

Creating an AutoScale Group in AWS

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E-mail or mobile number:

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-Alfresco

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An  company

Select EC2

Screenshot of the AWS Management Console homepage showing the AWS services menu.

The top navigation bar includes: Services (dropdown), Resource Groups (dropdown), a search icon, a bell icon, and a user profile for João Co.

The main content area is titled "AWS services" and features a search bar with placeholder text "Find a service by name (for example, EC2, S3, Elastic Beanstalk)".

The "All services" section is expanded, showing the following categories:

- Compute**: EC2, EC2 Container Service, Lightsail, Elastic Beanstalk, Lambda, Batch
- Storage**: S3, EFS, Glacier, Storage Gateway
- Database**: RDS, DynamoDB, ElastiCache, Redshift
- Developer Tools**: CodeCommit, CodeBuild, CodeDeploy, CodePipeline, X-Ray
- Management Tools**: CloudWatch, CloudFormation, CloudTrail, Config, OpsWorks, Service Catalog, Trusted Advisor, Managed Services
- Security, Identity & Compliance**
- Internet of Things**: AWS IoT
- Game Development**: Amazon GameLift
- Mobile Services**: Mobile Hub, Cognito, Device Farm, Mobile Analytics, Pinpoint
- Application Services**: Step Functions, SWF, API Gateway, Elastic Transcoder

A large green arrow points from the text "Select EC2" in the original image to the "EC2" link under the Compute category.

Featured next (partial view):

- Manage your usage budget
- Get best practices

What's new? (partial view):

- Announcing AWS E
- Now generally available
- scientists, and engineers. [Learn more](#)

[See all](#)

Launch an Instance

AWS Services Edit

EC2 Dashboard

- Events
- Tags
- Reports
- Limits

INSTANCES

- Instances
- Spot Requests
- Reserved Instances
- Scheduled Instances
- Commands
- Dedicated Hosts

IMAGES

- AMIs
- Bundle Tasks

ELASTIC BLOCK STORE

- Volumes
- Snapshots

NETWORK & SECURITY

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

Resources

You are using the following Amazon EC2 resources in the US East (N. Virginia) region:

0 Running Instances	0 Elastic IPs
0 Dedicated Hosts	0 Snapshots
0 Volumes	0 Load Balancers
4 Key Pairs	6 Security Groups
0 Placement Groups	

Need fast, reliable, scalable, fully-managed message queuing? Try [Amazon Simple Queue Service](#).

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 la  ne US East (N. Virginia) region

Service Health

Service Status:

- US East (N. Virginia): This service is operating normally

Availability Zone Status:

- us-east-1a: Availability zone is operating normally

Scheduled Events

US East (N. Virginia):

No events

Pick AWS Linux from QuickStart

Screenshot of the AWS QuickStart wizard Step 1: Choose an Amazon Machine Image (AMI). The interface shows a list of AMIs with filters on the left and a sidebar on the right.

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.

Quick Start

My AMIs

AWS Marketplace

Community AMIs

Free tier only (i)

Amazon Linux Free tier eligible

Red Hat Enterprise Linux 7.2 (HVM), SSD Volume Type - ami-2051294a

SUSE Linux Enterprise Server 12 SP1 (HVM), SSD Volume Type - ami-b7b4fedd

Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-fce3c696

Microsoft Windows Server 2012 R2 Base - ami-3586ac5f

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

Root device type: ebs Virtualization type: hvm

Red Hat Enterprise Linux version 7.2 (HVM), EBS General Purpose (SSD) Volume Type

Root device type: ebs Virtualization type: hvm

SUSE Linux Enterprise Server 12 Service Pack 1 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

Root device type: ebs Virtualization type: hvm

Ubuntu Server 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

Microsoft Windows Server 2012 R2 Base

Cancel and Exit

1 to 22 of 22 AMIs

Select 32-bit

Select 64-bit

Select 32-bit

Select 64-bit

Select 32-bit

Select 64-bit



Pick a free tier machine

AWS Services Edit

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)

T2 instances are VPC-only. Your T2 instance will launch into your VPC. [Learn more](#) about T2 and VPC.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium		4	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.4xlarge	16	64	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.10xlarge	40	160	EBS only	Yes	10 Gigabit
<input type="checkbox"/>	General purpose	m3.medium	1	3.75	1 x 4 (SSD)	-	Moderate

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

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Select a subnet and enable monitoring

Screenshot of the AWS Lambda console showing the "Step 3: Configure Instance Details" page. The page includes fields for Number of instances (1), Purchasing option (Request Spot instances), Network (vpc-ed028988), Subnet (subnet-89f953fe), Auto-assign Public IP (Use subnet setting (Enable)), IAM role (None), Shutdown behavior (Stop), Enable termination protection (Protect against accidental termination), Monitoring (Enable CloudWatch detailed monitoring), and Tenancy (Shared - Run a shared hardware instance). A large green arrow points to the Subnet dropdown. Another green arrow points to the Monitoring checkbox. A third green arrow points to the "Review and Launch" button at the bottom right.

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances Launch into Auto Scaling Group [i](#)

Purchasing option Request Spot instances

Network [vpc-ed028988 \(172.30.0.0/16\)](#) [Create new VPC](#)

Subnet [subnet-89f953fe\(172.30.0.0/24\) | us-east-1a](#) [Create new subnet](#)
251 IP Addresses available

Auto-assign Public IP [Use subnet setting \(Enable\)](#)

IAM role [None](#) [Create new IAM role](#)

Shutdown behavior [Stop](#)

Enable termination protection Protect against accidental termination

Monitoring Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy [Shared - Run a shared hardware instance](#)
Additional charges will apply for dedicated tenancy

Network interfaces [i](#)

Device	Network Interface	Subnet	Primary IP	Secondary IP addresses
eth0	New network interface ▼	subnet-89f953fe ▼	Auto-assign	Add IP

Add Device [Advanced Details](#)

Cancel Previous Review and Launch Next: Add Storage

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Use default storage

Screenshot of the AWS EC2 Instance Creation Wizard - Step 4: Add Storage.

The screenshot shows the configuration for adding storage to an instance. A green arrow points to the "Snapshot" field, which contains the identifier "snap-6618acf0". Another green arrow points to the "Next: Tag Instance" button at the bottom right of the page.

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.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Delete on Termination	Encrypted
Root	/dev/xvda	snap-6618acf0	8	General Purpose SSD (GP2)	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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Don't use tags for now...

Screenshot of the AWS EC2 Instance Creation Wizard - Step 5: Tag Instance

The screenshot shows the "Tag Instance" step of the EC2 instance creation process. The top navigation bar includes "AWS", "Services", "Edit", and user information "João Coelho Garcia". Below the navigation is a progress bar with steps 1-7: Choose AMI, Choose Instance Type, Configure Instance, Add Storage, Tag Instance (highlighted in orange), Configure Security Group, and Review.

Step 5: Tag Instance
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 EC2 resources.

Key (127 characters maximum) | Value (255 characters maximum)

X

Create Tag (Up to 10 tags maximum)

Buttons at the bottom: Cancel, Previous, **Review and Launch**, Next: Configure Security Group. A large green arrow points upwards from the bottom right towards the "Review and Launch" button.

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Add inbound network rules to security group

Screenshot of the AWS EC2 instance creation wizard, Step 6: Configure Security Group.

The screenshot shows the configuration of a new security group named "launch-wizard-1". The "Type" dropdown is set to "Custom TCP Rule". Two rules are listed:

Type	Protocol	Port Range	Source
SSH	TCP	22	Anywhere (0.0.0.0/0)
Custom TCP Rule	TCP	8000	Anywhere (0.0.0.0/0)

A large green arrow points from the "Type" dropdown to the "Custom TCP Rule" option in the list. Another green arrow points from the "Custom TCP Rule" option to the second rule's port range field (8000). A third green arrow points from the second rule's port range field up towards the "Source" field.

Step 6: Configure Security Group

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

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

Security group name:

Description:

Type	Protocol	Port Range	Source
SSH	TCP	22	Anywhere (0.0.0.0/0)
Custom TCP Rule	TCP	8000	Anywhere (0.0.0.0/0)

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

Cancel Previous Review and Launch

Add name to security group

AWS Services Edit

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

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

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

Security group name: CNV-ssh+http 

Description: launch-cri-2016-03-01T14:27:36.929+00:00

Type	Protocol	Port Range	Source
SSH	TCP	22	Anywhere 0.0.0.0/0
Custom TCP Rule	TCP	80	Anywhere 0.0.0.0/0

Add Rule

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

Review and Launch 

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Review and Launch

AWS Services Edit

João Coelho Garcia N. Virginia Support

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 instances' security. Your security group, CNV-ssh+http, 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](#)

Amazon Linux AMI 2015.09.2 (HVM), SSD Volume Type - ami-8fceee4e5
Free tier eligible
The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.
Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

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

Security Groups [Edit security groups](#)

Security group name: CNV-ssh+http
Description: launch-wizard-1 created 2016-03-01T14:27:36.929+00:00

Type <small>i</small>	Protocol <small>i</small>	Port Range <small>i</small>	Source <small>i</small>
SSH	TCP	22	0.0.0.0/0
HTTP	TCP	80	0.0.0.0/0

Instance Details [Edit instance details](#)

Storage [Edit storage](#)

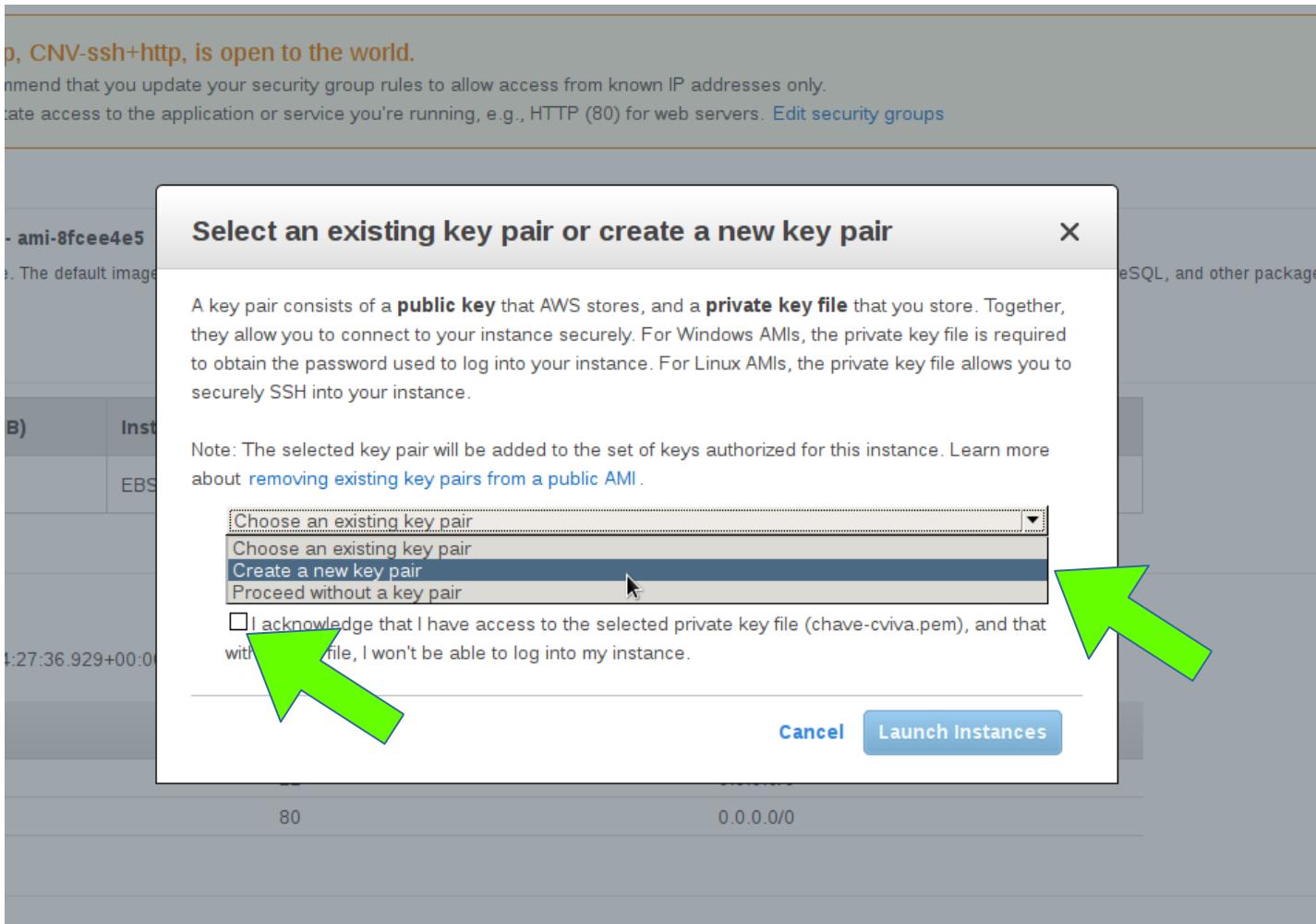
Tags [Edit tags](#)

Launch Define key pair and launch

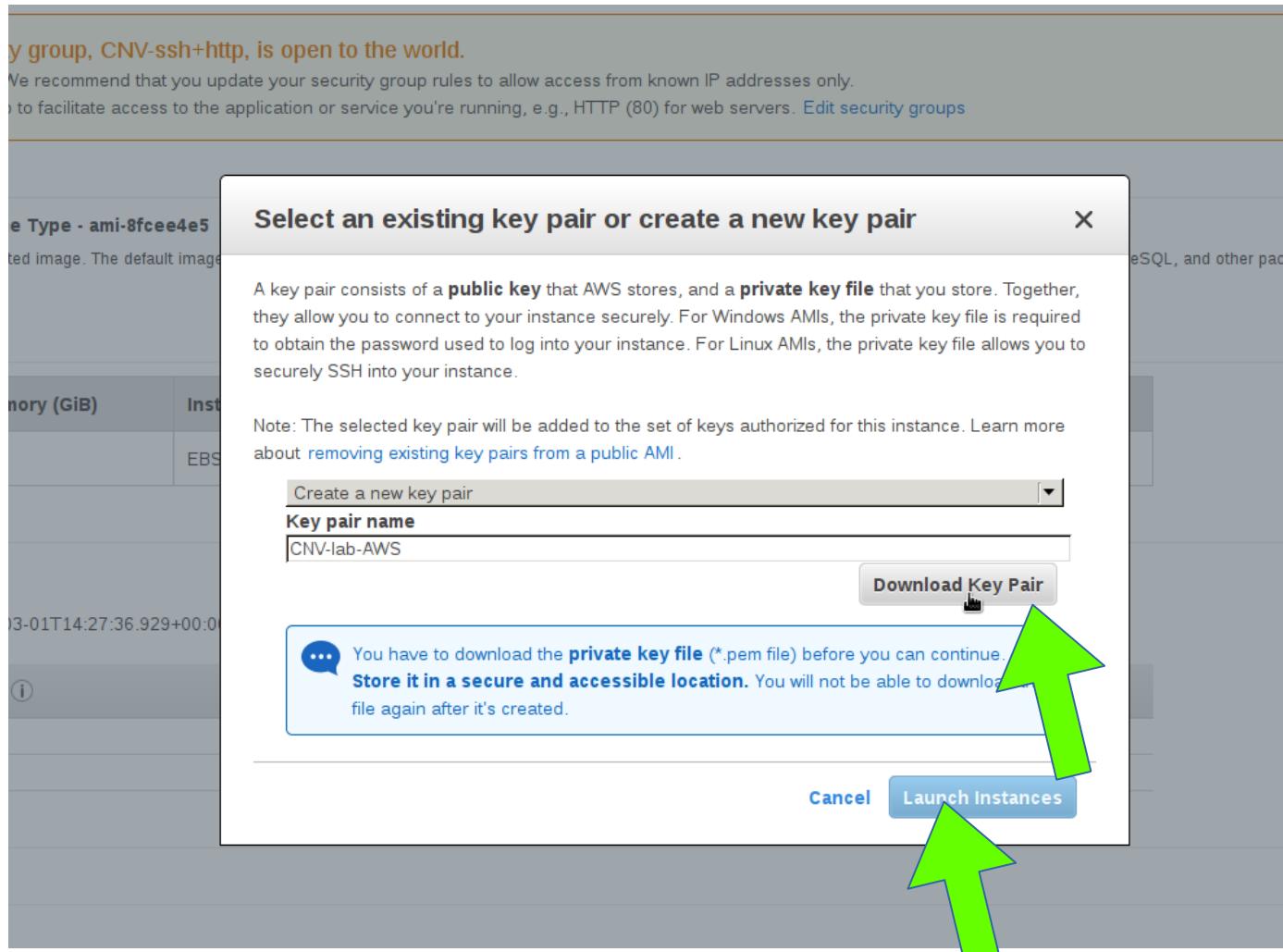
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Create a key pair to connect to instance



Download key pair and launch



Instances starting...



Launch Status

Your instances are now launching

The following instance launches have been initiated: i-34d477b0 [View launch log](#)

Get notified of estimated charges

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

How to connect to your instances

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

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

Here are some helpful resources to get you started

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

While your instances are launching you can also

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

[Create and attach additional EBS volumes](#) (Additional charges may apply)

[Manage security groups](#)

[View Instances](#)



Check starting instances

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with navigation links for EC2 Dashboard, Events, Tags, Reports, Limits, Instances (which is selected), Spot Requests, Reserved Instances, Scheduled Instances, Commands, Dedicated Hosts, Images (AMIs), and Elastic Block Store (Volumes, Snapshots). Below these are Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers), Auto Scaling (Launch Configurations, Auto Scaling Groups), and a Feedback link.

The main content area has tabs for Launch Instance, Connect, and Actions. It includes a search bar and a table header with columns: Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS, Public IP, Key Name, Monitoring, and Launch Time. A single instance is listed:

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Public IP	Key Name	Monitoring	Launch Time
	i-34d477b0	t2.micro	us-east-1a	pending	Initializing	None		54.210.176.57	CNV-lab-AWS	enabled	March 1, 2016 at 2:33:44 P...

A large green arrow points to the instance row. Below the table, a detailed view for instance i-34d477b0 is shown with tabs for Description, Status Checks, Monitoring, and Tags. The Description tab displays the following details:

Instance ID	Public DNS
i-34d477b0	54.210.176.57
Instance state	pending
Instance type	t2.micro
Private IPs	172.30.0.221
Secondary private IPs	vpc-ed028988
Subnet ID	subnet-89f953fe

On the right side of the detailed view, there are sections for Public DNS, Public IP, Elastic IP, Availability zone, Security groups, Scheduled events, AMI ID, and Platform.

At the bottom, there are links for Feedback, English, and a footer with copyright information: © 2008 - 2016, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy and Terms of Use.

Now it's running!!

Screenshot of the AWS EC2 Dashboard showing a running instance.

The dashboard includes the following sections:

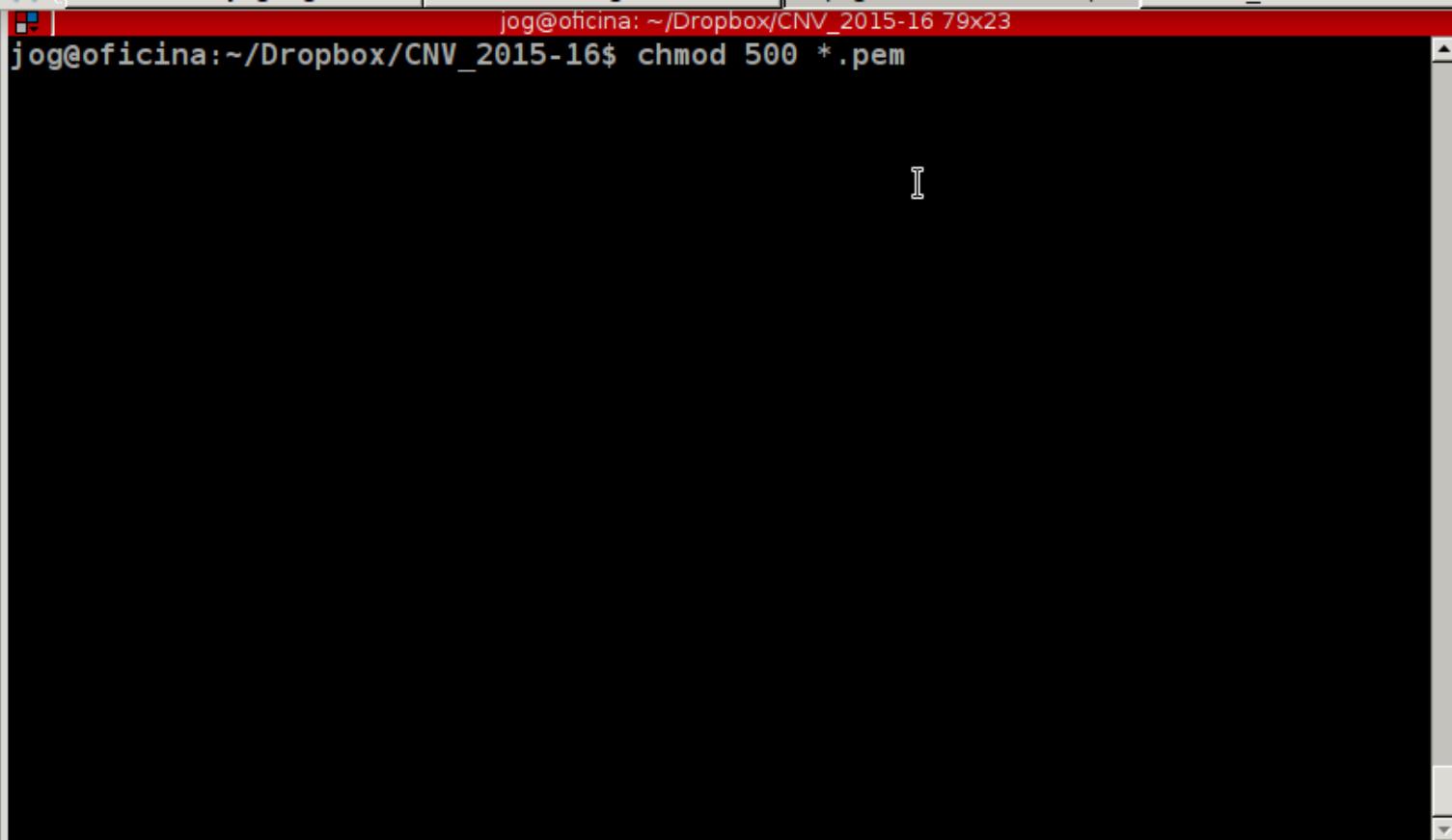
- EC2 Dashboard**: A sidebar with links to Events, Tags, Reports, Limits, Instances, Spot Requests, Reserved Instances, Scheduled Instances, Commands, Dedicated Hosts, AMIs, and Auto Scaling.
- Instances**: A table showing the instance details for i-34d477b0, including Name, Instance ID, Instance Type, Availability Zone, Status Checks, Alarm Status, Public DNS, Public IP, Key Name, Monitoring, and Launch Time.
- Description**: A detailed view of the instance configuration, including Secondary private IPs, Network interfaces, Source/dest. check, EBS-optimized, Root device type, and Block devices.
- Status Checks**: Shows 2/2 checks passed.
- Monitoring**: Enabled.
- Tags**: None.

Two large green arrows point upwards from the bottom of the page towards the status bar at the top of the screenshot.

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Decrease permissions on key



A screenshot of a terminal window titled 'Terminal' with a red header bar. The window shows a command-line interface with the following text:

```
jog@oficina: ~/Dropbox/CNV_2015-16 79x23
jog@oficina:~/Dropbox/CNV_2015-16$ chmod 500 *.pem
```

The terminal window has a dark background and light-colored text. It includes standard terminal elements like a title bar, a scroll bar on the right side, and a cursor icon.

Ssh into instance

The screenshot shows a terminal window with the following command history:

```
jog@oficina: ~/Dropbox/CNV_2015-16
jog@oficina: ~/Dropbox/CNV_2015-16 86x23
jog@oficina:~/Dropbox/CNV_2015-16$ chmod 500 *.pem
jog@oficina:~/Dropbox/CNV_2015-16$ ssh -i CNV-lab-AWS.pem -l ec2-user 54.210.176.57
```

The terminal window has a red header bar. The title bar shows the current directory as `jog@oficina: ~/Dropbox/CNV_2015-16`. The window frame includes standard window controls (minimize, maximize, close) and scroll bars on the right side.

Logged in!

```
ec2-user@ip-172-30-0-221:~  
ec2-user@ip-172-30-0-221:~ 86x23  
  
jog@oficina:~/Dropbox/CNV_2015-16$ ssh -i CNV-lab-AWS.pem -l ec2-user 54.210.176.57  
Last login: Tue Mar  1 14:47:53 2016 from officina.gsd.inesc-id.pt  
  
      _\|_(_\|_ /     Amazon Linux AMI  
      __|\_\_|__|  
  
https://aws.amazon.com/amazon-linux-ami/2015.09-release-notes/  
No packages needed for security; 3 packages available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-30-0-221 ~]$
```

Update packages

```
ec2-user@ip-172-30-0-221:~  
ec2-user@ip-172-30-0-221:~ 86x23  
  
jog@oficina:~/Dropbox/CNV_2015-16$ ssh -i CNV-lab-AWS.pem -l ec2-user 54.210.176.57  
Last login: Tue Mar  1 14:47:53 2016 from officina.gsd.inesc-id.pt  
  
      _\|_(_\|_ /     Amazon Linux AMI  
      __|\_\_|__|  
  
https://aws.amazon.com/amazon-linux-ami/2015.09-release-notes/  
No packages needed for security; 3 packages available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-30-0-221 ~]$ sudo yum update
```

Updated!

```
ec2-user@ip-172-30-0-221:~          ec2-user@ip-172-30-0-221:~ 86x23
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Atualizando: python27-boto-2.39.0-1.0.amzn1.noarch      1/6
  Atualizando: tzdata-java-2016a-1.36.amzn1.noarch       2/6
  Atualizando: tzdata-2016a-1.36.amzn1.noarch           3/6
  Limpeza     : python27-boto-2.38.0-1.7.amzn1.noarch      4/6
  Limpeza     : tzdata-java-2015g-1.35.amzn1.noarch       5/6
  Limpeza     : tzdata-2015g-1.35.amzn1.noarch           6/6
  Verificando : tzdata-2016a-1.36.amzn1.noarch           1/6
  Verificando : tzdata-java-2016a-1.36.amzn1.noarch       2/6
  Verificando : python27-boto-2.39.0-1.0.amzn1.noarch      3/6
  Verificando : python27-boto-2.38.0-1.7.amzn1.noarch       4/6
  Verificando : tzdata-2015g-1.35.amzn1.noarch           5/6
  Verificando : tzdata-java-2015g-1.35.amzn1.noarch       6/6

Atualizado:
  python27-boto.noarch 0:2.39.0-1.0.amzn1      tzdata.noarch 0:2016a-1.36.amzn1
  tzdata-java.noarch 0:2016a-1.36.amzn1

Complete!
[ec2-user@ip-172-30-0-221 ~]$
```

Install Java SDK

```
ec2-user@ip-172-30-0-221:~ ec2-user@ip-172-30-0-221:~ 86x26
Linux ip-172-30-0-221 4.1.17-22.30.amzn1.x86_64 #1 SMP Fri Feb 5 23:44:22 UTC 2016 x86_64 x86_64 GNU/Linux
[ec2-user@ip-172-30-0-221 ~]$ sudo yum search jdk
Loaded plugins: priorities, update-motd, upgrade-helper
=====
java-1.6.0-openjdk.x86_64 : OpenJDK Runtime Environment
java-1.6.0-openjdk-demo.x86_64 : OpenJDK Demos
java-1.6.0-openjdk-devel.x86_64 : OpenJDK Development Environment
java-1.6.0-openjdk-javadoc.x86_64 : OpenJDK API Documentation
java-1.6.0-openjdk-src.x86_64 : OpenJDK Source Bundle
java-1.7.0-openjdk.x86_64 : OpenJDK Runtime Environment
java-1.7.0-openjdk-demo.x86_64 : OpenJDK Demos
java-1.7.0-openjdk-devel.x86_64 : OpenJDK Development Environment
java-1.7.0-openjdk-javadoc.noarch : OpenJDK API Documentation
java-1.7.0-openjdk-src.x86_64 : OpenJDK Source Bundle
java-1.8.0-openjdk.x86_64 : OpenJDK Runtime Environment
java-1.8.0-openjdk-demo.x86_64 : OpenJDK Demos
java-1.8.0-openjdk-devel.x86_64 : OpenJDK Development Environment
java-1.8.0-openjdk-headless.x86_64 : OpenJDK Runtime Environment
java-1.8.0-openjdk-javadoc.noarch : OpenJDK API Documentation
java-1.8.0-openjdk-src.x86_64 : OpenJDK Source Bundle
ldapjdk-javadoc.noarch : Javadoc for ldapjdk
ldapjdk.noarch : The Mozilla LDAP Java SDK

Name and summary matches only, use "search all" for everything.
[ec2-user@ip-172-30-0-221 ~]$ sudo yum install java-1.7.0-openjdk-devel.x86_64
```

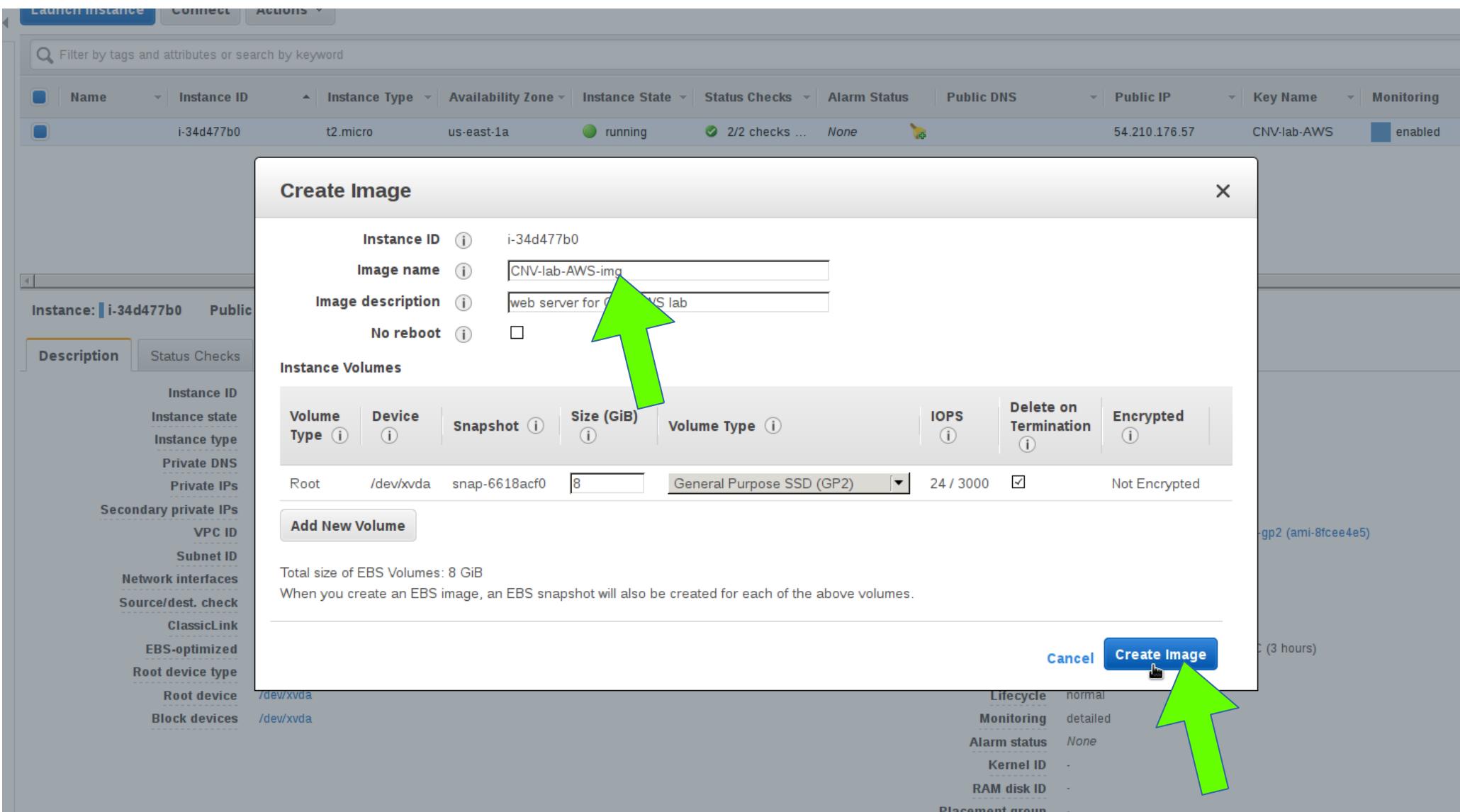
Setup your Application Software

- At this point, setup up the Java application that will be used (transfer it using scp or develop it at the AWS instance directly)
- Don't forget to make sure that the application server is running at startup, e.g. by launching it inside /etc/rc.local or an equivalent mechanism.

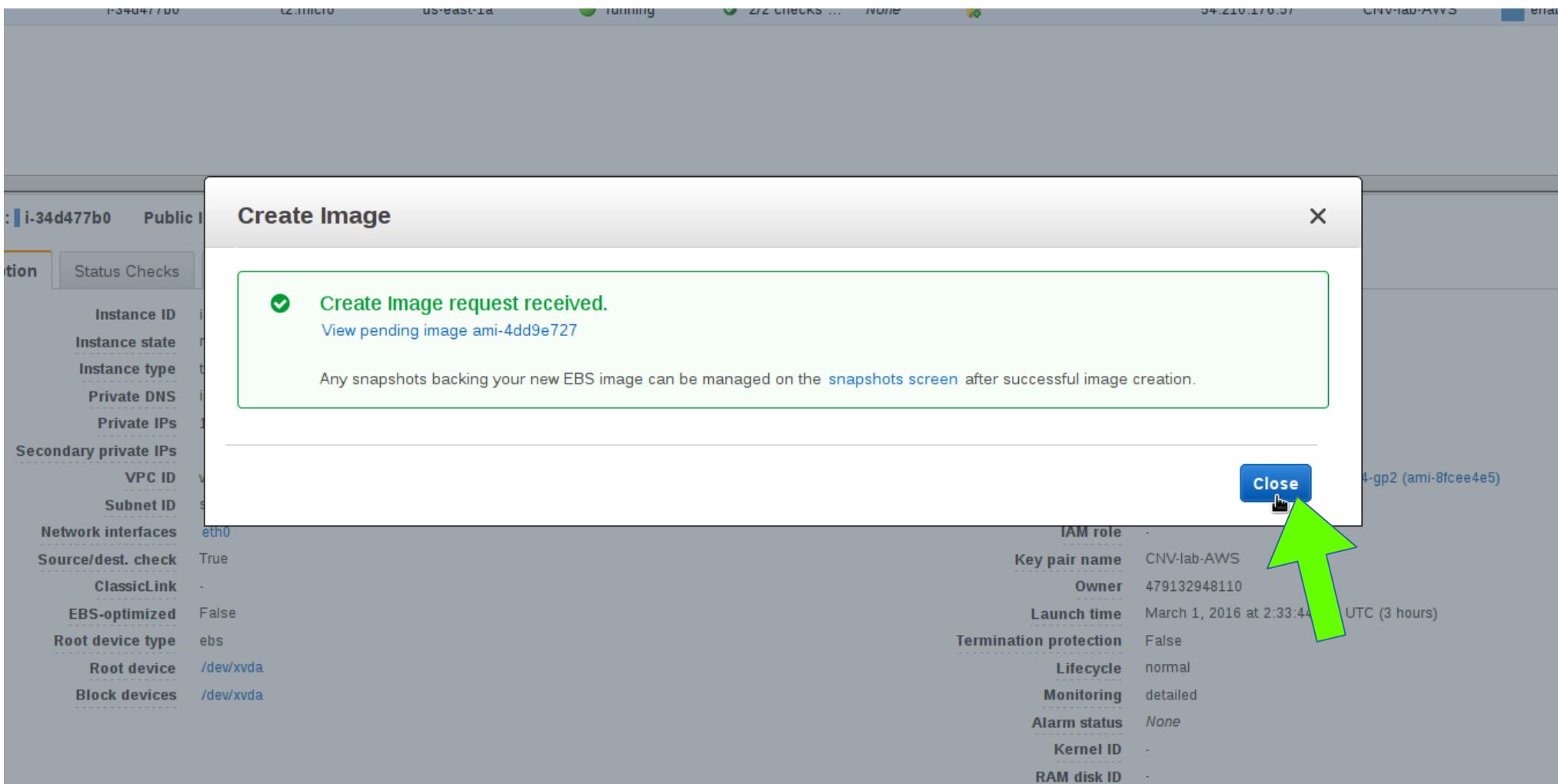
Once the web server is running at startup (e.g. /etc/rc.local), create image.

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The main area displays a table of instances. A context menu is open over an instance named i-34d477b0. The menu options are: Connect, Get Windows Password, Launch More Like This, Instance State, Instance Settings, Image, Networking, ClassicLink, and CloudWatch Monitoring. The 'Image' option is highlighted with a green arrow pointing to its 'Create Image' sub-option. The instance details shown include Instance ID (i-34d477b0), Instance state (running), Instance type (t2.micro), Private DNS (ip-172-30-0-221.ec2.internal), Private IPs (172.30.0.221), Secondary private IPs (VPC ID: vpc-ed028988, Subnet ID: subnet-89f953fe), Network interfaces (eth0), Source/dest. check (True), ClassicLink (-), EBS-optimized (False), Root device type (ebs), Root device (/dev/xvda), and Block devices (/dev/xvda). To the right of the instance table, there's a detailed view of the instance's configuration with fields like Public DNS, Public IP, Elastic IP, Availability zone, Security groups, Scheduled events, AMI ID, Platform, IAM role, Key pair name, Owner, Launch time, Termination protection, Lifecycle, Monitoring, Alarm status, and Kernel ID.

Give it a name and create it



It may take a little time for the request to be fulfilled



Once the image is created, right click the instance and terminate it.

The screenshot shows the AWS EC2 Dashboard. On the left, the navigation pane includes links for EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces, Load Balancing, Load Balancers, and Auto Scaling. The Instances section is currently selected. In the main content area, a table lists an instance: i-34d477b0, t2.micro, running, with a Public IP of 54.210.176.57. A modal dialog titled "Stop Instances" is open over the table. The dialog asks, "Are you sure you want to stop these instances?", listing the instance i-34d477b0. It contains a warning message: "Note that when your instances are stopped: Any data on the ephemeral storage of your instances will be lost." At the bottom of the dialog are "Cancel" and "Yes, Stop" buttons. A large green arrow points to the "Yes, Stop" button. The background table also displays other instance details like VPC ID, Subnet ID, Network interfaces, and Root device type.

It's terminated...

Let's create a load balancer...

The screenshot shows the AWS EC2 Dashboard. On the left, there is a sidebar with various navigation links. A large green arrow points upwards from the 'Load Balancers' link under the 'LOAD BALANCING' section. Another green arrow points upwards from the 'terminated' status of an instance in the main list. The main area displays a table of instances, with one row highlighted for an instance named 'i-34d477b0'. Below the table, a detailed view of this instance is shown, including its configuration and metadata.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
	i-34d477b0	t2.micro	us-east-1a	terminated	None		

Instance: i-34d477b0 Private IP: 172.30.0.221

Description **Status Checks** **Monitoring** **Tags**

Instance ID	i-34d477b0	Public DNS	-
Instance state	stopped	Public IP	-
Instance type	t2.micro	Elastic IP	-
Private DNS	ip-172-30-0-221.ec2.internal	Availability zone	us-east-1a
Private IPs	172.30.0.221	Security groups	CNV-ssh+http . view rules
Secondary private IPs		Scheduled events	-
VPC ID	vpc-ed028988	AMI ID	amzn-ami-hvm-2015.09.2.x86_64-gp2 (ami-8fce4e5)
Subnet ID	subnet-89f953fe	Platform	-
Network interfaces	eth0	IAM role	-
Source/dest. check	True	Key pair name	CNV-lab-AWS
ClassicLink	-	Owner	479132948110
EBS-optimized	False	Launch time	March 1, 2016 at 2:33:44 PM UTC (3 hours)
Root device type	ebs	Termination protection	False
Root device	/dev/xvda	Lifecycle	normal
Block devices	/dev/xvda	Monitoring	detailed
		Alarm status	None
		Kernel ID	-
		RAM disk ID	-
		Placement group	-
		Virtualization	hvm

<https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LoadBalancers> © 2008 - 2016, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use

Click on create...

The screenshot shows the AWS EC2 Management Console interface. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Reports, Limits, Instances, AMIs, Elastic Block Store, Network & Security, Load Balancing, Auto Scaling, and a selected category, Load Balancers. The main content area displays a message: "You do not have any load balancers in this region." Below this, instructions say "To learn about Elastic Load Balancing, see our [FAQ](#) and [Getting Started Guide](#). Click 'Create Load Balancer' to create a load balancer that distributes traffic across your instances." At the top of this section is a blue button labeled "Create Load Balancer". A large green arrow points upwards towards this button. The browser's address bar shows the URL <https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LoadBalancers>.

Pick a classic Load Balancer

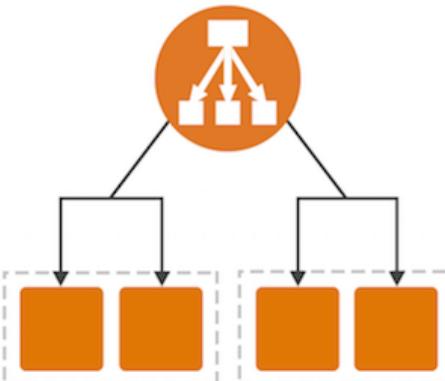
Welcome to Elastic Load Balancing

Select load balancer type

Elastic Load Balancing supports two types of load balancers: Application Load Balancers (new) and Classic Load Balancers. Choose the load balancer type that meets your needs. [Learn more.](#)

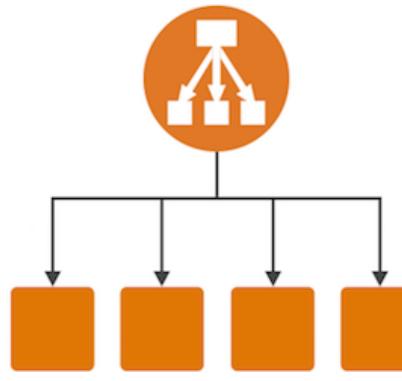
Application Load Balancer

Preferred for HTTP/HTTPS



An Application Load Balancer makes routing decisions at the application layer (HTTP/HTTPS), supports path-based routing, and can route requests to one or

Classic Load Balancer



A Classic Load Balancer makes routing decisions at either the transport layer (TCP/SSL) or the application layer (HTTP/HTTPS), and supports either

[Cancel](#) [Continue](#)

[Feedback](#) [English](#)

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Give it a name..

AWS Services Edit João Coelho Garcia N. Virginia Support

1. Define Load Balancer 2. Assign Security Groups 3. Configure Security Settings 4. Configure Health Check 5. Add EC2 Instances 6. Add Tags 7. Review

Step 1: Define Load Balancer

This wizard will walk you through setting up a new load balancer. Begin by giving your new load balancer a unique name so that you can identify it from other load balancers you might create. You will also need to configure ports and protocols for your load balancer. Traffic from your clients can be routed from any load balancer port to any port on your EC2 instances. By default, we've configured your load balancer with a standard web server on port 80.

Load Balancer name: CNV-lab-AWS-LB
Create LB Inside: vpc-ed028988 (172.30.0.0/16)
Create an internal load balancer: (what's this?)

Listener Configuration:

Load Balancer Protocol	Load Balancer Port	Instance Protocol	Instance Port
HTTP	80	HTTP	8000

Add

Select Subnets

You will need to select a Subnet for each Availability Zone where you wish traffic to be routed by your load balancer. If you have instances in only one Availability Zone, please select at least two Subnets in different Availability Zones to provide higher availability for your load balancer.

VPC vpc-ed028988 (172.30.0.0/16)

⚠ Please select at least two Subnets in different Availability Zones to provide higher availability for your load balancer.

Available Subnets				
Actions	Availability Zone	Subnet ID	Subnet CIDR	Name
+	us-east-1b	subnet-eb5e8bb2	172.30.2.0/24	
+	us-east-1d	subnet-b5ea1e9e	172.30.3.0/24	
+	us-east-1e	subnet-209d0f1a	172.30.1.0/24	

Selected Subnets				
Actions	Availability Zone	Subnet ID	Subnet CIDR	Name
-	us-east-1a	subnet-89f953fe	172.30.0.0/24	

Cancel Next: Assign Security Groups

Create it inside your default VPC

Screenshot of the AWS Load Balancer creation wizard, Step 1: Define Load Balancer.

The screenshot shows the configuration for creating a new load balancer named "CNV-lab-AWS-LB" within the VPC "vpc-ed028988 (172.30.0.0/16)". A large green arrow points to the "Create LB Inside:" dropdown menu.

Step 1: Define Load Balancer

This wizard will walk you through setting up a new load balancer. Begin by giving your new load balancer a unique name so that you can identify it from other load balancers you might create. You will also need to configure ports and protocols for your load balancer. Traffic from your clients can be routed from any load balancer port to any port on your EC2 instances. By default, we've configured your load balancer with a standard web server on port 80.

Load Balancer name: CNV-lab-AWS-LB

Create LB Inside: vpc-ed028988 (172.30.0.0/16)

Create an internal load balancer: (what's this?)

Listener Configuration:

Load Balancer Protocol	Load Balancer Port	Instance Protocol	Instance Port
HTTP	80	HTTP	8000

Select Subnets

You will need to select a Subnet for each Availability Zone where you wish traffic to be routed by your load balancer. If you have instances in only one Availability Zone, please select at least two Subnets in different Availability Zones to provide higher availability for your load balancer.

VPC vpc-ed028988 (172.30.0.0/16)

Available Subnets

Actions	Availability Zone	Subnet ID	Subnet CIDR	Name
	us-east-1b	subnet-eb5e8bb2	172.30.2.0/24	
	us-east-1d	subnet-b5ea1e9e	172.30.3.0/24	
	us-east-1e	subnet-209d0f1a	172.30.1.0/24	

Selected Subnets

Actions	Availability Zone	Subnet ID	Subnet CIDR	Name
	us-east-1a	subnet-89f953fe	172.30.0.0/24	

Next: Assign Security Groups

Connect external and internal traffic

Screenshot of the AWS Load Balancer wizard Step 1: Define Load Balancer.

This wizard will walk you through setting up a new load balancer. Begin by giving your new load balancer a unique name so that you can identify it from other load balancers you might create. You will also need to configure ports and protocols for your load balancer. Traffic from your clients can be routed from any load balancer port to any port on your EC2 instances. By default, we've configured your load balancer with a standard web server on port 80.

Load Balancer name: CNV-lab-AWS-LB
Create LB Inside: vpc-ed028988 (172.30.0.0/16)
Create an internal load balancer: (what's this?)

Listener Configuration:

Load Balancer Protocol	Load Balancer Port	Instance Protocol	Instance Port
HTTP	80	HTTP	8000

Add

Select Subnets

You will need to select a Subnet for each Availability Zone where you wish traffic to be routed by your load balancer. If you have instances in only one Availability Zone, please select at least two Subnets in different Availability Zones to provide higher availability for your load balancer.

VPC vpc-ed028988 (172.30.0.0/16)

⚠ Please select at least two Subnets in different Availability Zones to provide higher availability for your load balancer.

Available Subnets

Actions	Availability Zone	Subnet ID	Subnet CIDR	Name
+	us-east-1b	subnet-eb5e8bb2	172.30.2.0/24	
+	us-east-1d	subnet-b5ea1e9e	172.30.3.0/24	
+	us-east-1e	subnet-209d0f1a	172.30.1.0/24	

Selected Subnets

Actions	Availability Zone	Subnet ID	Subnet CIDR	Name
-	us-east-1a	subnet-89f953fe	172.30.0.0/24	

Cancel Next: Assign Security Groups



Add a subnet

This wizard will walk you through setting up a new load balancer. Begin by giving your new load balancer a unique name so that you can identify it from other load balancers you might create. You will also need to configure ports and protocols for your load balancer. Traffic from your clients can be routed from any load balancer port to any port on your EC2 instances. By default, we've configured your load balancer with a standard web server on port 80.

Load Balancer name: CNV-lab-AWS-LB
Create LB Inside: vpc-ed028988 (172.30.0.0/16)
Create an internal load balancer: (what's this?)

Listener Configuration:

Load Balancer Protocol	Load Balancer Port	Instance Protocol	Instance Port
HTTP	80	HTTP	8000

Select Subnets

You will need to select a Subnet for each Availability Zone where you wish traffic to be routed by your load balancer. If you have instances in only one Availability Zone, please select at least two Subnets in different Availability Zones to provide higher availability for your load balancer.

VPC vpc-ed028988 (172.30.0.0/16)

Available Subnets

Actions	Availability Zone	Subnet ID	Subnet CIDR	Name
	us-east-1b	subnet-eb5e8bb2	172.30.2.0/24	
	us-east-1d	subnet-b5ea1e9e	172.30.3.0/24	
	us-east-1e	subnet-209d0f1a	172.30.1.0/24	

Selected Subnets

Actions	Availability Zone	Subnet ID	Subnet CIDR	Name
	us-east-1a	subnet-89f953fe	172.30.0.0/24	

Next: Assign Security Groups

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Pick a security group

AWS Services Edit João Coelho Garcia N. Virginia Support

1. Define Load Balancer 2. Assign Security Groups 3. Configure Security Settings 4. Configure Health Check 5. Add EC2 Instances 6. Add Tags 7. Review

Step 2: Assign Security Groups

You have selected the option of having your Elastic Load Balancer inside of a VPC, which allows you to assign security groups to your load balancer. Please select the security groups to assign to this load balancer. This can be changed at any time.

Assign a security group:

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

Filter VPC security groups

Security Group ID	Name	Description	Actions
<input checked="" type="checkbox"/> sg-47b2103f	CNV-ssh+http	launch-wizard-1 created 2016-03-01T14:27:36.929+00:00	Copy to new
<input type="checkbox"/> sg-38cfdd5d	default	default VPC security group	Copy to new



Cancel Previous Next: Configure Security Settings

Ignore this warning..

The screenshot shows a step-by-step wizard for creating a load balancer. The current step is "Step 3: Configure Security Settings". A prominent orange warning box is present, stating: "Improve your load balancer's security. Your load balancer is not using any secure listener." It advises users to use HTTPS or SSL for secure connections and provides links to "Basic Configuration" and "Configure Health Check". The bottom right of the warning box has a green arrow pointing towards the "Next: Configure Health Check" button.

AWS Services Edit João Coelho Garcia N. Virginia

1. Define Load Balancer 2. Assign Security Groups 3. Configure Security Settings 4. Configure Health Check 5. Add EC2 Instances

Step 3: Configure Security Settings

⚠ Improve your load balancer's security. Your load balancer is not using any secure listener.

If your traffic to the load balancer needs to be secure, use either the HTTPS or the SSL protocol for your front-end connection. You can go back to the first step to add/configure secure listeners under [Basic Configuration](#) section. You can also continue with current settings.

Cancel Previous Next: Configure Health Check

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Configure the health check

The screenshot shows the AWS EC2 Management Console interface for creating a new load balancer. The current step is "Step 4: Configure Health Check".

Ping Configuration:

- Ping Protocol: HTTP
- Ping Port: 8000
- Ping Path: /test

Advanced Details:

- Response Timeout: 5 seconds
- Health Check Interval: 30 seconds
- Unhealthy Threshold: 2
- Healthy Threshold: 10

Buttons at the bottom:

- Cancel
- Previous
- Next: Add EC2 Instances

Page Footer:

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Don't add instances

The screenshot shows the AWS EC2 Management Console interface for creating a Load Balancer. The current step is "Step 5: Add EC2 Instances".

VPC vpc-ed028988 (172.30.0.0/16)

Instance	Name	State	Security Group	Zone	Subnet ID	Subnet CIDR
i-34d477b0		stopped	CNV-ssh+http	us-east-1a	subnet-89f953fe	172.30.0.0/24
i-933bb217		running	CNV-ssh+http	us-east-1a	subnet-89f953fe	172.30.0.0/24

Availability Zone Distribution

Enable Cross-Zone Load Balancing (i)

Enable Connection Draining (i) 300 seconds

Cancel Previous Next: Add Tags

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You don't need tags

The screenshot shows a step-by-step wizard for creating a new AWS Lambda function. The current step is 'Step 6: Add Tags'. The interface includes a table for adding tags, a 'Create Tag' button, and a bottom navigation bar with 'Cancel', 'Previous', and 'Review and Create' buttons. A green arrow points to the 'Review and Create' button.

AWS Services Edit João Coelho Garcia N. Virginia Support

1. Define Load Balancer 2. Assign Security Groups 3. Configure Security Settings 4. Configure Health Check 5. Add EC2 Instances

Step 6: Add Tags

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 EC2 resources.

Key	Value
<input type="text"/>	<input type="text"/> ×

Create Tag

Cancel Previous **Review and Create**

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Review and Create

1. Define Load Balancer 2. Assign Security Groups 3. Configure Security Settings 4. Configure Health Check 5. Add EC2 Instances

Step 7: Review

Please review the load balancer details before continuing

Define Load Balancer [Edit load balancer definition](#)

Load Balancer name: CNV-lab-AWS-LB
Scheme: internet-facing
Port Configuration: 80 (HTTP) forwarding to 8000 (HTTP)

Configure Health Check [Edit health check](#)

Ping Target: HTTP:8000/test
Timeout: 5 seconds
Interval: 30 seconds
Unhealthy Threshold: 2
Healthy Threshold: 10

Add EC2 Instances [Edit instances](#)

Cross-Zone Load Balancing: Enabled

[Cancel](#) [Previous](#) [Create](#)

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Load Balancer Creation Status

 **Successfully created load balancer**

Load balancer [CNV-lab-AWS-LB](#) was successfully created.

Note: It may take a few minutes for your instances to become active in the new load balancer.

[Close](#)



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Create an Auto Scaling Group

Screenshot of the AWS Auto Scaling Welcome page. A large green arrow points to the "Create Auto Scaling group" button.

The screenshot shows the AWS navigation bar with "AWS" and "Services" dropdowns, and a "Edit" dropdown. The left sidebar menu is expanded under "AUTO SCALING", showing "Launch Configurations" which is selected and highlighted with an orange border. Other items in the sidebar include "Auto Scaling Groups", "Load Balancers", "Network Interfaces", "Placement Groups", "Key Pairs", "Elastic IPs", "Security Groups", "Volumes", "Schemas", "Bundle Tasks", "AMIs", and "Instances".

The main content area is titled "Welcome to Auto Scaling". It displays a message about managing EC2 capacity automatically and provides links to "Learn more". It shows "Auto Scaling Group : 1" and "Launch Configuration : 1". There are two prominent buttons: a blue "Create Auto Scaling group" button and a grey "Create launch configuration" button. A note below the "Create Auto Scaling group" button states: "Note: To create your Auto Scaling group in a different region, select your region from the navigation bar." Below this, there are three sections: "Reusable Instance Templates" (with a gear and plus icon), "Automated Provisioning" (with a checkmark and circular arrow icon), and "Adjustable Capacity" (with a gear and cross icon). Each section has a brief description and a "Learn more" link.

Create a new Launch Configuration



Create Auto Scaling Group

[Cancel and Exit](#)

To create an Auto Scaling group, you will first need to choose a template that your Auto Scaling group will use when it launches instances for you, called a launch configuration. Choose a launch configuration or create a new one, and then apply it to your group.

Later, if you want to use a different template, you can create another launch configuration and apply it to this group, even if you already have instances running in it. Using this method, you can update the software that your group uses when it launches new instances.

- Create a new launch configuration
- Create an Auto Scaling group from an existing launch configuration

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

Pick the image created before

The screenshot shows the 'Create Launch Configuration' wizard in the AWS Management Console, specifically the '1. Choose AMI' step. The interface includes a navigation bar with tabs: 1. Choose AMI (selected), 2. Choose Instance Type, 3. Configure details, 4. Add Storage, 5. Configure Security Group, and 6. Review. The main area is titled 'Create Launch Configuration' and contains a search bar 'Search my AMIs'. A sidebar on the left lists filters: 'Quick Start', 'My AMIs' (selected), 'AWS Marketplace AMIs', 'Copied AMIs', 'Ownership' (with 'Owned by me' checked), 'Architecture' (with '32-bit' and '64-bit' options), and 'Root device type' (with 'EBS' checked). The main content area displays a single AMI entry: 'CNV-lab-AWS-img - ami-4dd9e727' (web server for CNV AWS lab), with 'Root device type: ebs', 'Virtualization type: hvm', and 'Owner: 479132948110'. A large green arrow points from the 'My AMIs' filter in the sidebar to the AMI listing. Another large green arrow points from the AMI listing to the 'Select' button at the top right of the listing. The top right corner of the page shows user information: João Coelho Garcia, N. Virginia, and Support.

Pick a free tier instance

AWS Services Edit João Coelho Garcia N. Virginia

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

Create Launch Configuration

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

Filter by: All Instance types Current generation Show/Hide Columns

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

T2 instances are VPC-only. Your T2 instance will launch into your VPC. [Learn more](#) about T2 and VPC.

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

Cancel Previous Next: Configure details

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Name and monitoring

The screenshot shows the 'Create Launch Configuration' wizard on the AWS Management Console. The current step is '3. Configure details'. A green arrow points to the 'Name' field, which contains 'CNV-lab-AWS-launch'. Another green arrow points to the 'Monitoring' section, where the checkbox 'Enable CloudWatch detailed monitoring' is checked. A third green arrow points to the 'Next: Add Storage' button at the bottom right.

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

Create Launch Configuration

Name i
CNV-lab-AWS-launch

Purchase option i
 Request Spot Instances

IAM role i
None

Monitoring i
 Enable CloudWatch detailed monitoring Learn more

Advanced Details i
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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Default Storage

The screenshot shows the AWS EC2 'Create Launch Configuration' wizard at step 4. The top navigation bar includes 'AWS', 'Services', 'Edit', 'João Coelho Garcia', and 'N. Virginia'. Below the navigation is a horizontal progress bar with steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure details, 4. Add Storage (highlighted in orange), 5. Configure Security Group, and 6. Review.

Create Launch Configuration

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. <https://docs.aws.amazon.com/console/ec2/launchinstance/storage> about storage options in Amazon EC2.

Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Delete on Termination
Root	/dev/xvda	snap-f7bf4fe2	8	General Purpose (SSD)	24 / 3000	<input checked="" type="checkbox"/>

Add New Volume

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

At the bottom are buttons for 'Cancel', 'Previous', 'Skip to review' (highlighted in blue), and 'Next: Configure Security Group'. The footer includes links for 'Feedback', 'English', 'Privacy Policy', and 'Terms of Use', along with a copyright notice: '© 2008 - 2016, Amazon Web Services, Inc. or its affiliates. All rights reserved.'

Pick an adequate security group

AWS Services Edit João Coelho Garcia N. Virginia

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

Create Launch Configuration

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

Assign a security group:

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

Filter **VPC security groups**

Security	Name	VPC ID	Description	Actions
<input checked="" type="checkbox"/>	sg-47b2103f	vpc-ed028988	CNV-ssh+http launch-wizard-1 created 2016-03-01T14:27:36.929+00:00	Copy to new
<input type="checkbox"/>	default	vpc-ed028988	default VPC security group	Copy to new

Inbound rules for sg-47b2103f Selected security groups: sg-47b2103f.

Type	Protocol	Port Range	Source
Custom TCP Rule	TCP	8000	0.0.0.0/0
SSH	TCP	22	0.0.0.0/0

Cancel Previous **Review**

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Review

AWS Services Edit João Coelho Garcia N. Virginia

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

Create Launch Configuration

AMI Details [Edit AMI](#)

CNV-lab-AWS-img - ami-4dd9e727
web server for CNV AWS lab
Root device type: ebs Virtualization Type: hvm

Instance Type [Edit instance type](#)

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

Launch configuration details [Edit details](#)

Name: CNV-lab-AWS-launch
Purchasing option: On demand
EBS Optimized: No
Monitoring: Yes
IAM role: None
Tenancy: Shared tenancy (multi-tenant hardware)

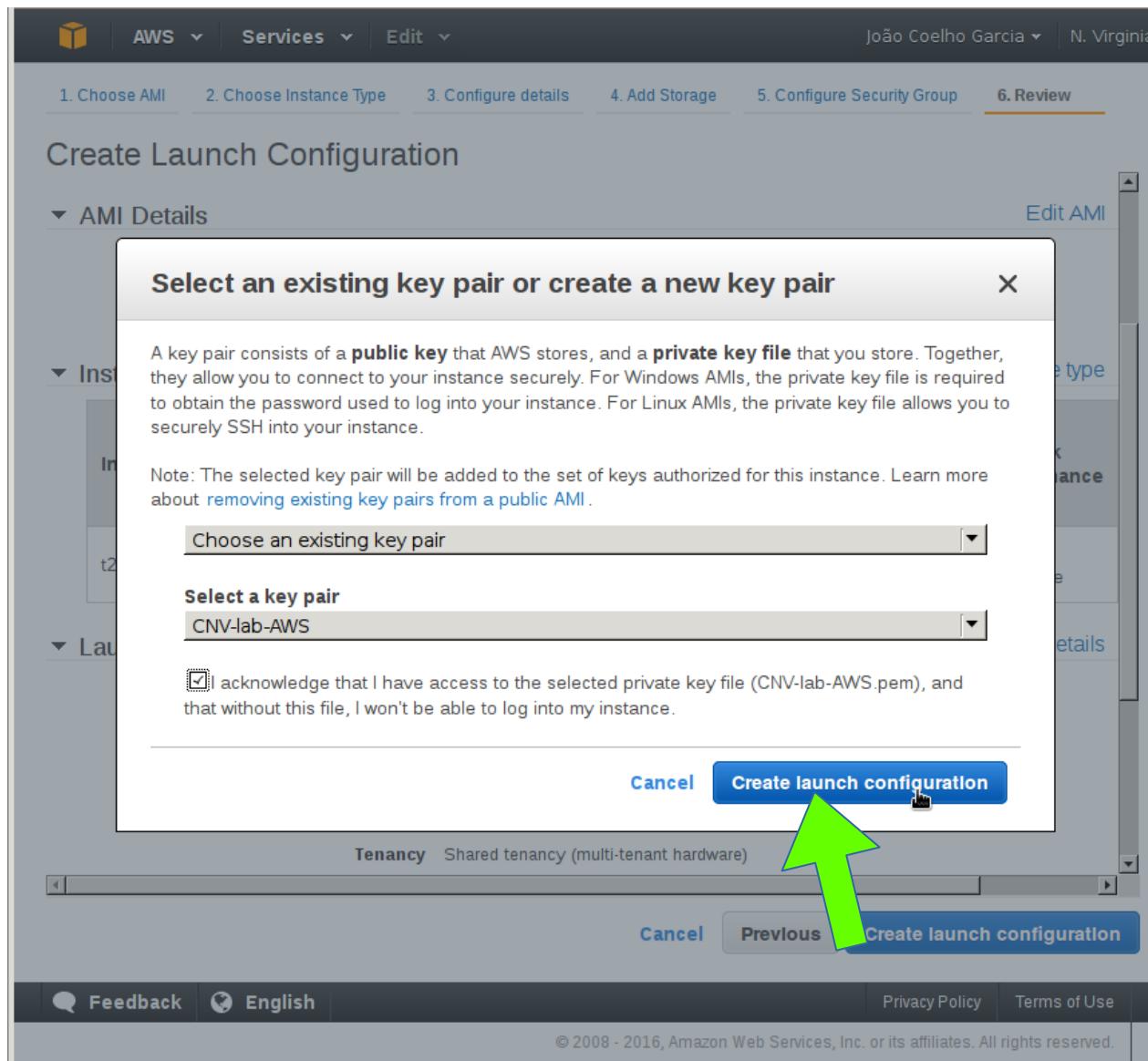
[Cancel](#) [Previous](#) [Create launch configuration](#)

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Create !

(this does not start instances)



Create an Auto Scale Group

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

Create Auto Scaling Group

Launch Configuration CNV-lab-AWS-launch

Group name CNV-lab-AWS-asgroup

Group size Start with 1 instances

Network vpc-ed028988 (172.30.0.0/16)

Subnet subnet-89f953fe(172.30.0.0/24) | us-east-1a

No public IP addresses will be assigned

None of the instances in this Auto Scaling group will be assigned a public IP address because you have not chosen to launch in your default VPC and subnet.

You can ensure a public IP address is assigned to instances in this group by launching instances in a default subnet of your default VPC.

Learn more about IP addressing in an Amazon VPC.

Advanced Details

Load Balancing Receive traffic from Elastic Load Balancer(s)
CNV-lab-AWS-LB

Health Check Type ELB OEC2

Health Check Grace Period 60 seconds

Monitoring Enable CloudWatch detailed monitoring
Learn more

Instance Protection

Cancel Next: Configure scaling policies

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- Name it,
- Pick a size,
- Pick your default VPC,
- Pick the default subnet,
- Select the load balancer you created,
- Select a ELB health check,

Create an alarm

Screenshot of the AWS Auto Scaling 'Create Auto Scaling Group' wizard, step 2: Configure scaling policies.

The screenshot shows the 'Create Auto Scaling Group' wizard with the second step, 'Configure scaling policies', selected. A modal window titled 'Create Alarm' is open, showing the configuration for a CloudWatch alarm.

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: dynamodb

Whenever: Average of CPU Utilization
Is: \geq 60 Percent

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

Name of alarm: awsec2-CNV-lab-AWS-asgroup-FastCPU-Utilization

CPU Utilization Percent

3/1 3/1 3/1
12:00 14:00 16:00

CNV-lab-AWS-asgroup

Cancel Create Alarm

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Create an Increase Group Rule

The screenshot shows the AWS Auto Scaling 'Create Auto Scaling Group' wizard, Step 2: Configure scaling policies. The modal window 'Increase Group Size' contains the following configuration:

- Name:** Increase Group Size
- Execute policy when:** awsec2-CNV-lab-AWS-asgroup-FastCPU-Utilization (Edit Remove)
breaches the alarm threshold: CPUUtilization >= 60 for 60 seconds
for the metric dimensions AutoScalingGroupName = CNV-lab-AWS-asgroup
- Take the action:** Add ▾ 1 instances ▾ when 60 <= CPUUtilization < +infinity
- Instances need:** 300 seconds to warm up after each step

At the bottom of the modal, there are buttons: Cancel, Previous, Review, and Next: Configure Notifications.

The main wizard steps are: 1. Configure Auto Scaling group details, 2. Configure scaling policies (highlighted), 3. Configure Notifications, 4. Configure Tags, 5. Review.

The top navigation bar shows: AWS Services Edit João Coelho Garcia N. Virginia.

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AWS Services Edit João Coelho Garcia N. Virginia Sup

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

Create Auto Scaling Group

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.

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:

Whenever: of
Is: Percent

For at least: consecutive period(s) of

Name of alarm:

CPU Utilization Percent

40
30
20
10
0
3/1 3/1 3/1
12:00 14:00 16:00
CNV-lab-AWS-asgroup

Cancel Create Alarm

Add step (i)

Cancel Previous Review Next: Configure Notifications

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Create an Decrease Group Rule

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

Create Auto Scaling Group

(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: awsec2-CNV-lab-AWS-asgroup-FastCPU-Utilization [Edit](#) [Remove](#)
breaches the alarm threshold: CPUUtilization ≥ 60 for 60 seconds
for the metric dimensions AutoScalingGroupName = CNV-lab-AWS-asgroup

Take the action: instances $\leq \text{CPUUtilization} < +\infty$
[Add step](#) [i](#)

Instances need: seconds to warm up after each step

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

Decrease Group Size

Name:

Execute policy when: awsec2-CNV-lab-AWS-asgroup-fast-low-CPU [Edit](#) [Remove](#)
breaches the alarm threshold: CPUUtilization ≥ 40 for 60 seconds
for the metric dimensions AutoScalingGroupName = CNV-lab-AWS-asgroup

Take the action: instances $\geq \text{CPUUtilization} > -\infty$
[Add step](#) [i](#)

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

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

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Add notification if wanted

The screenshot shows the AWS Auto Scaling 'Create Auto Scaling Group' wizard, specifically step 3: Configure Notifications. The top navigation bar includes the AWS logo, 'AWS Services Edit', and user information 'João Coelho Garcia N. Virginia Support'. Below the navigation is a progress bar with five steps: 1. Configure Auto Scaling group details, 2. Configure scaling policies, 3. Configure Notifications (the current step), 4. Configure Tags, and 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

At the bottom are standard navigation buttons: 'Cancel', 'Previous', 'Review' (highlighted in blue), and 'Next: Configure Tags'.

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You shouldn't need tags

The screenshot shows the AWS Management Console interface for creating an Auto Scaling group. The top navigation bar includes the AWS logo, 'AWS Services', 'Edit', and user information ('João Coelho Garcia', 'N. Virginia', 'Support'). Below the navigation is a progress bar with five steps: 1. Configure Auto Scaling group details, 2. Configure scaling policies, 3. Configure Notifications, 4. Configure Tags (which is the active step), and 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](#).

The main area displays a table for adding tags:

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

Add tag 9 remaining

At the bottom of the screen are buttons for 'Cancel', 'Previous', and 'Review' (which is highlighted in blue).

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Create the Group (this starts instances)

The screenshot shows the AWS Auto Scaling Group creation wizard at step 5: Review. The page title is "Create Auto Scaling Group". It displays the configuration details for the group, including group name, size, and policies. At the bottom, there are buttons for "Cancel", "Previous", and "Create Auto Scaling group".

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

Group name	CNV-lab-AWS-asgroup	Edit details
Group size	1	
Minimum Group Size	1	
Maximum Group Size	2	
Availability Zone(s)	us-east-1a	
Health Check Grace Period	300	
Detailed Monitoring	No	
Instance Protection	None	

Scaling Policies

Increase Group Size With alarm = awsec2-CNV-lab-AWS-asgroup-FastCPU-Utilization; Add 1 instances and 300 second

Decrease Group Size With alarm = awsec2-CNV-lab-AWS-asgroup-fast-low-CPU; Remove 0 instances

Notifications

Tags

[Edit scaling policies](#) [Edit notifications](#) [Edit tags](#)

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

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Done!!!

The screenshot shows a screenshot of the AWS Management Console. The top navigation bar includes the AWS logo, 'AWS' dropdown, 'Services' dropdown, 'Edit' dropdown, user 'João Coelho Garcia', region 'N. Virginia', and a 'Support' link. The main content area has a title 'Auto Scaling group creation status'. A green success message box contains a checkmark icon and the text 'Successfully created Auto Scaling group' with a 'View creation log' link. Below this, a 'View' section with a downward arrow has links to 'View your Auto Scaling groups' and 'View your launch configurations'. A 'Helpful resources' section lists 'Here are some helpful resources to get you started' with a 'Close' button. The footer includes 'Feedback', 'English', copyright information (© 2008 - 2016, Amazon Web Services, Inc. or its affiliates. All rights reserved.), and 'Privacy Policy' and 'Terms of Use' links.

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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