listeners, you can configure them from the [Load Balancing console](#) after your load balancer is created.

Protocol: HTTP Port: 80

Default routing (forward to): Create a target group

New target group name
An instance target group with default settings will be created.

Newtesting

Tags - optional
Consider adding tags to your load balancer. Tags enable you to categorize your AWS resources so you can more easily manage them.

Add tag 50 remaining

3.8 Click on **Next**

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.

☐ 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.

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.
300 seconds

Additional settings

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

Cancel Skip to review Previous **Next**

3.9 Skip to **Step 7**, review the launch template by clicking **Review**, and then click **Create Auto Scaling group**

Step 1 [Choose launch template or configuration](#)

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**

Review [Info](#)

Step 1: Choose launch template or configuration [Edit](#)

Group details

Auto Scaling group name
New testing

Launch template

Launch template	Version	Description
NewTemp ↗	Default	For demonstrating autoscaling
lt-085713c2e7d063d9c		

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

Network

Network

VPC
vpc-0a932f255da31c564 [↗](#)

Instance scale-in protection

Instance scale-in protection

☐ Enable instance protection from scale in

Step 5: Add notifications Edit

Notifications

No notifications

Step 6: Add tags Edit

Tags (0)

Key	Value	Tag new instances
No tags		

Cancel Previous **Create Auto Scaling group**

The Auto Scaling groups have been created successfully, as shown:

EC2 > Auto Scaling groups

Auto Scaling groups (1/1) Info Refresh Launch configurations Launch templates Actions Create Auto Scaling group

Search your Auto Scaling groups

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max
<input checked="" type="checkbox"/>	New testing	NewTemp Version Default	1	-	1	1	1

Auto Scaling group: New testing Settings Close

Details | Activity | Automatic scaling | Instance management | Monitoring | Instance refresh

Group details Edit

Auto Scaling group name	Desired capacity	Desired capacity type	Amazon Resource Name (ARN)
New testing	1	Units (number of instances)	arn:aws:autoscaling:us-east-1:679249:075824:autoScalingGroup:89acd4eb-a09

By following these steps, you have successfully set up an Auto Scaling group using a launch template in AWS for automated scaling and efficient resource management.