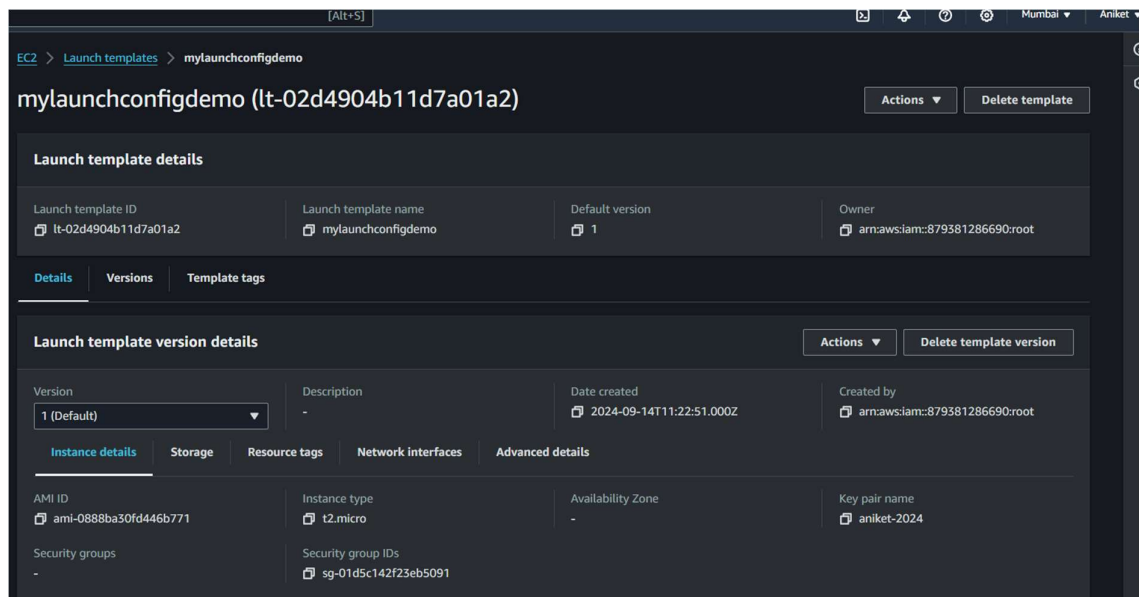


AUTO SCALING PRATICAL

DATE 12/09/2024

1) LAUNCH TEMPLETE



2) CREATE AUTOSCALING GROUP AND SELECT THE
TEMPLATE
STEPS FOR CREATEING AUTOSCALIG GROUP.....

3) CONFIGURE GROUP SIZE AND SCALING

×

Group size

Specify the size of the Auto Scaling group by changing the desired capacity. You can also specify minimum and maximum scaling limits.

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.

3

Scaling limits

Set limits on how much your desired capacity can be increased or decreased.

Min desired capacity

2

Equal or less than desired capacity

Max desired capacity

5

Equal or greater than desired capacity

Cancel

Update

4) ADD SNS TOPIC

The screenshot shows the 'Add notifications - optional' page in the AWS Management Console. The page title is 'Add notifications - optional' with an 'Info' link. Below the title, it says 'Send notifications to SNS topics whenever Amazon EC2 Auto Scaling launches or terminates the EC2 instances in your Auto Scaling group.' There is a section for 'Notification 1' with a 'Remove' button. Under 'SNS Topic', there is a dropdown menu showing 'mysnstopic001 (aniketthorat1402@gmail.com)' and a 'Create a topic' button. Under 'Event types', there are four checkboxes: 'Launch' (checked), 'Terminate' (checked), 'Fail to launch' (checked), and 'Fail to terminate' (checked). At the bottom, there is an 'Add notification' button and navigation buttons: 'Cancel', 'Skip to review', 'Previous', and 'Next'.

5) AUTO SCALING GROUP CREATED

The screenshot shows the 'Auto Scaling groups' page in the AWS Management Console. It displays a table with one group, 'ASG001'. The table has columns for Name, Launch template/configuration, Instances, Status, Desired capacity, Min, Max, and Availability Zones. The 'Instances' column shows '0' and the 'Status' column shows 'Updating capacity...'. There is a 'Create Auto Scaling group' button at the top right.

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
ASG001	mylaunchconfigdemo Version Default	0	Updating capacity...	2	2	5	ap-south-1b, ap-south-1a

6) INSTANCE HAS BEEN CREATED AS PER WE MENTION

The screenshot shows the 'Instances' page in the AWS Management Console. It displays a table with three instances. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Pu. The 'Instance state' column shows 'Running' for all three instances. There is a 'Launch instances' button at the top right.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Pu
	i-078818b9edea421f0	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2
	i-0d4badaeaedbd22b1	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2
	i-02c72d6caba9dfa7d	Running	t2.micro	Initializing	View alarms +	ap-south-1b	ec2

7) MANUAL SCALING – IF I CHANGE THE DESIRE CAPACITY '2'

Group size

Specify the size of the Auto Scaling group by changing the desired capacity. You can also specify minimum and maximum scaling limits.

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.

2

Scaling limits

Set limits on how much your desired capacity can be increased or decreased.

Min desired capacity

2

Equal or less than desired capacity

Max desired capacity

5

Equal or greater than desired capacity

Cancel

Update

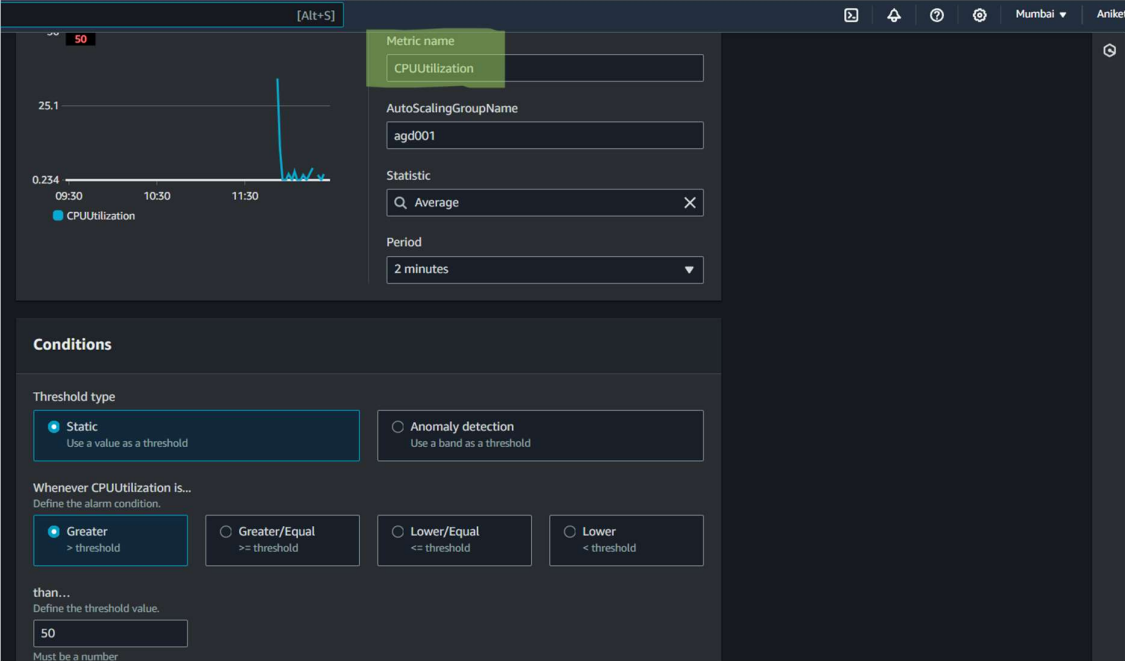
THEN ONE OF THE INSTANCE WILL TERMINATE

[Alt+S]							
Instances (3) Info							
Last updated less than a minute ago		Connect	Instance state	Actions	Launch instances		
Find Instance by attribute or tag (case-sensitive)				All states	< 1 >		
Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	
i-078818b9edea421f0	Shutting-do...	t2.micro	-	View alarms +	ap-south-1a	ec2-43-205-203-90.aj	
i-0d4badaeeadb22b1	Running	t2.micro	2/2 checks passec	View alarms +	ap-south-1a	ec2-3-110-30-255.ap	
i-02c72d6caba9dfa7d	Running	t2.micro	2/2 checks passec	View alarms +	ap-south-1b	ec2-13-201-222-78.aj	

AUTOMATIC SCALING –

1. CREATE A ALARM FOR AUTO SCALING GROUP

A .SELECT MATTIC (CPU UTILIZATION) And SELECT 2 minutes of timeperiod and threshold value of >50



[Alt+S]

50

25.1

0.234

09:30 10:30 11:30

CPUUtilization

Metric name

CPUUtilization

AutoScalingGroupName

agd001

Statistic

Average

Period

2 minutes

Conditions

Threshold type

☒ Static
Use a value as a threshold

☐ Anomaly detection
Use a band as a threshold

Whenever CPUUtilization is...

Define the alarm condition.

☒ Greater
> threshold

☐ Greater/Equal
>= threshold

☐ Lower/Equal
<= threshold

☐ Lower
< threshold

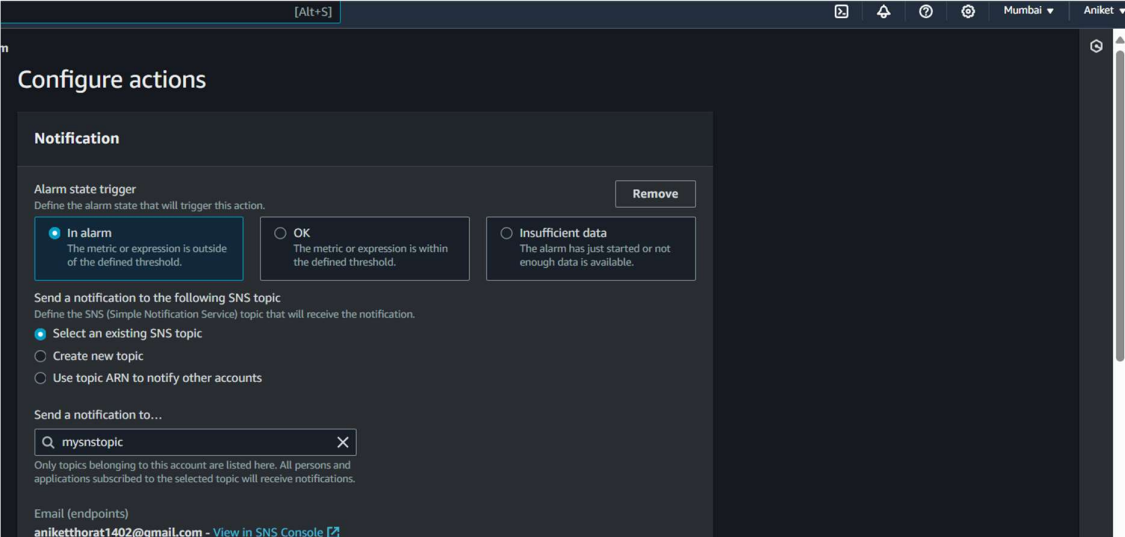
than...

Define the threshold value.

50

Must be a number

SELECT IN WHICH STATE ALARM NEED TO BE TRIGGERED (IN ALARM) AND ADD SNS TOPIC



[Alt+S]

Configure actions

Notification

Alarm state trigger

Define the alarm state that will trigger this action.

☒ In alarm
The metric or expression is outside of the defined threshold.

☐ OK
The metric or expression is within the defined threshold.

☐ Insufficient data
The alarm has just started or not enough data is available.

Remove

Send a notification to the following SNS topic

Define the SNS (Simple Notification Service) topic that will receive the notification.

☒ Select an existing SNS topic

☐ Create new topic

☐ Use topic ARN to notify other accounts

Send a notification to...

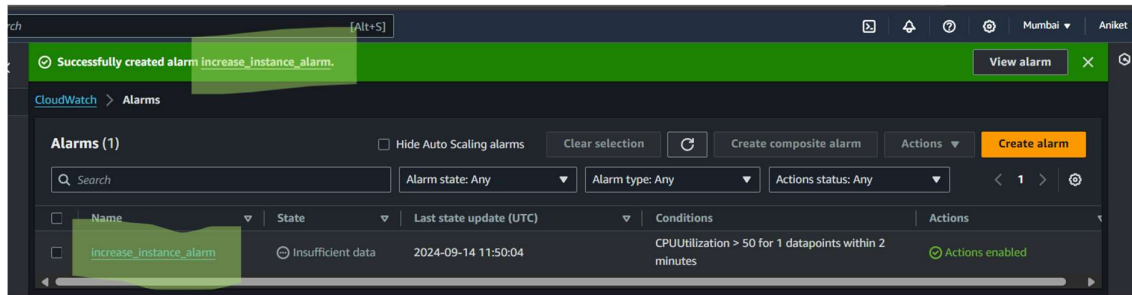
mysnstopic

Only topics belonging to this account are listed here. All persons and applications subscribed to the selected topic will receive notifications.

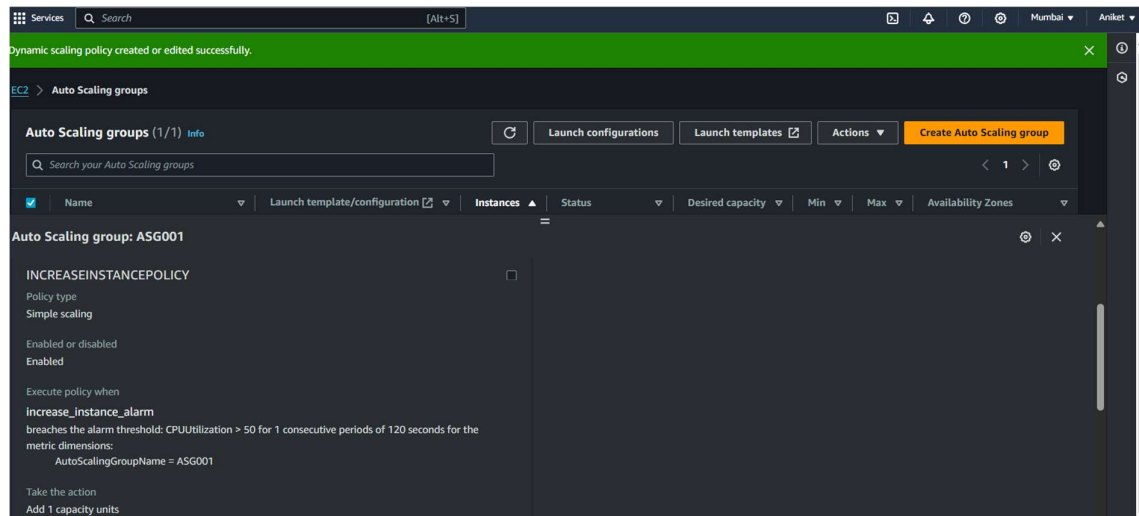
Email (endpoints)

aniketthorat1402@gmail.com - View in SNS Console

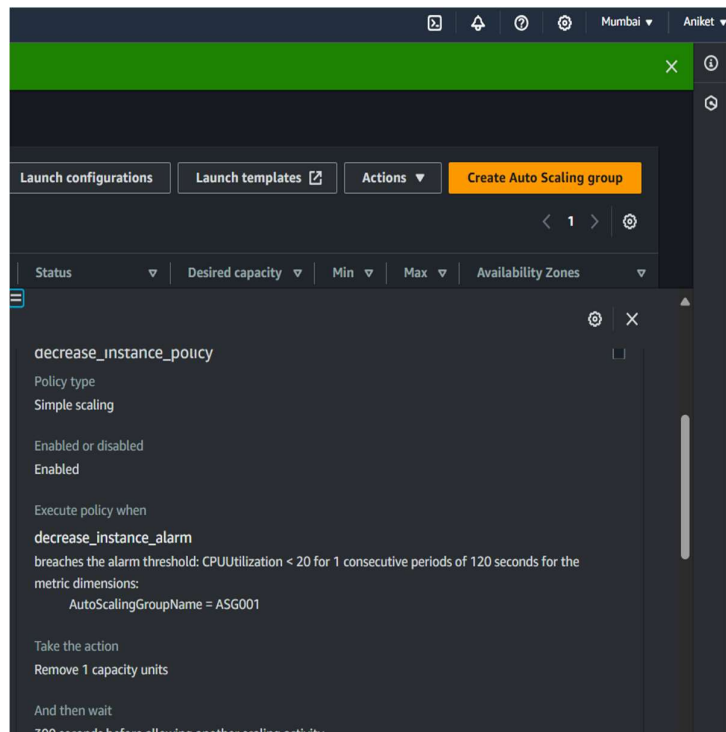
AND NOW JUST GIVE NAME (**INCREASE_INSTANCE_ALARM**)
TO ALARM AND ALARM HAS BEEN CREATED



2. CREATE DYNAMIC POLICY AND AND ADD ALARM TAKE
ACTION ADD '1' (**INCREASE_INSTANCE_ALARM**)

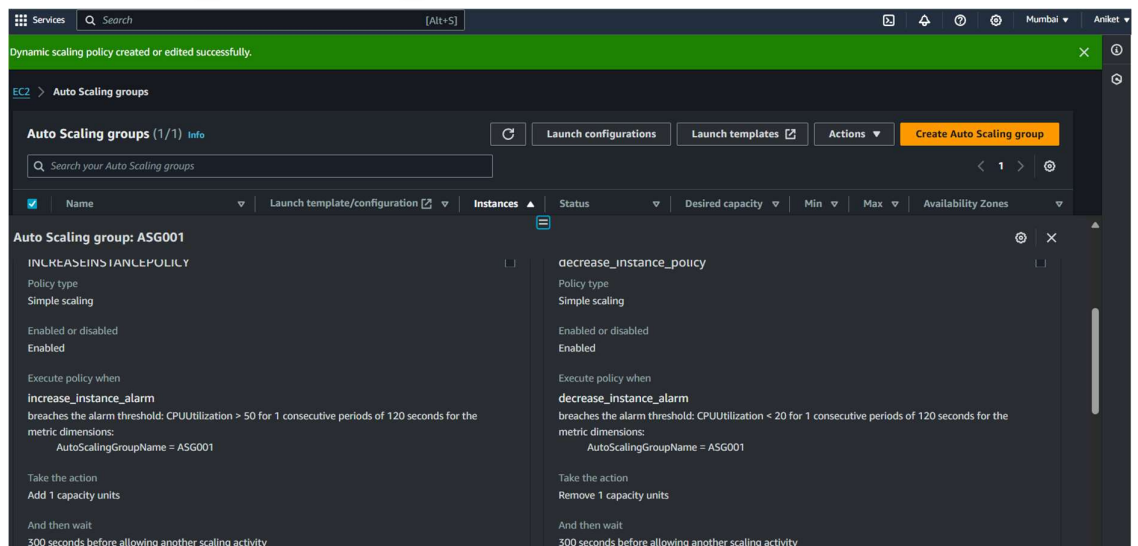


3. CREATE ONE MORE ALARM
(**DECREASE_INSTANCE_ALARM**) THRESHOLD VALUE
SHOULD BE <20,
AND CREATE ONE MORE DYNAMIC POLICY TAKE
ACTION REMOVE '1'



WE HAVE CREATED TWO DYNAMIC POLICY

- I. INCREASE_INSTANCE_POLICY
- II. DECREASE_INSTANCE_POLICY



1. NOW WE CAN SEE THE **DECREASE_INSTANCE_ALARM** HAS BEEN TRIGGERED BECAUSE

THE CPU UTILIZATION GOES <20 %



NOW ONE INSTANCE WILL BE TERMINATED FORM RUNNING INSTANCE

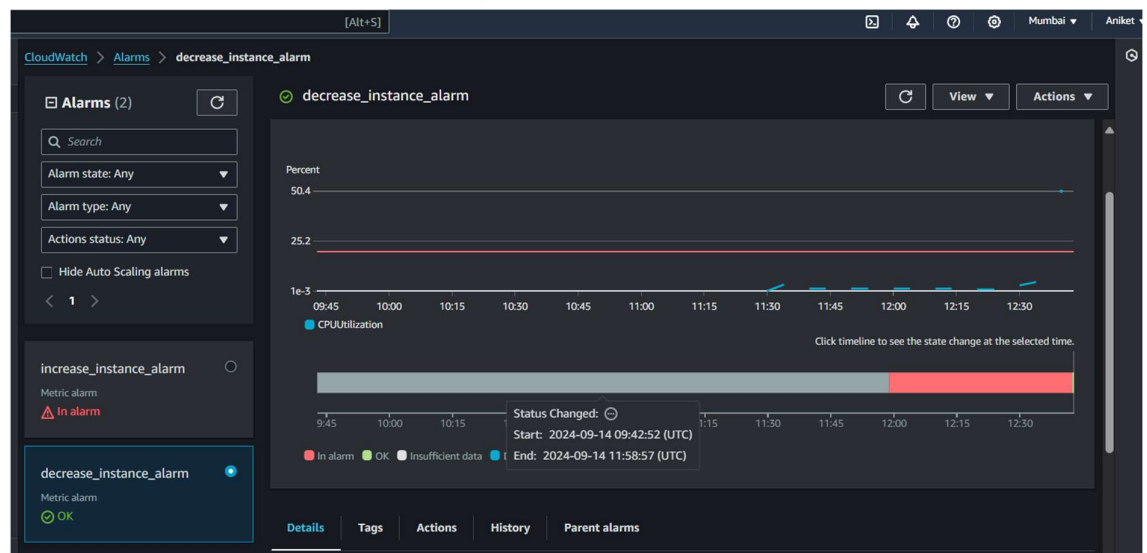
Instances (1/3) Info								
Find Instance by attribute or tag (case-sensitive)								
	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input type="checkbox"/>		i-0b48c09135c37a0ad	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-13-234-226-74.ap-...
<input type="checkbox"/>		i-0bee4cfc6ca0dbd2	Terminated	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	-
<input checked="" type="checkbox"/>		i-0766fcd3b3fda7e1	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	ec2-65-0-99-0.ap-south...

2. TO TRIGGER THE INCREASE_INSTANCE ALARM WE HAVE TO INCREASE THE CPU UTILIZATION WE WILL DO THAT BY INSTALLING 'STRESS' ON BOTH THE RUNNING INSTANCES

ENTER THE COMMAND for increasing cpu utilization
'stress __cpu 20 -timeout 1000 '


```
root@ip-172-31-5-4:~  
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: NOKEY  
Public key for stress-1.0.4-16.el7.x86_64.rpm is not installed  
stress-1.0.4-16.el7.x86_64.rpm | 39 kB 00:00  
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL-7  
Importing GPG key 0x352C64E5:  
Userid : "Fedora EPEL (7) <epel@fedoraproject.org>"  
Fingerprint: 91e9 7d7c 4a5e 96f1 7f3e 888f 6a2f aea2 352c 64e5  
Package : epel-release-7-11.noarch (@amzn2extra-epel)  
From : /etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL-7  
Running transaction check  
Running transaction test  
Transaction test succeeded  
Running transaction  
Installing : stress-1.0.4-16.el7.x86_64 1/1  
Verifying : stress-1.0.4-16.el7.x86_64 1/1  
  
Installed:  
stress.x86_64 0:1.0.4-16.el7  
  
Complete!  
[root@ip-172-31-5-4 ~]# stress --cpu 20 --timeout 1000  
stress: info: [3579] dispatching hogs: 20 cpu, 0 io, 0 vm, 0 hdd
```

1. Now we can check the cup utilization increases



ALARM: "increase_instance_alarm" in Asia Pacific (Mumbai)



mysnstopic001 <no-reply@sns.amazonaws.com>
to me

Sat, Sep 14, 6:12 PM (6 days ago) ☆ 😊 ↶ ⋮

You are receiving this email because your Amazon CloudWatch Alarm "increase_instance_alarm" in the Asia Pacific (Mumbai) region has entered the ALARM state, because "Threshold Crossed: 1 out of the last 1 datapoints [50.77731796785065 (14/09/24 12:40:00)] was greater than the threshold (50.0) (minimum 1 datapoint for OK -> ALARM transition)." at "Saturday 14 September, 2024 12:42:54 UTC".

View this alarm in the AWS Management Console:

https://ap-south-1.console.aws.amazon.com/cloudwatch/deeplink.js?region=ap-south-1#alarmsV2_alarm/increase_instance_alarm

Alarm Details:

- Name: increase_instance_alarm
- Description:
- State Change: OK -> ALARM
- Reason for State Change: Threshold Crossed: 1 out of the last 1 datapoints [50.77731796785065 (14/09/24 12:40:00)] was greater than the threshold (50.0) (minimum 1 datapoint for OK -> ALARM transition).
- Timestamp: Saturday 14 September, 2024 12:42:54 UTC
- AWS Account: 879381286690
- Alarm Arn: arn:aws:cloudwatch:ap-south-1:879381286690:alarm:increase_instance_alarm

Threshold:

- The alarm is in the ALARM state when the metric is GreaterThanThreshold 50.0 for at least 1 of the last 1 period(s) of 120 seconds.

Monitored Metric:

- MetricNamespace: AWS/EC2
- MetricName: CPUUtilization
- Dimensions: [AutoScalingGroupName = ASG001]
- Period: 120 seconds

Now it will take action and create '1' instance

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input checked="" type="checkbox"/>	i-0b48c09135c37a0ad	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-13-234-226-74.ap-south-1.amazonaws.com
<input type="checkbox"/>	i-068472260bd325faa	Running	t2.micro	...	View alarms +	ap-south-1a	ec2-3-109-133-42.ap-south-1.amazonaws.com
<input type="checkbox"/>	i-0766fcd3bfd47e1	Running	t2.micro	...	View alarms +	ap-south-1b	ec2-65-0-99-0.ap-south-1.amazonaws.com

Thankyou....