



## Learner Lab - Tutorial

CS-559: Infrastructure Technologies for Large-Scale  
Service Oriented Systems



ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ  
UNIVERSITY OF CRETE

# What is AWS Academy Learner Lab?

- AWS Academy Learner Lab offers a long-running lab environment suitable for student projects for a limited period of time
- Provides access to a restricted set of Amazon's AWS Cloud services
- Each student is given credits worth \$100 to spend on the lab's available services

# Learner Lab: Getting Started

- [https://www.awsacademy.com/vforcesite/LMS\\_Login](https://www.awsacademy.com/vforcesite/LMS_Login)



**aws academy**

**Student Login**

(For students enrolled in a class)

学生の方はこちらからログインしてください。

已注册课程的学生请在这里登录

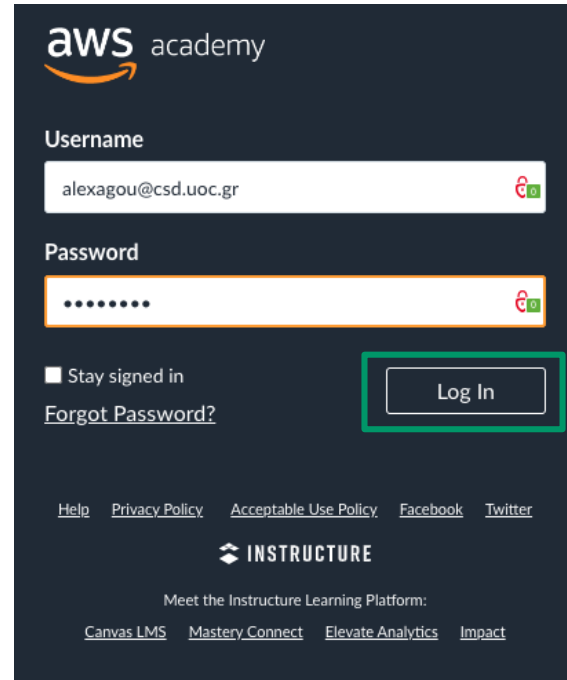
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**Educator Login**

(For educators who have access to the AWS Academy Portal)

講師の方（AWS Academyメンバーポータルアカウントをお持ちの方）はこちらからログインしてください。

教师请在这里登录（您需使用AWS Academy Portal账户登录）



**aws academy**

Username

alexagou@csd.uoc.gr

Password

.....

Stay signed in

[Forgot Password?](#)

**Log In**

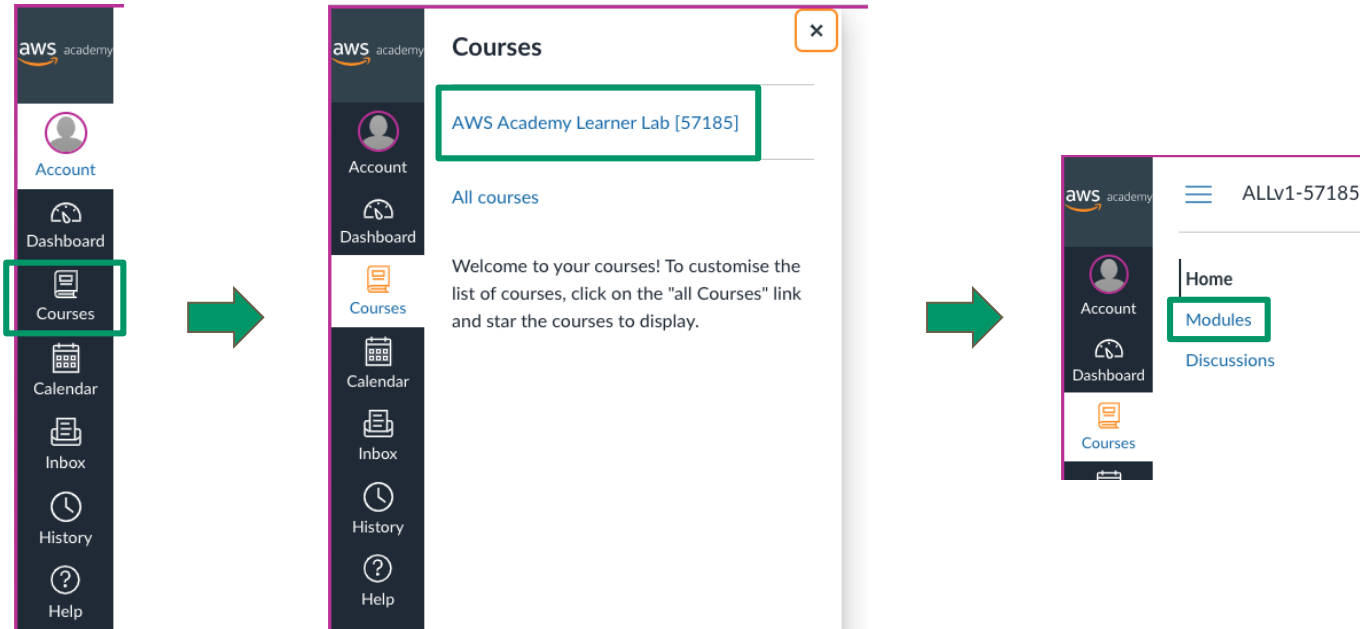
[Help](#) [Privacy Policy](#) [Acceptable Use Policy](#) [Facebook](#) [Twitter](#)

**INSTRUCTURE**

Meet the Instructure Learning Platform:

[Canvas LMS](#) [Mastery Connect](#) [Elevate Analytics](#) [Impact](#)

# Learner Lab: Getting Started



# Learner Lab: Getting Started

The screenshot displays the AWS Academy Learner Lab interface. On the left is a dark sidebar with navigation icons for Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The main content area shows the course 'ALLv1-57185' under 'Modules'. A list of modules is shown, including 'Course Welcome and Overview', 'AWS Academy Learner Lab Compliance and Security', and 'AWS Academy Learner Lab'. The 'Launch AWS Academy Learner Lab' button is highlighted with a green box. An information callout box with a green border and arrow points to this button, containing the text: 'After clicking on this link, accept Terms & Conditions for the first use of the lab'.

aws academy

ALLv1-57185 > Modules

Home

Modules

Discussions

Account

Dashboard

Courses

Calendar

Inbox

History

Help

▼ Course Welcome and Overview

📄 Pre-Course Survey

🔗 AWS Academy Learner Lab Student Guide

▼ AWS Academy Learner Lab Compliance and Security

🔗 Learn how to effectively use the Academy Learner Lab

📄 Module Knowledge Check  
100 pts | Score at least 70.0

▼ AWS Academy Learner Lab

🔗 Launch AWS Academy Learner Lab

**i** After clicking on this link, accept Terms & Conditions for the first use of the lab

# Learner Lab: Getting Started

The screenshot displays the AWS Academy Learner Lab interface. On the left is a dark sidebar with navigation options: Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The main content area features a terminal window with the prompt `eee_w_2482872@runweb94180:~$`. To the right of the terminal is a sidebar titled "Learner Lab" containing several blue hyperlinks: [Environment Overview](#), [Environment Navigation](#), [Access the AWS Management Console](#), [Region restriction](#), [Service usage and other restrictions](#), [Using the terminal in the browser](#), and [Running AWS CLI commands](#). At the top right, a status bar shows "Used \$0 of \$100" and control buttons for "Start Lab", "End Lab", "AWS Details", "Readme", and "Reset".

**i** Credits spent (typically updates every 8-12 hours)

**i** Useful links

# Learner Lab: Getting Started

The screenshot shows the AWS Academy Learner Lab interface. On the left is a dark sidebar with navigation icons for Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The main content area has a top bar with 'AWS' and a red dot, a timer at '00:00', and buttons for 'Start Lab' (highlighted with a green box), 'End Lab', 'AWS Details', 'Readme', and 'Reset'. Below the top bar, it says 'Used \$0 of \$100'. The main area contains a terminal window with the prompt 'eee\_w\_2482872@runweb94180:~\$' and a right-hand sidebar with a dropdown menu set to 'EN-US' and a list of links under the heading 'Learner Lab'. The links are: Environment Overview, Environment Navigation, Access the AWS Management Console, Region restriction, Service usage and other restrictions, Using the terminal in the browser, and Running AWS CLI commands. Two green callout boxes with information icons provide additional context: one points to the 'Start Lab' button and another points to the 'Useful links' section.

**i** Credits spent (typically updates every 8-12 hours)

**i** Useful links

aws academy

Home

Modules

Discussions

Account

Dashboard

Courses

Calendar

Inbox

History

Help

AWS

00:00

▶ Start Lab

■ End Lab

i AWS Details

i Readme

↺ Reset

Used \$0 of \$100

eee\_w\_2482872@runweb94180:~\$

EN-US

## Learner Lab

- [Environment Overview](#)
- [Environment Navigation](#)
- [Access the AWS Management Console](#)
- [Region restriction](#)
- [Service usage and other restrictions](#)
- [Using the terminal in the browser](#)
- [Running AWS CLI commands](#)

# Learner Lab: Getting Started

The screenshot displays the AWS Academy Learner Lab interface. On the left is a dark sidebar with navigation options: Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The main content area shows a breadcrumb trail: ALLv1-57... > Modules > AWS Acad... > Launch AWS Academy Learner Lab. Below this, there are tabs for Home, Modules, and Discussions. A status bar at the top right of the main area shows '04:00', 'Start Lab', 'End Lab', 'AWS Details', 'Readme', 'Reset', and a close button. A callout box with an information icon and text 'Wait until this circle becomes green (may take some minutes)' points to a yellow circle next to the 'AWS' label. Below the status bar, it says 'Used \$0 of \$100'. The main content area features a large blue 'V' logo with a red curved arrow above it. On the right side, there is a panel with a region dropdown set to 'EN-US' and a list of links: 'Learner Lab', 'Environment Overview', 'Environment Navigation', 'Access the AWS Management Console', 'Region restriction', 'Service usage and other restrictions'.

aws academy

Account

Dashboard

Courses

Calendar

Inbox

History

Help

ALLv1-57... > Modules > AWS Acad... > Launch AWS Academy Learner Lab

Home

Modules

Discussions

AWS ●

04:00

Start Lab

End Lab

AWS Details

Readme

Reset

Used \$0 of \$100


EN-US

## Learner Lab

- [Environment Overview](#)
- [Environment Navigation](#)
- [Access the AWS Management Console](#)
- [Region restriction](#)
- [Service usage and other restrictions](#)




# Learner Lab: Getting Started

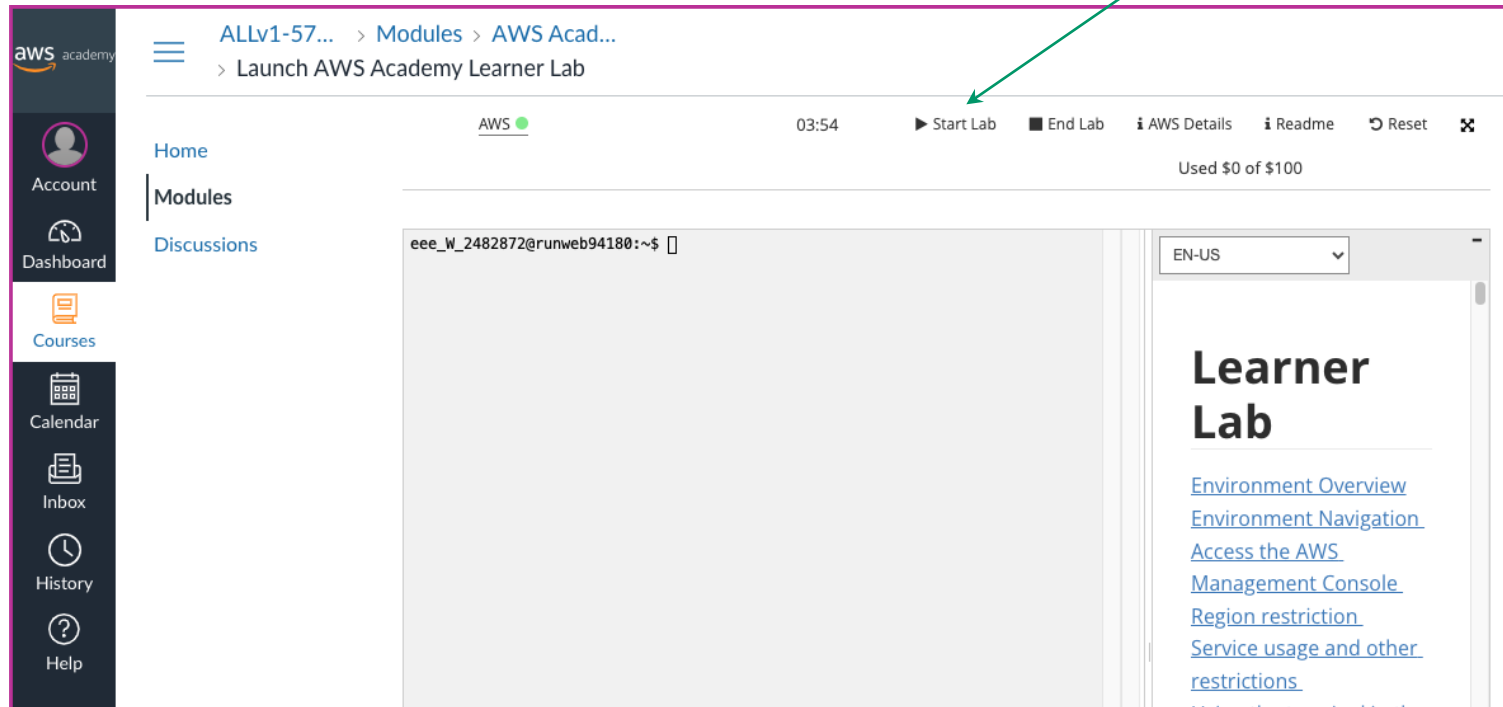
 The lab will be active for **4 hours** only!  
After that, your machines will stop running



The screenshot shows the AWS Academy Learner Lab interface. On the left is a dark sidebar with navigation icons for Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The main content area has a breadcrumb trail: ALLv1-57... > Modules > AWS Acad... > Launch AWS Academy Learner Lab. Below the breadcrumb is a status bar with 'AWS' and a green dot, a timer at '03:54', and buttons for 'Start Lab', 'End Lab', 'AWS Details', 'Readme', 'Reset', and a close icon. A usage indicator shows 'Used \$0 of \$100'. The main workspace is a terminal window with the prompt 'eee\_w\_2482872@runweb94180:~\$'. On the right side of the terminal, there is a sidebar with a region dropdown set to 'EN-US' and a 'Learner Lab' section containing several blue links: 'Environment Overview', 'Environment Navigation', 'Access the AWS Management Console', 'Region restriction', 'Service usage and other restrictions', and a partially visible '...' link.

# Learner Lab: Getting Started

 To reset the timer, press **Start Lab**



The screenshot displays the AWS Academy Learner Lab interface. On the left is a dark sidebar with navigation icons for Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The main content area shows a breadcrumb trail: ALLv1-57... > Modules > AWS Acad... > Launch AWS Academy Learner Lab. Below this is a control bar with a timer at 03:54, a 'Start Lab' button, an 'End Lab' button, and links for 'AWS Details', 'Readme', and 'Reset'. A green arrow points from the 'Start Lab' button to the information box above. The right side of the interface features a 'Learner Lab' panel with a dropdown menu set to 'EN-US' and a list of links: Environment Overview, Environment Navigation, Access the AWS Management Console, Region restriction, Service usage and other restrictions, and a partially visible 'Used \$0 of \$100' indicator.

# Learner Lab: Getting Started

The screenshot displays the AWS Academy Learner Lab interface. On the left is a dark sidebar with navigation icons for Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The top navigation bar shows the breadcrumb path: ALLv1-57... > Modules > AWS Acad... > Launch AWS Academy Learner Lab. A green box highlights the 'AWS' status indicator in the top right, which is accompanied by a timer at 03:54 and control buttons for Start Lab, End Lab, AWS Details, Readme, Reset, and a close icon. Below the navigation, the 'Modules' section is active, and a 'Discussions' link is visible. The main content area features a terminal window with the prompt 'eee\_w\_2482872@runweb94180:~\$' and a right-hand panel titled 'Learner Lab' containing links for Environment Overview, Environment Navigation, Access the AWS Management Console, Region restriction, Service usage and other restrictions, and a partially visible '...' link. A language dropdown menu is set to 'EN-US' and a usage indicator shows 'Used \$0 of \$100'.

# Learner Lab: Getting Started

You are now ready to use the AWS Academy services!

→ To launch VMs, you will use the **EC2** service

The screenshot shows the AWS Management Console Home page. At the top, there is a navigation bar with the AWS logo, a 'Services' menu, a search bar, and a user profile dropdown. The main content area is titled 'Console Home' and features several widgets. The 'Recently visited' widget shows 'No recently visited services' with a list of common services: IAM, EC2, S3, RDS, and Lambda. The 'Welcome to AWS' widget includes links for 'Getting started with AWS', 'Training and certification', and 'What's new with AWS?'. The 'AWS Health' widget displays '0' open issues, '0' scheduled changes, and '0' other notifications. The 'Cost and usage' widget shows 'Current month costs' as '\$0.00', 'Forecasted month end costs' as '-', and 'Last month costs' as '\$0.00'. A 'Top costs for current month' section shows 'No top cost breakdowns. Cost breakdowns show when you use services.' The footer contains 'CloudShell', 'Feedback', and copyright information for Amazon Web Services, Inc.



Amazon **EC2**

# Amazon EC2: Launch Instance(s)

The screenshot shows the AWS Services search interface. The search bar at the top contains the text 'ec2'. Below the search bar, there are several sections: 'Services (13)', 'Features (54)', 'Resources (New)', 'Blogs (2,040)', 'Documentation (33,471)', 'Knowledge Articles (20)', 'Tutorials (21)', 'Events (30)', and 'Marketplace (2,891)'. The 'Services' section is expanded, showing 'EC2' (Virtual Servers in the Cloud), 'EC2 Image Builder' (A managed service to automate build, custom), 'Recycle Bin' (Protect resources from accidental deletion), and 'Amazon Inspector' (Continual vulnerability management at scale). The 'Features' section shows 'Dashboard' with 'EC2 feature'.



The screenshot shows the Amazon EC2 console 'Launch Instance' page. The top navigation bar includes the AWS logo, 'Services', a search bar, and '[Option+S]'. The main content area is titled 'New EC2 Experience' and includes a 'Tell us what you think' link. The left sidebar contains a navigation menu with 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Instances' (expanded), 'Images', and 'Elastic Block Store'. The 'Instances' section is expanded, showing 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', and 'Capacity Reservations'. The 'Images' section shows 'AMIs' and 'AMI Catalog'. The 'Elastic Block Store' section shows 'Volumes', 'Snapshots', and 'Lifecycle Manager'. The main content area is titled 'Resources' and shows a table of resources in the US East (N. Virginia) Region. The table has two columns: the resource name and the count. The resources listed are: Instances (running) (0), Elastic IPs (0), Load balancers (0), Snapshots (0), Auto Scaling Groups, Instances, Placement groups, and Volumes. Below the table is the 'Launch instance' section, which includes a 'Launch Instance' button (highlighted with a green box) and a 'Migrate a server' link. A note below the button states: 'Note: Your instances will launch in the US East (N. Virginia) Region'. The 'Scheduled events' section shows 'US East (N. Virginia)' with 'No scheduled events' and a refresh button.

Resource	Count
Instances (running)	0
Elastic IPs	0
Load balancers	0
Snapshots	0
Auto Scaling Groups	
Instances	
Placement groups	
Volumes	

# Amazon EC2: Launch Instance(s)

aws Services Search [Option+S]

EC2 > Instances > Launch an Instance

## Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

### Name and tags [Info](#)

Name  [Add additional tags](#)

### ▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

#### Quick Start

[Browse more AMIs](#)  
Including AMIs from AWS, Marketplace and the Community

### Amazon Machine Image (AMI)

**Amazon Linux 2023 AMI**  
ami-03a6eaae9938c858c (64-bit (x86)) / ami-03f6c2c562b3df715 (64-bit (Arm)) Free tier eligible

Virtualization: hvm ENA enabled: true Root device type: ebs

### ▼ Summary

Number of Instances [Info](#)

Software Image (AMI)  
Amazon Linux 2023 AMI 2023.2.2...[read more](#)  
ami-03a6eaae9938c858c

Virtual server type (instance type)  
t2.micro

Firewall (security group)  
New security group

Storage (volumes)  
1 volume(s) - 8 GiB

[Cancel](#) [Launch instance](#)  
[Review commands](#)

**i** Change this if you want to launch 2 or more instances (with the same configuration) at once

**i** **Limit:** A maximum of **9 instances** may run concurrently at any time! Any excess instances will be ignored

**i** For now, you can keep the default OS and VM image configurations

# Amazon EC2: Launch Instance(s)

The image shows a screenshot of the Amazon EC2 console's 'Instance type' page for the **t2.micro** instance type. The page displays the following information:

- Instance type:** t2.micro
- Family:** t2
- vCPU:** 1
- Memory:** 1 GiB
- Current generation:** true
- Free tier eligible:** Yes
- On-Demand Windows base pricing:** 0.0162 USD per Hour
- On-Demand SUSE base pricing:** 0.0116 USD per Hour
- On-Demand RHEL base pricing:** 0.0716 USD per Hour
- On-Demand Linux base pricing:** 0.0116 USD per Hour

Additional costs apply for AMIs with pre-installed software.

Callout boxes provide the following information:

- Limit:** A maximum of **32 vCPUs** may be allocated **in total** at any time!
- VM resources:** Points to the vCPU and Memory specifications.
- Instance type:** Points to the t2.micro instance type.
- Pricing:** Points to the base pricing information.
- Limit:** Supported instance types: **nano, micro, small, medium, large**



# Amazon EC2: Launch Instance(s)

▼ **Key pair (login)** [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

Proceed without a key pair (Not recommended) Default value ▼ ↻ Create new key pair



**i** Adjust this if you are going to connect to the instance from an SSH client (e.g. PuTTY)

**i** This will download a key file that is useful only when connecting to the instance from an SSH client

**Create key pair** ✕

**Key pair name**  
Key pairs allow you to connect to your instance securely.

my-kp

The name can include upto 255 ASCII characters. It can't include leading or trailing spaces.

**Key pair type**

**RSA**  
RSA encrypted private and public key pair

**ED25519**  
ED25519 encrypted private and public key pair

**Private key file format**


**.pem**  
For use with OpenSSH

**.ppk**  
For use with PuTTY

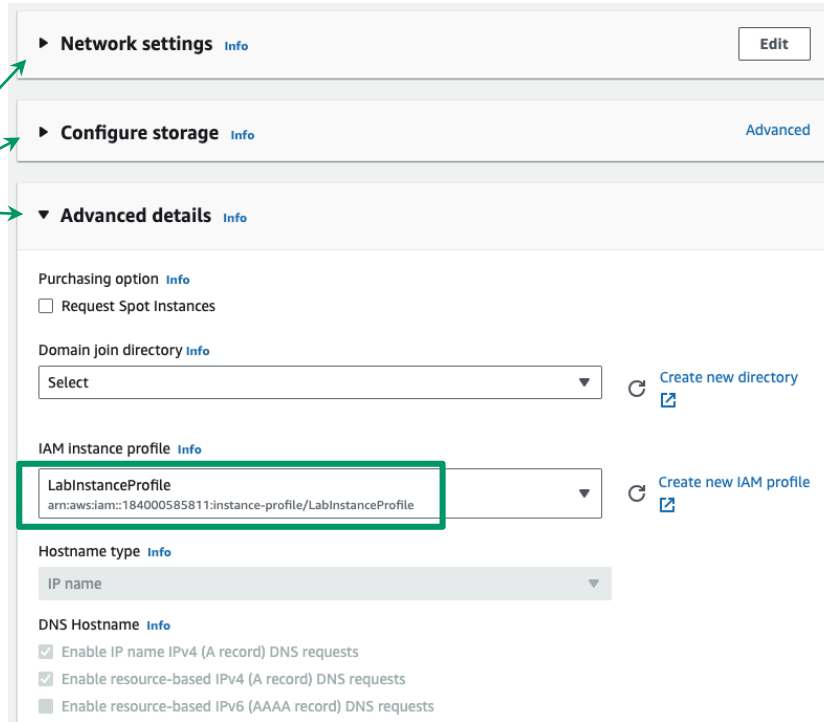
**⚠** When prompted, store the private key in a secure and accessible location on your computer. **You will need it later to connect to your instance.** [Learn more](#)

Cancel **Create key pair**

# Amazon EC2: Launch Instance(s)

 For your first instance, you can keep the network, storage and the rest (other than IAM Instance Profile) of the advanced settings to the default ones.

You may use different configurations in the future, depending on your project selection.



The screenshot shows the 'Advanced details' section of the Amazon EC2 Launch Instance wizard. It includes the following settings:

- Network settings** (Info) [Edit]
- Configure storage** (Info) [Advanced]
- Advanced details** (Info)
  - Purchasing option** (Info)
    - Request Spot Instances
  - Domain join directory** (Info)
    - Select
    - Create new directory
  - IAM instance profile** (Info)
    - LabInstanceProfile** (arn:aws:iam::184000585811:instance-profile/LabInstanceProfile)
    - Create new IAM profile
  - Hostname type** (Info)
    - IP name
  - DNS Hostname** (Info)
    - Enable IP name IPv4 (A record) DNS requests
    - Enable resource-based IPv4 (A record) DNS requests
    - Enable resource-based IPv6 (AAAA record) DNS requests

# Amazon EC2: Launch Instance(s)

The screenshot displays the AWS Management Console interface for launching a new EC2 instance. The top navigation bar includes the AWS logo, 'Services', a search bar, and a keyboard shortcut '[Option+S]'. The left sidebar shows the 'New EC2 Experience' section with a search icon and a list of navigation options: EC2 Dashboard, EC2 Global View, Events, Instances (expanded), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, and Snapshots.

The main content area is titled 'Launch an instance' and includes a breadcrumb trail: EC2 > Instances > Launch an Instance. Below the title is a brief introduction: 'Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.'

The configuration steps are as follows:

- Name and tags:** A text input field contains 'my-first-vm' and an 'Add additional tags' link is visible to the right.
- Application and OS Images (Amazon Machine Image):** A section header with an 'Info' link. Below it is a search bar with the placeholder text 'Search our full catalog including 1000s of application and OS images'.

On the right side, a 'Summary' panel provides a overview of the configuration:

- Number of Instances:** A text input field containing the value '1'.
- Software Image (AMI):** 'Amazon Linux 2023 AMI 2023.2.2...read more' with the ID 'ami-03a6eaae9938c858c'.
- Virtual server type (instance type):** 't2.micro'.
- Firewall (security group):** 'New security group'.
- Storage (volumes):** '1 volume(s) - 8 GiB'.

At the bottom of the Summary panel, there are two buttons: 'Cancel' and 'Launch Instance'. The 'Launch Instance' button is highlighted with a green rectangular border. Below it is a link for 'Review commands'.

# Amazon EC2: Connect to an Instance

Success  
Successfully initiated launch of Instance (i-02759c9f7a3975ad1)

Launch log

Next Steps

What would you like to do next with this instance, for example "create alarm"

Create billing and free tier usage alerts  
To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.  
Create billing alerts

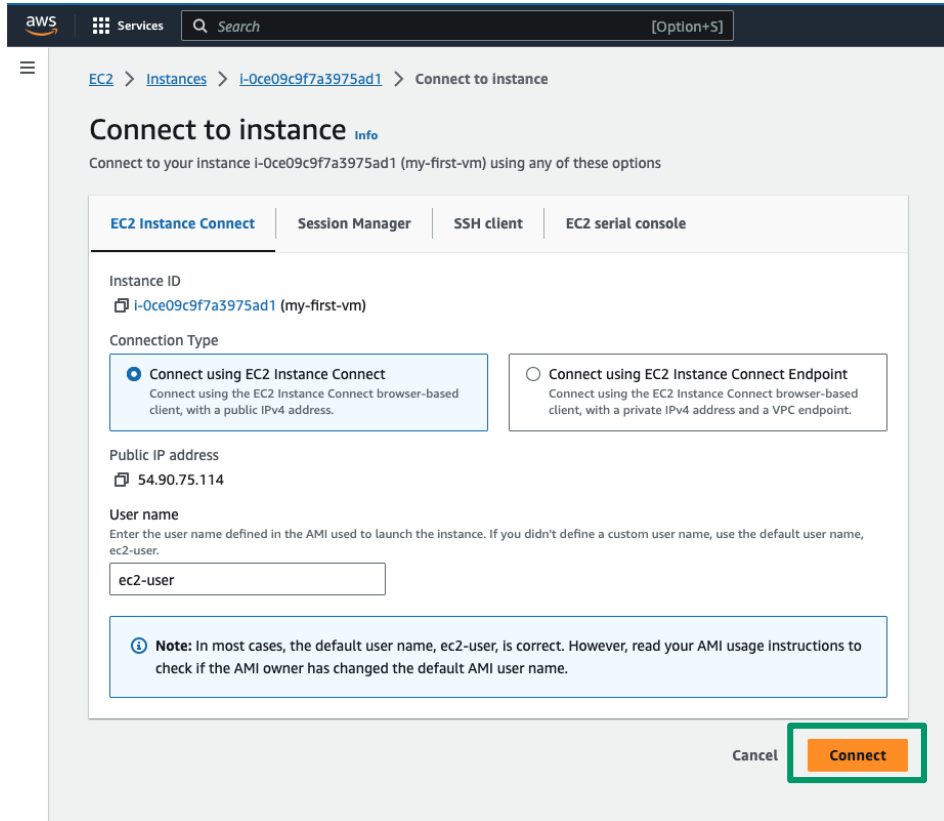
Connect to yo  
Once your instanc  
local computer.  
Connect to in  
Learn more

Instances (1/1) Info

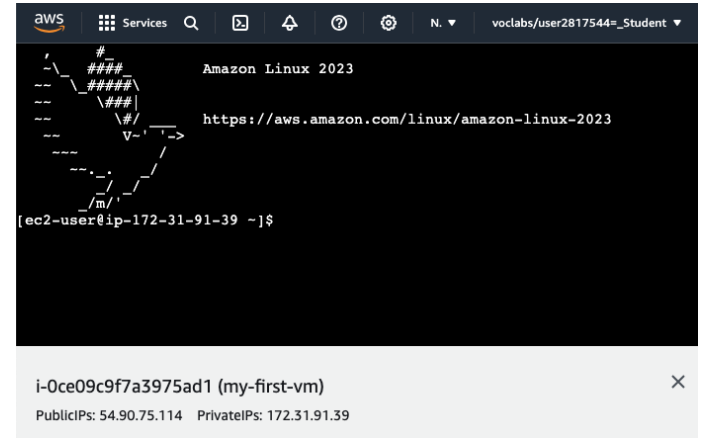
Find instance by attribute or tag (case-sensitive)

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IF
<input checked="" type="checkbox"/>	my-first-vm	i-0ce09c9f7a3975ad1	Running	t2.micro	Initializing	No alarms +	us-east-1c	ec2-54-90-75-114.com...	54.90.75.114	-	-

# Amazon EC2: Connect to an Instance



The screenshot shows the AWS Management Console interface for connecting to an EC2 instance. The breadcrumb navigation is **EC2 > Instances > i-0ce09c9f7a3975ad1 > Connect to instance**. The page title is **Connect to instance** with an **Info** link. Below the title, it says "Connect to your instance i-0ce09c9f7a3975ad1 (my-first-vm) using any of these options". There are four tabs: **EC2 Instance Connect** (selected), **Session Manager**, **SSH client**, and **EC2 serial console**. Under the **EC2 Instance Connect** tab, the **Instance ID** is **i-0ce09c9f7a3975ad1 (my-first-vm)**. The **Connection Type** section has two options: **Connect using EC2 Instance Connect** (selected) and **Connect using EC2 Instance Connect Endpoint**. The **Public IP address** is **54.90.75.114**. The **User name** is **ec2-user**. A **Note** states: "In most cases, the default user name, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name." At the bottom right, there are **Cancel** and **Connect** buttons, with the **Connect** button highlighted by a green box.



The screenshot shows a terminal window with a black background and white text. The terminal displays the **Amazon Linux 2023** logo and the URL **https://aws.amazon.com/linux/amazon-linux-2023**. The shell prompt is **[ec2-user@ip-172-31-91-39 ~]\$**. Below the terminal window, there is a grey box containing the instance ID **i-0ce09c9f7a3975ad1 (my-first-vm)** and its IP addresses: **PublicIPs: 54.90.75.114 PrivateIPs: 172.31.91.39**. A close button (X) is visible in the top right corner of the grey box.

# Amazon EC2: Elastic IP

- When you launch an instance, EC2 **automatically** allocates a public IP for it by default
  - However, when the instance gets stopped or terminated, this IP gets **lost**
- An Elastic IP is **static** and its allocation is independent of VM instances
  - After an Elastic IP gets allocated, it can be manually **associated** with an instance, becoming its new public IP
  - When the instance gets stopped or terminated, the Elastic IP remains **available** to your account, ready to be remapped to another instance
- For more information: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/elastic-ip-addresses-eip.html>

# Amazon EC2: Allocate Elastic IP


The screenshot shows the AWS Management Console navigation menu on the left side. The menu is organized into several categories: Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMI, AMI Catalog), Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), and Network & Security. The 'Elastic IPs' option under the 'Network & Security' category is highlighted with a green box.

 This process will create a new elastic IP



The screenshot shows the 'Allocate Elastic IP address' configuration page in the AWS Management Console. The page title is 'Allocate Elastic IP address Info'. It contains several sections: 'Elastic IP address settings Info', 'Network Border Group Info' (with a search box containing 'us-east-1'), 'Public IPv4 address pool' (with radio buttons for 'Amazon's pool of IPv4 addresses' (selected), 'Public IPv4 address that you bring to your AWS account with BYOIP', and 'Customer-owned pool of IPv4 addresses'), 'Global static IP addresses' (with a 'Create accelerator' button), and 'Tags - optional' (with an 'Add new tag' button). At the bottom right, there are 'Cancel' and 'Allocate' buttons, with the 'Allocate' button highlighted by a green box.

# Amazon EC2: Associate Elastic IP

 This process will assign an elastic IP to a running instance

Elastic IP addresses (1/1)

Filter Elastic IP addresses

Name	Allocated IPv4 address	Allocation ID
-	52.45.171.210	eipalloc-0edbd...

Actions

- Allocate Elastic IP address
- View details
- Release Elastic IP addresses
- Associate Elastic IP address
- Disassociate Elastic IP address
- Update reverse DNS
- Enable transfers
- Disable transfers
- Accept transfers



### Associate Elastic IP address Info

Choose the instance or network interface to associate to this Elastic IP address (52.45.171.210)

**Elastic IP address: 52.45.171.210**

**Resource type**  
Choose the type of resource with which to associate the Elastic IP address.

Instance  
 Network interface

**⚠** If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

**Instance**

Choose an instance

The private IP address with which to associate the Elastic IP address.

Choose a private IP address


**Reassociation**  
Specify whether the Elastic IP address can be reassociated with a different resource if it already associated with a resource.

Allow this Elastic IP address to be reassociated

Cancel **Associate**



# Amazon EC2: Disassociate Elastic IP

 This process will remove an elastic IP from the instance it was previously assigned to

Elastic IP addresses (1/1)

Filter Elastic IP addresses

<input checked="" type="checkbox"/>	Name	Allocated IPv4 address	Allocation ID
<input checked="" type="checkbox"/>	-	52.45.171.210	eipalloc-0edbf...

Actions

- Allocate Elastic IP address
- View details
- Release Elastic IP addresses
- Associate Elastic IP address
- Disassociate Elastic IP address**
- Update reverse DNS
- Enable transfers
- Disable transfers
- Accept transfers



**Disassociate Elastic IP address**

If you disassociate this Elastic IP address, you can reassociate it with a different resource. The Elastic IP address remains allocated to your account. You can have one Elastic IP (EIP) address associated with a running instance at no charge. If you associate additional EIPs with that instance, you will be charged for each additional EIP associated with that instance on a pro rata basis. Additional EIPs are only available in Amazon VPC. To ensure efficient use of Elastic IP addresses, we impose a small hourly charge when these IP addresses are not associated with a running instance or when they are associated with a stopped instance or unattached network interface.


Elastic IP address  
52.45.171.210


Instance ID  
i-0ce09c9f7a3975ad1


Network interface ID  
eni-0189ebbfb5c94a78

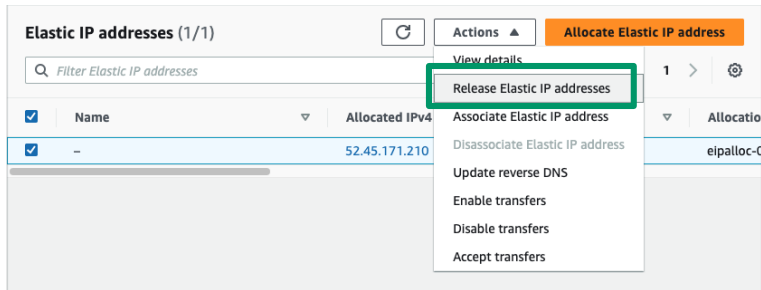
Cancel **Disassociate**

# Amazon EC2: Release Elastic IP

 This process will delete an elastic IP

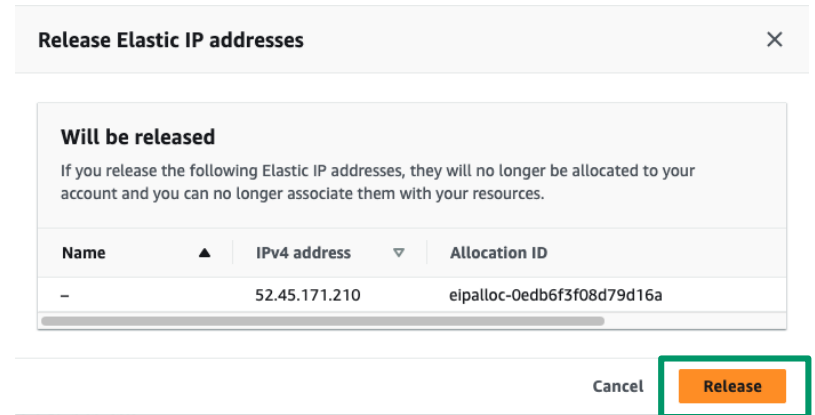
 Trying to release an elastic IP that is associated with an instance will not work

 **Keep in mind:** An elastic IP **costs** even if it is associated with no instances!



The screenshot shows the 'Elastic IP addresses (1/1)' page in the AWS console. A table lists one Elastic IP address with the name '-' and IP address 52.45.171.210. The 'Actions' menu is open, and the 'Release Elastic IP addresses' option is highlighted with a green box.

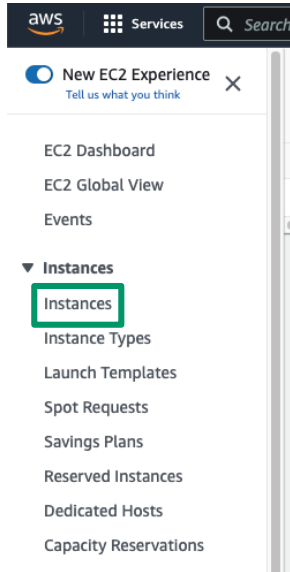
Name	Allocated IPv4	Allocation ID
-	52.45.171.210	eipalloc-C



The dialog box is titled 'Release Elastic IP addresses'. It contains a section 'Will be released' with a warning message: 'If you release the following Elastic IP addresses, they will no longer be allocated to your account and you can no longer associate them with your resources.' Below this is a table with one row of data. At the bottom right, there are 'Cancel' and 'Release' buttons, with the 'Release' button highlighted by a green box.

Name	IPv4 address	Allocation ID
-	52.45.171.210	eipalloc-0edb6f3f08d79d16a

# Amazon EC2: Stop/Terminate Instance



Instances (1/1) Info

Find instance by attribute or tag (case-sensitive)

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state
<input checked="" type="checkbox"/>	my-first-vm	i-0ce09c9f7a3975ad1	Running

Instance state dropdown menu:


- Stop instance
- Start instance
- Reboot instance
- Hibernate instance
- Terminate instance**


ⓘ Stops instance keeping the attached volume's data

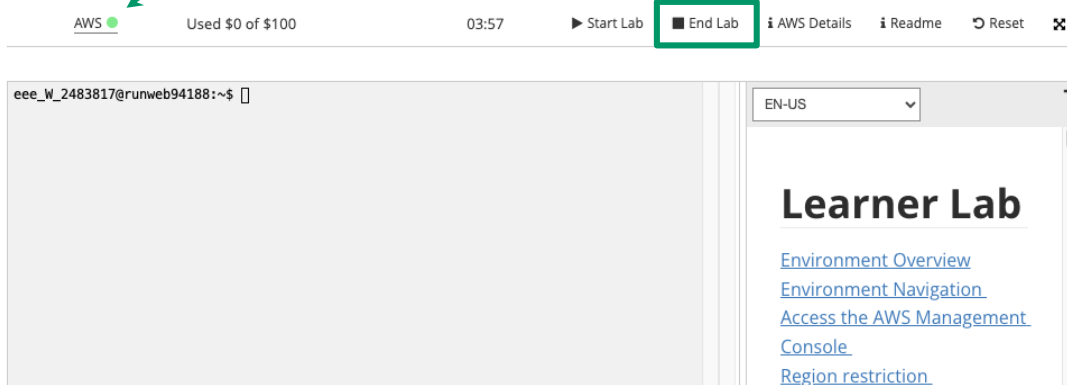
ⓘ Terminates instance deleting everything

ⓘ Keep in mind: Always terminate instances after use! **Idle instances cost too!**

# Learner Lab: End Lab

 After pressing **End Lab**, this circle will turn red

 Keep in mind: Always end the lab when you are finished with your work



The screenshot shows the AWS Learner Lab interface. At the top, there is a status bar with the following elements: 'AWS' with a green circle, 'Used \$0 of \$100', a timer '03:57', and a row of buttons: 'Start Lab', 'End Lab' (highlighted with a green box), 'AWS Details', 'Readme', 'Reset', and a close icon. Below the status bar is a terminal window with the prompt 'eee\_w\_2483817@runweb94188:~\$'. To the right of the terminal is a sidebar with a dropdown menu set to 'EN-US' and the heading 'Learner Lab'. Below the heading are four links: 'Environment Overview', 'Environment Navigation', 'Access the AWS Management Console', and 'Region restriction'.

**Thank you!**

**Any questions?**