

Lesson 09 Demo 08

Setting up an Auto Scaling Group with a Launch Template

Objective: To set up an auto-scaling group using a launch template in AWS for resource scaling and management

Tools required: AWS Management Console

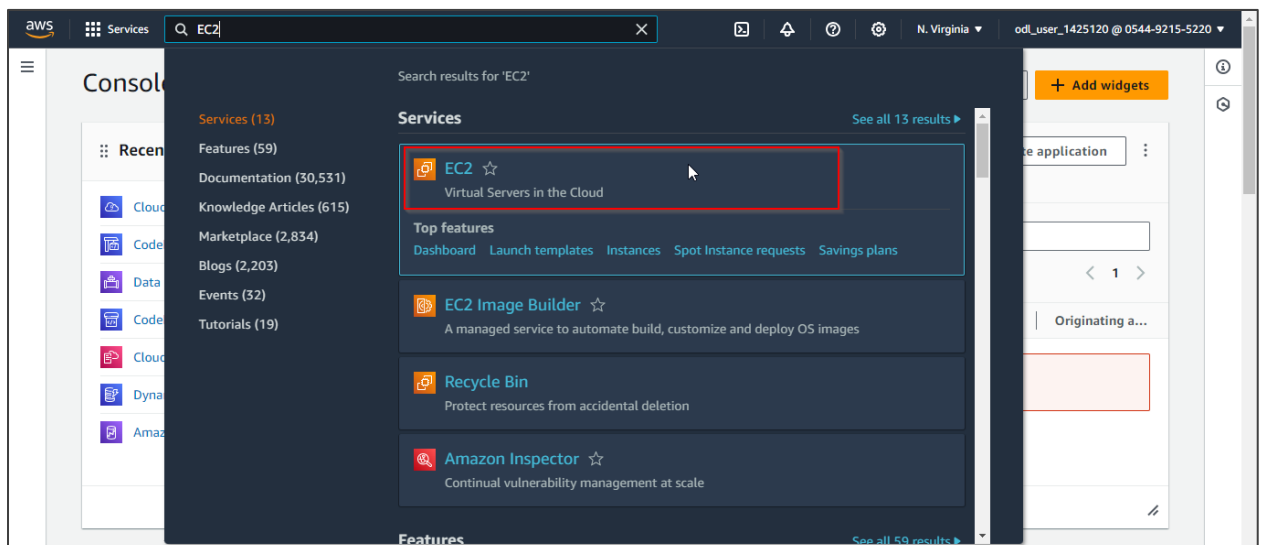
Prerequisites: None

Steps to be followed:

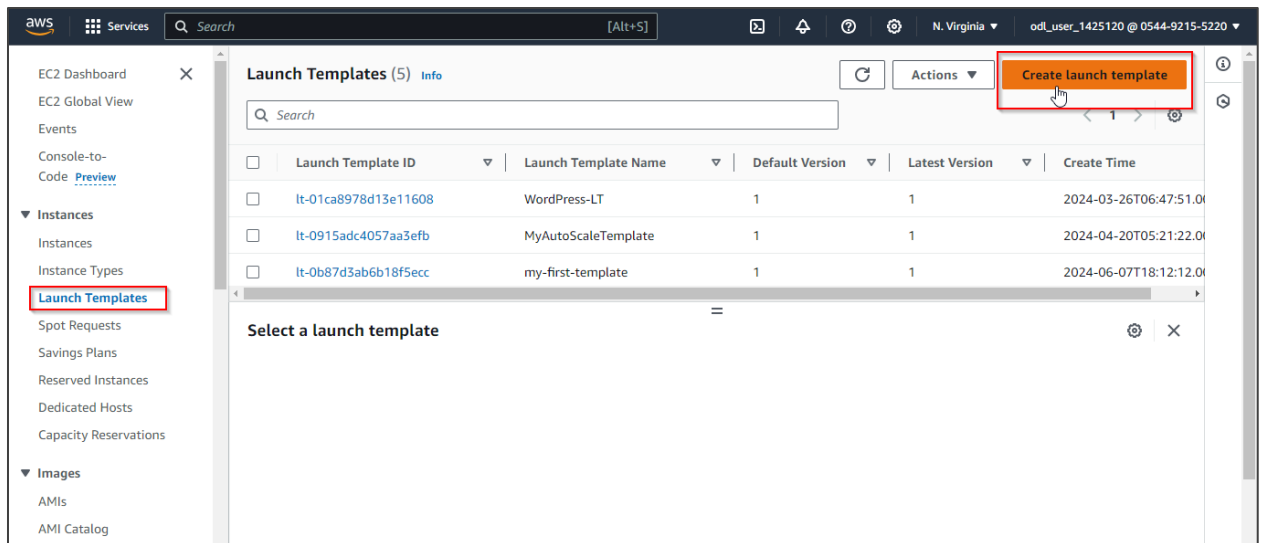
1. Create a launch template
2. Create an Auto Scaling group

Step 1: Create a launch template

1.1 Navigate to the AWS Management Console and search for and select **EC2**



1.2 Select the **Launch Templates** tab and click **Create launch template**



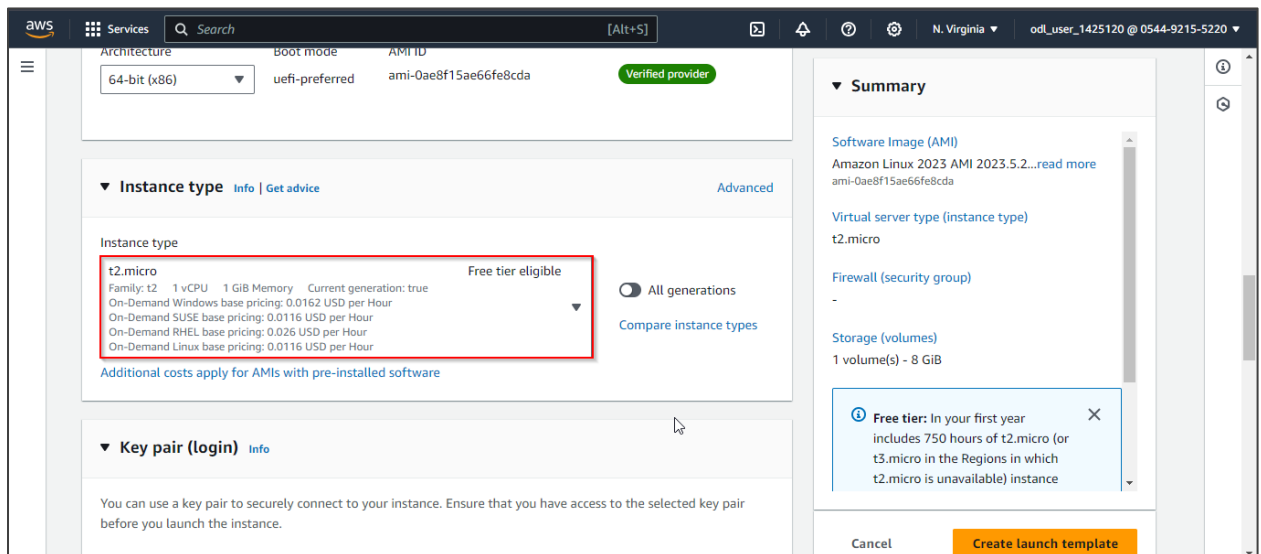
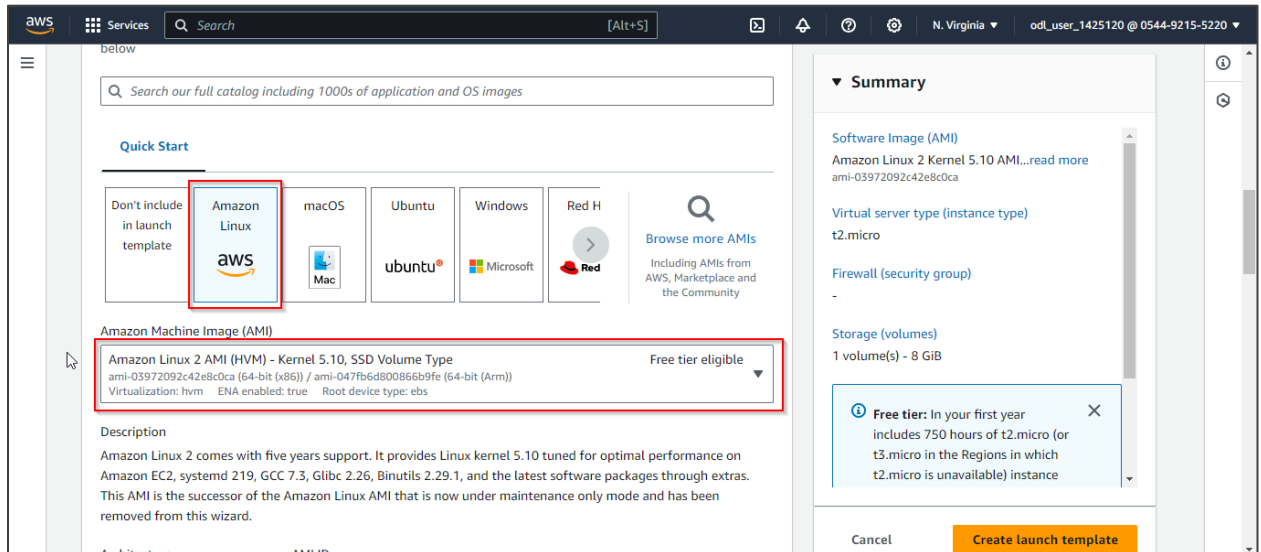
1.3 Provide name as **template1** and description as **A web server** in the **Create Launch template** section

The screenshot shows the 'Create launch template' form in the AWS Management Console. The breadcrumb navigation at the top indicates the path: EC2 > Launch templates > Create launch template. The main heading is 'Create launch template'. Below this, there is a section titled 'Launch template name and description'.

Within this section, there are two input fields:

- Launch template name - required:** The input field contains the text 'template1' and is highlighted with a red box. Below the field, a note states: 'Must be unique to this account. Max 128 chars. No spaces or special characters like '&', '*', '@'.
- Template version description:** The input field contains the text 'A web server' and is highlighted with a red box. Below the field, a note states: 'Max 255 chars'.

1.4 Choose Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type in the Amazon Machine Image section and set the instance type to t2.micro



1.5 Specify the **Key pair name** as **key** and click on **Create key pair**

Create key pair

Key pair name
Key pairs allow you to connect to your instance securely.
key
The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type
☒ RSA
RSA encrypted private and public key pair
☐ ED25519
ED25519 encrypted private and public key pair

Private key file format
☒ .pem
For use with OpenSSH
☐ .ppk
For use with PuTTY

⚠ When prompted, store the private key in a secure and accessible location on

Cancel **Create key pair**

▼ **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
key
[Create new key pair](#)

1.6 Keep the Security groups as **default**

Network settings Info

Subnet Info
Don't include in launch template
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

Security groups Info
Select security groups
default sg-01a0bc57433f16f85
VPC: vpc-0b998c5e3196260ee
Compare security group rules

► Advanced network configuration

Summary

Software Image (AMI)
Amazon Linux 2 Kernel 5.10 AMI...read more
ami-03972092c42e8c0ca

Virtual server type (instance type)
t2.micro

Firewall (security group)
default

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

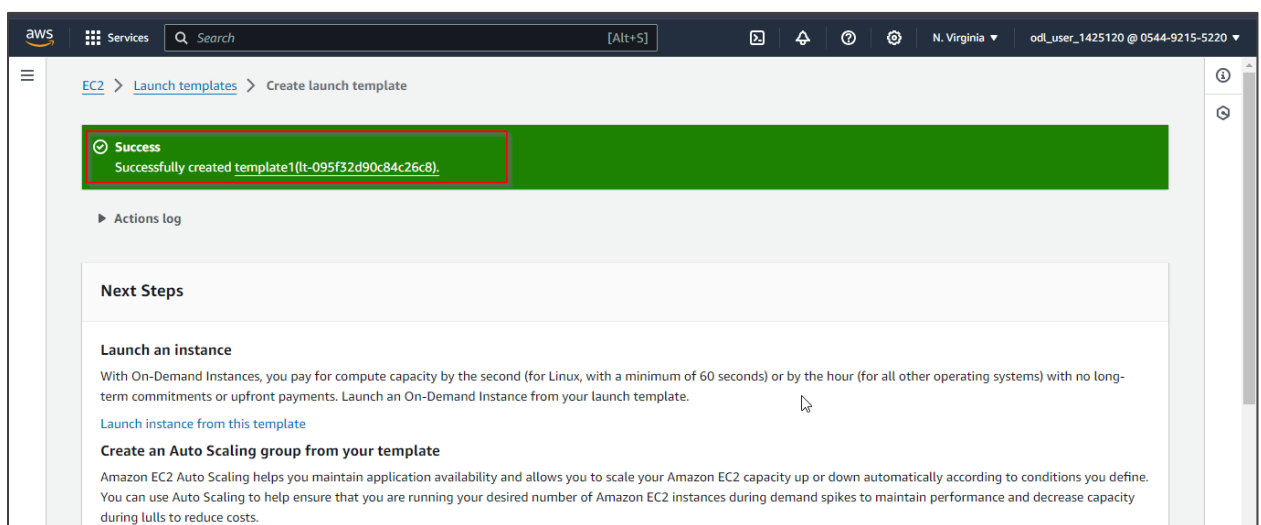
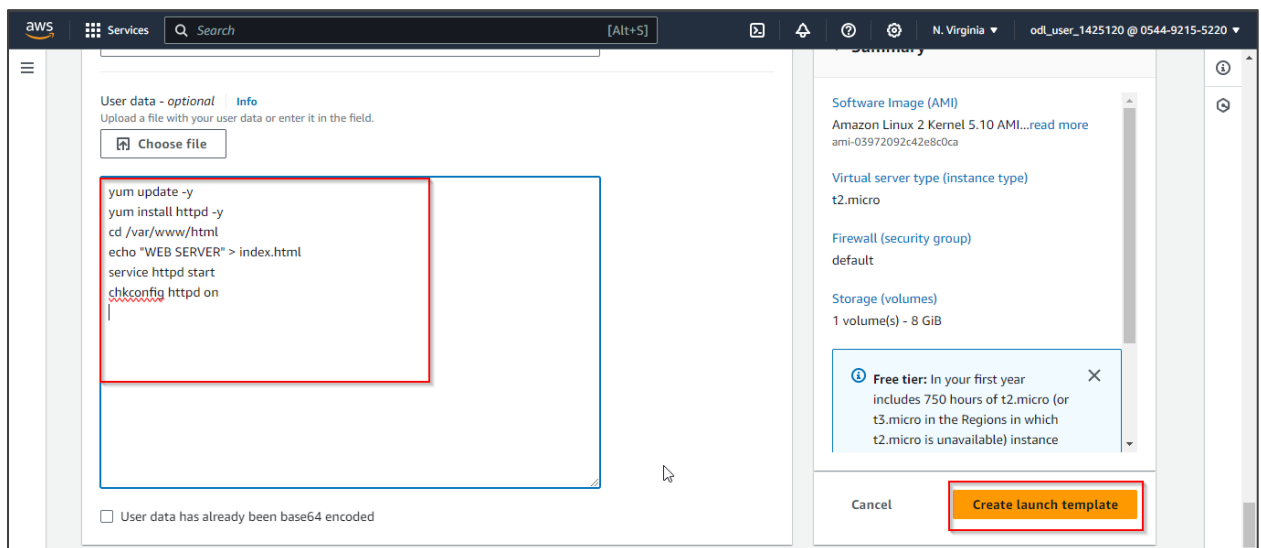
Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance

Cancel **Create launch template**

1.7 In the **Advanced details** section, add the following code under **User data**:

```
yum update -y
yum install httpd -y
cd /var/www/html
echo "WEB SERVER" > index.html
service httpd start
chkconfig httpd on
```

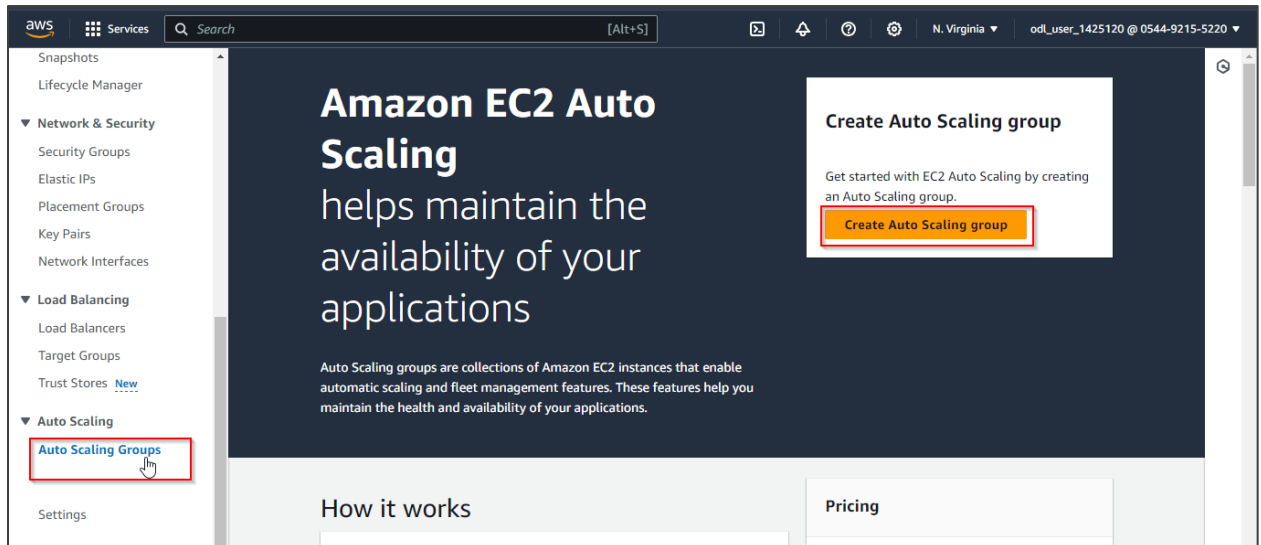
After adding the code, click **Create launch template**.



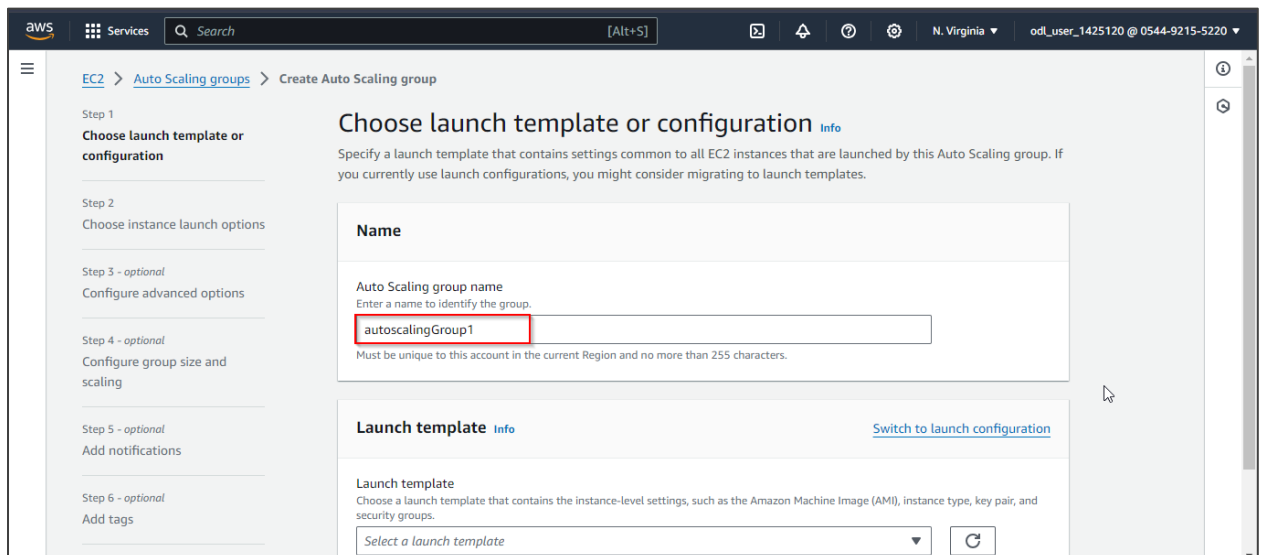
The template has been created successfully.

Step 2: Create an Auto Scaling group

2.1 In the EC2 dashboard on the left pane, click on **Create Auto Scaling group** under **Auto Scaling Groups**



2.2 Name the Auto Scaling group as **autoscalingGroup1**



2.3 Select Launch template as **template1** created in previous steps and click **Next**

Launch template Info [Switch to launch configuration](#)

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.

template1

[Create a launch template](#)

Version
Default (1)

[Create a launch template version](#)

Description A web server	Launch template template1 lt-095f32d90c84c26c8	Instance type t2.micro
AMI ID ami-03972092c42e8c0ca	Security groups -	Request Spot Instances No
Key pair name key	Security group IDs sg-01a0bc57433f16f85	

Review

Version
Default (1)

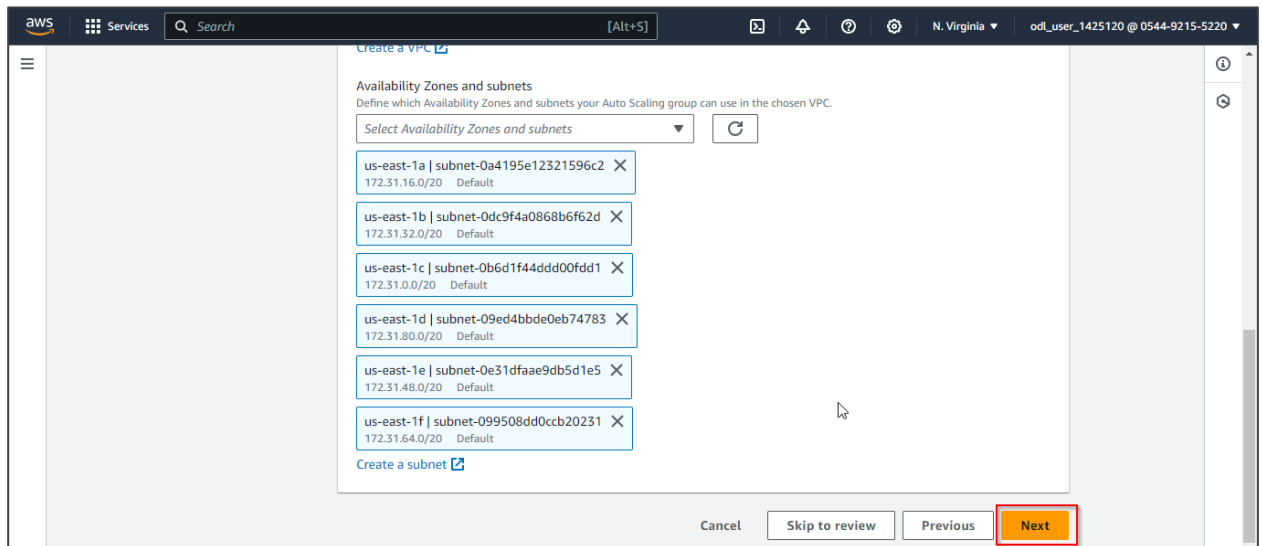
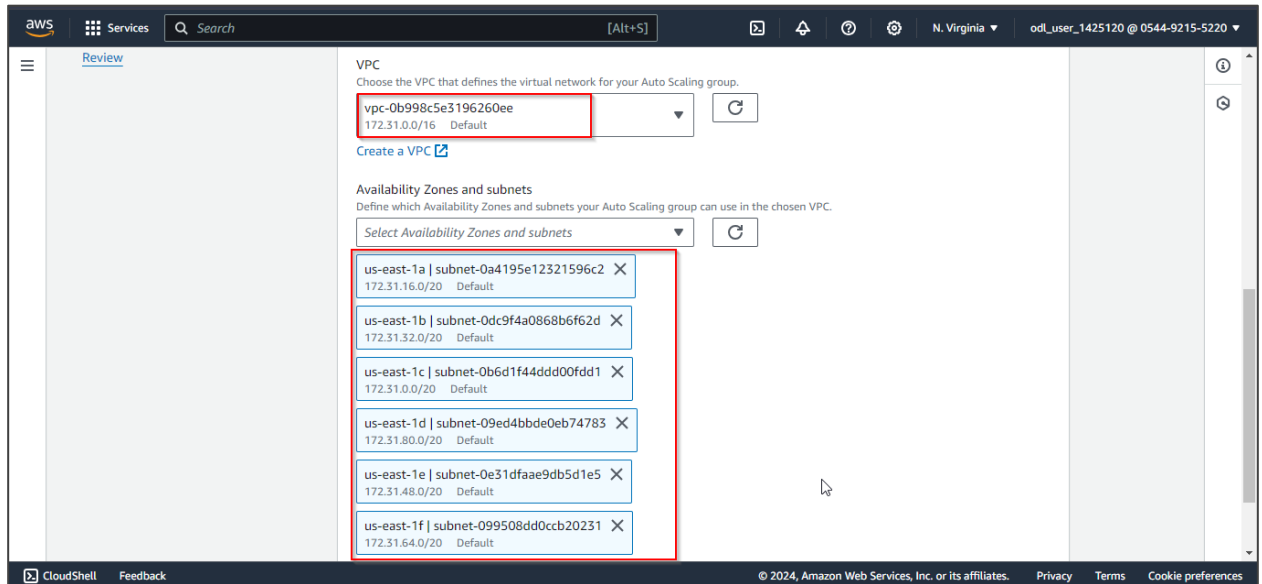
[Create a launch template version](#)

Description A web server	Launch template template1 lt-095f32d90c84c26c8	Instance type t2.micro
AMI ID ami-03972092c42e8c0ca	Security groups -	Request Spot Instances No
Key pair name key	Security group IDs sg-01a0bc57433f16f85	

Additional details

Storage (volumes) -	Date created Wed Aug 14 2024 12:16:20 GMT+0530 (India Standard Time)
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2.4 In the **Choose instance launch options** select the default VPC, select all the Availability Zones and subnets, and click **Next**



2.5 Select **No load balancer** for the **Load balancing** option and click on **Next**

aws Services Search [Alt+S] N. Virginia odl_user_1425120 @ 0544-9215-5220

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](#)

Configure advanced options - optional [Info](#)

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.

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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**

Note: The users can create or attach an existing load balancer if they want.

2.6 In the **Configure group size and scaling policies**, make **Desired capacity** as **9**, **Min desired capacity** as **1**, and **Max desired capacity** as **13** and click **Next**

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 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.

9

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

1

Equal or less than desired capacity

Max desired capacity

13

Equal or greater than desired capacity

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.

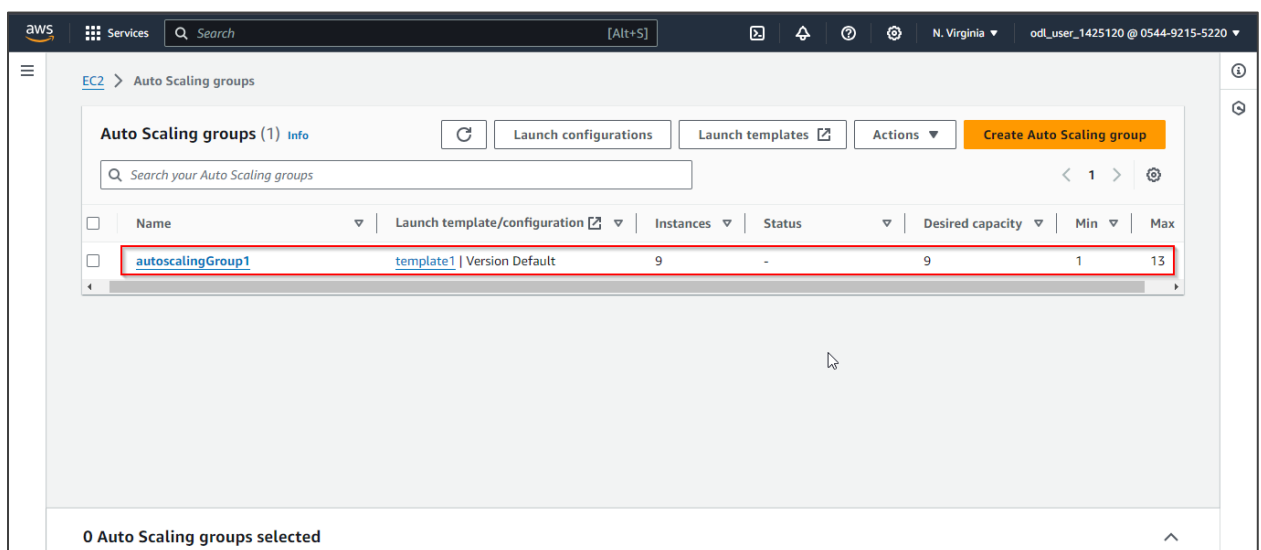
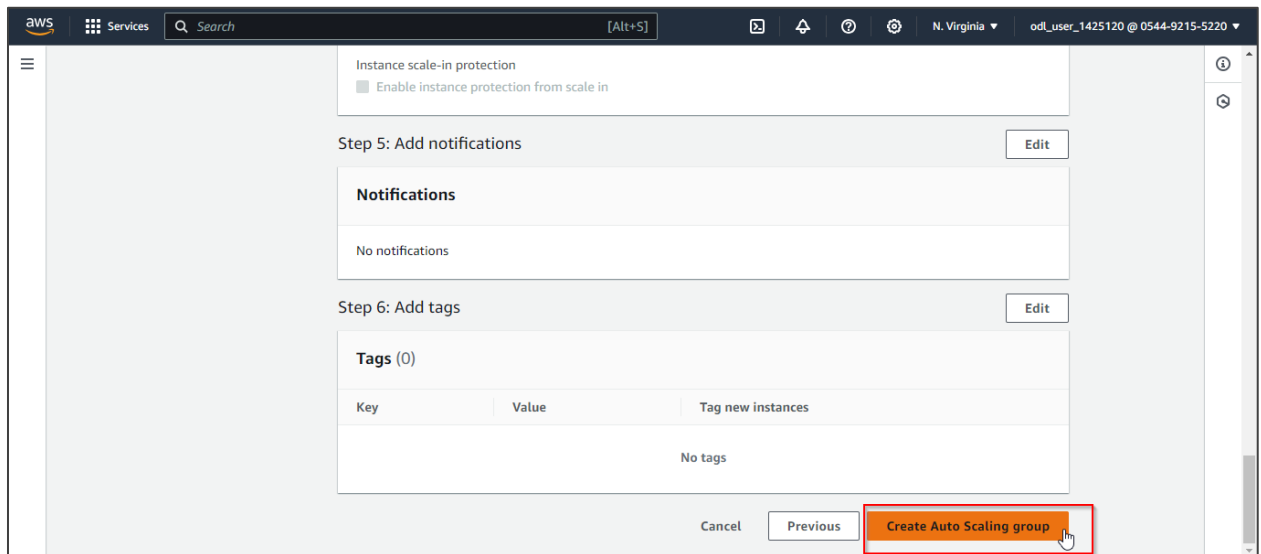
Instance scale-in protection

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

☐ Enable instance scale-in protection

Cancel Skip to review Previous **Next**

2.7 Skip all the remaining sections by clicking Next. Now, click **Create Auto Scaling group**



Finally, you will see **AutoScalingGroup1** in the **Auto Scaling group Dashboard**, which indicates that the Auto Scaling group has been launched successfully.

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