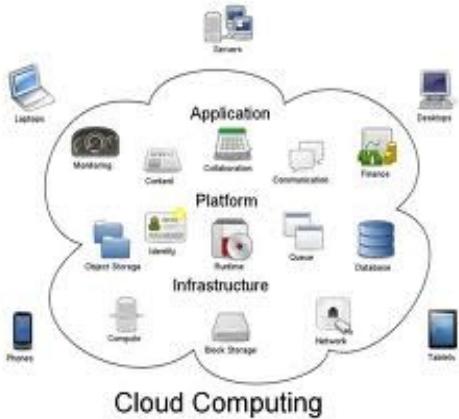




# Example with Amazon Web Service

Daniel Hagimont



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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.

Amazon Lightsail

Lightsail is the easiest way to get started on AWS

Learn more »



# AWS services

The screenshot shows the AWS Management Console interface. In the top left, the title bar reads "AWS Management Console - Mozilla Firefox". The address bar shows the URL "https://eu-west-3.console.aws.amazon.com/console/home?nc2=h...". The top navigation bar includes the AWS logo, a "Services" dropdown, "Resource Groups", and user account information for "dhagimont" (Paris, Support).

The main content area is titled "AWS services" and features a search bar with the placeholder "Find a service by name or feature (for example, EC2, S3 or VM, storage...)". Below the search bar, there are two sections: "Recently visited services" and "All services".

The "Recently visited services" section contains links to EC2, Billing, and Management Tools.

The "All services" section is organized into categories:

- Compute:** EC2 (highlighted with a red circle), Lightsail (with a red arrow pointing from the EC2 callout), ECS, EKS, Lambda, Batch, Elastic Beanstalk.
- 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.
- Media Services:** Elastic Transcoder, Kinesis Video Streams, MediaConvert, MediaLive, MediaPackage.
- AR & VR:** Amazon Sumerian.
- Application Integration:** Step Functions, Amazon MQ, Simple Notification Service.

To the right of the service list, there is a "Helpful tips" sidebar with three items:

- Manage your costs:** Monitor your AWS costs, usage, and reservations using AWS Budgets. [Start now](#).
- Create an organization:** Use AWS Organizations for policy-based management of multiple AWS accounts. [Start now](#).
- Explore AWS:** Machine Learning with Amazon SageMaker. The fastest way to build, train, and deploy machine learning models. [Learn more](#).

A large red callout bubble with the text "Choose the EC2 service" points to the EC2 link in the Compute section.

# EC2 Dashboard

The screenshot shows the EC2 Management Console in Mozilla Firefox, displaying the Resources page for the EU (Paris) region. The left sidebar lists various AWS services under 'INSTANCES', 'IMAGES', 'ELASTIC BLOCK STORE', and 'NETWORK & SECURITY'. The main content area shows resource counts and a 'Create Instance' section with a 'Launch Instance' button. Red annotations highlight the 'Create a security group' button, the 'Create a key pair' link, and the 'Create Instance' button.

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

Running Instances	Elastic IPs
0	0

Dedicated Hosts	Snapshots
0	0

Volumes	Load Balancers
0	0

Key Pairs	Security Groups
0	1

Placement Groups
0

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**

**Create a key pair**

**Launch Instance**

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

**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:

**Feedback** **English (US)**

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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. In the main content area, there's a top bar with 'Create Key Pair', 'Import Key Pair', and 'Delete' buttons. Below this is a search bar and a table listing key pairs. One row in the table is highlighted with a red circle and has a red arrow pointing from it to a large red callout box. The callout box contains the text: 'It generated a .pem file which is used to connect to the VM with SSH'. The table has columns for 'Key pair name' and 'Fingerprint'. The highlighted row shows 'key-dan' as the key pair name and a long hex string as the fingerprint.

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

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

# 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	Description
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 from the 'sec-grp-dan' entry to the text 'We created a security group'.

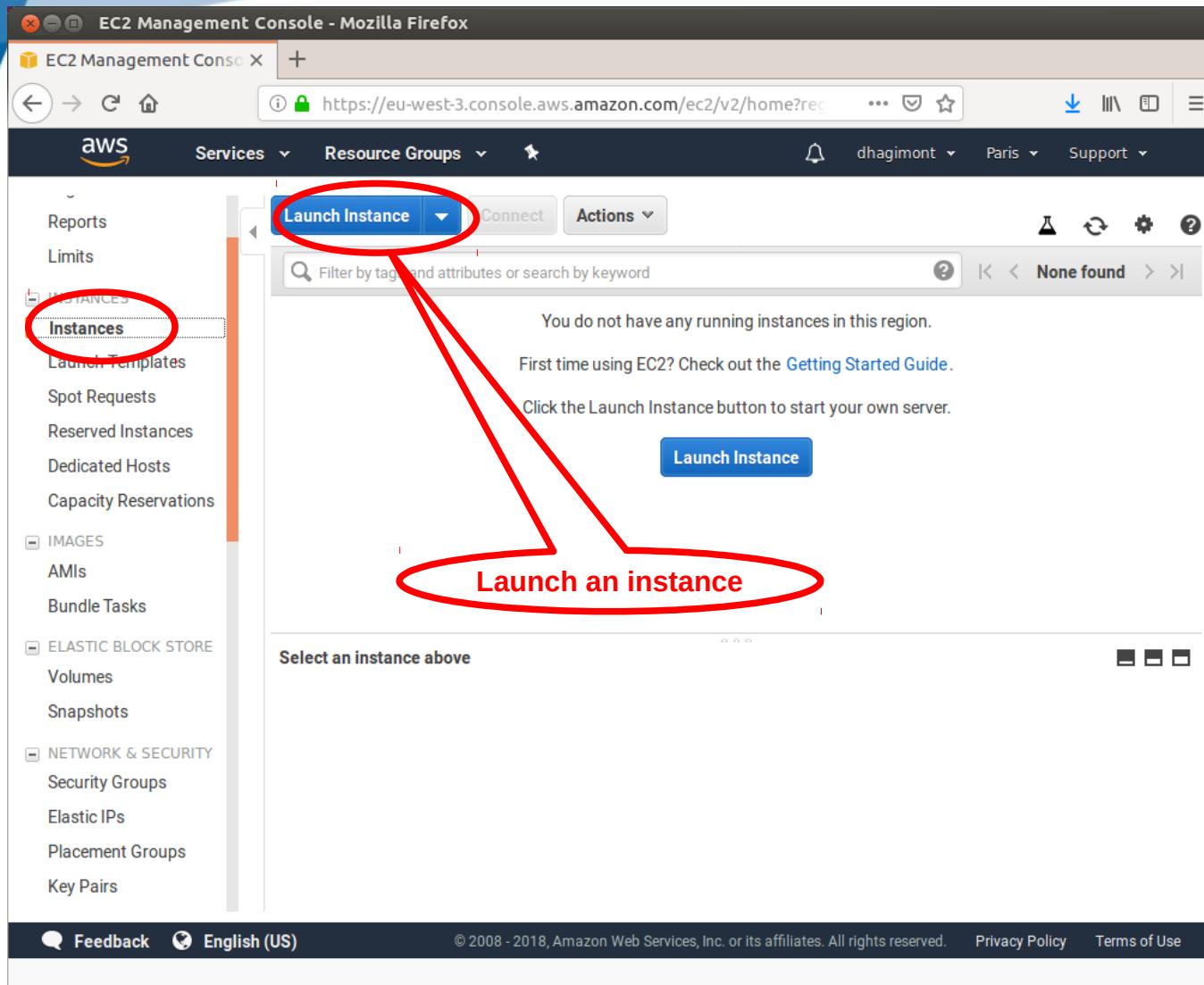
In the bottom right section, under 'Inbound' rules, there are two entries:

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 'All traffic' rule. A red callout bubble points from this rule to the text 'Autorize all traffic (TCP and UDP) to/from anywhere'.

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

# Instance management (VM)



# Choose the operating system

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, displaying the 'Choose AMI' step of a new instance creation process. The URL is https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3#instance-launch-wizard-step-1.

The page title is 'Step 1: Choose an Amazon Machine Image (AMI)'. It lists three AMI options:

- Amazon Linux**: Root device type: ebs, Virtualization type: hvm. Status: Free tier eligible. Description: 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. A 'Select' button is available.
- SUSE Linux Enterprise Server 15 (HVM)**: Root device type: ebs, Virtualization type: hvm. Status: Free tier eligible. Description: SUSE Linux Enterprise Server 15 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled. A 'Select' button is available.
- Ubuntu Server 18.04 LTS (HVM)**: Root device type: ebs, Virtualization type: hvm. Status: Free tier eligible. Description: Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>). A 'Select' button is available.

Red circles highlight the 'Select' button for the Ubuntu Server 18.04 LTS (HVM) entry and the entire entry itself.

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

# 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 highlighted 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 Free tier eligible	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-1>. The navigation bar includes 'Services', 'Resource Groups', and tabs for '1. Choose AMI' through '7. Review'. The '7. Review' tab is active.

**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

[Cancel](#) [Previous](#) **Launch**

[Feedback](#) [English \(US\)](#)

# 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 main navigation steps are: 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	<a href="#">Copy to new</a>
sg-05763b452785a0215	sec-grp-dan	security group of dan	<a href="#">Copy to new</a>

The row for "sec-grp-dan" is also 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: "Cancel", "Previous", "Review and Launch" (which is highlighted with a red circle), and "Review".

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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#LaunchWizard>. The top navigation bar includes the AWS logo, Services, Resource Groups, a user dropdown for dhagimont, location Paris, and Support.

The main content area shows the progress through Step 7: Review Instance Launch. The steps are numbered 1. Choose AMI to 7. Review, 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**

**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

Buttons at the bottom: Cancel, Previous, **Launch** (highlighted with a red circle), and Help.

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

# 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 an instance. A modal dialog box is displayed, asking the user to select an existing key pair or create a new one. The dialog includes a note about what a key pair is, a dropdown for selecting an existing key pair (set to 'key-dan'), a dropdown for selecting a key pair (also set to 'key-dan'), and a checkbox for acknowledging access to the private key file. The 'Launch Instances' button at the bottom right of the modal is highlighted with a red circle.

EC2 Management Console - Mozilla Firefox

EC2 Management Console

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 settings before launching. You can always change them later.

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

Feedback English (US)

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# Creation is done

The screenshot shows the EC2 Management Console in Mozilla Firefox. The title bar reads "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 AWS logo is in the top left, and the top navigation bar includes "Services", "Resource Groups", and user information "dhagimont", "Paris", and "Support".

**Launch Status**

**Your instances are now launching**  
The following instance launches have been initiated: i-02158e3e769c9400a [View launch log](#)

**Get notified of estimated charges**  
Create [billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

**How to connect to your instances**

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click [View Instances](#) to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

▼ Here are some helpful resources to get you started

- [How to connect to your Linux instance](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: User Guide](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

[Create status check alarms](#) to be notified when these instances fail status checks. (Additional charges may apply)

[Feedback](#) [English \(US\)](#)

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# 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 the Public DNS value. The bottom section shows detailed instance metadata: Instance ID (i-02158e3e769c9400a), Instance state (running), Instance type (t2.micro), Availability zone (eu-west-3c), Public DNS (IPv4) (ec2-35-180-97-11.eu-west-3.compute.amazonaws.com), IPv4 Public IP (35.180.97.11), IPv6 IPs (-), Private DNS (ip-172-31-47-134.eu-west-3.compute.internal), and Private IPs (172.31.47.134). The page footer includes links for English (US), Feedback, Privacy Policy, and Terms of Use, along with a copyright notice for 2008-2018 Amazon Web Services, Inc.

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

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

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

Feedback English (US)

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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:
 Usage of /:   13.3% of 7.69GB  Users logged in:
 Memory usage: 14%            IP address for eth0: 172.31.47.134
 Swap usage:   0%
Get cloud support with Ubuntu Advantage
http://www.ubuntu.com/business-solutions/cloud-support/
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.

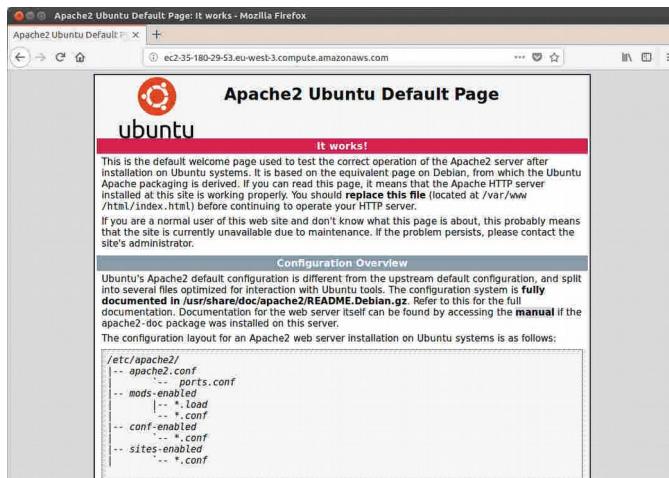
ubuntu@ip-172-31-47-134:~$
```

- 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 interface in Mozilla Firefox. The left sidebar is collapsed, and the main area displays an instance details page for an instance named 'i-02158e3e769c9400a'. A context menu is open over the instance row, with the 'Image' option highlighted and circled in red. The 'Create Image' option under 'Image' is also circled in red.

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

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

Name Instance ID Instance Type Availability Zone Instance State Status Checks Alarm State

i-02158e3e769c9400a 2.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**

Create Image Build Instance (instance store AMI)

Networking CloudWatch Monitoring

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 user is in the 'Create Image' dialog box. The 'Image name' field contains 'image-dan' and is circled in red. The 'Image description' field contains 'image of dan'. The 'No reboot' checkbox is unchecked. In the 'Instance Volumes' section, there is one volume listed: 'Root' (Volume Type: EBS, Device: /dev/sda1, Snapshot: snap-03c629352f3ccd91a, Size: 8 GiB, Volume Type: General Purpose, IOPS: 100 / 3000, Throughput: N/A, Delete on Termination: checked, Encrypted: Not Encrypted). Below this, there is an 'Add New Volume' button. A message at the bottom states 'Total size of EBS Volumes: 8 GiB' and 'When you create an EBS image, an EBS snapshot will also be created for each of the above volumes.' At the bottom right of the dialog box, there is a 'Create Image' button, which is also circled in red.

EC2 Management Console - Mozilla Firefox

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

aws Services Resource Groups

Launch Instance Connect Actions

Create Image

Instance ID: i-02158e3e769c9400a

Image name: image-dan

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
EBS	/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.

Cancel Create Image

Network Interfaces 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 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, containing the message: "Create Image request received. View pending image ami-0ea0d7841acec". Below this message, it says: "Any snapshots backing your new EBS image can be managed on the [snapshots screen](#) after successful image creation." At the bottom right of the dialog is a "Close" button. The footer of the page includes links for Feedback, English (US), and legal notices from 2008-2018.

Create Image

✓ Create Image request received.  
View pending image [ami-0ea0d7841acec](#)

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 named 'image-dan'. Below the table, a detailed view of the selected AMI ('Image: ami-0eaa1790d7841acec') is shown, with tabs for Details, Permissions, and Tags. The 'Edit' button is visible in the bottom right corner of this panel.

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

Image: ami-0eaa1790d7841acec

Details    Permissions    Tags

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

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# Terminate your instance

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with several sections: Tags, Reports, Limits, INSTANCES (which is expanded), Instances (highlighted with a red circle), Launch Templates, Spot Requests, Reserved Instances, Dedicated Hosts, Capacity Reservations, IMAGES, AMIs, Bundle Tasks, ELASTIC BLOCK STORE (with Volumes and Snapshots), and NETWORK & SECURITY (with Security Groups, Elastic IPs, Placement Groups, and Key Pairs). The main content area displays a single instance: i-02158e3e769c9400a. The instance is running in the eu-west-3c availability zone. The instance state is shown as 'running'. The public DNS is ec2-35-180-97-11.eu-west-3.compute.amazonaws.com. The instance type is t2.micro. There are also sections for Status Checks, Monitoring, and Tags. A context menu is open over the instance table, with 'Actions' selected. The menu includes options like Connect, Get Windows Password, Create Template From Instance, Launch More Like This, Instance State (selected), Instance Settings, Image, Networking, and CloudWatch Monitoring. The 'Terminate' option is highlighted with a red circle. The status bar at the bottom indicates the instance ID, public DNS, and private IP.

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

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# Use an image

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar menu is open, showing options like Instances, Images, Elastic Block Store, Network & Security, and more. The 'AMIs' option under 'Images' is highlighted with a red circle. A context menu is open over a specific AMI entry, with the 'Launch' option highlighted and also circled in red. A large red callout bubble points from the 'Launch' option to the text 'The following is similar to a VM creation'. The main content area displays details for an AMI named 'ami-0eaa1790d7841acec', showing its AMI ID, owner, and status.

The following is similar to a VM creation

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

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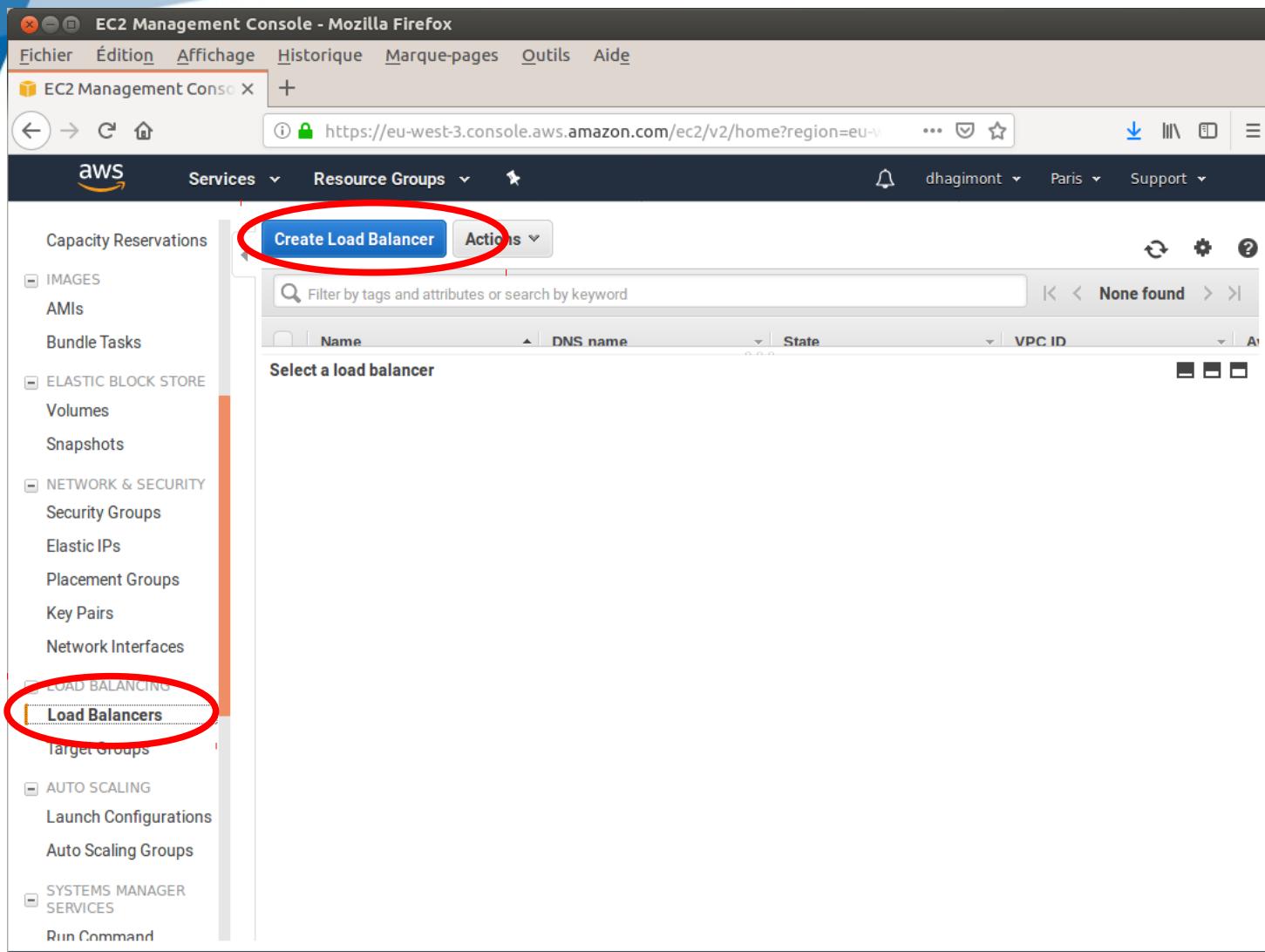
# Amazon Auto Scaling

- 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



# Creation of a load balancer

EC2 Management Console - Mozilla Firefox

EC2 Management Conso X +  
https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-w...  
aws Services Resource Groups dhagimont Paris Support

## Select load balancer type

Elastic Load Balancing supports three types of load balancers: Application Load Balancers, Network Load Balancers (new), 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**

HTTP  
HTTPS

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 >](#)

**Network Load Balancer**

TCP

Create

Choose a Network Load Balancer when you need ultra-high performance and static IP addresses for your application. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second while maintaining ultra-low latencies.

[Learn more >](#)

**Classic Load Balancer**

PREVIOUS GENERATION  
for HTTP, HTTPS, and TCP

Create

Choose a Classic Load Balancer when you have an existing application running in the EC2-Classic network.

[Learn more >](#)

Cancel

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# Creation of a load balancer

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 user is at Step 1: Configure Load Balancer. The 'Name' input field contains 'lb-dan' and is circled in red. The 'Scheme' section has 'internet-facing' selected. The 'IP address type' dropdown is set to 'ipv4'. In the 'Listeners' section, the 'Load Balancer Protocol' dropdown is set to 'HTTP' and the 'Load Balancer Port' input field is set to '80'. A red circle highlights the 'Next: Configure Security Settings' button at the bottom right of the page.

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

1. Configure Load Balancer 2. Configure Security Settings 3. Configure Security Groups 4. Configure Routing 5. Register Targets 6. Review

## Step 1: Configure Load Balancer

### Basic Configuration

To configure your load balancer, provide a name, select a scheme, specify one or more listeners, and select a network. The default configuration is an Internet-facing load balancer in the selected network with a listener that receives HTTP traffic on port 80.

Name: lb-dan

Scheme: internet-facing

IP address type: ipv4

### Listeners

A listener is a process that checks for connection requests, using the protocol and port that you configured.

Load Balancer Protocol	Load Balancer Port
HTTP	80

Add listener

Cancel Next: Configure Security Settings

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# Creation of a load balancer

EC2 Management Console - Mozilla Firefox

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

aws Services Resource Groups

dhagimont Paris Support

1. Configure Load Balancer 2. Configure Security Settings 3. Configure Security Groups 4. Configure Routing 5. Register Targets 6. Review

Step 1: Configure Load Balancer

HTTP 80

Add listener

Availability Zones

Specify the Availability Zones to enable for your load balancer. The load balancer routes traffic to the targets in these Availability Zones only. You can specify only one subnet per Availability Zone. You must specify subnets from at least two Availability Zones to increase the availability of your load balancer.

VPC vpc-59603330 (172.31.0.0/16) (default)

Availability Zone	Subnet ID	Subnet IPv4 CIDR	Name
eu-west-3a	subnet-8a9be5e3	172.31.0.0/20	
eu-west-3b	subnet-0b6ffe70	172.31.16.0/20	
eu-west-3c	subnet-7e3ee433	172.31.32.0/20	

At least two subnets must be specified

Cancel Next: Configure Security Settings

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# Creation of a load balancer

The screenshot shows a browser window for the 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 AWS logo is in the top left, and the user 'dhagimont' is logged in with a dropdown menu for 'Paris' and 'Support'.

The main content area shows a wizard titled 'Step 2: Configure Security Settings'. The steps are numbered 1 through 6: 1. Configure Load Balancer, 2. Configure Security Settings (which is active), 3. Configure Security Groups, 4. Configure Routing, 5. Register Targets, and 6. Review.

A yellow callout box contains a warning message:

**⚠ Improve your load balancer's security. Your load balancer is not using any secure listener.**  
If your traffic to the load balancer needs to be secure, use the HTTPS protocol for your front-end connection. You can go back to the first step to add/configure secure listeners under [Basic Configuration](#) section. You can also continue with current settings.

At the bottom right, there are buttons for 'Cancel', 'Previous', and 'Next: Configure Security Groups'. The 'Next' button is circled in red.

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# Creation of a load balancer

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, displaying the 'Configure Security Groups' step of a load balancer creation wizard.

The browser title bar reads "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 AWS navigation bar includes the "aws" logo, "Services" dropdown, "Resource Groups" dropdown, and user information "dhagimont" (Paris, Support).

The top navigation bar for the wizard has six tabs: 1. Configure Load Balancer, 2. Configure Security Settings, 3. Configure Security Groups (highlighted in orange), 4. Configure Routing, 5. Register Targets, and 6. Review.

### Step 3: Configure Security Groups

A security group is a set of firewall rules that control the traffic to your load balancer. On this page, you can add rules to allow specific traffic to reach your load balancer. First, decide whether to create a new security group or select an existing one.

Assign a security group:

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

Filter: VPC security groups

Security Group ID	Name	Description	Actions
sg-51430239	default	default VPC security group	<a href="#">Copy to new</a>
sg-05763b452785a0215	sec-grp-dan	security group of dan	<a href="#">Copy to new</a>

The row for "sec-grp-dan" is circled in red.

At the bottom right, there are three buttons: "Cancel", "Previous", and "Next: Configure Routing" (which is also circled in red).

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# Creation of a load balancer

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, navigating through the steps to create a load balancer. The current step is "4. Configure Routing".

**Target group**

- Target group: New target group (dropdown)
- Name: group-dan (highlighted with a red oval)
- Protocol: HTTP (dropdown)
- Port: 80
- Target type: instance (dropdown)

**Health checks**

- Protocol: HTTP (dropdown)
- Path: /index.php (highlighted with a red oval)

A red callout bubble points from the Path field to the text: "The load balancer checks access to this page to verify availability of the instance".

At the bottom right of the form, there are buttons: Cancel, Previous, and Next: Register Targets (highlighted with a red oval).

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# Creation of a load balancer

EC2 Management Console - Mozilla Firefox

aws Services Resource Groups

1. Configure Load Balancer 2. Configure Security Settings 3. Configure Security Groups 4. Configure Routing 5. Register Targets 6. Review

### Step 5: Register Targets

Register targets with your target group. If you register a target in an enabled Availability Zone, the load balancer starts routing requests to the targets as soon as the registration process completes and the target passes the initial health checks.

#### Registered targets

To deregister instances, select one or more registered instances and then click Remove.

Remove

Instance	Name	Port	State	Security groups	Zone
No instances available.					

#### Instances

To register additional instances, select one or more running instances, specify a port, and then click Add. The port is the port specified for the target group. If the instance is already registered on the specified port, you must specify a different port.

Add to registered on port 80

Search Instances X

Instance	Name	State	Security	Zone	Subnet ID	Subnet CIDR
No instances available.						

Cancel Previous Next: Review

No feedback provided.

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**No instances available.**

**For the moment, no instance attached to the load balancer**

**Next: Review**

# Creation of a load balancer

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, and user information (dhagimont, Paris, Support). Below the navigation is a progress bar with six steps: 1. Configure Load Balancer, 2. Configure Security Settings, 3. Configure Security Groups, 4. Configure Routing, 5. Register Targets, and 6. Review. Step 6 is highlighted with an orange underline.

**Step 6: Review**  
Please review the load balancer details before continuing

**Load balancer** (Edit)

- Name: lb-dan
- Scheme: internet-facing
- Listeners: Port:80 - Protocol:HTTP
- IP address type: ipv4
- VPC: vpc-59603330
- Subnets: subnet-8a9be5e3, subnet-0b6ffe70, subnet-7e3ee433
- Tags

**Security groups** (Edit)

- Security groups: sg-05763b452785a0215

**Routing** (Edit)

- Target group: New target group
- Target group name: group-dan
- Port: 80
- Target type: instance
- Protocol: HTTP
- Health check protocol: HTTP

Buttons at the bottom: Cancel, Previous, Create (the 'Create' button is circled in red).

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# Creation of a load balancer

The screenshot shows a Firefox browser window with the title "EC2 Management Console - Mozilla Firefox". The address bar displays the URL <https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-west-3>. The AWS navigation bar includes "Services", "Resource Groups", and user information for "dhagimont" in "Paris". The main content area is titled "Load Balancer Creation Status" and contains a green success message box. The message states: "Successfully created load balancer lb-dan was successfully created. Note: It might take a few minutes for your load balancer to be fully set up and ready to route traffic, and for the targets to complete the registration process and pass the initial health checks." A blue "Close" button is located in the bottom right corner of the message box. At the bottom of the page, there are links for "Feedback", "English (US)", and copyright information: "© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use".

Load Balancer Creation Status

✓ Successfully created load balancer  
Load balancer [lb-dan](#) was successfully created.  
Note: It might take a few minutes for your load balancer to be fully set up and ready to route traffic, and for the targets to complete the registration process and pass the initial health checks.

[Close](#)

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# Creation of a load balancer

EC2 Management Console - Mozilla Firefox

Services Resource Groups

dhagimont Paris Support

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
- Configuration Compliance

Create Load Balancer Actions

Filter by tags and attributes or search by keyword

1 to 1 of 1

Name	DNS name	State	VPC ID
lb-dan	lb-dan-673304993.eu-west-3... provisioning	vpc-59603330	eu

Load balancer: lb-dan

Description Listeners Monitoring Tags

**Basic Configuration**

Name:	lb-dan	Creation time:	November 12, 2018 at 8:59:24 AM UTC+1
ARN:	arn:aws:elasticloadbalancing:eu-west-3:91055617775:loadbalancer:lb-dan/ff1b2ff96ccf7031	Hosted zone:	Z3Q77PNBQS71R4
DNS name:	lb-dan-673304993.eu-west-3.elb.amazonaws.com (A Record)	State:	provisioning
Schema:	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.

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**Public address of the load balancer**

# Creation of an auto scaling group

EC2 Management Console - Mozilla Firefox

EC2 Management Console X https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?ref=auto

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

**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](#).

Welcome to Auto Scaling  
You can use Auto Scaling to manage Amazon EC2 capacity automatically, maintain the right number of instances for your application, operate a healthy group of instances, and scale it according to your needs.  
[Learn more](#)

**Create Auto Scaling group**

Note: To create your Auto Scaling groups in a different region, select your region from the navigation bar.

**Benefits of Auto Scaling**

Automated Provisioning	Adjustable Capacity	Launch Template Support
 	 	 
Keep your Auto Scaling group healthy and balanced, whether you need one instance or 1,000.	Maintain a fixed group size or adjust dynamically based on Amazon CloudWatch metrics.	Provision instances easily using EC2 Launch Templates.

Additional Information  
Getting Started Guide Documentation All EC2 Resources Forums Pricing Contact Us

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# Creation of a launch configuration

**EC2 Management Console - Mozilla Firefox**

EC2 Management Conso X + https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?re... Services Resource Groups dhagimont Paris Support

## Create Auto Scaling Group

Complete this wizard to create your Auto Scaling group. First, choose either a launch configuration or a launch template to specify the parameters that your Auto Scaling group uses to launch instances.

**Step 1: Create or select a launch template**



Create or select the launch template that your Auto Scaling group will use to launch your EC2 instances.

You can change your group's launch template at any time.

**Step 2: Create Auto Scaling group**



Next, give your group a name and specify how many instances you want to run in it.

Your group will maintain this number of instances, and replace

Cancel Get started

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# Creation of a launch configuration

EC2 Management Console - Mozilla Firefox

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

Services Resource Groups

dhagimont Paris Support

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

Create Launch Configuration

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start

My AMIs (highlighted with a red circle)

AWS Marketplace

Community AMIs

Ownership

Owned by me

Shared with me

Architecture

32-bit

64-bit

Root device type

Search my AMIs

image-dan - ami-0eaa1790d7841acec (highlighted with a red circle)

Image of dan

Root device type: ebs Virtualization type: hvm Owner: 910556517775

Select (highlighted with a red circle)

Cancel and Exit

1 to 1 of 1 AMIs

A launch configuration is a type of VM to create from an image. The following is similar to an instance creation.

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# Creation of a launch configuration

EC2 Management Console - Mozilla Firefox

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

aws Services Resource Groups

dhagimont Paris Support

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

### Create Launch Configuration

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
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.micro	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate

Cancel Previous Next: Configure details

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# Creation of a launch configuration

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, displaying the 'Create Launch Configuration' wizard. The current step is '3. Configure details'. A red circle highlights the 'Name' input field, which contains 'launchconf-dan'. Below it, under 'Purchasing option', there is a checkbox for 'Request Spot Instances' which is unchecked. The 'IAM role' dropdown is set to 'None'. Under 'Monitoring', there is a checkbox for 'Enable CloudWatch detailed monitoring' which is also unchecked. A link 'Learn more' is present next to the monitoring section. At the bottom left, a 'Advanced Details' section is expanded, containing 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.' At the bottom right, the navigation buttons are shown: 'Cancel', 'Previous', 'Skip to review' (which is highlighted in blue), and 'Next: Add Storage' (which is circled in red).

EC2 Management Console - Mozilla Firefox

EC2 Management Console X +

https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?ref\_=nav\_as\_launchconfig

aws Services Resource Groups

dhagimont Paris Support

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

Create Launch Configuration

Name  i

Purchasing option i  Request Spot Instances

IAM role i

Monitoring i  Enable CloudWatch detailed monitoring [Learn more](#)

Advanced Details

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.

Cancel Previous Skip to review Next: Add Storage

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# Creation of a launch configuration

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The user is creating a launch configuration, currently on step 4: Add Storage. The interface includes tabs for Choose AMI, Choose Instance Type, Configure details, Add Storage, Configure Security Group, and Review. The storage configuration table shows one volume: Root, /dev/sda1, snap-0d78e029ec79f4f91, 8 GiB, General Purpose, 100 / 3000 IOPS, N/A Throughput, Delete on Termination checked, and Encrypted unchecked. A note at the bottom states: "Free tier eligible customers can get up to 30 GB of EBS storage. [Learn more](#) about free usage tier eligibility and usage restrictions." At the bottom right, a red circle highlights the "Next: Configure Security Group" button.

EC2 Management Console - Mozilla Firefox

Fichier Édition Affichage Historique Marque-pages Outils Aide

EC2 Management Conso X +

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

aws Services Resource Groups

dhagimont Paris Support

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

### Create Launch Configuration

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes.  
<https://docs.aws.amazon.com/console/ec2/launchinstance/storage/about-storage-options-in-amazon-ec2>.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput	Delete on Termination	Encrypted
Root	/dev/sda1	snap-0d78e029ec79f4f91	8	General Purpose	100 / 3000	N/A	<input checked="" type="checkbox"/>	No

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Cancel Previous Skip to review Next: Configure Security Group

# Creation of a launch configuration

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, navigating through the steps to create a launch configuration. The current step is '5. Configure Security Group'. The 'Select an existing security group' radio button is selected and highlighted with a red circle. Below it, a table lists two security groups: 'default' and 'sec-grp-dan'. The 'sec-grp-dan' row is also highlighted with a red circle. At the bottom of the page, the 'Review' button is highlighted with a red circle.

EC2 Management Console - Mozilla Firefox

EC2 Management Console X +

https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?re...

aws Services Resource Groups

dhagimont Paris Support

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

### Create Launch Configuration

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

Security Group ID	Name	VPC ID	Description	Actions
sg-51430239	default	vpc-59603330	default VPC security group	<a href="#">Copy to new</a>
sg-05763b452785a0215	sec-grp-dan	vpc-59603330	security group of dan	<a href="#">Copy to new</a>

Inbound rules for sg-05763b452785a0215 Selected security groups: sg-05763b452785a0215.

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

Cancel Previous Review

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# Creation of a launch configuration

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, displaying the 'Create Launch Configuration' wizard. The current step is '6. Review'. The page title is 'Create Launch Configuration'.

**AMI Details:**

- AMI: image-dan - ami-0eaa1790d7841acec
- Description: image of dan
- Root device type: ebs
- Virtualization Type: hvm

**Instance Type:**

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

**Buttons at the bottom:**

- Cancel
- Previous
- Create launch configuration (highlighted with a red circle)

**Page footer:**

- Feedback
- English (US)
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- Privacy Policy
- Terms of Use

# Creation of a launch configuration

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, navigating through the 'Create Launch Configuration' wizard. The current step is '6. Review'. A modal dialog box titled 'Select an existing key pair or create a new key pair' is displayed. Inside the dialog, it explains what a key pair is and provides a note about removing existing key pairs from a public AMI. It includes a dropdown menu labeled 'Choose an existing key pair' and a text input field labeled 'Select a key pair' containing 'key-dan', which is circled in red. At the bottom of the dialog, there is an acknowledgment checkbox and two buttons: 'Cancel' and 'Create launch configuration', the latter also being circled in red.

EC2 Management Console - Mozilla Firefox

EC2 Management Console X +

https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?re...

aws Services Resource Groups

dhagimont Paris Support

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

Create Launch Configuration

Review the details of your launch configuration

**A** Improve security for the world.

Your instances must be secured by a key pair.

You can also open the security group editor.

Edit security group

AMI Details

image-dan image of dan

Root device type

Instance Type

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.

Create launch configuration

Cancel Previous Create launch configuration

Feedback English (US)

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# Creation of an auto scaling group

The screenshot shows the 'Create Auto Scaling Group' wizard in the EC2 Management Console. The current step is '1. Configure Auto Scaling group details'. Key fields highlighted by red circles include:

- Name of the auto scaling group:** scalinggroup-dan
- Launch configuration:** launchconf-dan
- Initial state of the group:** 1 instance  
The auto scaling group will start it.
- Need to select a subnet:** subnet-7e3ee433(172.31.32.0/20) | Default in eu-west-3c

Below the form, a note states: "Each instance in this Auto Scaling group will be assigned a public IP address." At the bottom, there are 'Advanced Details' and navigation buttons for 'Cancel', 'Next: Configure scaling policies', and 'Review'.

# Creation of an auto scaling group

EC2 Management Console - Mozilla Firefox

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

aws Services Resource Groups

dhagimont Paris Support

1. Configure Auto Scaling group details 2. Configure scaling policies 3. Configure Notifications 4. Configure Tags 5. Review

Create Auto Scaling Group

Each instance in this Auto Scaling group will be assigned a public IP address. ⓘ

Advanced Details

Load Balancing ⓘ

Receive traffic from one or more load balancers

Learn about Elastic Load Balancing

Classic Load Balancers ⓘ

Target Groups ⓘ

Health Check Type ⓘ

ELB  EC2

Health Check Grace Period ⓘ

300 seconds

Monitoring ⓘ

Amazon EC2 Detailed Monitoring metrics, which are provided at 1 minute frequency, are not enabled for the launch configuration launchconf-dan. Instances launched from it will use Basic Monitoring metrics, provided at 5 minute frequency.

Learn more

Cancel Next: Configure scaling policies

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Associate the auto scaling group to the instance group of the load balancer

# Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, navigating through the steps to create an Auto Scaling group. The current step is '2. Configure scaling policies'. The user has selected the option 'Use scaling policies to adjust the capacity of this group'. They have set the scale range to 'Scale between 1 and 2 instances'. A tooltip for the scale range indicates it will be the minimum and maximum size of the group. A callout box highlights the range 'Between 1 and 2 instances'. At the bottom of the scaling policy configuration, there is a link 'Scale the Auto Scaling group using step or simple scaling policies'. The browser address bar shows the URL for the Auto Scaling home page.

EC2 Management Console - Mozilla Firefox

EC2 Management Conso X https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?ref\_=nav\_as\_group

aws Services Resource Groups

dhagimont Paris Support

1. Configure Auto Scaling group details 2. Configure scaling policies 3. Configure Notifications 4. Configure Tags 5. Review

Create Auto Scaling Group  
accordingly. [Learn more](#) about scaling policies.

Keep this group at its initial size  
 Use scaling policies to adjust the capacity of this group

Scale between  and  instances. These will be the minimum and maximum size of your group.

Scale Group Size

Name: Scale Group Size

Metric type: Average CPU Utilization

Target value:

Instances need: 300 seconds to warm up after scaling

Disable scale-in:

Between 1 and 2 instances

Scale the Auto Scaling group using step or simple scaling policies

Cancel Previous Review Next: Configure Notifications

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# Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, navigating through the steps to create an Auto Scaling group. The current step is '2. Configure scaling policies'. The 'Increase Group Size' dialog is open, showing a policy named 'Increase Group Size' that triggers when no alarm is selected, adding 1 instance, and requires 300 seconds to warm up.

We add one instance

We add a triggering rule

EC2 Management Console - Mozilla Firefox  
https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?ref\_=nav\_as\_group

aws Services Resource Groups

dhagimont Paris Support

1. Configure Auto Scaling group details 2. Configure scaling policies 3. Configure Notifications 4. Configure Tags 5. Review

Create Auto Scaling Group  
accordingly. [Learn more](#) about scaling policies.

Keep this group at its initial size  
 Use scaling policies to adjust the capacity of this group

Scale between  and  instances. These will be the minimum and maximum capacity of your Auto Scaling group.

Increase Group Size

Name:

Execute policy when: No alarm selected

Add new alarm

Take the action: Add  instances

Add step [\(i\)](#)

Instances need:  seconds to warm up after each step

Create a simple scaling policy [\(i\)](#)

Cancel Previous Review Next: Configure Notifications

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# Creation of an auto scaling group

EC2 Management Console - Mozilla Firefox

EC2 Management Conso X + https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?re... Services Resource Groups dhagimont Paris Support

1. Configure Auto Scaling group details 2. Configure scaling policies 3. Configure Notifications 4. Configure Tags 5. Review

Create Auto Scaling Group accordingly. [Learn more](#) about scaling policies.

**Create Alarm**

You can use CloudWatch alarms to be notified automatically whenever an alarm condition occurs. To edit an alarm, first choose whom to notify and then define when the notification should be sent.

Send a notification to: aws-gr1

Whenever: Average of CPU Utilization  
>= 50 Percent

For at least: 1 consecutive period(s) of 1 Minute

Name of alarm: awsec2-scalinggroup-dan-CPU-Utilization

CPU Utilization Percent

50  
40  
30  
20  
10  
0

11/12 04:00 11/12 06:00 11/12 08:00

scalinggroup-dan

Add an instance if the CPU load is higher than 50 %

Cancel Create Alarm

Cancel Previous Review Next: Configure Notifications

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Add an instance if the CPU load is higher than 50 %

# Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The user is creating an Auto Scaling Group. The current step is "2. Configure scaling policies". The "Use scaling policies to adjust the capacity of this group" option is selected. Below it, the scaling policy configuration is shown:

**Increase Group Size**

Name: Increase Group Size

Execute policy when: awsec2-scalinggroup-dan-CPU-Utilization (Edit Remove)  
breaches the alarm threshold: CPUUtilization >= 50 for 60 seconds  
for the metric dimensions AutoScalingGroupName = scalinggroup-dan

Take the action: Add 1 instances when 50 <= CPUUtilization < +infinity

Add step (1)

Instances need: 300 seconds to warm up after each step

Buttons at the bottom: Cancel, Previous, Review (highlighted in blue), Next: Configure Notifications

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# Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, navigating through the steps to create an Auto Scaling group. The current step is "Configure scaling policies".

**Create Auto Scaling Group**

**Configure scaling policies**

Take the action: Add 1 instances when 50 <= CPUUtilization < +infinity

Instances need: 300 seconds to warm up after each step

Create a simple scaling policy [i](#)

**Decrease Group Size**

Name: Decrease Group Size (highlighted by a red circle)

Execute policy when: No alarm selected

Add new alarm (highlighted by a red circle)

Take the action: Remove 1 instances

Add step [i](#)

Create a simple scaling policy [i](#)

Cancel Previous Review Next: Configure Notifications

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# Creation of an auto scaling group

EC2 Management Console - Mozilla Firefox

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

aws Services Resource Groups

1. Configure Auto Scaling group details 2. Configure scaling policies 3. Configure Notifications 4. Configure Tags 5. Review

Create Auto Scaling Group

Take the action: Add 1 instances when 50 <= CPUUtilization < +infinity

Create Alarm

You can use CloudWatch alarms to be notified automatically whenever a metric reaches a certain threshold.

To edit an alarm, first choose whom to notify and then define when the notification should be sent.

Send a notification to: aws-gr1

Whenever: Average of CPU Utilization

Is: <= 20 Percent

For at least: 1 consecutive period(s) of 1 Minute

Name of alarm: awsec2-scalinggroup-dan-High-CPU-Utilization

CPU Utilization Percent

20  
15  
10  
5  
0

11/12 11/12 11/12  
04:00 06:00 08:00

scalinggroup-dan

Cancel Create Alarm

Cancel Previous Review Next: Configure Notifications

Feedback English (US)

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# Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, navigating through the steps to create an Auto Scaling Group. The current step is '2. Configure scaling policies'. The 'Decrease Group Size' policy is highlighted with a large red oval.

**Create Auto Scaling Group**

**2. Configure scaling policies**

**Decrease Group Size**

Name: Decrease Group Size

Execute policy when: awsec2-scalinggroup-dan-High-CPU-Utilization Edit Remove  
breaches the alarm threshold: CPUUtilization <= 20 for 60 seconds  
for the metric dimensions AutoScalingGroupName = scalinggroup-dan

Take the action: Remove 1 instances when 20 >= CPUUtilization > -infinity

**Review**

**Feedback English (US)**

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# Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox, displaying the 'Create Auto Scaling Group' wizard. The current step is '3. Configure Notifications'. The page includes instructions for configuring notifications to send emails for various events like successful instance launch or failed instance termination. A red circle highlights the 'Add notification' button, and a large red oval encloses the explanatory text below it.

EC2 Management Console - Mozilla Firefox

EC2 Management Conso X +  
https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?re...  
aws Services Resource Groups

dhagimont Paris Support

1. Configure Auto Scaling group details 2. Configure scaling policies 3. Configure Notifications 4. Configure Tags 5. Review

Create Auto Scaling Group

Configure your Auto Scaling group to send notifications to a specified endpoint, such as an email address, whenever a specified event takes place, including: successful launch of an instance, failed instance launch, instance termination, and failed instance termination.

If you created a new topic, check your email for a confirmation message and click the included link to confirm your subscription. Notifications can only be sent to confirmed addresses.

Add notification

Notifications allow to be informed (eg by email) whenever an alarm is triggered

Cancel Previous Review Next: Configure Tags

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# Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The user is in the process of creating an Auto Scaling group, specifically on the 'Review' step of a five-step wizard.

**Step 5: Review**

**Create Auto Scaling Group**

Please review your Auto Scaling group details. You can go back to edit changes for each section. Click **Create Auto Scaling group** to complete the creation of an Auto Scaling group.

**Auto Scaling Group Details**

Group name	scalinggroup-dan
Group size	1
Minimum Group Size	1
Maximum Group Size	2
Subnet(s)	subnet-7e3ee433
Load Balancers	
Target Groups	group-dan
Health Check Type	EC2
Health Check Grace Period	300
Detailed Monitoring	No
Instance Protection	None
Service-Linked Role	AWSServiceRoleForAutoScaling

**Scaling Policies**

Increase Group Size	With alarm = awsec2-scalinggroup-dan-CPU-Utilization; Add 1 instances and 300 seconds for instances to warm up
Decrease Group Size	With alarm = awsec2-scalinggroup-dan-High-CPU-Utilization; Remove 1 instances

**Buttons:** Cancel, Previous, Create Auto Scaling group

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# Creation of an auto scaling group

The screenshot shows a Mozilla Firefox browser window titled "EC2 Management Console - Mozilla Firefox". The address bar displays the URL <https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?ref=autoScalingHome>. The AWS navigation bar includes "Services", "Resource Groups", and "dhagimont".

The main content area is titled "Auto Scaling group creation status". It displays a green success message: "Successfully created Auto Scaling group" with a checkmark icon, and a link "View creation log".

A dropdown menu "View" is open, showing two options: "View your Auto Scaling groups" and "View your launch configurations".

A sidebar on the left lists helpful resources: "View your Auto Scaling groups", "View your launch configurations", and "Here are some helpful resources to get you started".

In the bottom right corner of the main content area is a blue "Close" button.

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

# Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The URL is <https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?region=eu-west-3>. The left sidebar shows navigation links for Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The Auto Scaling section is expanded, and the 'Auto Scaling Groups' link is highlighted with a red oval. 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 named 'launchconf-dan'. A large red arrow points from the 'Auto Scaling Groups' link in the sidebar to the selected row in the table. Another red arrow points from the 'Launch Configuration' link in the table row to the 'Launch Configuration' section of the 'Auto Scaling Group: scalinggroup-dan' details page. A red box highlights the 'Launch Configuration' section of the details page. A red annotation text at the bottom right of the 'Auto Scaling Group' details page reads: 'The auto scaling group associated with the launch configuration was created'.

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**   **Termination Policies**   **Monitoring**   **Notifications**   **Tags**   **Scheduled Actions**   **Lifecycle Hook**

**Launch Configuration**

Availability Zone(s): eu-west-3c, subn

Target Groups: group

Health Check Type: EC2

**The auto scaling group associated with the launch configuration was created**

# Creation of an auto scaling group

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The URL is <https://eu-west-3.console.aws.amazon.com/ec2/autoscaling/home?region=eu-west-3>. The left sidebar shows navigation options like AMIs, Bundle Tasks, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The Auto Scaling section is expanded, and 'Auto Scaling Groups' is selected, highlighted with a red oval. The main content area shows the 'Create Auto Scaling group' button and a table for the 'scalinggroup-dan' group. The table has columns: Instances, Desired, Min, Max, Availability Zones, and Default Cool-off. It shows 1 instance, desired 1, min 1, max 2, in 'eu-west-3c' zone, and a cool-off of 300. Below the table, under 'Auto Scaling Group: scalinggroup-dan', there are tabs for Details, Activity History, Scan, Instances, Monitoring, Notifications, Tags, Scheduled Actions, and Lifecycle. The 'Instances' tab is selected, highlighted with a red oval. A large red oval encloses the entire main content area. A red arrow points from the text 'The first instance in the group was started' to the 'Instances' table. Another red arrow points from the text 'The first instance in the group was started' to the 'Instances' tab.

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

Instances

Filter: Any Health Status	Any Lifecycle State	Filter instances...

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 circle. The main content area displays a 'Create target group' interface. A target group named 'group-dan' is listed, with its name 'group-dan' also circled in red. Below the list, the 'Targets' tab is selected, indicated by a red circle. A large red callout points from the 'Targets' tab to the 'Registered targets' table, which contains one entry: an instance with ID 'i-04e5e4338b7b6fd50'. This instance is shown with a port of 80, an availability zone of 'eu-west-3c', and a status of 'healthy'. The 'Availability Zones' table below shows one entry: 'eu-west-3c' with a target count of 1 and a healthy status.

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

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

This first instance is associated with the group and the load balancer

# 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 BALANCING' section is expanded, and the 'Load Balancers' link is highlighted with a red circle.

In the main content area, a table displays a single load balancer entry. The table columns are Name, DNS name, State, VPC ID, and Availability Z. The entry for 'lb-dan' is selected and highlighted with a red circle. The 'lb-dan' row is also circled in red.

The detailed view for the 'lb-dan' load balancer shows the following configuration:

Name	Description	Listeners	Monitoring	Tags
lb-dan	Load balancer: lb-dan			
<b>Basic Configuration</b>				
Name:	lb-dan	Creation time:	November 12, 2018 at 2:06:47 PM UTC+1	
ARN:	arn:aws:elasticloadbalancing:eu-west-3:910556517775:loadbalancer/app/lb-dan/202c0aa8af9cc0da	Hosted zone:	Z3Q77PNBQS71R4	
DNS name:	lb-dan-326497551.eu-west-3.elb.amazonaws.com	State:	active	
Scheme:	internet-facing	VPC:	vpc-59603330	
Type:	application	IP address type:	ipv4	
Availability Zones:	subnet-0b6ffe70 - eu-west-3b, subnet-7e3ee433 - eu-west-3c	AWS WAF Web ACL:	An error occurred while a request was made to AWS WAF.	

A red callout points from the text 'Address of the load balancer' to the 'DNS name' field in the configuration table.

At the bottom of the page, there are links for Feedback, English (US), and links to Privacy Policy and Terms of Use.

# The load balancer relays the requests



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

# Overloading the application

We log in to the instance  
And run the yes program

A single active instance

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

04e5e4338b7b6fd50 Public DNS: ec2-35-180-100-161.eu-west-3.compute.amazonaws.com

Instance ID	i-04e5e4338b7b6fd50	Public DNS (IPv4)	ec2-35-180-100-161.eu-west-3.compute.amazonaws.com
Instance state	running	IPv4 Public IP	35.180.100.161
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-40-151.eu-west-3.compute.internal

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# Auto scaling

The screenshot shows the AWS EC2 Management Console interface. On the left, a sidebar lists various services: EC2 Dashboard, Events, Tags, Reports, Limits, Instances (selected), Launch Templates, Spot Requests, Reserved Instances, Dedicated Hosts, Capacity Reservations, AMIs, Bundle Tasks, Volumes, Snapshots, Security Groups, Elastic IPs, and Placement Groups. The main content area displays a table of three EC2 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
	i-09a8ce005f425f5c4	t2.micro	eu-west-3c	running	Initializing	None

A large red oval highlights the message "A second instance was created NB: with free instances, 5 minutes latency" at the bottom of the table area. Another red circle highlights the second instance in the list.

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

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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

