

Open Source Software



PHP MySQL Database

1. MySQL Introduction
2. Các vấn đề về bảo mật và an ninh thông tin khi sử dụng phần mềm nguồn mở
3. Giới thiệu về các phần mềm mã nguồn mở hỗ trợ thiết kế website...



1

MySQL Introduction

What is MySQL?



MySQL is a database system used on the web

MySQL is a database system that runs on a server

MySQL is ideal for both small and large applications

MySQL is very fast, reliable, and easy to use

MySQL uses standard SQL

MySQL compiles on a number of platforms

MySQL is free to download and use

MySQL is developed, distributed, and supported by Oracle Corporation

MySQL is named after co-founder Monty Widenius's daughter: My

Using MySQL in XAMPP



Step 1: Start

(1) Apache

(2) MySQL

XAMPP Control Panel v3.3.0 [Compiled: Apr 6th 2021]

XAMPP Control Panel v3.3.0

Modules	Service	Module	PID(s)	Port(s)	Actions
<input type="checkbox"/>		Apache	9856 1408	80, 443	Stop Admin Config Logs
<input type="checkbox"/>		MySQL	10952	3306	Stop Admin Config Logs
<input type="checkbox"/>		FileZilla			Start Admin Config Logs
<input type="checkbox"/>		Mercury			Start Admin Config Logs
<input type="checkbox"/>		Tomcat			Start Admin Config Logs

10:26:55 PM [main] All prerequisites found
10:26:55 PM [main] Initializing Modules
10:26:55 PM [main] Starting Check-Timer
10:26:55 PM [main] Control Panel Ready
10:28:47 PM [mysql] Attempting to start MySQL app...
10:28:48 PM [mysql] Status change detected: running
10:38:11 PM [Apache] Attempting to start Apache app...
10:38:11 PM [Apache] Status change detected: running

Config Netstat Shell Explorer Services Help Quit

Using MySQL in XAMPP



Step 2: Login MySQL

XAMPP Control Panel v3.3.0 [Compiled: Apr 6th 2021]

XAMPP Control Panel v3.3.0

Service	Module	PID(s)	Port(s)	Actions
<input type="checkbox"/>	Apache	9856 1408	80, 443	<input type="button" value="Stop"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>
<input type="checkbox"/>	MySQL	10952	3306	<input type="button" value="Stop"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>
<input type="checkbox"/>	FileZilla			<input type="button" value="Start"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>
<input type="checkbox"/>	Mercury			<input type="button" value="Start"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>
<input type="checkbox"/>	Tomcat			<input type="button" value="Start"/> <input type="button" value="Admin"/> <input type="button" value="Config"/> <input type="button" value="Logs"/>

Log:

- 10:26:55 PM [main] All prerequisites found
- 10:26:55 PM [main] Initializing Modules
- 10:26:55 PM [main] Starting Check-Timer
- 10:26:55 PM [main] Control Panel Ready
- 10:28:47 PM [mysql] Attempting to start MySQL app...
- 10:28:48 PM [mysql] Status change detected: running
- 10:38:11 PM [Apache] Attempting to start Apache app...
- 10:38:11 PM [Apache] Status change detected: running

Config **Netstat** **Shell** **Explorer** **Services** **Help** **Quit**

Using MySQL in XAMPP



Step 3: Create DB

The screenshot shows the phpMyAdmin web interface in a browser window. The address bar indicates the URL is localhost/phpmyadmin/. The interface includes a sidebar on the left with a tree view of databases: information_schema, mysql, performance_schema, phpmyadmin, and test. The main content area is divided into several panels. The 'General settings' panel shows the 'Server connection collation' set to 'utf8mb4_unicode_ci'. The 'Appearance settings' panel shows the 'Language' set to 'English' and the 'Theme' set to 'pmahomme'. The 'Database server' panel provides details about the server configuration, including the server version (10.4.32-MariaDB) and the user (root@localhost). The 'Web server' panel shows the Apache version (2.4.58) and the PHP version (8.2.12).

phpMyAdmin

Server: 127.0.0.1

Databases SQL Status User accounts Export Import Settings Replication More

Recent Favorites

New

- information_schema
- mysql
- performance_schema
- phpmyadmin
- test

General settings

Server connection collation: utf8mb4_unicode_ci

More settings

Appearance settings

Language: English

Theme: pmahomme View all

Database server

- Server: 127.0.0.1 via TCP/IP
- Server type: MariaDB
- Server connection: SSL is not being used
- Server version: 10.4.32-MariaDB - mariadb.org binary distribution
- Protocol version: 10
- User: root@localhost
- Server charset: UTF-8 Unicode (utf8mb4)

Web server

- Apache/2.4.58 (Win64) OpenSSL/3.1.3 PHP/8.2.12
- Database client version: libmysql - mysqlnd 8.2.12
- PHP extension: mysqli curl mbstring
- PHP version: 8.2.12

phpMyAdmin

Console

2 Connect to MySQL

Connect to MySQL



PHP 5 and later can work with a MySQL database using:

MySQLi extension (the "i" stands for improved)

PDO (PHP Data Objects)

Earlier versions of PHP used the MySQL extension. However, this extension was deprecated in 2012.

Should I Use MySQLi or PDO?



If you need a short answer, it would be "Whatever you like".

Both MySQLi and PDO have their advantages:

PDO will work on 12 different database systems, whereas MySQLi will only work with MySQL databases.

So, if you have to switch your project to use another database, PDO makes the process easy. You only have to change the connection string and a few queries. With MySQLi, you will need to rewrite the entire code - queries included.

Both are object-oriented, but MySQLi also offers a procedural API.

Both support Prepared Statements. Prepared Statements protect from SQL injection, and are very important for web application security.

Open a Connection to MySQL



```
<?php
$servername = "localhost";
$username = "username";
$password = "password";

// Create connection
$conn = new mysqli($servername, $username, $password);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
echo "Connected successfully";
?>
```

Create a MySQL Database



```
<?php
$servername = "localhost";
$username = "username";
$password = "password";
// Create connection
$conn = new mysqli($servername, $username, $password);
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

// Create database
$sql = "CREATE DATABASE myDB";
if ($conn->query($sql) === TRUE) {
    echo "Database created successfully";
} else {
    echo "Error creating database: " . $conn->error;
}
$conn->close();
?>
```

MySQL Create Table



```
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname = "myDB";

// Create connection
$conn = new mysqli($servername,$username,$password, $dbname);
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
```


MySQL Create Table



```
// sql to create table
$sql = "CREATE TABLE MyGuests (
id INT(6) UNSIGNED AUTO_INCREMENT PRIMARY KEY,
firstname VARCHAR(30) NOT NULL,
lastname VARCHAR(30) NOT NULL,
email VARCHAR(50),
reg_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP
)";

if ($conn->query($sql) === TRUE) {
    echo "Table MyGuests created successfully";
} else {
    echo "Error creating table: " . $conn->error;
}

$conn->close();
?>
```

MySQL Insert Data



```
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname = "myDB";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
```

```
$sql = "INSERT INTO MyGuests (firstname, lastname, email)
VALUES ('John', 'Doe', 'john@example.com')";
```

```
if ($conn->query($sql) === TRUE) {
    echo "New record created successfully";
} else {
    echo "Error: " . $sql . "<br>" . $conn->error;
}
```

```
$conn->close();
```

```
?>
```

```
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$dbname = "myDB";

// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
```

MySQL Select Data



```
$sql = "SELECT id, firstname, lastname FROM MyGuests";
$result = $conn->query($sql);

if ($result->num_rows > 0) {
    // output data of each row
    while($row = $result->fetch_assoc()) {
        echo $row["id"]."-".$row["firstname"]." ". $row["lastname"]."<br>";
    }
}
else {
    echo "0 results";}
$conn->close();
?>
```


Any

Question

