

1. Creating ASG(auto scale group) and Target group

1.Goto ec2 services

2. Left navigation bar select Launch Templates, click on create launch template

The screenshot shows the AWS EC2 Dashboard with the 'Compute' tab selected. In the left sidebar, under 'Launch Templates', there is a 'Create launch template' button. A tooltip over this button says: 'Use launch templates to automate instance launches, simplify permission policies, and enforce best practices across your organization. Save launch parameters in a template that can be used for on-demand launches and with managed services, including EC2 Auto Scaling and EC2 Fleet. Easily update your launch parameters by creating a new launch template version.'

3.Type Template name

The screenshot shows the 'Create launch template' wizard. On the left, there's a 'Launch template name and description' section where 'AsgTemplate' is entered. On the right, there's a 'Summary' section with details like 'Software Image (AMI)', 'Virtual server type (instance type)', 'Firewall (security group)', and 'Storage (volumes)'. A tooltip for the 'Free tier' information is visible.

4. Select AMI (Amazon machine image)

The screenshot shows the 'Application and OS Images (Amazon Machine Image)' page. It features a 'Quick Start' section with various AMI icons (Amazon Linux, macOS, Ubuntu, Windows, Red Hat) and a search bar. Below this is a detailed view of the 'Amazon Machine Image (AMI)' for 'Amazon Linux 2023 AMI'. The description states: 'Amazon Linux 2023 AMI ami-0c10f26f147fa7fd (64-bit (x86), uefi-preferred) / ami-0d8f91fa8ecd3b58 (64-bit (Arm), uefi) Virtualization: hvm ENA enabled: true Root device type: ebs'. A 'Free tier eligible' badge is present. To the right, there's a 'Summary' section with the same AMI details and a 'Create launch template' button.

5. select Instance Type

The screenshot shows the AWS Lambda 'Create new function' wizard, Step 5: Select instance type. The 'Software Image (AMI)' is set to 'Amazon Linux 2023 AMI 2023.4.20240319.1 x86_64 HVM kernel-6.1'. The 'Virtual server type (instance type)' is set to 't2.micro'. A tooltip for the 'Free tier' is displayed, 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'. The 'Create launch template' button is highlighted.

6. select key-pair

The screenshot shows the AWS Lambda 'Create new function' wizard, Step 6: Select key pair. The 'Key pair (login)' is set to 'ebs1'. A tooltip for the 'Free tier' is displayed, 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'. The 'Create launch template' button is highlighted.

7. select Security group (default/create new security group)

The screenshot shows the AWS Lambda 'Create new function' wizard, Step 7: Select security group. The 'Firewall (security groups)' section shows 'Select existing security group' selected. A tooltip for the 'Free tier' is displayed, 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'. The 'Create launch template' button is highlighted.

8. launch template

The screenshot shows the 'Storage (volumes)' section of the launch template configuration. It includes an 'EBS Volumes' table with one entry: 'Volume 1 (AMI Root) (8 GiB, EBS, General purpose SSD (gp3))'. A note states: 'Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage'. Below this is a 'Resource tags' section with a note: 'No resource tags are currently included in this template. Add a resource tag to include it in the launch template.' A 'Create launch template' button is visible at the bottom right.

The screenshot shows a green success message box stating: 'Successfully created AsgTemplate(lt-0bd0862570c9ac948).'. Below this is a 'Next Steps' section with links: 'Launch an instance', 'Create an Auto Scaling group from your template', 'Create Auto Scaling group', and 'Create Spot Fleet'. A note about spot instances is present. At the bottom is a 'Create launch template' button.

9. Template is created.

The screenshot shows the 'Launch Templates (1/1)' list. It displays a single entry: 'lt-0bd0862570c9ac948' with the name 'AsgTemplate'. The table columns include 'Launch Template ID', 'Launch Template Name', 'Default Version', 'Latest Version', and 'Create Time'. Below the table is a detailed view for 'AsgTemplate (lt-0bd0862570c9ac948)'. It shows 'Launch template details' with fields: 'Launch template ID' (lt-0bd0862570c9ac948), 'Launch template name' (AsgTemplate), 'Default version' (1), and 'Owner' (arn:aws:iam::198727865038:root). Navigation tabs at the bottom include 'Details', 'Versions', and 'Template tags'.

Note: Selecting Default VPC, Carefully ip address, Security groups also

The left screenshot shows the 'Launch template details' section. It includes fields for 'Launch Template ID' (lt-0ed5c3e450a28ab30), 'Launch Template Name' (asg-template), 'Default version' (1), 'Latest Version' (1), and 'Create Time' (2024-03-31T17:37:26.000Z). A 'Security groups' dropdown is open, showing 'default' selected. The right screenshot shows the 'Network settings' section, which includes a 'Subnets' dropdown set to 'Don't include in launch template', a 'VPC' dropdown set to 'vpc-0a491cb5a5a5f1384 (default)', and a 'Security groups' dropdown set to 'default sg-0e31887930dd3514d X'. Both screenshots show the AWS navigation bar at the top.

1. Scroll down select ASG (Auto Scaling Groups).

The screenshot shows the 'Launch Templates' list with one item: 'Launch Template ID: lt-0ed5c3e450a28ab30', 'Launch Template Name: asg-template', 'Default Version: 1', 'Latest Version: 1', and 'Create Time: 2024-03-31T17:37:26.000Z'. The left sidebar shows categories like 'Elastic Block Store', 'Network & Security', 'Load Balancing', and 'Auto Scaling'. The bottom of the screen shows the AWS navigation bar.

2. Typing Auto Scaling group name.

The screenshot shows the 'Choose launch template' step. It has a 'Name' field containing 'asg-scale'. Below it is a note: 'For accounts created after May 31, 2023, the EC2 console only supports creating Auto Scaling groups with launch templates. Creating Auto Scaling groups with launch configurations is not recommended but still available via the CLI and API until December 31, 2023.' The left sidebar shows steps 1 through 7 for creating an Auto Scaling group. The bottom of the screen shows the AWS navigation bar.

3. Selecting our created Launch template

Launch template
Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.

Version
Default (1)

Description	Launch template asg-template lt-0ed5c3e450a28ab30	Instance type t2.micro
AMI ID	Security groups	Request Spot Instances No
Key pair name	Security group IDs sg-0e51887930dd3514d	
Additional details		
Storage (volumes)	Date created Sun Mar 31 2024 23:07:26 GMT+0530 (India Standard Time)	

Step 1 Choose launch template

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

Choose instance launch options

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

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 lt-0ed5c3e450a28ab30	Version Default	Description -
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.

4. Selecting Default VPC and selecting Availability Zones

Step 6 - optional Add tags

Step 7 Review

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-0a491cb5a5a3f1384
172.31.0.0/16 Default

Create a VPC

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

- us-east-1a | subnet-0ff8d480209131dea X
172.31.16.0/20 Default
- us-east-1b | subnet-0f4a256ea1d5d778f X
172.31.32.0/20 Default
- us-east-1c | subnet-00bf15bf77f8a0555 X
172.31.0.0/20 Default

Create a subnet

Cancel Skip to review Previous Next

5. As it is Default values

Configure advanced options - optional

Integrate your Auto Scaling group with other services to distribute network traffic across multiple servers using a load balancer or to establish service-to-service communications using VPC Lattice. You can also set options that give you more control over 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.

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.

Step 6 - optional

Add tags

Step 7

Review

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.

No VPC Lattice service
VPC Lattice will not manage your Auto Scaling group's network access and connectivity with other services.

Attach to VPC Lattice service
Incoming requests associated with specified VPC Lattice target groups will be routed to your Auto Scaling group.

Health checks

Health checks increase availability by replacing unhealthy instances. When you use multiple health checks, all are evaluated, and if at least one fails, instance replacement occurs.

EC2 health checks

Always enabled

Additional health check types - optional

Turn on Elastic Load Balancing health checks
Elastic Load Balancing monitors whether instances are available to handle requests. When it reports an unhealthy instance, EC2 Auto Scaling can replace it on its next periodic check.

Turn on Elastic Load Balancing health checks
Elastic Load Balancing monitors whether instances are available to handle requests. When it reports an unhealthy instance, EC2 Auto Scaling can replace it on its next periodic check.

Turn on VPC Lattice health checks
VPC Lattice can monitor whether instances are available to handle requests. If it considers a target as failed a health check, EC2 Auto Scaling replaces it after its next periodic check.

Health check grace period

This time period delays the first health check until your instances finish initializing. It doesn't prevent an instance from terminating when placed into a non-running state.

300 seconds

Additional settings

Monitoring

Enable group metrics collection within CloudWatch

Default instance warmup

The amount of time that CloudWatch metrics for new instances do not contribute to the group's aggregated instance metrics, as their usage data is not reliable yet.

Enable default instance warmup

Cancel **Skip to review** **Previous** **Next**

6. Configuring the group size, Select as per our requirement:

- Desired: 5
- Minimum: 3
- Maximum: 9

The screenshot shows the AWS Auto Scaling 'Create Auto Scaling group' wizard at Step 4: Configure group size and scaling. The 'Desired capacity' field is highlighted with the value '5'. Other optional steps like 'Add notifications' and 'Add tags' are visible on the left.

7. Select the Target tracking scaling policy.

The screenshot shows the 'Scaling' configuration page. The 'Target tracking scaling policy' option is selected, and the scaling policy name is set to 'Target Tracking Policy'. The metric type is set to 'Average CPU utilization'.

The screenshot shows the 'Automatic scaling - optional' configuration page. The 'Target tracking scaling policy' option is selected, and the scaling policy name is set to 'Target Tracking Policy'. The target value is set to 50, and the instance warmup is set to 300 seconds.

8. Instance maintenance policy, Selecting Behavior on as per our Requirements

The screenshot shows the 'Instance maintenance policy' configuration page. It includes sections for choosing a replacement behavior (Mixed behavior, No policy, Prioritize availability, Launch before terminating, Control costs, Terminate and launch, Flexible, Custom behavior), instance scale-in protection (checkbox for enabling it), and a summary of the selected policy.

9. Selecting SNS topic or create new one

The screenshot shows the 'Add notifications - optional' configuration page. It lists steps 1 through 7, with step 5 selected ('Add notifications'). The main area shows a notification configuration for an SNS topic named 'testsns (bhaskardevopsdec@gmail.com)'. It includes event types for launching, terminating, failing to launch, and failing to terminate instances.

Notification mail

The screenshot shows an email inbox with an incoming message from 'AWS Notifications <no-reply@sns.amazonaws.com>' titled 'Auto Scaling: test notification for group "asg-scale"'. The message contains details about the notification, including service, time, request ID, event, account ID, auto scaling group name, and ARN. It also includes unsubscribe and support links.

Add tags - optional Info

Add tags to help you search, filter, and track your Auto Scaling group across AWS. You can also choose to automatically add these tags to instances when they are launched.

ⓘ You can optionally choose to add tags to instances (and their attached EBS volumes) by specifying tags in your launch template. We recommend caution, however, because the tag values for instances from your launch template will be overridden if there are any duplicate keys specified for the Auto Scaling group.

Tags (0)

Add tag

50 remaining

Cancel **Previous** **Next**

This screenshot shows the 'Add tags' step of the Auto Scaling group creation wizard. It includes a tooltip explaining that tag values from the launch template will be overridden if there are any duplicate keys. The 'Tags (0)' section is empty, and the 'Add tag' button is visible. Navigation buttons for 'Cancel', 'Previous', and 'Next' are at the bottom.

Review Info

Step 1: Choose launch template

Group details

Auto Scaling group name
asg-scale

Launch template

Launch template	Version	Description
asg-template	Default	lt-0ed5c3e450a28ab30

Step 2: Choose instance launch options

Network

This screenshot shows the 'Review' step of the Auto Scaling group creation wizard. It displays the chosen launch template and network settings. The launch template is 'asg-template' (version Default, ID lt-0ed5c3e450a28ab30). The network settings show a VPC (vpc-0a491cb5a5a3f1384) and three availability zones (us-east-1a, us-east-1b, us-east-1c) each associated with a specific subnet.

Step 6 - optional **Add tags**

Step 7 **Review**

Step 2: Choose instance launch options

Network

VPC
vpc-0a491cb5a5a3f1384

Availability Zone **Subnet**

us-east-1a	subnet-off8d480209131dea	172.31.16.0/20
us-east-1b	subnet-0f4a256ea1d5d778f	172.31.32.0/20
us-east-1c	subnet-00bf15bf77f8a0555	172.31.0.0/20

Instance type requirements

This Auto Scaling group will adhere to the launch template.

Step 3: Configure advanced options

This screenshot shows the 'Review' step of the Auto Scaling group creation wizard. It highlights the network configuration, specifically the VPC and subnets for three availability zones. Below this, it shows the instance type requirements, stating that the group will adhere to the launch template's requirements. The 'Step 3: Configure advanced options' section is partially visible at the bottom.

Step 3: Configure advanced options

Load balancing

Load balancer
-

VPC Lattice integration options

VPC Lattice target groups
-

Health checks

Health check type EC2	Health check grace period 300 seconds
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Additional settings

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Additional settings

Monitoring Disabled	Default instance warmup Disabled
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Step 4: Configure group size and scaling policies

Group size

Desired capacity 5	Desired capacity type Units (number of instances)
-----------------------	--

Scaling

Minimum desired capacity 3	Maximum desired capacity 9	
Target tracking policy Policy type Target tracking scaling	Scaling policy name Target Tracking Policy	Execute policy when As required to maintain Average CPU

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Instance maintenance policy

Replacement behavior No policy	Min healthy percentage -	Max healthy percentage -
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Instance scale-in protection

Instance scale-in protection
 Enable instance protection from scale in

Step 5: Add notifications

Notifications

Notification 1 SNS Topic testsns (bhaskardevopsdec@gmail.com)	Event types <input checked="" type="checkbox"/> Launch <input checked="" type="checkbox"/> Terminate <input checked="" type="checkbox"/> Fail to launch <input checked="" type="checkbox"/> Fail to terminate
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10. Click on Create Auto Scaling group

The screenshot shows the AWS Auto Scaling wizard at Step 5: Add notifications and Step 6: Add tags. In Step 5, a notification named 'Notification 1' is configured with an SNS Topic 'testsns (bhaskardevopsdec@gmail.com)' and event types 'Launch', 'Terminate', 'Fail to launch', and 'Fail to terminate'. In Step 6, there are no tags added yet. At the bottom, there are 'Cancel', 'Previous', and 'Create Auto Scaling group' buttons.

11. Auto Scaling group is creating and status updating

The screenshot shows the AWS Auto Scaling groups list. One group named 'asg-scale' is listed, showing '0' instances and a status of 'Updating capacity...'. The 'Desired capacity' is set to 5, with 'Min' at 3 and 'Max' at 9. The 'Create Auto Scaling group' button is visible at the top right of the list table.

12. Instances are created desired capacity 5

The screenshot shows the AWS Auto Scaling groups list again. The group 'asg-scale' now has '5' instances, and the status is '5'. The 'Desired capacity' remains at 5, with 'Min' at 3 and 'Max' at 9. The 'Create Auto Scaling group' button is still visible at the top right.

12. We selected the Desired state equal to 5 and we can see the 5 Instance is Running (EC2)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
feb24	i-09c1af9cddb0e47	Stopped	t2.micro	-	View alarms	us-east-1b
Asg	i-0f16d44ae1d500728	Stopped	t2.micro	-	View alarms	us-east-1d
	i-0cb521a0e40aac6c2	Running	t2.micro	Initializing	View alarms	us-east-1b
Asg2	i-0f879edb39e5c149a	Stopped	t2.micro	-	View alarms	us-east-1d
ebs1	i-0f94ad9a744bfc8ed	Stopped	t2.micro	-	View alarms	us-east-1f
	i-0c4b2024d2db9dedd	Running	t2.micro	Initializing	View alarms	us-east-1a
	i-0248a9d57af29fb8d	Running	t2.micro	Initializing	View alarms	us-east-1a
	i-0b7245a09cd585d6	Running	t2.micro	Initializing	View alarms	us-east-1c
	i-089b80a3e3dd11b62	Running	t2.micro	Initializing	View alarms	us-east-1c

13. All our Desired Instances are Running status check 2/2 checks passed we see that

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
feb24	i-09c1af9cddb0e47	Running	t2.micro	2/2 checks passed	View alarms	us-east-1b
Asg	i-0f16d44ae1d500728	Running	t2.micro	2/2 checks passed	View alarms	us-east-1d
	i-0cb521a0e40aac6c2	Running	t2.micro	2/2 checks passed	View alarms	us-east-1b
Asg2	i-0f879edb39e5c149a	Running	t2.micro	2/2 checks passed	View alarms	us-east-1d
ebs1	i-0f94ad9a744bfc8ed	Running	t2.micro	2/2 checks passed	View alarms	us-east-1f
	i-0c4b2024d2db9dedd	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a
	i-0248a9d57af29fb8d	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a
	i-0b7245a09cd585d6	Running	t2.micro	2/2 checks passed	View alarms	us-east-1c
	i-089b80a3e3dd11b62	Running	t2.micro	2/2 checks passed	View alarms	us-east-1c

Launch group mail notification's

Compose

Inbox 4

Starred

Snoozed

Sent

Drafts 2

More

Labels +

Auto Scaling: launch for group "asg-scale" Inbox

Sun, Mar 31, 11:16 PM (8 hours ago) star

AWS Notifications more

Service: AWS Auto Scaling Time: 2024-03-31T17:46:47.162Z RequestId: 58163a56-79f5-797d-e9e0-1de368e35269 Event: autoscaling:EC2_INSTANCE_LAUNCH AccountId: 12345678901234567890

Sun, Mar 31, 11:16 PM (8 hours ago) star

AWS Notifications <no-reply@sns.amazonaws.com> to me more

Service: AWS Auto Scaling Time: 2024-03-31T17:46:49.812Z RequestId: 88763a56-79f1-7acd-2c45-b231b0f29734 Event: autoscaling:EC2_INSTANCE_LAUNCH AccountId: 12345678901234567890

AutoScalingGroupName: asg-scale AutoScalingGroupARN: arn:aws:autoscaling:us-east-1:198727865038:autoScalingGroup:2203a4dd-e435-4c12-a69a-4a2445037053:autoScalingGroupName/asg-scale ActivityId: 88763a56-79f1-7acd-2c45-b231b0f29734 Description: Launching a new EC2 instance: i-0cb521a0e40aac6c2 Cause: At 2024-03-31T17:46:04Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 5. At 2024-03-31T17:46:13Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 5. StartTime: 2024-03-31T17:46:15.516Z EndTime: 2024-03-31T17:46:46.981Z StatusCode: InProgress StatusMessage: Progress: 50 EC2InstanceId: i-0cb521a0e40aac6c2 Details: ("Subnet ID": "subnet-0f4a256ea1d5d778f", "Availability Zone": "us-east-1b")

The screenshot shows the Gmail inbox interface. The left sidebar includes 'Compose' and 'Inbox' (6 messages). The main area displays an email from 'AWS Notifications <no-reply@sns.amazonaws.com>' titled 'Auto Scaling: launch for group "asg-scale"'. The message content details an EC2 instance launch event:

```
Service: AWS Auto Scaling
Time: 2024-03-31T17:46:47.162Z
RequestId: 58163a56-79f5-797d-e9e0-1de368e35269
Event: autoscaling:EC2_INSTANCE_LAUNCH
AccountId: 198727865038
AutoScalingGroupName: asg-scale
AutoScalingGroupARN: arn:aws:autoscaling:us-east-1:198727865038:autoScalingGroup:2203a4dd-e435-4c12-a69a-4a2445037053:autoScalingGroupName/asg-scale
ActivityId: 58163a56-79f5-797d-e9e0-1de368e35269
Description: Launching a new EC2 instance: i-08980a3e3dd11b62
Cause: At 2024-03-31T17:46:04Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 5. At 2024-03-31T17:46:13Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 5.
StartTime: 2024-03-31T17:46:15.774Z
EndTime: 2024-03-31T17:46:47.162Z
StatusCode: InProgress
StatusMessage:
Progress: 50
EC2InstanceId: i-08980a3e3dd11b62
Details: {"Subnet ID": "subnet-00bf15bf77f8a0555", "Availability Zone": "us-east-1c"}
Origin: EC2
Destination: AutoScalingGroup
```

From ASG termination for group(Instances) mails notifications

The screenshot shows the Gmail inbox interface. The left sidebar includes 'Compose' and 'Inbox' (6 messages). The main area displays an email from 'AWS Notifications <no-reply@sns.amazonaws.com>' titled 'Auto Scaling: termination for group "asg-scale"'. The message content details an EC2 instance termination event:

```
Service: AWS Auto Scaling
Time: 2024-03-31T17:56:11.580Z
RequestId: e2a63a56-9e3b-e9b7-269b-e09eaca154fd
Event: autoscaling:EC2_INSTANCE_TERMINATE
AccountId: 198727865038
AutoScalingGroupName: asg-scale
AutoScalingGroupARN: arn:aws:autoscaling:us-east-1:198727865038:autoScalingGroup:2203a4dd-e435-4c12-a69a-4a2445037053:autoScalingGroupName/asg-scale
ActivityId: e2a63a56-9e3b-e9b7-269b-e09eaca154fd
Description: Terminating EC2 instance: i-0cb521a0e40aac6c2
Cause: At 2024-03-31T17:56:10Z an instance was taken out of service in response to an EC2 health check indicating it has been terminated or stopped.
StartTime: 2024-03-31T17:56:10.106Z
EndTime: 2024-03-31T17:56:11.580Z
StatusCode: InProgress
StatusMessage:
Progress: 50
EC2InstanceId: i-0cb521a0e40aac6c2
Details: {"Subnet ID": "subnet-0f4a256ea1d5d778f", "Availability Zone": "us-east-1b"}
Origin: AutoScalingGroup
Destination: EC2
```

The bottom section of the email shows three buttons: 'Reply', 'Forward', and a smiley face icon.

This screenshot shows the Gmail inbox interface. The left sidebar includes 'Compose' and 'Inbox' (7 messages). The main area displays an email from 'AWS Notifications <no-reply@sns.amazonaws.com>' titled 'Auto Scaling: termination for group "asg-scale"'. The message content details another EC2 instance termination event, identical to the one above but with a different instance ID:

```
Service: AWS Auto Scaling
Time: 2024-03-31T17:58:10.875Z
RequestId: bae63a56-a584-8210-ba4f-c327c16f7125
Event: autoscaling:EC2_INSTANCE_TERMINATE
AccountId: 198727865038
AutoScalingGroupName: asg-scale
AutoScalingGroupARN: arn:aws:autoscaling:us-east-1:198727865038:autoScalingGroup:2203a4dd-e435-4c12-a69a-4a2445037053:autoScalingGroupName/asg-scale
ActivityId: bae63a56-a584-8210-ba4f-c327c16f7125
Description: Terminating EC2 instance: i-0248a9d57af29f8bd
Cause: At 2024-03-31T17:58:09Z an instance was taken out of service in response to an EC2 health check indicating it has been terminated or stopped.
StartTime: 2024-03-31T17:58:09.440Z
EndTime: 2024-03-31T17:58:10.875Z
StatusCode: InProgress
StatusMessage:
Progress: 50
EC2InstanceId: i-0248a9d57af29f8bd
Details: {"Subnet ID": "subnet-0ff8d480209131dea", "Availability Zone": "us-east-1a"}
```

1. Edit (Modify) the Instance maintenance policy

The screenshot shows the AWS EC2 Auto Scaling Groups page. In the left sidebar, under 'Instances', 'Instances' is selected. The main content area is titled 'Edit asg-scale' and contains a section for 'Instance maintenance policy'. It lists several options: 'No policy', 'Launch before terminating', 'Terminate and launch' (which is selected), and 'Custom behavior'. Below these options is a 'Set healthy percentage' field set to 90% to 100% of 5 instances. A note says 'This range is currently within your group's scaling limits.'

2. Update the new Instance policy

This screenshot shows the continuation of the 'Edit asg-scale' configuration. It includes a 'Set healthy percentage' section with a slider from 90 to 100 and a note about scaling limits. Below it is a 'View capacity during replacements based on your desired capacity' section with tables for current desired capacity (5 instances), temporary minimum healthy instances (5), temporary maximum healthy instances (6), and scaling limits (Min - Max, 3 - 9). At the bottom right are 'Cancel' and 'Update' buttons.

The screenshot shows the AWS EC2 Instances page. The left sidebar has 'Instances' selected. The main area is titled 'Instances (3/12) Info' and lists 12 instances. Two instances are highlighted with blue checkboxes: 'Asg' (instance i-08fdc6961ceb428cb) and 'Asg2' (instance i-059f7fb75c795062). Other instances listed include 'feb24', 'ebs1', and several terminated instances. The interface includes columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone.

Instances (3/15) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
feb24	i-09c1af9cd9bb0e47	Stopped	t2.micro	-	View alarms	us-east-1b
	i-08fdc6961ceb428cb	Terminated	t2.micro	-	View alarms	us-east-1b
<input checked="" type="checkbox"/>	i-0379cc608adc02f0b	Running	t2.micro	2/2 checks passed	View alarms	us-east-1b
Asg	i-0f16d44ae1d500728	Terminated	t2.micro	-	View alarms	us-east-1d
	i-0cb521a0e40aac6c2	Terminated	t2.micro	-	View alarms	us-east-1b
Asg2	i-0f879edb39e5c149a	Terminated	t2.micro	-	View alarms	us-east-1d
<input checked="" type="checkbox"/>	i-0f5b0daf3ecc50bc4	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a
	i-059f7fb75c795062	Terminated	t2.micro	-	View alarms	us-east-1a
	i-06fa00346c59371fd	Terminated	t2.micro	-	View alarms	us-east-1a
<input checked="" type="checkbox"/>	i-06c9e7a1a57d17971	Running	t2.micro	2/2 checks passed	View alarms	us-east-1c
ebs1	i-0f94ad9a744bfc8ed	Stopped	t2.micro	-	View alarms	us-east-1f
	i-04cb2024d2db9dedd	Terminated	t2.micro	-	View alarms	us-east-1a

Instances: i-0379cc608adc02f0b, i-0f5b0daf3ecc50bc4, i-06c9e7a1a57d17971

Target group instance created

```

Service: AWS Auto Scaling Time: 2024-03-31T18:02:42.241Z RequestId: ab363a56-b43e-efb2-d1d0-e1e5ac87f8e8 ActivityId: ab363a56-b43e-efb2-d1d0-e1e5ac87f8e8...
Sun, Mar 31, 11:36 PM (8 hours ago)

AWS Notifications <no-reply@sns.amazonaws.com>
Service: AWS Auto Scaling Time: 2024-03-31T18:06:12.660Z RequestId: 27363a56-bb8c-1cdd-d887-a0cdf0ee937e ActivityId: 27363a56-bb8c-1cdd-d887-a0cdf0ee937...
Sun, Mar 31, 11:37 PM (8 hours ago)

AWS Notifications <no-reply@sns.amazonaws.com>
to me
Service: AWS Auto Scaling
Time: 2024-03-31T18:07:10.832Z
RequestId: 7ce63a56-c2cd-5a60-c46e-d0ed4dc3c942
Event: autoscaling:EC2_INSTANCE_LAUNCH
AccountId: 198727865038
AutoScalingGroupName: asg-scale
AutoScalingGroupARN: arn:aws:autoscaling:us-east-1:198727865038:autoScalingGroup:2203a4dd-e435-4c12-a69a-4a2445037053:autoScalingGroupName/asg-scale
ActivityId: fce63a56-c2cd-5a60-c46e-d0ed4dc3c942
Description: Launching a new EC2 Instance: i-0379cc608adc02f0b
Cause: At 2024-03-31T18:06:07Z an instance was launched in response to an unhealthy instance needing to be replaced.
StartTime: 2024-03-31T18:06:09.239Z
EndTime: 2024-03-31T18:07:10.832Z
StatusCode: InProgress
StatusMessage:
Progress: 50
EC2InstanceId: i-0379cc608adc02f0b
***
```

Termination instances

```

Service: AWS Auto Scaling Time: 2024-03-31T18:20:50.821Z RequestId: d74c6143-d725-495e-bfb0-19587374519f ActivityId: d74c6143-d725-495e-bfb0-19587374519f...
Sun, Mar 31, 11:50 PM (8 hours ago)

AWS Notifications <no-reply@sns.amazonaws.com>
Service: AWS Auto Scaling Time: 2024-03-31T18:38:59.870Z RequestId: af31d42b-aec5-459b-a126-bc5614d72bec
Event: autoscaling:EC2_INSTANCE_TERMINATE
AccountId: 198727865038
AutoScalingGroupName: asg-scale
AutoScalingGroupARN: arn:aws:autoscaling:us-east-1:198727865038:autoScalingGroup:2203a4dd-e435-4c12-a69a-4a2445037053:autoScalingGroupName/asg-scale
ActivityId: af31d42b-aec5-459b-a126-bc5614d72bec
Description: Terminating EC2 instance: i-0379cc608adc02f0b
Cause: At 2024-03-31T18:38:01Z a user request forced AutoScaling group changing the desired capacity from 1 to 0. At 2024-03-31T18:38:10Z an instance was taken out of service in response to a difference between desired and actual capacity, shrinking the capacity from 1 to 0. At 2024-03-31T18:38:10Z instance i-0379cc608adc02f0b was selected for termination.
StartTime: 2024-03-31T18:38:10.194Z
EndTime: 2024-03-31T18:38:59.870Z
StatusCode: InProgress
StatusMessage:
Progress: 50
EC2InstanceId: i-0379cc608adc02f0b
***
```

1. Creating Target group for ASG

The screenshot shows the AWS EC2 Target groups page. On the left, there's a sidebar with various EC2 services like Instances, AMIs, and CloudShell. The main area has a heading 'Target groups' with a search bar and a 'Create target group' button. Below it, a message says 'No target groups' and 'You don't have any target groups in us-east-1'. A 'Create target group' button is at the bottom.

2. Selecting target type is Instances

This screenshot shows the 'Specify group details' step of the 'Create target group' wizard. It's Step 1 of 2. The 'Basic configuration' section is visible, showing the 'Choose a target type' dropdown where 'Instances' is selected. Other options like 'IP addresses' and 'Lambda function' are also shown. The 'Instances' option is highlighted with a blue border and contains a bulleted list of benefits.

3. Type the Target group name, select port HTTP

This screenshot shows the continuation of the 'Create target group' wizard. It's Step 2 of 2, titled 'Register targets'. The 'Target group name' field contains 'asg-tg'. The 'Protocol : Port' section shows 'HTTP' selected as the protocol and '80' as the port. Below it, the 'IP address type' section indicates that IPv4 is selected. At the bottom, there are 'Next Step' and 'Cancel' buttons.

IP address type: IPv4
Each instance has a default network interface (eth0) that is assigned the primary private IPv4 address. The instance's primary private IPv4 address is the one that will be applied to the target.

Protocol version: HTTP1
Send requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.

Health checks: The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

4. Type proper Health check path

Health check protocol: HTTP
Health check path: /health

5. Register the target

Step 1: Specify group details
Step 2: Register targets
Available instances (1/1)
Instance ID: i-0379cc608adc02f0b
Name:
State: Running
Security groups: default
Ports for the selected instances:
Ports for routing traffic to the selected instances.
80
1-65535 (separate multiple ports with commas)

6. Click on create target group

The screenshot shows the AWS Lambda service page. A modal window titled "Create target group" is open. In the "Ports for routing traffic to the selected instances" section, the port "80" is entered. Below it, there is a note: "1-65535 (separate multiple ports with commas)" and a button "Include as pending below". At the bottom of the modal, there is a "Create target group" button.

7. Created target group

The screenshot shows the AWS Lambda service page. A modal window titled "asg-tg" is open, displaying the target group details. It includes sections for "Details" (Target type: Instance, Protocol: Port HTTP: 80, Protocol version: HTTP1, VPC: vpc-0a491cb5a5a3f1384), "Health" (Total targets: 0, Healthy: 0, Unhealthy: 0, Unused: 0, Initial: 0, Draining: 0), and "Anomaly detection" (Info: "Introducing Automatic Target Weights (ATW) to increase application availability"). At the bottom, there is a "Create target group" button.

The screenshot shows the AWS Lambda service page. The "Targets" tab is selected for the target group "asg-tg". It displays the following metrics: Total targets (0), Healthy (0), Unhealthy (0), Unused (0), Initial (0), and Draining (0). Below this, there is a summary: "0 Anomalous". The "Targets" tab also includes tabs for "Monitoring", "Health checks", "Attributes", and "Tags". The "Registered targets" section shows 0 registered targets and a note: "No registered targets. You have not registered targets to this group yet." There is a "Register targets" button at the bottom.

8. Again we go to the ASG selecting our created ASG, scroll down on same page Go to load balancing click on edit.

The screenshot shows the AWS Auto Scaling Groups (ASG) console. On the left sidebar, under the 'Auto Scaling' section, 'Auto Scaling Groups' is selected. In the main content area, the 'Auto Scaling group: asg-scale' is displayed. Under the 'Load balancing' section, there is a table with two columns: 'Load balancer target groups' and 'Classic Load Balancers'. Both columns are currently empty. There is an 'Edit' button in the top right corner of this section.

9. Application, Network or Gateway Load Balancer target groups Click on Check box.

10. Select our created Target group and then click Update

The screenshot shows the 'Load balancing - optional' configuration screen. Under the 'Load balancers' section, the 'Application, Network or Gateway Load Balancer target groups' checkbox is checked. Below it, a dropdown menu shows 'asg-tg | HTTP' selected. A note indicates that one target group is not yet associated with any load balancer. At the bottom right, there is a 'Cancel' button and a yellow 'Update' button.

11. Target group with ASG is Registered

The screenshot shows the EC2 Targets console. On the left sidebar, under the 'Instances' section, 'Targets' is selected. In the main content area, the 'Targets' tab is active, showing a table with one row. The table columns are: 'Total targets' (1), 'Healthy' (0), 'Unhealthy' (0), 'Unused' (1), 'Initial' (0), and 'Draining' (0). Below the table, a section titled 'Registered targets (1/1)' shows a single target: 'i-0379cc608adc02f0b'. The target details are: Port 80, Zone us-east-1b, Health status: Unused, and a note stating 'Target group is not co...'.

12. We can see the same Instances ID's both Target group and ASG

The screenshot displays three AWS service pages side-by-side, showing the relationship between Auto Scaling Groups (ASGs), Target Groups, and Registered Targets.

Top Panel (Auto Scaling Group):

- Auto Scaling group updated successfully:** Shows the ASG named "asg-scale" with one instance.
- Instances (1/1):** Details for the single instance, showing Instance ID: i-0379cc608adc02f0b, Lifecycle: InService, Type: t2.micro, Launch Configuration: asg-template, and Availability Zone: us-east-1b. The instance is marked as Healthy.

Middle Panel (Target Group):

- Targets:** Shows 1 Total targets. Status: 0 Healthy, 0 Unhealthy, 1 Unused, 0 Initial, 0 Draining.
- Health checks:** Displays health check settings for the target group.

Protocol	Path	Traffic port	Healthy threshold
HTTP	/health	Traffic port	5 consecutive health check successes

Unhealthy threshold	Timeout	Interval	Success codes
2 consecutive health check failures	5 seconds	30 seconds	200

Bottom Panel (Registered Targets):

- Distribution of targets by Availability Zone (AZ):** Shows 1 target in the "us-east-1b" zone.
- Targets:** Shows 1 Total targets. Status: 0 Healthy, 0 Unhealthy.
- Registered targets (1/1):** Details for the registered target, showing Instance ID: i-0379cc608adc02f0b, Port: 80, Zone: us-east-1b, and Health status: Unused. A note indicates the target group is not co-located.