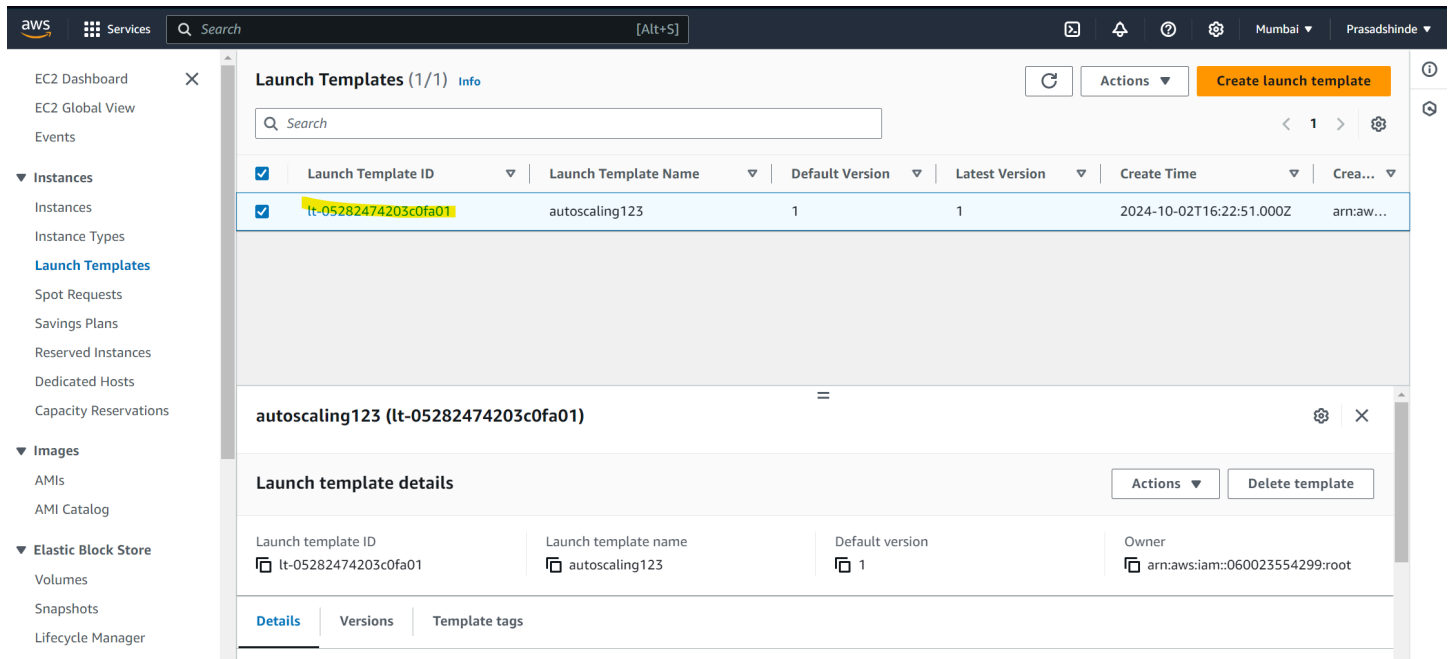


Autoscaling Practical 10th sept

1] create a launch template

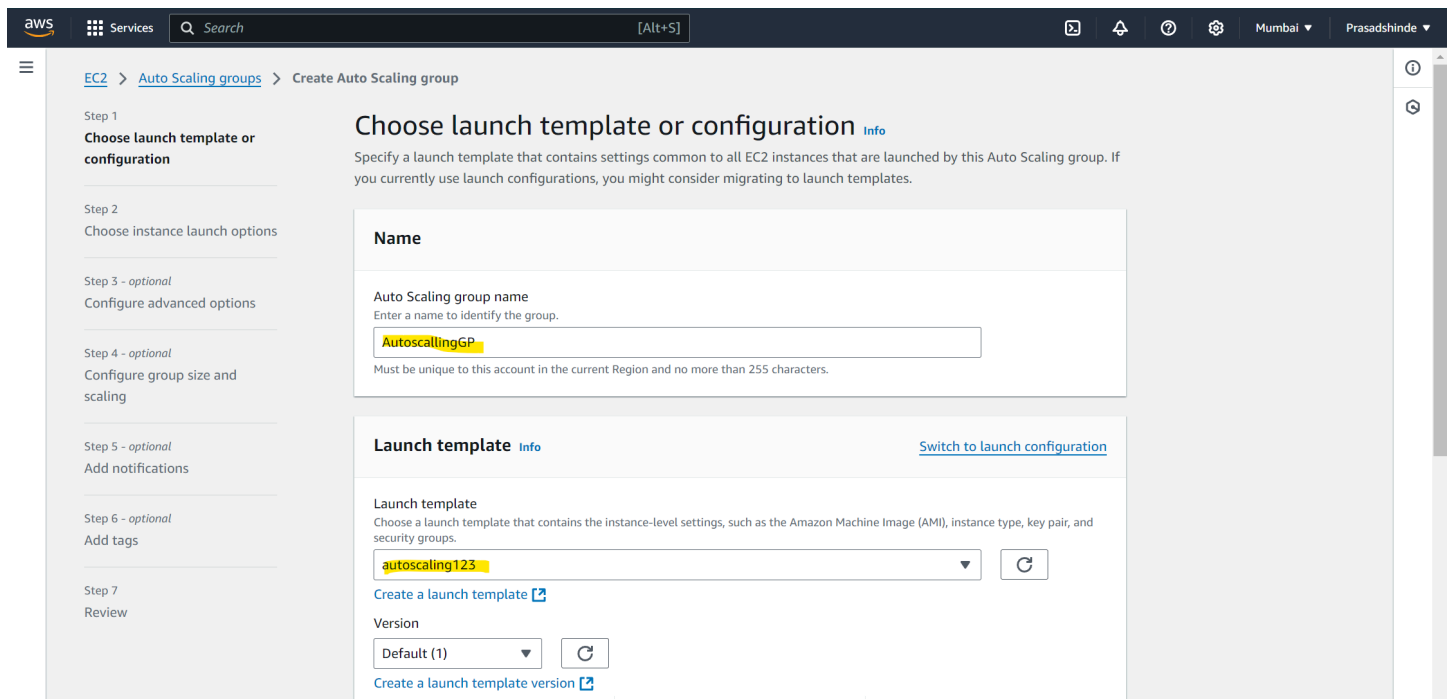


The screenshot shows the AWS Management Console interface for Launch Templates. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, and Lifecycle Manager. The main content area is titled 'Launch Templates (1/1)' and includes a search bar and a 'Create launch template' button. A table lists the existing launch templates:

Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	Created By
lt-05282474203c0fa01	autoscaling123	1	1	2024-10-02T16:22:51.000Z	arn:aws:iam::060023554299:root

Below the table, the 'Launch template details' section for 'autoscaling123 (lt-05282474203c0fa01)' is shown, including fields for Launch template ID, Launch template name, Default version, and Owner.

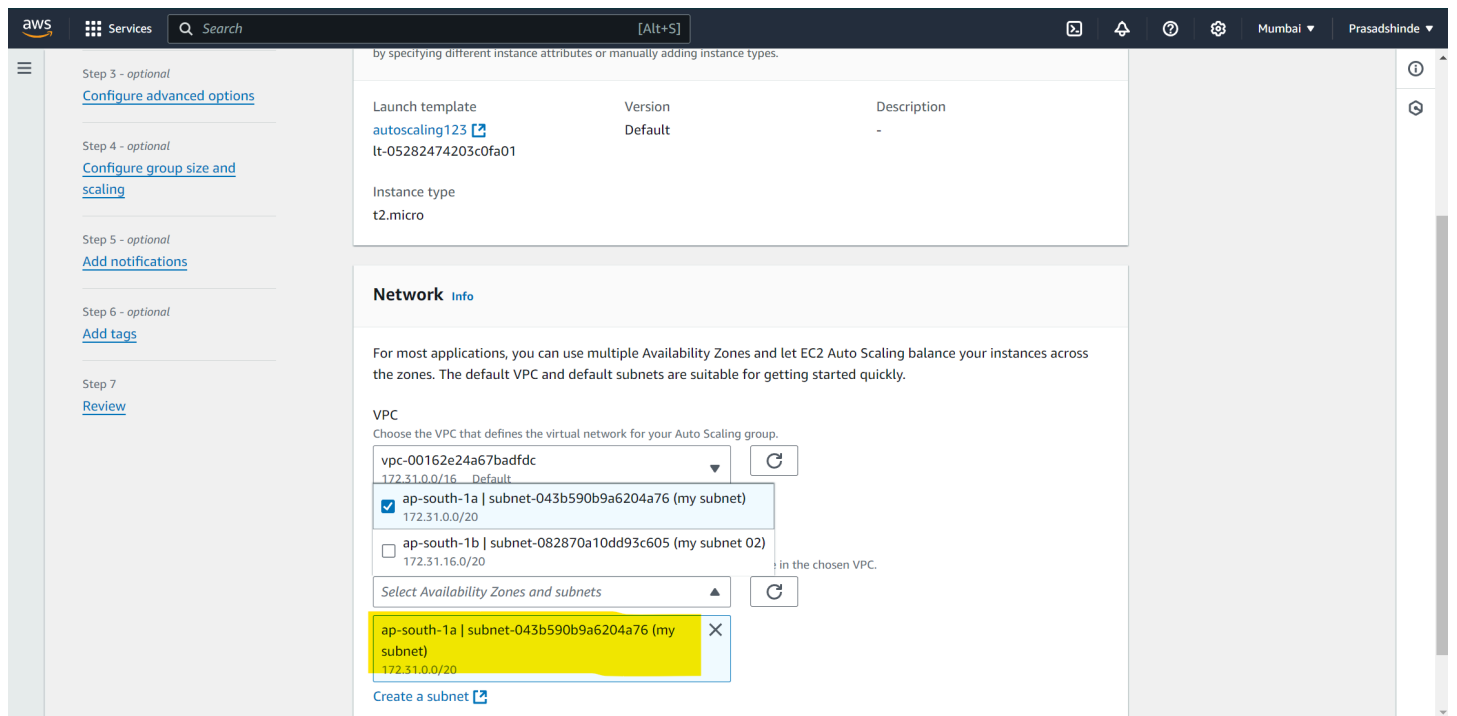
2] Provide group name and select template which is created



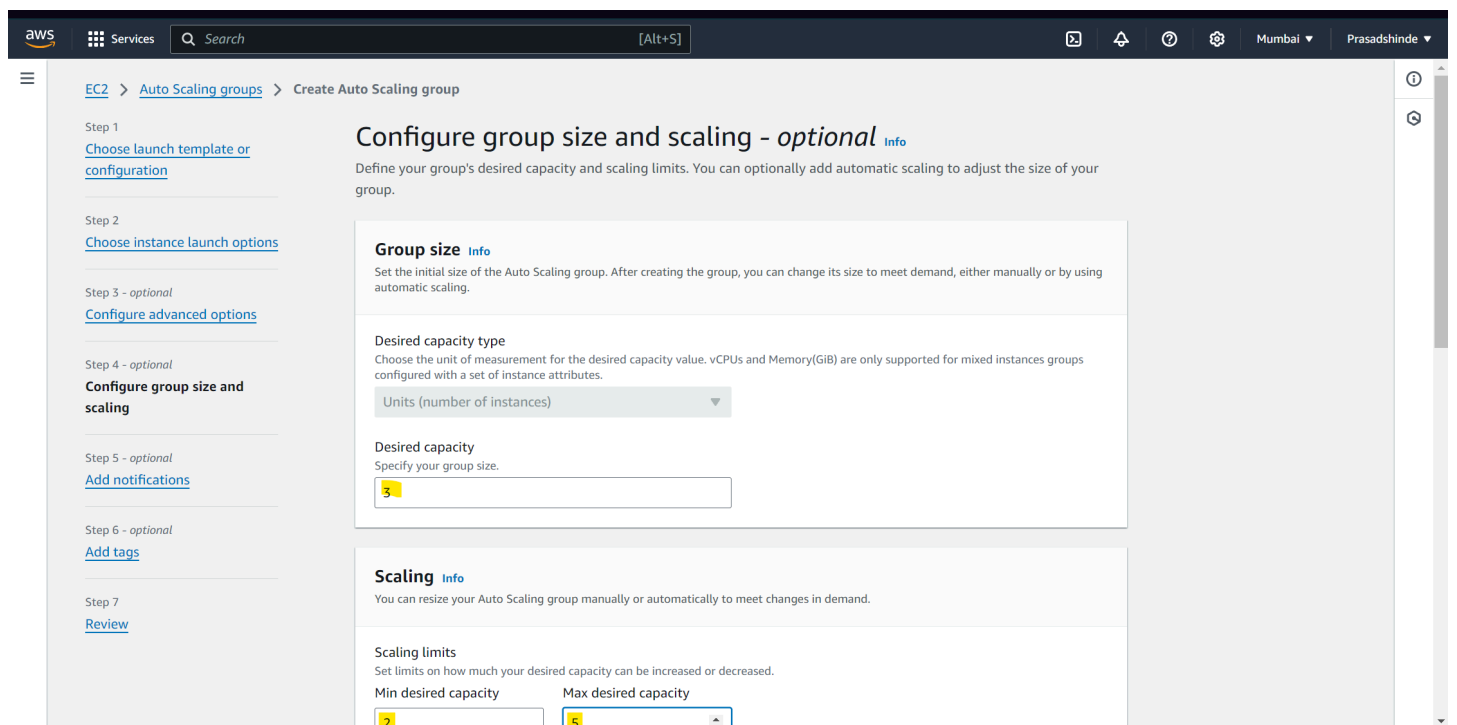
The screenshot shows the 'Create Auto Scaling group' wizard in the AWS Management Console. The left sidebar lists the steps: Step 1: Choose launch template or configuration, Step 2: Choose instance launch options, Step 3 - optional: Configure advanced options, Step 4 - optional: Configure group size and scaling, Step 5 - optional: Add notifications, Step 6 - optional: Add tags, Step 7: Review. The main content area is titled 'Choose launch template or configuration' and includes a description: 'Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group. If you currently use launch configurations, you might consider migrating to launch templates.'

The 'Name' section contains the 'Auto Scaling group name' field, which is populated with 'AutoscalingGP'. Below this, the 'Launch template' section shows a dropdown menu with 'autoscaling123' selected. The 'Version' section shows a dropdown menu with 'Default (1)' selected. There are links to 'Create a launch template' and 'Create a launch template version'.

3] Select Availability Zone which you want to create instance



4] Configured group size and scaling



5]Add Notification

aws Services Search [Alt+S] Mumbai Prasadshinde

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

Step 6 - optional
[Add tags](#)

Step 7
[Review](#)

Add notifications - optional [Info](#)

Send notifications to SNS topics whenever Amazon EC2 Auto Scaling launches or terminates the EC2 instances in your Auto Scaling group.

▼ Notification 1 Remove

Send a notification to

With these recipients

Event types
Notify subscribers whenever instances

- ☒ Launch
- ☒ Terminate
- ☒ Fail to launch
- ☒ Fail to terminate

6] . Auto scaling group have been created

aws Services Search [Alt+S] Mumbai Prasadshinde

EC2 > Auto Scaling groups

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

<input type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	A...
<input type="checkbox"/>	autoscalingGP	autoscaling123 Version Default	0	Updating capacity...	3	2	5	ap-S...

7] As we mention autoscaling will create 3 instance

The screenshot shows the AWS Management Console 'Instances' page. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, and Lifecycle Manager. The main content area displays a table of 3 instances. The first instance is 'autoscalingde...' with ID 'i-076d772cc950b975c' in a 'Running' state. The next two instances have IDs 'i-0596afc4d8285fd2b' and 'i-049809212d9c8d546', both in 'Running' state. The third instance has ID 'i-086f5b734f66e978f' and is also in a 'Running' state. All instances are 't2.micro' type and located in 'ap-south-1a' availability zone. The status check for all instances shows '2/2 checks passed'.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public
autoscalingde...	i-076d772cc950b975c	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-52
	i-0596afc4d8285fd2b	Running	t2.micro	Initializing	View alarms +	ap-south-1a	-
	i-049809212d9c8d546	Running	t2.micro	Initializing	View alarms +	ap-south-1a	-
	i-086f5b734f66e978f	Running	t2.micro	Initializing	View alarms +	ap-south-1a	-

Manual Scaling

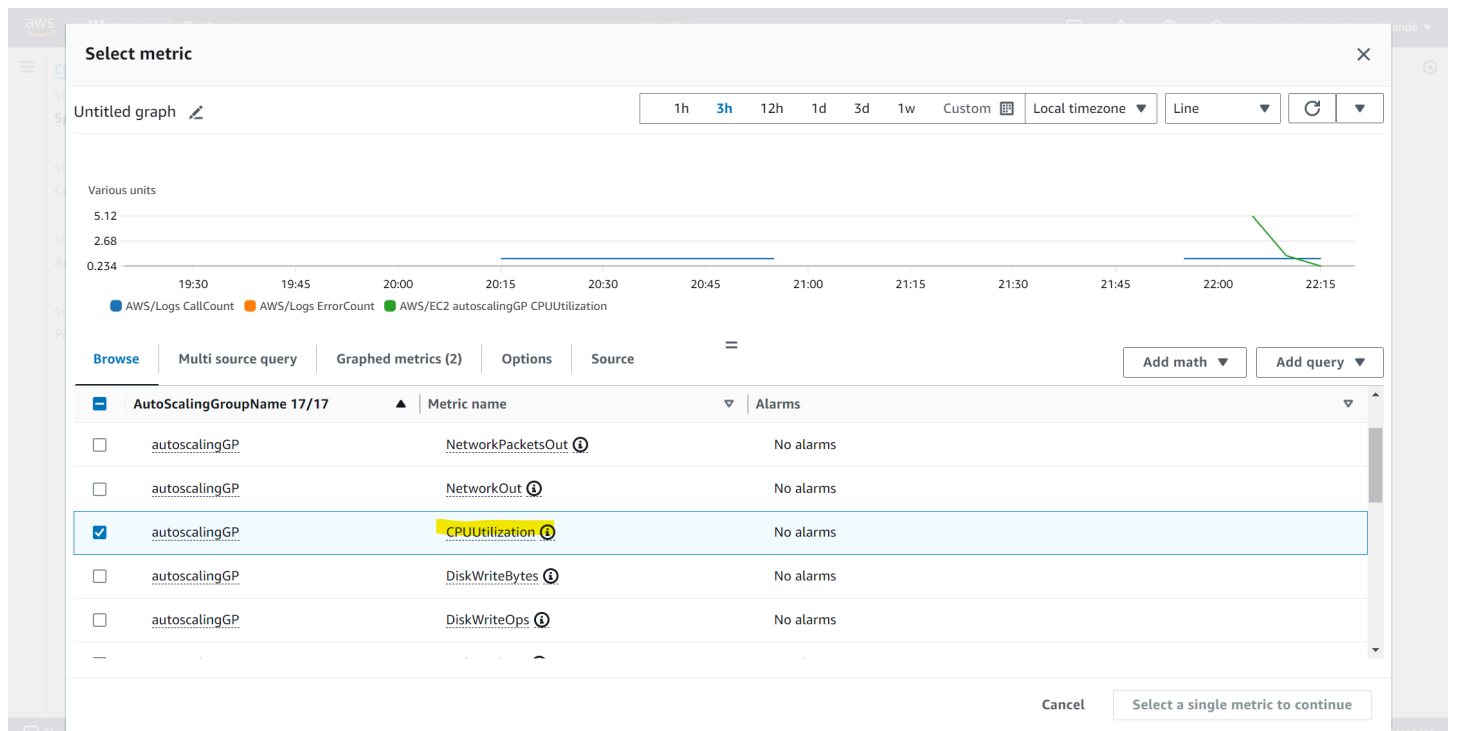
If we change desired value manually as 2 so AutoScaling group will remove 1 instance.

The screenshot shows the AWS Management Console 'Instances' page after manual scaling. The table now displays 4 instances. The first three instances are in a 'Running' state, and the fourth instance, with ID 'i-049809212d9c8d546', is in a 'Shutting-down' state. The other details remain the same as in the previous screenshot.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public
autoscalingde...	i-076d772cc950b975c	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-52
	i-0596afc4d8285fd2b	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	-
	i-049809212d9c8d546	Shutting-down	t2.micro	-	View alarms +	ap-south-1a	-
	i-086f5b734f66e978f	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	-

Automatic Scaling

1] Create alarm for Autoscaling group and select CPU Utilization



2] Select timeperiod"1 min " and threshold value(utilization greater than 50)

0.232 14:30 15:30 16:30

● AWS/EC2 autoscalingGP CPUUtilization

autoscalingGP

Statistic

Average

Period

1 minute

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

Additional configuration

3] Select the state of the alarm and add SNS-topic

aws Services Search [Alt+S]

CloudWatch > Alarms > Create alarm

Step 1
Specify metric and conditions

Step 2
Configure actions

Step 3
Add name and description

Step 4
Preview and create

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...

Q MYTOPIC09 X

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

Email (endpoints)
hyperracers09@gmail.com - [View in SNS Console](#)

Add notification

4] mention the name for the alarm and alarm has been created

aws Services Search [Alt+S]

CloudWatch X

Favorites and recents

Dashboards

Alarms 0 0 0 1

In alarm

All alarms

Logs

Metrics

All metrics

Explorer

Streams

X-Ray traces

Events

Application Signals

Network monitoring

Insights

Settings

Getting Started

What's new

Some subscriptions are pending confirmation
Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed

View SNS Subscriptions X

CloudWatch > Alarms

Alarms (1/1) ☐ Hide Auto Scaling alarms Clear selection Create composite alarm Actions Create alarm

Search Alarm state: Any Alarm type: Any Actions status: Any

<input checked="" type="checkbox"/>	Name	State	Last state update (Local)	Conditions	Actions
<input checked="" type="checkbox"/>	autoscalingalarm	Insufficient data	2024-10-02 22:27:41	CPUUtilization > 50 for 1 datapoints within 1 minute	Actions enabled Wz

Create Dynamic policy

We have 2 different alarm for different policy

CloudWatch

Some subscriptions are pending confirmation
Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed

Successfully created alarm Decrease Instance Policy.

CloudWatch > Alarms

Alarms (2) ☐ Hide Auto Scaling alarms Clear selection Create composite alarm Actions Create alarm

Search Alarm state: Any Alarm type: Any Actions status: Any < 1 >

<input type="checkbox"/>	Name	State	Last state update (Local)	Conditions	Actions
<input type="checkbox"/>	Decrease Instance Policy	Insufficient data	2024-10-03 00:23:43	CPUUtilization < 20 for 1 datapoints within 1 minute	Actions enabled
<input type="checkbox"/>	autoscalingalarm	Insufficient data	2024-10-03 00:23:04	CPUUtilization > 50 for 1 datapoints within 1 minute	Actions enabled

1] Increase_Instance_Alarm it will add 1 instance

Create dynamic scaling policy

Policy type
Simple scaling

Scaling policy name
Increase Instance Alarm

CloudWatch alarm
Choose an alarm that can scale capacity whenever:
autoscalingalarm
[Create a CloudWatch alarm](#)
breaches the alarm threshold: CPUUtilization > 50 for 1 consecutive periods of 60 seconds for the metric dimensions:
AutoScalingGroupName = autoscalingGP

Take the action
Add 1 capacity units

And then wait
300 seconds before allowing another scaling activity

Cancel Create

2] Decrease_Instance_Policy it will remove the intance

Create dynamic scaling policy

Policy type
Simple scaling

Scaling policy name
Decrease Instance Policy

CloudWatch alarm
Choose an alarm that can scale capacity whenever:
autoscalingalarm
[Create a CloudWatch alarm](#)
breaches the alarm threshold: CPUUtilization > 50 for 1 consecutive periods of 60 seconds for the metric dimensions:

AutoScalingGroupName = autoscalingGP

Take the action
Remove 1 capacity units

And then wait
300 seconds before allowing another scaling activity

Cancel Create

3] Both the alarm are attach to autoscaling group in Dynamic policy

Dynamic scaling policy created or edited successfully.

Auto Scaling groups (1/1)

Name	Launch template/configuration	Instances	Status	Desired capacity	Min capacity	Max capacity
autoscalingGP	autoscaling123 Version Default	2	-	2	2	2

Auto Scaling group: autoscalingGP

Dynamic scaling policies (2)

Policy name	Policy type	Enabled or disabled	Execute policy when
Decrease Instance Policy	Simple scaling	Enabled	Decrease Instance Policy
Increase Instance Alarm	Simple scaling	Enabled	autoscalingalarm

Output

We could see alarm has been triggered

aws

Services

Search

[Alt+S]

Mumbai

Prasadshinde

CloudWatch

Favorites and recents

Dashboards

Alarms

1

1

0

In alarm

All alarms

Logs

Metrics

All metrics

Explorer

Streams

X-Ray traces

Events

Application Signals

Network monitoring

Insights

Settings

Getting Started

What's new

CloudWatch > Alarms > Decrease Instance Policy

Alarms (2)

Search

Alarm state: Any

Alarm type: Any

Actions status: Any

☐ Hide Auto Scaling alarms

< 1 >

Decrease Instance Policy

Metric alarm

In alarm

autoscalingalarm

Metric alarm

OK

Decrease Instance Policy

Graph

1h 3h 12h 1d 3d 1w Custom Local timezone

CPUUtilization

CPUUtilization < 20 for 1 datapoints within 1 minute

In alarm

Percent

20

10.1

0.167

22:00 22:30 23:00 23:30 00:00 00:30

CPUUtilization

Click timeline to see the state change at the selected time.

22:00 22:30 23:00 23:30 0:00 0:30

In alarm

OK

Insufficient data

Disabled actions