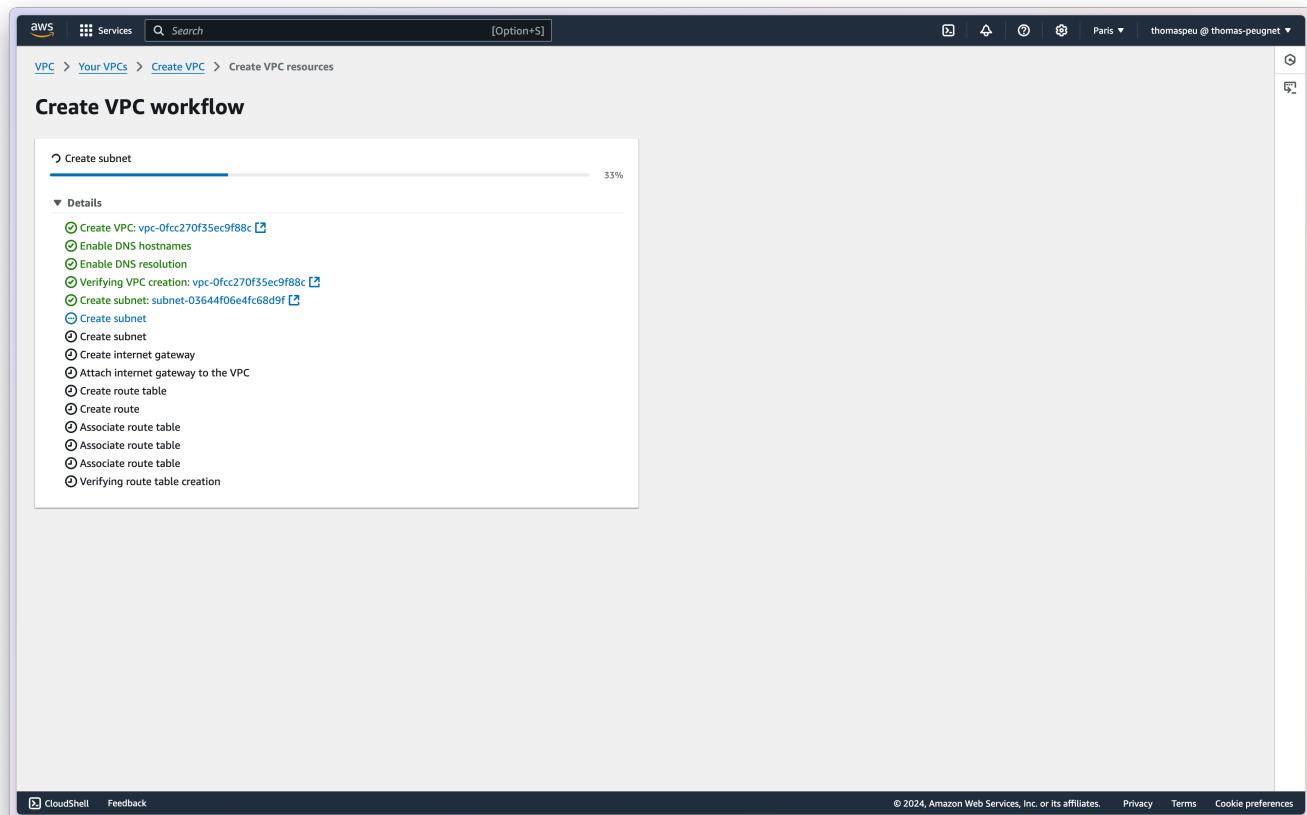


Rendu TP08

Compte rendu du TP 08 effectué par Thomas PEUGNET .

Nous créons le VPC VPC-THOMAS-ALB .



Screenshot of the AWS VPC dashboard showing the details of the VPC `vpc-0fcc270f35ec9f88c`. The VPC is named `VPC-THOMAS-ALB-vpc`. Key details include:

- VPC ID:** `vpc-0fcc270f35ec9f88c`
- State:** Available
- Block Public Access:** Off
- DNS hostnames:** Enabled
- Main route table:** `rtb-02a258f6f669fc4f4`
- IPv6 pool:** -
- Owner ID:** `794038237731`

The **Resource map** section shows the network structure:

- VPC:** `VPC-THOMAS-ALB-vpc`
- Subnets:** (3) `eu-west-3a`, `eu-west-3b`, `eu-west-3c`
- Route tables:** (2) `rtb-02a258f6f669fc4f4`, `VPC-THOMAS-ALB-rtb-public`
- Network connections:** (1) `VPC-THOMAS-ALB-igw`

Nous créons un Security Group `HTTP-access`.

Screenshot of the AWS Security Groups page for the VPC `vpc-0fcc270f35ec9f88c`. The security group `HTTP-access` is selected.

Inbound rules:

Type	Protocol	Port range	Source	Description
HTTP	TCP	80	Anywhere... (0.0.0.0/0)	HTTP-access

Outbound rules:

Type	Protocol	Port range	Destination	Description
All traffic	All	All	Custom (0.0.0.0/0)	

Tags - optional:

No tags associated with the resource.

The screenshot shows the AWS VPC dashboard. A green banner at the top indicates that a security group was created successfully. The main panel displays the details of the security group 'sg-0826d70242b13093d - HTTP-access'. It shows the security group ID, owner, inbound rules count (1 permission entry), and outbound rules count (1 permission entry). Below this, there are tabs for Inbound rules, Outbound rules, Sharing - new, VPC associations - new, and Tags. The Inbound rules section lists one rule: 'sgr-0a887ee37322ae3...' with source '0.0.0.0/0', type 'HTTP', and port range '80'. There are buttons for Manage tags and Edit inbound rules.

Nous créons un template d'instance WEB-SERVER .

The screenshot shows the EC2 Launch Templates page. A modal window is open for creating a new launch template. The left side of the modal shows 'Network settings' with options for Subnet (selected 'Don't include in launch template'), Firewall (selected 'Select existing security group' with 'HTTP-access' chosen), and Common security groups (selected 'HTTP-access sg-0826d70242b13093d'). The right side shows the 'Summary' section with 'Software Image (AMI)' set to 't2.micro'. It also shows 'Virtual server type (instance type)' as 't2.micro', 'Firewall (security group)' as 'HTTP-access', and 'Storage (volumes)' as 'Free tier'. A note about the free tier is displayed: 'Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) Instance usage on free tier AMIs per month, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.' At the bottom right is a 'Create launch template' button.

Nous ajoutons le code suivant dans User Data.

```

#!/bin/bash

# Update the system and install necessary packages
yum update -y
yum install -y httpd

# Start the Apache server
systemctl start httpd
systemctl enable httpd

# Fetch the Availability Zone information using IMDSv2
TOKEN=`curl -X PUT "http://169.254.169.254/latest/api/token" -H "X-aws-ec2-metadata-token-ttl-seconds: 21600"`
AZ=`curl -H "X-aws-ec2-metadata-token: $TOKEN" http://169.254.169.254/latest/meta-data/placement/availability-zone`

# Create the index.html file
cat > /var/www/html/index.html <<EOF
<html>
<head>
    <title>Instance Availability Zone</title>
    <style>
        body {
            background-color: #6495ED; /* Cornflower Blue - a darker shade */
            color: white;
            font-size: 36px; /* Significantly larger text */
            display: flex;
            justify-content: center;
            align-items: center;
            height: 100vh;
            margin: 0;
            font-family: Arial, sans-serif;
        }
    </style>
</head>
<body>
    <div>This instance is located in Availability Zone: $AZ</div>
</body>
</html>
EOF

# Ensure the httpd service is correctly set up to start on boot
chkconfig httpd on

```

Success
Successfully created WEB-SERVER(lt-0c5015f790414a2e2).

Actions log

Next Steps

[Launch an instance](#)
With On-Demand Instances, you pay for compute capacity by the second (for Linux, with a minimum of 60 seconds) or by the hour (for all other operating systems) with no long-term commitments or upfront payments. Launch an On-Demand Instance from your launch template.

[Launch instance from this template](#)

[Create an Auto Scaling group from your template](#)
Amazon EC2 Auto Scaling helps you maintain application availability and allows you to scale your Amazon EC2 capacity up or down automatically according to conditions you define. You can use Auto Scaling to help ensure that you are running your desired number of Amazon EC2 instances during demand spikes to maintain performance and decrease capacity during lulls to reduce costs.

[Create Auto Scaling group](#)

[Create Spot Fleet](#)
A Spot Instance is an unused EC2 instance that is available for less than the On-Demand price. Because Spot Instances enable you to request unused EC2 instances at steep discounts, you can lower your Amazon EC2 costs significantly. The hourly price for a Spot Instance (of each instance type in each Availability Zone) is set by Amazon EC2, and adjusted gradually based on the long-term supply of and demand for Spot Instances. Spot instances are well-suited for data-analysis, batch jobs, background processing, and optional tasks.

[Create Spot Fleet](#)

[View launch templates](#)

Nous créons une instance à partir de ce template.

Instance summary for i-0ad10621839cd8e72 Info															
Updated less than a minute ago															
Instance ID i-0ad10621839cd8e72	Public IPv4 address 15.237.183.29 open address														
IPv6 address -	Instance state Running														
Hostname type IP name: ip-10-200-0-63.eu-west-3.compute.internal	Private IP DNS name (IPv4 only) ip-10-200-0-63.eu-west-3.compute.internal														
Answer private resource DNS name -	Instance type t2.micro														
Auto-assigned IP address 15.237.183.29 [Public IP]	VPC ID vpc-0fcc270f35ec9f88c (VPC-THOMAS-ALB-vpc)														
IAM Role -	Subnet ID subnet-03644f06e4fc68d9f (VPC-THOMAS-ALB-subnet-public1-eu-west-3a)														
IMDSv2 Required	Instance ARN arn:aws:ec2:eu-west-3:794038237731:instance/i-0ad10621839cd8e72														
Operator -	Auto Scaling Group name -														
Details	Status and alarms	Monitoring	Security	Networking	Storage	Tags									
Instance details Info <table border="1"> <tr> <td>AMI ID ami-03216a20ecc5d72ee</td> <td>Monitoring disabled</td> <td>Platform details Linux/UNIX</td> </tr> <tr> <td>AMI name al2023-ami-2023.6.20241121.0-kernel-6.1-x86_64</td> <td>Allowed image -</td> <td>Termination protection Disabled</td> </tr> <tr> <td>Stop protection Disabled</td> <td>Launch time Wed Dec 11 2024 08:37:18 GMT+0100 (heure normale d'E</td> <td>AMI location amazon/al2023-ami-2023.6.20241121.0-kernel-6.1-x86_64</td> </tr> </table>							AMI ID ami-03216a20ecc5d72ee	Monitoring disabled	Platform details Linux/UNIX	AMI name al2023-ami-2023.6.20241121.0-kernel-6.1-x86_64	Allowed image -	Termination protection Disabled	Stop protection Disabled	Launch time Wed Dec 11 2024 08:37:18 GMT+0100 (heure normale d'E	AMI location amazon/al2023-ami-2023.6.20241121.0-kernel-6.1-x86_64
AMI ID ami-03216a20ecc5d72ee	Monitoring disabled	Platform details Linux/UNIX													
AMI name al2023-ami-2023.6.20241121.0-kernel-6.1-x86_64	Allowed image -	Termination protection Disabled													
Stop protection Disabled	Launch time Wed Dec 11 2024 08:37:18 GMT+0100 (heure normale d'E	AMI location amazon/al2023-ami-2023.6.20241121.0-kernel-6.1-x86_64													

Les règles sont correctes.

The screenshot shows the AWS EC2 Instances details page for instance `i-0ad10621839cd8e72`. The `Security` tab is selected. The instance ARN is `arn:aws:ec2:eu-west-3:794038237731:instance/i-0ad10621839cd8e72`. The managed status is false. The security details show an owner ID of `794038237731` and a launch time of `Wed Dec 11 2024 08:37:18 GMT+0100 (heure normale d'Europe centrale)`. There is one inbound rule named `sgr-0a887ee37322ae343` allowing port 80 from 0.0.0.0/0 to the security group `HTTP-access`. There is one outbound rule named `sgr-0871ace59f10b442c` allowing all ports to 0.0.0.0/0 from the security group `HTTP-access`.

Le `nslookup` donne bien le résultat suivant.

```
● ○ ● ⌂⌘1 thomas@MacBook-Pro-de-Thomas:~  
Last login: Tue Dec 10 14:35:24 on ttys004  
↳ thomas@MacBook-Pro-de-Thomas ~  
└↳ nslookup ec2-15-237-183-29.eu-west-3.compute.amazonaws.com  
Server: 1.1.1.1  
Address: 1.1.1.1#53  
  
Non-authoritative answer:  
Name: ec2-15-237-183-29.eu-west-3.compute.amazonaws.com  
Address: 15.237.183.29  
  
↳ thomas@MacBook-Pro-de-Thomas ~  
└↳
```

Nous avons bien un accès web à notre instance.

Cette instance est située dans une zone de disponibilité: eu-west-3a

Nous créons un nouveau Auto Scaling Group.

aws Search [Option+S] Paris thomaspeu @ thomas-peugnet ▾

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 3 - optional
Integrate with other services

Step 4 - optional
Configure group size and scaling

Step 5 - optional
Add notifications

Step 6 - optional
Add tags

Step 7 Review

Name

Auto Scaling group name
Enter a name to identify the group.
ASG-THOMAS

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

Launch template [Info](#)

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.

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.
WEB-SERVER [G](#)

[Create a launch template](#) [Create a launch template version](#)

Version
Default (3) [G](#)

Description
-

Launch template
WEB-SERVER [L](#)
lt-0c5015f790414a2e2

AMI ID
ami-03216a20ecc5d72ee

Key pair name
-

Security groups
-

Instance type
t2.micro

Security group IDs
sg-0826d70242b13093d [L](#)

Request Spot Instances
No

Additional details

Storage (volumes)
-

Date created
Wed Dec 11 2024 08:41:44 GMT+0100 (heure normale d'Europe centrale)

[Cancel](#) [Next](#)

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aws Search [Option+S] Paris thomaspeu @ thomas-peugnet ▾

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 4 - optional
Configure group size and scaling

Step 5 - optional
Add notifications

Step 6 - optional
Add tags

Step 7 Review

specifying different instance attributes or manually adding instance types.

Launch template	Version	Description
WEB-SERVER L lt-0c5015f790414a2e2	Default	-

Instance type
t2.micro

Network [Info](#)

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-0fc2270f35ec9f88c (VPC-THOMAS-ALB-vpc) [G](#)
10.200.0.0/16

[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 [G](#)

eu-west-3a | subnet-03644f06e4fc68d9f (VPC-THOMAS-ALB-...) [X](#)
10.200.0.0/24

eu-west-3b | subnet-0e10fcc7add7555f9 (VPC-THOMAS-ALB-...) [X](#)
10.200.1.0/24

[Create a subnet](#)

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

Balanced best effort
If launches fail in one Availability Zone, Auto Scaling will attempt to launch in another healthy Availability Zone.

Balanced only
If launches fail in one Availability Zone, Auto Scaling will continue to attempt to launch in the unhealthy Availability Zone to preserve balanced distribution.

[Cancel](#) [Skip to review](#) [Previous](#) [Next](#)

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Screenshot of the AWS EC2 Auto Scaling group creation wizard.

Step 1: Choose launch template

- Step 1: Choose launch template
- Step 2: Choose instance launch options
- Step 3 - optional: Integrate with other services
- Step 4 - optional: Configure group size and scaling
- Step 5 - optional: Add notifications
- Step 6 - optional: Add tags
- Step 7: Review

Review [Info]

Step 1: Choose launch template

Group details

Auto Scaling group name: ASG-THOMAS

Launch template

Launch template	Version	Description
WEB-SERVER [Edit]	Default	It-0c5015f790414a2e2

Step 2: Choose instance launch options

Network

VPC: vpc-0fcc270f35ec9fb8c [Edit]

Availability Zones and subnets

Availability Zone	Subnet	Subnet CIDR range
eu-west-3a	subnet-03644f06e4fc68d9f [Edit]	10.200.0.0/24
eu-west-3b	subnet-0e10fc7add7555f9 [Edit]	10.200.1.0/24

Availability Zone distribution

Balanced best effort

Instance type requirements

This Auto Scaling group will adhere to the launch template.

Step 3: Integrate with other services

Load balancing

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Screenshot of the AWS EC2 Auto Scaling group details page for ASG-THOMAS.

Desired capacity: 2

Scaling limits (Min - Max): 2 - 2

Desired capacity type: Units (number of instances)

Status: Updating capacity

Date created: Wed Dec 11 2024 08:49:15 GMT+0100 (heure normale d'Europe centrale)

Activity

Activity notifications (0)

No notifications are currently specified

Activity history (2)

Status	Description	Cause	Start time	End time
Successful	Launching a new EC2 instance: i-0d18b15b03fa3135e	At 2024-12-11T07:49:15Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2024-12-11T07:49:26Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.	2024 December 11, 08:49:28 AM +01:00	2024 December 11, 08:49:28 AM +01:00
Successful	Launching a new EC2 instance: i-00fb392a81161c516	At 2024-12-11T07:49:15Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2024-12-11T07:49:26Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.	2024 December 11, 08:49:27 AM +01:00	2024 December 11, 08:49:27 AM +01:00

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Nous constatons que nos instances se sont bien lancées.

Instances (1/4) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
<input checked="" type="checkbox"/> i-00fb392a81161c516	i-00fb392a81161c516	Running	t2.micro	Initializing	View alarms +	eu-west-3b	ec2-13-37-234-127.eu...	13.37.234
<input type="checkbox"/> WEB-SERVER	i-0fc729d9c27d5e125	Terminated	t2.micro	-	View alarms +	eu-west-3a	-	-
<input type="checkbox"/> i-0d18b15b03fa3133e	i-0d18b15b03fa3133e	Running	t2.micro	Initializing	View alarms +	eu-west-3a	ec2-15-237-249-47.eu...	15.237.24
<input type="checkbox"/> i-0ad10621839cd8e72	i-0ad10621839cd8e72	Terminated	t2.micro	-	View alarms +	eu-west-3a	-	-

i-00fb392a81161c516

Inbound rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups
-	sgr-0a887ee37322ae343	80	TCP	0.0.0/0	HTTP-access

Outbound rules

Name	Security group rule ID	Port range	Protocol	Destination	Security groups
-	sgr-0871ace59f10b442c	All	All	0.0.0/0	HTTP-access

Le nslookup est concluant.

```
thomas@MacBook-Pro-de-Thomas:~
```

```
thomas@MacBook-Pro-de-Thomas ~
└> nslookup ec2-13-37-234-127.eu-west-3.compute.amazonaws.com
Server:      1.1.1.1
Address:     1.1.1.1#53

Non-authoritative answer:
Name:      ec2-13-37-234-127.eu-west-3.compute.amazonaws.com
Address:   13.37.234.127

└> thomas@MacBook-Pro-de-Thomas ~
```

Instance summary for i-00fb392a81161c516

Updated less than a minute ago

Instance ID	13.37.234.127 open address	Public IPv4 address	13.37.234.127 open address
IPv6 address	-	Instance state	Running
Hostname type	IP name: ip-10-200-1-231.eu-west-3.compute.internal	Private IP DNS name (IPv4 only)	ip-10-200-1-231.eu-west-3.compute.internal
Answer private resource DNS name	-	Instance type	t2.micro
Auto-assigned IP address	13.37.234.127 [Public IP]	VPC ID	vpc-0fcc270f35ec9f88c (VPC-THOMAS-ALB-vpc)
IAM Role	-	Subnet ID	subnet-0e10fc7add7555f9 (VPC-THOMAS-ALB-subnet-public2-eu-west-3b)
IMDSv2	Required	Instance ARN	arn:aws:ec2:eu-west-3:794038237731:instance/i-00fb392a81161c516
Operator	-	Monitoring	disabled
Details		Status and alarms	Platform details
		Monitoring	Linux/UNIX
Instance details		Allowed image	Termination protection
		-	Disabled
		Launch time	AMI location
		Wed Dec 11 2024 08:49:27 GMT+0100 (heure normale d'Europe de l'Ouest)	amazon/amazonlinux-2023.6.20241121.0-kernel-6.1-x86_64

Public IPv4 DNS copied

ec2-13-37-234-127.eu-west-3.compute.amazonaws.com | [open address](#)

Elastic IP addresses
-

AWS Compute Optimizer finding
[Opt-in to AWS Compute Optimizer for recommendations.](#) | [Learn more](#)

Auto Scaling Group name
ASG-THOMAS

Managed
false

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L'accès web est concuant également.

Cette instance est située dans une zone de disponibilité: eu-west-3b

Idem pour l'accès web et le nslookup de la seconde instance.

Cette instance est située dans une zone de disponibilité: eu-west-3a

Nous supprimons l'instance.

The screenshot shows the AWS EC2 Instances page. A green success message at the top right states: "Successfully initiated termination (deletion) of i-0d18b15b03fa3133e". The main content area displays the "Instance summary for i-0d18b15b03fa3133e" for an instance that has been shut down. Key details include:

- Public IPv4 address:** 15.237.249.47
- Private IPv4 address:** 10.200.0.123
- Public IPv4 DNS:** ec2-15-237-249-47.eu-west-3.compute.amazonaws.com
- Private IPv4 DNS:** 10.200.0.123
- Instance state:** Shutting-down
- Private IP DNS name (IPv4 only):** ip-10-200-0-123.eu-west-3.compute.internal
- Instance type:** t2.micro
- VPC ID:** vpc-0fcc270f35ec9f88c (VPC-THOMAS-ALB-vpc)
- Subnet ID:** subnet-03644f06e4fc68d9f (VPC-THOMAS-ALB-subnet-public-eu-west-3a)
- Instance ARN:** arn:aws:ec2:eu-west-3:794038237731:instance/i-0d18b15b03fa3133e
- Managed:** false

The left sidebar shows navigation links for EC2 services like Instances, Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The "Load Balancing" section is currently selected. At the bottom, there are links for CloudShell and Feedback.

Nous constatons que l'auto scaling group la relance bien.

Instances (1/5) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv
i-0d18b15b03fa3133e	i-0d18b15b03fa3133e	Shutting-down	t2.micro	-	View alarms +	eu-west-3a	ec2-15-237-249-47.eu...	15.237.24
i-0fb392a81161c516	i-0fb392a81161c516	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3b	ec2-13-37-234-127.eu...	13.37.234
WEB-SERVER	i-0fc729d9c27d5e125	Terminated	t2.micro	-	View alarms +	eu-west-3a	-	-
	i-03a1240d1f3287bdf	Running	t2.micro	Initializing	View alarms +	eu-west-3a	ec2-15-237-46-198.eu...	15.237.46
	i-0ad10621839cd8e72	Terminated	t2.micro	-	View alarms +	eu-west-3a	-	-

i-03a1240d1f3287bdf

Details Status and alarms Monitoring Security Networking Storage Tags

Instance summary

Instance ID i-03a1240d1f3287bdf	Public IPv4 address 15.237.46.198 open address	Private IPv4 addresses 10.200.0.219
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-15-237-46-198.eu-west-3.compute.amazonaws.com open address
Hostname type IP name: ip-10-200-0-219.eu-west-3.compute.internal	Private IP DNS name (IPv4 only) ip-10-200-0-219.eu-west-3.compute.internal	Elastic IP addresses -
Answer private resource DNS name -	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations.
Auto-assigned IP address 15.237.46.198 [Public IP]	VPC ID vpc-0fcc270f35ec9f88c (VPC-THOMAS-ALB-vpc)	

Ce processus est raccord avec les informations dans l'historique d'activité.

Activity notifications (0)

No notifications are currently specified

Activity history (4)

Status	Description	Cause	Start time	End time
Successful	Launching a new EC2 instance: i-03a1240d1f3287bdf	At 2024-12-11T07:53:21Z an instance was launched in response to an unhealthy instance needing to be replaced.	2024 December 11, 08:53:23 AM +01:00	2024 December 11, 08:53:23 AM +01:00
In progress	Terminating EC2 instance: i-0d18b15b03fa3133e	At 2024-12-11T07:53:21Z an instance was taken out of service in response to an EC2 health check indicating it has been terminated or stopped.	2024 December 11, 08:53:21 AM +01:00	2024 December 11, 08:53:21 AM +01:00
Successful	Launching a new EC2 instance: i-0d18b15b03fa3133e	At 2024-12-11T07:49:15Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2024-12-11T07:49:26Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.	2024 December 11, 08:49:28 AM +01:00	2024 December 11, 08:49:28 AM +01:00
Successful	Launching a new EC2 instance: i-00fb392a81161c516	At 2024-12-11T07:49:15Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2024-12-11T07:49:26Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.	2024 December 11, 08:49:27 AM +01:00	2024 December 11, 08:49:27 AM +01:00

Nous créons un Target Group TG-Thomas .

TG-Thomas

Details

Target type: Instance
Protocol: Port
HTTP: 80
Protocol version: HTTP1

IP address type: IPv4
Load balancer: None associated

Total targets	Healthy	Unhealthy	Unused	Initial	Draining
0	0	0	0	0	0
0 Anomalous					

Targets | Monitoring | Health checks | Attributes | Tags

Registered targets (0) Info

Target groups route requests to individual registered targets using the protocol and port number specified. Health checks are performed on all registered targets according to the target group's health check settings. Anomaly detection is automatically applied to HTTP/HTTPS target groups with at least 3 healthy targets.

No registered targets
You have not registered targets to this group yet

Actions

Anomaly mitigation: Not applicable | Deregister | Register targets

Nous créons un LoadBalancer ALBB-Thomas .

Review

Review the load balancer configurations and make changes if needed. After you finish reviewing the configurations, choose Create load balancer.

Summary

Review and confirm your configurations. [Estimate cost](#)

Basic configuration	Security groups	Network mapping	Listeners and routing
ALBB-Thomas • Internet-facing • IPv4	HTTP-access sg-0826d70242b13093d	VPC vpc-0fc270f5sec9f88c VPC-THOMAS-ALB-vpc eu-west-3a subnet-03644f06e4fc68d9f VPC-THOMAS-ALB-subnet-public1-eu-west-3a eu-west-3b subnet-0e10fc7add7555f9 VPC-THOMAS-ALB-subnet-public2-eu-west-3b	HTTP:80 defaults to TG-Thomas
Service integrations	Tags		
Amazon CloudFront + AWS Web Application Firewall (WAF): None AWS WAF: None AWS Global Accelerator: None	None		
Attributes			
Certain default attributes will be applied to your load balancer. You can view and edit them after creating the load balancer.			
Creation workflow and status			
Server-side tasks and status After completing and submitting the above steps, all server-side tasks and their statuses become available for monitoring.			

Actions

Create load balancer

ALBB-Thomas

Details

Load balancer type Application	Status Provisioning	VPC vpc-0fcc270f35ec9fb8c	Load balancer IP address type IPv4
Scheme Internet-facing	Hosted zone Z3Q77PNBQS71R4	Availability Zones subnet-03644f06e4fc68d9f eu-west-3a (euw3-az1) subnet-0e10fcc7add7555f9 eu-west-3b (euw3-az2)	Date created December 11, 2024, 08:57 (UTC+01:00)
Load balancer ARN arnaws:elasticloadbalancing:eu-west-3:794038237731:loadbalancer/app/ALBB-Thomas/f2e9414d6e84d557		DNS name Info ALBB-Thomas-813760480.eu-west-3.elb.amazonaws.com (A Record)	

Listeners and rules

Listeners and rules (1)

Protocol:Port	Default action	Rules	ARN	Security policy	Default SSL/TLS certificate
HTTP:80	Forward to target group • TG-Thomas : 1 (100%) • Target group stickiness: Off	1 rule	ARN	Not applicable	Not applicable

Nous assignons à notre Load Balancer notre Target Group.

ASG-THOMAS

ASG-THOMAS Capacity overview

Desired capacity 2	Scaling limits (Min - Max) 2 - 2	Desired capacity type Units (number of instances)	Status
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Date created
Wed Dec 11 2024 08:49:15 GMT+0100 (heure normale d'Europe centrale)

Load balancing

Load balancer target groups TG-Thomas	Classic Load Balancers -
--	-----------------------------

VPC Lattice integration options

VPC Lattice target groups -

Application Recovery Controller (ARC) zonal shift - new

During an Availability Zone impairment, target instance launches towards other healthy Availability Zones.

ARC zonal shift
Disabled

Nous pouvons voir nos targets enregistrées après quelques instants.

The screenshot shows the AWS EC2 Target groups interface. On the left, a sidebar navigation includes: Dashboard, EC2 Global View, Events, Instances (Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs, AMI Catalog), Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups, Trust Stores), and Auto Scaling (Auto Scaling Groups). The main content area displays 'Target groups (1/1)'. A table lists one target group: TG-Thomas. The table columns are: Name (TG-Thomas), ARN (arn:aws:elasticloadbalancing:eu-west-3:123456789012:targetgroup/TG-Thomas), Port (80), Protocol (HTTP), Target type (Instance), Load balancer (None associated), and VPC ID (vpc-0fc2270f35ec9f88c). Below this, a detailed view for 'Target group: TG-Thomas' shows the 'Targets' tab selected. It lists 'Registered targets (2)':

Instance ID	Name	Port	Zone	Health status	Health status details	Admini...	Overri...	Launch...
i-03a1240d1f3287bdf		80	eu-west-3a (eu...)	Healthy	-	No override.	No overri...	December...
i-00fb392a81161c516		80	eu-west-3b (eu...)	Healthy	-	No override.	No overri...	December...

Nous pouvons constater un changement de zone à chaque rafraîchissement.

Cette instance est située dans une zone de disponibilité: eu-west-3b

Cette instance est située dans une zone de disponibilité: eu-west-3a

Nous mettons à jour notre Scaling Limit.

The screenshot shows the AWS EC2 Target groups interface. On the left, a sidebar lists various services: Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces, Load Balancing, Load Balancers, Target Groups, Trust Stores, and Auto Scaling, Auto Scaling Groups, and Settings. A green banner at the top indicates "Auto Scaling group updated successfully". The main content area is titled "ASG-THOMAS Capacity overview" and shows the following details:

Desired capacity	Scaling limits (Min - Max)	Desired capacity type	Status
2	2 - 3	Units (number of instances)	-

Date created: Wed Dec 11 2024 08:49:15 GMT+0100 (heure normale d'Europe centrale)

The "Launch template" section displays the following configuration:

Launch template	AMI ID	Instance type	Owner
lt-0c5015f790414a2e2 WEB-SERVER	ami-03216a20ecc5d72ee	t2.micro	arn:aws:iam::794038237731:user/thomaspeugnet
Version	Security groups	Security group IDs	Create time
Default	-	sg-0826d70242b13093d	Wed Dec 11 2024 08:41:44 GMT+0100 (heure normale d'Europe centrale)
Description	Storage (volumes)	Key pair name	Request Spot Instances
-	-	-	No

The "Network" section shows the following configuration:

Availability Zones	Subnet ID	Availability Zone distribution
eu-west-3a, eu-west-3b	subnet-03644f06e4fc68d9f, subnet-0e10fcc7add7555f9	Balanced best effort

At the bottom, there are links for CloudShell, Feedback, and a footer with copyright information: © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences.

Nous ajoutons notre Subnet à notre ASG.

The screenshot shows the AWS EC2 Auto Scaling Groups page. On the left, there's a sidebar with navigation links for Instances, Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The main content area is titled "ASG-THOMAS Capacity overview". It displays the following details:

- Desired capacity:** 2
- Scaling limits (Min - Max):** 2 - 3
- Desired capacity type:** Units (number of instances)
- Status:** -

Below this, it shows the **Date created:** Wed Dec 11 2024 08:49:15 GMT+0100 (heure normale d'Europe centrale).

At the bottom of the main content area, there are tabs for Details, Integrations - new, Automatic scaling, Instance management, Instance refresh, Activity, and Monitoring. A "Launch template" section is also present, showing details like AMI ID, Instance type, Owner, Version, Security groups, Security group IDs, Create time, Description, Storage (volumes), Key pair name, and Request Spot Instances.

Nous ajoutons notre subnet à notre ALB.

The screenshot shows the AWS Load Balancers page. On the left, there's a sidebar with navigation links for Instances, Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The main content area is titled "ALBB-Thomas".

The "Details" section includes the following information:

- Load balancer type:** Application
- Status:** Active
- VPC:** vpc-0fcc270f35ec9f88c
- Hosted zone:** Z3Q77PNBQS71R4
- Load balancer IP address type:** IPv4
- Date created:** December 11, 2024, 08:57 (UTC+01:00)

The "Network mapping" section shows the VPC (vpc-0fcc270f35ec9f88c) and its subnets (subnet-03644f06e4fc68d9f, subnet-0e10fc7add7555f9, subnet-0714dfe25f2fae712) mapped to the load balancer. The "DNS name" is ALBB-Thomas-813760480.eu-west-3.elb.amazonaws.com (A Record).

The "Mappings" section lists the availability zones and corresponding subnets:

Zone	Subnet	IPv4 address	Private IPv4 address	IPv6 address
eu-west-3a (euw3-az1)	subnet-03644f06e4fc68d9f	Assigned by AWS	Assigned from CIDR 10.200.0.0/24	Not applicable
eu-west-3b (euw3-az2)	subnet-0e10fc7add7555f9	Assigned by AWS	Assigned from CIDR 10.200.1.0/24	Not applicable
eu-west-3c (euw3-az3)	subnet-0714dfe25f2fae712	Assigned by AWS	Assigned from CIDR 10.200.2.0/24	Not applicable

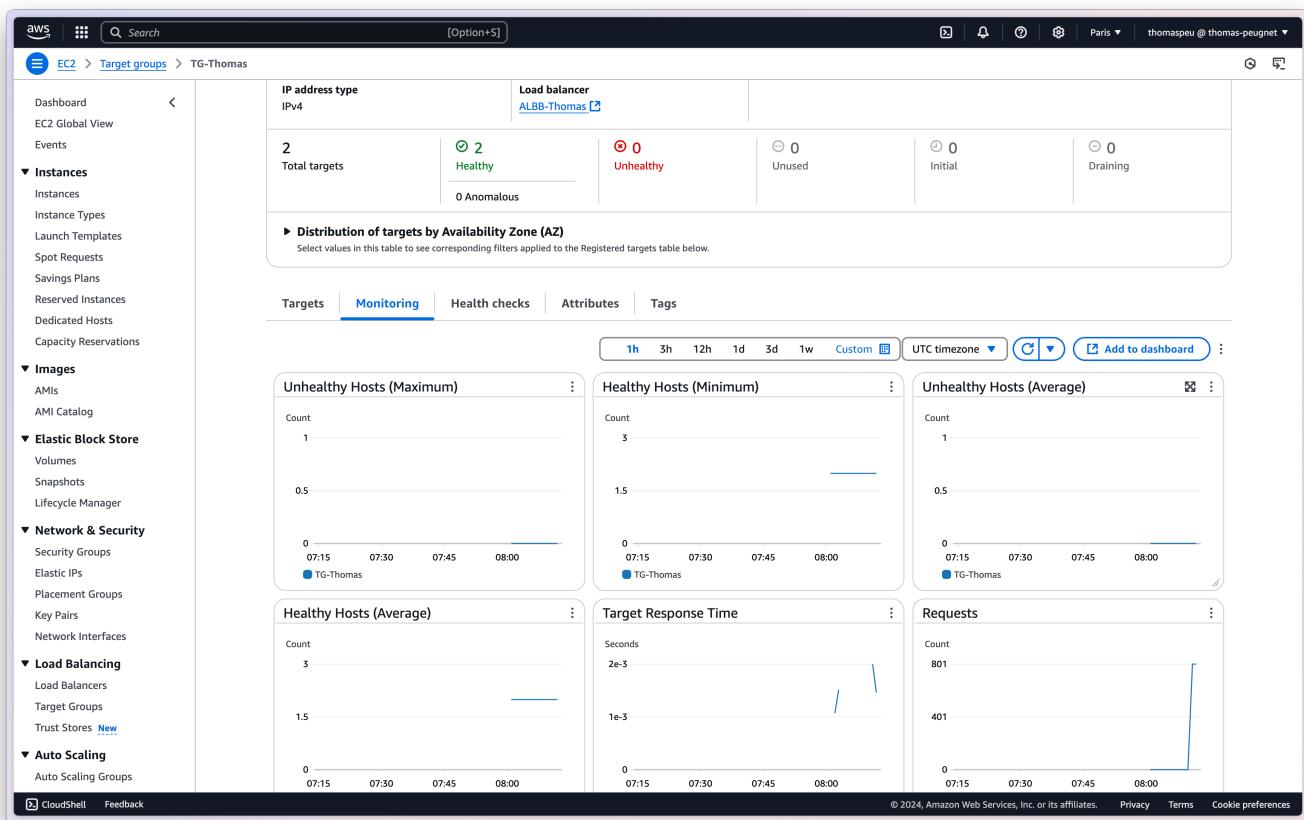
Nous créons notre Automatic Scaling Policy.

The screenshot shows the AWS EC2 Auto Scaling console. A success message at the top states: "Auto Scaling group updated successfully" and "Dynamic scaling policy created or edited successfully." The "Automatic scaling" tab is selected. A tooltip explains that scaling policies resize your Auto Scaling group to meet changes in demand. The "Dynamic scaling policies" section shows one entry (1) with a "Create dynamic scaling policy" button. The "Predictive scaling policies" section shows zero evaluations. The left sidebar includes sections for Instances, Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling.

Nous préparons une boucle shell pour interroger notre ALB.

```
for i in {1..200}; do curl ALBB-Thomas-813760480.eu-west-3.elb.amazonaws.com & done;
wait
```

Nous constatons un pic de requêtes.



Nous constatons en effet l'arrivée sur la zone numéro 3 après lancement de la 3e instance.

The screenshot shows the AWS EC2 Instances dashboard. The left sidebar is identical to the previous dashboard, including links for Dashboard, EC2 Global View, Events, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces, Load Balancing, Load Balancers, Target Groups, Trust Stores, Auto Scaling, Auto Scaling Groups, CloudShell, and Feedback.

The main content area displays a table of instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPs
i-00fb392a81161c516	i-00fb392a81161c516	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3b	ec2-13-37-234-127.eu...	13.37.234
i-0e20d4bc476185d26	i-0e20d4bc476185d26	Running	t2.micro	Initializing	View alarms +	eu-west-5c	ec2-35-181-151-110.eu...	35.181.15
WEB-SERVER	i-0fc729d9c27d5e125	Terminated	t2.micro	-	View alarms +	eu-west-3a	-	-
	i-0d18b15bd3fa3133e	Terminated	t2.micro	-	View alarms +	eu-west-3a	-	-
	i-03a1240d1f3287bdf	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3a	ec2-15-237-46-198.eu...	15.237.46
	i-0ad10621839cd8e72	Terminated	t2.micro	-	View alarms +	eu-west-3a	-	-

At the bottom right, there are links for "Last updated", "Connect", "Instance state", "Actions", "Launch instances", and "CloudShell", along with copyright information: "© 2024, Amazon Web Services, Inc. or its affiliates." and links for "Privacy", "Terms", and "Cookie preferences".

Cette instance est située dans une zone de disponibilité: eu-west-3c

Nous nous rendons à l'adresse de l'instance numéro 1.

Cette instance est située dans une zone de disponibilité: eu-west-3a

Nous nous rendons à l'adresse de l'instance numéro 2.

Cette instance est située dans une zone de disponibilité: eu-west-3b

Nous créons un Target Group **TG-NLB-Thomas**.

The screenshot shows the AWS EC2 Target Groups page. The left sidebar includes sections for Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMIs, AMI Catalog), Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups, Trust Stores), and Auto Scaling (Auto Scaling Groups). The main content area displays a success message: "Successfully created the target group: TG-NLB-Thomas. Anomaly detection is automatically applied to all registered targets. Results can be viewed in the Targets tab." Below this is a summary card for "TG-NLB-Thomas". It shows the Target type as "Instance", Protocol as "HTTP: 80", and Load balancer as "None associated". It also lists VPC details: "vpc-0fcc270f35ec9f88c". The summary table shows 2 total targets, 0 healthy, 0 unhealthy, 2 unused, 0 initial, and 0 draining. A section titled "Distribution of targets by Availability Zone (AZ)" indicates 1 target in eu-west-3a and 1 in eu-west-3b. At the bottom, the "Targets" tab is selected, showing a table of registered targets with 2 entries: "i-03a1240d1f3287bdf" and "i-00fb392a81161c516", both in the "eu-west-3b (eu...)" zone and marked as "Unused".

Nous créons notre NLB **NLB-Thomas**.

The screenshot shows the AWS EC2 Load Balancers console. A green success message at the top right says "Successfully created load balancer". The main panel displays the details of the newly created NLB-Thomas. Key information includes:

- Load balancer type:** Network
- Status:** Provisioning
- VPC:** vpc-0fcc270f35ec9f88c
- Hosted zone:** Z1CMSOP5QUZ6D5
- Availability Zones:** eu-west-3a (euw3-az1), eu-west-3b (euw3-az2), eu-west-3c (euw3-az3)
- Load balancer ARN:** arn:aws:elasticloadbalancing:eu-west-3:794038237731:loadbalancer/net/NLB-Thomas/3b3213571b13cc7f
- DNS name:** NLB-Thomas-5b3213571b13cc7f.elb.eu-west-3.amazonaws.com (A Record)

The "Listeners" tab is selected, showing one listener configuration:

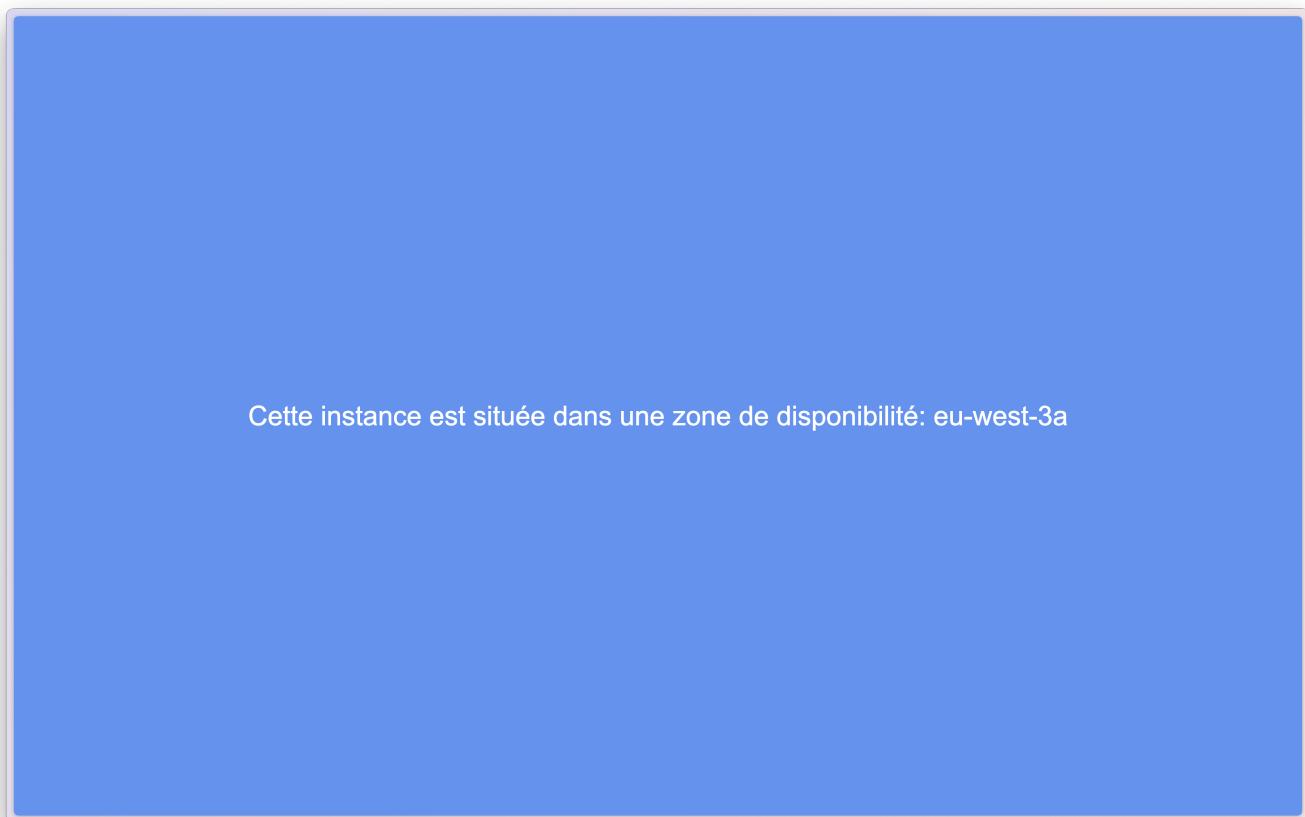
Protocol:Port	Forward to target group	ARN	Default SSL/TLS certificate	ALPN policy	Tags
TCP:80	TG-NLB-Thomas1	Not applicable	Not applicable	None	0

At the bottom, there are links for CloudShell, Feedback, and a footer with copyright information.

En mettant l'adresse du NLB, on obtient en effet la zone 1.

Cette instance est située dans une zone de disponibilité: eu-west-3b

Depuis une fenêtre de navigation privée, après quelques rafraîchissement nous obtenons enfin la zone numéro 2.



Nous supprimons notre ASG.

The screenshot shows the AWS EC2 Auto Scaling Groups page. On the left, a sidebar lists various services like Instances, Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The Auto Scaling section is expanded, showing the 'Auto Scaling Groups' tab. In the main area, a table titled 'Auto Scaling groups (1/1) Info' displays one group named 'ASG-THOMAS'. The status of this group is 'Deleting'. Below the table, a detailed view for 'ASG-THOMAS' is shown under the 'Details' tab, with tabs for Integrations - new, Automatic scaling, Instance management, Instance refresh, Activity, and Monitoring. The 'ASG-THOMAS Capacity overview' section shows desired capacity at 0, scaling limits from 0 to 0, and a status of 'Deleting'.

Nous supprimons notre ALB et notre NLB.

The screenshot shows the AWS EC2 Auto Scaling groups page. On the left, a sidebar lists various services: Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMIs, AMI Catalog), Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups, Trust Stores), and Auto Scaling (Auto Scaling Groups). The main content area is titled "Load balancers" and contains a message: "Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic." Below this is a table header with columns: Name, DNS name, State, VPC ID, Availability Zones, Type, and Date created. A green banner at the top indicates "Successfully deleted 2 load balancers." A button labeled "Create load balancer" is visible at the bottom right of the table area.

Nous supprimons notre Launch Template.

The screenshot shows the AWS EC2 Auto Scaling groups page. The sidebar is identical to the previous one. The main content area is titled "Launch Templates" and contains a message: "Delete Launch Template Request Succeeded". Below this is a table header with columns: Launch Template ID, Launch Template Name, Default Version, Latest Version, Create Time, Created By, and Manage. A green banner at the top indicates "Delete Launch Template Request Succeeded". A button labeled "Create launch template" is visible at the bottom right of the table area. A message at the bottom states: "You do not have any Launch Templates in this region".

Nous supprimons nos TG.

The screenshot shows the AWS EC2 Target Groups page. A green success message at the top states "Successfully deleted 3 target groups." Below this, the "Target groups" section is displayed with a search bar and a table header. The table has columns for Name, ARN, Port, Protocol, Target type, Load balancer, and VPC ID. A message below the table says "No target groups" and "You don't have any target groups in eu-west-3". A "Create target group" button is visible. On the left sidebar, under the "Instances" section, the "Target Groups" option is selected. Other sections like Images, Elastic Block Store, Network & Security, Load Balancing, Auto Scaling, and CloudShell are also listed.

Nous terminons nos instances.

The screenshot shows the AWS EC2 Instances page. A green success message at the top states "Successfully initiated termination (deletion) of i-0fb392a81161c516, i-0e20d4bc476185d26, i-094108cae48a5302, i-0d18b15b03fa3133e, i-03a1240d1f3287bdf, i-0ad10621839cd8e72". Below this, the "Instances (6/6)" section is shown with a table of terminated instances. The table includes columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, and Public IP. The instances listed are: i-0fb392a81161c516 (terminated), i-0e20d4bc476185d26 (terminated), i-094108cae48a5302 (terminated), i-0d18b15b03fa3133e (terminated), i-03a1240d1f3287bdf (terminated), and i-0ad10621839cd8e72 (terminated). On the left sidebar, under the "Instances" section, the "Instances" option is selected. Other sections like Images, Elastic Block Store, Network & Security, Load Balancing, Auto Scaling, and CloudShell are also listed. The bottom of the page features a monitoring section with various charts and a timeline selector.

Nous supprimons notre VPC.

The screenshot shows the AWS VPC dashboard with a list of VPCs. One VPC, 'VPC-THOMAS-ALB-vpc', is selected. A 'Delete VPC' dialog box is overlaid on the page. The dialog contains two sections: 'Will be deleted' (listing the VPC and its state) and 'Will also be deleted' (listing associated resources like IGW, RTB, SG, and Subnets). At the bottom, a field prompts the user to type 'delete' to confirm, with a large orange 'Delete' button next to it.

The screenshot shows the AWS VPC dashboard after the deletion. A prominent green banner at the top indicates the successful deletion of the VPC and associated resources. Below the banner, the 'Your VPCs' table shows the remaining VPC, 'vpc-024ad8fd0fd5c3446', which is now listed as 'Available'.