

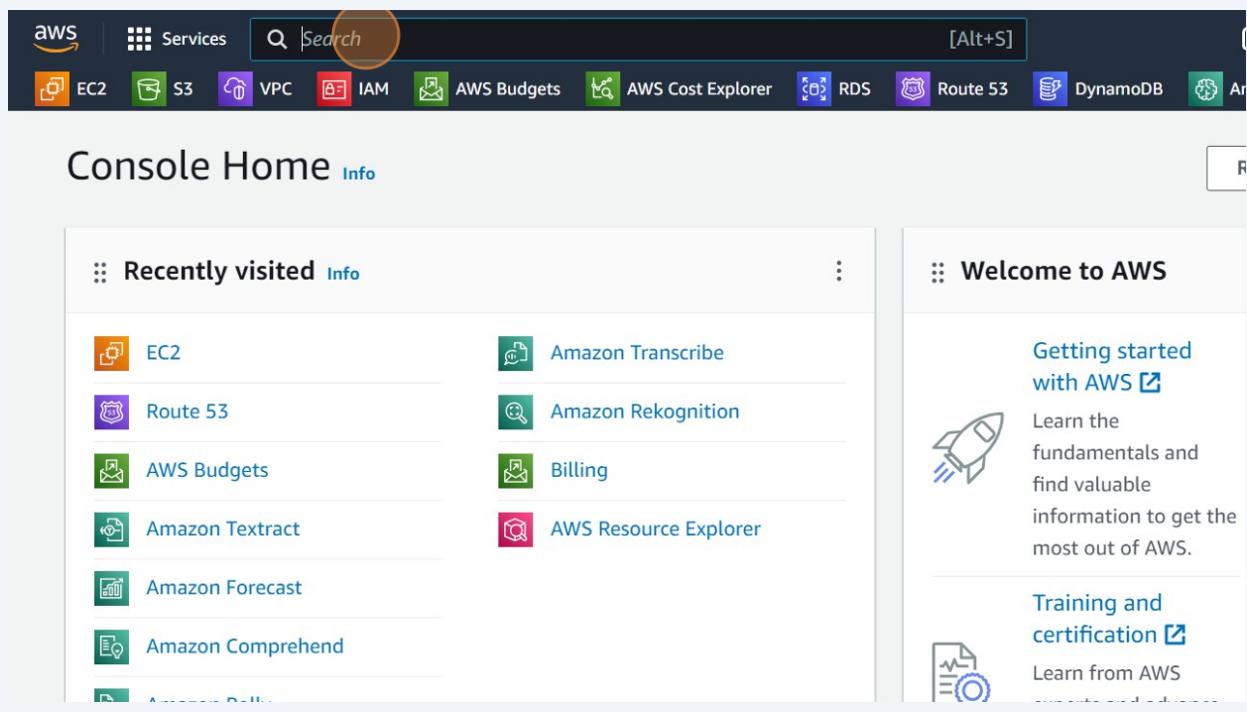
# Auto Scaling Groups (ASG)

This guide provides step-by-step instructions on how to navigate to and access AWS EC2 Auto Scaling Groups. It covers everything from creating a launch template to managing instances and monitoring activity. If you want to learn how to efficiently use Auto Scaling Groups on AWS, this guide is a must-read.

This guide was created by Nijat Hajiyev

- 1 Navigate to [aws.amazon.com](https://aws.amazon.com)

- 2 Click the "Search" field.



- 3 Type "EC2"

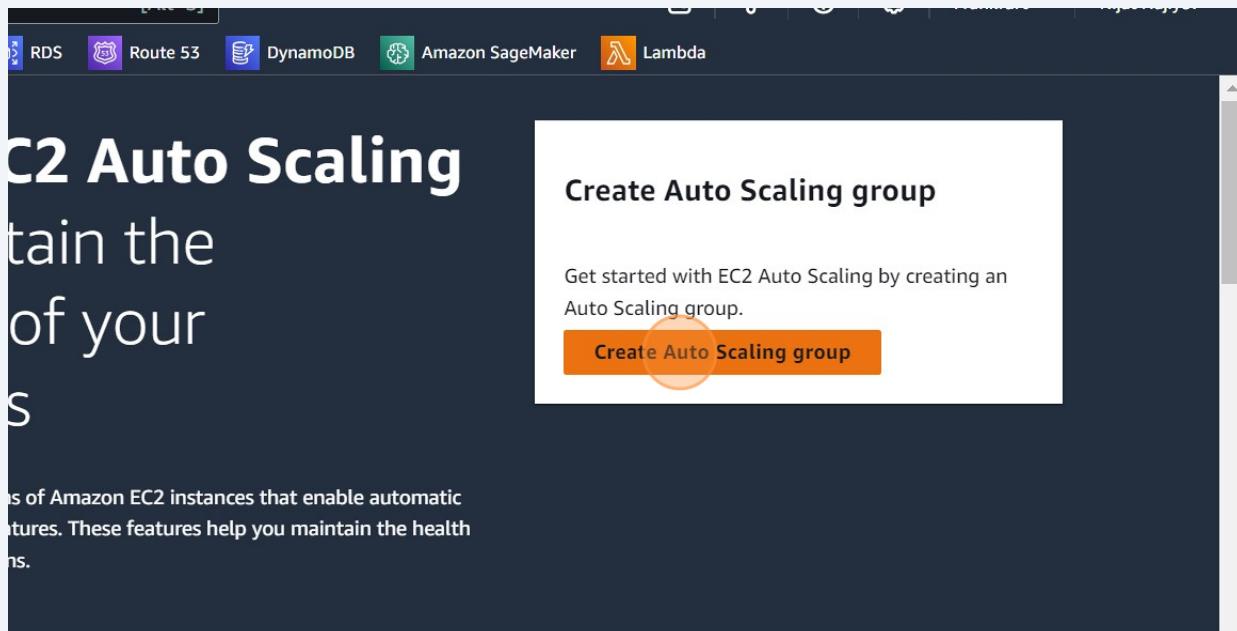
4 Click "EC2"

The screenshot shows the AWS Management Console search results for 'EC2'. The search bar at the top contains 'EC2'. Below it, a sidebar on the left lists various services and features, including EC2, Route 53, AWS Budgets, Amazon Translate, Amazon Forecast, and Amazon CloudWatch Metrics. The main content area is titled 'Services' and shows a list of services: EC2 (Virtual Servers in the Cloud), EC2 Image Builder (A managed service to automate build, customize and deploy OS images), and Recycle Bin (Protect resources from accidental deletion). The EC2 icon is highlighted with a red circle.

5 Click "Auto Scaling Groups"

The screenshot shows the AWS Auto Scaling Groups page. On the left, a navigation sidebar includes Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), and Auto Scaling (Auto Scaling Groups). The 'Auto Scaling Groups' link is highlighted with a red circle. The main content area is titled 'Resources' and displays a summary of EC2 resources: Instances (running) 2, Dedicated Hosts 0, Instances 2, Load balancers 0, Security groups 13, and Volumes 2. Below this, there are 'Launch instance' and 'Service health' buttons. At the bottom, there are links for CloudShell and Feedback, and a copyright notice: © 2023, Amazon Web Services, Inc.

- 6 Click "Create Auto Scaling group"



- 7 Click the "Auto Scaling group name" field.

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 policies

Step 5 - optional  
Add notifications

Step 6 - optional  
Add tags

## Choose launch template or configuration Info

Specify a launch template that contains settings common to all EC2 instances that are part of your Auto Scaling group. If you currently use launch configurations, you might consider migrating to launch templates.

### Name

#### Auto Scaling group name

Enter a name to identify the group.

Must be unique to this account in the current Region and no more than 255 characters.

### Launch template Info

#### Launch template

Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image, security groups, and key pairs.

**8** Type "AutoScalingGroup"

**9** Check "Launch template"

Choose instance launch options

Step 3 - optional

Configure advanced options

Step 4 - optional

Configure group size and scaling policies

Step 5 - optional

Add notifications

Step 6 - optional

Add tags

Step 7

Review

### Name

#### Auto Scaling group name

Enter a name to identify the group.

AutoScalingGroup

Must be unique to this account in the current Region and no more than 255 characters.

### Launch template Info

#### Launch template

Choose a launch template that contains the instance-level settings, such as the Amazon security groups.

Select a launch template

Create a launch template 

## 10 Click "Create a launch template"

The screenshot shows the AWS CloudShell interface with a sidebar on the left containing navigation steps:

- Step 3 - optional: Configure advanced options
- Step 4 - optional: Configure group size and scaling policies
- Step 5 - optional: Add notifications
- Step 6 - optional: Add tags
- Step 7: Review

The main area displays the "Launch template" configuration page. It includes fields for the Auto Scaling group name (set to "AutoScalingGroup") and a "Select a launch template" dropdown. A button labeled "Create a launch template" is highlighted with a red circle.

CloudShell   Feedback   © 2

## 11 Click the "Launch template name - required" field.

### 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

MyTemplate

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

##### Template version description

A prod webserver for MyApp

Max 255 chars

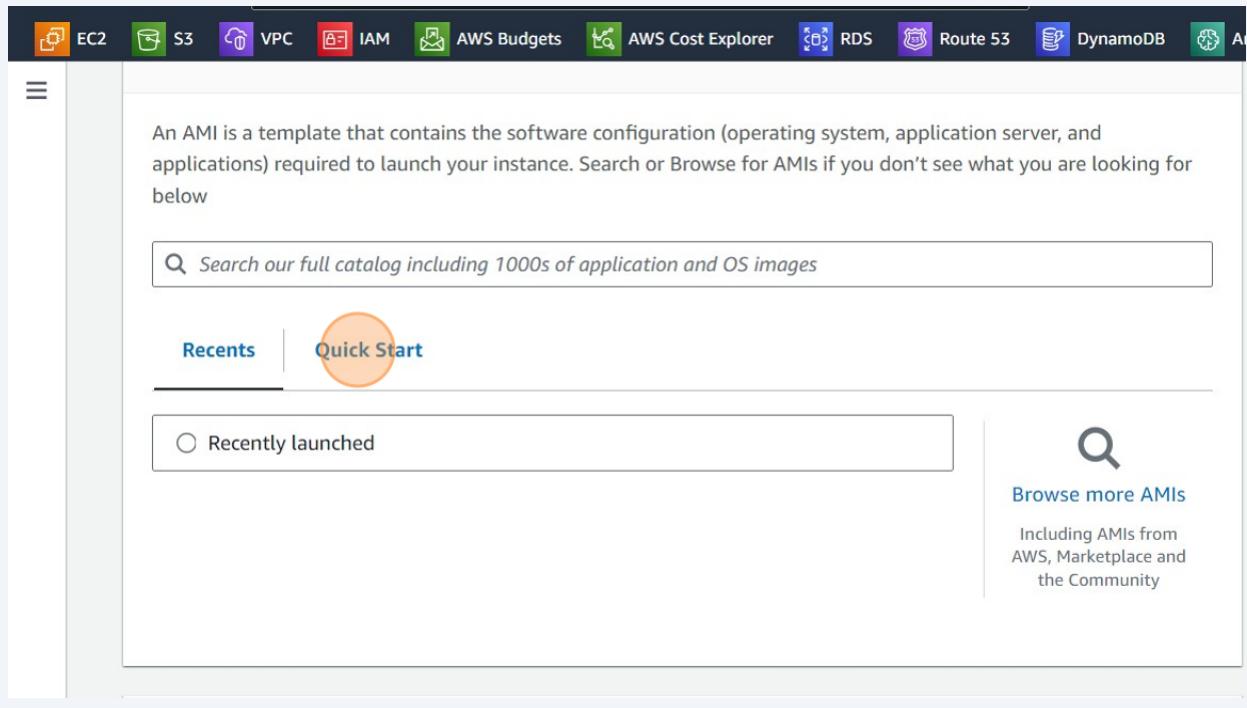
##### Auto Scaling guidance Info

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

**12** Type "Template"

**13** Click "Quick Start"



## 14 Click "Amazon Linux"

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

 Search our full catalog including 1000s of application and OS images

Recents

Quick Start



Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

▼ Instance type [Info](#)

Advanced

## 15 Click here.

The screenshot shows the AWS EC2 console with the "Amazon Machine Image (AMI)" section selected. A callout bubble highlights the "Free tier eligible" status next to the AMI thumbnail. The AMI details panel shows the following information:

- Amazon Linux 2023 AMI**
- ami-0d318f1f04612755 (64-bit (x86)) / ami-06e14f82e5afe2af (64-bit (Arm))
- Virtualization: hvm
- ENA enabled: true
- Root device type: ebs

The "Free tier eligible" status is highlighted with a yellow circle. To the right, the "Summary" pane displays the AMI's software image (Amazon Linux 2023 AMI 2023.2.2...), virtual server type (instance type), firewall (security group), storage (volumes), and a note about the free tier.

## 16 Click "Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type"

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI Free tier eligible

Amazon Linux 2023 AMI Free tier eligible

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type Free tier eligible

Amazon Linux 2 LTS with SQL Server 2019 Standard

▼ Instance type [Info](#) Advanced

CloudShell Feedback

## 17 Click here.

Services Search [Alt+S] Frankfurt

EC2 S3 VPC IAM AWS Budgets AWS Cost Explorer RDS Route 53 DynamoDB Amazon SageMaker Lambda

▼ Instance type [Info](#) Advanced

Instance type

Don't include in launch template

All generations

Compare instance types

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name

Don't include in launch template

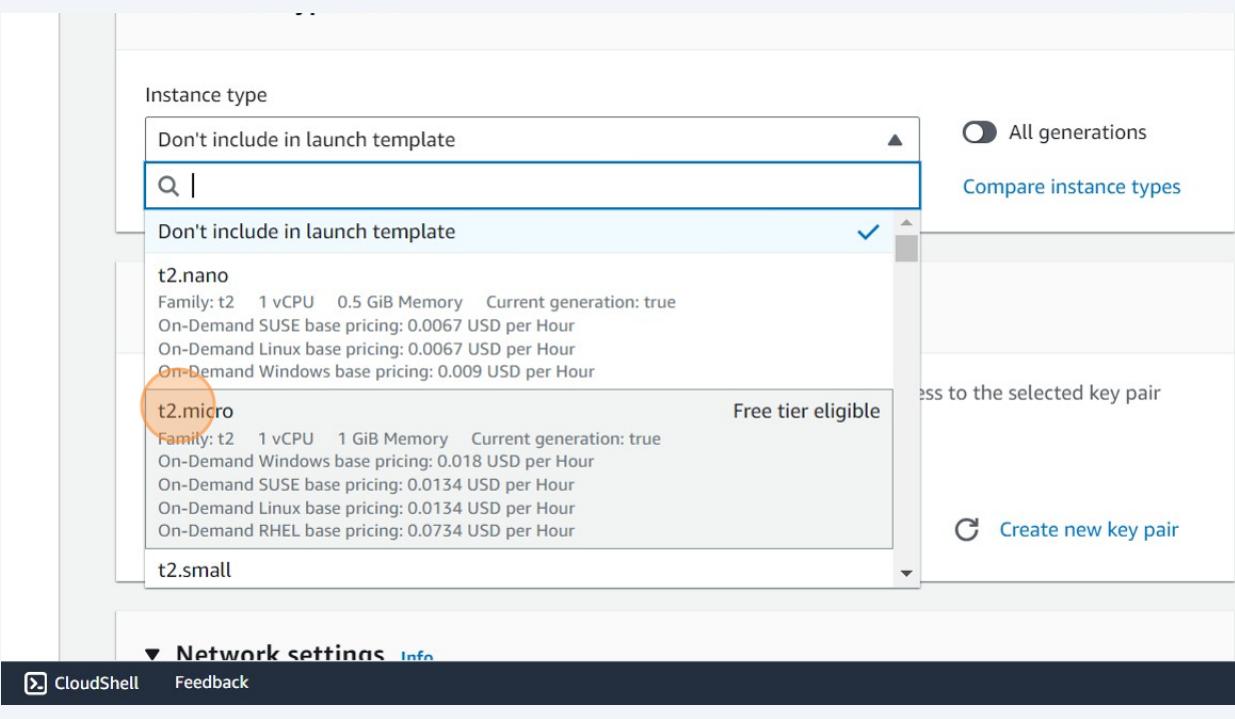
Create new key pair

▼ Network settings [Info](#)

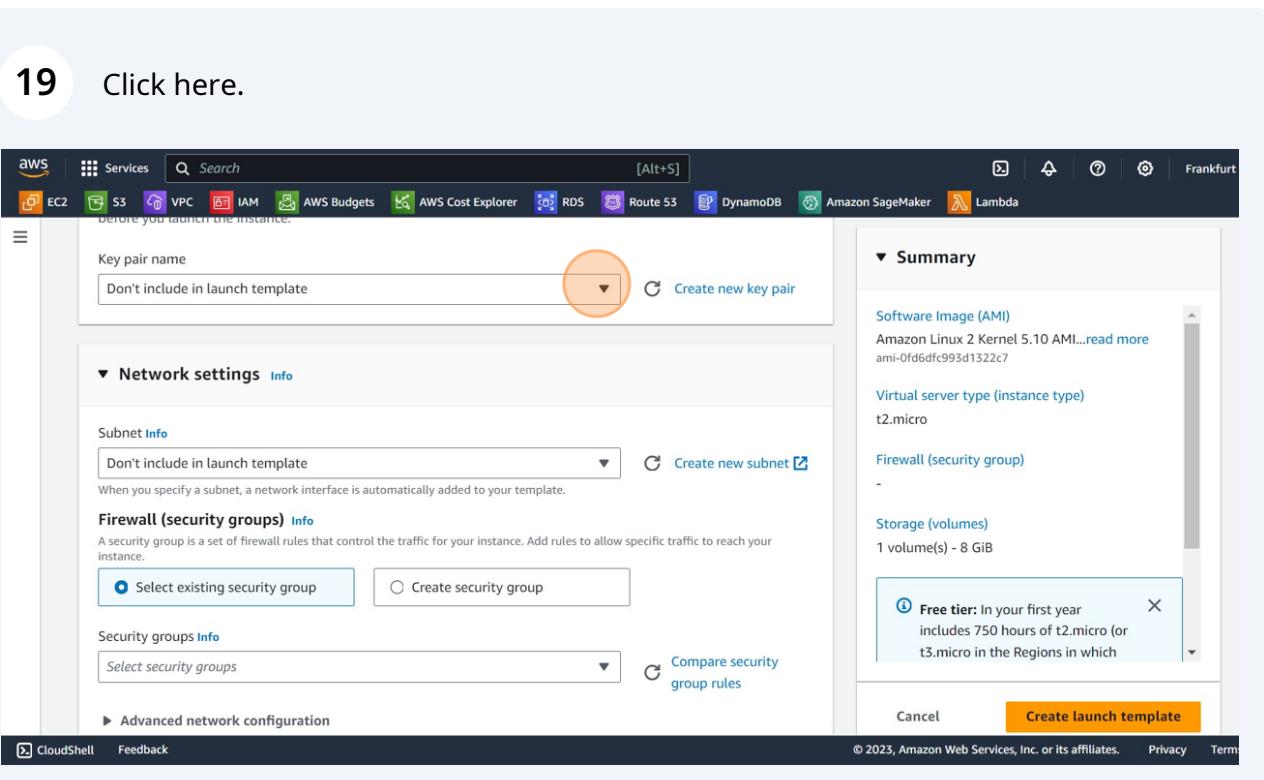
Cancel Create launch template

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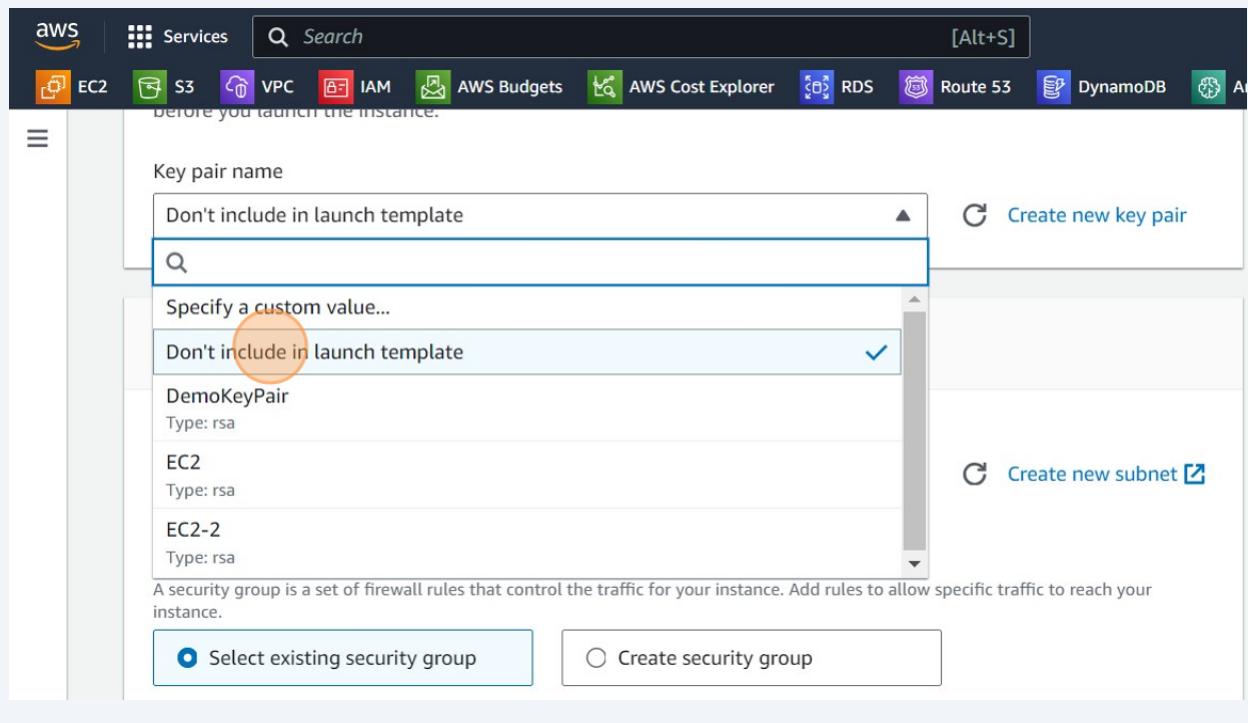
## 18 Click "t2.micro"



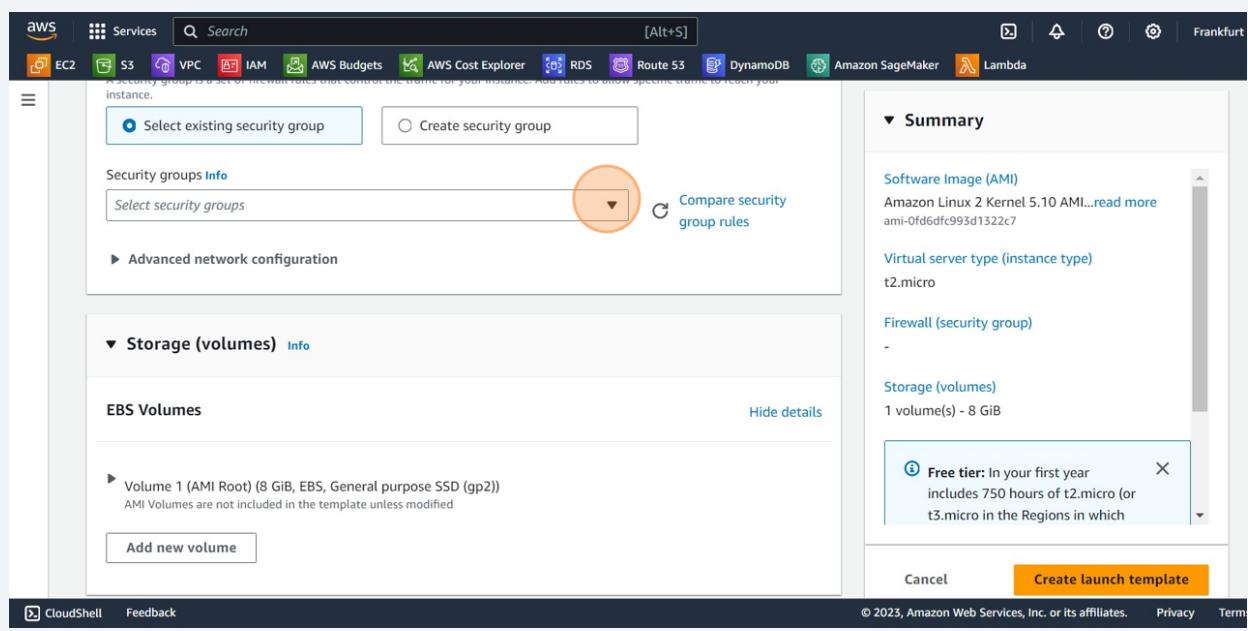
## 19 Click here.



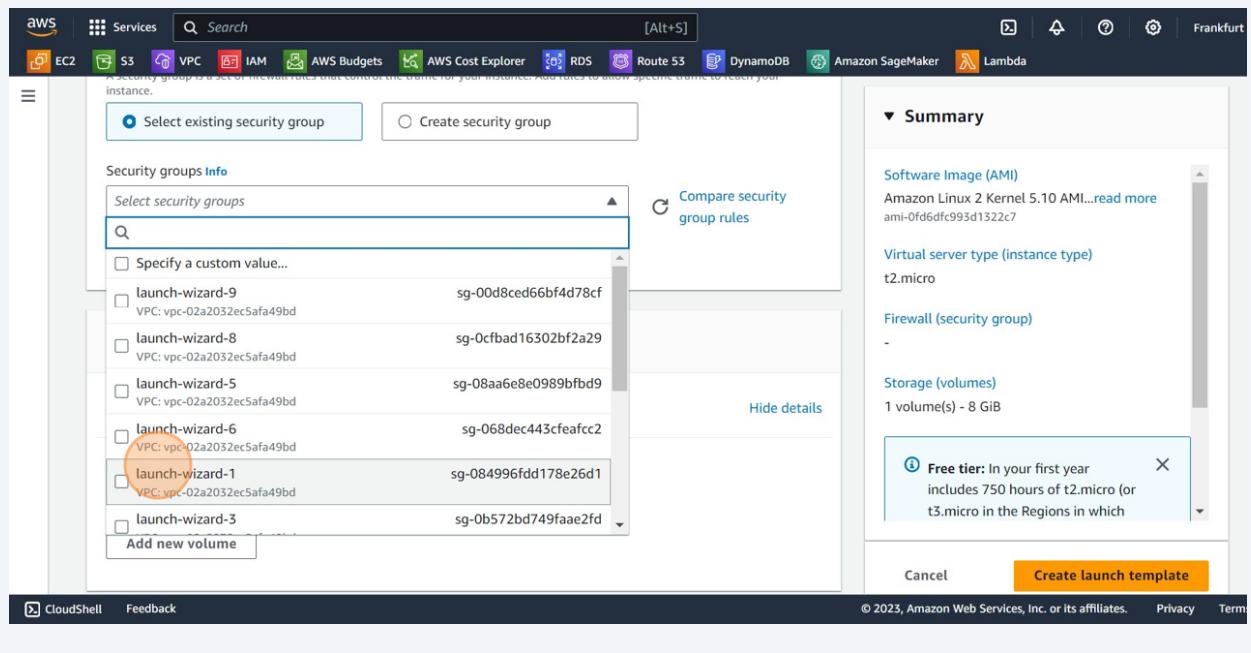
**20** Click "Don't include in launch template"



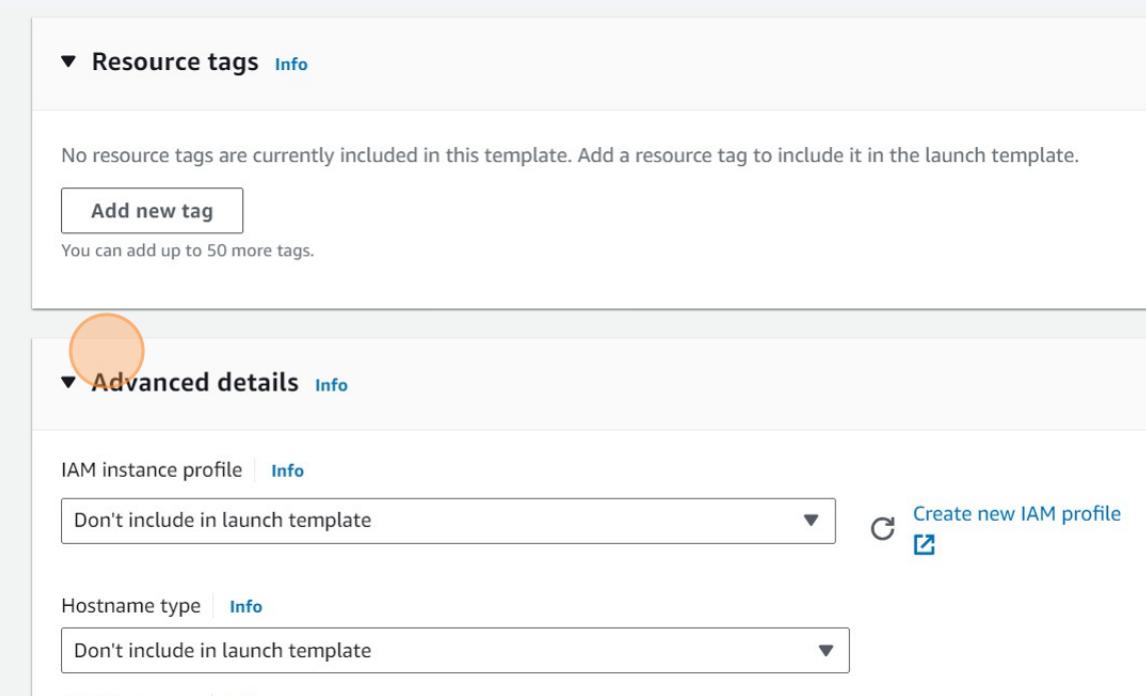
**21** Click here.



## 22 Click "launch-wizard-1"

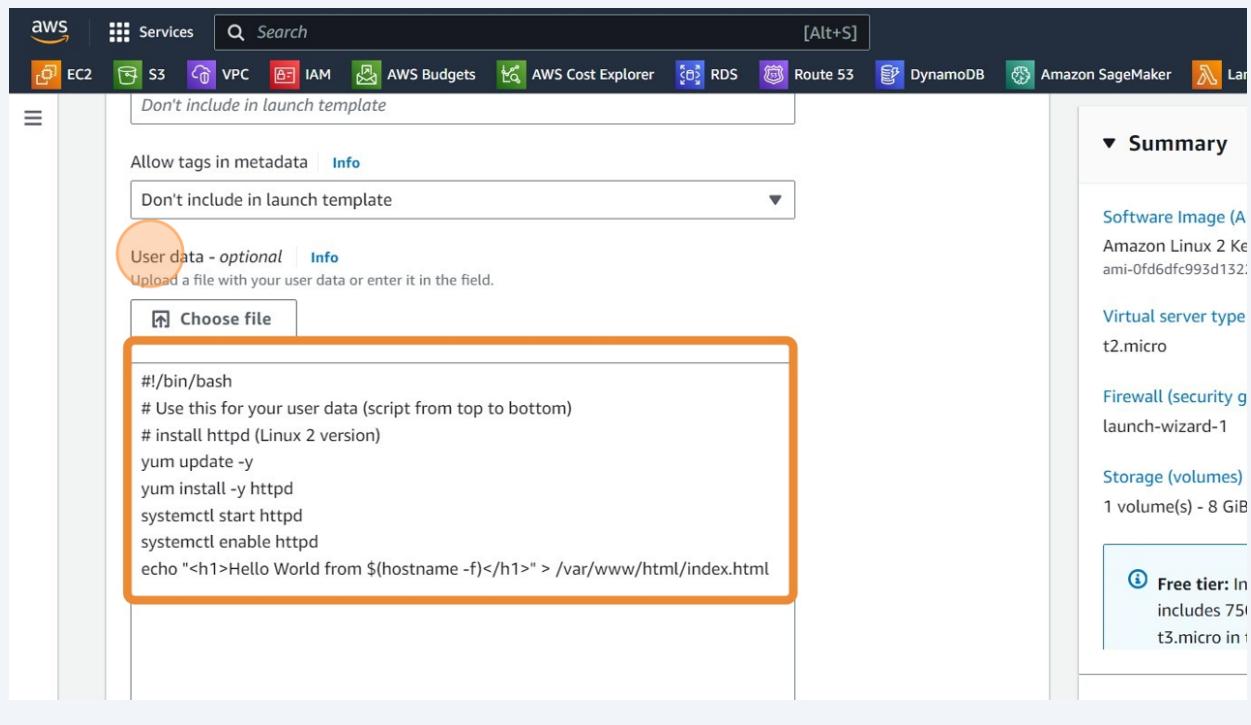


## 23 Click here.



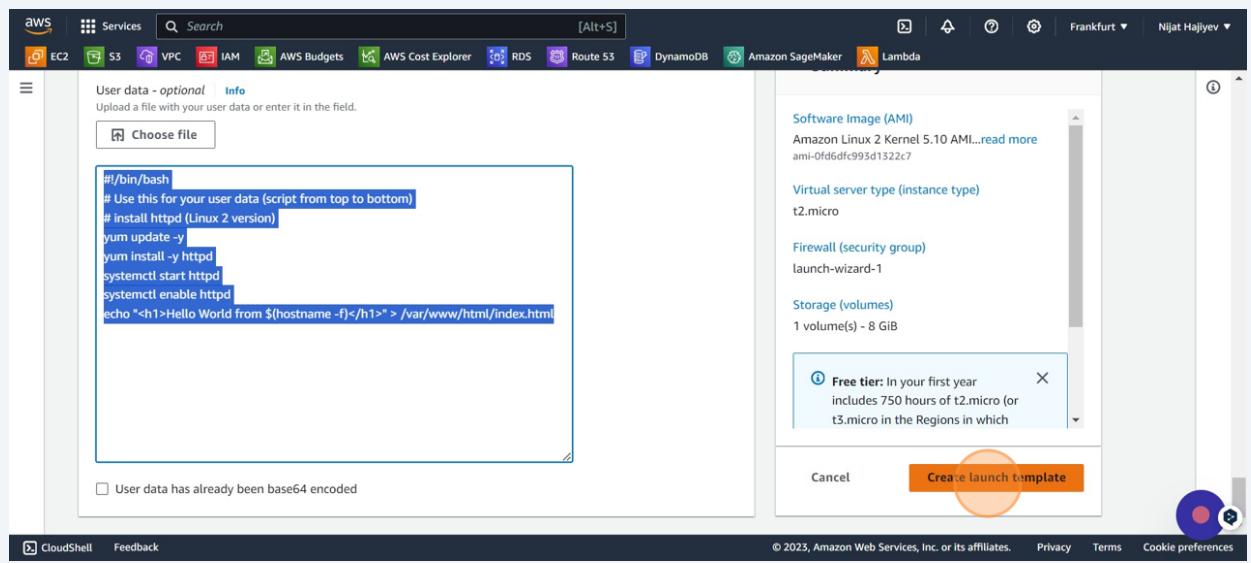
24

Click "User data - optional"



25

Click "Create launch template"



**26** Click this button.

The screenshot shows the AWS CloudFormation console. A modal window titled "Launch template" is open. At the top right of the modal, there is a button labeled "Switch to launch configuration". Below the title, there is a section for "Launch template" settings. A dropdown menu is open, showing "Template" and "Create a launch template". The "Create a launch template" option is highlighted with a red circle. Other fields in the modal include "Description" (empty), "AMI ID" (ami-0fd6dfc993d1322c7), "Launch template" (Template), "Security groups" (empty), "Instance type" (t2.micro), and "Request Spot Instances" (No). The background shows the AWS navigation bar with various services like AWS Cost Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda.

**27** Click here.

The screenshot shows the AWS CloudFormation console. A modal window titled "Launch template" is open. At the top right of the modal, there is a button labeled "Switch to launch configuration". Below the title, there is a section for "Launch template" settings. A dropdown menu is open, showing "Template" and "Create a launch template". The "Create a launch template" option is highlighted with a red circle. Other fields in the modal include "Description" (empty), "AMI ID" (ami-0fd6dfc993d1322c7), "Launch template" (Template), "Security groups" (empty), "Instance type" (t2.micro), and "Request Spot Instances" (No). The background shows the AWS navigation bar with various services like VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda.

## 28 Click "Template"

The screenshot shows the AWS Launch Template creation process at Step 7. On the left, there are optional steps: Step 5 (Add notifications) and Step 6 (Add tags). The main area is titled "Launch template" with a "Info" link. It asks to choose a launch template containing instance-level settings like security groups. A search bar shows "Search launch templates". Below it, a list includes "123", "DemoTemplate", and "Template", with "Template" highlighted by a red circle. To the right, detailed settings are shown: Description is empty; Launch template is set to "Template" (with a link), which corresponds to the ID "lt-0ecf7bc144ba8b28f"; AMI ID is "ami-0fd6dfc993d1322c7"; Security groups are empty. At the bottom, CloudShell and Feedback links are visible.

## 29 Click "Next"

The screenshot shows the "Create a launch template version" configuration page. It lists settings: Description is empty; Launch template is set to "Template" (with a link), which corresponds to the ID "lt-0ecf7bc144ba8b28f"; Instance type is "t2.micro"; AMI ID is "ami-0fd6dfc993d1322c7"; Security groups are empty; Request Spot Instances is "No"; Key pair name is empty; Security group IDs are listed as "sg-084996ffd178e26d1" (with a link); and Additional details show Storage (volumes) is empty and Date created is "Thu Nov 02 2023 15:16:53 GMT+0100 (Central European Standard Time)". The "Next" button at the bottom right is highlighted with a red circle. The top navigation bar includes VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, Lambda, and other AWS services.

**30** Click here.

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-02a2032ec5afa49bd  
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

eu-central-1a | subnet-0bad224858369b2d4  
172.31.16.0/20 Default

eu-central-1b | subnet-0fedb0605dd1a09e3  
172.31.32.0/20 Default

eu-central-1c | subnet-090b683d1c7d3a57b  
172.31.0.0/20 Default

[Create a subnet](#)

**31** Click here.

Choose the VPC that defines the virtual network for your Auto Scaling group.

vpc-02a2032ec5afa49bd  
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

eu-central-1a | subnet-0bad224858369b2d4  
172.31.16.0/20 Default

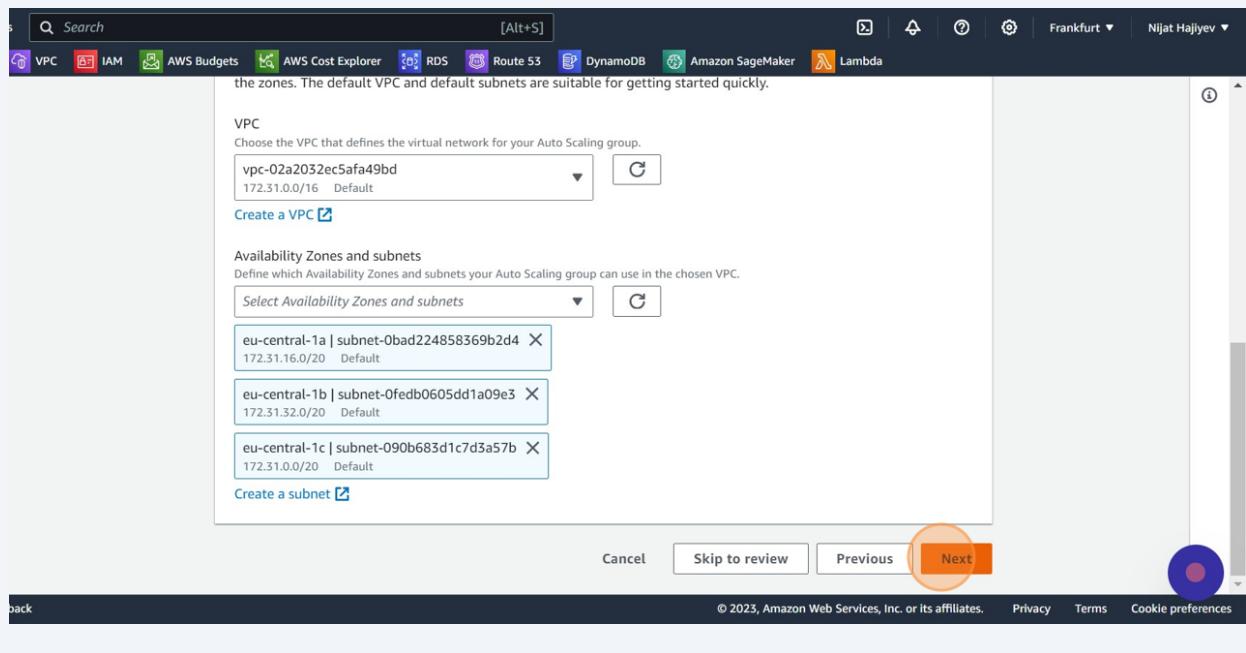
eu-central-1b | subnet-0fedb0605dd1a09e3  
172.31.32.0/20 Default

eu-central-1c | subnet-090b683d1c7d3a57b  
172.31.0.0/20 Default

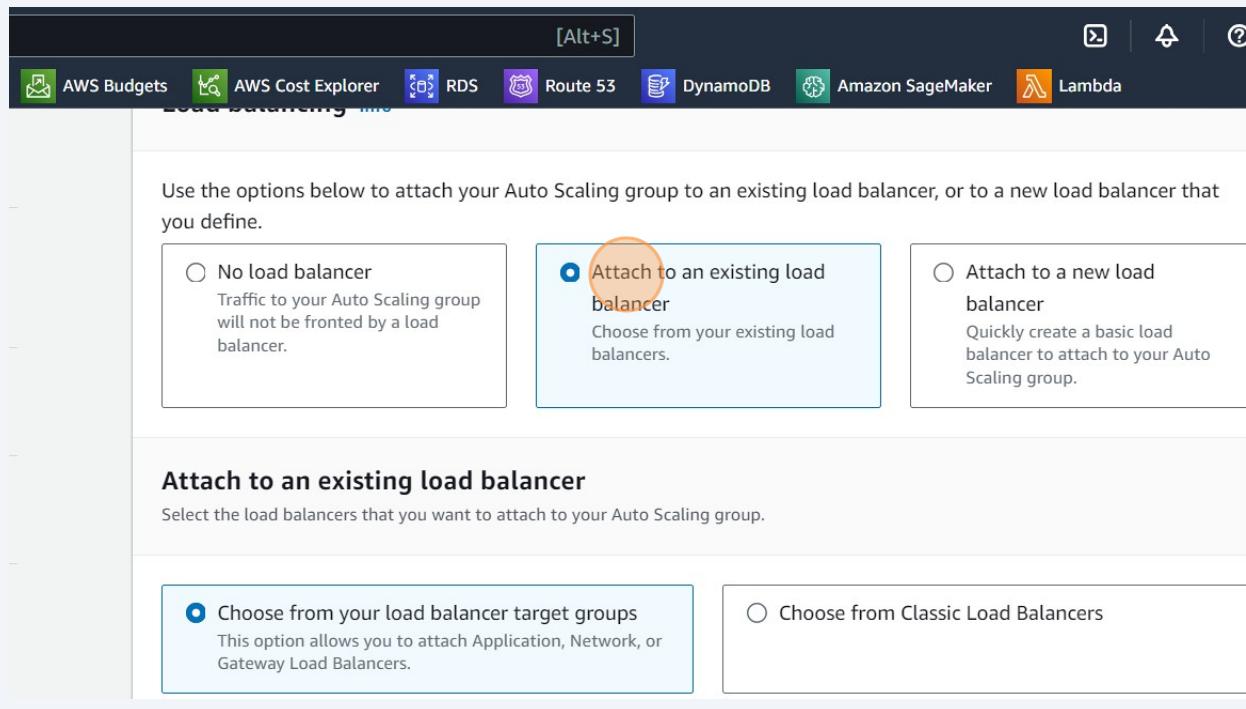
[Create a subnet](#)

Cancel

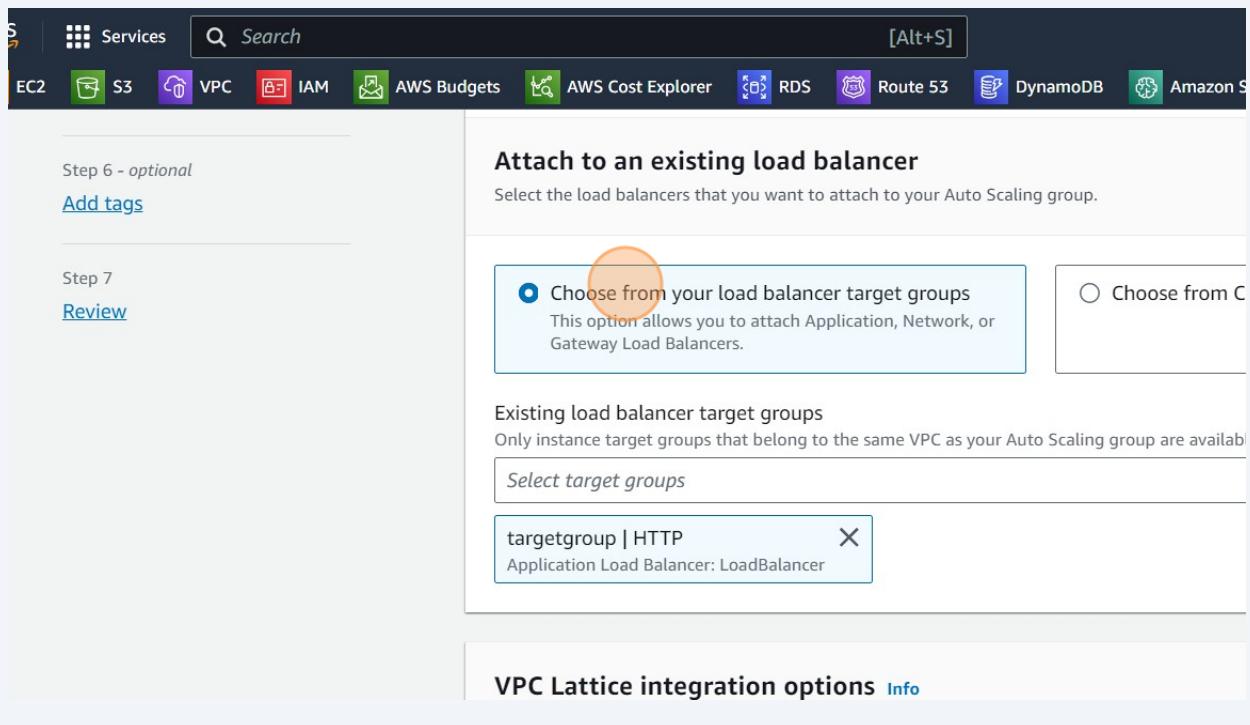
### 32 Click "Next"



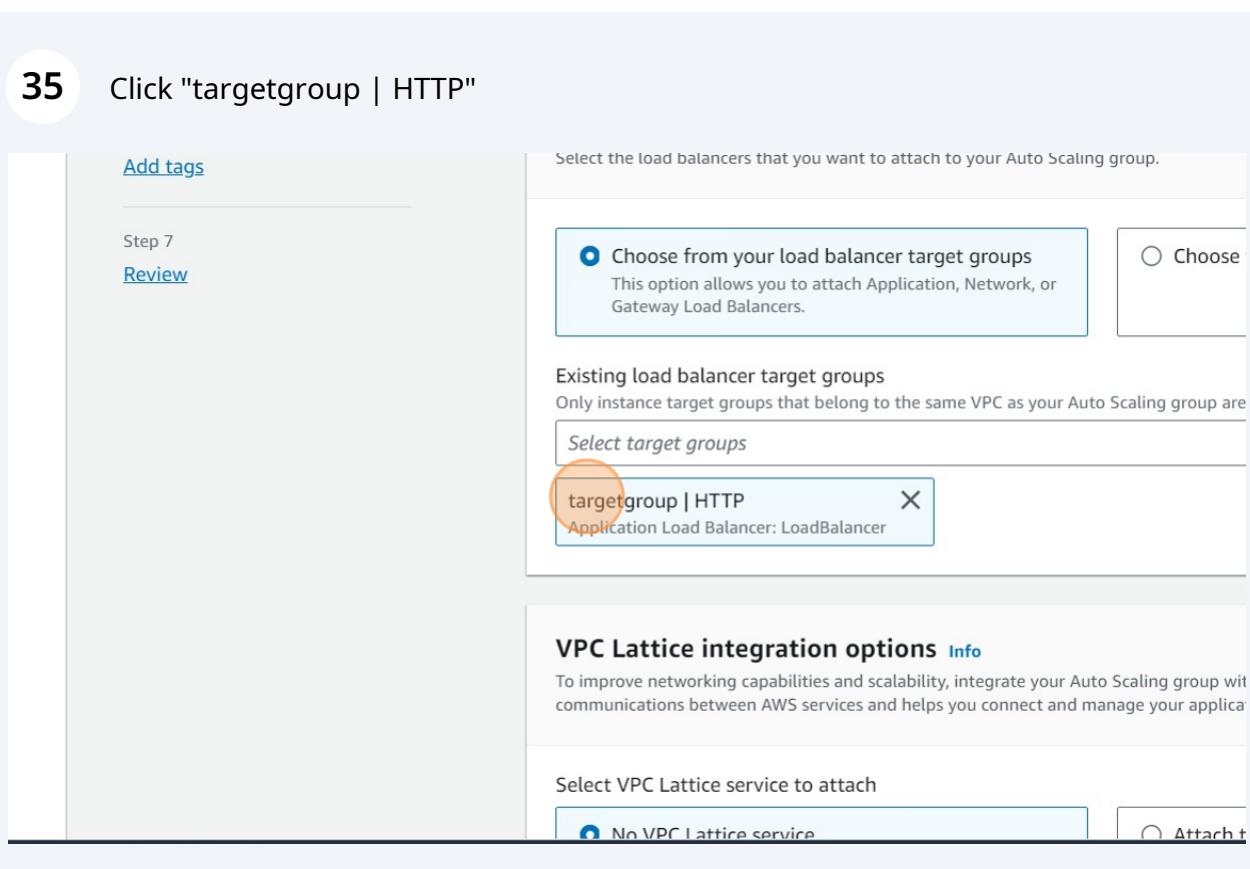
### 33 Click "Attach to an existing load balancer"



**34** Click "Choose from your load balancer target groups"



**35** Click "targetgroup | HTTP"



**36** Click "No VPC Lattice service"

The screenshot shows the 'VPC Lattice integration options' section of the AWS Management Console. At the top, there are several service icons: EC2, S3, VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, and Amazon SageMaker. Below these, a sidebar has three horizontal bars. The main content area has a heading 'VPC Lattice integration options' with an 'Info' link. A sub-section titled 'Select VPC Lattice service to attach' contains two options: 'No VPC Lattice service' (selected, highlighted with a blue border and orange circle) and 'Attach to VPC Lattice service'. A note below the first option states: 'VPC Lattice will not manage your Auto Scaling group's network access and connectivity with other services.' A 'Create new VPC Lattice service' button is also present. Another section titled 'Health checks' with an 'Info' link follows.

**37** Click "Next"

The screenshot shows the 'Additional settings' section of the AWS Auto Scaling configuration wizard. At the top, there are service icons: VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda. A search bar and a 'Turn on VPC Lattice health checks' link are also visible. The 'Additional settings' section includes 'Monitoring' (Info), 'Default instance warmup' (Info), and 'Enable default instance warmup' checkboxes. At the bottom, there are 'Cancel', 'Skip to review', 'Previous', and 'Next' buttons, with 'Next' being highlighted with an orange circle. A footer at the bottom right includes links for 'Privacy', 'Terms', and 'Cookie preferences'.

**38** Click the "Desired capacity" field.

The screenshot shows the AWS Auto Scaling Group configuration wizard. On the left, there's a sidebar with navigation links: Configuration, Step 2 (Choose instance launch options), Step 3 - optional (Configure advanced options), Step 4 - optional (Configure group size and scaling policies), Step 5 - optional (Add notifications), Step 6 - optional (Add tags), and Step 7 (Review). The main area is titled "Group size - optional". It includes descriptive text: "Set the desired, minimum, and maximum capacity of your Auto Scaling group. dynamically scale the number of instances in the group." Below this are three input fields: "Desired capacity" (containing "1", highlighted with an orange circle), "Minimum capacity" (containing "1"), and "Maximum capacity" (containing "1"). At the bottom right of the main area is a button labeled "Next Step - optional".

**39** Type "2"

**40** Click the "Minimum capacity" field.

The screenshot shows the AWS Auto Scaling Group configuration interface. On the left, there's a sidebar with navigation steps: Step 3 - optional ([Configure advanced options](#)), Step 4 - optional (**Configure group size and scaling policies**), Step 5 - optional ([Add notifications](#)), Step 6 - optional ([Add tags](#)), and Step 7 ([Review](#)). The main area is titled "Group size - optional" with a "Info" link. It says: "Specify the size of the Auto Scaling group by changing the desired capacity, maximum capacity limits. Your desired capacity must be within the limit ran". Below this are three input fields: "Desired capacity" (set to 2), "Minimum capacity" (set to 1, highlighted with an orange circle), and "Maximum capacity" (set to 1).

**41** Type "1"

**42** Click the "Maximum capacity" field.

The screenshot shows the AWS Auto Scaling group configuration interface. On the left, there are several optional steps listed: Step 3 (Configure advanced options), Step 4 (Configure group size and scaling policies), Step 5 (Add notifications), Step 6 (Add tags), and Step 7 (Review). Step 4 is currently active. On the right, under "Group size - optional", there are fields for Desired capacity (set to 2), Minimum capacity (set to 1), and Maximum capacity (set to 1, with the input field highlighted by a red circle). Below this is a section titled "Scaling policies - optional". At the bottom, there is a navigation bar with CloudShell, Feedback, and other AWS services like VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda.

**43** Type "4"

**44** Click "Next"

The screenshot shows the continuation of the AWS Auto Scaling group configuration. The "Scaling policies - optional" section is displayed, showing two options: "Target tracking scaling policy" (unchecked) and "None" (checked). Below this is the "Instance scale-in protection - optional" section, which contains a checkbox for "Enable instance scale-in protection" (unchecked). At the bottom, there are navigation buttons: Cancel, Skip to review, Previous, and Next. The "Next" button is highlighted with a red circle. The top navigation bar includes a search bar, account information (Frankfurt, Nijat Hajiyev), and various AWS service icons.

**45** Click "Skip to review"

### Applications - optional Info

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

n

Cancel **Skip to review** Previous Next

**46** Click "Create Auto Scaling group"

Value Tag new instances

No tags

Cancel Previous **Create Auto Scaling group**



47 Click here.

The screenshot shows the AWS Auto Scaling groups page. At the top, there is a navigation bar with various services like VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, and CloudWatch Metrics. Below the navigation bar, the title "Auto Scaling groups" is displayed. A search bar is present with the placeholder "Search your Auto Scaling groups". The main content area shows a table with one row for an Auto Scaling group. The columns are "Name", "Launch template/configuration", "Instances", and "Status". The "Name" column contains "AutoScalingGroup", the "Launch template/configuration" column contains "Template | Version Default", the "Instances" column shows "0", and the "Status" column shows "Updating capacity..". A large orange circle highlights the "C" icon in the "Launch configurations" button.

Name	Launch template/configuration	Instances	Status
<a href="#">AutoScalingGroup</a>	<a href="#">Template</a>   Version Default	0	Updating capacity..

48 Click "AutoScalingGroup"

The screenshot shows the AWS Auto Scaling groups page under the EC2 service. The title "Auto Scaling groups" is displayed. A search bar is present with the placeholder "Search your Auto Scaling groups". The main content area shows a table with one row for an Auto Scaling group. The columns are "Name", "Launch template/configuration", "Instances", and "Status". The "Name" column contains "AutoScalingGroup", the "Launch template/configuration" column contains "Template | Version Default", the "Instances" column shows "2", and the "Status" column shows "-". A large orange circle highlights the "AutoScalingGroup" entry in the "Name" column.

Name	Launch template/configuration	Instances	Status
<a href="#">AutoScalingGroup</a>	<a href="#">Template</a>   Version Default	2	-

49 Click "Activity"

The screenshot shows the AWS Management Console with the Auto Scaling Groups page open. The navigation bar at the top includes the AWS logo, Services (with EC2 selected), Search, and various links like AWS Budgets, AWS Cost Explorer, RDS, Route 53, and DynamoDB. Below the navigation is a breadcrumb trail: EC2 > Auto Scaling groups > AutoScalingGroup. The main title is "AutoScalingGroup". A horizontal menu bar below the title has tabs: Details (selected), Activity (circled in orange), Automatic scaling, Instance management, Monitoring, and Instance refresh. The "Group details" section contains the following information:

Auto Scaling group name	Desired capacity	Status
AutoScalingGroup	2	-
Date created	Minimum capacity	
Thu Nov 02 2023 15:26:49 GMT+0100 (Central European Standard Time)	1	
	Maximum capacity	

50 Click "Launching a new EC2 instance: i-0e37b2fa1de17c268"

The screenshot shows the "Activity history (2)" page. At the top is a search bar labeled "Filter activity history". Below it is a table with columns: Status, Description, and Cause. The table contains two rows, both marked as "Successful":

Status	Description	Cause
Successful	Launching a new EC2 instance: i-00ce43d91f079971c	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to the user's request, increasing the capacity from 0 to 2.
Successful	Launching a new EC2 instance: i-0e37b2fa1de17c268	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to the user's request, increasing the capacity from 0 to 2.

- 51 Click "Launching a new EC2 instance: i-00ce43d91f079971c"

The screenshot shows the 'Activity history' section with a search bar and columns for Status, Description, and Cause. Two entries are listed:

Status	Description	Cause
Successful	Launching a new EC2 instance: i-00ce43d91f079971c	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to the request, increasing the capacity from 0 to 2.
Successful	Launching a new EC2 instance: i-0e37b2fa1de17c268	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to the request, increasing the capacity from 0 to 2.

- 52 Click "Instance management"

The screenshot shows the 'AutoScalingGroup' page with a navigation bar and tabs. The 'Instance management' tab is highlighted with an orange circle.

Navigation Bar:

- Services
- Search [Alt+S]
- S3 VPC IAM AWS Budgets AWS Cost Explorer RDS Route 53 DynamoDB Amazon Sage

Breadcrumbs:

EC2 > Auto Scaling groups > AutoScalingGroup

AutoScalingGroup

Tabs:

- Details
- Activity
- Automatic scaling
- Instance management
- Monitoring
- Instance refresh

Activity notifications (0)

Filter notifications

Send to On instance action

No notifications are currently specified

Create notification

53 Click "Instances"

EC2 > Auto Scaling groups > AutoScalingGroup

## AutoScalingGroup

Details Activity Automatic scaling Instance management Monitoring Instance refresh

### Instances (2)

Filter instances

<input type="checkbox"/>	Instance ID	Lifecycle	Instance t...	Weighted ...	Launch te...
<input type="checkbox"/>	i-00ce43d91f079971c	InService	t2.micro	-	<a href="#">Template</a>
<input type="checkbox"/>	i-0e37b2fa1de17c268	InService	t2.micro	-	<a href="#">Template</a>

54 Click here.

EC2 > Auto Scaling groups > AutoScalingGroup

## AutoScalingGroup

Details Activity Automatic scaling Instance management Monitoring Instance refresh

### Instances (2)

Filter instances

<input type="checkbox"/>	Instance ID	Lifecycle	Instance t...	Weighted ...	Launch te...
<input type="checkbox"/>	i-00ce43d91f079971c	InService	t2.micro	-	<a href="#">Template</a>
<input type="checkbox"/>	i-0e37b2fa1de17c268	InService	t2.micro	-	<a href="#">Template</a>

## 55 Click "Instances"

The screenshot shows the AWS EC2 dashboard with the path: EC2 > Auto Scaling groups > AutoScalingGroup. The left sidebar is expanded, showing the 'Instances' section with 'Instances' selected, indicated by an orange circle. The main content area is titled 'AutoScalingGroup' and shows the 'Instance management' tab selected. Below it, a table titled 'Instances (2)' lists two instances: 'i-00ce43d91f079971c' and 'i-0e37b2fa1de17c268', both marked as 'InService' and 't2.micro'. A search bar labeled 'Filter instances' is present above the table.

## 56 Click this checkbox.

The screenshot shows the AWS EC2 dashboard with the path: EC2 > Instances. The left sidebar is expanded, showing the 'Instances' section with 'Instances' selected, indicated by an orange circle. The main content area is titled 'Instances (2) Info' and shows a table of running instances. The first instance, 'i-00ce43d91f079971c', has its checkbox checked, indicated by an orange circle. The table includes columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability zone. A search bar at the top allows filtering by attribute or tag. A 'Select an instance' button is visible at the bottom.

## 57 Click "Target Groups"

The screenshot shows the AWS CloudWatch Metrics console. On the left, there's a navigation sidebar with sections like Snapshots, Lifecycle Manager, Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), Auto Scaling (Auto Scaling Groups), and CloudShell/Feedback. The 'Target Groups' link under Load Balancing is circled in orange. The main area displays two EC2 instances: i-00ce43d91f079971c and i-0e37b2fa1de17c268, both in the 'Running' state. Below the instances, it says 'Instances: i-00ce43d91f079971c, i-0e37b2fa1de17c268'. Under the 'Monitoring' tab, there are sections for Alarm recommendations, CPU utilization (%), and Status check failed (a...). The status for both instances is 'Status check failed (a...)'. At the bottom, there are tabs for CPU utilization (%), Status check failed (a...), and Status.

## 58 Click "targetgroup"

The screenshot shows the AWS Lambda console. The left sidebar includes sections for Lambda, VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, and DynamoDB. The 'Target Groups' link under the Load Balancing section is circled in orange. The main area shows a table titled 'Target groups (1) Info' with one item: 'targetgroup'. A search bar above the table also has 'Filter target groups' text. Below the table, it says '0 target groups selected' and 'Select a target group above.'

59 Click here.

The screenshot shows the AWS CloudWatch Metrics console. The top navigation bar includes the AWS logo, Services (with EC2 selected), a search bar, and a keyboard shortcut [Alt+S]. Below the navigation bar, there are links for EC2, S3, VPC, IAM, AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, and Amazon SageMaker. On the left, a sidebar lists categories: Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), and Load Balancing (Load Balancers, Target Groups). The main content area displays a summary table with the following data:

Total targets	Healthy	Unhealthy
2	2	0

A callout highlights the 'Total targets' cell with a value of 2. Below this, a section titled 'Distribution of targets by Availability Zone (AZ)' contains a note: 'Select values in this table to see corresponding filters applied to the Registered targets table below.' At the bottom, tabs for Targets, Monitoring, Health checks, Attributes, and Tags are shown, with 'Targets' being the active tab. A table titled 'Registered targets (2)' follows, with columns for Instance ID, Name, Port, and Zone (the last column is partially visible).

60 Click here.

This screenshot is identical to the one above, showing the AWS CloudWatch Metrics console with the 'Targets' tab selected. The interface, data summary table, distribution section, and registered targets table are all the same, with the 'Healthy' status cell highlighted by a callout.

## 61 Click "Registered targets"

The screenshot shows the AWS CloudWatch Metrics console. On the left, there's a sidebar with navigation links: Snapshots, Lifecycle Manager, Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), and Auto Scaling (Auto Scaling Groups). The main area has a title 'Distribution of targets by Availability Zone (AZ)' with a subtitle 'Select values in this table to see corresponding filters applied to the Registered targets table below.' Below this is a table titled 'Registered targets (2)'. The table has columns: Instance ID, Name, and Port. Two rows are listed: one for instance i-00ce43d91f079... with port 80, and another for instance i-0e37b2fa1de17c... with port 80. A search bar labeled 'Filter targets' is at the top of the table. The 'Targets' tab is selected.

	Instance ID	Name	Port
<input type="checkbox"/>	i-00ce43d91f079...		80
<input type="checkbox"/>	i-0e37b2fa1de17c...		80

## 62 Click "Healthy"

The screenshot shows the same AWS CloudWatch Metrics console as the previous step. The table now includes a 'Health status' column. The first row (instance i-00ce43d91f079...) has a status of 'Healthy' with a green checkmark icon. The second row (instance i-0e37b2fa1de17c...) also has a status of 'Healthy' with a green checkmark icon. The 'Health status det...' link is visible in the header of the 'Health status' column. The 'Health checks' tab is selected.

	Port	Zone	Health status	Health status det...
	80	eu-central-1c	Healthy	
	80	eu-central-1a	Healthy	

### 63 Click "Healthy"

The screenshot shows the AWS CloudWatch Metrics Insights Targets table. At the top, there are tabs for 'Metrics' (selected), 'Attributes', and 'Tags'. Below the table header, there are buttons for 'Deregister' and 'Register targets'. The table has columns for Port, Zone, Health status, and a dropdown for Health status details. Two rows are listed:

Port	Zone	Health status	Health status det...
80	eu-central-1c	Healthy	
80	eu-central-1a	Healthy	

The 'Healthy' status in both rows is highlighted with a green circle and a red outline. The bottom right corner of the screenshot features a blue circular icon with a white dot.

### 64 Click "Load Balancers"

The screenshot shows the AWS Lambda console navigation bar on the left with options like Snapshots, Lifecycle Manager, Network & Security, Load Balancing, Auto Scaling, and CloudShell. The 'Load Balancing' section is expanded, and 'Load Balancers' is selected, which is highlighted with a red circle. The main content area displays a distribution table for targets by availability zone and a registered targets table.

**Distribution of targets by Availability Zone (AZ)**

Region	Count
eu-central-1	2

**Registered targets (2)**

Instance ID	Name	Port
i-00ce43d91f079971c		80
i-0e37b2fa1de17c268		80

65 Click here.

The screenshot shows the AWS Management Console with the EC2 service selected. In the left navigation pane, 'Store' is visible. The main content area displays the 'Load balancers' section with the heading 'Load balancers (1)'. A table lists one item: 'LoadBalancer' with a DNS name of 'LoadBalancer-104927435...', which is active and associated with VPC ID 'vpc-02a2'. A search bar labeled 'Filter load balancers' is present above the table. Below the table, a message says '0 load balancers selected' and 'Select a load balancer above.' A large orange circle highlights the 'DNS name' column header and the first row of the table.

66 Click here and open in new window.

This screenshot is identical to the one above, showing the AWS EC2 Load Balancers page with one item listed. The 'DNS name' column header and the first row of the table are highlighted with a large orange circle. The rest of the interface, including the navigation pane and the message below the table, is the same.

- 67** Click "Hello World from ip-172-31-24-170.eu-central-1.compute.internal"

Hello World from ip-172-31-24-170.eu-central-1.compute.inter

- 68** Press **ctrl + r**

Refresh page

69 Click "Hello World from ip-172-31-0-226.eu-central-1.compute.internal"

Hello World from ip-172-31-0-226.eu-central-1.compute.interna

70 Click "Auto Scaling Groups"

The screenshot shows the AWS CloudFront console. On the left, there is a navigation sidebar with the following menu items:

- Snapshots
- Lifecycle Manager
- Network & Security**
  - Security Groups
  - Elastic IPs
  - Placement Groups
  - Key Pairs
  - Network Interfaces
- Load Balancing**
  - Load Balancers**
  - Target Groups
- Auto Scaling**
  - Auto Scaling Groups**

The "Load Balancers" section is currently selected and displayed on the right. It contains the following information:

- Load balancers (1)**
- Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incor
- A search bar labeled "Filter load balancers".
- A table with one row:

Name	DNS name copied	State
LoadBalancer	LoadBalancer-104927435...	Active
- 0 load balancers selected**
- Select a load balancer above.

**71** Click "AutoScalingGroup"

The screenshot shows the AWS EC2 console with the navigation path: EC2 > Auto Scaling groups. On the left, there's a sidebar with categories like Network & Security, Load Balancing, and Auto Scaling, with 'Auto Scaling Groups' selected. The main area displays a table titled 'Auto Scaling groups (1)'. The first row in the table is 'AutoScalingGroup', which is circled in orange. The table includes columns for Name, Launch template/configuration, and Actions.

**72** Click "Instance management"

The screenshot shows the 'AutoScalingGroup' details page. At the top, there's a navigation bar with links to various AWS services. Below it, the path is EC2 > Auto Scaling groups > AutoScalingGroup. The main content area has tabs: Details (highlighted), Activity, Automatic scaling, Instance management (circled in orange), Monitoring, and Instance refresh. Under the 'Group details' section, there are two rows of information:

Auto Scaling group name	Desired capacity	Status	Amazon CloudWatch Metrics
AutoScalingGroup	2	-	3372 9e9c664:2
Date created	Minimum capacity	Maximum capacity	alining
Thu Nov 02 2023 15:26:49 GMT+0100 (Central European Standard Time)	1		

**73** Click "i-00ce43d91f079971c"

The screenshot shows the AWS Auto Scaling group management interface. On the left, there's a sidebar with Network & Security, Load Balancing, and Auto Scaling sections. The main area is titled 'Auto Scaling Group' and has tabs for Details, Activity, Automatic scaling, Instance management (which is selected), and Monitoring. Under 'Instances (1/2)', there's a table with columns for Instance ID, Lifecycle, Instance Type, and Weight. The first row, which has a checked checkbox and a circled 'i-00ce43d91f079971c' link, is highlighted with a red circle. Below the table is a section for 'Lifecycle hooks (0)'.

**74** Click "Instance state"

The screenshot shows the AWS instance details page for 'i-00ce43d91f079971c'. At the top, there are navigation links for RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda. The instance ID 'i-00ce43d91f079971c' is shown with an 'Info' link. Below the instance ID are buttons for 'Connect', 'Instance state ▾' (which is highlighted with a red circle), and 'Actions ▾'. The main content area displays various instance details in pairs: Public IPv4 address (3.68.104.22), Private IPv4 addresses (172.31.0.226), Instance state (Running), Public IPv4 DNS (ec2-3-68-104-22.eu-central-1.compute.amazonaws.com), Private IP DNS name (ip-172-31-0-226.eu-central-1.compute.internal), Instance type (t2.micro), and Elastic IP addresses (none).

**75** Click "Terminate instance"

The screenshot shows the AWS Lambda console interface. On the left, there's a sidebar with a search bar and a list of functions. The main area displays detailed information for a function named '1f079971c'. The 'Info' tab is selected. Key details shown include:

- Public IPv4 address: 3.68.104.22
- Instance state: Running
- Private IP: 172.31.0.1
- Public IP: ec2-3-6-1.compute.amazonaws.com
- Instance type: t2.micro
- VPC ID: vpc-02a2032ec5afa49bd
- Elastic IP addresses: -
- AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations

An 'Actions' dropdown menu is open on the right, listing options: Stop instance, Start instance, Reboot instance, Hibernate instance, and Terminate instance. The 'Terminate instance' option is highlighted with a red circle.

**76** Click "Terminate"

The screenshot shows a confirmation dialog box titled 'Terminate?'. It contains the following text:

To protect your instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost.

I want to terminate these instances?

Termination protection:  Disabled

I want to terminate the instances, choose the terminate button below. Instances with termination protection enabled will not be terminated. Terminating the instance cannot be undone.

Cancel **Terminate**

At the bottom, there are links for 'Opt-in to AWS Compute Optimizer for recommendations', 'Learn more', and 'Cookie preferences'.

77

Click "Instance management"

The screenshot shows the AWS Auto Scaling Groups page. At the top, there are navigation links: AWS Budgets, AWS Cost Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda. Below these are breadcrumb links: C2 > Auto Scaling groups > AutoScalingGroup. The main title is "AutoScalingGroup". Below the title, there are tabs: Details, Activity (which is selected), Automatic scaling, Instance management (which is highlighted with an orange circle), Monitoring, and Instance refresh. Under the "Activity" tab, there is a section titled "Activity notifications (0)". It includes a search bar labeled "Filter notifications", a "Send to" dropdown, and a "Send to" button. A dropdown menu is open next to "Send to" with the option "On instance action". Below this, a message says "No notifications are currently specified" with a "Create notification" button.

78

Click here.

The screenshot shows the AWS Auto Scaling Groups page. At the top, there are navigation links: AWS Cost Explorer, RDS, Route 53, DynamoDB, Amazon SageMaker, and Lambda. Below these are breadcrumb links: C2 > Auto Scaling groups > AutoScalingGroup. The main title is "AutoScalingGroup". Below the title, there are tabs: Details, Automatic scaling, Instance management (which is selected), Monitoring, and Instance refresh. Under the "Instance management" tab, there is a section titled "Lifecycle hooks (0) Info". It includes a search bar labeled "Filter hooks", a "Create lifecycle hook" button, and a table with two rows. The table has columns: ID, Lifecycle, Instance type, Weight, Launch type, Availability zone, Health status, and Progress. The first row has an ID of 3d91f079971c, a Lifecycle status of Terminating, an Instance type of t2.micro, a Weight of -, a Launch type of Template, an Availability zone of eu-central..., and a Health status of Unhealthy. The second row has an ID of f97109f38c96, a Lifecycle status of InService, an Instance type of t2.micro, a Weight of -, a Launch type of Template, an Availability zone of eu-central..., and a Health status of Healthy. The third row has an ID of 2fa1de17c268, a Lifecycle status of InService, an Instance type of t2.micro, a Weight of -, a Launch type of Template, an Availability zone of eu-central..., and a Health status of Healthy. The "Health status" column for the first row is highlighted with an orange rectangle.

79 Click "Activity"

The screenshot shows the AWS Management Console with the EC2 service selected. In the left navigation pane, the 'Auto Scaling' section is expanded, showing 'Auto Scaling groups' and 'AutoScalingGroup'. The main content area displays the 'AutoScalingGroup' details for a group named 'AutoScalingGroup'. The 'Activity' tab is highlighted with a yellow circle. Below it, the 'Instances (3)' section lists three instances: one terminating (t2.micro) and two in service (t2.micro). The 'Activity' tab also includes a search bar and filtering options.

80 Click "Connection draining in progress"

The screenshot shows the AWS Management Console with the EC2 service selected. In the left navigation pane, the 'Auto Scaling' section is expanded, showing 'Auto Scaling groups' and 'AutoScalingGroup'. The main content area displays the 'Activity' log for an Auto Scaling group. One entry is circled in orange and labeled 'Connection draining in progress'. The log entries include:

Status	Description	Cause
Successful	Launching a new EC2 instance: i-0b139f97109f38c96	At 2023-11-02T14:36:59Z an instance replaced.
... Connection draining in progress	Terminating EC2 instance: i-00ce43d91f079971c - Waiting For ELB Connection Draining.	At 2023-11-02T14:36:59Z an instance indicating it has been terminated or still
Successful	Launching a new EC2 instance: i-00ce43d91f079971c	At 2023-11-02T14:26:49Z a user request from 0 to 2. At 2023-11-02T14:26:51: desired and actual capacity, increasing
Successful	Launching a new EC2 instance: i-	At 2023-11-02T14:26:49Z a user request from 0 to 2. At 2023-11-02T14:26:51:

81

Click "At 2023-11-02T14:36:59Z an instance was taken out of service in response to an EC2 health check indicating it has been terminated or stopped."

Description	Cause
Launching a new EC2 instance: i-0b139f97109f38c96	At 2023-11-02T14:36:59Z an instance was launched in response to an unhealthy instance needing to be replaced.
Terminating EC2 instance: i-00ce43d91f079971c - Waiting For ELB Connection Draining.	At 2023-11-02T14:36:59Z an instance was taken out of service in response to an EC2 health check indicating it has been terminated or stopped.
Launching a new EC2 instance: i-00ce43d91f079971c	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.
Launching a new EC2 instance: i-0e37b2fa1de17c268	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.

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Click "Successful"

Status			
Services	Search	AWS Cost Explorer	RDS
EC2	S3	VPC	IAM
AWS Budgets	AWS Cost Explorer	RDS	Route 53
Elastic Block Store	Successful	Launching a new EC2 instance: i-0b139f97109f38c96	At 2023-11-02T14:36:59Z an instance was launched in response to an unhealthy instance needing to be replaced.
Network & Security	Connecting instance draining in progress	Terminating EC2 instance: i-00ce43d91f079971c - Waiting For ELB Connection Draining.	At 2023-11-02T14:36:59Z an instance was taken out of service in response to an EC2 health check indicating it has been terminated or stopped.
Load Balancing	Successful	Launching a new EC2 instance: i-00ce43d91f079971c	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.
		Launching a new EC2	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.

83

Click "At 2023-11-02T14:36:59Z an instance was launched in response to an unhealthy instance needing to be replaced."

Search [Alt+S]		
	Status	Description
	Cause	
	Success <ul style="list-style-type: none"><li>Launching a new EC2 instance: i-0b139f97109f38c96</li></ul>	At 2023-11-02T14:36:59Z an instance was launched in response to an unhealthy instance needing to be replaced.
	Connecting draining instance in progress <ul style="list-style-type: none"><li>Terminating EC2 instance: i-00ce43d91f079971c - Waiting For ELB Connection Draining.</li></ul>	At 2023-11-02T14:36:59Z an instance was taken out of service in response indicating it has been terminated or stopped.
	Success <ul style="list-style-type: none"><li>Launching a new EC2 instance: i-00ce43d91f079971c</li></ul>	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to the desired and actual capacity, increasing the capacity from 0 to 2.
	Success <ul style="list-style-type: none"><li>Launching a new EC2 instance: i-00ce43d91f079971c</li></ul>	At 2023-11-02T14:26:49Z a user request created an AutoScalingGroup from 0 to 2. At 2023-11-02T14:26:51Z an instance was started in response to the desired and actual capacity, increasing the capacity from 0 to 2.