WINDOWS TUTORIAL — BEGINNER'S GUIDE

PHP Environment on Windows

WSL2 + Docker Desktop installation guide and step-by-step usage — Windows 10 or 11 — Intel/AMD (x64) or Qualcomm (Arm64)

🌐 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 Windows 10 or 11 — Intel/AMD (x64) or Qualcomm (Arm64) — with Docker Desktop + WSL2. All operations are performed through graphical interfaces after the initial setup.

CHAPTER 1

1 Install WSL2 and Docker Desktop

Two programs to install once

① Enable WSL2 (Windows Subsystem for Linux)

WSL2 allows Docker to run efficiently on Windows. It is free and built into Windows 10 and 11.

1. **Open PowerShell as administrator**
   Start menu → search for "PowerShell" → **right-click** → **"Run as administrator"**

2. **Type the installation command**
   Copy-paste exactly:

```
wsl --install
```

3. **Restart your PC**
   Required after installing WSL2

4. **After reboot: Ubuntu installs automatically**
   Create a Linux username and password when prompted (remember them!)

WSL2 already installed?
Check the version: in PowerShell type `wsl --list --verbose`. If you see "VERSION 2", you're good. Otherwise: `wsl --set-default-version 2`

② Install Docker Desktop for Windows

1. **Go to docker.com → "Download for Windows"**
   Download the `Docker Desktop Installer.exe` file

2. **Run the installer**
   Check **"Use WSL 2 instead of Hyper-V"** if offered — then install

3. **Restart if prompted**

4. **Open Docker Desktop → Settings → Resources → WSL Integration**
   Enable integration with **Ubuntu** → click "Apply & Restart"

✅ Docker Desktop is ready when...

The whale icon 🐳 appears in the taskbar

Bottom-right corner of the Windows screen (notification area). It must be stable (not animated = ready).

⚠️ **Docker Desktop must stay open**

Docker Desktop must remain running (even in the background) during your entire work session.

CHAPTER 2

2 First launch

Launch the environment with start.bat (double-click)

🚀 Launch the environment

1 **Open Docker Desktop from the Start menu**

Wait for the whale icon to appear in the taskbar (bottom-right corner)

2 **Double-click on `start.bat`**

This file is in the project folder. A black command window opens.

3 **Wait for the confirmation message**

`[OK] Environment started successfully!`

4 **Your browser opens automatically to the dashboard**

http://localhost:8082 — all your services are accessible

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

⚠️ If start.bat closes immediately

Solution A

Right-click on `start.bat`
→ **"Run as administrator"**

Solution B

Open **CMD** in the folder (Shift + right-click) → type `start.bat` to see the error message

📁 Where is the project folder?

Access from Windows Explorer

If the project is on your Desktop:

```
C:\Users\YourName\Desktop\PHPenv\
```

Your PHP files go in the `htdocs\` subfolder

CHAPTER 3

3 Access the web interfaces

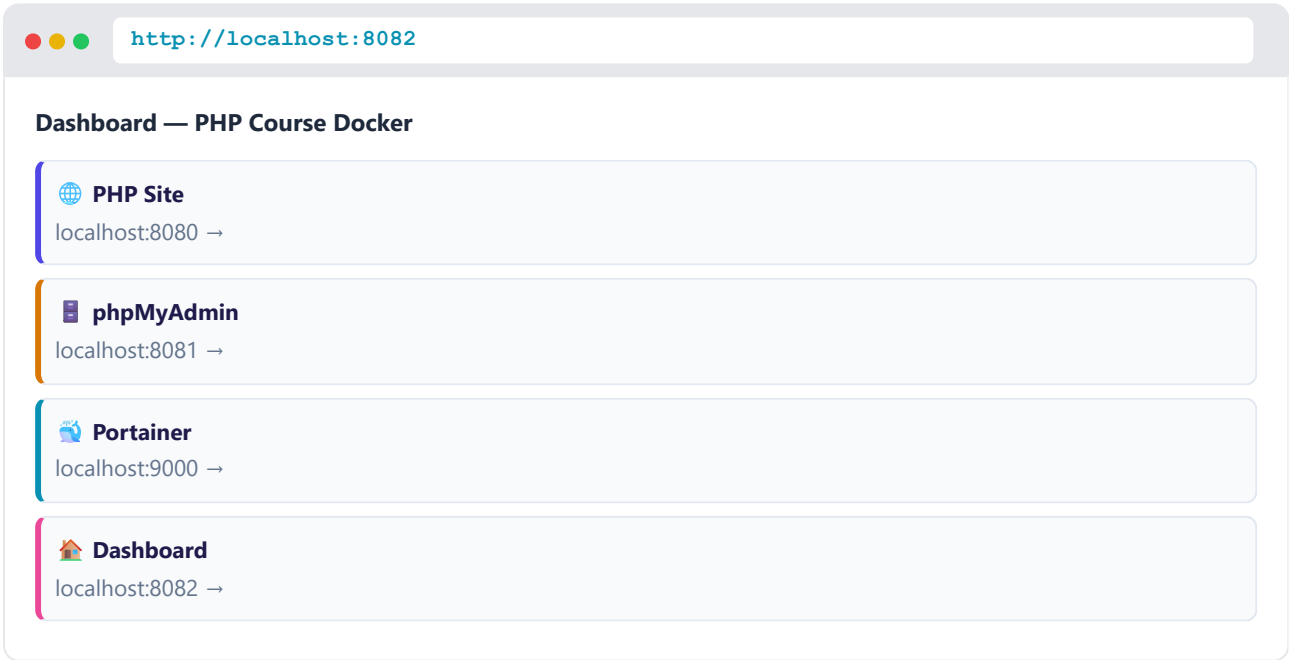
Everything happens in your Windows browser

🗺️ Overview

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

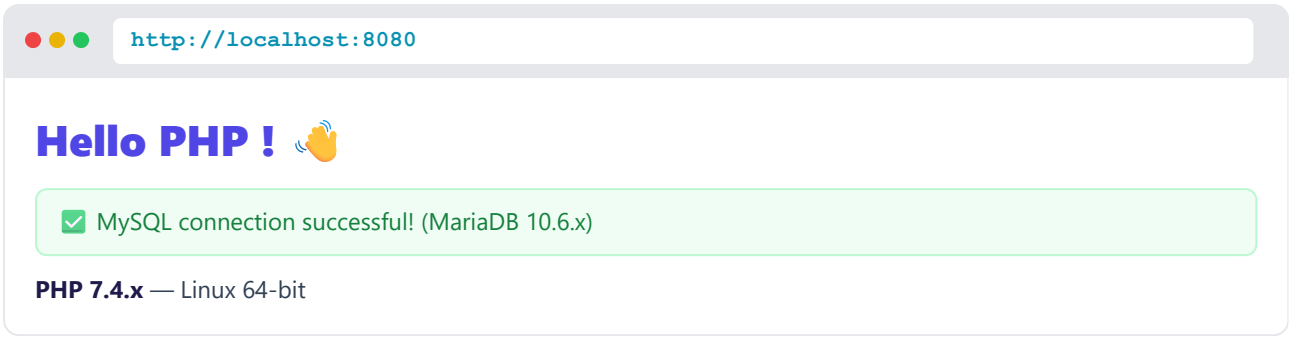
🏠 Dashboard — localhost:8082

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. Pre-configured connection (automatic).

Address	`http://localhost:8081`
Username	`root`
Password	`root`
Database	`app`

phpMyAdmin not responding?

The DB takes 10 to 20 seconds to start. Wait and refresh with **Ctrl+R** or **F5**.

Portainer — localhost:9000

Graphical interface to manage your Docker containers (start, stop, restart, view logs).

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) or double-click on `reset-portainer.bat`.

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
3. **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

CHAPTER 4

4 Working with PHP

Create, edit and test your PHP scripts on Windows

📁 The htdocs folder — your workspace

All your PHP files must be in the `htdocs\` folder of the project. It is directly accessible from **Windows Explorer**.

📁 Where is htdocs?

```
C:\Users\YourName\Desktop\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 Windows Explorer**
   Double-click from your Desktop → `PHPenv` folder → `htdocs`

2. **Create a new file `hello.php`**
   In VS Code, Notepad++, or any editor. The `.php` extension is required.

3. **Write your PHP code and save**

4. **Open in the browser**
   `http://localhost:8080/hello.php` — refresh with **Ctrl+F5**

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

🎉 **No need to restart!**

Every change to your PHP files is visible immediately after **Ctrl+F5** in the browser.

🔌 Database connection (PDO)

```php
// 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 name. The database is called `db` — even on Windows.

CHAPTER 5

5 Manage the database

Create tables and manipulate data with phpMyAdmin

🔑 Log in to phpMyAdmin

Go to **http://localhost:8081**. Automatic connection (pre-configured).

🌐 Address	`http://localhost:8081`
👤 Username	`root`
🔑 Password	`root`
🗃️ Database	`app`

🛠️ 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
`id`	INT	11	PRIMARY KEY, AUTO_INCREMENT
`name`	VARCHAR	100	—
`email`	VARCHAR	150	—
`date_created`	DATETIME	—	DEFAULT CURRENT_TIMESTAMP

🔍 Execute an SQL query

"SQL" tab in phpMyAdmin:

```sql
-- Insert data
INSERT INTO users (name, email)
VALUES ('Alice Martin', 'alice@example.com');


-- Read all data
SELECT * FROM users;
```

CHAPTER 6

6 Stop and restart

Manage the environment without the command line

⏹ Stop the environment

Option A — The simplest

Double-click on `stop.bat` in the project folder. A black window opens and 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` = DB | `cours_phpmyadmin`
3. **Click the ↺ (Restart) button**
   The service restarts in a few seconds

💡 **Daily Windows routine**

Morning: Open Docker Desktop → wait for whale → double-click `start.bat`
Evening: Double-click `stop.bat`

CHAPTER 7

7 Windows Troubleshooting

Solutions to the most common issues

Common issues

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

Solution A: Double-click on `reset-portainer.bat` in the project folder.

Solution B: In CMD from the project folder:

```
docker compose restart portainer
```

Then go **immediately** to http://localhost:9000.

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

❌ Docker Desktop not detected / start.bat fails

Open **Docker Desktop** from the Start menu → wait for the whale in the taskbar → relaunch `start.bat`.

❌ start.bat closes immediately

Right-click → **"Run as administrator"**. Or open CMD in the folder and type `start.bat`.

❌ "port already in use" / "bind failed" error

Another program is using port 8080 or 8081. Close Skype, IIS, WAMP, or any other server. Restart and relaunch `start.bat`.

❌ PHP files are not displayed / not updating

Verify that your files are in `htdocs\` of the project. Refresh with **Ctrl+F5** (clears cache).

❌ phpMyAdmin — connection error

The DB takes 10 to 20 seconds to start → wait and refresh (F5 or Ctrl+R).

🔑 Credentials summary

🌐 PHP Site	`http://localhost:8080`
🗄️ phpMyAdmin	`http://localhost:8081`
🐳 Portainer	`http://localhost:9000`
🏠 Dashboard	`http://localhost:8082`
📂 DB Host (in PHP)	`db`
🗃️ Database	`app`
👤 DB Username	`app`
🔑 DB Password	`app`
👑 Root password	`root`

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