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

Source: https://its.umich.edu/computing/virtualization-cloud/amazon-web-services/aws-academy-learner-lab
Learner Lab: Getting Started

- https://www.awsacademy.com/vforcesite/LMS_Login
Welcome to your courses! To customise the list of courses, click on the "all Courses" link and star the courses to display.
Learner Lab: Getting Started

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

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<td>100 pts</td>
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Launch AWS Academy Learner Lab
Learner Lab: Getting Started

Credits spent (typically updates every 8-12 hours)

Useful links:
- 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
Wait until this circle becomes green (may take some minutes)
Learner Lab: Getting Started

The lab will be active for **4 hours** only! After that, your machines will stop running.
Learner Lab: Getting Started

To reset the timer, press Start Lab.
Learner Lab: Getting Started
You are now ready to use the AWS Academy services!

➔ To launch VMs, you will use the **EC2** service
Amazon EC2
Amazon EC2: Launch Instance(s)
Amazon EC2: Launch Instance(s)

- Change this if you want to launch 2 or more instances (with the same configuration) at once.
- Limit: A maximum of 9 instances may run concurrently at any time! Any excess instances will be ignored.

For now, you can keep the default OS and VM image configurations.
Amazon EC2: Launch Instance(s)

Limit: A maximum of **32 vCPUs** may be allocated **in total** at any time!

- **Instance type**
  - **Limit:** Supported instance types: **nano, micro, small, medium, large**

- **VM resources**
  - Free tier eligible

- **Pricing**
  - On-Demand Windows base pricing: $0.0162 USD per Hour
  - On-Demand SUSE base pricing: $0.0194 USD per Hour
  - On-Demand RHEL base pricing: $0.0216 USD per Hour
  - On-Demand Linux base pricing: $0.0202 USD per Hour

Additional costs apply for AMIs with pre-installed software
Amazon EC2: Launch Instance(s)

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

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

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

Create key pair
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.
Amazon EC2: Launch Instance(s)

Launch an instance

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

Name

my-first-vm

Add additional tags

Application and OS Images (Amazon Machine Image)

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.

Search our full catalog including 1000s of application and OS images

Quick Start

Launch instance
Amazon EC2: Connect to an Instance
Amazon EC2: Connect to an Instance

Connect to instance info
Connect to your instance i-0ce09c9f7a3975ad1 (my-first-vm) using any of these options:

EC2 Instance Connect | Session Manager | SSH Client | EC2 serial console

**Connection Type**
- **Connect using EC2 Instance Connect**
  - Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.
- **Connect using EC2 Instance Connect Endpoint**
  - Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.

**Public IP address**
54.90.75.114

**User name**
Enter the user name defined in the AMI used to launch the instance. If you didn’t define a custom user name, use the default user name, ec2-user.

**Note:** 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.

Cancel | Connect

Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

[ec2-user@ip-172-31-91-39 ~]$
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

Amazon EC2: Allocate Elastic IP

This process will create a new elastic IP.
Amazon EC2: Associate Elastic IP

This process will assign an elastic IP to a running instance.

Elastic IP addresses (1/1)

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<th>Elastic IP addresses</th>
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<th>Allocate Elastic IP address</th>
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<tbody>
<tr>
<td>Name</td>
<td>Allocated IPv4 addr</td>
<td>52.45.171.210</td>
</tr>
</tbody>
</table>

Associate Elastic IP address

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

i-0e09c9f7a33975ad1 (my-first-vm - running)

Private IP address with which to associate the Elastic IP address.

Reassociation
Specify whether the Elastic IP address can be reassigned with a different resource if it already associated with a resource.
- Allow this Elastic IP address to be reassigned

Associate
This process will remove an elastic IP from the instance it was previously assigned to.
Amazon EC2: Release Elastic IP

ℹ️ This process will delete an elastic IP

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

ℹ️ Keep in mind: An elastic IP costs even if it is associated with no instances!
Amazon EC2: Stop/Terminate Instance

- Stop Instance:
  - Stops instance keeping the attached volume's data

- Terminate Instance:
  - Terminates instance deleting everything

- Keep in mind: Always terminate instances after use! Idle instances cost too much!
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.
Thank you!

Any questions?