

Autoscaling group →

1. Create launch Template (to create instances during autoscaling), here we are creating the three launch template for the three services like shopping application (home page , mobile section , laptop section).for each service we provide one EC2 instance.
2. Created template for the home section

Create launch template
Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions.

Launch template name and description
Launch template name - *required*

Must be unique to this account. Max 128 chars. No spaces or special characters like '&', '"', '@', '!'.

Template version description

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**

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

Summary
Software Image (AMI)
Amazon Linux 2023 AMI 2023.6.2...[read more](#)
ami-07b69f62c1d38b012

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 usage on free tier AMIs per month, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

[Cancel](#) [Create launch template](#)

Key pair name
 [Create new key pair](#)

Network settings [Info](#)
Subnet [Info](#)
 [Create new subnet](#)
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](#)

 [Compare security group rules](#)

► **Advanced network configuration**

Storage (volumes) [Info](#)

Summary
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Amazon Linux 2023 AMI 2023.6.2...[read more](#)
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[Cancel](#) [Create launch template](#)

3. Template for mobile section

EC2

4. Template for the laptop section

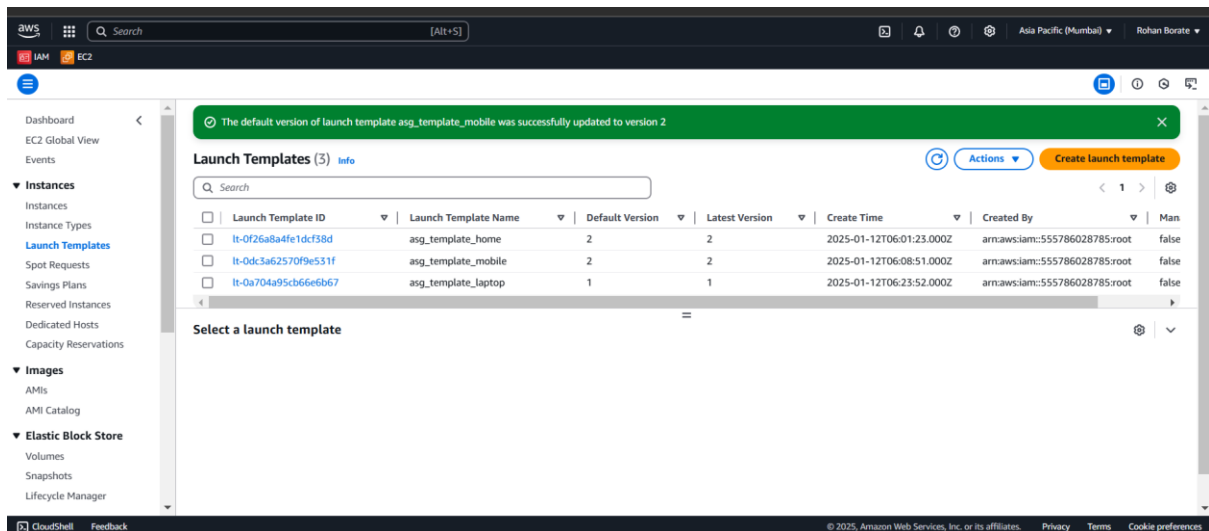
The screenshot displays the AWS Management Console interface for creating a new launch template. The top navigation bar shows the AWS logo, a search bar, and the user's account information (Asia Pacific (Mumbai) and Rohan Borate). The breadcrumb trail indicates the current location: EC2 > Launch templates > Create launch template. A green notification banner at the top states: "The default version of launch template asg_template_home was successfully updated to version 2".

The main content area is titled "Create launch template" and includes a brief description: "Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions." The interface is divided into two main sections:

- Launch template name and description:** This section contains two input fields. The first, "Launch template name - required", has the value "asg_template_laptop". The second, "Template version description", has the value "this template used for the laptop section". Below these fields is a note: "Must be unique to this account. Max 128 chars. No spaces or special characters like '&', "'", '@'." There are also checkboxes for "Auto Scaling guidance" (selected) and "Provide guidance to help me set up a template that I can use with EC2 Auto Scaling".
- Summary:** This section provides a overview of the configuration. It lists:
 - Software Image (AMI):** Amazon Linux 2023 AMI 2023.6.2...read more (ami-07b69f62c1d38b012)
 - Virtual server type (instance type):** t2.micro
 - Firewall (security group):** default
 - Storage (volumes):** 1 volume(s) - 8 GiBA "Free tier" notice is also present, stating: "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, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of bandwidth to the internet."

At the bottom of the page, there is a "Create launch template" button. The footer of the console shows "© 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences".

All launch templates are created successfully

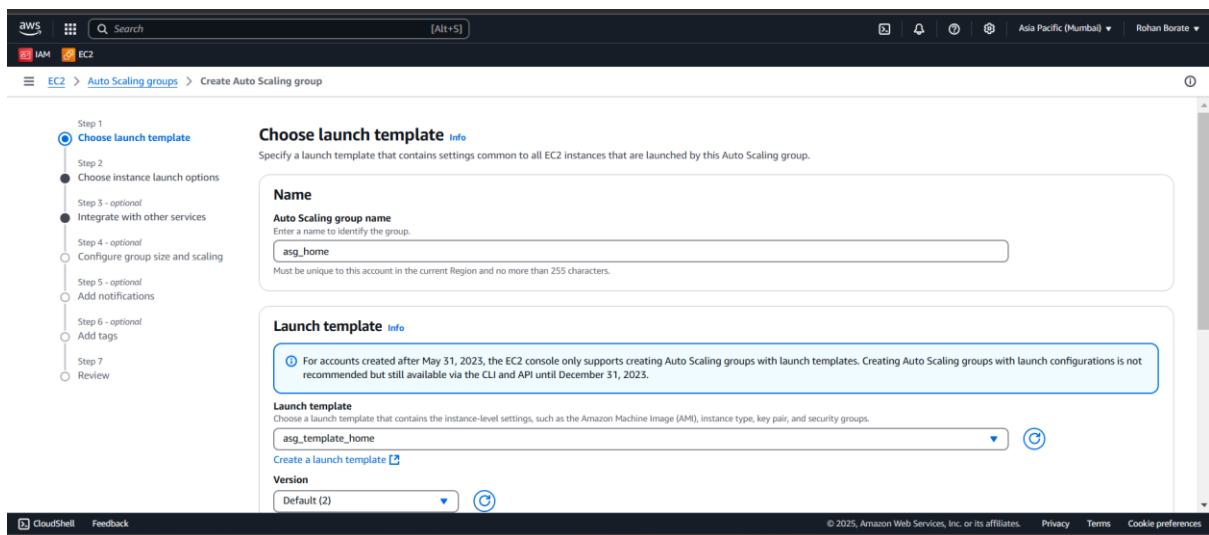


Now we are creating the autoscaling group for the each instance means for each section (home , laptop, mobile).

Autoscaling group requires load balancer and Target groups

So we are also creating this while creating the autoscaling group

Creating autoscaling group for the home section.



EC2 > Auto Scaling groups > Create Auto Scaling group

asg_template_home

Create a launch template

Version: Default (2)

Create a launch template version

Description: asg_template_home

AMI ID: ami-07b69f62c1d38b012

Key pair name: server

Launch template: asg_template_home

Security groups: -

Security group IDs: sg-0be643d4a8b2ab45

Instance type: t2.micro

Request Spot Instances: No

Additional details

Storage (volumes): -

Date created: Sun Jan 12 2025 11:41:34 GMT+0530 (India Standard Time)

Cancel Next

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1: Choose launch template

Step 2: Choose instance launch options

Step 3 - optional: Integrate with other services

Step 4 - optional: Configure group size and scaling

Step 5 - optional: Add notifications

Step 6 - optional: Add tags

Step 7: Review

Choose instance launch options

Choose the VPC network environment that your instances are launched into, and customize the instance types and purchase options.

Override launch template

Instance type requirements

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.

Launch template: asg_template_home

Version: Default

Description: asg_template_home

Instance type: t2.micro

Network

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-074321e9b52b24a31

Create a VPC

EC2 > Auto Scaling groups > Create Auto Scaling group

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

ap-south-1a | subnet-0a3a36e89d871c759

ap-south-1b | subnet-020b1cc024c04ec04

ap-south-1c | subnet-063968e541fe68df9

Create a subnet

Availability Zone distribution - new

Auto Scaling automatically balances instances across Availability Zones. If launch failures occur in a zone, select a strategy.

Balanced best effort

Balanced only

Your requested instance type (t2.micro) is not available in 1 Availability Zone. You may need to change the instance type or choose other Availability Zones for better resiliency.

Cancel Skip to review Previous Next

Now we have to integrate the ASG to other services , like load balancer and Target groups

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[Alt+S]

Asia Pacific (Mumbai)

Rohan Borate

EC2

Auto Scaling groups

Create Auto Scaling group

Step 1
Choose launch template

Step 2
Choose instance launch options

Step 3 - optional
Integrate with other services

Step 4 - optional
Configure group size and scaling

Step 5 - optional
Add notifications

Step 6 - optional
Add tags

Step 7
Review

Integrate with other services - *optional*

Use a load balancer to distribute network traffic across multiple servers. Enable service-to-service communications with VPC Lattice. Shift resources away from impaired Availability Zones with zonal shift. You can also customize health check replacements and monitoring.

Load balancing

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.

CloudShell

Feedback

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Asia Pacific (Mumbai)

Rohan Borate

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Auto Scaling groups

Create Auto Scaling group

Add tags

Step 7

Review

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.

Load balancer scheme
Scheme cannot be changed after the load balancer is created.

☐ Internal

☒ Internet-facing

Network mapping
Your new load balancer will be created using the same VPC and Availability Zone selections as your Auto Scaling group. You can select different subnets and add subnets from additional Availability Zones.

VPC
[vpc-074321e9b52b24a31](#)

Availability Zones and subnets
You must select a single subnet for each Availability Zone enabled. Only public subnets are available for selection to support DNS resolution.

☒ ap-south-1c

CloudShell

Feedback

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EC2

Auto Scaling groups

Create Auto Scaling group

ap-south-1b

subnet-020b1cc024c04ec04

ap-south-1a

subnet-0a3a36e89d871c759

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	Create a target group

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

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

VPC Lattice integration options

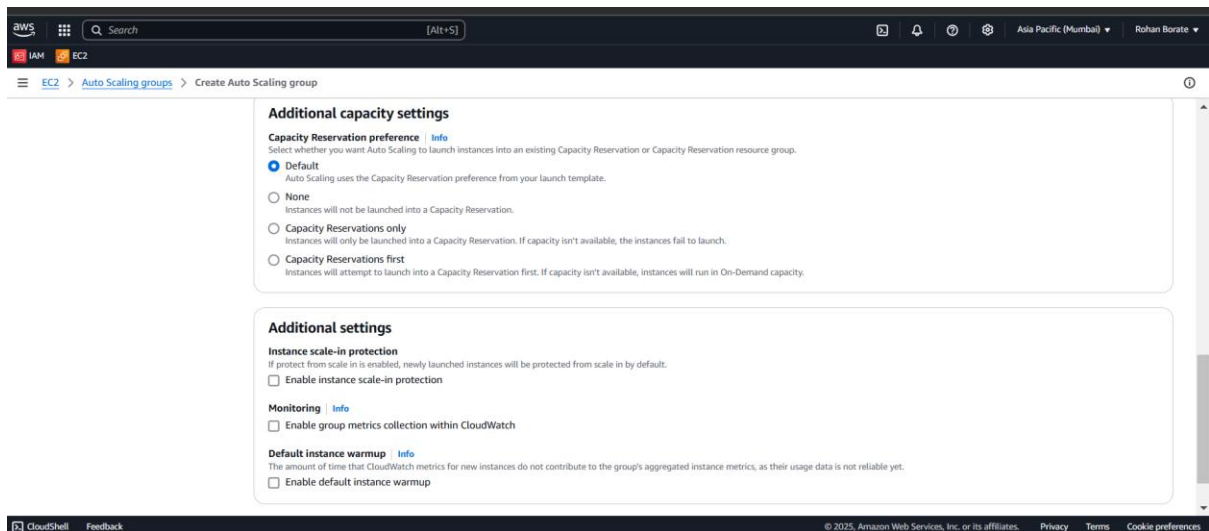
To improve networking capabilities and scalability, integrate your Auto Scaling group with VPC Lattice. VPC Lattice facilitates communications between AWS services and helps you connect and manage your applications across compute services in AWS.

Select VPC Lattice service to attach

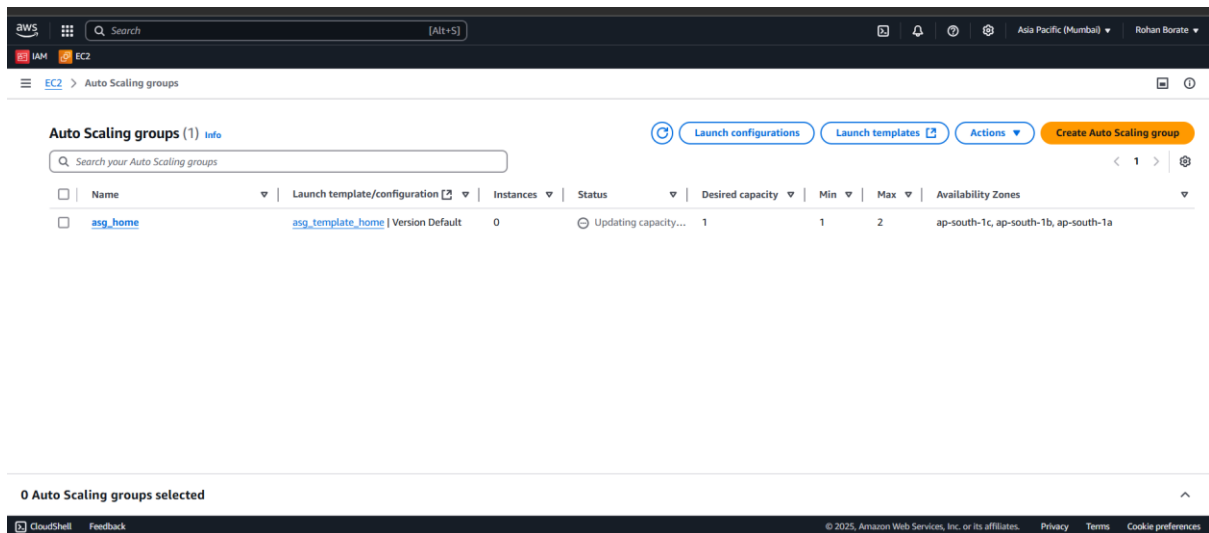
CloudShell

Feedback

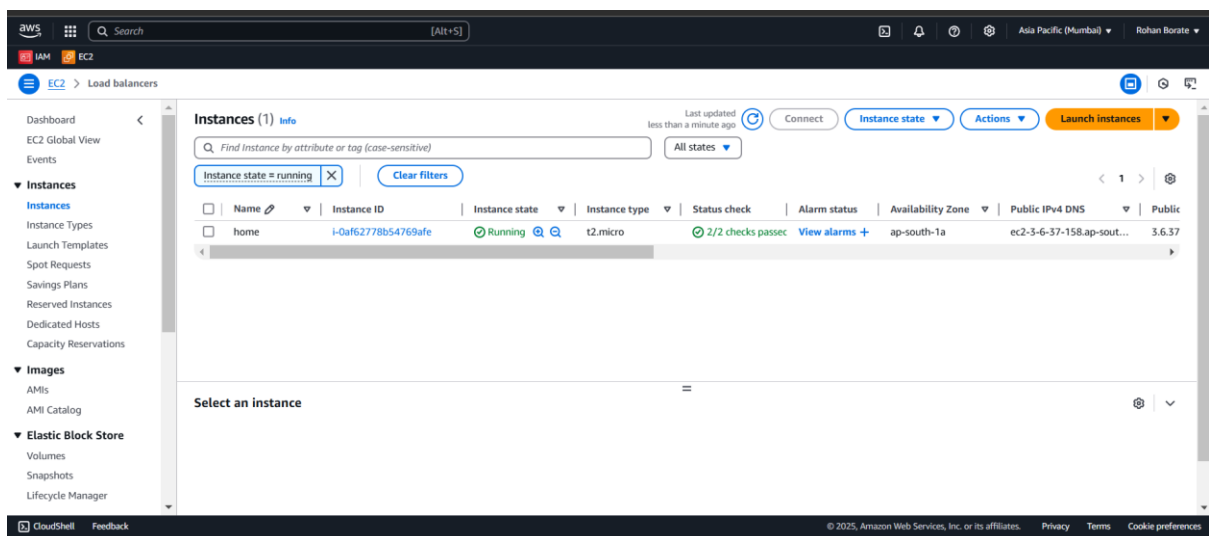
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Now our autoscaling group is created successfully



After successful creation of the ASG , instance is launched successfully for home section.



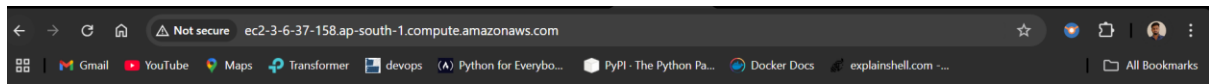
We have created the Target group, in previous sections but then we have to register the our running instance , so go to target group and register the instance

The screenshot shows the AWS Management Console interface for the 'asghomeTG' target group. The left sidebar contains navigation links for IAM, EC2, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The main content area is titled 'Instances (1) Info' and shows a table of instances. The instance 'home' is listed with ID 'i-0af62778b54769afe', state 'Running', type 't2.micro', and status '2/2 checks passed'. Below the table, there is a section to 'Select an instance'.

The screenshot shows the 'Register targets' page in the AWS Management Console. A blue banner at the top states: 'Already included in either your pending or previously registered targets for the specified port: i-0af62778b54769afe () already registered to port 80'. Below this, the 'Available instances (1/1)' section shows a table with one instance: 'home' with ID 'i-0af62778b54769afe', state 'Running', security groups 'default', zone 'ap-south-1a', private IPv4 address '172.31.43.245', and subnet ID 'subnet-0a3a36e'. The 'Ports for the selected instances' section shows port '80' selected. The 'Include as pending below' button is visible.

The screenshot shows the 'Target groups (1/1) Info' page in the AWS Management Console. The 'asghomeTG' target group is listed with ARN 'arn:aws:elasticloadbalancing:ap-south-1:123456789012:targetgroup/asghomeTG/vpc-074321e9b52b24a31', port '80', protocol 'HTTP', target type 'Instance', load balancer 'asghomeLB', and VPC ID 'vpc-074321e9b52b24a31'. The 'Registered targets (1) Info' section shows a table with one instance: 'home' with ID 'i-0af62778b54769afe', port '80', zone 'ap-south-1a', health status 'Healthy', and launch time 'January 1, 2025'.

Now check that the httpd server is running on the instance , and the instance is accessible



Increase the CPU utilization by using stress command , to check the ASG functionality

```

MiB Mem : 949.5 total, 473.8 free, 167.0 used, 308.7 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 639.0 avail Mem

  PID USER      PR  NI   VIRT    RES    SHR   S  %CPU  %MEM    TIME+  COMMAND
    1 root        20   0 106292 17408 10592  S   0.0   1.8   0:01.26 systemd
    2 root        20   0     0     0     0  S   0.0   0.0   0:00.00 kthreadd
    3 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 rcu_gp
    4 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 rcu_par_gp
    5 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 slub_flushwq
    6 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 netns
    8 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
   10 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 mm_percpu_wq
   11 root        20   0     0     0     0  I   0.0   0.0   0:00.00 rcu_tasks_kthread
   12 root        20   0     0     0     0  I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
   13 root        20   0     0     0     0  I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
   14 root        20   0     0     0     0  S   0.0   0.0   0:00.16 ksoftirqd/0
   15 root        20   0     0     0     0  I   0.0   0.0   0:00.06 rcu_preempt
   16 root        rt   0     0     0     0  S   0.0   0.0   0:00.01 migration/0
   18 root        20   0     0     0     0  S   0.0   0.0   0:00.00 cpuhp/0
   20 root        20   0     0     0     0  S   0.0   0.0   0:00.00 kdevtmpfs
   21 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 inet_frag_wq
   22 root        20   0     0     0     0  S   0.0   0.0   0:00.00 kauditd
   23 root        20   0     0     0     0  S   0.0   0.0   0:00.00 khungtaskd
   24 root        20   0     0     0     0  S   0.0   0.0   0:00.00 oom_reaper
   27 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 writeback
   28 root        20   0     0     0     0  S   0.0   0.0   0:00.05 kcompactd0
   29 root        39  19     0     0     0  S   0.0   0.0   0:00.00 khugepaged
   30 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 cryptd
   31 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 kintegrityd
   32 root         0 -20     0     0     0  I   0.0   0.0   0:00.00 kblockd

[root@ip-172-31-43-245 ~]# stress --cpu 100 --timeout 800
stress: info: [28941] dispatching hogs: 100 cpu, 0 io, 0 vm, 0 hdd

```

After increasing the CPU utilization, after some time automatically one instance is created

