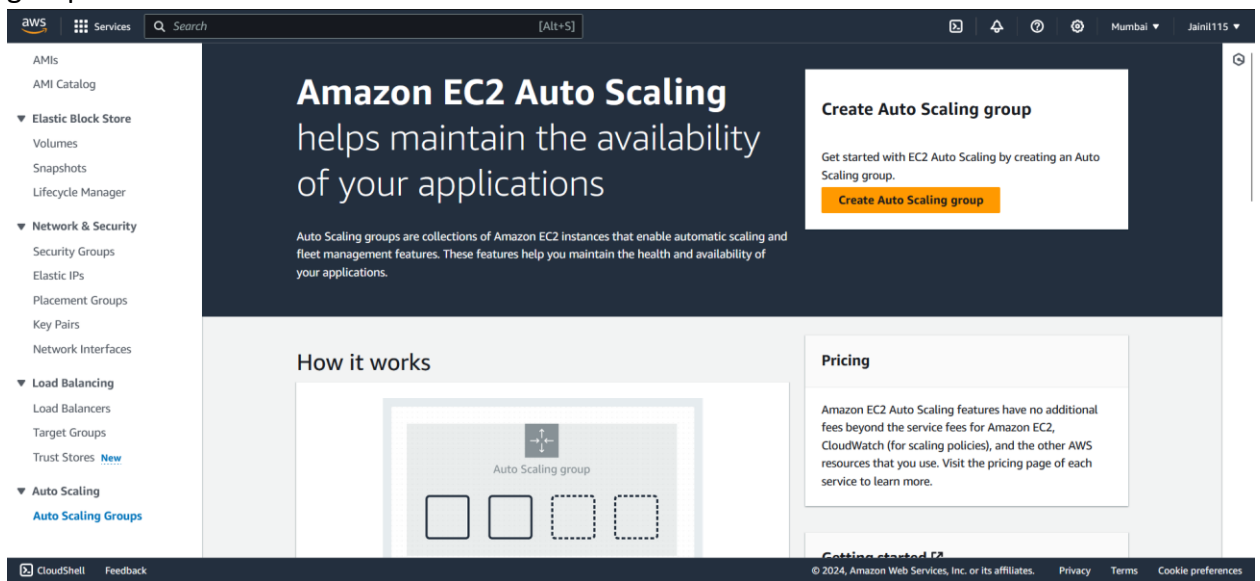


## TASK 5: Create an ASG with minimum 1 and maximum 2 instance requirement.

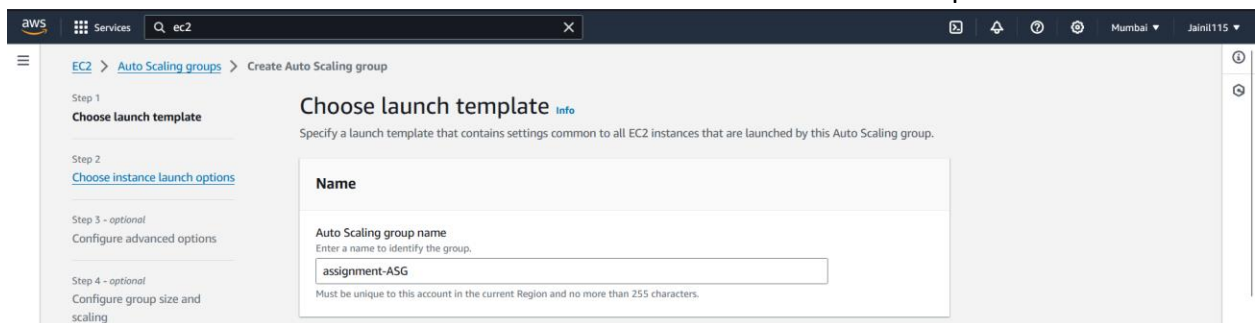
1. Use "Stress" command for increasing CPU utilization and it should create 2nd instance automatically

### Steps to create Auto Scaling Group:

1. Click on Auto Scaling Groups from EC2 Dashboard. Then click on "Create Auto Scaling group".



2. Then we need to enter ASG name and then click on "create a launch template".



3. Then create launch template by first entering the template name "Assignment-launch-template"

Launch template name and description

Launch template name - *required*

Assignment-launch-template

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

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

Template tags

Source template

**Summary**

Software Image (AMI)

Amazon Linux 2 AMI (HVM) - Ker...[read more](#)

ami-039e1f129f345d75f

Virtual server type (instance type)

-

Firewall (security group)

-

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, 30 GiB of EBS storage, 2 million I/Os, 1 GB of

4. Then select Amazon Linux 2 as the AMI.

Specify the details of your launch template below. Leaving a field blank will result in the field not being included in the launch template.

**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

Q amazon linux 2

[AMI from catalog](#) [Quick Start](#)

Amazon Machine Image (AMI)

amzn2-ami-kernel-5.10-hvm-2.0.20240124.0-x86\_64-gp2

ami-039e1f129f345d75f

[Browse more AMIs](#)

Including AMIs from AWS, Marketplace and the Community

Catalog	Published	Architecture	Virtualization	Root device type	ENA Enabled
Quickstart AMIs	2024-01-24T01:57:10.000Z	x86_64	hvm	ebs	Yes

**Summary**

Software Image (AMI)

Amazon Linux 2 AMI (HVM) - Ker...[read more](#)

ami-039e1f129f345d75f

Virtual server type (instance type)

-

Firewall (security group)

-

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, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

5. Then select the t2.micro as the instance type.

**Instance type** [Info](#) [Get advice](#) [Advanced](#)

Instance type

t2.micro

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

On-Demand Linux base pricing: 0.0124 USD per Hour

On-Demand Windows base pricing: 0.017 USD per Hour

On-Demand RHEL base pricing: 0.0724 USD per Hour

On-Demand SUSE base pricing: 0.0124 USD per Hour

Additional costs apply for AMIs with pre-installed software

Free tier eligible

☒ All generations

[Compare instance types](#)

**Summary**

Software Image (AMI)

Amazon Linux 2 AMI (HVM) - Ker...[read more](#)

ami-039e1f129f345d75f

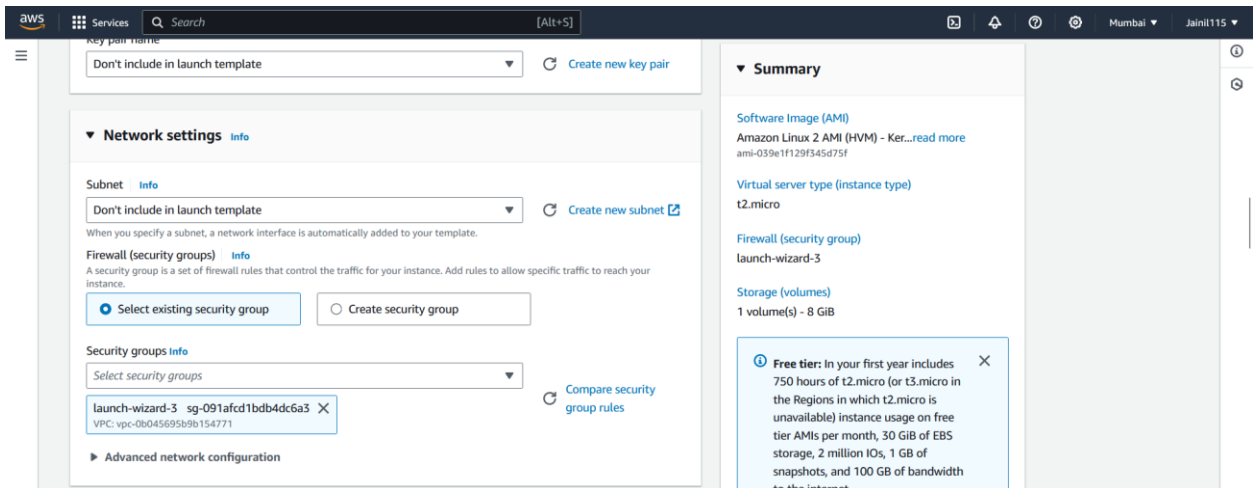
Virtual server type (instance type)

t2.micro

Firewall (security group)

-

6. No need create key pair for this task, select launch-wizard-3 as the security group.



7. Keep everything as default, then add the following as user data:

```
#!/bin/bash
yum update -y
yum install -y httpd
systemctl start httpd
systemctl enable httpd
echo "<h1>IP ADDRESS: $(hostname -f)</h1>" >
/var/www/html/index.html
```

aws Services Search [Alt+S]

Metadata response hop limit [Info](#)


2

Allow tags in metadata [Info](#)

Don't include in launch template

User data - optional [Info](#)

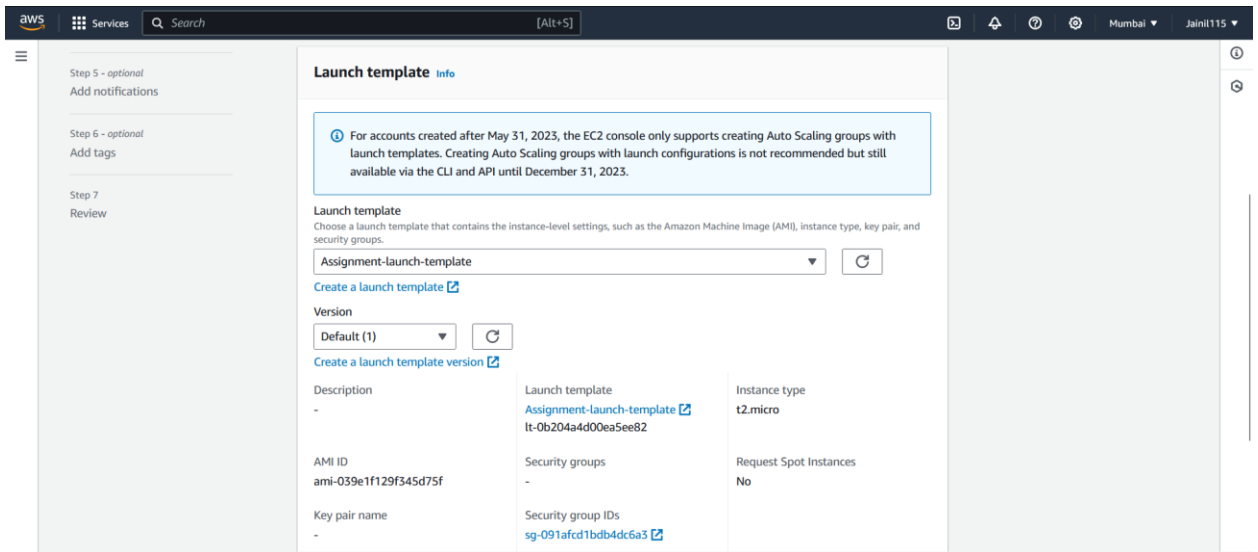
Upload a file with your user data or enter it in the field.

 Choose file

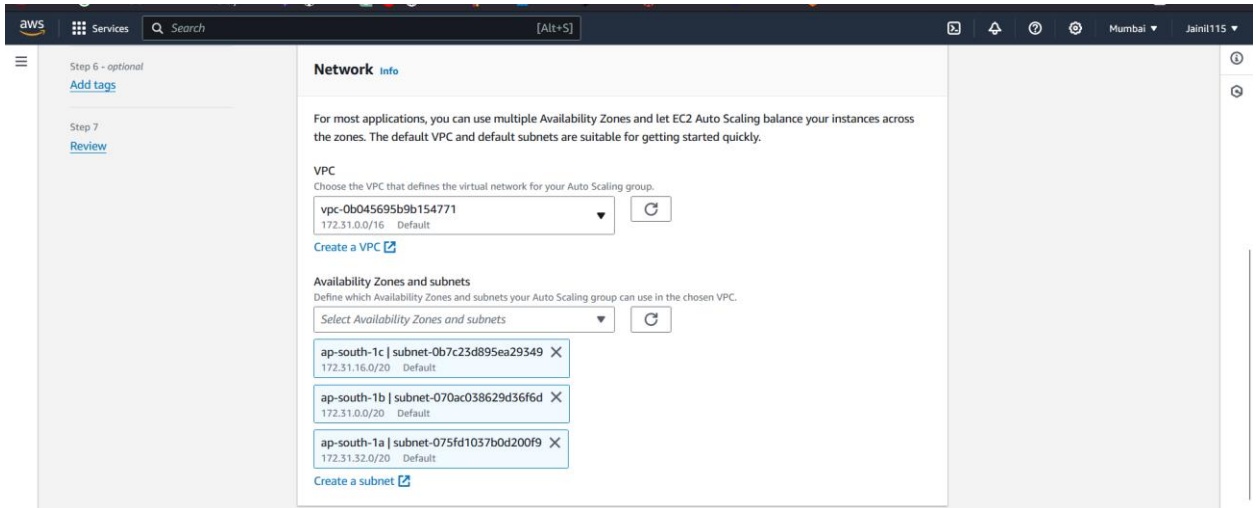
```
#!/bin/bash
yum update -y
yum install -y httpd
systemctl start httpd
systemctl enable httpd
echo "<h1>IP ADDRESS: $(hostname -f)</h1>" > /var/www/html/index.html
```

☐ User data has already been base64 encoded

8. Then click on create launch template to create this template, Now select Assignment-launch-template in Launch Template, then click on next.



9. Now inside Network select multiple availability zones, Then click on next.



10. Now inside load balancer choose Attach to an existing load balancer. Select alp-loadbalancer-targer-group from existing load balancer groups. Then click on next.

**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

alp-loadbalancer-targer-group | HTTP  
Application Load Balancer: assignment-alp-loadbalancer

11. Now desired group size should be 1 and set minimum group size to 1 and maximum group size to 2, then click on skip for review. Then click on create Auto Scaling group.

**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 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 2

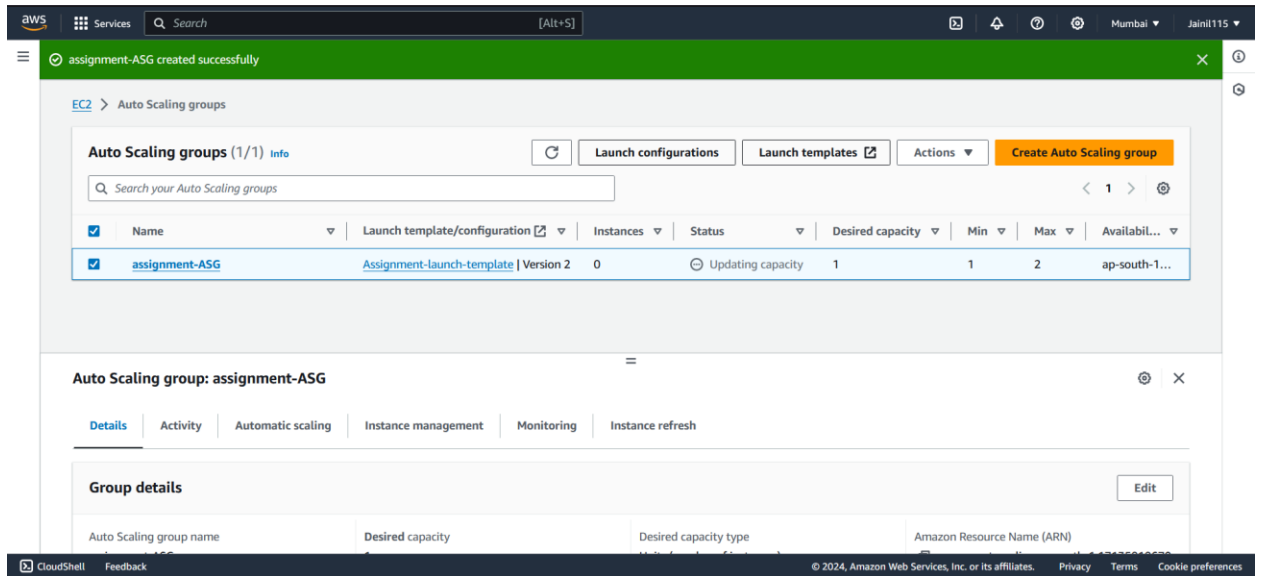
Equal or less than desired capacity Equal or greater than desired capacity

**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.

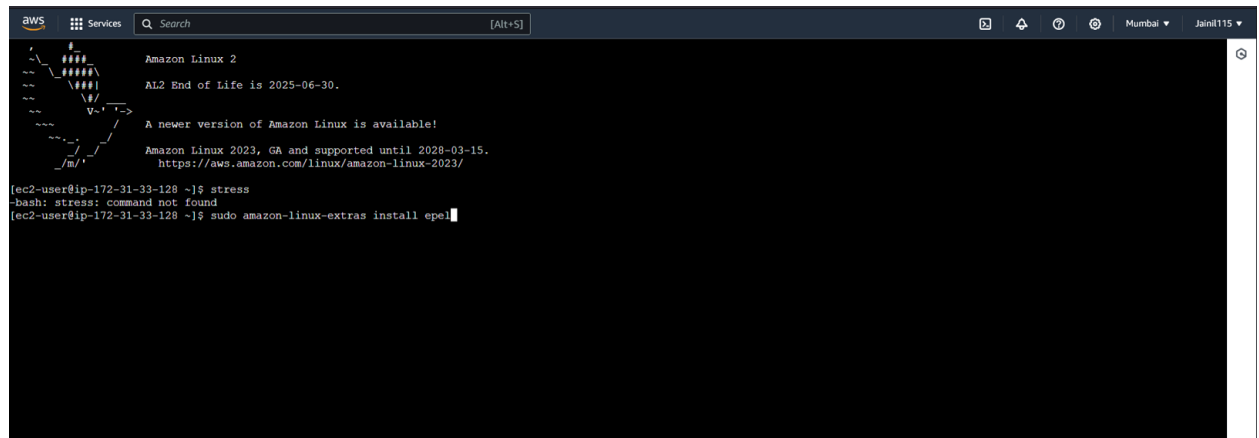
☒ No scaling policies  
Your Auto Scaling group will remain at its initial size and will not dynamically resize to meet demand.

☐ 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.

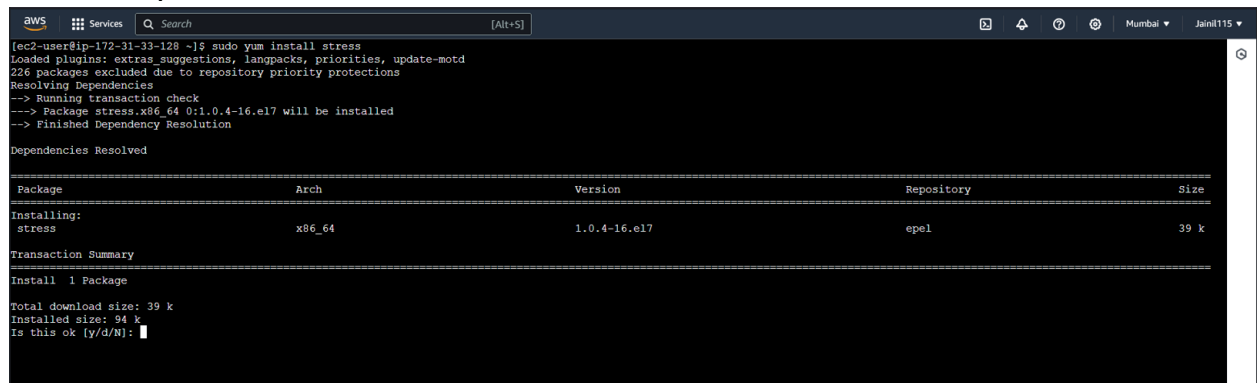


Using stress command:

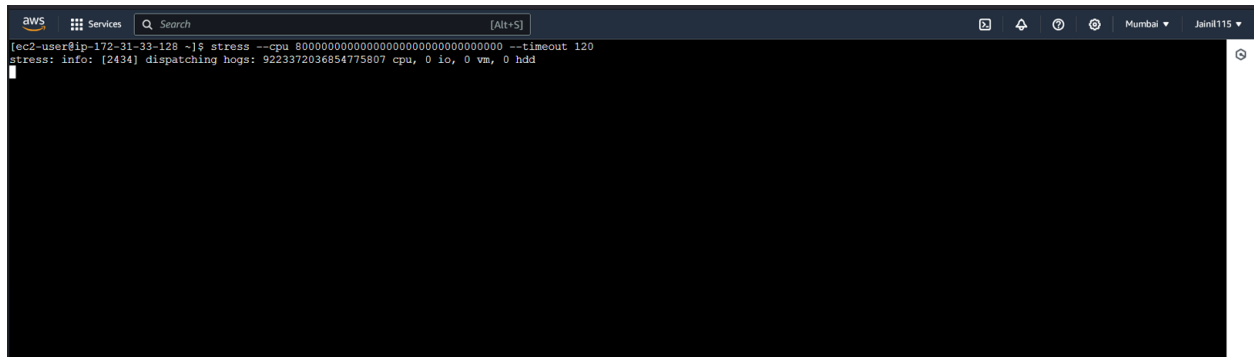
1. To install stress connect to ec2 instance and enter the following command:
  - `sudo amazon-linux-extras install epel`



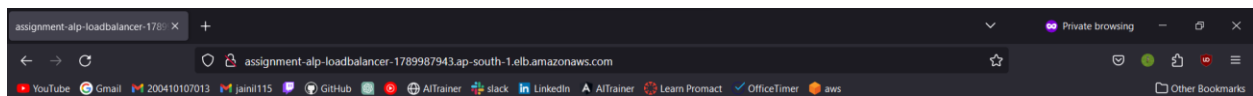
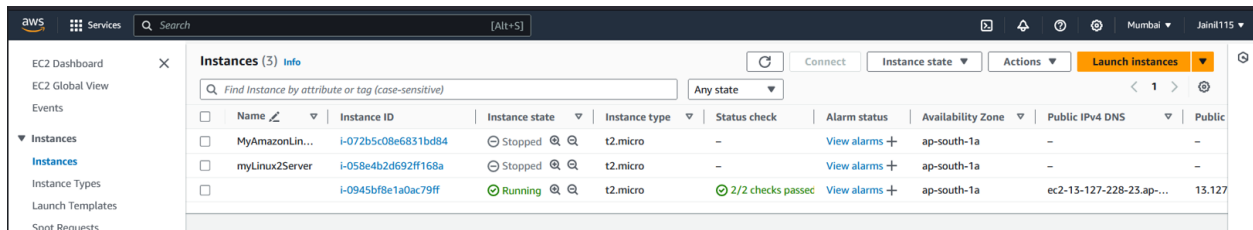
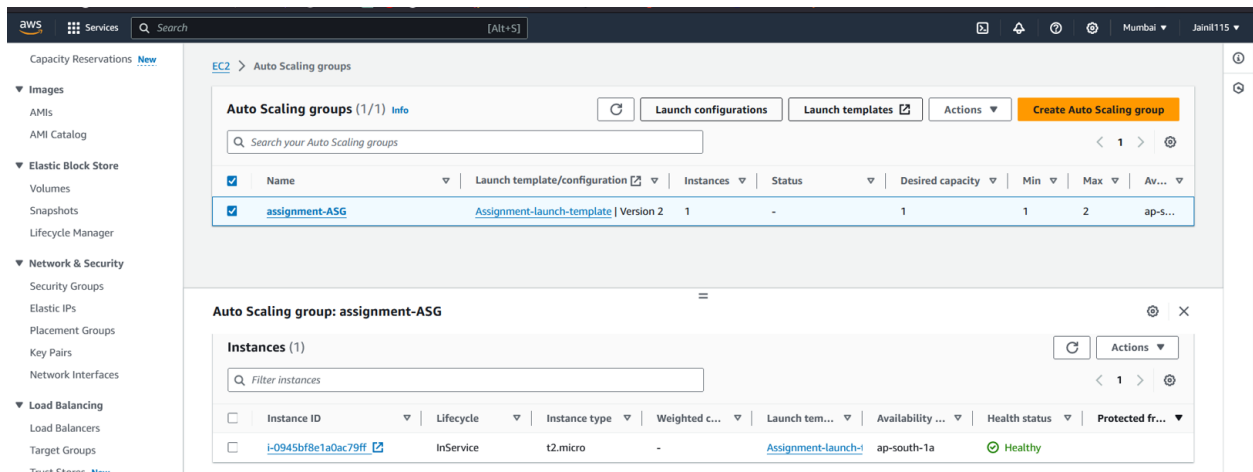
- `sudo yum install stress`



- ```
- sudo stress --cpu 800000000000000000000000 --timeout 120
```



**Before:**



**IP ADDRESS:** ip-171-31-33-128.ap-south-1.compute.internal

**After:**



aws Services Search [Alt+S]

Capacity Reservations [New](#)

▼ Images

- AMIs
- AMI Catalog

▼ Elastic Block Store

- Volumes
- Snapshots
- Lifecycle Manager

▼ Network & Security

- Security Groups
- Elastic IPs
- Placement Groups
- Key Pairs
- Network Interfaces

▼ Load Balancing

- Load Balancers
- Target Groups
- Trust Stores [New](#)

▼ Auto Scaling

- [Auto Scaling Groups](#)

EC2 > Auto Scaling groups

Auto Scaling groups (1/1) [Info](#)

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 | Av...   |
|-------------------------------------|----------------|--------------------------------------------------------|-----------|--------|------------------|-----|-----|---------|
| <input checked="" type="checkbox"/> | assignment-ASG | <a href="#">Assignment-launch-template</a>   Version 2 | 1         | -      | 1                | 1   | 2   | ap-s... |

Auto Scaling group: assignment-ASG

Instances (2)

Filter instances

| <input type="checkbox"/> | Instance ID                         | Lifecycle   | Instance type | Weighted c... | Launch tem...                      | Availability ... | Health status | Protected fr... |
|--------------------------|-------------------------------------|-------------|---------------|---------------|------------------------------------|------------------|---------------|-----------------|
| <input type="checkbox"/> | <a href="#">i-06e4ee15efd946863</a> | Pending     | t2.micro      | -             | <a href="#">Assignment-launch-</a> | ap-south-1b      | Healthy       |                 |
| <input type="checkbox"/> | <a href="#">i-0945bf8e1a0ac79ff</a> | Terminating | t2.micro      | -             | <a href="#">Assignment-launch-</a> | ap-south-1a      | Unhealthy     |                 |

Lifecycle hooks (0) [Info](#)

[Create lifecycle hook](#)

assignment-alp-loadbalancer-178... +

Private browsing

assignment-alp-loadbalancer-1789987943.ap-south-1.elb.amazonaws.com

YouTube Gmail 200410107013 jainil115 GitHub AITrainer slack LinkedIn AITrainer Learn Promact OfficeTimer aws Other Bookmarks

## IP ADDRESS: ip-172-31-0-146.ap-south-1.compute.internal

← → https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#AutoScalingGroups:assignment-ASG;view=activity 90% ☆

aws Services Search [Alt+S]

Capacity Reservations [New](#)

▼ Images

- AMIs
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▼ Elastic Block Store

- Volumes
- Snapshots
- Lifecycle Manager

▼ Network & Security

- Security Groups
- Elastic IPs
- Placement Groups
- Key Pairs
- Network Interfaces

▼ Load Balancing

- Load Balancers
- Target Groups
- Trust Stores [New](#)

▼ Auto Scaling

- [Auto Scaling Groups](#)

EC2 > Auto Scaling groups

Auto Scaling groups (1/1) [Info](#)

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 | Av...   |
|-------------------------------------|----------------|--------------------------------------------------------|-----------|--------|------------------|-----|-----|---------|
| <input checked="" type="checkbox"/> | assignment-ASG | <a href="#">Assignment-launch-template</a>   Version 2 | 1         | -      | 1                | 1   | 2   | ap-s... |

Auto Scaling group: assignment-ASG

|              | Terminating EC2 instance: i-0cf183a7cda4d7347     | At 2024-01-25T16:20:40Z an instance was taken out of service in response to an ELB system health check failure.                                                                                                                                                     | 2024 January 25, 09:50:40 PM +05:30 | 2024 January 25, 09:56:26 PM +05:30 |
|--------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| Successful   | Launching a new EC2 instance: i-0d812e5b334bdc9d9 | At 2024-01-25T16:20:40Z an instance was launched in response to an unhealthy instance needing to be replaced.                                                                                                                                                       | 2024 January 25, 09:50:42 PM +05:30 | 2024 January 25, 09:51:14 PM +05:30 |
| Successful   | Launching a new EC2 instance: i-0cf183a7cda4d7347 | At 2024-01-25T15:46:23Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 1. At 2024-01-25T15:46:28Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 1. | 2024 January 25, 09:16:29 PM +05:30 | 2024 January 25, 09:17:01 PM +05:30 |
| Connection d | Terminating EC2 instance: i-0d812e5b334bdc9d9     | At 2024-01-26T17:56:21Z an instance was taken out of service in response to an ELB system health                                                                                                                                                                    | 2024 January                        |                                     |

aws Services Search [Alt+S]

EC2 Dashboard

EC2 Global View

Events

▼ Instances

- [Instances](#)
- Instance Types
- Launch Templates
- Spot Requests

Instances (4) [Info](#)

Find Instance by attribute or tag (case-sensitive) Any state

Connect Instance state [Actions](#) [Launch instances](#)

| <input type="checkbox"/> | Name           | Instance ID         | Instance state | Instance type | Status check      | Alarm status                | Availability Zone | Public IPv4 DNS          | Public |
|--------------------------|----------------|---------------------|----------------|---------------|-------------------|-----------------------------|-------------------|--------------------------|--------|
| <input type="checkbox"/> | MyAmazonLin... | i-072b5c08e6831bd84 | Stopped        | t2.micro      | -                 | <a href="#">View alarms</a> | ap-south-1a       | -                        | -      |
| <input type="checkbox"/> | myLinux2Server | i-058e4b2d692ff168a | Stopped        | t2.micro      | -                 | <a href="#">View alarms</a> | ap-south-1a       | -                        | -      |
| <input type="checkbox"/> |                | i-0945bf8e1a0ac79ff | Terminated     | t2.micro      | -                 | <a href="#">View alarms</a> | ap-south-1a       | -                        | -      |
| <input type="checkbox"/> |                | i-06e4ee15efd946863 | Running        | t2.micro      | 2/2 checks passed | <a href="#">View alarms</a> | ap-south-1b       | ec2-13-127-184-141.ap... | 13.127 |

