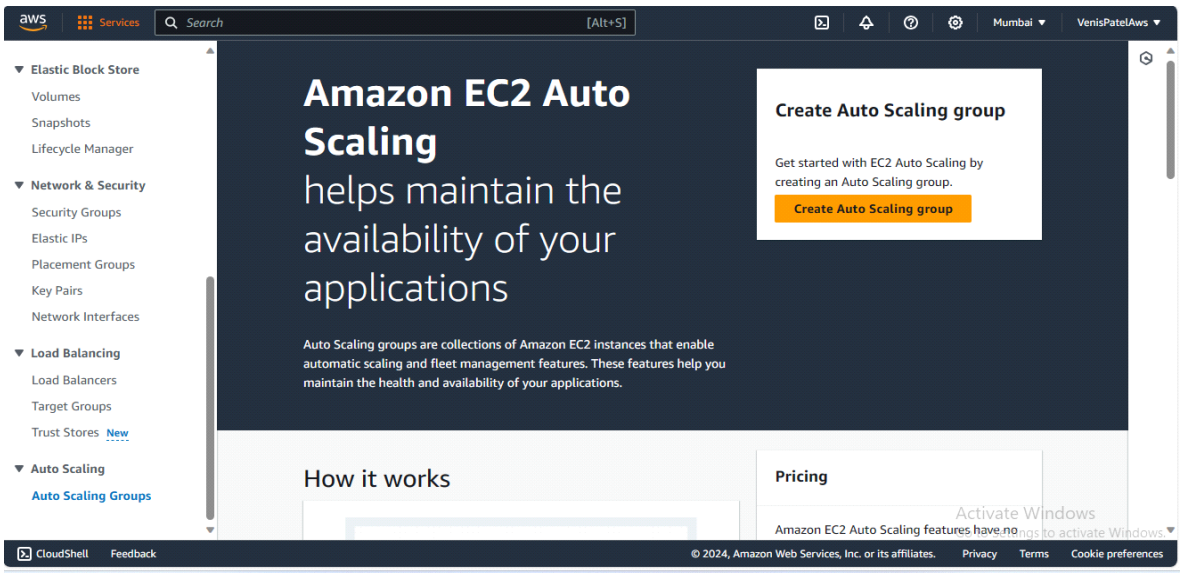
TASK 5: Create an ASG with minimum 1 and maximum 2 instance requirement.

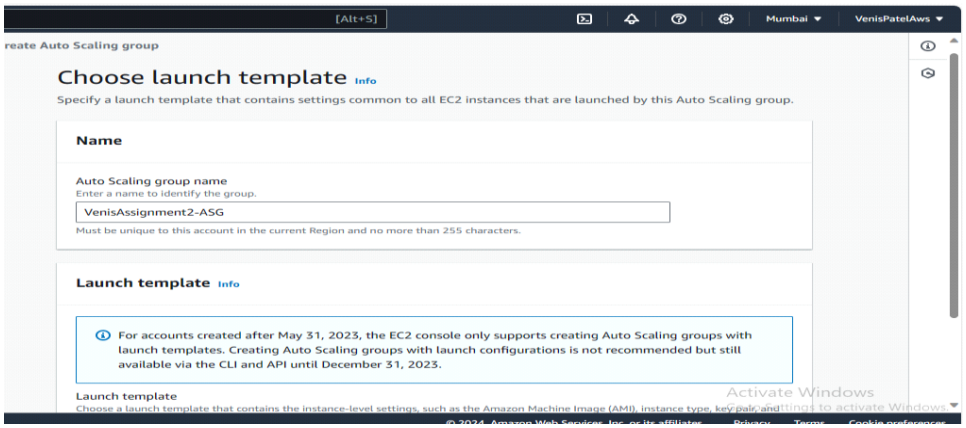
- **Use "Stress" command for increasing CPU utilization and it should create 2nd instance automatically**

Steps to create Auto Scaling Group:

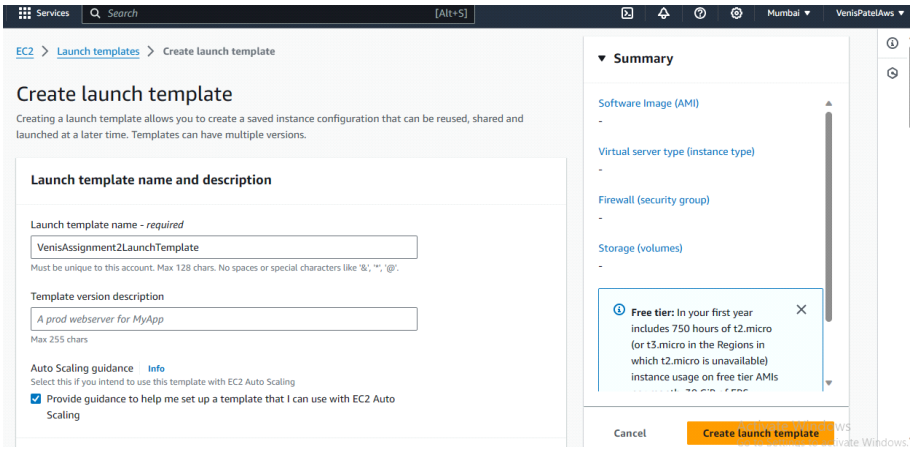
1. Click on Auto Scaling Groups from EC2 Dashboard. Then click on “Create Auto Scaling group”.



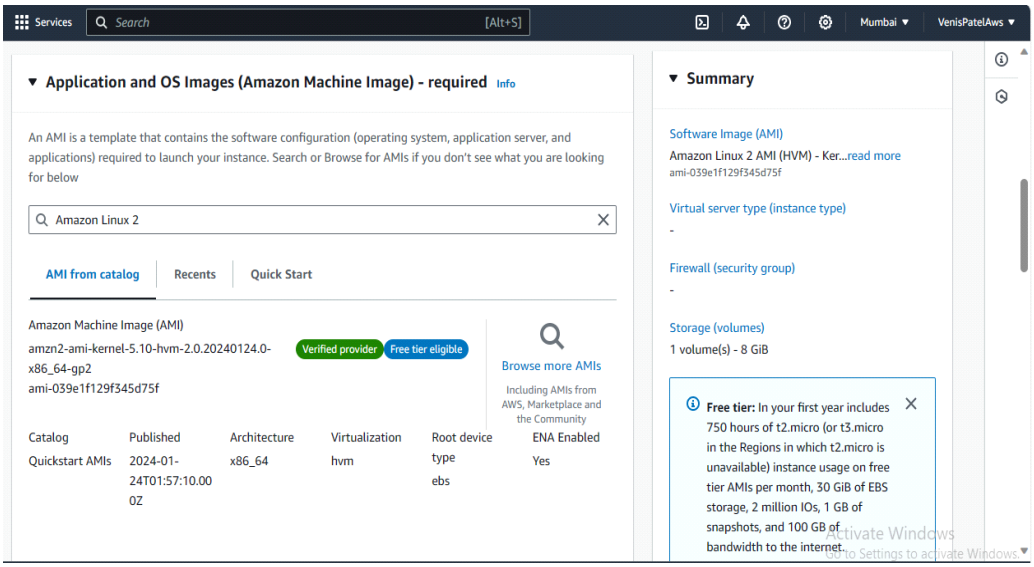
2. Then we need to enter ASG name and then click on “create a launch template”.



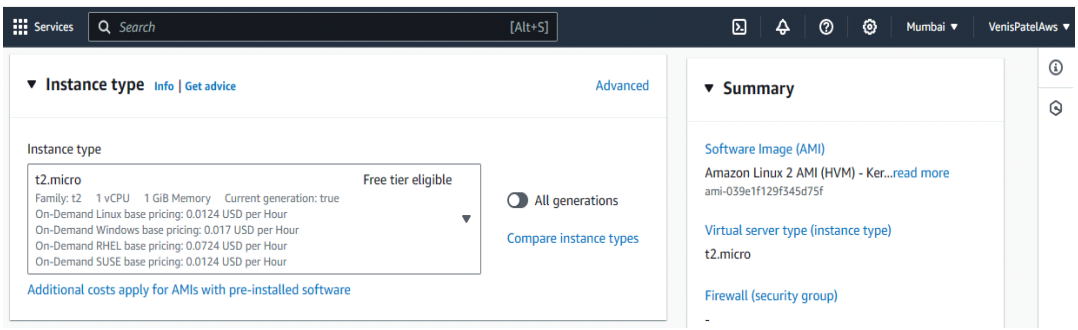
3. Then create launch template by first entering the template name “VenisAssignment2LaunchTemplate”.



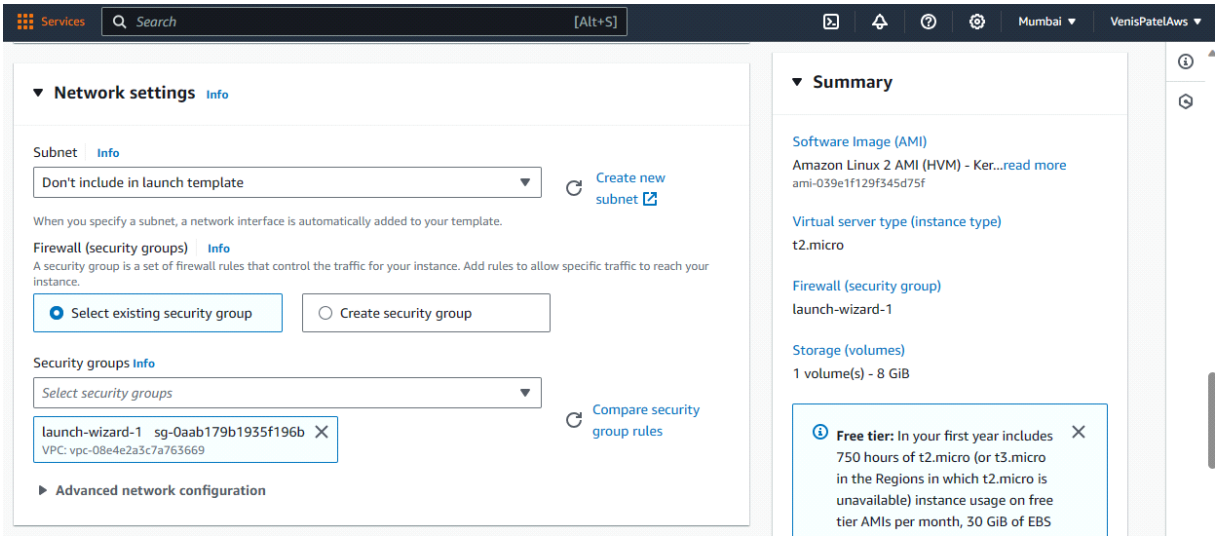
4. Then select Amazon Linux 2(Free tier eligible) as the AMI.



5. Select the t2.micro as the instance type.

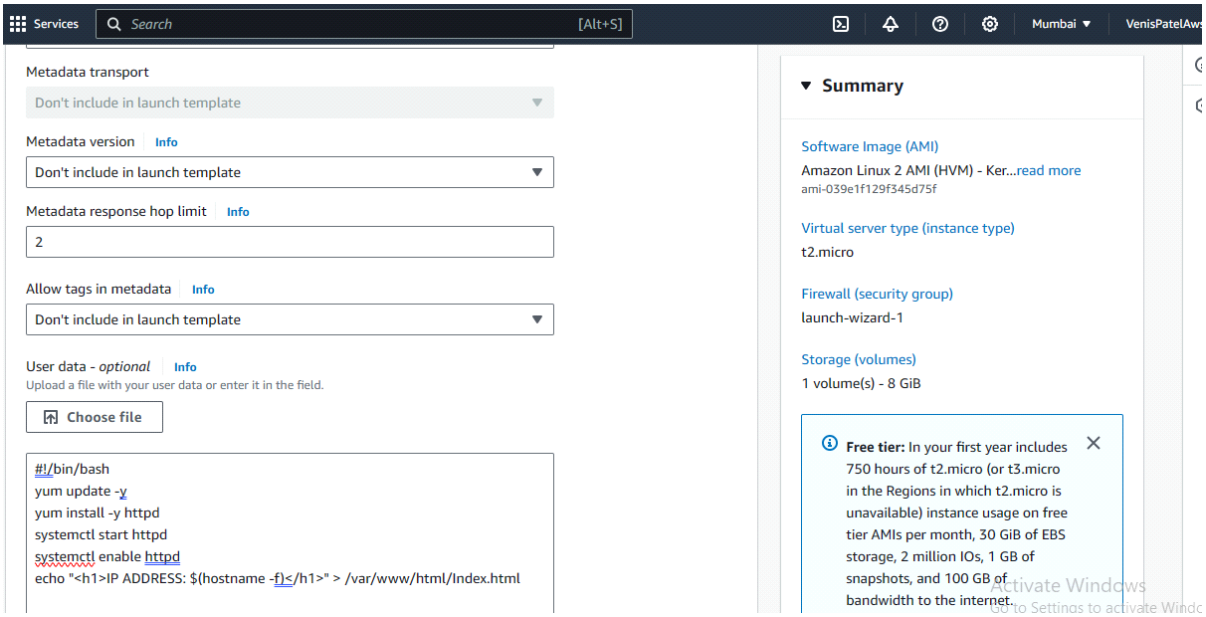


6. Select launch-wizard-1 as the security group.

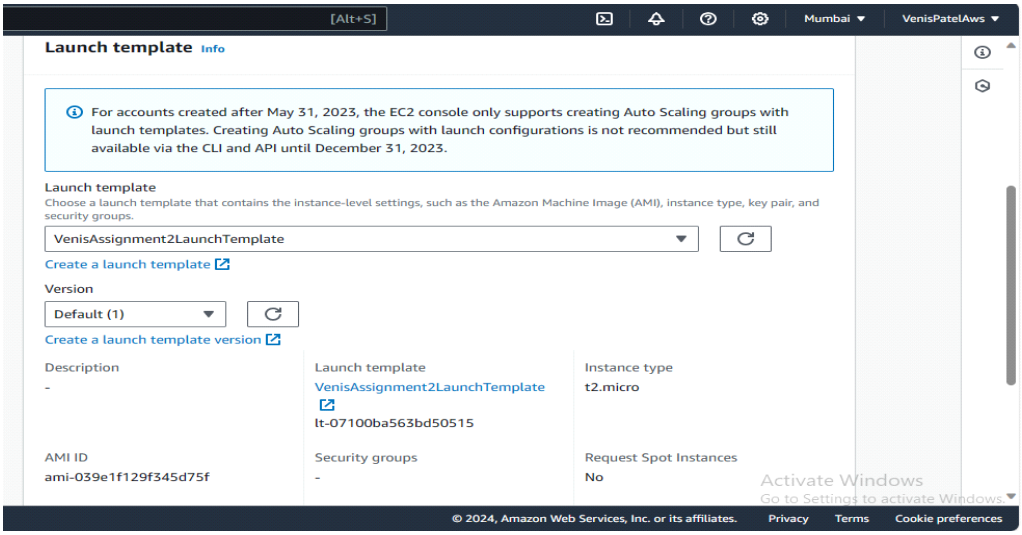


7. Keep everything as default, then add the following as user data:

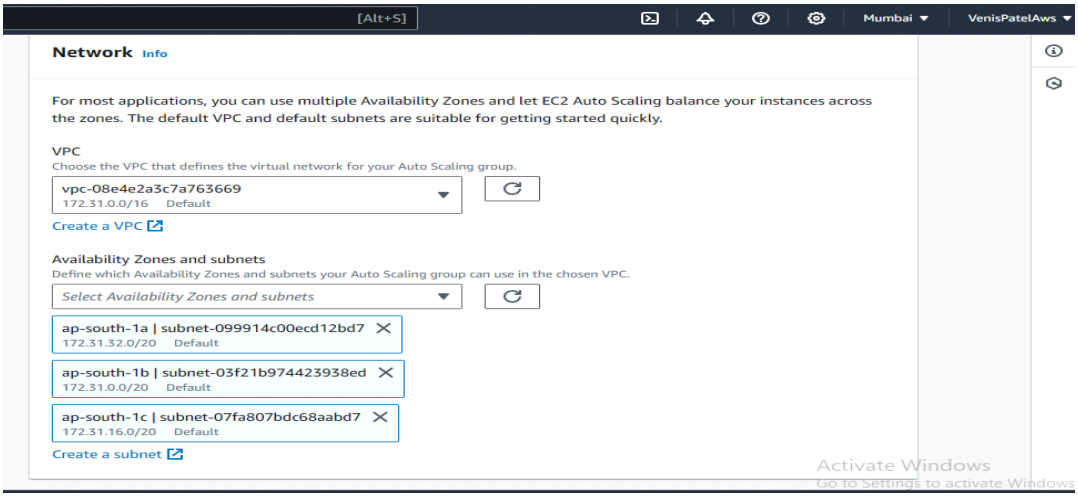
```
#!/bin/bash
yum update -y
yum install -y httpd
systemctl start httpd
systemctl enable httpd
echo "<h1>IP ADDRESS: $(hostname -f)</h1>" > /var/www/html/index.html
```



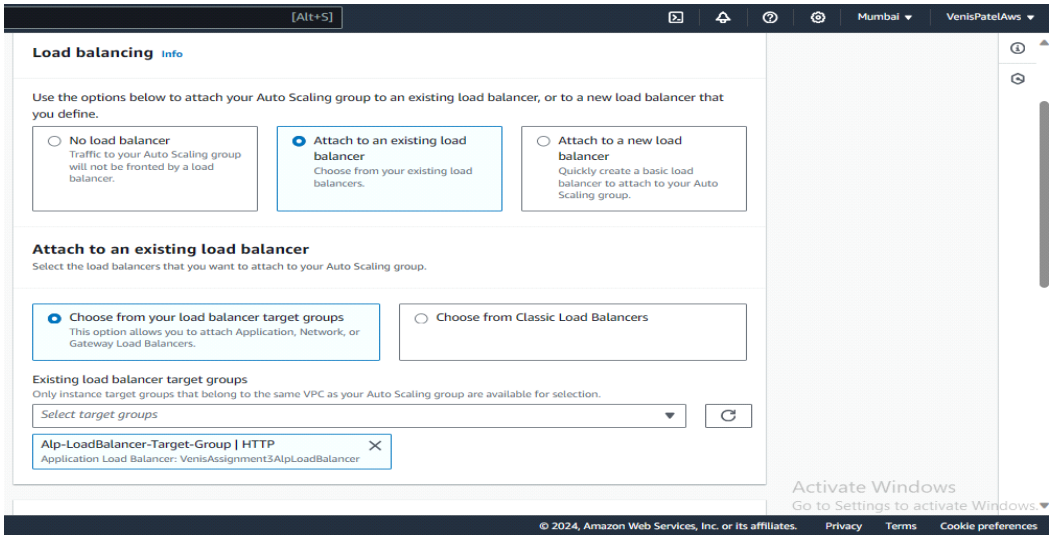
8. Then click on create launch template to create this template, Now select VenisAssignment2LaunchTemplate in Launch Template, then click on next.



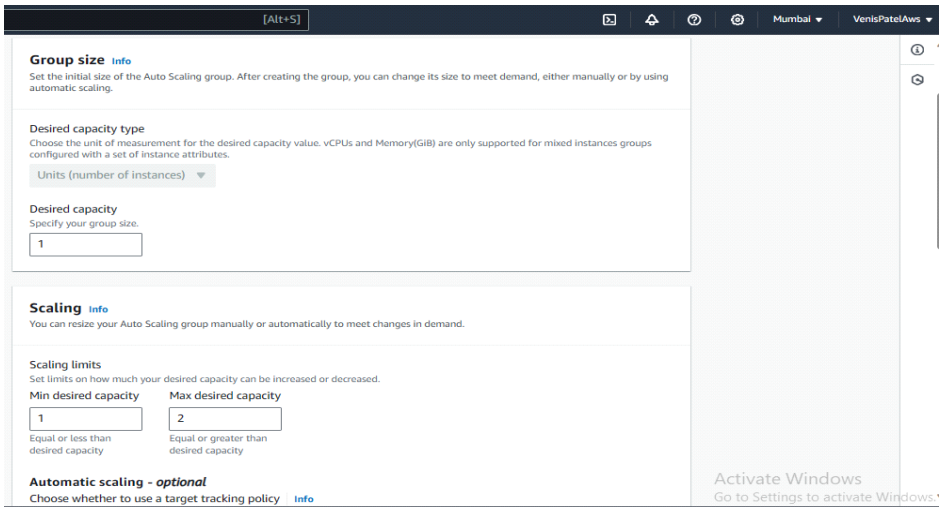
9. Now inside Network select multiple availability zones, then click on next.

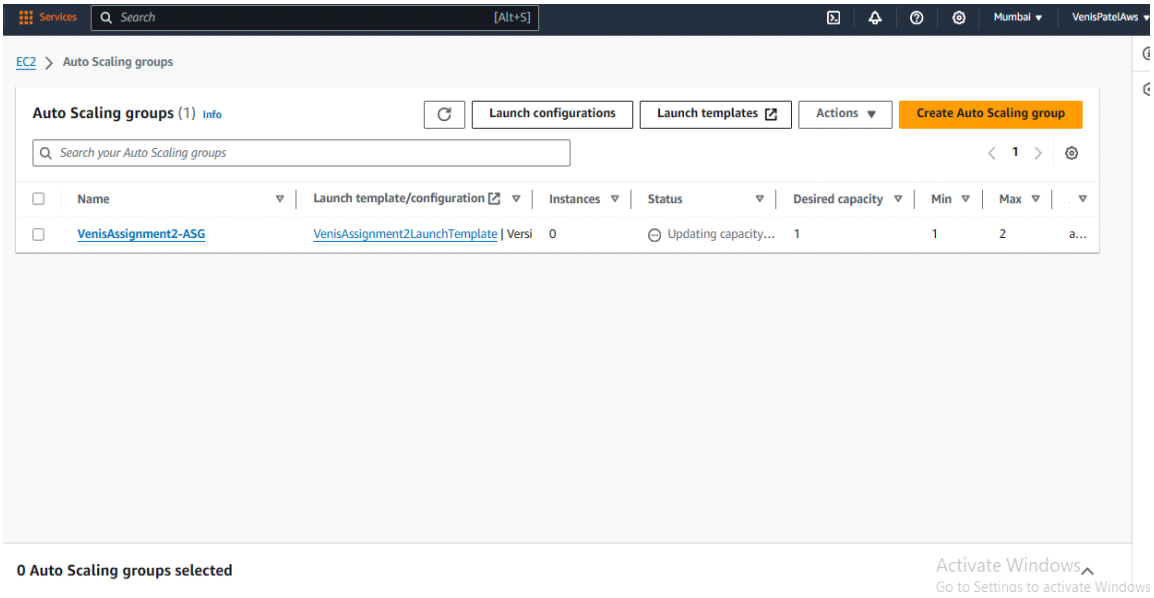


10. Now inside load balancer choose Attach to an existing load balancer. Select Alp-Load-Balancer-Target-Group from existing load balancer groups. Then click on next.



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.





Using stress command:

In order for stress command to work enable ELB and set health update to 10s.

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

```
[ec2-user@ip-172-31-1-187 ~]$ sudo amazon-linux-extras install epel
Installing epel-release
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Cleaning repos: amzn2-core amzn2extra-docker amzn2extra-epel amzn2extra-kernel-5.10
17 metadata files removed
6 sqlite files removed
0 metadata files removed
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                                  | 3.6 kB  00:00:00
amzn2extra-docker                                           | 2.9 kB  00:00:00
amzn2extra-epel                                             | 3.0 kB  00:00:00
amzn2extra-kernel-5.10                                      | 3.0 kB  00:00:00
(1/9): amzn2-core/2/x86_64/group_gz                         | 2.7 kB  00:00:00
(2/9): amzn2-core/2/x86_64/updateinfo                       | 787 kB  00:00:00
(3/9): amzn2extra-epel/2/x86_64/primary_db                  | 1.8 kB  00:00:00
(4/9): amzn2extra-kernel-5.10/2/x86_64/updateinfo           |  44 kB  00:00:00
(5/9): amzn2extra-docker/2/x86_64/primary_db                | 105 kB  00:00:00
(6/9): amzn2extra-docker/2/x86_64/updateinfo                |  14 kB  00:00:00
(7/9): amzn2extra-epel/2/x86_64/updateinfo                  |  76 B  00:00:00
(8/9): amzn2extra-kernel-5.10/2/x86_64/primary_db           |  22 MB  00:00:00
(9/9): amzn2-core/2/x86_64/primary_db                       |  70 MB  00:00:00
Resolving Dependencies
--> Running transaction check
---> Package epel-release.noarch 0:7-11 will be installed
--> Finished Dependency Resolution
```

  - sudo yum install stress

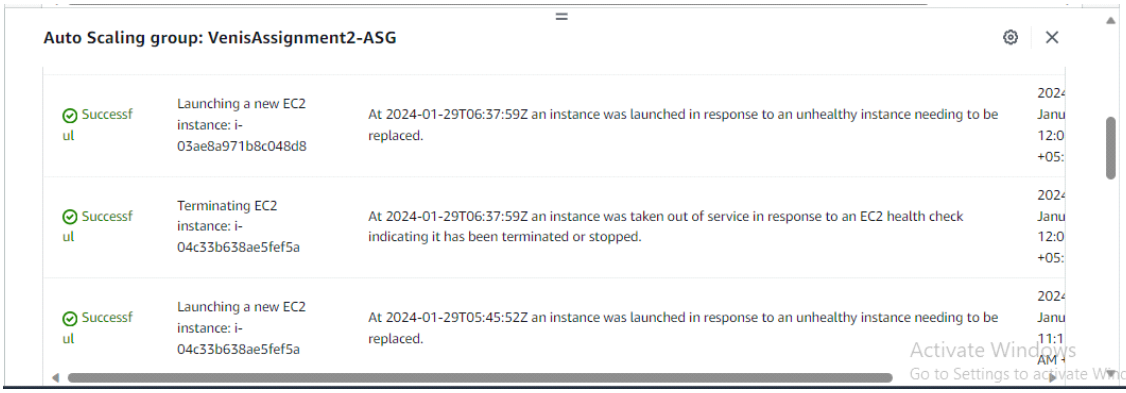
```
[ec2-user@ip-172-31-1-187 ~]$ sudo yum install stress
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
226 packages excluded due to repository priority protections
Resolving Dependencies
--> Running transaction check
---> Package stress.x86_64 0:1.0.4-16.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package          Arch          Version                 Repository        Size
================================================================================
Installing:
 stress           x86_64        1.0.4-16.el7            epel              39 k

Transaction Summary
================================================================================
Install  1 Package

Total download size: 39 k
Installed size: 94 k
Is this ok [y/d/N]: y
Downloading packages:
warning: /var/cache/yum/x86_64/2/epel/packages/stress-1.0.4-16.el7.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID 352c64e5: NOKEYs |    0 B  --:--:-- ETA
```

- To run stress command in order to max out CPU utilization use the following command:
  - Sudo stress –-Cpu 1000 –-timeout 120

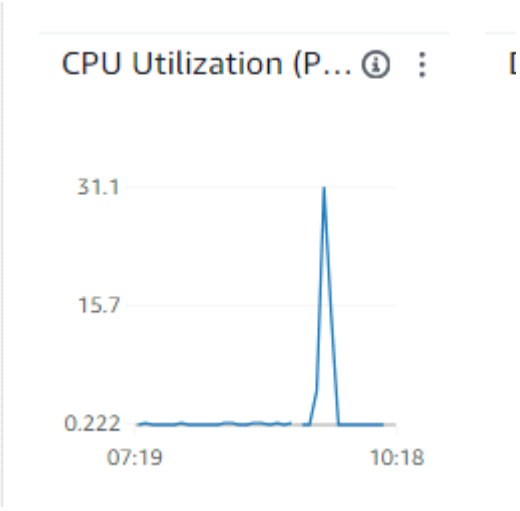
```
[ec2-user@ip-172-31-32-92 ~]$ sudo stress --cpu 1000 --timeout 120
stress: info: [3798] dispatching hogs: 1000 cpu, 0 io, 0 vm, 0 hdd
stress: info: [3798] successful run completed in 120s
[ec2-user@ip-172-31-32-92 ~]$
```

Results of stress command:

-> First instance became unhealthy then stopped and new instance Launched.



-> we can clearly see increment in Cpu utilization due to stress command we used.


CPU Utilization (P...
31.1
15.7
0.222
07:19
10:18