

## Lesson 03 Demo 11

### Setting Up Auto Scaling Using Launch Templates

**Objective:** To create an Auto Scaling group using a launch template

**Tools required:** AWS workspace

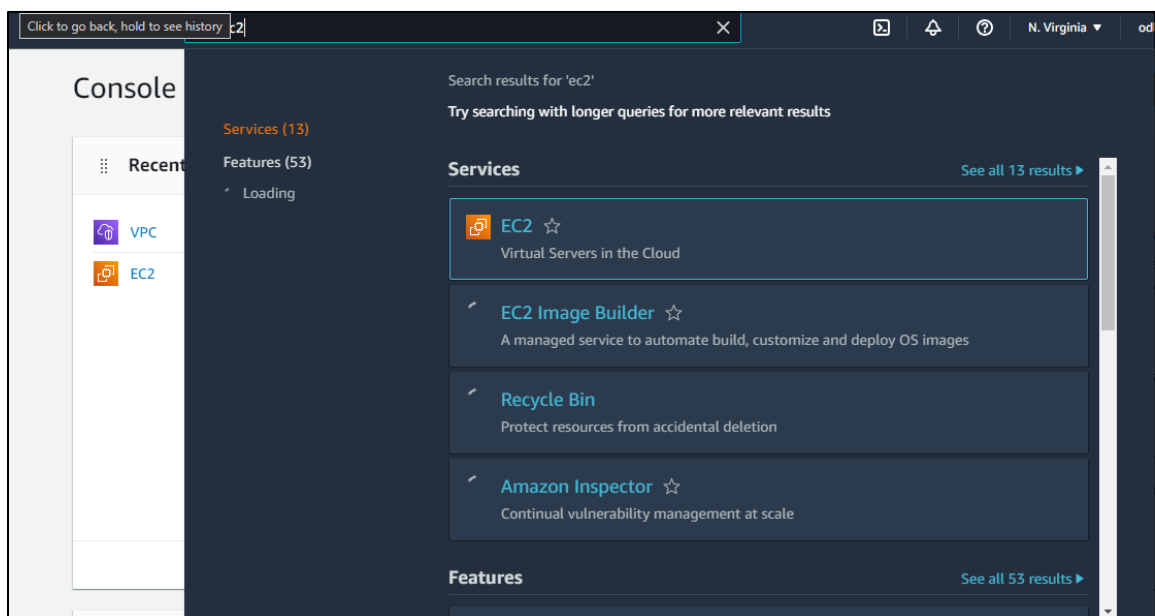
**Prerequisites:** Create a launch template and have IAM permissions to create an Auto Scaling group using a launch template

Steps to be followed:

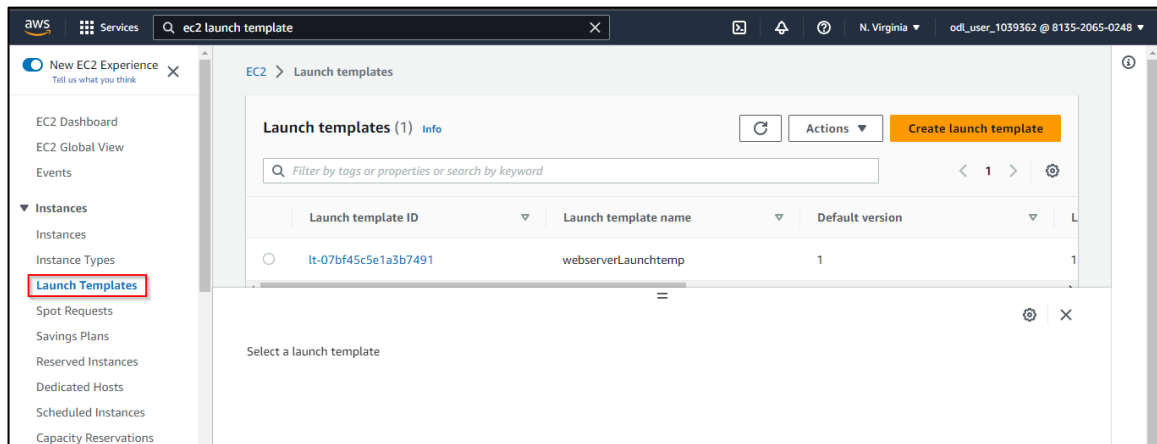
1. Create a launch template in EC2
2. Create a launch configuration
3. Create an Auto Scaling group

#### Step 1: Create a launch template in EC2

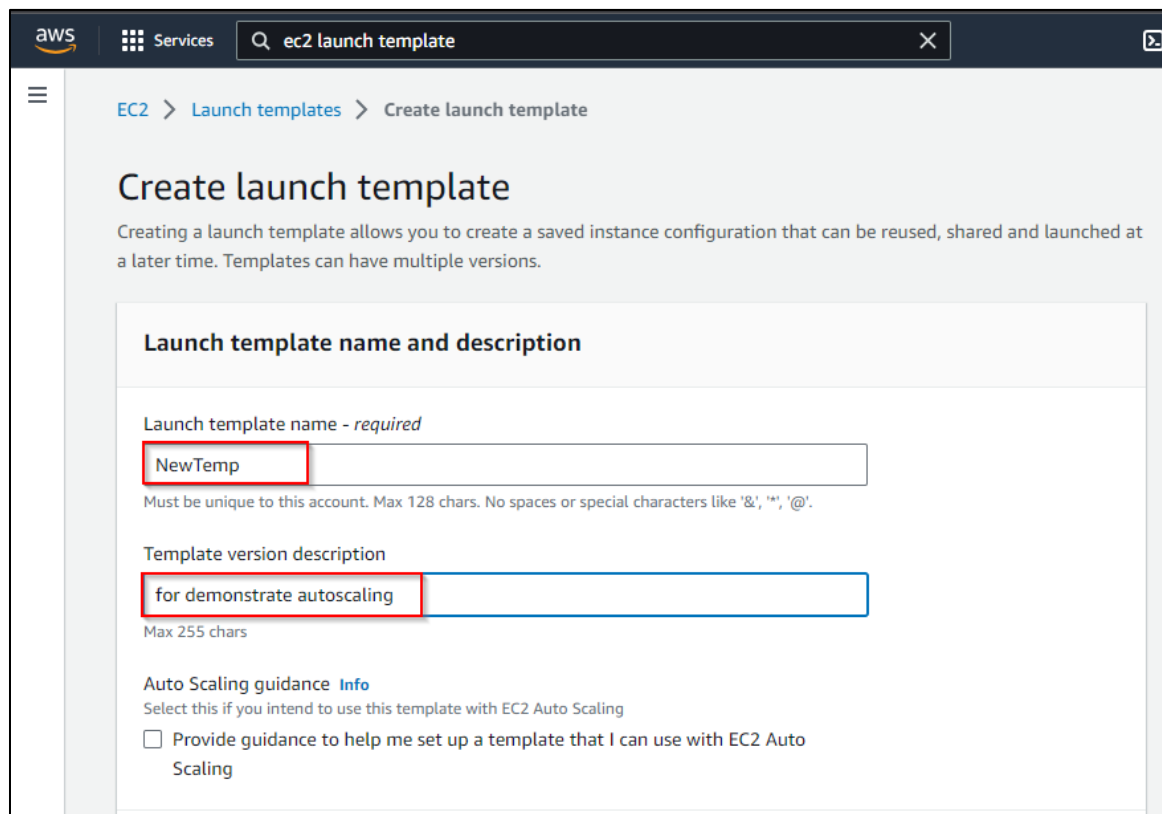
1.1 Open the AWS console and search for Amazon EC2



1.2 In the left navigation pane, select **Launch Templates** and then click the **Create launch template** button



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



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

▼ Application and OS Images (Amazon Machine Image) [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

Quick Start

Don't include in launch template

Amazon Linux

aws

macOS

Mac

Ubuntu

ubuntu®

Windows

Microsoft

Red H

Red

[Browse more AMIs](#)

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type

Free tier eligible

ami-09538990a0c4fe9be (64-bit (x86)) / ami-059310caab7e9f4ef (64-bit (Arm))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

▼ Instance type [Info](#)

[Advanced](#)

Instance type

t2.micro

Free tier eligible

Family: t2    1 vCPU    1 GiB Memory    Current generation: true

On-Demand Windows pricing: 0.0162 USD per Hour

On-Demand SUSE pricing: 0.0116 USD per Hour

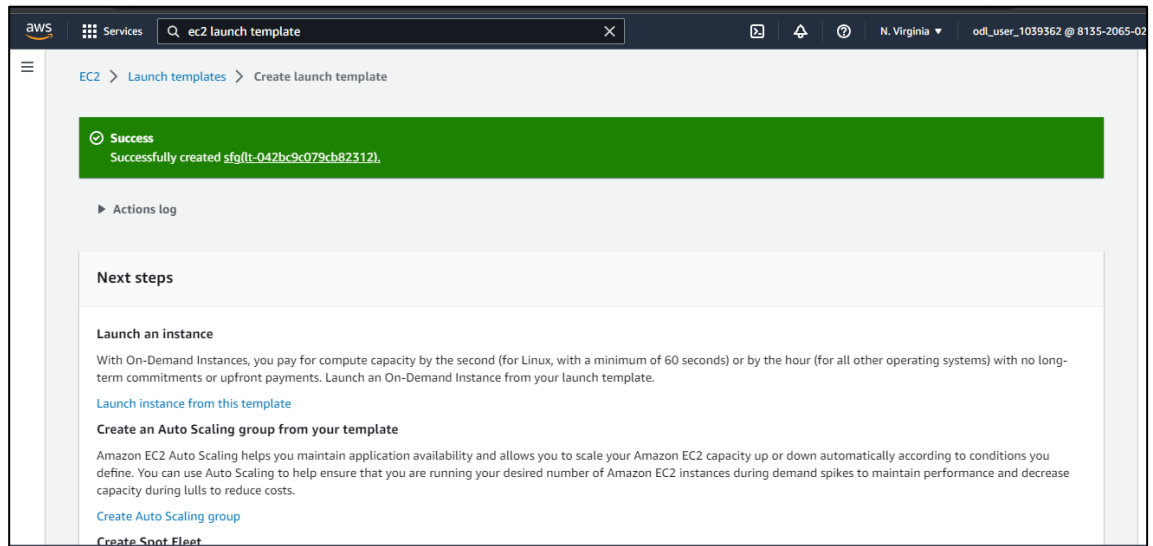
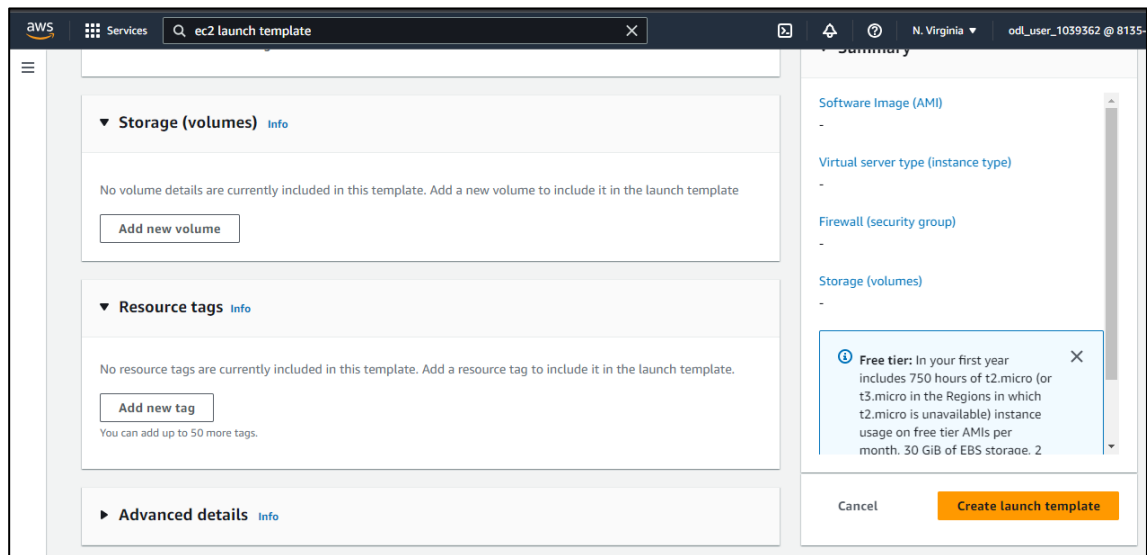
On-Demand RHEL pricing: 0.0716 USD per Hour

On-Demand Linux pricing: 0.0116 USD per Hour

☐ All generations

[Compare instance types](#)

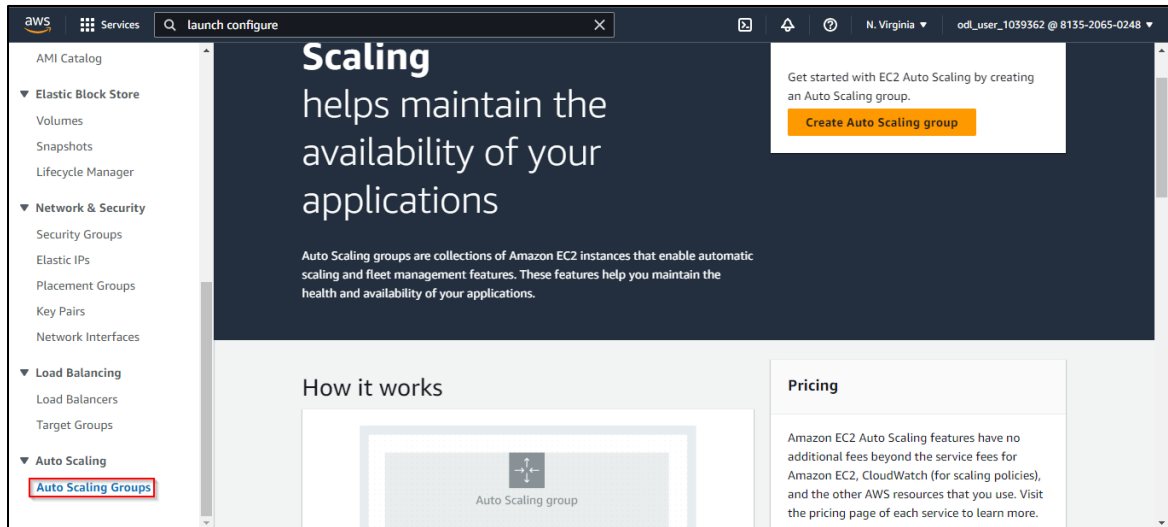
## 1.5 Click on **Create launch template**



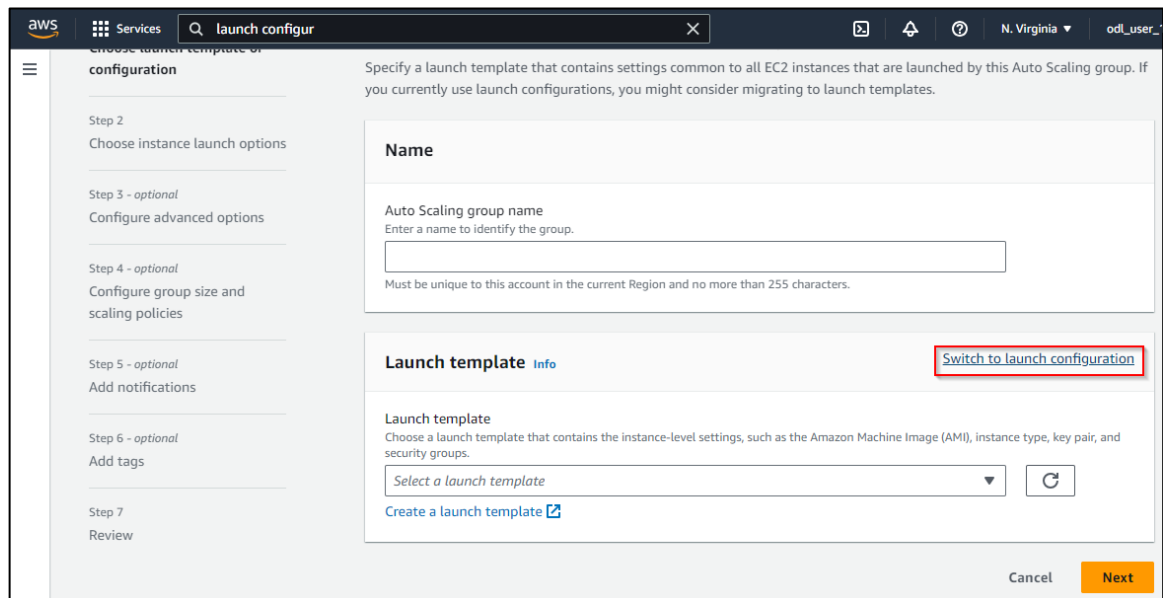
Launch template is created successfully.

## Step 2: Create a launch configuration

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



### 2.2 Click on Switch to launch configuration



## 2.3 Click on **Create a launch configuration**

aws Services launch configur

Step 3 - optional  
Configure advanced options

Step 4 - optional  
Configure group size and scaling policies

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.

Select a launch configuration

**Create a launch configuration** [↗](#)

Cancel

## 2.4 Enter **NewConfig** as the name for the configuration

aws

EC2 > Launch configurations > Create launch configuration

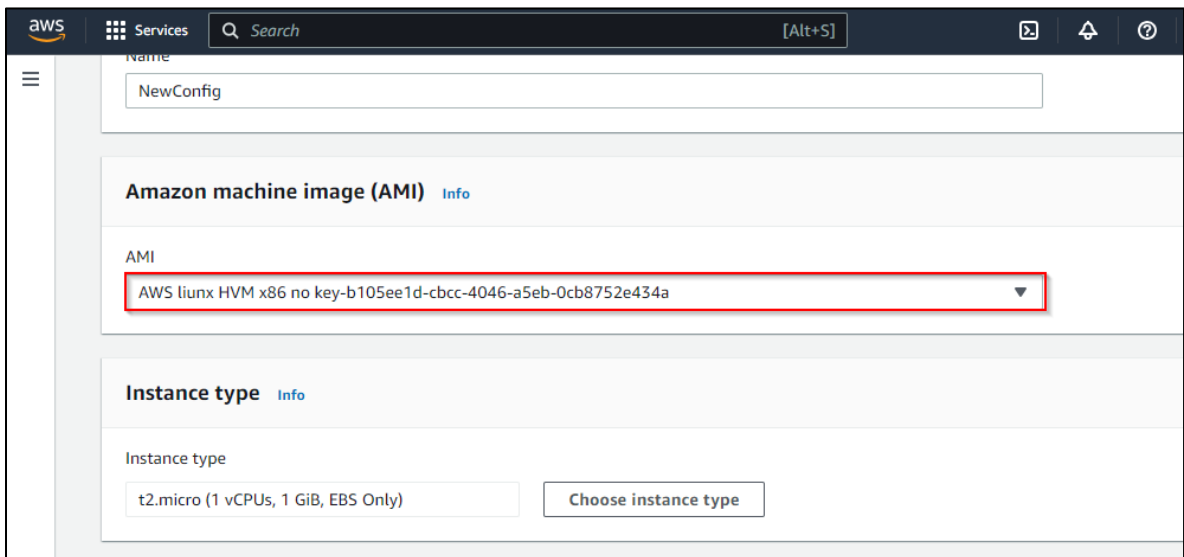
Create launch configuration Info

⚠ 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](#)

Launch configuration name

Name

## 2.5 Select AMI as AWS linux HVM x86



aws Services Search [Alt+S]

Name

NewConfig

Amazon machine image (AMI) Info

AMI

AWS linux HVM x86 no key-b105ee1d-cbcc-4046-a5eb-0cb8752e434a

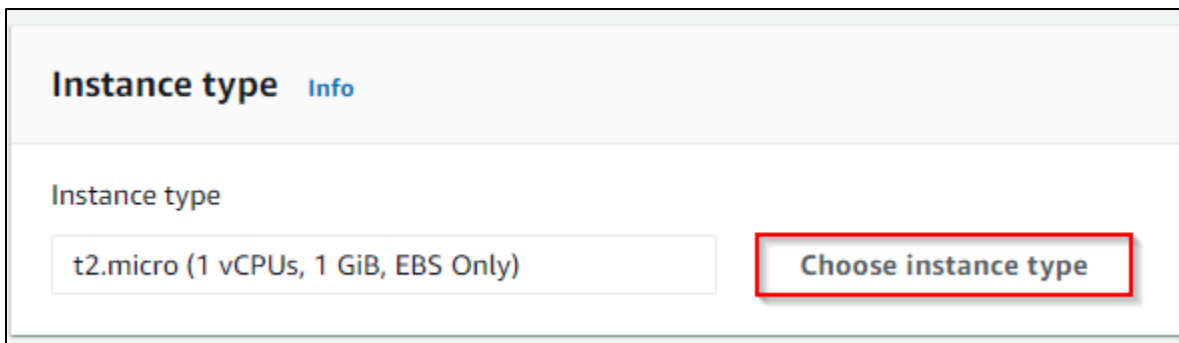
Instance type Info

Instance type

t2.micro (1 vCPUs, 1 GiB, EBS Only)

Choose instance type

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

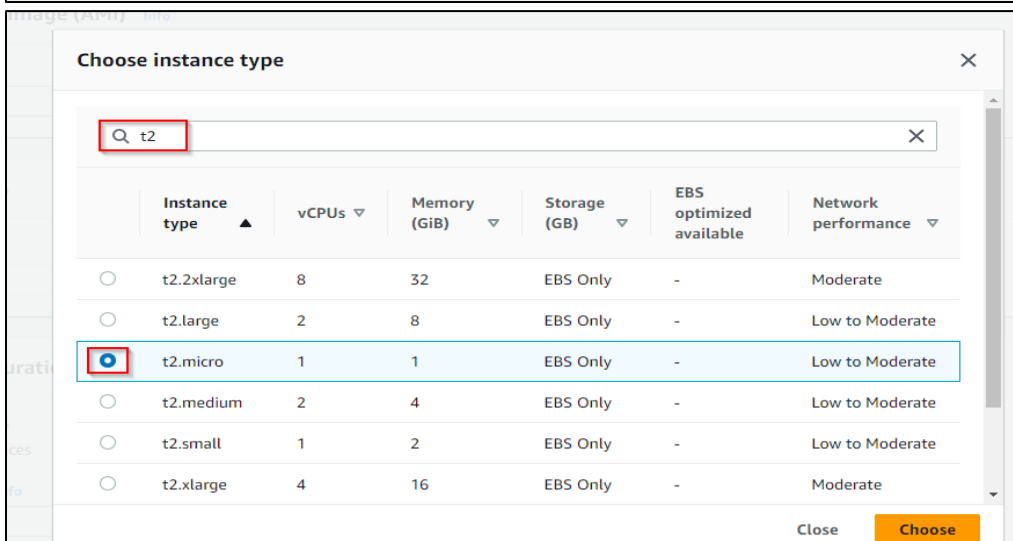


Instance type Info

Instance type

t2.micro (1 vCPUs, 1 GiB, EBS Only)

Choose instance type



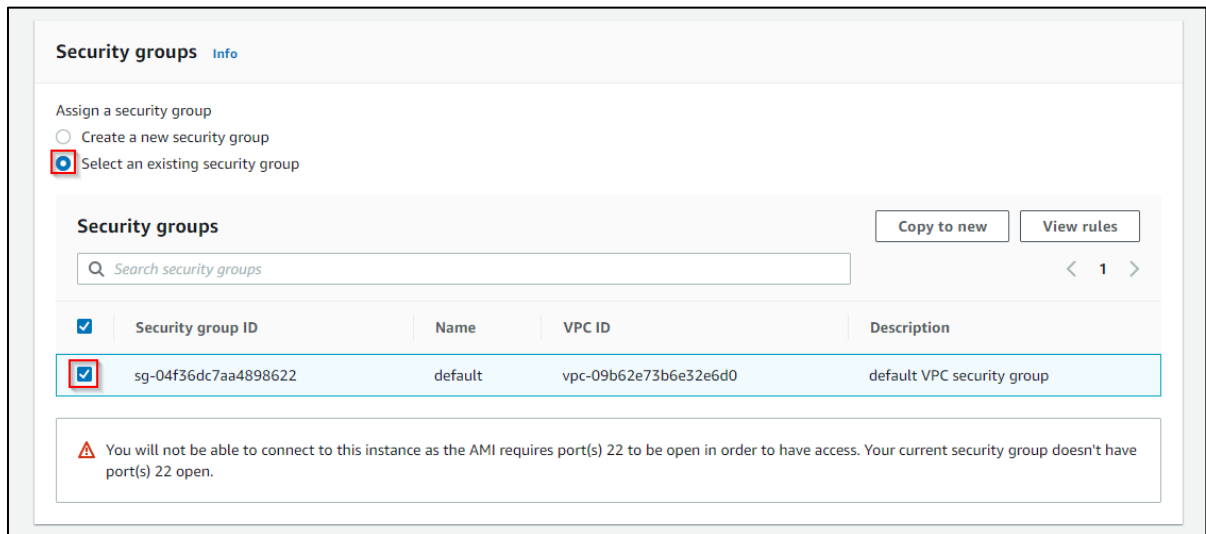
Choose instance type

Q t2

	Instance type ▲	vCPUs ▼	Memory (GiB) ▼	Storage (GB) ▼	EBS optimized available	Network performance ▼
<input type="radio"/>	t2.2xlarge	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 Scroll down to the security groups, click on **Select an existing security group**, and click on the **default** Security group



**Security groups** [Info](#)

Assign a security group

☐ Create a new security group  
☒ **Select an existing security group**

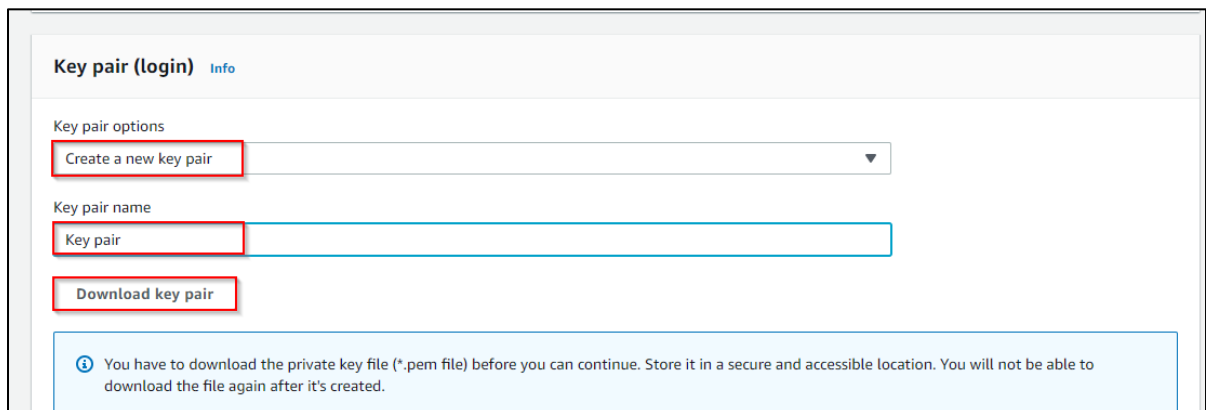
**Security groups** Copy to new View rules

Search security groups

<input checked="" type="checkbox"/>	Security group ID	Name	VPC ID	Description
<input checked="" type="checkbox"/>	sg-04f36dc7aa4898622	default	vpc-09b62e73b6e32e6d0	default VPC security group

**Warning:** You will not be able to connect to this instance as the AMI requires port(s) 22 to be open in order to have access. Your current security group doesn't have port(s) 22 open.

2.8 Click on **Create a new key pair**, enter the **Key pair name**, and click on **Download key pair**



**Key pair (login)** [Info](#)

Key pair options

**Create a new key pair**

Key pair name

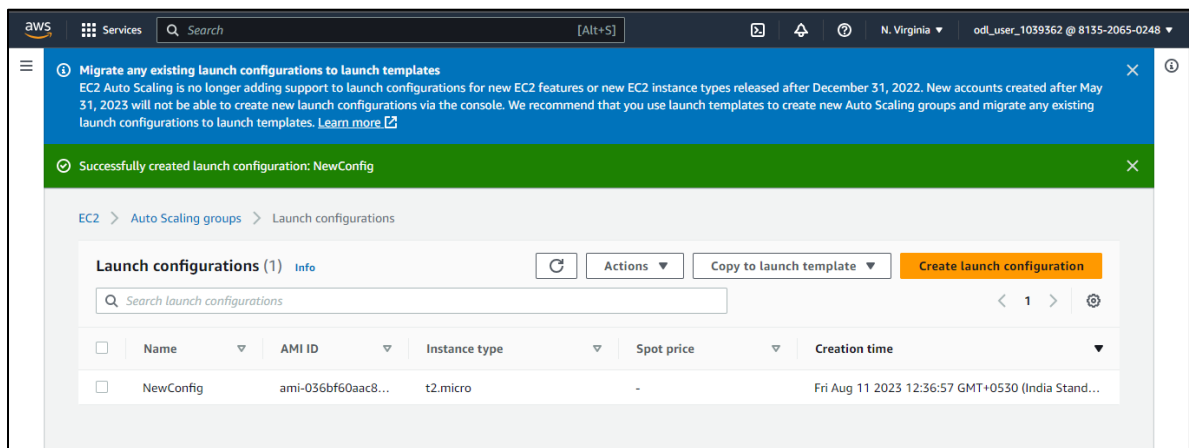
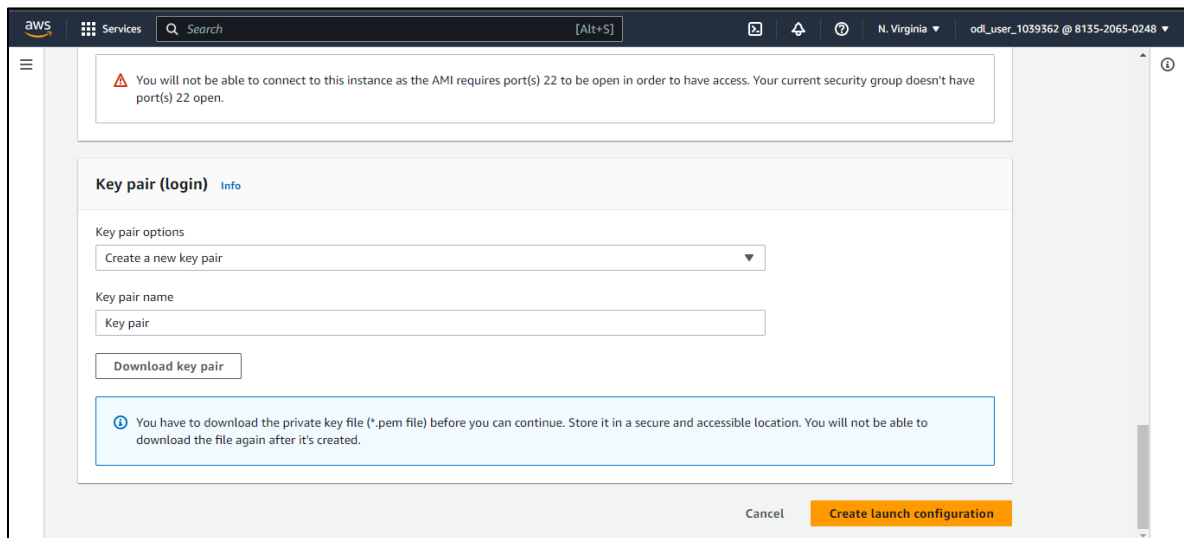
Key pair

**Download key pair**

**Warning:** 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.



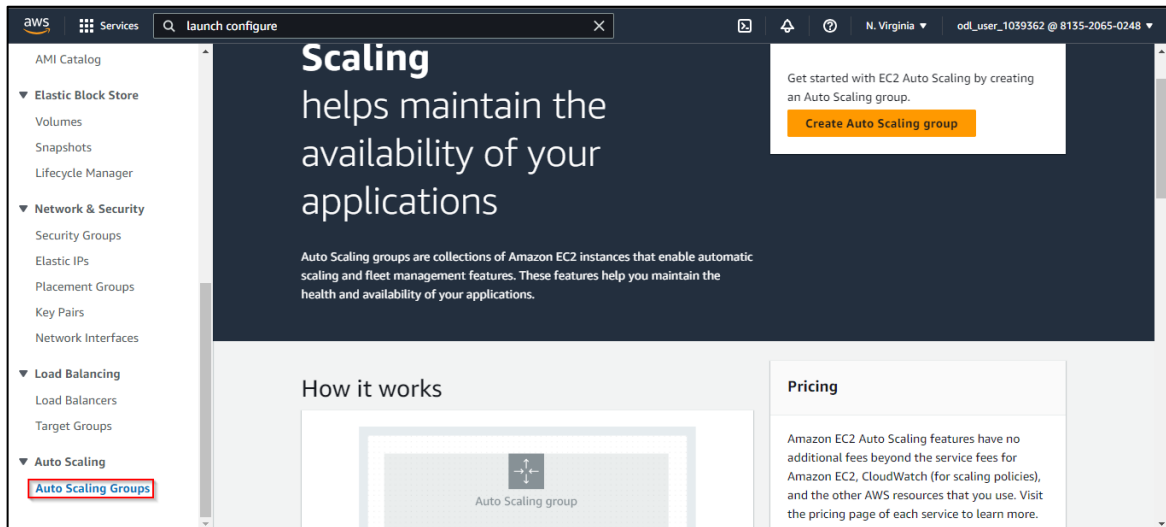
## 2.9 Click on **Create launch configuration**



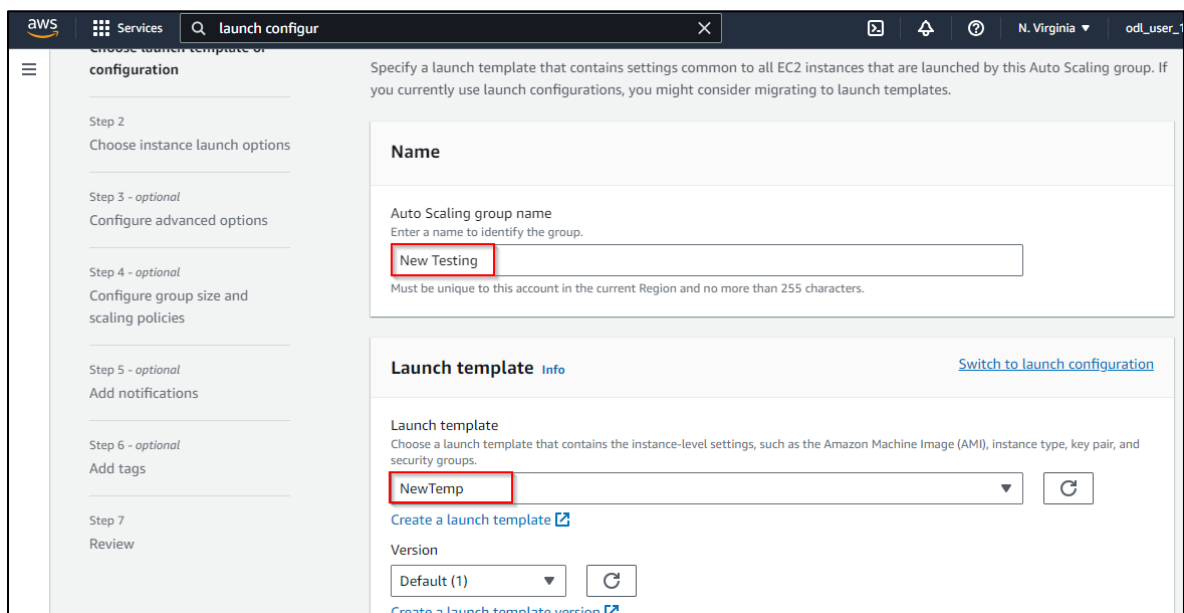
Launch configuration is created successfully.

## Step 3: Create an Auto Scaling group

### 3.1 On the left navigation pane, click on **Create Auto Scaling group**



### 3.2 Name the **Auto Scaling group**, **New testing**, and choose Launch template as **NewTemp**



### 3.3 Click on **Next**

aws Services launch configur

Step 7  
Review

Create a launch template

Version  
Default (1)

Create a launch template version

Description  
for demonstrate autoscaling

Launch template  
NewTemp  
lt-0e87458560a8819f3

Instance type  
t2.micro

AMI ID  
ami-09538990a0c4fe9be

Security groups  
-

Request Spot Instances  
No

Key pair name  
-

Security group IDs  
-

Additional details

Storage (volumes)  
-

Date created  
Fri Aug 11 2023 11:38:11 GMT+0530  
(India Standard Time)

Cancel Next

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

aws Services launch configur

Step 3 - optional  
[Configure advanced options](#)

Step 4 - optional  
[Configure group size and scaling policies](#)

Step 5 - optional  
[Add notifications](#)

Step 6 - optional  
[Add tags](#)

Step 7  
[Review](#)

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-09b62e73b6e32e6d0  
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-05398dcd8d76d41de  
172.31.80.0/20 Default

us-east-1b | subnet-0b16c5592074be82  
172.31.16.0/20 Default

us-east-1c | subnet-0f35ca6e668522b3a  
172.31.32.0/20 Default

us-east-1d | subnet-05dee7e6e68d5c744  
172.31.0.0/20 Default

us-east-1e | subnet-0986fedc9768c213d  
172.31.48.0/20 Default

Create a subnet

### 3.5 Click on **Next**

#### Instance type requirements [Info](#)

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.

Override launch template

Launch template	Version	Description
<a href="#">NewTemp</a> lt-0e87458560a8819f3	Default	for demonstrate autoscaling

Instance type

t2.micro

Cancel

Skip to review

Previous

Next

### 3.6 Click on the **Attach to a new load balancer** and then on **Application Load Balancer**

aws

Services

Q launch configur

configuration

Step 2

[Choose instance launch options](#)

Step 3 - optional

Configure advanced options

Step 4 - optional

[Configure group size and scaling policies](#)

Step 5 - optional

[Add notifications](#)

Step 6 - optional

[Add tags](#)

Step 7

[Review](#)

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](#)

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

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

☒ us-east-1e
 

subnet-0986fedc9768c213d

☒ us-east-1a
 

subnet-05398dcd8d76d41de

☒ us-east-1d
 

subnet-05dee7e6e68d5c744

☒ us-east-1f
 

subnet-01c289e5163e7d317

**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	Port	Default routing (forward to)
HTTP	80	<div>Select new or existing target group</div> <div> <input type="text"/> </div> <div>Create a target group</div>

**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

**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	Port	Default routing (forward to)
HTTP	80	<div>Create a target group</div>

**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**

aws Services launch configur

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.

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** and review the launch template by clicking on Review, and then click on **Create Auto Scaling group**

aws Services launch configur

[configuration](#)

Step 2  
[Choose instance launch options](#)

Step 3 - optional  
[Configure advanced options](#)

Step 4 - optional  
[Configure group size and scaling policies](#)

Step 5 - optional  
[Add notifications](#)

Step 6 - optional  
[Add tags](#)

**Step 7**  
**Review**

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

**Group details**

Auto Scaling group name  
New Testing

**Launch template**

Launch template	Version	Description
NewTemp <a href="#">🔗</a>	Default	for demonstrate autoscaling
lt-0e87458560a8819f3		

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

**Network**

aws Services  X

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**

aws Services  X

EC2 > Auto Scaling groups

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

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min
<input checked="" type="checkbox"/>	New Testing	NewTemp   Version Default	0	Updating capacity...	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	Status	Amazon Resource Name (ARN)
New Testing	1	Updating capacity	arn:aws:autoscaling:us-east-1:813520650248:autoScalingGroup:7c3b6f66-9fa0

Auto Scaling groups are created successfully.

By following these steps, you will be able to successfully establish an Auto Scaling group, using launch templates within the AWS workspace.