

# Cloud Computing

## Introduction à AWS : EC2, Auto Scaling, et Elastic Beanstalk

Alain Tchana, Maître de Conférence  
Institut National Polytechnique de Toulouse

IRIT / Équipe SEPIA

[alain.tchana@enseeiht.fr](mailto:alain.tchana@enseeiht.fr)

**Roboconf**



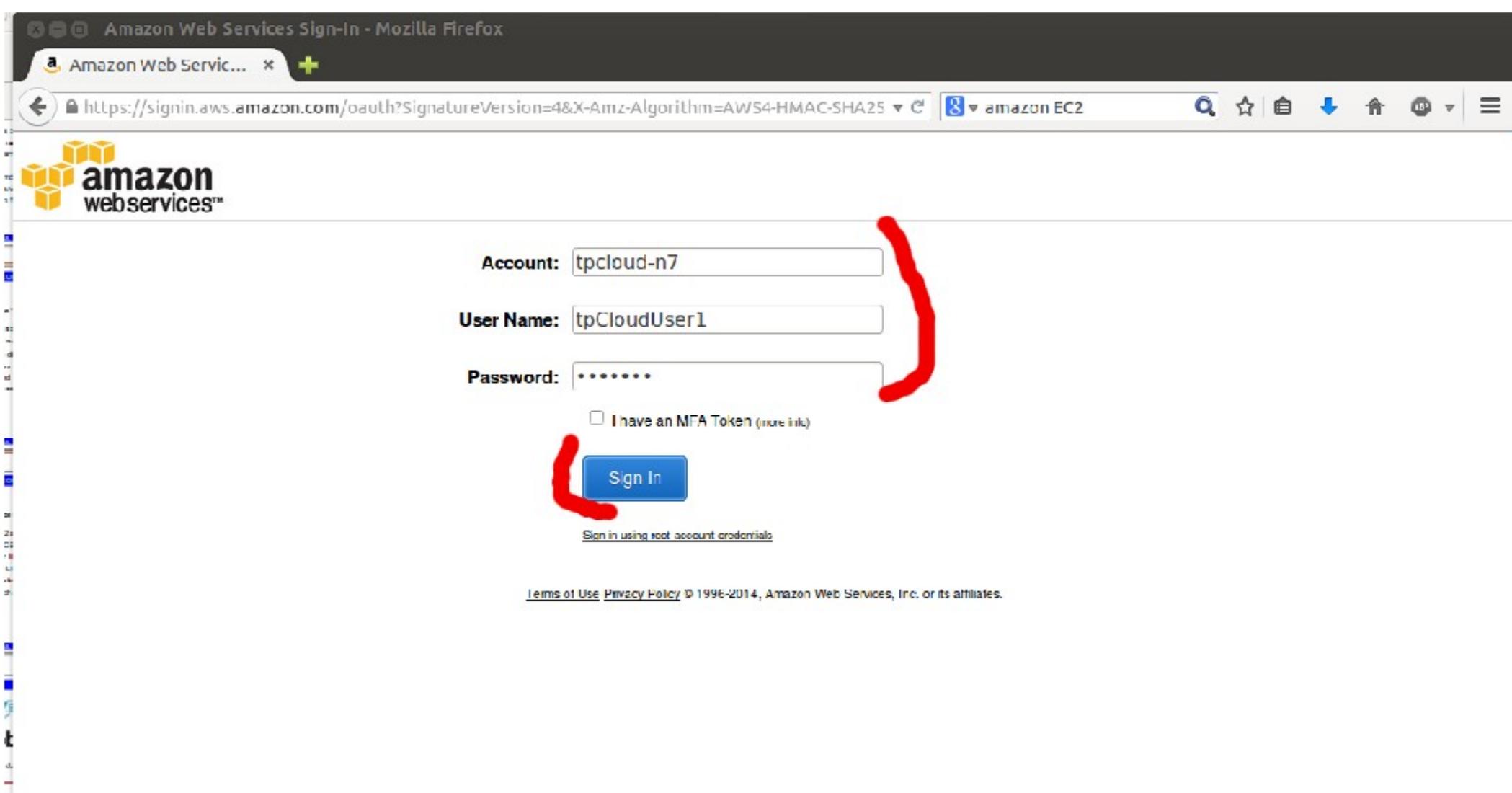
- Fait partie des *Amazon Web Services (AWS)*
- Concepts principaux
  - Image de VM (AMI)
  - Instance de VM
  - Régions et zones de disponibilité



AWS

Démarrage d'une VM

Suivre creationImageEC2.pdf



Aller à l'URL : <https://433816680058.signin.aws.amazon.com/console>  
Account tpCloud-n7      Login : etudiantXX      Mot de passe : etudiantXX

Amazon Web Services Sign In - Mozilla Firefox

Amazon Web Servic... 

https://www.amazon.com/ap/signin?openid.assoc\_handle=aws&openid.return\_to=https%3A%2F%2Famazon.com%2Faws%2Findex.html%3Fref\_=nav\_bar\_ec2&ec2=1

amazon EC2

Sign In or Create an AWS Account

You may sign in using your existing Amazon.com account or you can create a new account by selecting "I am a new user."

My e-mail address is:

I am a new user.

I am a returning user and my password is:

**Sign in using our secure server** 

[Forgot your password?](#)

[Has your e-mail address changed?](#)

New AWS Accounts Include -

**12 months of access to the AWS Free Tier**

Amazon EC2: 750 hrs/month of Windows and Linux Micro Instance usage

Amazon S3: 5GBs of Storage

Amazon RDS: 750 hrs/month of Micro DB Instance usage

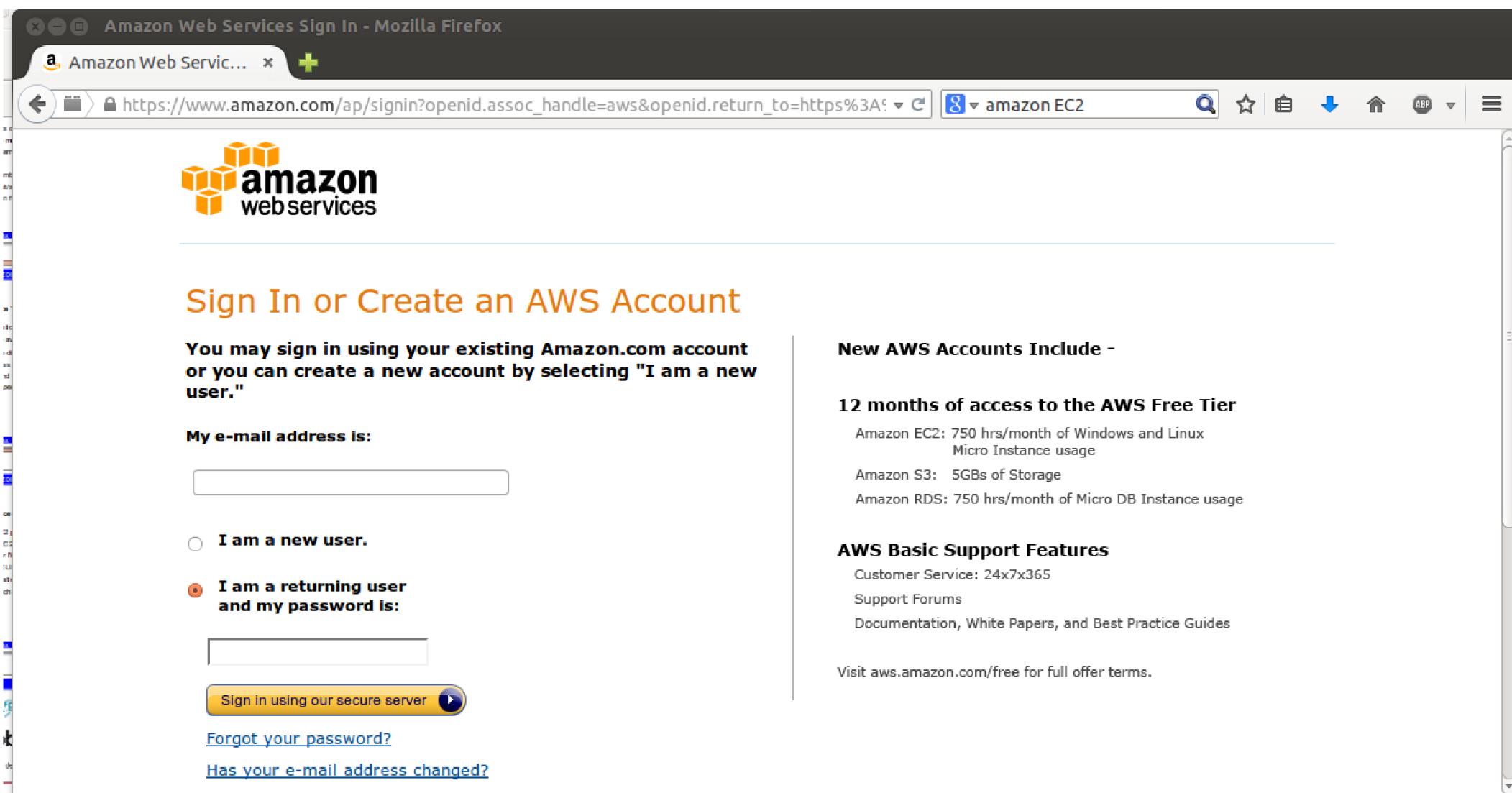
AWS Basic Support Features

Customer Service: 24x7x365

Support Forums

Documentation, White Papers, and Best Practice Guides

Visit [aws.amazon.com/free](http://aws.amazon.com/free) for full offer terms.



Ceci est l'interface habituelle de ceux qui disposent d'un véritable compte Amazon. L'interface précédente est celle des utilisateurs manager par un autre utilisateur.

AWS Management Console - Mozilla Firefox

AWS Management C... x +

https://console.aws.amazon.com/console/home?region=us-west-2

amazon EC2

Services Edit tpCloudUser1 @ tpcloud n7 Oregon Help

## Amazon Web Services

Compute & Networking

- Direct Connect
- EC2 Virtual Servers in the Cloud
- Route 53 Scalable Domain Name System
- VPC Isolated Cloud Resources

Storage & Content Delivery

- CloudFront Global Content Delivery Network
- Glacier Archive Storage in the Cloud
- S3 Scalable Storage in the Cloud
- Storage Gateway Integrates On-Premises IT Environments with Cloud Storage

Database

- DynamoDB Predictable and Scalable NoSQL Data Store
- ElasticSearch

Deployment & Management

- CloudFormation Templated AWS Resource Creation
- CloudTrail User Activity and Change Tracking
- CloudWatch Resource and Application Monitoring
- Elastic Beanstalk AWS Application Container
- IAM Secure AWS Access Control
- OpsWorks DevOps Application Management Service
- Trusted Advisor AWS Cloud Optimization Expert

Analytics

- Data Pipeline Orchestration for Data-Driven Workflows
- Elastic MapReduce Managed Hadoop Framework
- Kinesis Real-time Processing of Streaming Big Data

Mobile Services

## Additional Resources

### Getting Started

See our documentation to get started and learn more about how to use our services.

### AWS Console Mobile App

View your resources on the go with our AWS Console mobile app, available from [Amazon Appstore](#), [Google Play](#), or [iTunes](#).

### AWS Marketplace

Find and buy software, launch with 1-Click and pay by the hour.

### Service Health

All services operating normally.

Updated: Aug 30 2014 13:08:00 GMT+0200

[Service Health Dashboard](#)

[Set Start Page](#)

La liste des services offerts par AWS. Choisir le service EC2

EC2 Management Console - Mozilla Firefox

EC2 Management C... [+ New Window](#)

<https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#>

amazon EC2

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

**EC2 Dashboard**

- Events
- Tags
- Reports
- Limits

**INSTANCES**

- Instances
- Spot Requests
- Reserved Instances

**IMAGES**

- AMIs
- Bundle Tasks

**ELASTIC BLOCK STORE**

- Volumes
- Snapshots

**NETWORK & SECURITY**

**Resources**

You are using the following Amazon EC2 resources in the US West (Oregon) region:

0 Running Instances	0 Elastic IPs
0 Volumes	0 Snapshots
2 Key Pairs	1 Load Balancer
0 Placement Groups	4 Security Groups

[View AWS Trusted Advisor to optimize EC2.](#) Hide

**Create Instance**

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

**Launch Instance**

Note: Your instances will launch in the US West (Oregon) region

**Service Health**

**Scheduled Events**

**Service Status:** US West (Oregon):

Account Attributes

Supported Platforms VPC

Default VPC vpc-3943d151

Additional Information

Getting Started Guide Documentation All EC2 Resources Forums Pricing Contact Us

AWS Marketplace

Find free software trial products in the AWS Marketplace from the [EC2](#)

Feedback

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Le dashboard

The screenshot shows the EC2 Management Console interface. On the left, there's a sidebar with links for EC2 Dashboard, Events, Tags, Reports, Limits, Instances (which is selected and highlighted with a red box), Spot Requests, Reserved Instances, AMIs, Bundle Tasks, Volumes, Snapshots, and Network & Security. The main area has a header with 'Launch Instance', 'Connect', and 'Actions'. It includes filters for 'Running instances' and 'All instance types', a search bar, and buttons for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS. A message says 'No Instances found matching your filter criteria'. At the bottom, there are links for 'Feedback' and 'Privacy Policy'.

Aucune VM (instances) démarrées actuellement. Démarrons en une.

EC2 Management Console - Mozilla Firefox

EC2 Management C... https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard: amazon EC2 Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

**Step 1: Choose an Amazon Machine Image (AMI)** Cancel and Exit

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

Amazon Linux AMI 2014.03.2 (HVM) - ami-d13845e1 Select 64-bit

The Amazon Linux AMI is an EBS-backed image. It includes Linux 3.10, AWS tools, Java 7, Ruby 2, and repository access to multiple versions of Apache, MySQL, PostgreSQL, Python, Ruby and Tomcat.

Root device type: ebs Virtualization type: hvm

AWS Marketplace

Community AMIs

Free tier only ⓘ

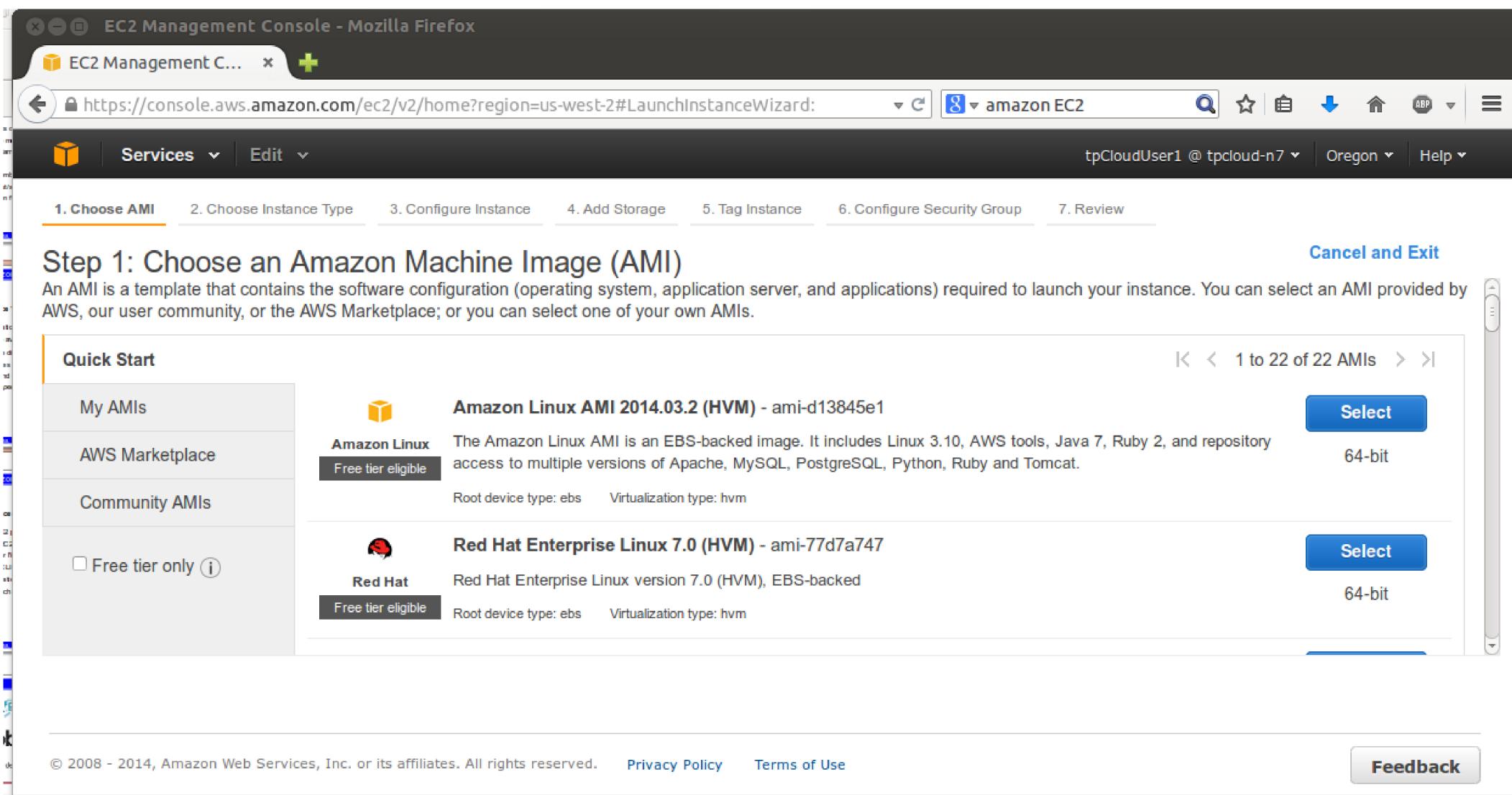
Red Hat Enterprise Linux 7.0 (HVM) - ami-77d7a747 Select 64-bit

Red Hat Enterprise Linux version 7.0 (HVM), EBS-backed

Root device type: ebs Virtualization type: hvm

Free tier eligible

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Démarrons une VM à partir d'un OS Ubuntu Server 14.04 LTS (HVM)

EC2 Management Console - Mozilla Firefox

EC2 Management C... [+ New](#)

https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

Services Edit tpCloudUser1 @ tpcloud n7 Oregon Help

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 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
<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

Cancel Previous Review and Launch Next: Configure Instance Details Feedback

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	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
<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

La VM sera une micro-instance (gratuite)

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The user is in the 'Launch Instance Wizard' at Step 3: Configure Instance Details. The 'Number of Instances' field contains '1'. A red circle highlights the value '1'. Below it, under 'Purchasing option', there is a checkbox for 'Request Spot Instances' which is unchecked. The 'Network' dropdown is set to 'vpc-3943d151 (172.31.0.0/16) (default)' with a 'Create new VPC' button next to it. The 'Subnet' dropdown is set to 'subnet-3b43d153 (172.31.32.0/20) | Default in us-west-2a' with a 'Create new subnet' button and a note '4090 IP Addresses available'. Under 'Auto-assign Public IP', the dropdown is set to 'Use subnet setting (Enable)'. At the bottom, the 'IAM role' dropdown is set to 'None'. The footer includes links for 'Cancel', 'Previous', 'Review and Launch' (which is highlighted in blue), and 'Next: Add Storage' (which is circled in red). The page also includes standard browser navigation icons and a footer with copyright information.

Démarrer une unique instance

EC2 Management Console - Mozilla Firefox

EC2 Management C... https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

amazon EC2 Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

### Step 3: Configure Instance Details

IAM role: None

Shutdown behavior: Terminate (highlighted)

Enable termination protection: Prevents your instance from being terminated against accidental termination.

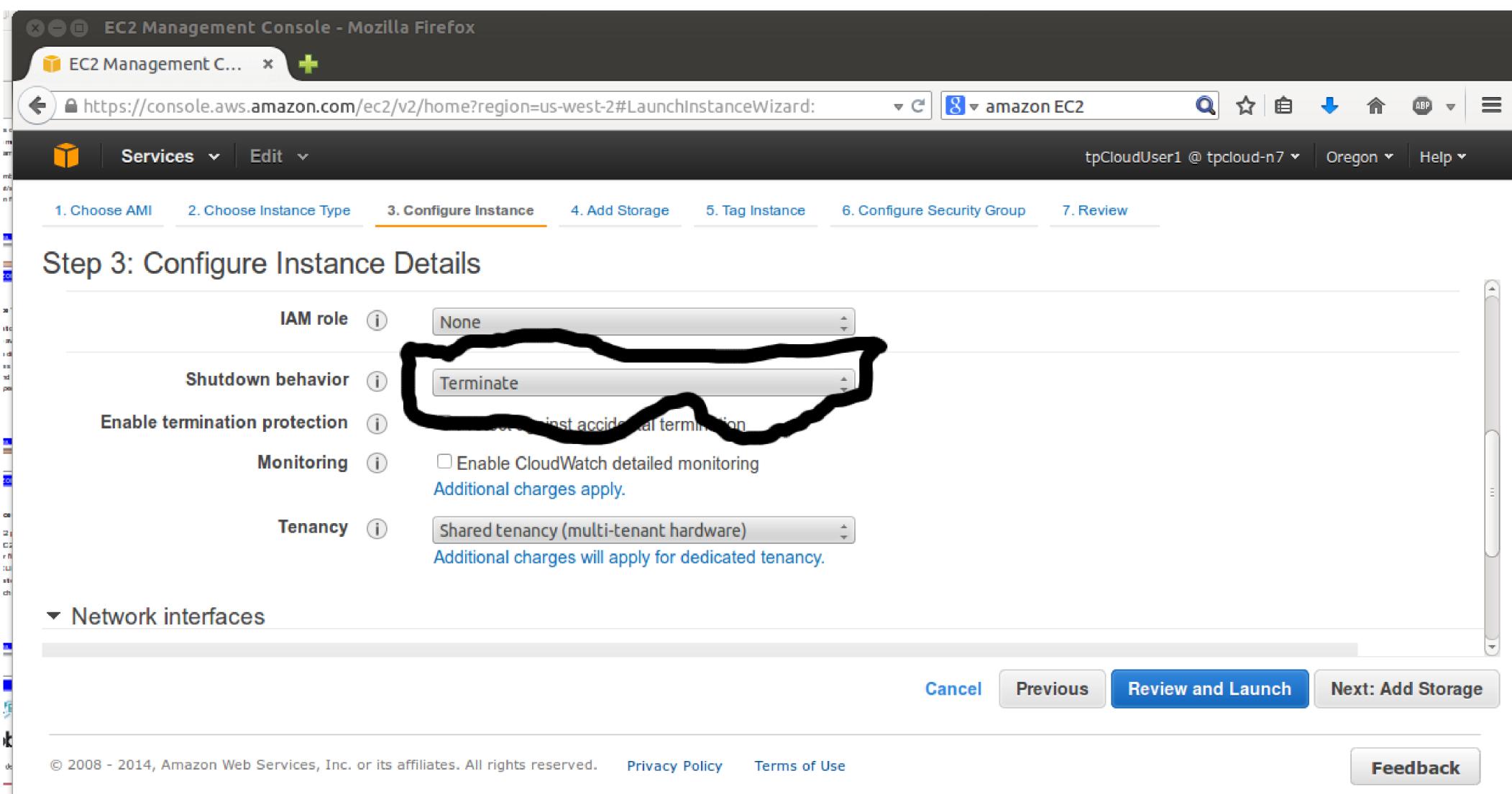
Monitoring:  Enable CloudWatch detailed monitoring  
Additional charges apply.

Tenancy: Shared tenancy (multi-tenant hardware)  
Additional charges will apply for dedicated tenancy.

Network interfaces

Cancel Previous Review and Launch Next: Add Storage Feedback

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Configurer la VM afin qu'elle soit « terminée » (plus facturée) lorsque vous l'arrêtez (halt en ligne de commande)

EC2 Management Console - Mozilla Firefox

EC2 Management C... [+ New](#)

<https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:> [amazon EC2](#) [Search](#) [Star](#) [Bookmark](#) [Download](#) [Home](#) [ABP](#) [More](#)

Services | Edit | tpCloudUser1 @ tpcloud-n7 | Oregon | Help

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

## Step 4: Add Storage

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. [Learn more](#) about storage options in Amazon EC2.

Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Delete on Termination	Encrypted
Root	/dev/sda1	snap-5ebe82aa	8	General Purpose (SSD)	24 / 3000	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

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

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Tag Instance](#)

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EC2 Management Console - Mozilla Firefox

EC2 Management C... +

https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

amazon EC2

Services Edit

luCloudUser1 @ (pccloud-n7) Oregon Help

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

### Step 6: Configure Security Group

Select an existing security group

Security Group ID	Name	Description	Actions
sg-2655b249	default	default VPC security group	<a href="#">Copy to new</a>
sg-db53b4b4	quick-create-1	quick-create-1	<a href="#">Copy to new</a>
sg-63a07405	testPapier	launch-wizard-1 created on Friday, April 25, 201...	<a href="#">Copy to new</a>
sg-44e16f21	IpCloudAutoScaling-sg	launch-wizard-1 created 2014-08-30T11:50:44...	<a href="#">Copy to new</a>

All TCP	TCP	0 - 65535	0.0.0.0/0
All UDP	UDP	0 - 65535	0.0.0.0/0
All traffic	All	All	0.0.0.0/0

[Cancel](#) [Previous](#) [Review and Launch](#)

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Définir les protections réseau (contrôles d'accès) sur la VM. Ouvrir tous les ports. (Voir le document creationImageEC2.pdf)

EC2 Management Console - Mozilla Firefox

EC2 Management C... [+ New](#)

<https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:> [Edit](#) [Amazon EC2](#) [Help](#)

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

## 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 instance's security. Your security group, tpCloudAutoScaling-sg, is open to the world.**

Your instance 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** [Edit AMI](#)

 **Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-e7b8c0d7**  
**Free tier eligible**

Ubuntu Server 14.04 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
---------------	------	-------	--------------	-----------------------	-------------------------	---------------------

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

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EC2 Management Console - Mozilla Firefox

EC2 Management C... + New Tab

https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

amazon EC2

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

1. Choose AMI 2. Choose Instance Type

Step 7: Review Instance

Please review your instance launch details.

**⚠ Improve your instance's security**

Your instance may be accessible from the internet. You can also open additional security groups.

AMI Details

Ubuntu Server 14.04 LTS (HVM, SSD Volume Type) Free tier eligible

Instance Type

ECUs

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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](#).

Create a new key pair

Key pair name: tpCloudAutoScaling-kp

Download Key Pair

You have to download the **private key file (\*.pem file)** before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel Launch Instances

complete the launch process.

IP addresses only. web servers. [Edit security](#)

Edit AMI

Edit instance type

Network Performance

Cancel Previous Launch Feedback

Télécharger la clé d'authentification SSH.

EC2 Management Console - Mozilla Firefox

EC2 Management C... [+ New Tab](#)

<https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:>

amazon EC2

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

## Launch Status

 Your instance is now launching

The following instance launch has been initiated: [i-f7c299fc](#) [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 instance

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

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

▼ 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](#)

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[Feedback](#)

# Démarrage de VM

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a sidebar with navigation links: EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES (with sub-links Instances, Spot Requests, Reserved Instances), IMAGES (with sub-links AMIs, Bundle Tasks), ELASTIC BLOCK STORE (with sub-links Volumes, Snapshots), and NETWORK & SECURITY (with sub-link Security Groups). The main content area has tabs for Launch Instance, Connect, and Actions. A search bar at the top says "Search Instances". Below it, a table lists one instance: i-f7c299fc, t2.micro, us-west-2a, running, Initializing, None, ec2-54-68-11-7.us-west-2.compute.amazonaws.com. A large black rectangle highlights the Public DNS link. At the bottom, there's a detailed view of the instance with tabs for Description, Status Checks, Monitoring, and Tags. The instance details are: Instance ID: i-f7c299fc, Public DNS: ec2-54-68-11-7.us-west-2.compute.amazonaws.com, Instance state: running, Instance type: t2.micro, Private DNS: ip-172-31-39-164.us-west-2.compute.internal, Public IP: 54.68.11.7, Elastic IP: -, Availability zone: us-west-2a. The footer includes a copyright notice (© 2008 - 2014, Amazon Web Services, Inc. or its affiliates. All rights reserved.) and links for Privacy Policy and Terms of Use.

Une fois démarrée, la VM dispose d'un nom DNS public ainsi que d'une adresse IP privée (communication interne au cloud).

```
napster@tchana:~$ ssh -i tpcloudAutoScaling-kp.pem ubuntu@ec2-54-68-11-7.us-west-2.compute.amazonaws.com
The authenticity of host 'ec2-54-68-11-7.us-west-2.compute.amazonaws.com (54.68.11.7)' can't be established.
ECDSA key fingerprint is 4a:65:5f:cd:38:14:73:8e:cd:25:08:82:d0:85:d9:c5.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-54-68-11-7.us-west-2.compute.amazonaws.com,54.68.11.7' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 14.04 LTS (GNU/Linux 3.13.0-29-generic x86_64)

 * Documentation:  https://help.ubuntu.com/

 System information as of Sat Aug 30 11:24:11 UTC 2014

System load: 0.16           Memory usage: 6%   Processes:      113
Usage of /:  9.7% of 7.74GB  Swap usage:  0%   Users logged in: 0

Graph this data and manage this system at:
  https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
  http://www.ubuntu.com/business/services/cloud

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.

ubuntu@ip-172-31-39-164:~$
```

Connexion ssh sur la VM

*Alain Tchana, alain.tchana@enseeiht.fr*



AWS

Customiser sa VM

1. Installer apache2 sur votre VM (connectez-vous à la VM)
  - sudo bash
  - apt-get update
  - apt-get install apache2 php5
  - vérifier que votre apache fonctionne correctement
    - Saisir le nom DNS de votre VM dans un navigateur :
      - <http://ec2-54-68-11-7.us-west-2.compute.amazonaws.com/>

The screenshot shows a Mozilla Firefox browser window with the title bar "Apache2 Ubuntu Default Page: It works - Mozilla Firefox". The address bar displays "ec2-54-68-11-7.us-west-2.compute.amazonaws.com". The main content is the "Apache2 Ubuntu Default Page". It features the Ubuntu logo and the word "ubuntu" below it. A red banner across the middle says "It works!". Below the banner, text explains that this is the default welcome page for testing Apache2 on Ubuntu. It advises replacing the file at /var/www/html/index.html if the server is working properly. If the site is unavailable, it suggests contacting the administrator. A "Configuration Overview" section details the configuration layout, mentioning files like apache2.conf, ports.conf, mods-enabled, and \*.load under /etc/apache2/. A code block shows the directory structure:

```
/etc/apache2/
|-- apache2.conf
|   '-- ports.conf
|-- mods-enabled
|   '-- *.load
```

Le serveur web Apache installé sur la VM est bien accessible d'internet

## 1. Installer le petit site qui vous est fourni

- A partir de votre poste de travail :
  - scp -i <chemin vers votre clé ssh> <chemin vers >/index.php [ubuntu@ec2-54-68-11-7.us-west-2.compute.amazonaws.com](mailto:ubuntu@ec2-54-68-11-7.us-west-2.compute.amazonaws.com) .
- Dans votre VM
  - Sudo bash
  - rm /var/www/html/index.html
  - mv index.php /var/www/html/
  - Chmod 777 /var/www/html/index.php

The screenshot shows a Mozilla Firefox browser window with the title bar "TP Cloud EC2 - Mozilla Firefox". The address bar displays "ec2-54-68-11-7.us-west-2.compute.amazonaws.com". The main content area of the browser shows the text "It works!" followed by "TP Cloud, 2014-2015" and "Génère une charge CPU artificielle en exécutant:". Below this, a snippet of PHP code is shown: `for ($i = 1; $i < pow(10,6); $i++);`. The browser interface includes standard toolbar icons like back, forward, search, and refresh.

Le petit site web est également accessible



AWS

Sauvegarder l'image

# Sauvegarder l'image

The screenshot shows the EC2 Management Console in Mozilla Firefox. The left sidebar has 'Instances' selected. The main area shows a single running instance with ID i-f7c299fc. The 'Actions' dropdown menu is open, and the 'Create Image' option is highlighted with a red circle. The instance details on the right show it's running, with Public DNS ec2-54-68-11-7.us-west-2.compute.amazonaws.com and Public IP 54.68.11.7.

Instance State	Status Checks	Alarm Status	Public DNS
running	2/2 checks ...	None	ec2-54-68-11-7.us-west-2.compute.amazonaws.com

Feedback

Amazon EC2 offre la persistance des VMs. Pour cela, faut sauvegarder l'image de la MV.

# Sauvegarder l'image

EC2 Management Console - Mozilla Firefox

EC2 Management C... TP Cloud EC2

https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#Instances:instancesFilter=runnir

amazon EC2

Create Image

Instance ID: i-07c299fc

Image name: tpCloud-img

Image description:

No reboot:

Instance Volumes

Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Delete on Termination	Encrypted
Root	/dev/sda1	snap-5ebe82aa	8	General Purpose (SSD)	24 / 3000	<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

Donner un nom à l'image

# Sauvegarder l'image

EC2 Management Console - Mozilla Firefox

EC2 Management C... TP Cloud EC2

https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#Instances:instancesFilter=runnin

amazon EC2

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

EC2 Dashboard Events Tags Reports Limits

INSTANCES Instances Spot Requests Reserved Instances

IMAGES AMIs Bundle Tasks

ELASTIC BLO Volumes Snapshots

NETWORK & SECURITY Security Groups

Launch Instance Connect Actions

Filter: Running instances All instance types

Search Instances

Create Image

✓ Create Image request received.

[View pending image ami-57bcfb67](#)

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

Close

Instance state	running	Public IP	54.68.11.7
Instance type	t2.micro	Elastic IP	-
Private DNS	ip-172-31-39-164.us-west-2.compute.internal	Availability zone	us-west-2a

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Feedback

The screenshot shows the AWS EC2 Management Console in a Mozilla Firefox browser. The user is in the 'Instances' section, viewing a single running instance. A modal dialog box titled 'Create Image' is open, displaying a green checkmark icon and the message 'Create Image request received.' Below this, a link 'View pending image ami-57bcfb67' is shown. A note at the bottom of the dialog says, 'Any snapshots backing your new EBS image can be managed on the [snapshots screen](#) after successful image creation.' The background shows the instance's details: Instance state: running, Instance type: t2.micro, Private DNS: ip-172-31-39-164.us-west-2.compute.internal, Public IP: 54.68.11.7, Elastic IP: -, Availability zone: us-west-2a. At the bottom of the page, there is a copyright notice for Amazon Web Services from 2008-2014, links to Privacy Policy and Terms of Use, and a Feedback button.

# Sauvegarder l'image

The screenshot shows the EC2 Management Console in Mozilla Firefox. The left sidebar has a red circle around the 'AMIS' link under the 'IMAGES' section. The main content area shows a table of existing AMIs, with one entry highlighted:

Name	AMI Name	AMI ID	Source	Owner	Visibility	Status	Platform	Rock
tpCloud-img	ami-57bcfb67	544746072523/t...	544746072523	Private	pending	Other Linux	ebs	

Below the table, a modal window is open for the selected AMI (ami-57bcfb67). The 'Details' tab is selected, showing the AMI ID (ami-57bcfb67) and AMI Name (tpCloud-img). There are tabs for 'Permissions' and 'Tags'. An 'Edit' button is visible in the top right corner of the modal.

Une copie de votre VM est maintenant disponible. Vous pouvez démarrer une VM à partir de cette sauvegarde.



AWS

Utiliser l'image

EC2 Management Console - Mozilla Firefox

EC2 Management C... TP Cloud EC2

https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

amazon EC2

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

Step 1: Choose an Amazon Machine Image (AMI)

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.

Cancel and Exit

Quick Start

Search my AMIs

1 to 1 of 1 AMIs

My AMIs

AWS Marketplace

Community AMIs

tpCloud-img - ami-57bcfb67

Root device type: ebs Virtualization type: hvm Owner: 544746072523

Select

64-bit

Ownership

Owned by me

Shared with me

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The screenshot shows the 'Choose AMI' step of the EC2 Launch Instance Wizard. On the left, there's a sidebar with 'Quick Start', 'My AMIs' (which is selected and highlighted with a red box), 'AWS Marketplace', and 'Community AMIs'. Below that is a 'Ownership' section with checkboxes for 'Owned by me' (checked) and 'Shared with me'. The main area shows a single AMI entry: 'tpCloud-img - ami-57bcfb67'. It includes details like 'Root device type: ebs', 'Virtualization type: hvm', and 'Owner: 544746072523'. To the right of the AMI details is a large blue 'Select' button. A red circle highlights the 'Select' button. At the top, the browser title bar says 'EC2 Management Console - Mozilla Firefox' and the address bar shows 'https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:'. The top navigation bar includes 'Services', 'Edit', and 'Help'.

La suite est identique à ce que nous avions lors du démarrage d'une VM



- Ajuster automatiquement le nombre d'instances en fonction de :
  - Règles que vous définissez
  - Informations de monitoring
  - Événements (alarmes)
- 3 cas d'utilisations :
  - Maintenir un nombre fixe d'instances
  - Planifier le rajout/suppression de ressources
  - Dimensionner en fonction de la charge

## Comment mettre en place ?

1. Définir une configuration initiale
2. Démarrer un groupe avec la configuration définie
3. Définir des règles de dimensionnement :
  1. Alarmes basées sur le monitoring
  2. Que faire quand une alarme est déclenchée ?

*Optionnellement, on peut aussi utiliser un load balancer*

# Auto Scaling : Load balancing

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The URL is <https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LoadBalancers>. The user is logged in as `samueleto'o` with session `tpCloudUser1 @ tpcloud-n7` in the Oregon region.

The left sidebar menu is open, showing the following categories:

- IMAGES
- AMIs
- Bundle Tasks
- ELASTIC BLOCK STORE
  - Volumes
  - Snapshots
- NETWORK & SECURITY
  - Security Groups
  - Elastic IPs
  - Placement Groups
  - Load Balancers** (highlighted with a red box)
  - Key Pairs
  - Network Interfaces
- AUTO SCALING
  - Launch Configurations
  - Auto Scaling Groups

The main content area displays the following message:

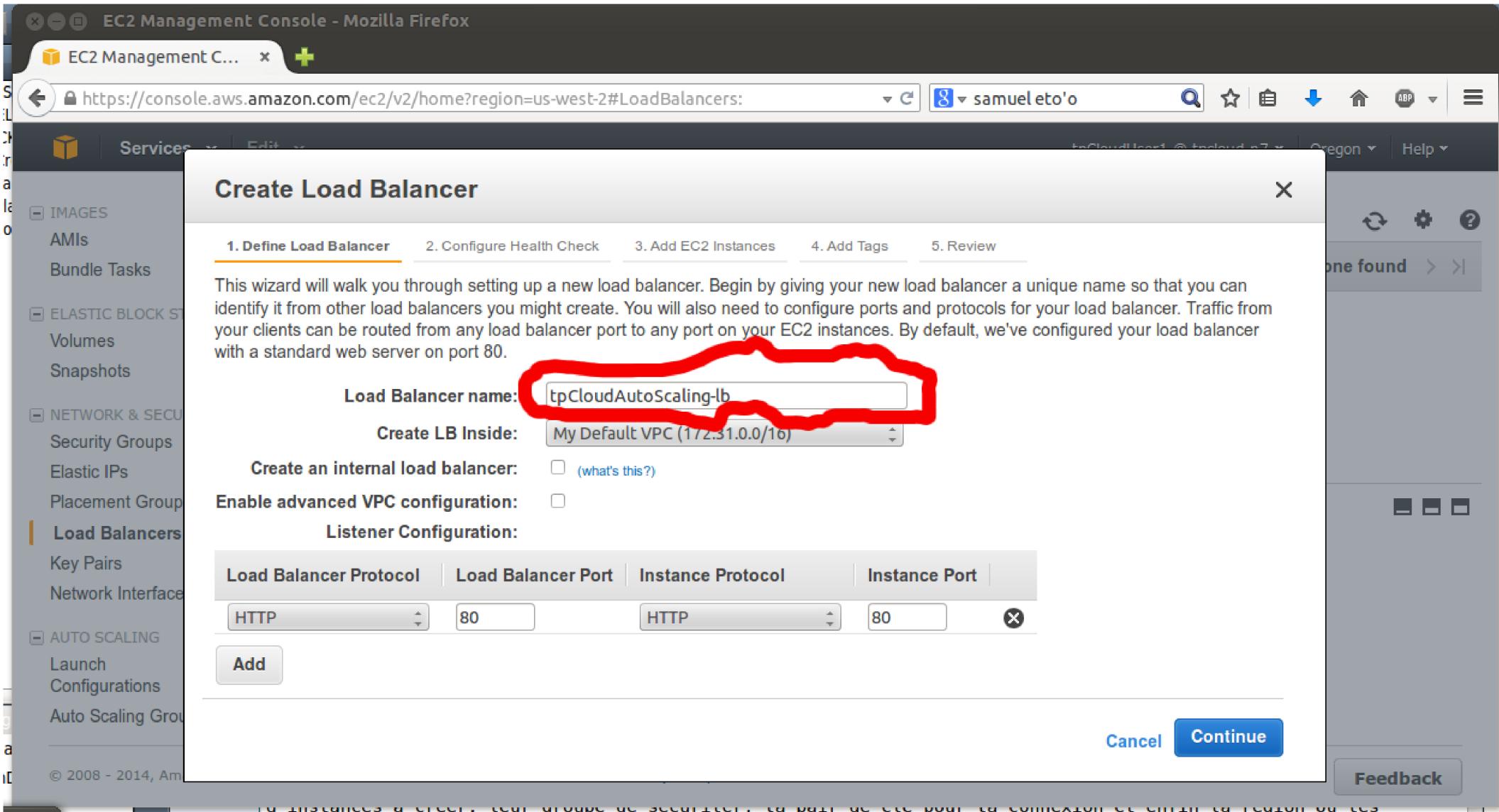
You do not have any load balancers in this region.  
Click the button below to create a load balancer for distributing traffic across your instances.

**Create Load Balancer**

At the bottom of the page, there is a footer with links to [Privacy Policy](#) and [Terms of Use](#), and a [Feedback](#) button.

Le load balancer sera le point d'entrée de l'application. Il est fournit par AWS.

# Auto Scaling : Load balancing



The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The user is in the 'Load Balancers' section, creating a new load balancer. The 'Create Load Balancer' wizard is open, with the first step, '1. Define Load Balancer', selected. A red box highlights the 'Load Balancer name:' input field, which contains 'tpCloudAutoScaling-lb'. Below it, the 'Create LB Inside:' dropdown is set to 'My Default VPC (172.31.0.0/16)'. There are options for creating an internal load balancer and enabling advanced VPC configuration. Under 'Listener Configuration', there is a table with two rows: one for 'Load Balancer Protocol' (HTTP) and 'Load Balancer Port' (80), and another for 'Instance Protocol' (HTTP) and 'Instance Port' (80). An 'Add' button is available to add more listener pairs. At the bottom right are 'Cancel' and 'Continue' buttons, with 'Feedback' also present.

Donner un nom au load balancer. Ex. tpCloudAutoScaling-lb

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The user is in the process of creating a new load balancer, specifically at the 'Configure Health Check' step (step 2). The left sidebar shows navigation links for Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Security Groups, Elastic IPs, Placement Groups, Load Balancers (which is the active tab), Key Pairs, Network Interfaces, and Auto Scaling. The main content area has tabs for 1. Define Load Balancer, 2. Configure Health Check (which is selected), 3. Assign Security Groups, 4. Add EC2 Instances, 5. Add Tags, and 6. Review. The 'Configure Health Check' section contains fields for Ping Protocol (set to HTTP), Ping Port (set to 80), and Ping Path (set to /index.html). Below this, the 'Advanced Details' section includes fields for Response Timeout (5 seconds), Health Check Interval (30 seconds), Unhealthy Threshold (2), and Healthy Threshold (10). At the bottom right are 'Back' and 'Continue' buttons, with a 'Feedback' link in the bottom right corner of the main panel.

Le load balancer effectue un ping régulier vers les replicas. Le ping path sert à cela.

# Auto Scaling : Load balancing

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The user is creating a new load balancer. They have reached step 3, "Assign Security Groups". There are two options: "Create a new security group" (radio button not selected) and "Select an existing security group" (radio button selected). Below the radio buttons is a table listing existing security groups:

Security Group ID	Name	Description	Actions
sg-2655b249	default	default VPC security group	<a href="#">Copy to new</a>
sg-db53b4b4	quick-create-1	quick-create-1	<a href="#">Copy to new</a>
sg-63a07406	testPapier	launch-wizard-1 created on Friday,...	<a href="#">Copy to new</a>
sg-44e16f21	tpCloudAutoScaling-sg	launch-wizard-1 created 2014-08-...	<a href="#">Copy to new</a>

At the bottom right of the modal are "Back" and "Continue" buttons. The "Continue" button is highlighted with a blue border.

Sélectionner le security group que vous aviez créé

# Auto Scaling : Load balancing

EC2 Management Console - Mozilla Firefox

EC2 Management C... +

https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LoadBalancers:

samuel eto'o

volumes

Snapshots

NETWORK & SECU

Security Groups

Elastic IPs

Placement Group

**Load Balancers**

Key Pairs

Network Interface

AUTO SCALING

Launch Configurations

Auto Scaling Groups

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## Add Instances to Load Balancer

The table below lists all your running EC2 Instances. Check the boxes in the Select column to add those instances to this load balancer.

VPC vpc-3943d151 (172.31.0.0/16)

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

---

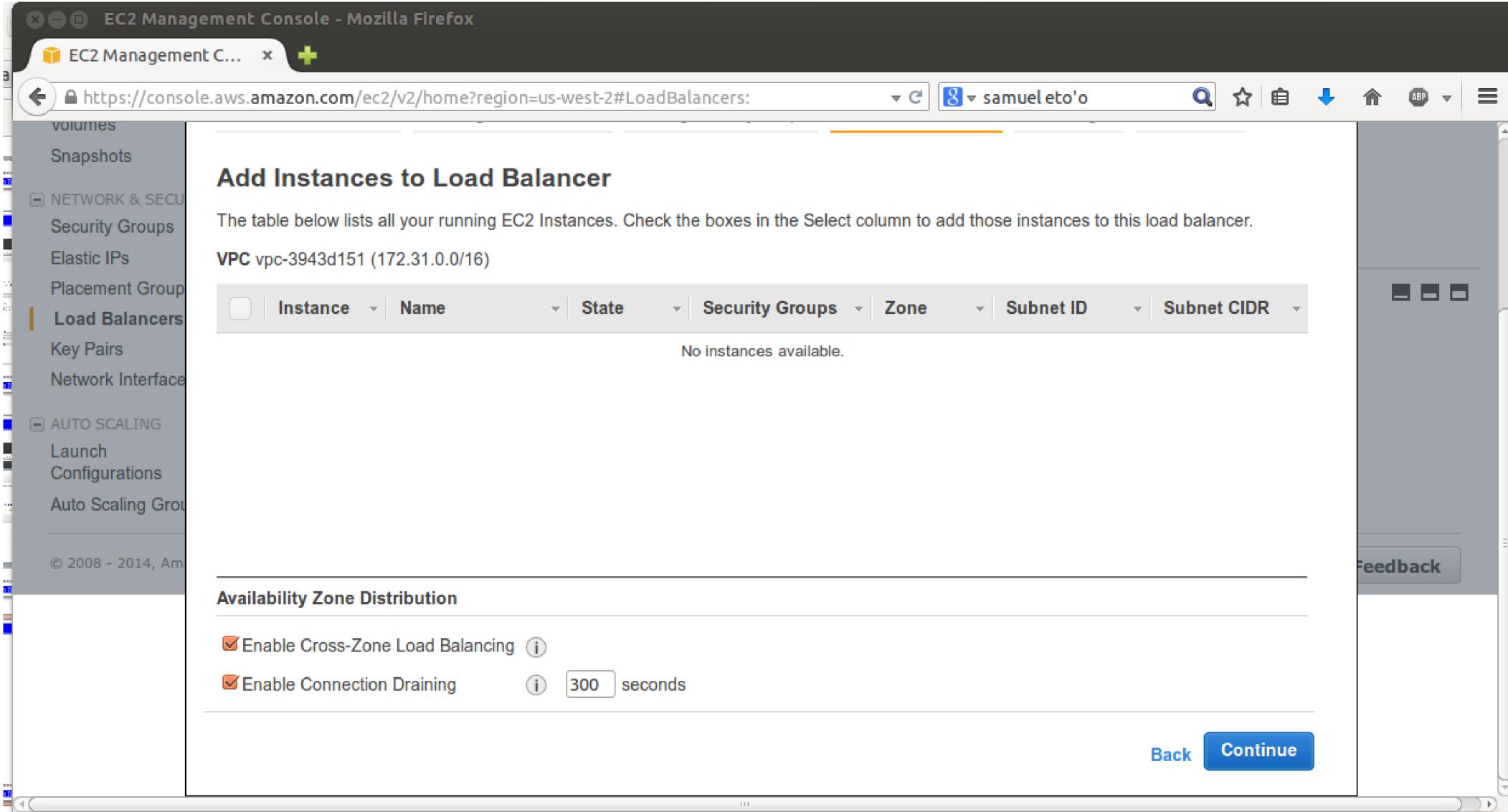
### Availability Zone Distribution

Enable Cross-Zone Load Balancing i

Enable Connection Draining i  seconds

[Back](#) [Continue](#)

Feedback



Pour l'instant aucun replica (instance de VM) n'est rattaché au load balancer.

# Auto Scaling : Load balancing

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The user is creating a new load balancer. The current step is '5. Add Tags'. The interface includes tabs for '1. Define Load Balancer', '2. Configure Health Check', '3. Assign Security Groups', '4. Add EC2 Instances', '5. Add Tags' (which is highlighted in orange), and '6. Review'. A note below the tabs says: 'Apply tags to your resources to help organize and identify them. A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. [Learn more about tagging your Amazon ELB resources.](#)' There is a table with 'Key' and 'Value' columns, a 'Create Tag' button, and 'Back' and 'Continue' buttons at the bottom. The left sidebar shows navigation links for Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Security Groups, Elastic IPs, Placement Group, Load Balancers (which is selected), Key Pairs, Network Interface, Auto Scaling, Launch Configurations, and Auto Scaling Groups. The top right shows the user's name 'samuel eto'o' and location 'Oregon'.

Cliquer sur continuer

The screenshot shows the AWS EC2 Management Console interface for creating a load balancer. The left sidebar lists services like AMIs, Volumes, Security Groups, and Load Balancers. The main window is titled "Create Load Balancer" and is on step 6: Review. The configuration details are as follows:

- Define Load Balancer:** Load Balancer name: tpCloudAutoScaling-lb, Scheme: internet-facing, Port Configuration: 80 (HTTP) forwarding to 80 (HTTP).
- Configure Health Check:** Ping Target: HTTP:80/index.html, Timeout: 5 seconds, Interval: 30 seconds, Unhealthy Threshold: 2, Healthy Threshold: 10.
- Add EC2 Instances:** Cross-Zone Load Balancing: Enabled, Connection Draining: Enabled, 300 seconds.

Récapitulatif de la configuration du load balancer

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The URL is <https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LoadBalancers>. The left sidebar is collapsed, showing services like AMIs, EBS, Volumes, Snapshots, Security Groups, Elastic IPs, Placement Groups, Load Balancers (which is selected), Key Pairs, Network Interfaces, Auto Scaling, Launch Configurations, and Auto Scaling Groups. The main content area displays a modal dialog titled "Create Load Balancer". Inside the dialog, there is a green checkmark icon followed by the text "Successfully created load balancer". Below that, it says "Load balancer [tpCloudAutoScaling-lb](#) was successfully created." A note below states: "Note: It may take a few minutes for your instances to become active in the new load balancer." At the bottom right of the dialog are "Close" and "Feedback" buttons. The background shows a list of load balancers with one item visible: "1 to 1 of 1" and "tpCloudAutoScaling-lb".

La suite est identique à ce que nous avions lors du démarrage d'une VM

# Auto Scaling

The screenshot shows the AWS EC2 Management Console in Mozilla Firefox. The left sidebar navigation includes 'IMAGES', 'AMIs', 'Bundle Tasks', 'ELASTIC BLOCK STORE', 'Volumes', 'Snapshots', 'NETWORK & SECURITY', 'Security Groups', 'Elastic IPs', 'Placement Groups', 'Load Balancers' (which is selected), 'Key Pairs', 'Network Interfaces', and 'AUTO SCALING', which contains 'Launch Configurations' and 'Auto Scaling Groups'. The main content area displays a table of load balancers. A single row is visible for 'tpCloudAutoScaling-lb', showing its 'DNS Name' as 'tpCloudAutoScaling-lb-824525215.us-west-2.elb.amazonaws.com (A Record)'. Below the table, a note explains that the IP address can change over time and advises against using a specific IP in an 'A' record. The bottom of the page includes a copyright notice for Amazon Web Services (2008-2014), links to 'Privacy Policy' and 'Terms of Use', and a 'Feedback' button.

Load Balancer Name	DNS Name	Port Configuration	Availability Zones	Instance Count	Health
tpCloudAutoScaling-lb	tpCloudAutoScaling-lb-824525215.us-west-2.elb.amazonaws.com (A Record)	80 (HTTP) forwarding to 80 (...)	us-west-2c, us-west-2b...	0 Instances	HTTP:

**Load balancer: tpCloudAutoScaling-lb**

Description Instances Health Checks Monitoring Domains Load Balancers Tags

DNS Name: tpCloudAutoScaling-lb-824525215.us-west-2.elb.amazonaws.com (A Record)

Note: Because the public IP addresses assigned to a Load Balancer can change over time, you should never create an "A" record with any specific IP address. If you want to use a friendly DNS name for your load balancer instead of the name generated by the Elastic Load Balancing service, you should create a CNAME record for the LoadBalancer DNS name, or use Amazon Route 53 to create a hosted zone. For more information, see [Using Domain Names With Elastic Load Balancing](#).

Le nom DNS du load balancer est celui que vous devez passer aux clients de l'application.



AWS Management Console - Mozilla Firefox

AWS Management C... [Create New](#)

<https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#LaunchConfigurations> Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

IMAGES AMIs Bundle Tasks

ELASTIC BLOCK STORE Volumes Snapshots

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

AUTO SCALING **Launch Configurations** Auto Scaling Groups

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

Reusable Instance Templates



Provision instances based on a reusable template you define, called a launch configuration.

[Learn more](#)

Automated Provisioning



Keep your Auto Scaling group healthy and balanced, whether you need one instance or 1,000.

[Learn more](#)

Adjustable Capacity



Maintain a fixed group size or adjust dynamically based on Amazon CloudWatch metrics.

[Learn more](#)

Additional Information

Getting Started Guide Documentation All EC2 Resources Forums Pricing Contact Us

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La configuration de l'Auto Scaling débute par la création d'une configuration de démarrage

AWS Management Console - Mozilla Firefox

AWS Management C... +

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateLaunchConfigur... Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

Create Launch Configuration Cancel and Exit

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

Search my AMIs

1 to 1 of 1 AMIs

tpCloud-img - ami-57bcfb67

Select

Root device type: ebs Virtualization type: hvm Owner: 544746072523

64-bit

AWS Marketplace

Community AMIs

Ownership

Owned by me

Shared with me

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The screenshot shows the AWS Management Console interface for creating a launch configuration. The top navigation bar indicates the user is in the EC2 Auto Scaling section. The main content area is titled 'Create Launch Configuration' and is currently on step 1: 'Choose AMI'. A single AMI entry is listed: 'tpCloud-img - ami-57bcfb67'. The 'Select' button next to it is highlighted with a red arrow. To the left, a sidebar shows 'My AMIs' and other filtering options like 'AWS Marketplace' and 'Community AMIs'. At the bottom, there are links for 'Privacy Policy' and 'Terms of Use'.

La suite est identique à ce que nous avions lors du démarrage d'une VM

Alain Tchana, alain.tchana@enseeiht.fr

AWS Management Console - Mozilla Firefox

AWS Management C... +

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateLaunchConfigur... Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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.

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 1 GiB memory, EBS only)

All instance types	General purpose						
<b>General purpose</b>	General purpose instances provide a balance of compute, memory, and network resources, and are a good choice for many applications. They are recommended for small and medium databases, data processing tasks that require additional memory, caching fleets, and for running backend servers for SAP, Microsoft SharePoint, and other enterprise applications.						
Compute optimized	Size	ECUs	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance
GPU instances	t2.micro	Variable	1	1	EBS only	-	Low to Moderate
Memory optimized	t2.small	Variable	1	2	EBS only	-	Low to Moderate
Storage optimized							

Cancel Previous Next: Configure details

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# Auto Scaling

AWS Management Console - Mozilla Firefox

AWS Management C... https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateLaunchConfigur Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

### Create Launch Configuration

Name: tpCloudAutoScaling-lc (highlighted with a red box)

Purchasing option: Request Spot Instances

IAM role: Loading...

Monitoring: Enable CloudWatch detailed monitoring

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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AWS Management Console - Mozilla Firefox

AWS Management C...

<https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateLaunchConfigur> Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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. [Learn more](#) about storage options in Amazon EC2.

Type	Device	Snapshot	Size (GB)	Volume Type	IOPS	Delete on Termination
Root	/dev/sda1	snap-07c648f1	8	General Purpose (SSD)	N/A	<input checked="" type="checkbox"/>

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 Feedback

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AWS Management Console - Mozilla Firefox

AWS Management C...

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateLaunchConfigur... Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

### Create Launch Configuration

Assign a security group:  Create a new security group  Select an existing security group

Security Group ID	Name	VPC ID	Description	Actions
<input type="checkbox"/> sg-63a07406	testPapier	vpc-3943d151	launch-wizard-1 created on Friday,...	<a href="#">Copy to new</a>
<input type="checkbox"/> sg-2655b249	default	vpc-3943d151	default VPC security group	<a href="#">Copy to new</a>
<input checked="" type="checkbox"/> sg-44e16f21	tpCloudAutoScaling-sg	vpc-3943d151	launch-wizard-1 created 2014-08-...	<a href="#">Copy to new</a>

Inbound rules for sg-44e16f21

Protocol <i>(i)</i>	Type <i>(i)</i>	Port Range (Code) <i>(i)</i>	Source <i>(i)</i>
Custom TCP Rule	TCP	0 - 65535	0.0.0.0/0

[Cancel](#) [Previous](#) [Review](#)

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AWS Management Console - Mozilla Firefox

AWS Management C... [+](#)

<https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateLaunchConfigur> Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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. You can go back to edit the details of each section before you finish.

**⚠ Improve security of instances launched using your launch configuration, tpCloudAutoScaling-lc. Your security group, tpCloudAutoScaling-sg, 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 [Edit AMI](#)

**tpCloud-img - ami-57bcfb67**

 Root device type: ebs Virtualization Type: hvm

Instance Type [Edit instance type](#)

Cancel Previous [Create launch configuration](#)

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AWS Management Console - Mozilla Firefox

AWS Management C...

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateLaunchConfigur... Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

**Improve security of instances open to the world.**

Your instances may be accessed from the Internet. You can also open additional security groups.

AMI Details

tpCloud-img - ami-57f2e0d2

Root device type: ebs Virtualization type: hvm

Instance Type

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.

Choose an existing key pair

Select a key pair

tpCloudAutoScaling-kp

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

Cancel Create launch configuration

tpCloudAutoScaling-sg, is in IP addresses only. web servers. [Edit security](#)

Edit AMI

Edit instance type

Create launch configuration

Feedback

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# Auto Scaling

AWS Management Console - Mozilla Firefox

AWS Management C... https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

Create Auto Scaling Group Cancel and Exit

Launch Configuration tpCloudAutoScaling-lc

Group name tpCloudAutoScaling-asg

Group size Start with 1 instances

Network Launch into EC2-Classic Create new VPC

Availability Zone(s) us-west-2a

Advanced Details

Cancel Next: Configure scaling policies

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The screenshot shows the 'Create Auto Scaling Group' wizard in the AWS Management Console. The 'Group name' field contains 'tpCloudAutoScaling-asg'. The 'Group size' field has '1' selected, which is circled in red with a red arrow pointing to it. The 'Availability Zone(s)' field contains 'us-west-2a', also circled in red with a red arrow pointing to it. The 'Network' dropdown is set to 'Launch into EC2-Classic'. At the bottom right, there are 'Cancel' and 'Next: Configure scaling policies' buttons.

Le groupe d'Auto Scaling débute avec une VM. C'est le service d'Auto Scaling qui démarrera cette VM.

AWS Management Console - Mozilla Firefox

AWS Management C... https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

Create Auto Scaling Group Cancel and Exit

Advanced Details

Load Balancing  Receive traffic from Elastic Load Balancer(s)  
tpCloudAutoScaling-lb

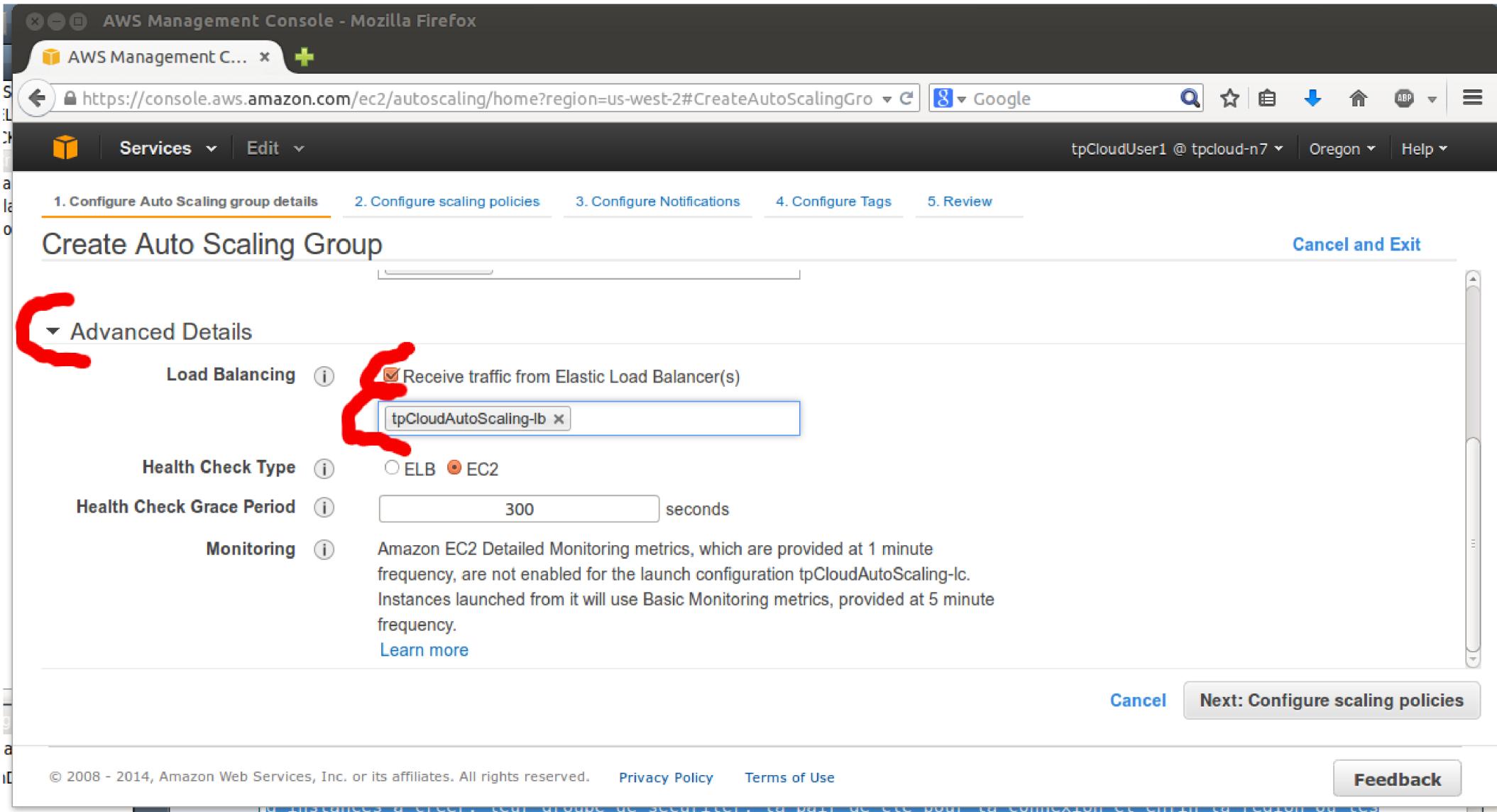
Health Check Type  ELB  EC2

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 tpCloudAutoScaling-lc. 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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Associer le load balancer au groupe de VMs que gérera le service d'Auto Scaling

AWS Management Console - Mozilla Firefox

AWS Management C... https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

## Create Auto Scaling Group

You can optionally add scaling policies if you want to adjust the size (number of instances) of your group automatically. A scaling policy is a set of instructions for making such adjustments in response to an Amazon CloudWatch alarm that you assign to it. In each policy, you can choose to add or remove a specific number of instances or a percentage of the existing group size, or you can set the group to an exact size. When the alarm triggers, it will execute the policy and adjust the size of your 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.

**Increase Group Size**

Name:

Execute policy when:  Add new alarm

**Cancel Previous Review Next: Configure Notifications**

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The number of replicas max is 2. The Auto Scaling will not be able to add a VM dynamically.

Le nombre de replicas max est de 2. L'Auto Scaling ne pourra rajouter qu'une VM dynamiquement

AWS Management Console - Mozilla Firefox

AWS Management C... https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

### Create Auto Scaling Group

Increase Group Size

Name: tpCloudAutoScaling-out

Execute policy when: No alarm selected Add new alarm

Take the action: Add 1 instances

And then wait: 300 seconds before allowing another scaling activity

Decrease Group Size

Cancel Previous Review Next: Configure Notifications Feedback

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L'ajout se fait en pas de 1.

AWS Management Console - Mozilla Firefox

AWS Management C... https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

### Create Auto Scaling Group

Increase Group Size

Name: tpCloudAutoScaling-out

Execute policy when: No alarm selected  Add new alarm (circled in red)

Take the action: Add 1 instances

And then wait: 300 seconds before allowing another scaling activity

Decrease Group Size

Cancel Previous Review Next: Configure Notifications Feedback

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Ajouter l'alarme qui déclenchera l'ajout

# Auto Scaling

AWS Management Console - Mozilla Firefox

AWS Management C... https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

Create Auto Scaling Group

Increase capacity

Execute policy

Take snapshots

And more...

Decrease capacity

Configure Notifications

Feedback

**Create Alarm**

You can use CloudWatch alarms to be notified automatically whenever metric data reaches a level you define.

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

Send a notification to: tpCloudAutoScaling-out-notif (alain.tchana)

Whenever: Average of CPU Utilization

Is: **>= 60** Percent

For at least: 1 consecutive period(s) of 5 Minutes

Name of alarm: awsec2-tpCloudAutoScaling-asg-High-CPU-Utilization

CPU Utilization Percent

60  
40  
20  
0

8/31 8/31 8/31  
04:00 06:00 08:00

tpCloudAutoScaling-asg

Cancel Create Alarm

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Instances à créer, ceul groupe de sécurité, la pair de clé pour la connexion et enfin la région où l'asg

Lorsque la charge CPU moyenne du groupe de VMs sera supérieure ou égale à 60 % alors une VM sera ajoutée au groupe de VM

AWS Management Console - Mozilla Firefox

AWS Management C...

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

## Create Auto Scaling Group

### Increase Group Size

Name: tpCloudAutoScaling-out

Execute policy when awsec2-tpCloudAutoScaling-asg-High-CPU-Utilization [Edit](#) [Remove](#)  
breaches the alarm threshold: CPUUtilization >= 60 for 300 seconds  
for the metric dimensions AutoScalingGroupName = tpCloudAutoScaling-asg

Take the action: Add 1 instances

And then wait: 300 seconds before allowing another scaling activity

[Cancel](#) [Previous](#) [Review](#) [Next: Configure Notifications](#)

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L'alarme a été créée

AWS Management Console - Mozilla Firefox

AWS Management C...

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

Create Auto Scaling Group

And then wait: 300 seconds before allowing another scaling activity

Decrease Group Size

Name: tpCloudAutoScaling--in :

Execute policy when: No alarm selected

Take the action: Remove 1 instances

And then wait: 300 seconds before allowing another scaling activity

Cancel Previous Review Next: Configure Notifications

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Configuration du retrait. En pas de 1, comme l'ajout.

# Auto Scaling

AWS Management Console - Mozilla Firefox

AWS Management C... 

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro  Google     

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

## Create Auto Scaling Group

And then wait:  seconds before allowing another scaling activity

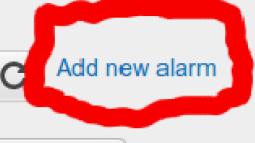
### Decrease Group Size

Name:

Execute policy when:   

Take the action:   instances 

And then wait:  seconds before allowing another scaling activity



Cancel Previous Review Next: Configure Notifications Feedback

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Configuration de l'alarme

Alain Tchana, alain.tchana@enseeiht.fr

# Auto Scaling

AWS Management Console - Mozilla Firefox

AWS Management C... https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

Create Auto Scaling Group

Decrease Increase

Execute policy

Takeover

And more...

**Create Alarm**

You can use CloudWatch alarms to be notified automatically whenever metric data reaches a level you define.

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

Send a notification to: tpCloudAutoScaling-out-notif (alain.tchana)

Whenever: Average of CPU Utilization Is < 20 Percent

For at least: 1 consecutive period(s) of 5 Minutes

Name of alarm: awsec2-tpCloudAutoScaling-asg-High-CPU-Utilization

CPU Utilization Percent

20  
15  
10  
5  
0

8/31 8/31 8/31  
04:00 06:00 08:00

tpCloudAutoScaling-asg

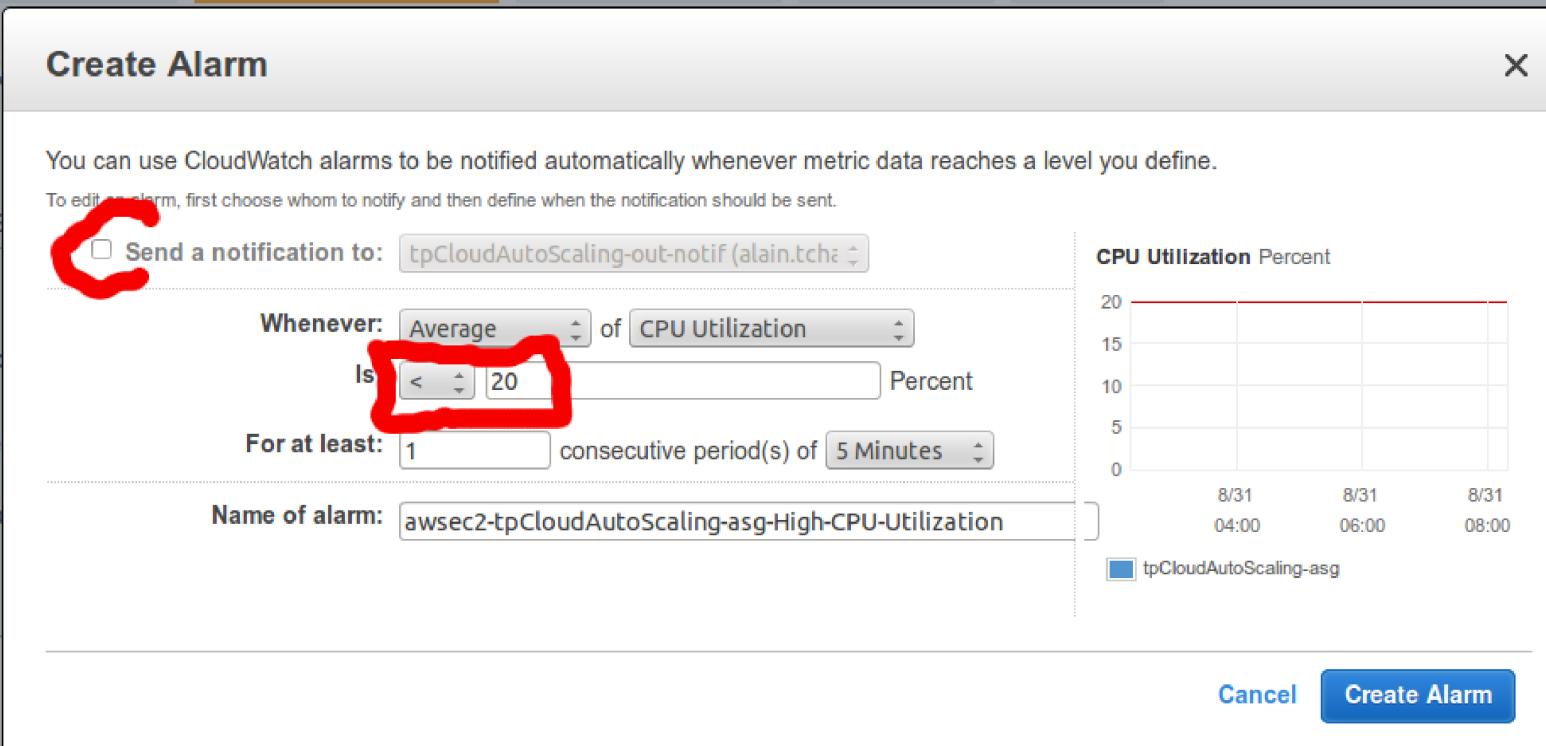
Cancel Create Alarm

Configure Notifications

Feedback

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The instances à créer, leur groupe de sécurité, la paire de clés pour la connexion et enfin la région où l'on



Lorsque la charge CPU moyenne du groupe de VMs sera inférieure ou égale à 20 % alors une VM sera retirée du groupe de VMs

AWS Management Console - Mozilla Firefox

AWS Management C... 

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro  Google      

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

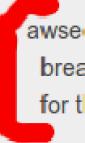
1. Configure Auto Scaling group details 2. Configure scaling policies 3. Configure Notifications 4. Configure Tags 5. Review

### Create Auto Scaling Group

And then wait:  seconds before allowing another scaling activity

#### Decrease Group Size

Name:

Execute policy when:  awsec2-tpCloudAutoScaling-asg-High-CPU-Utilization [Edit](#) [Remove](#)  
breaches the alarm threshold: CPUUtilization < 20 for 300 seconds  
for the metric dimensions AutoScalingGroupName = tpCloudAutoScaling-asg

Take the action: [Remove](#)  instances

And then wait:  seconds before allowing another scaling activity

[Cancel](#) [Previous](#) [Review](#) [Next: Configure Notifications](#)

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Alarme créée

AWS Management Console - Mozilla Firefox

AWS Management C... +

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

Cancel Previous Review Next: Configure Tags

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Les notifications permettent de vous informer (par mail par exemple) lorsqu'une alarme a été déclenchée. Nous ne la configurons pas ici.

AWS Management Console - Mozilla Firefox

AWS Management C... +

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro ↴ Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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

## Create Auto Scaling Group

A tag consists of a case sensitive key-value pair that you can use to identify your group. For example, you could define a tag with Key = Environment and Value = Production. You can optionally choose to apply these tags to instances in the group when they launch. [Learn more](#).

Key	Value	Tag New Instances <small>i</small>
<input type="text"/>	<input type="text"/>	<input checked="" type="checkbox"/> <small>x</small>

Add tag 9 remaining

Cancel Previous Review

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D'instances à créer, leur groupe de sécurité, la paire de clef pour la connexion et enfin la région ou les

Rien à faire ici.

AWS Management Console - Mozilla Firefox

AWS Management C... [+](#)

<https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro> Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

1. Configure Auto Scaling group details 2. Configure scaling policies 3. Configure Notifications 4. Configure Tags 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** [Edit details](#)

Group name	tpCloudAutoScaling-asg
Group size	1
Minimum Group Size	1
Maximum Group Size	2
Availability Zone(s)	us-west-2a
Load Balancers	tpCloudAutoScaling-lb
Health Check Type	EC2
Health Check Grace Period	300
Detailed Monitoring	No

**Scaling Policies** [Edit scaling policies](#)

[Cancel](#) [Previous](#) [Create Auto Scaling group](#)

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Créer l'Auto Scaling group

Alain Tchana, alain.tchana@enseeiht.fr

AWS Management Console - Mozilla Firefox

AWS Management C... +

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#CreateAutoScalingGro Google

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

## Auto Scaling group creation status

✓ Successfully created Auto Scaling group

[View creation log](#)

▼ View

[View your Auto Scaling groups](#)

[View your launch configurations](#)

► Here are some helpful resources to get you started

[Close](#)

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[Feedback](#)

Le service d'Auto Scaling est complètement configuré et démarré

Alain Tchana, alain.tchana@enseeiht.fr

# Auto Scaling

AWS Management Console - Mozilla Firefox

AWS Management C... +

https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#AutoScalingGroups:id=

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

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
tpCloudAutoSc...	tpCloudAutoScaling-lc	0	1	1	2	us-west-2a	300

Auto Scaling Group: tpCloudAutoScaling-asg

Details Scaling History Scaling Policies Instances Notifications Tags

Launch Configuration tpCloudAutoScaling-lc

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The configuration has been completed.

La configuration est achevée

# Auto Scaling

AWS Management Console - Mozilla Firefox

AWS Management C... https://console.aws.amazon.com/ec2/autoscaling/home?region=us-west-2#AutoScalingGroups:id= tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

IMAGES AMIs Bundle Tasks

ELASTIC BLOCK STORE Volumes Snapshots

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

AUTO SCALING Launch Configurations Auto Scaling

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
tpCloudAutoSc...	tpCloudAutoScaling-lc	0	1	1	2	us-west-2a	300

Auto Scaling Group: tpCloudAutoScaling-asg

Details Scaling History Scaling Policies Instances Notifications Tags

Filter: Any Health Status Any Lifecycle State Filter instances... 1 to 1 of 1 Instances

Instance ID	Lifecycle	Launch Configuration Name	Availability Zone	Health Status
i-f72500fc	InService	tpCloudAutoScaling-lc	us-west-2a	Healthy

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The screenshot shows the AWS Auto Scaling console in the AWS Management Console. On the left, there's a sidebar with navigation links for Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Security Groups, Elastic IPs, Placement Groups, Load Balancers, Key Pairs, Network Interfaces, and Auto Scaling (which is currently selected). The main content area has tabs for 'Create Auto Scaling group' and 'Actions'. Below that is a search bar for filtering Auto Scaling groups. A table lists one Auto Scaling group named 'tpCloudAutoScaling-asg' with a launch configuration 'tpCloudAutoScaling-lc', 0 instances, and a desired count of 1. The 'Instances' tab is highlighted with a red circle. Below the table, another section shows a single instance with ID 'i-f72500fc', lifecycle status 'InService', launch configuration 'tpCloudAutoScaling-lc', availability zone 'us-west-2a', and health status 'Healthy'. The entire screenshot is framed by a red border.

Le service d'Auto Scaling a démarré une VM comme spécifié dans la configuration

# Auto Scaling

The screenshot shows the EC2 Management Console in Mozilla Firefox. The left sidebar is collapsed, showing the following navigation menu:

- Spot Requests
- Reserved Instances
- IMAGES
  - AMIs
  - Bundle Tasks
- ELASTIC BLOCK STORE
  - Volumes
  - Snapshots
- NETWORK & SECURITY
  - Security Groups
  - Elastic IPs
  - Placement Groups
- Load Balancers** (highlighted in red)
- Key Pairs
- Network Interfaces
- AUTO SCALING
  - Launch

The main content area displays a list of Load Balancers. A single entry is visible:

Load Balancer Name	DNS Name	Port Configuration	Availability Zones	Instance Count	Health
tpCloudAutoScaling-lb	tpCloudAutoScaling-lb-82452...	80 (HTTP) forwarding to 80 (...)	us-west-2c, us-west-2b...	1 Instance	HTTP:

Below the list, a detailed view of the selected load balancer is shown. The "Instances" tab is highlighted with a red box. The "Description" and "Edit Instances" buttons are visible. The "Instances" table has the following structure:

Instance ID	Name	Availability Zone	Status	Actions
i-f72500fc		us-west-2a	InService (i)	<a href="#">Remove from Load Balancer</a>

Red boxes highlight the "Instances" tab and the "InService" status cell.

Le load balancer est bien rattaché à l'instance créée par le service d'Auto Scaling

# Auto Scaling

EC2 Management Console - Mozilla Firefox

EC2 Management C... TP Cloud EC2

https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#LoadBalancers:

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

Spot Requests  
Reserved Instances

IMAGES  
AMIs  
Bundle Tasks

ELASTIC BLOCK STORE  
Volumes  
Snapshots

NETWORK & SECURITY  
Security Groups  
Elastic IPs  
Placement Groups

Load Balancers

Key Pairs  
Network Interfaces

AUTO SCALING  
Launch

Create Load Balancer Actions

Filter: Search Load Balancers

1 to 1 of 1

Load Balancer Name	DNS Name	Port Configuration	Availability Zones	Instance Count	Health
tpCloudAutoScaling-lb	tpCloudAutoScaling-lb-824525215.us-west-2.elb.amazonaws.com	80 (HTTP) forwarding to 80 (...)	us-west-2c, us-west-2b...	1 Instance	HTTP:

Description Instances Health Check Monitoring Security Listeners Tags

DNS Name: tpCloudAutoScaling-lb-824525215.us-west-2.elb.amazonaws.com (A Record)

Note: Because the set of IP addresses associated with a LoadBalancer can change over time, you should never create an "A" record with any specific IP address. If you want to use a friendly DNS name for your load balancer instead of the name generated by the Elastic Load Balancing service, you should create a CNAME record for the LoadBalancer DNS name, or use Amazon Route 53 to create a hosted zone. For more information, see [Using Domain Names With Elastic Load Balancing](#).

Scheme: internet-facing

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createinstance10. createinstance11. createinstance12. dashboard.aspx installationDESCLIA installationDESCLIA installationDESCLIA installationDESCLIA

Nous allons soumettre une requête au load balancer afin de vérifier son bon fonctionnement

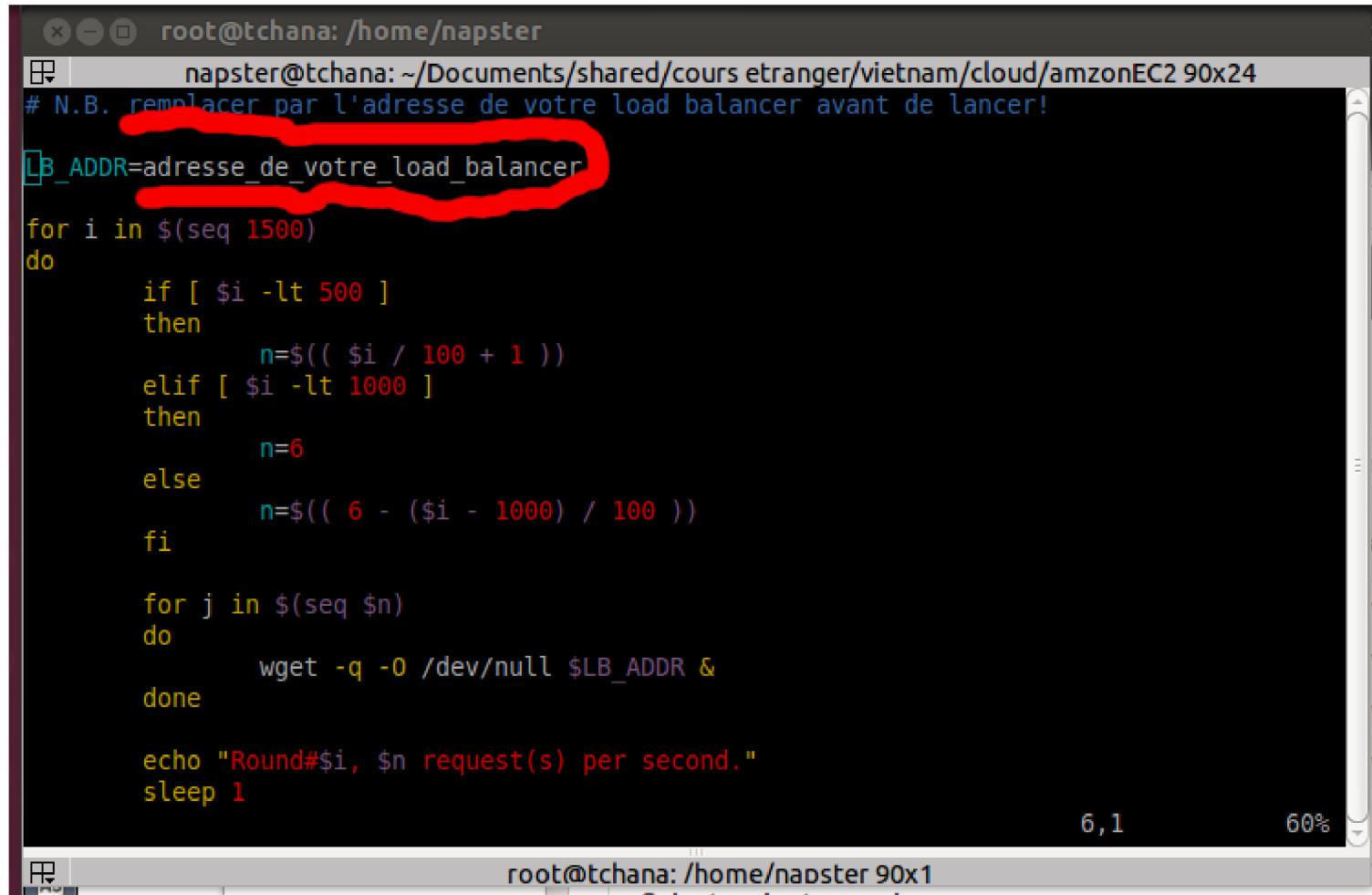
The screenshot shows a Mozilla Firefox browser window with the title bar "TP Cloud EC2 - Mozilla Firefox". The address bar displays "tpcloudautoscaling-lb-824525215.us-west-2.elb.amazonaws.com". The main content area of the browser shows the text "It works!" in large, bold, black font. Below it, smaller text reads "TP Cloud, 2014-2015" and "Génère une charge CPU artificielle en exécutant:" followed by a snippet of PHP code: "for (\$i = 1; \$i < pow(10,6); \$i++);". At the bottom of the browser window, there are several tabs with titles like "createinstance10", "createinstance11", "createinstance12", "dashdoku.eps", "InstallationDESLIA", etc.

Le load balancer relaie très bien notre requête



AWS

Surcharge de  
l'application



```
root@tchana: /home/napster
napster@tchana: ~/Documents/shared/cours etranger/vietnam/cloud/amzonEC2 90x24
# N.B. remplacer par l'adresse de votre load balancer avant de lancer!
LB_ADDR=adresse_de_votre_load_balancer
for i in $(seq 1500)
do
    if [ $i -lt 500 ]
    then
        n=$(( $i / 100 + 1 ))
    elif [ $i -lt 1000 ]
    then
        n=6
    else
        n=$(( 6 - ($i - 1000) / 100 ))
    fi
    for j in $(seq $n)
    do
        wget -q -O /dev/null $LB_ADDR &
    done
    echo "Round#$i, $n request(s) per second."
    sleep 1
done
```

Modifier le fichier load.sh et y renseigner l'adresse DNS du load balancer. Démarrer le script pour surcharger le site.

# Auto Scaling

EC2 Management Console - Mozilla Firefox

EC2 Management C... Xavier Moreau sur la... https://console.aws.amazon.com/ec2/v2/home?region=us-west-2#Instances: Google tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

EC2 Dashboard Events Tags Reports Limits

**INSTANCES**

- Instances** (selected)
- Spot Requests
- Reserved Instances

**IMAGES**

- AMIs
- Bundle Tasks

**ELASTIC BLOCK STORE**

- Volumes
- Snapshots

**NETWORK & SECURITY**

- Security Groups

Launch Instance Connect Actions

Filter: All instances All instance types Search Instances 1 to 5 of 5

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
	i-0722070c	t2.micro	us-west-2a	terminated		None	
	i-1e2f0a15	t2.micro	us-west-2a	running	2/2 checks ...	None	ec2-54-68-35-208.u
	i-2020052b	t2.micro	us-west-2a	terminated		None	
	i-2f2a0f24	t2.micro	us-west-2a	running	Initializing	None	ec2-54-68-22-111.u
	i-f72500fc	t2.micro	us-west-2a	terminated		None	

Select an instance above

```
napster@tchana: ~/Documents/shared/cours etranger/vietnam/cloud/amzonEC2
napster@tchana: ~/Documents/shared/cours etranger/vietnam/cloud/amzonEC2 90x6
Round#41, 1 request(s) per second.
Round#42, 1 request(s) per second.
Round#43, 1 request(s) per second.
Round#44, 1 request(s) per second.
^C
napster@tchana:~/Documents/shared/cours etranger/vietnam/cloud/amzonEC2$ ./load.sh
```

Feedback

La surcharge de l'application a provoqué l'ajout d'un réplica par le service d'Auto Scaling



## PaaS Amazon pour construire des applications web Auto Scalable

1. Gère le démarrage des VMs
2. Gère le déploiement des serveurs d'applications dans les VMs
3. Gère le load balancing
4. Gère l'auto scaling de l'application

....Bref vous n'avez presque rien à faire

# Elastic Beanstalk

AWS Management Console - Mozilla Firefox

AWS Management C... x +

https://console.aws.amazon.com/console/home?region=us-west-2

amazon EC2

Services Edit toCloudUser1 @ tpcloud n7 Oregon Help

## Amazon Web Services

Compute & Networking

- Direct Connect
- EC2
- Route 53
- VPC

Storage & Content Delivery

- CloudFront
- Glacier
- S3
- Storage Gateway

Database

- DynamoDB
- ElastiCache

Deployment & Management

- CloudFormation
- CloudTrail
- CloudWatch
- Elastic Beanstalk
- IAM
- OpsWorks
- Trusted Advisor

Analytics

- Data Pipeline
- Elastic MapReduce
- Kinesis

Mobile Services

App Services

- AppStream
- CloudSearch
- Elastic Transcoder
- SES
- SQS
- SWF

Applications

- WorkSpaces
- Zocalo

Additional Resources

Getting Started

See our documentation to get started and learn more about how to use our services.

AWS Console Mobile App

View your resources on the go with our AWS Console mobile app, available from [Amazon Appstore](#), [Google Play](#), or [iTunes](#).

AWS Marketplace

Find and buy software, launch with 1-Click and pay by the hour.

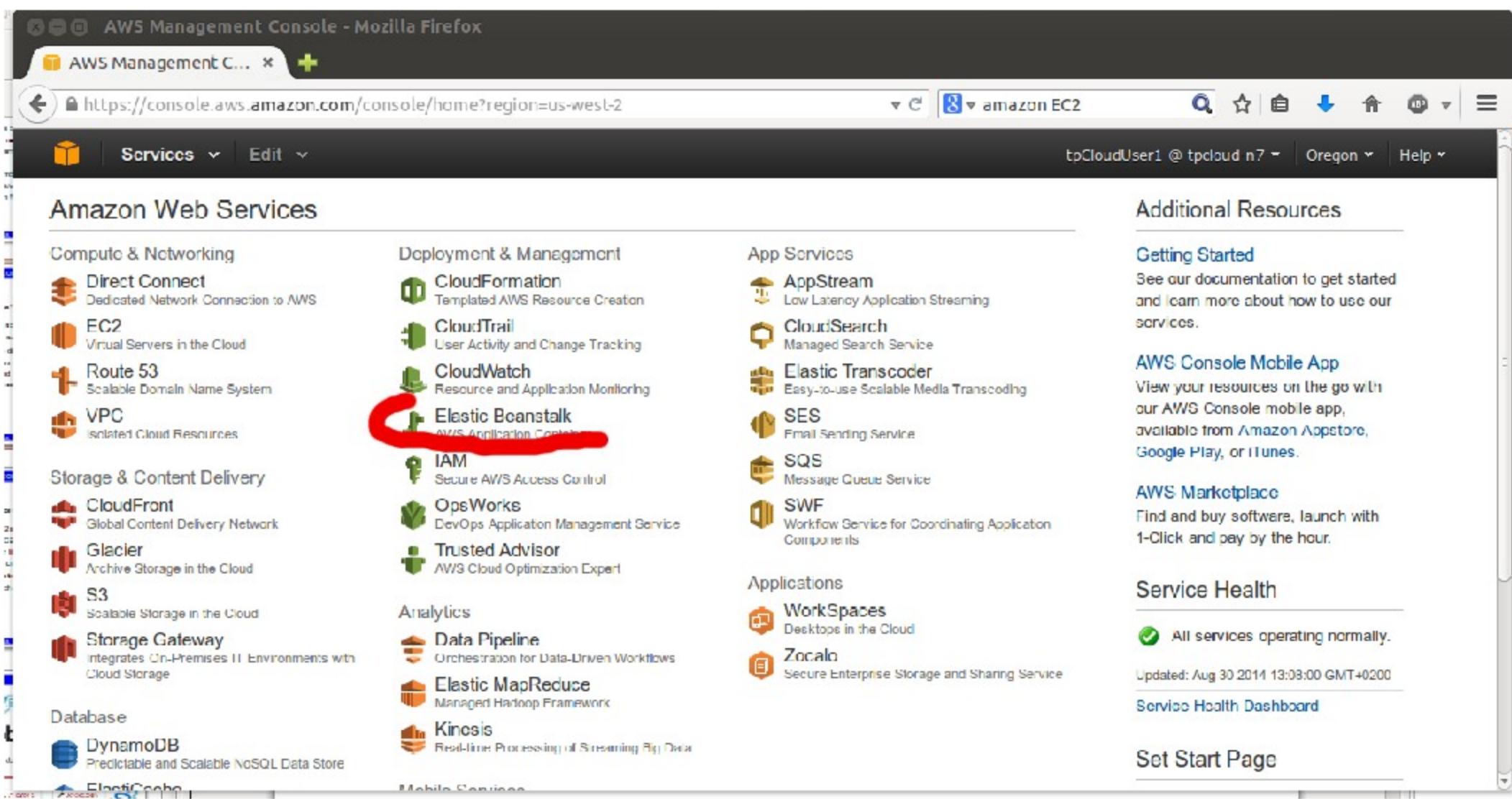
Service Health

All services operating normally.

Updated: Aug 30 2014 13:08:00 GMT+0200

Service Health Dashboard

Set Start Page



The screenshot shows the AWS Management Console home page. A red circle highlights the 'Elastic Beanstalk' service under the 'Deployment & Management' section. The page includes links for Compute & Networking, Storage & Content Delivery, Database, Analytics, and Mobile Services. It also features sections for App Services and Applications, along with links for Getting Started, AWS Console Mobile App, AWS Marketplace, Service Health, and Set Start Page.

Choisir le service Elastic Beanstalk de la liste des services AWS

# Elastic Beanstalk

The screenshot shows the AWS Elastic Beanstalk Management Console in Mozilla Firefox. The URL is [https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2#/getting\\_started](https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2#/getting_started). The browser tabs include 'Elastic Beanstalk M...' and 'Apache Tomcat/7.0.47 ...'. The page header shows 'Services' and 'Edit' dropdowns, and user information 'tpCloudUser1 @ tpcloud-n7' and 'Oregon'. A 'Create New Application' button is visible.

**Welcome to AWS Elastic Beanstalk**

With Elastic Beanstalk, you can **deploy**, **monitor**, and **scale** your application quickly and easily. Let us do the heavy lifting so you can focus on your business. To create a default environment and deploy a sample application in it in just one click, select a platform and click **Launch Now**.

A red box highlights the 'Tomcat' dropdown menu, and another red box highlights the 'Launch Now' button.

Looking for a different platform? [Let us know.](#)

Elastic Beanstalk will create an environment running Tomcat 7 Java 7 on 64bit Amazon Linux 2014.03 v1.0.4. [Change Defaults](#)

Get Started in Three Easy Steps

Choisir le serveur d'applications qui hébergera vos application. Tomcat dans notre cas.

Default-Environment - Dashboard - Mozilla Firefox

Default-Environment... +

https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2#/environment/dashbo tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

Elastic Beanstalk My First Elastic Beanstalk Application Create New Environment

**Info**  
Elastic Beanstalk is now creating your environment. When it has finished it will be running Sample Application.

My First Elastic Beanstalk Application ▶ Default-Environment ( Default-Environment-andb6ufraq.elasticbeanstalk.com ) Actions

Dashboard Overview Refresh

Configuration

Logs

Monitoring

Alarms

Events

Tags

Health Green Monitor

Running Version Sample Application Upload and Deploy

64bit Amazon Linux 2014.03 v1.0.4 running Tomcat 7 Java 7 Configuration

https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2

Votre environnement est opérationnel. Il ne manque plus que le déploiement de votre application.

# Elastic Beanstalk

Default-Environment - Dashboard - Mozilla Firefox

Default-Environment...

https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2#/environment/dashbo samuel eto'o

Events

Tags

64bit Amazon Linux 2014.03  
v1.0.4 running Tomcat 7 Java 7

Recent Events

Show All

Time	Type	Details
2014-09-01 17:55:56 UTC+0200	INFO	Successfully launched environment: Default-Environment
2014-09-01 17:55:56 UTC+0200	INFO	Application available at Default-Environment-andb6ufrac.elasticbeanstalk.com.
2014-09-01 17:55:37 UTC+0200	INFO	Adding instance 'i-fd12bef2' to your environment.
2014-09-01 17:55:02 UTC+0200	INFO	Added EC2 instance 'i-fd12bef2' to Auto Scaling Group 'awseb-e-qd3ummpxys-stack-AWSEBAutoScalingGroup-PUIAQ481QJ1S'.
2014-09-01 17:53:31 UTC+0200	INFO	Created CloudWatch alarm named: awseb-e-qd3ummpxys-stack-AWSEBCloudwatchAlarmLow-1Y1WK5WH3R2E1

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Vous pouvez voir tous les services qu'Elastic Beanstalk associe à votre application.

Alain Tchana, alain.tchana@enseeiht.fr

# Elastic Beanstalk

Screenshot of the Amazon Elastic Beanstalk console showing the "Default-Environment" dashboard for the application "My First Elastic Beanstalk Application".

The dashboard includes the following sections:

- Health:** Green (indicated by a green checkmark icon)
- Running Version:** Sample Application
- Configuration:** 64bit Amazon Linux 2014.03, v1.0.4 running on Java 7 Java 7
- Actions:** Upload and Deploy, Edit (button circled in red)

A sidebar on the left lists navigation options: Dashboard, Configuration, Logs, Monitoring, Alarms, Events, and Tags.

Recent Events are listed at the bottom of the dashboard.

Cliquer sur Edit afin d'avoir les configurations de votre serveur d'application.

# Elastic Beanstalk

The screenshot shows the AWS Elastic Beanstalk console interface. The left sidebar has links for Dashboard, Configuration (which is selected), Logs, Monitoring, Alarms, Events, and Tags. The main area shows the 'Web Tier' configuration for the 'Default-Environment'. A red box highlights the URL '(Default-Environment-andb6ufraq.elasticbeanstalk.com)'. Below it, a red bracket points to the scaling configuration section, which includes environment type (Load balanced, auto scaling), number of instances (1 - 4), scaling rules based on average network out, and instance types (t1.micro). The 'Instances' and 'Notifications' sections are also visible.

Default-Environment - Configuration - Mozilla Firefox

Default-Environment... Amazon Web Servic... +

https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2#/environment/configure Default-Environment-andb6ufraq.elasticbeanstalk.com

Samuel Eto'o tpCloudUser1 @ tpcloud-n7 Oregon Help

Services Edit

Elastic Beanstalk My First Elastic Beanstalk Application Create New Environment

My First Elastic Beanstalk Application > Default-Environment (Default-Environment-andb6ufraq.elasticbeanstalk.com)

Actions

Dashboard

Configuration

Logs

Monitoring

Alarms

Events

Tags

Web Tier

Scaling

Environment type: Load balanced, auto scaling

Number Instances: 1 - 4

Scale based on Average network out

Add Instance when > 6000000

Remove Instance when < 2000000

Instances

Instance type: t1.micro

Availability Zones: Any

Notifications

Notifications: Off

Software Configuration

Rolling Updates

Le nom DNS d'accès à votre application est déjà disponible.

The screenshot shows a Mozilla Firefox browser window with the title bar "Welcome - Mozilla Firefox". The address bar contains "default-environment-andb6ufraq.elasticbeanstalk.com". The main content area displays a blue "Congratulations" banner with white text: "Your first AWS Elastic Beanstalk Application is now running on your own dedicated environment in the AWS Cloud". Below the banner, the URL "aws.amazon.com/elasticbeanstalk/docs/" is visible. To the right of the banner, there is a "What's Next?" section with a list of links:

- [Learn how to build, deploy and manage your own applications using AWS Elastic Beanstalk](#)
- [AWS Elastic Beanstalk concepts](#)
- [Learn how to create new application versions](#)
- [Learn how to manage your application environments](#)

Below this is a "Download the AWS Reference Application" section with a link:

- [Explore a fully-featured reference application using the AWS SDK for Java](#)

Finally, there is an "AWS Toolkit for Eclipse" section with three links:

- [Developers may build and deploy AWS Elastic Beanstalk applications directly from Eclipse](#)
- [Get started with Eclipse and AWS Elastic Beanstalk by watching this video](#)
- [View all AWS Elastic Beanstalk documentation](#)

Une application web par défaut est déployée, celle que vous avez sous vos yeux.

## Elastic Beanstalk

Déploiement d'une  
application

# Elastic Beanstalk

Default-Environment - Dashboard - Mozilla Firefox

Default-Environment... [+](#)

<https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2#/environment/dashbo> samuel eto'o

Services Edit lpCloudUser1 @ lpcloud-n7 Oregon Help

Elastic Beanstalk My First Elastic Beanstalk Application Create New Environment

**Info**  
Elastic Beanstalk is now creating your environment. When it has finished it will be running Sample Application.

My First Elastic Beanstalk Application > Default-Environment ([Default-Environment-andb6ufrag.elasticbeanstalk.com](https://Default-Environment-andb6ufrag.elasticbeanstalk.com)) Actions

Dashboard Overview Refresh

Configuration

Logs

Monitoring

Alarms

Events

Tags

Health Green Monitor

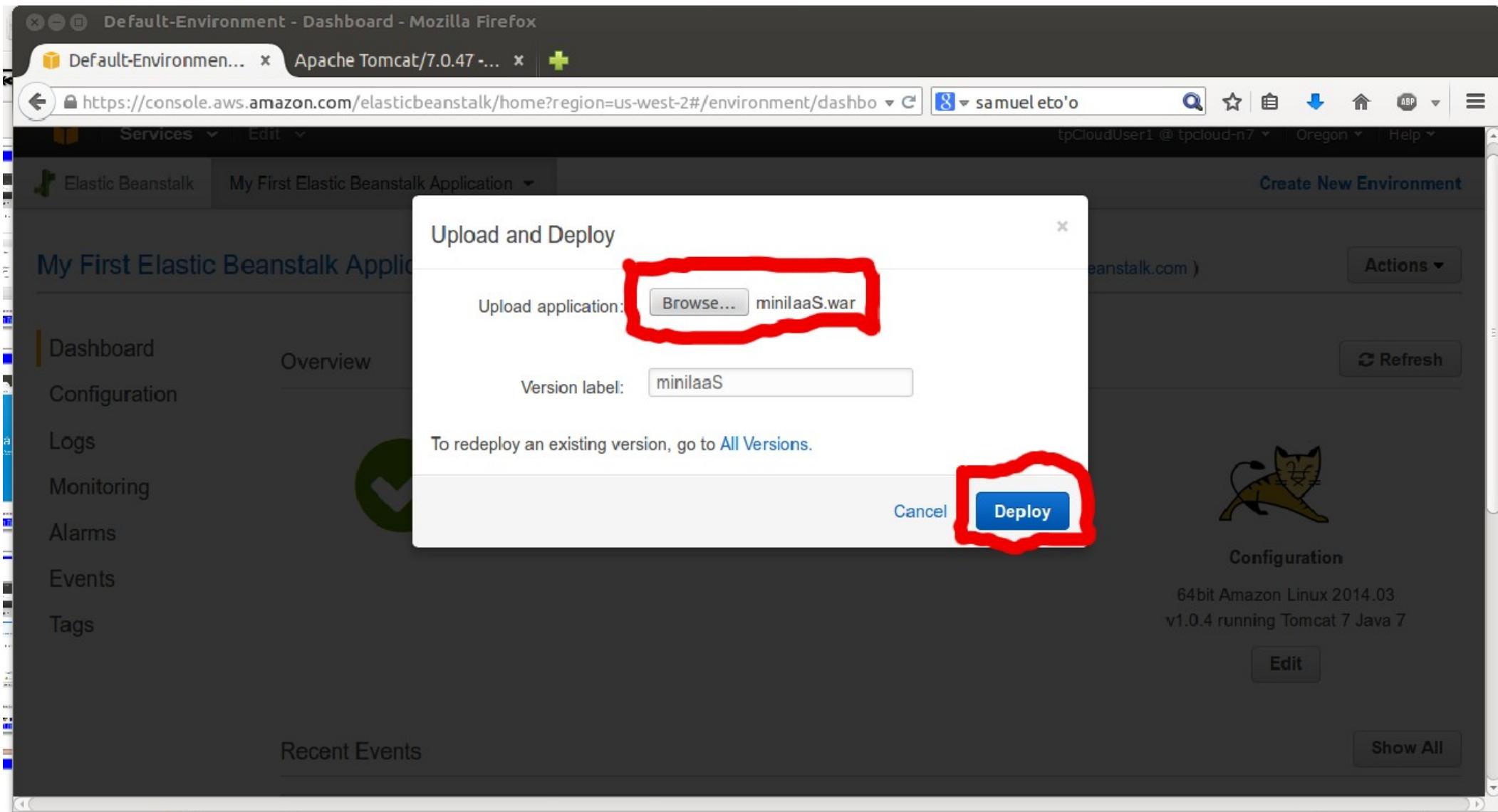
Running Version  
Sample Application  
[Upload and Deploy](#)

Configuration  
64bit Amazon Linux 2014.03  
v1.0.4 running Tomcat 7 Java 7

<https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2>

Déployer votre propre application. Ici nous déployons le minilaaS.war

# Elastic Beanstalk



Choisir sur votre machine l'archive minilaas.war. Elastic Beatalk réalise le déploiement pour vous

Screenshot of the AWS Elastic Beanstalk Dashboard for a Default-Environment environment.

The dashboard shows the following details:

- Health:** Green (indicated by a green circle with a white checkmark)
- Running Version:** minilaas
- Upload and Deploy:** Button
- Configuration:** 64bit Amazon Linux 2014.03 v1.0.4 running Tomcat 7 Java 7
- Recent Events:**

Time	Type	Details
2014-09-01 18:40:04 UTC+0200	INFO	Environment update completed successfully.
2014-09-01 18:40:04 UTC+0200	INFO	New application version was deployed to running EC2 instances.

Red annotations highlight the "Health Green" status, the "Running Version" section, and the most recent event in the "Recent Events" table.

L'application a été correctement déployée



Elastic Beanstalk

Test de l'application  
déployée



Vérifier en utilisant l'URL ci-dessous que votre application est en service.

URL : <http://default-environment-andb6ufraq.elasticbeanstalk.com/minilaas/PortailMinilaas.jsp>



Elastic Beanstalk



Arrêt de l'application

Elastic Beanstalk Applications - Mozilla Firefox

Elastic Beanstalk Ap... Apache Tomcat/7.0.47 ...

https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2#/applications?applicationName=My%20First%20Elastic%20Beanstalk%20Application

Samuel Eto'o

Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

Elastic Beanstalk My First Elastic Beanstalk Application Create New Application

Create an Application

All Applications

Filter by Application Name:

Actions

My First Elastic Beanstalk Application

Default-Environment

Environment tier: Web Server 1.0  
Running versions: minilaas  
Last modified: 2014-09-01 18:40:05 UTC+0200  
URL: Default-Environment-andb6ufraq.elastic...

Elastic Beanstalk applications are a logical collection of components, including environments, versions, and saved configurations. An environment encapsulates all the AWS resources needed to deploy and run your application. An application can have multiple environments to run multiple stages (such as production and staging).

For different projects, you can create more Elastic Beanstalk applications.

Create a New Application

Learn More

Get Started using Elastic Beanstalk

Nous allons supprimer l'application

Elastic Beanstalk Applications - Mozilla Firefox

Elastic Beanstalk Ap... x Apache Tomcat/7.0.47 ... x +

https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2#/applications?applicationName=My+First+Elastic+Beanstalk+Application

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Services Edit tpCloudUser1 @ tpcloud-n7 Oregon Help

Elastic Beanstalk My First Elastic Beanstalk Application Create New Application

Create an Application

All Applications

Filter by Application Name:

Actions

Launch New Environment

Delete Application

View Application Versions

View Saved Configurations

Elastic Beanstalk applications are a logical collection of components, including environments, versions, and saved configurations. An environment encapsulates all the AWS resources needed to deploy and run your application. An application can have multiple environments to run multiple stages (such as production and staging).

For different projects, you can create more Elastic Beanstalk applications.

Create a New Application

Learn More

Get Started using Elastic Beanstalk

Default-Environment

Environment tier: Web Server 1.0

Running versions: minilaas

Last modified: 2014-09-01 18:40:05 UTC+0200

URL: Default-Environment-andb6ufraq.elasticbeanstalk.com

# Elastic Beanstalk

Elastic Beanstalk Applications - Mozilla Firefox

Elastic Beanstalk Ap... Apache Tomcat/7.0.47 ...

https://console.aws.amazon.com/elasticbeanstalk/home?region=us-west-2#/applications?applicationName=My+First+Elastic+Beanstalk+Application

Samuel Eto'o

Services Edit

Elastic Beanstalk My First Elastic Beanstalk Application Name: Create New Application

Delete Application

Are you sure you want to delete the application: My First Elastic Beanstalk Application?

Cancel Delete

Environment tier: Web Server 1.0  
Running versions: minilaaS  
Last modified: 2014-09-01 18:40:05 UTC+0200  
URL: Default-Environment-andb6ufraq.elasticbeanstalk.com

Create an Application

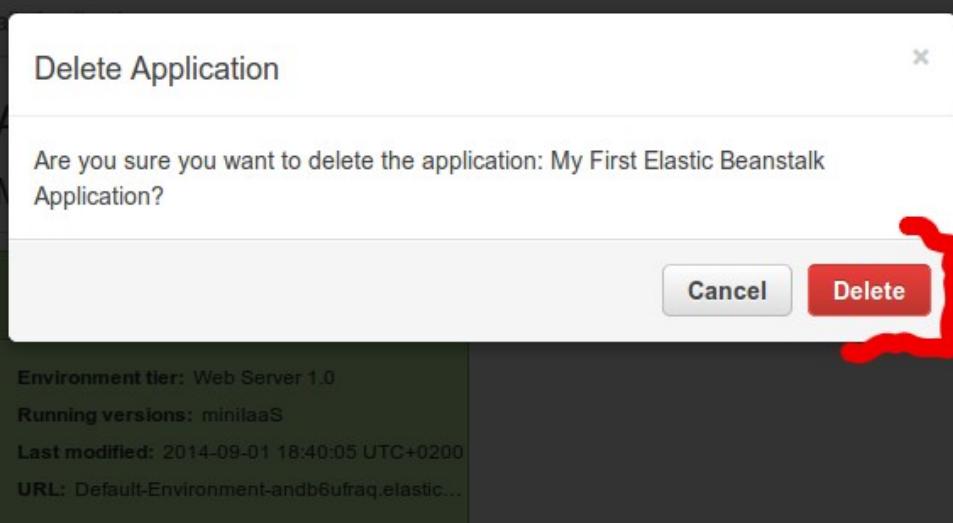
Elastic Beanstalk applications are a logical collection of components, including environments, versions, and saved configurations. An environment encapsulates all the AWS resources needed to deploy and run your application. An application can have multiple environments to run multiple stages (such as production and staging).

For different projects, you can create more Elastic Beanstalk applications.

Create a New Application

Learn More

Get Started using Elastic Beanstalk





AWS

Conclusion

## Nous avons découvert 4 services de AWS

1. Démarrage de VM et persistance
2. Load balancing
3. Auto Scaling
4. Elastic Beanstalk

....A vous de découvrir le reste

# Roboconf

## **Une Solution pour des Déploiements Elastiques**

## ⚡ Projet

## Utilisateurs

 Développeurs

# Cloud Computing

## Introduction à AWS : EC2, Auto Scaling, et Elastic Beanstalk

Alain Tchana, Maître de Conférence  
Institut National Polytechnique de Toulouse

IRIT / Équipe SEPIA

[alain.tchana@enseeiht.fr](mailto:alain.tchana@enseeiht.fr)

**Roboconf**