

MAC TUTORIAL — BEGINNER'S GUIDE




PHP Environment on MacBook

Step-by-step installation and usage guide

Compatible with Mac Intel & Apple Silicon (M1/M2/M3/M4)

 Apache 2.4

 PHP 7.4

 MariaDB 10.6

 phpMyAdmin

 Portainer

 PHP Site

`http://localhost:8080`

 phpMyAdmin

`http://localhost:8081`

 Portainer (GUI)

`http://localhost:9000`

 Dashboard

`http://localhost:8082`

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About this tutorial

This guide is designed for beginners. All operations are performed through graphical interfaces. No complex command line is required after the initial setup.

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CHAPTER 1

Install Docker Desktop

To be done once on your MacBook

What type of Mac do you have?

Before downloading, identify your processor. The two Mac types require different versions of Docker.



How to tell?

Menu **Apple ()** → **"About This Mac"**

- You see **"Intel Processor"** → Mac Intel
- You see **"Apple M1/M2/M3/M4 Chip"** → Mac Apple Silicon

Download and installation



Mac Intel

1. Go to **docker.com**
2. Click **"Download for Mac"**
3. Choose **"Intel Chip"**
4. Open the **.dmg** file
5. Drag Docker → Applications
6. Open Docker Desktop






Mac Apple Silicon (M1/M2/M3/M4)

1. Go to **docker.com**
2. Click **"Download for Mac"**
3. Choose **"Apple Chip"**
4. Open the **.dmg** file
5. Drag Docker → Applications
6. Open Docker Desktop

Verify that Docker is ready

Docker Desktop places a **whale icon**  in the menu bar (top right of the screen).

Color meanings

	Green = Ready	Docker is running — you can work
	Yellow = Starting	Wait a few seconds
	Red = Error	Restart Docker Desktop



Docker must be green before continuing

Docker Desktop must remain open during your entire work session. If you close it, all services will stop.

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CHAPTER 2

First launch

Launch the environment with a double-click

🔑 One-time step — Grant permissions

The scripts `start.command` and `stop.command` need execution permission. **This step only needs to be done once.**

1

Open Terminal

Launchpad → search for "Terminal" → click on it

2

Navigate to the project folder

Type and press **Enter**:

```
cd ~/Desktop/PHPenv
```

3

Grant permissions

Type and press **Enter**:

```
chmod +x start.command stop.command
```



Done!

You will never need the Terminal again. From now on, everything is done by double-clicking.



Launch the environment

1

Verify that Docker Desktop is open and green

Check the whale icon at the top right of the screen

2

Double-click on `start.command`

This file is in the project folder (on your Desktop)

3

A Terminal window opens automatically

Do not close it! Services are starting in the background

4

Wait for the green confirmation message

✓ Environment started successfully!

!

Go to Portainer immediately!

Open <http://localhost:9000> within the first 5 minutes to create your account. See Ch.3 for details.



First time: wait 5 to 10 minutes

Docker is downloading the images (PHP, MariaDB...). This is slow **only the first time**. Subsequent launches: less than 10 seconds.





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CHAPTER 3

Access the web interfaces

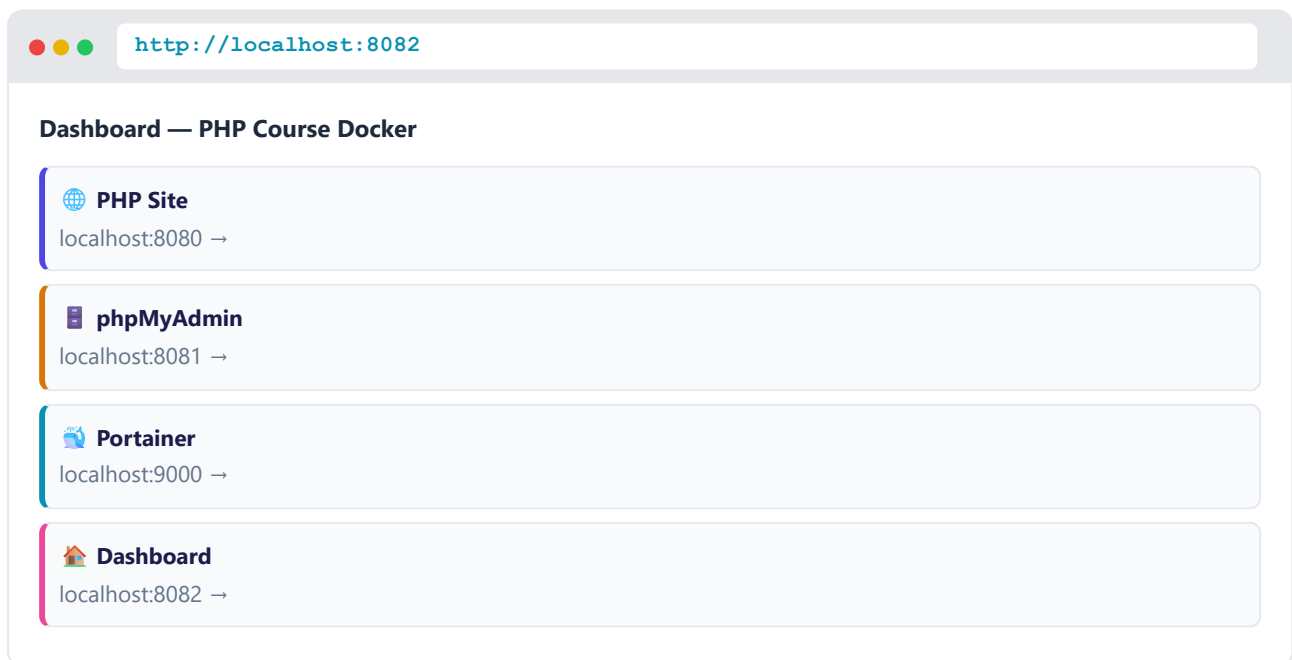
Everything happens in your browser

Overview

SERVICE	ADDRESS	DESCRIPTION
 Dashboard	<code>localhost:8082</code>	Home page with all links
 PHP Site	<code>localhost:8080</code>	Your PHP files (htdocs/)
 phpMyAdmin	<code>localhost:8081</code>	Visual management of the DB
 Portainer	<code>localhost:9000</code>	Docker container management

Dashboard — localhost:8082

Your daily **starting point**. It centralizes all links and your credentials.



PHP Site — localhost:8080

Displays the contents of your `htdocs/` folder. The test page confirms that PHP and the database are working.



http://localhost:8080





Hello PHP ! 🖐️

✅ MySQL connection successful! (MariaDB 10.6.x)

PHP 7.4.x — Linux 64-bit

phpMyAdmin — localhost:8081

Graphical interface to manage your database. The connection is pre-configured (automatic).

 Address	<code>http://localhost:8081</code>
 Username	<code>root</code>
 Password	<code>root</code>
 Database	<code>app</code>



phpMyAdmin not responding?

The DB takes 10 to 20 seconds to start. Wait and refresh with **Cmd+R**.



Portainer — localhost:9000

Graphical interface to manage your Docker containers (start, stop, restart, view logs) — no command line needed.



Act within the first 5 minutes!

Portainer expires its initialization for security reasons. After startup, go **immediately** to `http://localhost:9000` and create your account. If you see the "*timeout*" page → see the Troubleshooting chapter (p. 10).

Create your account (first access)

1

Open `http://localhost:9000`

Portainer asks you to create an administrator account

2

Enter a username and a password

Example: `admin` — Password: 12 characters minimum













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Click "Create user"

Then choose "**Get Started**" → "**local**"

What you can do in Portainer

http://localhost:9000 → Containers

Container	Status	Available actions
cours_web	running	   
cours_db	running	   
cours_phpmyadmin	running	   

 Start  Stop  Restart  View logs

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CHAPTER 4

Working with PHP

Create, edit and test your PHP scripts

📁 The htdocs folder — your workspace

All your PHP files must be in the `htdocs/` folder of the project. It is the equivalent of the `htdocs` folder in XAMPP.

📁 Project structure

```
PHPenv/  
├─ 📁 htdocs/      ← YOUR PHP FILES HERE  
│   ├─ index.php   ← test page (already created)  
│   └─ hello.php   ← your next file  
└─ docker-compose.yml ← do not modify
```

🔧 Create your first PHP file

1 Open the `htdocs/` folder in Finder

Double-click on the folder from your Desktop

2 Create a new file `hello.php`

In VS Code, TextEdit, or any text editor. The `.php` extension is required.

3 Write your PHP code

Minimal example below

4 Save and open in the browser

`http://localhost:8080/hello.php` — refresh with **Cmd+R**

```
<?php  
echo "Hello world!";  
?>
```



No need to restart!

Every change to your PHP files is visible immediately after **Cmd+R** in the browser.



Database connection (PDO)

```
// Connect to the database

$pdo = new PDO(
    "mysql:host=db;dbname=app;charset=utf8mb4",
    "app",    // username
    "app"     // password
);

// Retrieve data
$stmt = $pdo->query("SELECT * FROM my_table");
foreach ($stmt as $row) {
    echo $row['name'] . "<br>";
}
```



The host is "db", not "localhost"

In Docker, services communicate via their service name. The database is called `db`.

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CHAPTER 5

Manage the database

Create tables and manipulate data with phpMyAdmin

🔑 Log in to phpMyAdmin

Go to **http://localhost:8081**. The connection is pre-configured, you are automatically logged in as root.

🌐 Address	<code>http://localhost:8081</code>
👤 Username	<code>root</code>
🔑 Password	<code>root</code>
🗄 Database	<code>app</code>

🔧 Create a table

1 In the left column, click on "app"

This is your database

2 "Structure" tab → "Create table"

Give it a name (e.g.: `users`) and choose the number of columns

3 Define your columns, then "Save"

Always add an `id` column as INT AUTO_INCREMENT as the primary key

📊 Example "users" table

COLUMN	TYPE	LENGTH	OPTIONS
<code>id</code>	INT	11	PRIMARY KEY, AUTO_INCREMENT
<code>name</code>	VARCHAR	100	—
<code>email</code>	VARCHAR	150	—
<code>date_created</code>	DATETIME	—	DEFAULT CURRENT_TIMESTAMP

Execute an SQL query

"SQL" tab in phpMyAdmin:

```
-- Insert data

INSERT INTO users (name, email)
VALUES ('Alice Martin', 'alice@example.com');

-- Read all data

SELECT * FROM users;
```

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CHAPTER 6

Stop and restart

Manage the environment without the command line

□ Stop the environment

Option A — The simplest

Double-click on `stop.command` in the project folder. A window opens, everything stops cleanly.

Option B — Via Portainer

1. Open `localhost:9000`
2. "Containers" tab
3. Check all containers
4. Click "Stop"



Your data is preserved!

Stopping the services does not delete your PHP files or your database data. Everything is preserved for the next launch.

↺ Restart a specific service

1 Portainer → `http://localhost:9000` → "Containers"

2 Find the container to restart

`cours_web` = Apache+PHP | `cours_db` = database | `cours_phpmyadmin`

3 Click the ↺ (Restart) button

The service restarts in a few seconds



View the logs

In Portainer → Containers → click on the **name** of a container → "Logs". Useful for diagnosing errors.



Daily routine

Morning: Open Docker Desktop → double-click `start.command`

Evening: Double-click `stop.command`

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CHAPTER 7

Mac Troubleshooting

Solutions to the most common issues

Common issues

✗ Portainer — "timeout" page (/timeout.html)

Cause: admin account not created within the first 5 minutes.

Solution: Restart Portainer (preserves all data):

```
docker compose restart portainer
```

Then go **immediately** to <http://localhost:9000> to create your account.

Full reset: Docker Desktop → Volumes → delete `cours_portainer_data` → relaunch Portainer.

✗ Docker Desktop is not started

Open **Docker Desktop** from the Launchpad → wait for the green whale → relaunch `start.command`

✗ localhost:8080 is not loading

Wait 30 seconds (the DB starts last) → **Cmd+R** to refresh.

✗ "Permission denied" on start.command










Open Terminal and type:

```
chmod +x ~/Desktop/PHPenv/start.command stop.command
```

✗ phpMyAdmin — connection error

The DB takes 10 to 20 seconds to start → wait and refresh (**Cmd+R**).

Credentials summary

 PHP Site	<code>http://localhost:8080</code>
 phpMyAdmin	<code>http://localhost:8081</code>
 Portainer	<code>http://localhost:9000</code>
 Dashboard	<code>http://localhost:8082</code>
 DB Host (in PHP)	<code>db</code>
 Database	<code>app</code>
 DB Username	<code>app</code>
 DB Password	<code>app</code>
 Root password	<code>root</code>

Mac Tutorial — Apache 2.4 + PHP 7.4 + MariaDB 10.6 + phpMyAdmin 5.2 + Portainer CE
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