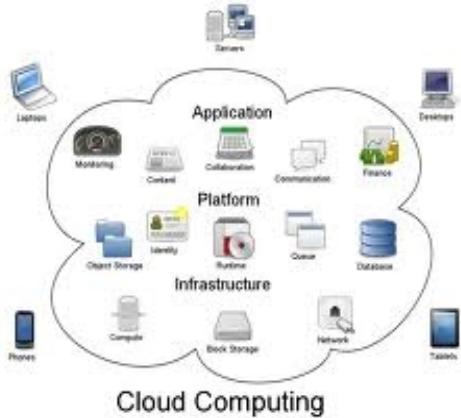




Example with Amazon Web Service

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Log in AWS

Amazon Web Services Sign-In - Mozilla Firefox

Amazon Web Services Sign In https://signin.aws.amazon.com/signin?redirect_uri=https%3A%2F%2Faws%2Eamazon%2Ecom%2F

aws

Root user sign in ⓘ

Email: daniel.hagimont@irit.fr

Password Forgot password?

.....

Sign in

Sign in to a different account

Create a new AWS account

About Amazon.com Sign In

Amazon Web Services uses information from your Amazon.com account to identify you and allow access to Amazon Web Services. Your use of this site is governed by our Terms of Use and Privacy Policy linked below. Your use of Amazon Web Services products and services is governed by the AWS Customer Agreement linked below unless you have entered into a separate agreement with Amazon Web Services or an AWS Value Added Reseller to purchase these products and services. The AWS Customer Agreement was updated on March 31, 2017. For more information about these updates, see Recent Changes.



The advertisement for Amazon Lightsail features a background of blurred orange and yellow light streaks against a dark background. The text "Amazon Lightsail" is prominently displayed in white. Below it, the tagline "Lightsail is the easiest way to get started on AWS" is written in a smaller white font. A "Learn more »" button is located in the lower-left corner of the ad area. To the right of the text, there is a simple line-art illustration of a robot with a smiling face, one hand on its chest, and the other pointing upwards.

AWS services

The screenshot shows the AWS Management Console interface in Mozilla Firefox. The URL is <https://eu-west-3.console.aws.amazon.com/console/home?nc2=h>. The top navigation bar includes the AWS logo, Services dropdown, Resource Groups dropdown, and user information (dhagimont, Paris, Support). The main content area is titled "AWS services" and features a search bar: "Find a service by name or feature (for example, EC2, S3 or VM, storage, etc.)". Below the search bar, there are sections for "Recently visited services" and "All services". The "Compute" section is highlighted with a red circle, and the "EC2" service is specifically circled with a red oval and labeled "Choose the EC2 service". Other services listed in the Compute section include Lightsail, ECS, EKS, Lambda, Batch, and Elastic Beanstalk. The "All services" section is organized into categories: Storage (S3, EFS, S3 Glacier, Storage Gateway), Database (RDS, DynamoDB), Management Tools (CloudWatch, AWS Auto Scaling, CloudFormation, CloudTrail, Config, OpsWorks, Service Catalog, Systems Manager, Trusted Advisor, Managed Services), Mobile Services (Mobile Hub, AWS AppSync, Device Farm), AR & VR (Amazon Sumerian), Media Services (Elastic Transcoder, Kinesis Video Streams, MediaConvert, MediaLive, MediaPackage), Application Integration (Step Functions, Amazon MQ, Simple Notification Service), and Helpful tips (Manage your costs, Create an organization, Explore AWS). The "Explore AWS" section includes links to Machine Learning with Amazon SageMaker and Amazon Relational Database Service (RDS).

Choose the EC2 service

Helpful tips

Manage your costs

Create an organization

Explore AWS

Machine Learning with Amazon SageMaker

Amazon Relational Database Service (RDS)

EC2 Dashboard

The screenshot shows the EC2 Management Console interface in Mozilla Firefox. The URL is <https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3>. The top navigation bar includes the AWS logo, Services dropdown, Resource Groups dropdown, a bell icon, user name 'dhagimont', region 'Paris', and Support dropdown.

The left sidebar contains the following navigation links:

- Tags
- Reports
- Limits
- INSTANCES**
 - Instances
 - Launch Templates
 - Spot Requests
 - Reserved Instances
 - Dedicated Hosts
 - Capacity Reservations
- IMAGES**
 - AMIs
 - Bundle Tasks
- ELASTIC BLOCK STORE**
 - Volumes
 - Snapshots
- NETWORK & SECURITY**
 - Security Groups
 - Elastic IPs
 - Placement Groups
 - Key Pairs**
 - Network Interfaces

The main content area displays the following information:

You are using the following Amazon EC2 resources in the EU (Paris) region:

0 Running Instances	0 Elastic IPs
0 Dedicated Hosts	0 Snapshots
0 Volumes	0 Load Balancers
0 Key Pairs	1 Security Groups
0 Placement Groups	

Learn more about the latest in AWS Compute from AWS re:Invent 2017 by viewing the [EC2 Videos](#).

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Create a security group

Launch Instance

Note: Your instances will launch in the EU (Paris) region

Create a key pair

Service Health

Service Status: EU (Paris): No events

Availability Zone Status:

AWS Marketplace

Find free software trial products in the AWS Marketplace from the [EC2 Launch Wizard](#). Or try these popular AMIs:

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Generation of a key pair

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with categories like Instances, Images, Elastic Block Store, Network & Security, and Key Pairs. The 'Key Pairs' section is currently selected, indicated by an orange border. In the main content area, there's a toolbar with 'Create Key Pair' (highlighted with a red circle), 'Import Key Pair', and 'Delete' buttons. Below the toolbar is a search bar labeled 'Filter by attributes or search by keyword'. A table lists existing key pairs. One row, 'key-dan', is highlighted with a red circle. To the right of the table, a large red callout bubble contains the text: 'It generated a .pem file which is used to connect to the VM with SSH'. At the bottom of the page, there are links for Feedback, Language selection (English (US)), and legal notices (Privacy Policy, Terms of Use). The URL in the browser address bar is https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3#vpc-console:::key-pairs.

EC2 Management Console - Mozilla Firefox

EC2 Management Conso x +

https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3#vpc-console:::key-pairs

aws Services Resource Groups

dhagimont Paris Support

Tags Reports Limits

INSTANCES Instances Launch Templates Spot Requests Reserved Instances Dedicated Hosts Capacity Reservations

IMAGES AMIs Bundle Tasks

ELASTIC BLOCK STORE Volumes Snapshots

NETWORK & SECURITY Security Groups Elastic IPs Placement Groups

Key Pairs

Create Key Pair Import Key Pair Delete

Filter by attributes or search by keyword

Key pair name Fingerprint

key-dan e9:1a:76:82:69:72:3e:2a:c7:3e:e1:c0:e3:c7:2c:0c:82:fc:4a:69

Key Pair: key-dan

Key pair name: key-dan
Fingerprint: e9:1a:76:82:69:72:3e:2a:c7:3e:e1:c0:e3:c7:2c:0c:82:fc:4a:69

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Creation of a security group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar navigation includes 'INSTANCES', 'IMAGES', 'ELASTIC BLOCK STORE', 'NETWORK & SECURITY' (with 'Security Groups' selected), and 'LOAD BALANCING'. The main content area displays a table of existing security groups:

Name	Group ID	Group Name	VPC ID
sg-05763b452785a0215	sec-grp-dan	vpc-59603330	sec
sg-51430239	default	vpc-59603330	def

A red circle highlights the 'Create Security Group' button at the top of the page. Another red circle highlights the 'sec-grp-dan' entry in the table. A large red callout bubble points to the 'sec-grp-dan' entry with the text 'We created a security group'.

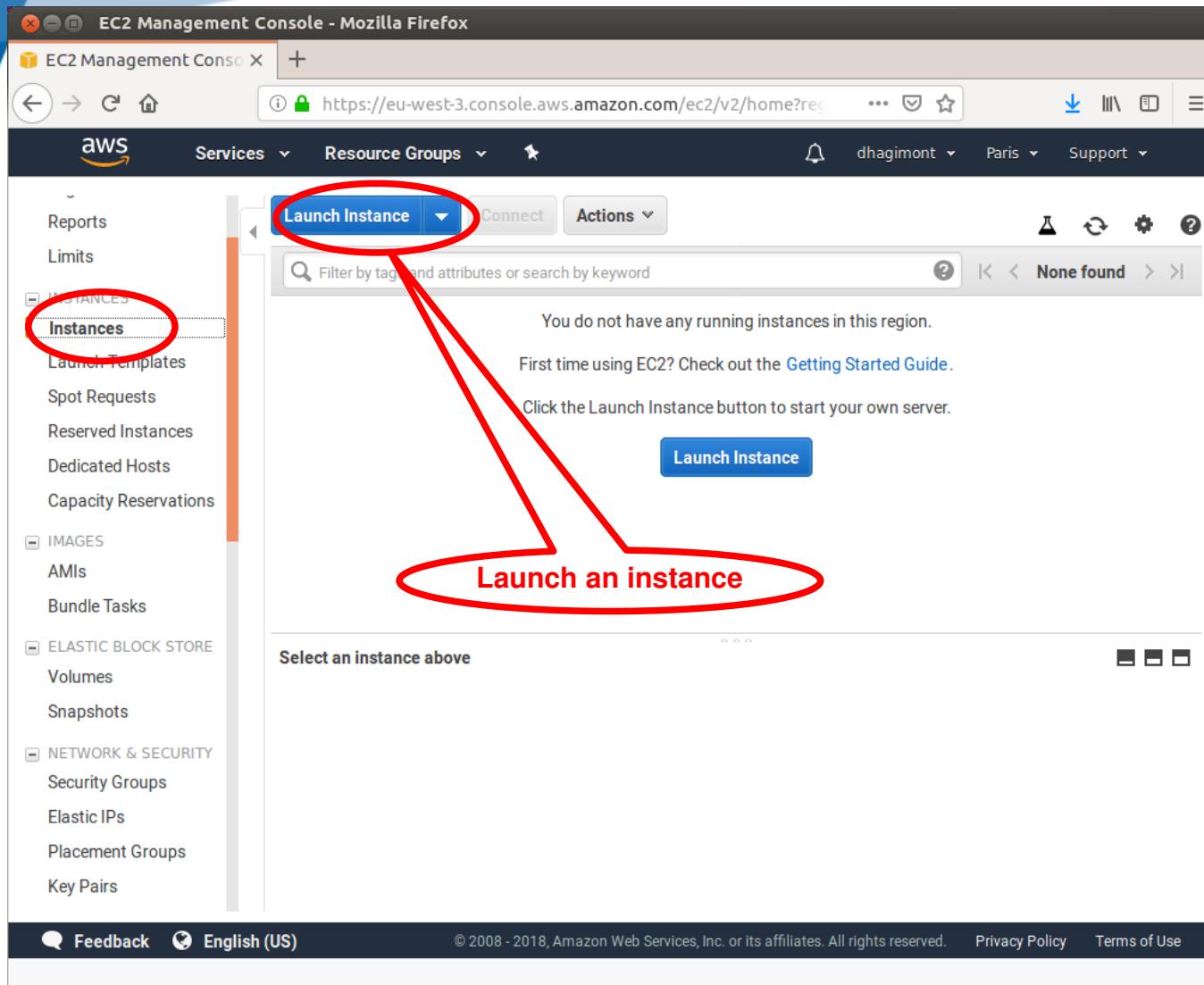
The 'Inbound' tab of the security group details page is selected. It shows two rules:

Type	Protocol	Port Range	Source	Description
All traffic	All	All	0.0.0.0/0	
All traffic	All	All	::/0	

A red circle highlights the first rule ('All traffic'). A large red callout bubble points to the second rule ('All traffic') with the text 'Autorize all traffic (TCP and UDP) to/from anywhere'.

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Instance management (VM)



Choose the operating system

EC2 Management Console - Mozilla Firefox

EC2 Management Conso X + https://eu-west-3.console.aws.amazon.com/ec2/v2/home?rec...

aws Services Resource Groups dhagimont Paris Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review Cancel and Exit

Step 1: Choose an Amazon Machine Image (AMI)

Free tier only ⓘ Root device type: ebs Virtualization type: hvm

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0ebc281c20e89ba4b

Select 64-bit (x86)

Amazon Linux Free tier eligible

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root device type: ebs Virtualization type: hvm

SUSE Linux Enterprise Server 15 (HVM), SSD Volume Type - ami-01116bee807116ece

Select 64-bit (x86)

SUSE Linux Free tier eligible

SUSE Linux Enterprise Server 15 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

Root device type: ebs Virtualization type: hvm

Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-08182c55a1c188dee

Select 64-bit (x86)

Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root device type: ebs Virtualization type: hvm

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Choose the instance type

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The URL is <https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3#instanceTypes>. The top navigation bar includes 'Services', 'Resource Groups', and user information 'dhagimont' (Paris, Support). Below the navigation is a breadcrumb trail: 1. Choose AMI, 2. Choose Instance Type (which is underlined in blue), 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, 7. Review.

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types ▾ Current generation ▾ Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes

Cancel Previous **Review and Launch** Next: Configure Instance Details

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Details of the configuration

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, displaying the 'Step 7: Review Instance Launch' page. The URL is <https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3#LaunchWizard-7>. The navigation bar includes 'Services', 'Resource Groups', and 'Support'. Below the navigation, the steps are numbered 1 through 7, with '7. Review' currently selected.

Step 7: Review Instance Launch
Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

AMI Details Edit AMI

Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-08182c55a1c188dee
Free tier eligible
Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).
Root Device Type: ebs Virtualization type: hvm

Instance Type Edit instance type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Security Groups Edit security groups

Security group name: launch-wizard-1
Description: launch-wizard-1 created 2018-11-12T08:18:52.107+01:00

Buttons: Cancel, Previous, Launch

Page Footer: Feedback, English (US), © 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved., Privacy Policy, Terms of Use

Select the security group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The URL is <https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3#LaunchNewInstance:step=6>. The page title is "EC2 Management Console - Mozilla Firefox". The navigation bar includes "Services", "Resource Groups", and "dhagimont". The breadcrumb navigation shows steps 1 through 7: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group (which is highlighted), and 7. Review.

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group:

- Create a new security group
- Select an existing security group

The "Select an existing security group" option is circled in red.

Security Group ID	Name	Description	Actions
sg-51430239	default	default VPC security group	Copy to new
sg-05763b452785a0215	sec-grp-dan	security group of dan	Copy to new

The row for "sg-05763b452785a0215" is circled in red.

Inbound rules for sg-05763b452785a0215 (Selected security groups: sg-05763b452785a0215)

Type	Protocol	Port Range	Source	Description
All traffic	All	All	0.0.0.0/0	
All traffic	All	All	::/0	

At the bottom, there are buttons for "Cancel", "Previous", "Review and Launch" (which is highlighted with a red circle), and "Launch".

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Summary

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The URL is <https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3>. The top navigation bar includes the AWS logo, Services, Resource Groups, a notification bell, user dhagimont, location Paris, and Support.

The main content area shows the progress through 7 steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, and 7. Review. Step 7 is highlighted with an orange underline.

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

⚠ Improve your instances' security. Your security group, sec-grp-dan, is open to the world.

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only.

You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details

Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-08182c55a1c188dee

Free tier eligible

Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root Device Type: ebs Virtualization type: hvm

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Launch (button circled in red)

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Associate a key pair

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The user is in the 'Step 7: Review Instance Launch' phase of launching a new instance. A modal dialog box is displayed, asking the user to 'Select an existing key pair or create a new key pair'. The dialog contains instructions about key pairs and a note that the selected key pair will be added to the instance's authorized keys. It includes a dropdown for selecting a key pair, a dropdown showing 'key-dan' as the selected option, and a checkbox for acknowledging access to the private key file. At the bottom of the dialog, the 'Launch Instances' button is highlighted with a red circle.

EC2 Management Console - Mozilla Firefox

https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3

aws Services Resource Groups dhagimont Paris Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Please review your instance details before you launch. You can't change them once you complete the launch process.

AMI Details

Ubuntu 16.04 LTS (HVM) - SSD (x1)

Free tier eligible

Instance Type

t2.micro

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair

Select a key pair

key-dan

I acknowledge that I have access to the selected private key file (key-dan.pem), and that without this file, I won't be able to log into my instance.

Cancel Launch Instances

Cancel Previous Launch

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Creation is done

The screenshot shows the EC2 Management Console in Mozilla Firefox. The title bar says "EC2 Management Console - Mozilla Firefox". The address bar shows the URL "https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3". The top navigation bar includes the AWS logo, "Services", "Resource Groups", and user information "dhagimont", "Paris", and "Support".

The main content area is titled "Launch Status". It contains a green box with a checkmark icon and the text "Your instances are now launching". Below this, it says "The following instance launches have been initiated: i-02158e3e769c9400a" and a link "View launch log".

Below this is a blue box with an info icon and the text "Get notified of estimated charges". It explains how to create billing alerts to receive email notifications when estimated charges exceed a defined amount.

A section titled "How to connect to your instances" follows. It states that instances are launching and may take a few minutes to reach the "running" state. It encourages users to click "View Instances" to monitor status and "Find out" how to connect. A collapsed section "Here are some helpful resources to get you started" lists links to "How to connect to your Linux instance", "Learn about AWS Free Usage Tier", "Amazon EC2: User Guide", and "Amazon EC2: Discussion Forum".

At the bottom, it says "While your instances are launching you can also" and provides a link to "Create status check alarms". The footer includes links for "Feedback", "English (US)", copyright information ("© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved."), and "Privacy Policy" and "Terms of Use".

The instance is started

The screenshot shows the AWS EC2 Management Console interface in Mozilla Firefox. The left sidebar navigation bar includes links for Reports, Limits, Instances (selected), Launch Templates, Spot Requests, Reserved Instances, Dedicated Hosts, Capacity Reservations, AMIs, Bundle Tasks, Elastic Block Store (Volumes, Snapshots), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), and Feedback. The main content area displays a table of instances. A single row is selected, showing details for an instance with ID i-02158e3e769c9400a, Type t2.micro, and State running. A red circle highlights the 'running' status. Below the table, a summary card provides the Public DNS (ec2-35-180-97-11.eu-west-3.compute.amazonaws.com) and Instance ID (i-02158e3e769c9400a). A large red oval encircles this information, with the text 'Public address of the VM' written above it. The bottom of the screen shows the footer with links for English (US), Feedback, Privacy Policy, and Terms of Use, along with a copyright notice for 2008-2018 Amazon Web Services.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm S
i-02158e3e769c9400a	t2.micro	eu-west-3c	running	Initializing	None	

Instance: i-02158e3e769c9400a Public DNS: ec2-35-180-97-11.eu-west-3.compute.amazonaws.com

Description	Status Checks	Monitoring	Tags
Instance ID	i-02158e3e769c9400a	Public DNS (IPv4)	ec2-35-180-97-11.eu-west-3.compute.amazonaws.com
Instance state	running	IPv4 Public IP	35.180.97.11
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-47-134.eu-west-3.compute.internal
Availability zone	eu-west-3c	Private IPs	172.31.47.134

Connection with SSH

```
ubuntu@ip-172-31-47-134: ~
Fichier Édition Affichage Rechercher Terminal Aide
hagimont@hagimont-pc:~/Téléchargements$ chmod go-rw key-dan.pem
hagimont@hagimont-pc:~/Téléchargements$ ssh -i key-dan.pem ubuntu@ec2-35-180-97-11.eu
-west-3.compute.amazonaws.com
Welcome to Ubuntu 18.04.1 LTS (GNU/Linux 4.15.0-1021-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

 System information as of Mon Nov 12 07:27:39 UTC 2018

 System load:  0.01          Processes:           147
 Usage of /:   13.3% of 7.69GB  Users logged in:  1
 Memory usage: 14%          IP address for eth0: 1.47.134
 Swap usage:   0%
Get cloud support with Ubuntu Advantage
  http://www.ubuntu.com/business/services/
0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

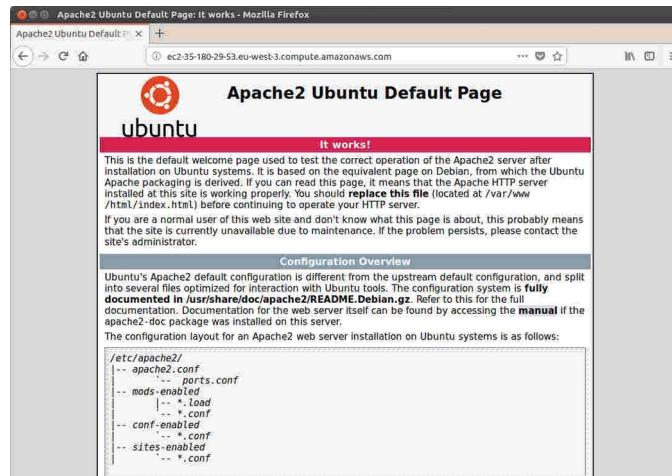
ubuntu@ip-172-31-47-134:~$
```

- modify access rights on the key pair file
- log in the VM with the key pair

Ubuntu@...

Installation of Apache2 + Php5

- Installation
 - sudo bash
 - apt-get update
 - apt-get install apache2 php libapache2-mod-php
 - systemctl restart apache2
- Verify that Apache is functionning
 - From a web browser:
 - <http://ec2-35-180-97-11.eu-west-3.compute.amazonaws.com>



Installation of a php page

- From your machine
 - `scp -i <fichier .pem> index.php ubuntu@ec2-35-180-29-53.eu-west-3.compute.amazonaws.com:.`
- In the VM
 - `sudo bash`
 - `rm /var/www/html/index.html`
 - `mv index.php /var/www/html/`
 - `chmod 777 /var/www/html/index.php`



Save an image

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar is collapsed, and the main area displays an instance details page for an instance named 'i-02158e3e769c9400a'. The instance is a t2.micro type, running in the eu-west-3c availability zone. A context menu is open over the instance table, with the 'Image' option highlighted and a red circle around it. The 'Create Image' option is also circled in red. The browser address bar shows the URL: <https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3>.

EC2 Management Console - Mozilla Firefox

EC2 Management Conso X +
https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3

aws Services Resource Groups

dhagimont Paris Support

Reports Limits

INSTANCES Instances Launch Templates Spot Requests Reserved Instances Dedicated Hosts Capacity Reservations

IMAGES AMIs Bundle Tasks

ELASTIC BLOCK STORE Volumes Snapshots

NETWORK & SECURITY Security Groups Elastic IPs Placement Groups Key Pairs Network Interfaces

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

1 to 1 of 1

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm S
i-02158e3e769c9400a	i-02158e3e769c9400a	t2.micro	eu-west-3c	running	2/2 checks ...	None

Connect Get Windows Password Create Template From Instance Launch More Like This

Instance State Instance Settings Image Networking CloudWatch Monitoring

Create Image

Instance: i-02158e3e769c9400a Public DNS: ec2-35-180-97-11.eu-west-3.compute.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID	i-02158e3e769c9400a	Public DNS (IPv4)	ec2-35-180-97-11.eu-west-3.compute.amazonaws.com
Instance state	running	IPv4 Public IP	35.180.97.11
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-47-134.eu-west-3.compute.internal
Availability zone	eu-west-3c	Private IPs	172.31.47.134

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Save an image

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The URL is https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3. The main navigation bar includes 'Services', 'Resource Groups', and 'Actions'. Below the navigation is a toolbar with 'Launch Instance', 'Connect', and 'Actions'. A 'Create Image' dialog box is open in the center.

Create Image

Instance ID: i-02158e3e769c9400a

Image name: **image-dan** (highlighted with a red circle)

Image description: image of dan

No reboot:

Instance Volumes

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	snap-03c629352f3ccd91a	8	General Purpose	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

Total size of EBS Volumes: 8 GiB
When you create an EBS image, an EBS snapshot will also be created for each of the above volumes.

Create Image (highlighted with a red circle)

At the bottom, there are tabs for 'Network Interfaces' (selected), 'Availability zone' (eu-west-3c), and 'Private IPs' (172.31.47.134). The footer includes 'Feedback', 'English (US)', '© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved.', 'Privacy Policy', and 'Terms of Use'.

Save an image

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The main interface displays a list of instances, with one instance selected: i-02158e3e769c9400a, t2.micro, eu-west-3c, running, with 2/2 checks. A modal dialog box titled "Create Image" is open in the foreground. The dialog contains a green success message: "Create Image request received." followed by the pending image ID "ami-0eaa1790d7841acec". It also includes a note: "Any snapshots backing your new EBS image can be managed on the [snapshots screen](#) after successful image creation." A "Close" button is at the bottom right of the dialog. The left sidebar shows navigation links like Reports, Limits, Instances, Launch Templates, and Network & Security. The bottom navigation bar includes Feedback, English (US), and links to Privacy Policy and Terms of Use.

Create Image

✓ Create Image request received.
View pending image ami-0eaa1790d7841acec

Any snapshots backing your new EBS image can be managed on the [snapshots screen](#) after successful image creation.

Close

Instance ID: i-02158e3e769c9400a
Public DNS (IPv4): ec2-35-180-97-11.eu-west-3.compute.amazonaws.com
Instance state: running
IPv4 Public IP: 35.180.97.11
Instance type: t2.micro
IPv6 IPs: -
Elastic IPs
Private DNS: ip-172-31-47-134.eu-west-3.compute.internal
172.31.47.134

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Save an image

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar menu is open, showing various services like Instances, Images, and Network & Security. The 'AMIs' option under the 'Images' section is highlighted with a red circle. The main content area displays a table of AMIs owned by the user, with one entry visible:

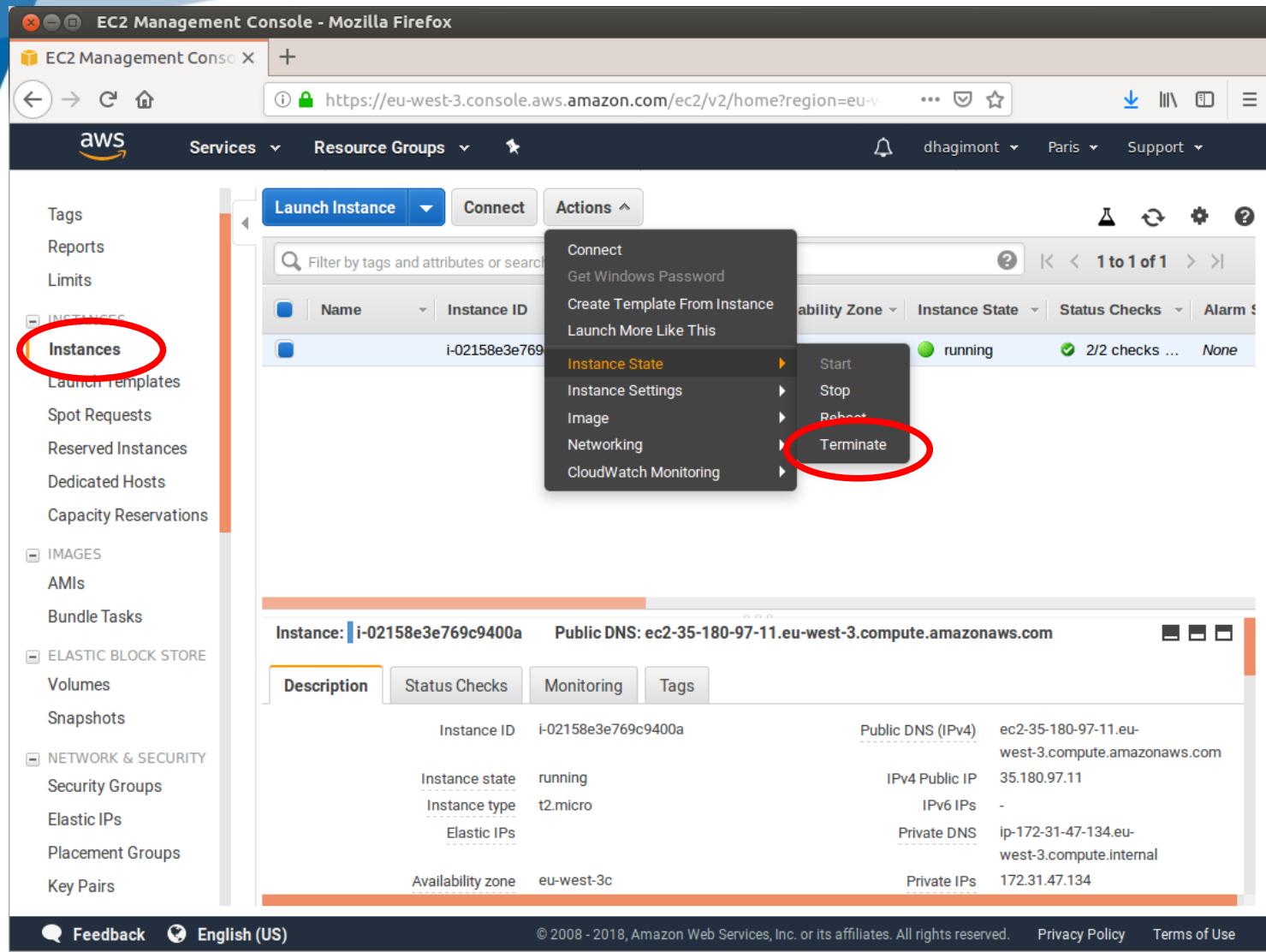
Name	AMI Name	AMI ID	Source	Owner	Visibility	Status
image-dan	ami-0eaa1790d7841acec	910556517775/i...	910556517775	Private	available	

Below the table, a detailed view of the selected AMI (ami-0eaa1790d7841acec) is shown with tabs for Details, Permissions, and Tags. The Details tab displays the following information:

AMI ID	ami-0eaa1790d7841acec	AMI Name	image-dan
Owner	910556517775	Source	910556517775/image-dan
Status	available	State Reason	-

At the bottom of the page, there are links for Feedback, Language selection (English (US)), and legal notices (© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use).

Terminate your instance



Use an image

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar navigation bar has several sections: Reports, Limits, INSTANCES (Instances, Launch Templates, Spot Requests, Reserved Instances, Dedicated Hosts, Capacity Reservations), IMAGES (AMIs, Bundle Tasks), ELASTIC BLOCK STORE (Volumes, Snapshots), and NETWORK & SECURITY (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces). The 'AMIs' section is highlighted with an orange circle.

In the main content area, the 'Launch' tab is selected under the 'Actions' dropdown. A context menu is open over an AMI entry, with the 'Launch' option highlighted and circled in red. A red callout bubble points from this circled 'Launch' option to the text: "The following is similar to a VM creation".

The details panel for the AMI 'ami-0eaa1790d7841acec' is visible, showing the following information:

AMI ID	ami-0eaa1790d7841acec	AMI Name	image-dan
Owner	910556517775	Source	910556517775/image-dan
Status	available	State Reason	-

At the bottom of the page, there are links for Feedback, English (US), and footer text: © 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use.

Amazon Auto Scaling

- Automatically adjust the number of instance according to
 - Monitoring information
 - Rules
- Three utilization cases
 - Maintain a fixed number of instances
 - Plan the addition/removal of instances
 - Dimension according to the load

Amazon Auto Scaling

- Steps
 - Creation of a *load balancer*
 - Load balancer between instances
 - Creation of a *Launch Configuration*
 - Type of VM which will be added
 - Creation of an *Auto Scaling Group*
 - Rules of management

Creation of a load balancer

The screenshot shows the AWS Management Console interface for creating a target group. The left sidebar is collapsed, and the main content area is titled "Target groups".

Header: Search bar: "Search for services, features, marketplace products, and docs" [Alt+S]. User info: user50 @ 5604-0605-2148 ▾ Seoul ▾ Support ▾.

Actions Bar: Includes a refresh icon, "Actions" dropdown, and a prominent orange "Create target group" button, which is circled in red.

Table Headers: Name, ARN, Port, Protocol, Target type, Load balancer, VPC ID.

Table Content: A message: "No target groups to display."

Left Sidebar (Load Balancing section):

- Load Balancers
- Target Groups** (highlighted with a red circle)
- Auto Scaling

Bottom Center: A message: "Select a target group above." followed by three small square icons.

Creation of a load balancer

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EC2 > Target groups > Create target group

Step 1
Specify group details

Your load balancer routes requests to the targets in a target group and performs health checks on the targets.

Step 2
Register targets

Basic configuration
Settings in this section cannot be changed after the target group is created.

Choose a target type

Instances

- Supports load balancing to instances within a specific VPC.

IP addresses

- Supports load balancing to VPC and on-premises resources.
- Facilitates routing to multiple IP addresses and network interfaces on the same instance.
- Offers flexibility with microservice based architectures, simplifying inter-application communication.

Lambda function

- Facilitates routing to a single Lambda function.
- Accessible to Application Load Balancers only.

Application Load Balancer

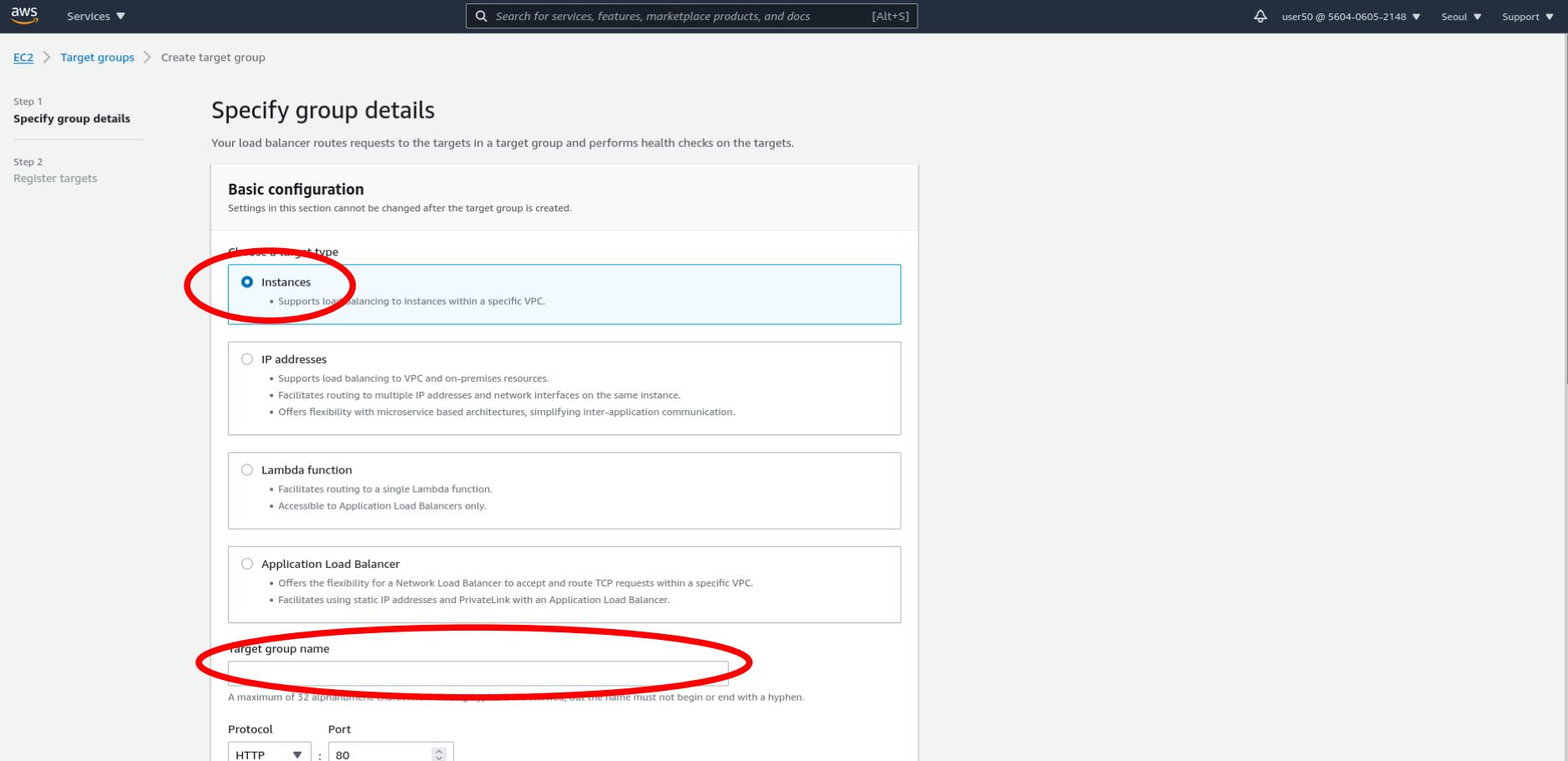
- Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
- Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

target group name

A maximum of 32 alphanumeric characters can be used for target group names, but the name must not begin or end with a hyphen.

Protocol Port

HTTP : 80



Creation of a load balancer

The screenshot shows the AWS Load Balancer creation interface. A blue speech bubble labeled "Index.php" points to the "Health check path" field in the "Health checks" section, which contains the value "/". Two specific fields are circled in red: the "VPC" dropdown in the "Target groups" section and the "Health check path" input field in the "Health checks" section.

AWS Services ▾ Search for services, features, marketplace products, and docs [Alt+S] user50 @ 5604-0605-2148 ▾ Seoul AWS Agent

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Protocol Port

HTTP : 80

VPC

Select the VPC with the instances that you want to include in the target group.

vpc-910c69fa
IPv4: 172.31.0.0/16

Protocol version

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

HTTP2 Send requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC, but gRPC-specific features are not available.

gRPC Send requests to targets using gRPC. Supported when the request protocol is gRPC.

Health checks

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

Health check protocol

HTTP

Health check path

Use the default value (/) to ping the root, or specify a custom path to be tested.

/

Up to 1024 characters allowed.

► Advanced health check settings

▶ Tags - optional

Creation of a load balancer

Check your instances

AWS Services ▾ Step 2 Register targets

Available instances (2)

Instance ID	Name	State	Security groups	Zone	Subnet ID
i-0fb2cf71d5d6ea466		running	launch-wizard-1	ap-northeast-2a	subnet-5f47d034
i-07255fc82b0de724d		running	AutoScaling-Security-Group-2	ap-northeast-2a	subnet-5f47d034

Ports for the selected instances
Ports for routing traffic to the selected instances.
80
1-65535 (separate multiple ports with commas)
Include as pending below

Review targets

Targets (0)

Remove	Health status	Instance ID	Name	Port	State	Security groups	Zone	Subnet ID
No instances added yet								

Specify Instances above, or leave the group empty if you prefer to add targets later.

0 pending

Cancel Previous Create target group

The screenshot shows the AWS Lambda console interface for creating a new function. At the top, there's a large title 'Creation of a load balancer' with a callout bubble pointing to the 'Available instances' section. Below the title, the 'Register targets' step is shown. The 'Available instances' table lists two running instances. The first instance is circled in red. A blue arrow points from the 'Check your instances' text to this table. In the 'Review targets' section, there's a table for adding targets, which is currently empty. The 'Create target group' button at the bottom right is also circled in red. The overall theme is light blue and white.

Creation of a load balancer

The screenshot shows the AWS CloudFormation console interface. On the left, a navigation sidebar lists various AWS services: Instances, Images, Elastic Block Store, Network & Security, Auto Scaling, and Launch Configurations. The 'Instances' section is currently selected, showing a table of existing instances. A red circle highlights the 'Create Load Balancer' button at the top of this section.

The main content area displays the details of a load balancer named 'tab'. A second red circle highlights the 'Load Balancers' tab in the navigation bar. The 'Basic Configuration' section shows the following details:

Name	tab	Creation time	October 4, 2021 at 5:59:22 AM UTC+2
* DNS name	tab-571090069.ap-northeast-2.elb.amazonaws.com (A Record)	Hosted zone	ZWKZPGTI48KDX
Type	Classic (Migrate Now)	Status	0 of 2 instances in service
Scheme	internet-facing	VPC	vpc-910c69fa

Creation of a load balancer

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Select load balancer type

Elastic Load Balancing supports four types of load balancers: Application Load Balancers, Network Load Balancers, Gateway Load Balancers, and Classic Load Balancers. Choose the load balancer type that meets your needs. [Learn more about which load balancer is right for you](#)

Application Load Balancer	Network Load Balancer	Gateway Load Balancer	Classic Load Balancer
Create	Create	Create	Create
Choose an Application Load Balancer when you need a flexible feature set for your web applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers. Learn more >	Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your application. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies. Learn more >	Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support GENEVE. These appliances enable you to improve security, compliance, and policy controls. Learn more >	PREVIOUS GENERATION for HTTP, HTTPS, and TCP Learn more > AWS will be retiring the EC2-Classic network on August 15, 2022. Learn more <input checked="" type="checkbox"/> .

[Cancel](#)

Creation of a load balancer

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on request attributes. When the load balancer receives a connection request, it evaluates the listener rules in priority order to determine which rule to apply, and if applicable, it selects a target from the target group for the rule action.

▶ How Application Load Balancers work

Basic configuration

Load balancer name Name must be unique within your AWS account and cannot be changed after the load balancer is created. A maximum of 32 alphanumeric characters, underscores, and hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme [Info](#) Scheme cannot be changed after the load balancer is created.

Internet-facing An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)

Internal An internal load balancer routes requests from clients to targets using private IP addresses.

IP address type [Info](#) Select the type of IP addresses that your subnets use.

IPv4 Recommended for internal load balancers.

Dualstack Includes IPv4 and IPv6 addresses.

Network mapping [Info](#)

The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings.

VPC [Info](#) Select the virtual private cloud (VPC) for your targets. Only VPCs with an internet gateway are enabled for selection. The selected VPC cannot be changed after the load balancer is created. To confirm the VPC for your targets, view your [target groups](#)

vpc-910c69fa IPv4: 172.31.0.0/16

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Creation of a load balancer

The screenshot shows the AWS Management Console interface for creating a new load balancer. The top navigation bar includes the AWS logo, a search bar, and user information (user50 @ 5604-0605-2148, Seoul, Support). The main content area is titled "Create a new load balancer" and contains several configuration sections:

- Network mapping**: A note says "The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings." A blue callout bubble points to the "Check at least two zones" section.
- VPC**: A note says "Select the virtual private cloud (VPC) for your targets. Only VPCs with an internet gateway are enabled for selection. The selected VPC cannot be changed after the load balancer is created. To confirm the VPC for your targets, view your target groups." A blue callout bubble points to the "Select your security group" section.
- Mappings**: A note says "Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in the selected Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection. Subnets cannot be removed after the load balancer is created, but additional subnets can be added. Availability Zones that are not supported by the load balancer or the VPC are disabled. At least two subnets must be specified." A red circle highlights the "ap-northeast-2a" checkbox, and a blue callout bubble points to it.
- Security groups**: A note says "A security group is a set of firewall rules that control the traffic to your load balancer." A red circle highlights the "Select security groups" dropdown menu, and a blue callout bubble points to it.

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Creation of a load balancer

The screenshot shows the AWS Management Console interface for creating a load balancer. The main focus is on the 'Listeners and routing' section.

Listener HTTP:80 Configuration:

- Protocol: HTTP
- Port: 80
- Action: Forward to (highlighted with a red oval)
- Target group: Select a target group (highlighted with a red oval)
- Buttons: Create target group, C

A blue callout bubble points to the 'Select a target group' button with the text "Select your target group".

Tags - optional:

Consider adding tags to your load balancer. Tags enable you to categorize your AWS resources so you can more easily manage them. The 'Key' is required, but 'Value' is optional. For example, you can have Key = production-webserver, or Key = webserver, and Value = production.

Summary:

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

Basic configuration Edit Load balancer name not defined • Internet-facing • IPv4	Security groups Edit • default sg-f48d0f84	Network mapping Edit VPC vpc-910c69fa Subnet not defined	Listeners and routing Edit • HTTP:80 defaults to Target group not defined
--	---	---	--

Tags [Edit](#)
None

Attributes

Certain default attributes will be applied to your load balancer. You can view and edit them after creating the load balancer.

A blue callout bubble points to the bottom right corner with the text "Create the LB".

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Creation of a load balancer

The screenshot shows the AWS EC2 Management Console interface. On the left, a sidebar lists various services: ELASTIC BLOCK STORE, NETWORK & SECURITY, LOAD BALANCING (with 'Load Balancers' highlighted by a red oval), AUTO SCALING, SYSTEMS MANAGER SERVICES, and others. The main panel shows a 'Create Load Balancer' page. A table lists one load balancer entry: 'lb-dan' with ARN 'arn:aws:elasticloadbalancing:eu-west-3:910556517775:loadbalancer/app/lb-dan/ff1b2ff96ccf7031'. Below the table, the 'Basic Configuration' section displays the following details:

Name:	lb-dan	Creation time:	November 12, 2018 at 8:59:24 AM UTC+1
ARN:	arn:aws:elasticloadbalancing:eu-west-3:910556517775:loadbalancer/app/lb-dan/ff1b2ff96ccf7031	Hosted zone:	Z3Q77PNBQS71R4
DNS name:	lb-dan-673304993.eu-west-3.elb.amazonaws.com (A Record)	State:	provisioning
Scheme:	internet-facing	VPC:	vpc-59603330
Type:	application	IP address type:	ipv4
AWS WAF Web ACL:	An error occurred while a request was made to AWS WAF.		

Annotations with red circles highlight the 'Load Balancers' link in the sidebar, the 'DNS name' field in the configuration table, and the 'DNS name' value itself, which is also circled in red.

Creation of an auto scaling group

The screenshot shows the AWS Management Console interface for creating an Auto Scaling group. The left sidebar is collapsed, and the main content area displays the 'Launch configurations' page under the EC2 service.

Left Sidebar:

- Instances New
- Instance Types
- Launch Templates
- Spot Requests
- Savings Plans
- Reserved Instances New
- Dedicated Hosts
- Capacity Reservations
- Images**
 - AMIs
- Elastic Block Store**
 - Volumes
 - Snapshots
 - Lifecycle Manager New
- Network & Security**
 - Security Groups
 - Elastic IPs
 - Placement Groups
 - Key Pairs
 - Network Interfaces
- Load Balancing**
 - Load Balancers
 - Target Groups New
- Auto Scaling**
 - Launch Configurations** (highlighted)
 - Auto Scaling Groups

Top Bar:

- aws Services ▾
- Search for services, features, marketplace products, and docs [Alt+S]
- user50 @ 5604-0605-2148 ▾ Seoul ▾ Support ▾

Main Content Area:

Launch configurations (2) Info

<input type="checkbox"/>	Name	AMI ID	Instance type	Spot price	Creation time
<input type="checkbox"/>	toto	ami-0d2c3b36ab...	t2.micro	-	Mon Oct 04 2021 06:03:37 GMT+0200 (Central European Summer Time)
<input type="checkbox"/>	test	ami-0d2c3b36ab...	t2.micro	-	Mon Oct 04 2021 05:52:57 GMT+0200 (Central European Summer Time)

Action Buttons:

- Create launch configuration (highlighted)
-
-

Bottom Left:

Select a launch configuration above

Bottom Right:

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Creation of a launch configuration

The screenshot shows the 'Create launch configuration' page in the AWS EC2 console. The page has several input fields:

- Launch configuration name:** A text input field with a red circle around it.
- Amazon machine image (AMI):** A dropdown menu with a red circle around it. A blue callout bubble points to it with the text "Select your AMI".
- Instance type:** A dropdown menu with a red circle around it. A button labeled "Choose instance type" is also circled.
- Additional configuration - optional:** A section containing a checkbox for "Request Spot Instances".

At the top of the page, there are two notifications:

- "Instead of using launch configurations to create your EC2 Auto Scaling groups, we recommend that you use launch templates to make sure that you're getting the latest features from EC2. [Start using launch templates](#)."
- "Something went wrong. Please refresh and try again."

Creation of a launch configuration

The screenshot shows the AWS Launch Configuration creation interface. At the top, there's a header bar with the AWS logo, a search bar, and user information. Below the header, the main content area is divided into several sections:

- Additional configuration - optional**: This section includes fields for "Purchasing option" (Request Spot Instances), "IAM Instance profile" (Select IAM role dropdown), and "Monitoring" (Enable EC2 Instance detailed monitoring within CloudWatch). It also features a note: "Later, if you want to use a different launch configuration, you can create a new one and apply it to any Auto Scaling group. Existing launch configurations cannot be edited."
- Storage (volumes)**: This section is titled "EBS volumes". It has a table with columns: Volume type, Devices, Snapshot, Size (GiB), and Volume type. A "Remove" button is at the top right of the table. Below the table is a "Add new volume" button and a note: "Select an AMI before adding volumes". A blue box contains the message: "Free tier eligible customers can get up to 30 GB of EBS storage. [Learn more](#) about free usage tier eligibility and usage restrictions."
- Security groups**: This section is partially visible at the bottom.

Creation of a launch configuration

The screenshot shows the AWS Lambda 'Security groups' configuration page. A blue callout bubble points from the top right towards the 'Select an existing security group' radio button. The 'Select an existing security group' option is highlighted with a red circle.

Security groups Info

Assign a security group

Create a new security group

Select an existing security group

Security group name

AutoScaling-Security-Group-3

Description

AutoScaling-Security-Group-3 (2021-10-04T04:20:21.995Z)

Rules

Type	Protocol	Port range	Source type	Source
<input type="checkbox"/>	SSH	TCP	22	Anywhere

[+ Add new rule](#)

⚠ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Key pair (login) Info

Creation of an auto scaling group

The screenshot shows the AWS Management Console interface for the EC2 service. The left sidebar is collapsed, showing various AWS services like Instances, Instance Types, Launch Templates, and Auto Scaling. The main content area displays the 'Launch configurations' page for the EC2 service. It lists two launch configurations: 'toto' and 'test'. The 'toto' configuration was created on Mon Oct 04 2021 06:03:37 GMT+0200 (Central European Summer Time) and uses an AMI ID starting with 'ami-0d2c3b36ab...'. The 'test' configuration was created on Mon Oct 04 2021 05:52:57 GMT+0200 (Central European Summer Time) and also uses an AMI ID starting with 'ami-0d2c3b36ab...'. The instance type for both is 't2.micro'. The 'Actions' dropdown menu includes options like 'Copy to launch template' and 'Create launch configuration'. A search bar at the top allows searching for launch configurations.

Name	AMI ID	Instance type	Spot price	Creation time
toto	ami-0d2c3b36ab...	t2.micro	-	Mon Oct 04 2021 06:03:37 GMT+0200 (Central European Summer Time)
test	ami-0d2c3b36ab...	t2.micro	-	Mon Oct 04 2021 05:52:57 GMT+0200 (Central European Summer Time)

Select a a launch configuration above

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Creation of an auto scaling group

The screenshot shows the AWS EC2 Auto Scaling Groups console. A red circle highlights the 'Create an Auto Scaling group' button in the top right corner of the main table header.

Auto Scaling groups (1/1)

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
toto	toto	1	-	1	1	2	ap-northeast-2a

Group details

Desired capacity	Auto Scaling group name
1	test
Minimum capacity	Date created
1	Mon Oct 04 2021 06:09:44 GMT+0200 (Central European Summer Time)
Maximum capacity	Amazon Resource Name (ARN)
2	arn:aws:autoscaling:ap-northeast-2:560406052148:autoScalingGroup:e2565094-5051-44f6-817a-8db5a85f3f8a:autoScalingGroupName/test

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Creation of an auto scaling group

Screenshot of the AWS EC2 Auto Scaling Groups creation wizard.

The left sidebar shows the New EC2 Experience menu with various services like EC2 Dashboard, Instances, Images, and Network & Security.

The main page title is "Create Auto Scaling group".

The first step, "Choose launch template or configuration", is highlighted. A blue callout bubble points to the "Switch to launch configuration" link, which is circled in red.

The "Launch template" section is also circled in red. It includes a dropdown menu labeled "Select a launch template" and a "Create a launch template" button.

Below the "Launch template" section, there are "Step 1" through "Step 7" options, with "Step 1" currently selected.

At the bottom right are "Cancel" and "Next" buttons.

A large blue callout bubble on the right side contains the text: "Switch to select your launch configuration".

Switch to
select your
launch
configuration

Creation of an auto scaling group

Sales Services ▾

New EC2 Experience Tell us what you think X

EC2 Dashboard New

Events New

Tags

Limits

INSTANCES

- Instances
- Instance Types
- Launch Templates
- Spot Requests
- Savings Plans
- Reserved Instances
- Dedicated Hosts New
- Scheduled Instances
- Capacity Reservations

IMAGES

- AMIs

ELASTIC BLOCK STORE

- Volumes
- Snapshots
- Lifecycle Manager

NETWORK & SECURITY

- Security Groups New
- Elastic IPs New
- Placement Groups New
- Key Pairs New

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EC2 > Auto Scaling groups > Create Auto Scaling group

Configure settings Info

Configure the settings below. Depending on whether you chose a launch template, these settings may include options to help you make optimal use of EC2 resources.

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 Info

vpc-910c69fa 172.31.0.0/16 Default

Create a VPC

Subnets Info

Select subnets

ap-northeast-2a | subnet-5f47d034 X 172.31.0.0/20 Default

ap-northeast-2c | subnet-4436cd0b X 172.31.32.0/20 Default

ap-northeast-2d | subnet-dd9a4e82 X 172.31.48.0/20 Default

Create a subnet

Cancel Previous Skip to review Next

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Creation of an auto scaling group

The screenshot shows the AWS EC2 Auto Scaling Groups creation wizard. The left sidebar lists various services like EC2 Dashboard, Instances, Images, Elastic Block Store, and Network & Security. The main pane shows the 'Configure advanced options' step, which is optional for load balancing. It provides three choices: 'No load balancer', 'Attach to an existing load balancer', and 'Attach to a new load balancer'. A red circle highlights the 'Attach to an existing load balancer' option. Below it, a blue callout bubble says 'Select your LB, target group'. The 'Attach to an existing load balancer' section shows a list of target groups, with one named 'toto | HTTP' selected.

Search for services, features, marketplace products, and docs [Alt+S]

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New EC2 Experience Tell us what you think

EC2 Dashboard New

Events New

Tags

Limits

INSTANCES

- Instances
- Instance Types
- Launch Templates
- Spot Requests
- Savings Plans
- Reserved Instances
- Dedicated Hosts New
- Scheduled Instances
- Capacity Reservations

IMAGES

- AMIs

ELASTIC BLOCK STORE

- Volumes
- Snapshots
- Lifecycle Manager

NETWORK & SECURITY

- Security Groups New
- Elastic IPs New

EC2 > Auto Scaling groups > Create Auto Scaling group

Configure advanced options Info

Choose a load balancer to distribute incoming traffic for your application across instances to make it more reliable and easily scalable. You can also set options that give you more control over health check replacements and monitoring.

Load balancing - optional Info

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.

Attach to an existing load balancer

Select the load balancers that you want to attach to your Auto Scaling group.

Choose from your load balancer target groups
This option allows you to attach Application, Network, or Gateway Load Balancers.

Choose from Classic Load Balancers

Existing load balancer target groups

Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups

toto | HTTP X

Application Load Balancer: lb

Select your LB, target group

Creation of an auto scaling group

Sales Services ▾

New EC2 Experience Tell us what you think X

EC2 Dashboard New

Events New

Tags

Limits

INSTANCES

- Instances
- Instance Types
- Launch Templates
- Spot Requests
- Savings Plans
- Reserved Instances
- Dedicated Hosts New
- Scheduled Instances
- Capacity Reservations

IMAGES

- AMIs

ELASTIC BLOCK STORE

- Volumes
- Snapshots
- Lifecycle Manager

NETWORK & SECURITY

- Security Groups New
- Elastic IPs New
- Placement Groups New
- Key Pairs New

Feedback English (US) ▾

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Attach to an existing load balancer

Select the load balancers that you want to attach to your Auto Scaling group.

Choose from your load balancer target groups
This option allows you to attach Application, Network, or Gateway Load Balancers.

Choose from Classic Load Balancers

Existing load balancer target groups
Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups ▾ C

toto | HTTP X

Application Load Balancer: lb

Health checks - optional

Health check type Info

EC2 Auto Scaling automatically replaces instances that fail health checks. If you enabled load balancing, you can enable ELB health checks in addition to the EC2 health checks that are always enabled.

EC2 ELB

Health check grace period

The amount of time until EC2 Auto Scaling performs the first health check on new instances after they are put into service.

300 seconds

Additional settings - optional

Monitoring Info

Enable group metrics collection within CloudWatch

Cancel Previous Skip to review Next

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Creation of an auto scaling group

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NETWORK & SECURITY

- Security Groups New
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- Placement Groups New
- Key Pairs New

Feedback English (US) ▾

Configure group size and scaling policies Info

Set the desired, minimum, and maximum capacity of your Auto Scaling group. You can optionally add a scaling policy to dynamically scale the number of instances in the group.

Step 1 Choose launch template or configuration

Step 2 Configure settings

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

Group size - optional Info

Specify the size of the Auto Scaling group by changing the desired capacity. You can also specify minimum and maximum capacity limits. Your desired capacity must be within the limit range.

Desired capacity

Minimum capacity

Maximum capacity

Scaling policies - optional

Choose whether to use a scaling policy to dynamically resize your Auto Scaling group to meet changes in demand. Info

Target tracking scaling policy Choose a desired outcome and leave it to the scaling policy to add and remove capacity as needed to achieve that outcome.

None

Scaling policy name

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Top 100% CPU 63% CPU 76281 102 168.1.64.1 1.00% CPU 91.75% 11.1 GiB 1.0.94.11.1 GiB 1.18.6 GiB 2021.10.04.06.26.15

Creation of an auto scaling group

The screenshot shows the AWS Auto Scaling 'Scaling policies - optional' configuration step. The left sidebar lists various AWS services like EC2 Dashboard, Instances, Images, Elastic Block Store, and Network & Security. The main area shows the configuration for a 'Target tracking scaling policy'. A red circle highlights the 'Target tracking scaling policy' radio button, which is selected. Another red circle highlights the 'Metric type' dropdown set to 'Average CPU utilization'. A third red circle highlights the 'Target value' input field containing '50'. A fourth red circle highlights the 'Warmup' input field containing '300'. Below these fields is a checkbox for 'Disable scale in to create only a scale-out policy', which is unchecked. At the bottom, there is an 'Instance scale-in protection - optional' section with a checkbox for 'Enable Instance scale-in protection', which is unchecked. The footer contains 'Cancel', 'Previous', 'Skip to review' (which is highlighted with a red oval), and 'Next' buttons.

Scaling policies - *optional*

Choose whether to use a scaling policy to dynamically resize your Auto Scaling group to meet changes in demand. [Info](#)

Target tracking scaling policy
Choose a desired outcome and we'll tailor the scaling policy to add and remove capacity as needed to achieve that outcome.

None

Scaling policy name
Target Tracking Policy

Metric type
Average CPU utilization

Target value
50

Warmup
300 seconds warm up before including in metric

Disable scale in to create only a scale-out policy

Instance scale-in protection - *optional*

Instance scale-in protection
If protect from scale in is enabled, newly launched instances will be protected from scale in by default.

Enable Instance scale-in protection

Cancel Previous Skip to review Next

Creation of an auto scaling group

The screenshot shows the AWS EC2 Auto Scaling Groups creation wizard. The left sidebar lists various AWS services under 'New EC2 Experience'. The main content area shows the 'Create Auto Scaling group' process at Step 1: 'Choose launch template or configuration'. A sub-step 'Add notifications' is highlighted, with a callout box providing information about sending notifications to SNS topics. The 'Add notification' button is visible. The process continues through optional steps: Step 2 (Configure settings), Step 3 (Configure advanced options), Step 4 (Configure group size and scaling policies), Step 5 (Add notifications), Step 6 (Optional: Add tags), and Step 7 (Review). Navigation buttons for 'Cancel', 'Previous', 'Skip to review', and 'Next' are at the bottom.

AWS Services ▾

New EC2 Experience Tell us what you think X

EC2 Dashboard New

Events New

Tags

Limits

INSTANCES

- Instances
- Instance Types
- Launch Templates
- Spot Requests
- Savings Plans
- Reserved Instances
- Dedicated Hosts New
- Scheduled Instances
- Capacity Reservations

IMAGES

- AMIs

ELASTIC BLOCK STORE

- Volumes
- Snapshots
- Lifecycle Manager

NETWORK & SECURITY

- Security Groups New
- Elastic IPs New
- Placement Groups New
- Key Pairs New

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EC2 > Auto Scaling groups > Create Auto Scaling group

Add notifications Info

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

Add notification

Step 1 Choose launch template or configuration

Step 2 Configure settings

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

Cancel Previous Skip to review Next

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Creation of an auto scaling group

The screenshot shows the AWS EC2 Auto Scaling Groups creation wizard at Step 6: Add tags. The left sidebar lists various EC2 services like Instances, AMIs, and Network Security. The main pane shows a step-by-step guide:

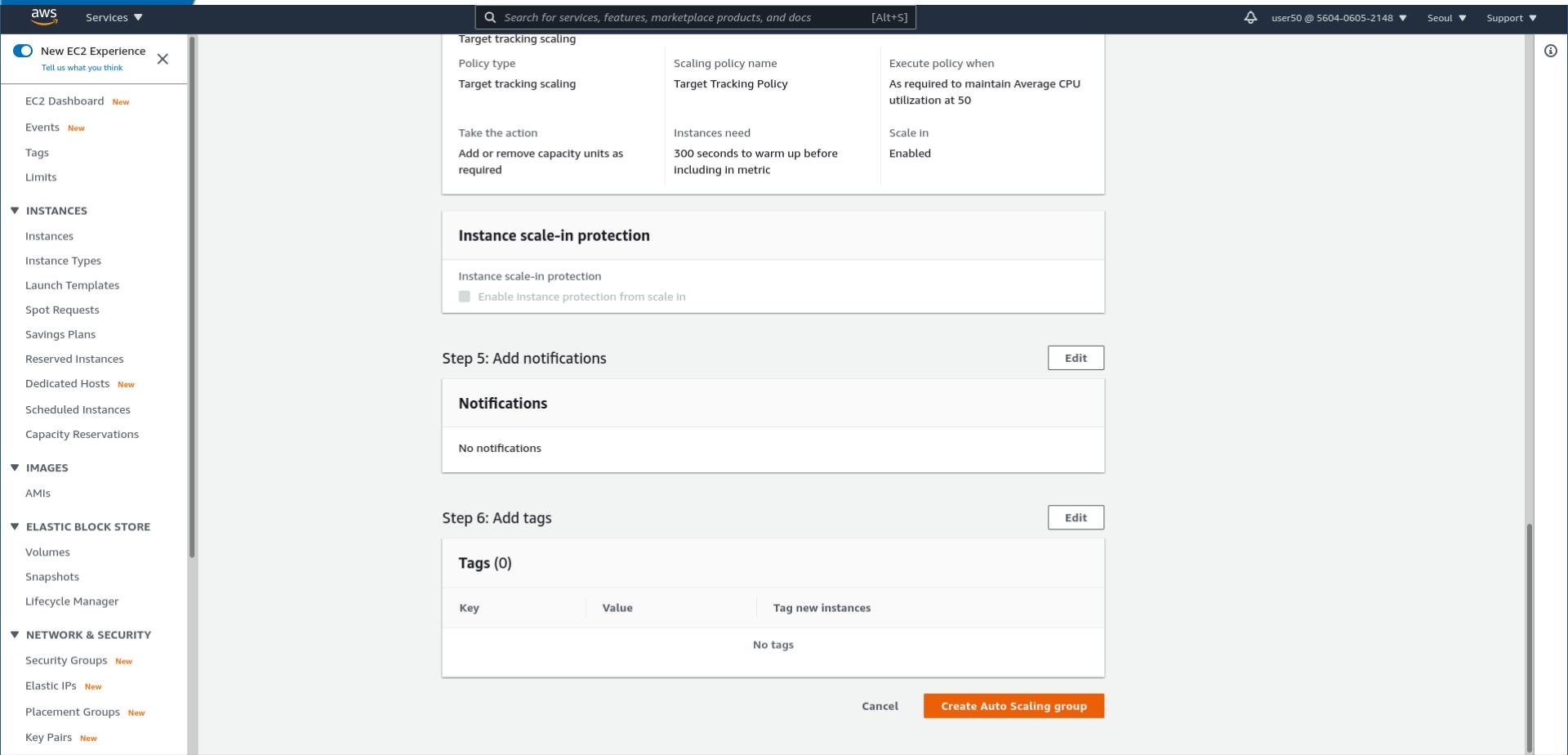
- Step 1: Choose launch template or configuration**
- Step 2: Configure settings**
- Step 3 (optional): Configure advanced options**
- Step 4 (optional): Configure group size and scaling policies**
- Step 5 (optional): Add notifications**
- Step 6 (optional): Add tags**
- Step 7: Review**

The "Add tags" section includes an info link and a note: "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." A "Tags (0)" table shows no tags added yet, with an "Add tag" button and a note "50 remaining". Navigation buttons "Cancel", "Previous", and "Next" are at the bottom.

Creation of an auto scaling group

The screenshot shows the AWS EC2 console interface for creating a new Auto Scaling group. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Limits, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations), Images (AMIs), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area is titled "Create Auto Scaling group" and is currently on "Step 1: Add tags". The sub-titles are "Choose launch template or configuration", "Configure settings", "Configure advanced options", "Configure group size and scaling policies", "Add notifications", and "Add tags". The "Add tags" section includes a descriptive info box: "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." Below this is a "Tags (0)" section with an "Add tag" button and a note "50 remaining". Navigation buttons at the bottom right include "Cancel", "Previous", and "Next". The top bar includes the AWS logo, services dropdown, search bar ("Search for services, features, marketplace products, and docs [Alt+S]"), user information ("user50 @ 5604-0605-2148 Seoul Support"), and a feedback link ("Tell us what you think").

Creation of an auto scaling group



The screenshot shows the AWS Auto Scaling Group creation wizard. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Limits, Instances, Images, Elastic Block Store, Network & Security, and Feedback. The main content area is divided into several sections:

- Target tracking scaling**:
 - Policy type: Target tracking scaling
 - Scaling policy name: Target Tracking Policy
 - Execute policy when: As required to maintain Average CPU utilization at 50
 - Take the action: Add or remove capacity units as required
 - Instances need: 300 seconds to warm up before including in metric
 - Scale in: Enabled
- Instance scale-in protection**:
 - Instance scale-in protection: Enable Instance protection from scale in
- Step 5: Add notifications**:
 - Notifications**: No notifications
 - Edit** button
- Step 6: Add tags**:
 - Tags (0)**
 - | Key | Value | Tag new instances |
|-----|-------|-------------------|
| | | No tags |
 - Edit** button

At the bottom right are **Cancel** and **Create Auto Scaling group** buttons.

Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar navigation bar has 'Auto Scaling' selected, with 'Launch Configurations' and 'Auto Scaling Groups' highlighted. A red circle highlights the 'Auto Scaling Groups' link. The main content area displays a table of Auto Scaling groups. One row is selected, showing details for an Auto Scaling group named 'scalinggroup-dan' associated with a launch configuration 'launchconf-dan'. The table includes columns for Name, Launch Configuration, Instances, Desired, Min, Max, Availability Zones, and Default Cooldown. Below the table, a modal window titled 'Auto Scaling Group: scalinggroup-dan' provides more detailed information about the group's configuration, including its launch configuration, availability zones, target groups, and health check type. A large red callout points from the text 'The auto scaling group associated with the launch configuration was created' to the 'Auto Scaling Groups' section in the sidebar.

EC2 Management Console - Mozilla Firefox

EC2 Management Conso X +
https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?region=eu-w

aws Services Resource Groups

dhagimont Paris Support

ELASTIC BLOCK STORE
Volumes Snapshots

NETWORK & SECURITY
Security Groups Elastic IPs Placement Groups Key Pairs Network Interfaces

LOAD BALANCING
Load Balancers Target Groups

AUTO SCALING
Launch Configurations **Auto Scaling Groups**

SYSTEMS MANAGER SERVICES
Run Command State Manager Configuration Compliance Automations Patch Compliance

Feedback English (US)

Launch Templates have arrived!

The EC2 Auto Scaling console now has full support for launch templates. Launch templates can be updated and versioned, and include support for the latest features of Amazon EC2. Create an Auto Scaling group to get started or [Learn more](#).

Create Auto Scaling group Actions

Filter: Filter Auto Scaling groups... 1 to 1 of 1 Auto Scaling Groups

Name	Launch Configuration	Instances	Desired	Min	Max	Availability Zones	Default Cooldown
scalinggroup-dan	launchconf-dan	0	1	1	2	eu-west-3c	300

Auto Scaling Group: scalinggroup-dan

Details Activity History Scaling Policies Instances Monitoring Notifications Tags Scheduled Actions Lifecycle H

Launch Configuration: launchconf-dan

Availability Zone(s): eu-w, subn

Target Groups: grou

Health Check Type: EC2

The auto scaling group associated with the launch configuration was created

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Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar navigation bar is visible, with the 'Auto Scaling Groups' option highlighted by a red oval. The main content area displays the 'Create Auto Scaling group' wizard. A large red oval highlights the message 'The first instance in the group was started'. Another red oval highlights the 'Instances' tab in the navigation bar of the resulting Auto Scaling Group details page. The bottom of the page shows a table with one instance listed.

The first instance in the group was started

Instances	Desired	Min	Max	Availability Zones	Default Cool-off
1	1	1	2	eu-west-3c	300

Auto Scaling Group: scalinggroup-dan

Actions	Details	Activity History	Scalability	Instances	Monitoring	Notifications	Tags	Scheduled Actions	Lifecycle
Actions	Details	Activity History	Scalability	Instances	Monitoring	Notifications	Tags	Scheduled Actions	Lifecycle

Filter: Any Health Status ▾ Any Lifecycle State ▾

Instance ID	Lifecycle	Launch Configuration / Template	Availability Zone	Health Status	Protected from
i-04e5e4338b7b6fd50	InService	launchconf-dan	eu-west-3c	Healthy	

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Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar navigation bar is visible, with the 'Target Groups' option under the 'LOAD BALANCING' section highlighted by a red oval. The main content area displays a 'Create target group' interface. A target group named 'group-dan' is listed in the table, with its details shown below: Port 80, Protocol HTTP, Target type instance, Load Balancer lb-dan, and VPC ID vpc-59603330. The 'Targets' tab is selected in the navigation bar. A red oval highlights the 'Targets' tab. A large red callout points from the 'Targets' tab to the 'Registered targets' table, which lists one instance: i-04e5e4338b7b6fd50. This instance is associated with the target group and the load balancer, as indicated by the red text annotation: 'This first instance is associated with the group and the load balancer'. The bottom of the page includes standard AWS footer links for Feedback, English (US), Privacy Policy, and Terms of Use.

EC2 Management Console - Mozilla Firefox

https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3#

aws Services Resource Groups

Capacity Reservations

- IMAGES
- AMIs
- Bundle Tasks

ELASTIC BLOCK STORE

- Volumes
- Snapshots

NETWORK & SECURITY

- Security Groups
- Elastic IPs
- Placement Groups
- Key Pairs
- Network Interfaces

LOAD BALANCING

- Load balancers
- Target Groups

AUTO SCALING

- Launch Configurations
- Auto Scaling Groups

SYSTEMS MANAGER SERVICES

- Run Command
- State Manager

Create target group Actions

Filter by tags and attributes or search by keyword

Name	Port	Protocol	Target type	Load Balancer	VPC ID
group-dan	80	HTTP	instance	lb-dan	vpc-59603330

Target group: group-dan

Description Targets Health checks Monitoring Tags

The load balancer starts routing requests to initial health checks. If demand on your target group increases, the load balancer automatically deregisters targets.

Edit

Registered targets

Instance ID	Name	Port	Availability Zone	Status
i-04e5e4338b7b6fd50		80	eu-west-3c	healthy

Availability Zones

Availability Zone	Target count	Healthy?
eu-west-3c	1	Yes

Feedback English (US)

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Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console interface. On the left, the navigation sidebar lists various services: Capacity Reservations, IMAGES, AMIs, Bundle Tasks, ELASTIC BLOCK STORE (Volumes, Snapshots), NETWORK & SECURITY (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), LOAD BALANCING (Load Balancers, Target Groups), AUTO SCALING (Launch Configurations, Auto Scaling Groups), and SYSTEMS MANAGER SERVICES (Run Command, State Manager). The 'Load Balancers' link is circled in red.

In the main content area, the 'Create Load Balancer' button is visible. The 'Actions' dropdown menu is open, showing options like 'Create Load Balancer', 'Edit', 'Delete', 'Details', and 'Logs'. A search bar is present above the table.

Name	DNS name	State	VPC ID	Availability Z
lb-dan	lb-dan-326497551.eu-west-3....	active	vpc-59603330	eu-west-3b, eu

The 'Basic Configuration' section displays the following details for the load balancer 'lb-dan':

- Description:** lb-dan
- Listeners:** (not shown)
- Monitoring:** (not shown)
- Tags:** (not shown)
- Basic Configuration:**
 - Name:** lb-dan
 - ARN:** arn:aws:elasticloadbalancing:eu-west-3:91055617775:loadbalancer/app/lb-dan/02cd0aa8af9cc0da
 - DNS name:** lb-dan-326497551.eu-west-3.elb.amazonaws.com (A Record)
 - Scheme:** internet-facing
 - Type:** application
 - Availability:** subnet-0b6ffe70 - eu-west-3b, subnet-7e3ee433 - eu-west-3c
 - Zones:** subnet-7e3ee433 - eu-west-3c
- Creation time:** November 12, 2018 at 2:06:47 PM UTC+1
- Hosted zone:** Z3Q77PNBQS71R4
- State:** active
- VPC:** vpc-59603330
- IP address type:** ipv4
- AWS WAF Web ACL:** An error occurred while a request was made to AWS WAF.

A red circle highlights the text 'Address of the load balancer' in red, pointing to the DNS name 'lb-dan-326497551.eu-west-3.elb.amazonaws.com'.

The load balancer relays the requests



You can reload many times the page,
it's always the same IP address

Overloading the application

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar has 'Instances' selected. The main pane lists two instances:

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status
	i-04e5e4338b7b6fd50	t2.micro	eu-west-3c	running	2/2 checks ...	None
	i-06aec0c3940e17e35	t2.micro	eu-west-3c	terminated		None

A red circle highlights the first instance (running). A red callout from a terminal window below points to this instance. Another red callout highlights the 'Public DNS (IPv4)' entry in the detailed view of the active instance.

We log in the instance And run the yes program

A single active instance

Public DNS (IPv4) ec2-35-180-100-161.eu-west-3.compute.amazonaws.com

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Auto scaling

The screenshot shows the AWS EC2 Management Console interface. On the left, the navigation menu is visible with the 'Instances' section selected. The main pane displays a list of three EC2 instances in the 'eu-west-3c' availability zone. The first instance is 'running', the second is 'terminated', and the third is 'running' but is labeled 'Initializing'. A large red oval highlights the third instance and the text 'A second instance was created NB: with free instances, 5 minutes latency'.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status
	i-04e5e4338b7b6fd50	t2.micro	eu-west-3c	running	2/2 checks ...	None
	i-06aec0c3940e17e35	t2.micro	eu-west-3c	terminated		None
	i-09a8ce005f425f5c4	t2.micro	eu-west-3c	running	Initializing	None

A second instance was created
NB: with free instances, 5 minutes latency

Select an instance above

Feedback English (US)

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Load balancing between the 2 instances

You can reload many times the page, you should have different IP addresses, i.e. the load is balanced between the 2 instances

