



NOVA SCHOOL OF
SCIENCE & TECHNOLOGY

MDE

TP1 – Class 0

Software Installation

(to prepare at home)

2023 - 2024

- ☐ XAMPP installation, components:

- MySQL installation
 - Apache (optional)

- ☐ Installing MySQL Workbench

- ☐ Setting phpMyAdmin



XAMPP

Installation

DOWNLOAD XAMPP



☐ Download from:

<https://www.apachefriends.org/download.html>

☐ Execute the installer.

Apache Friends Download Hosting Community About

Download

XAMPP is an easy to install Apache distribution containing MariaDB, PHP, and Perl. Just download and start the installer. It's that easy.

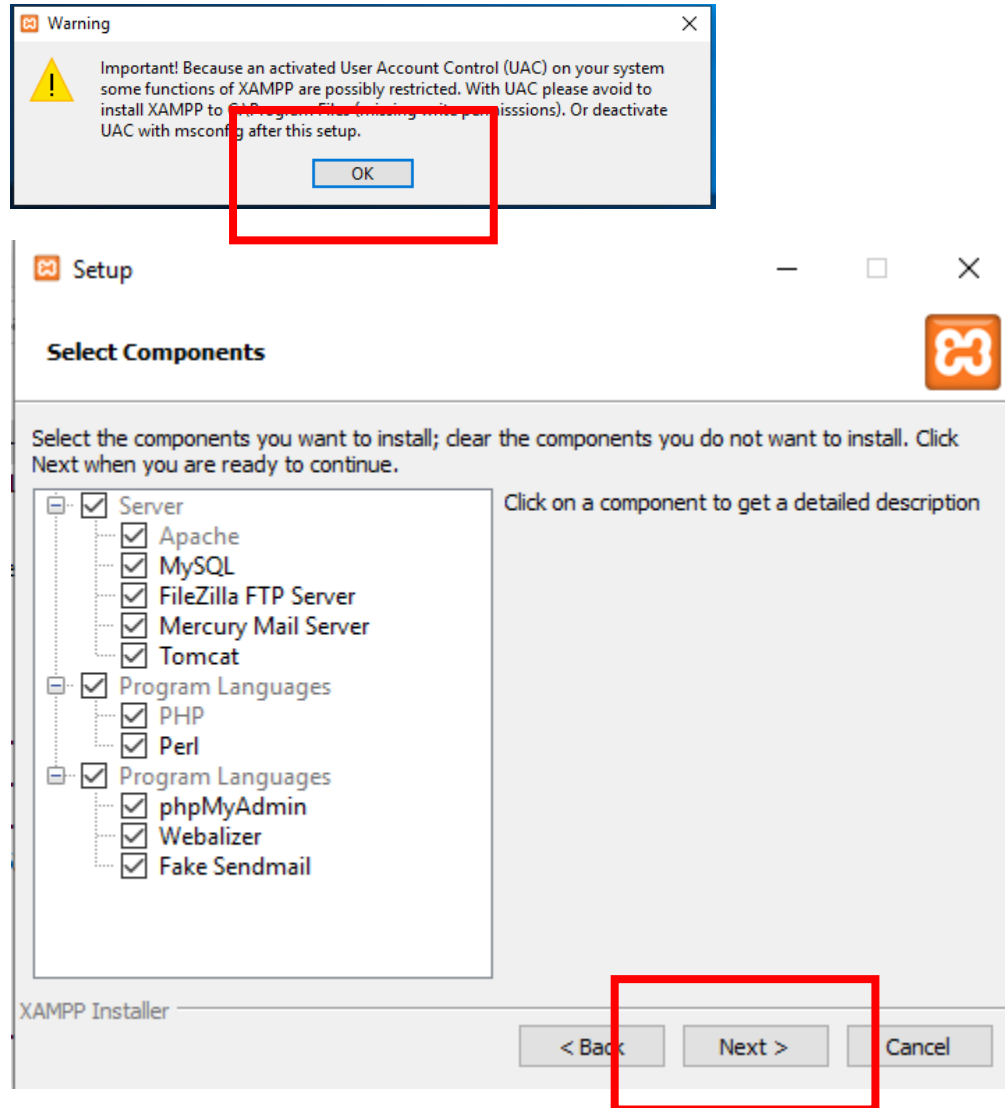
XAMPP for Windows 8.0.25, 8.1.12 & 8.2.0

Version	Checksum	Size
8.0.25 / PHP 8.0.25	What's Included? md5 sha1	Download (64 bit) 143 Mb
8.1.12 / PHP 8.1.12	What's Included? md5 sha1	Download (64 bit) 147 Mb
8.2.0 / PHP 8.2.0	What's Included? md5 sha1	Download (64 bit) 148 Mb

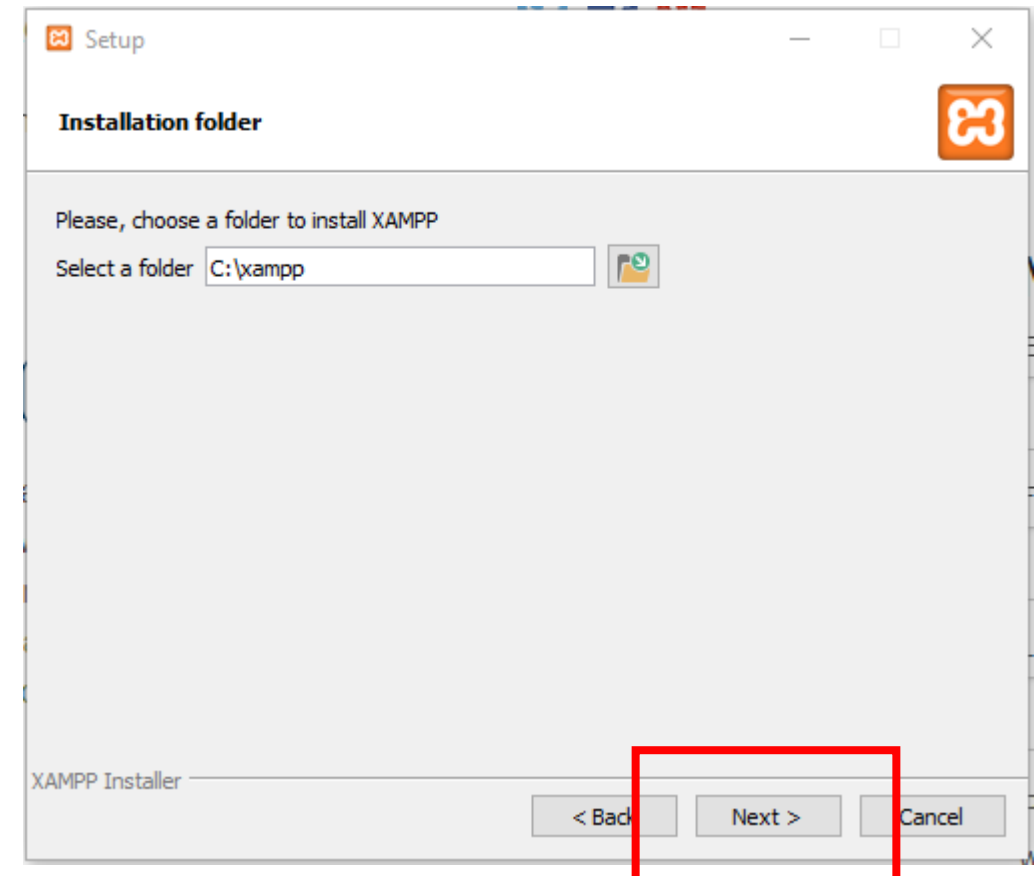
PS: Next slides might be slightly distinct depending on XAMPP version.

XAMPP INSTALLATION

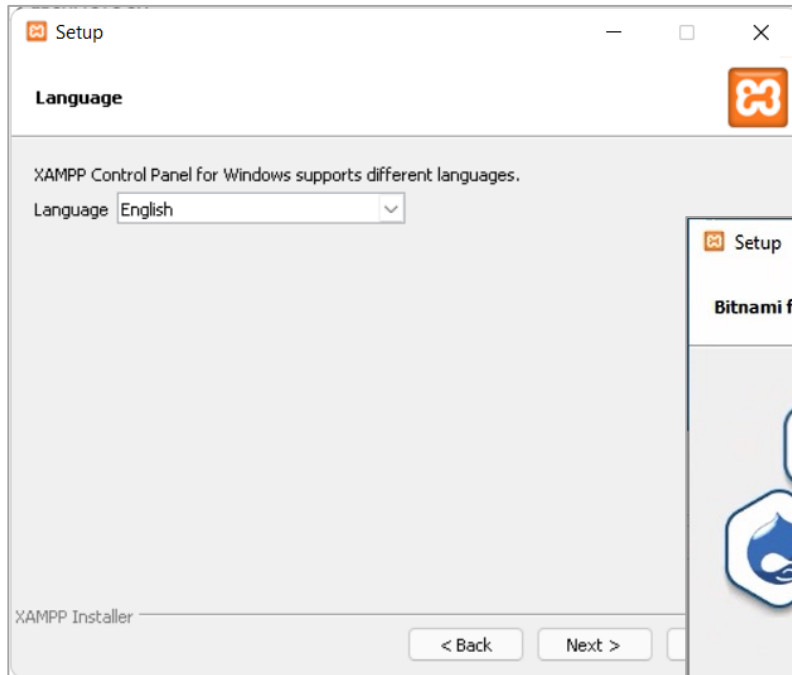
Leave all options by default



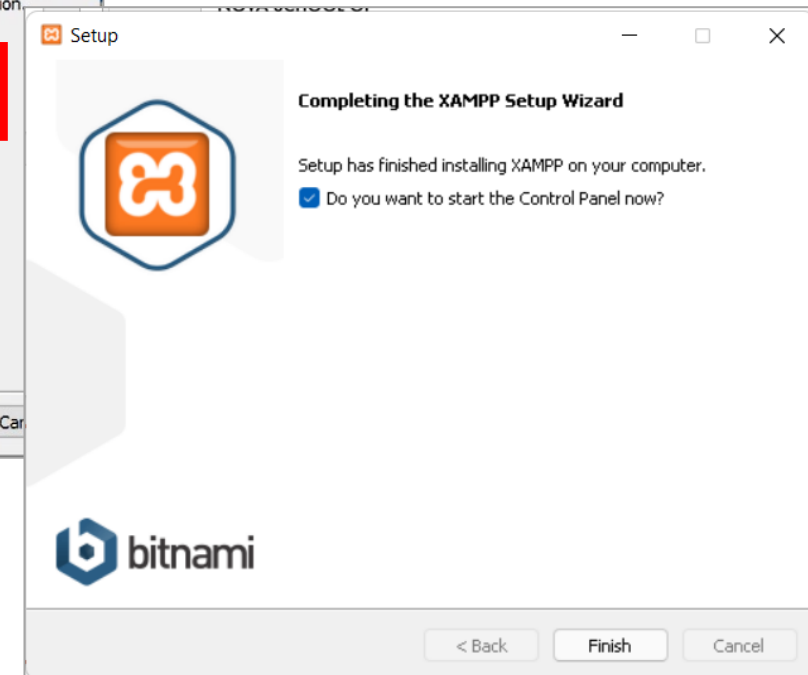
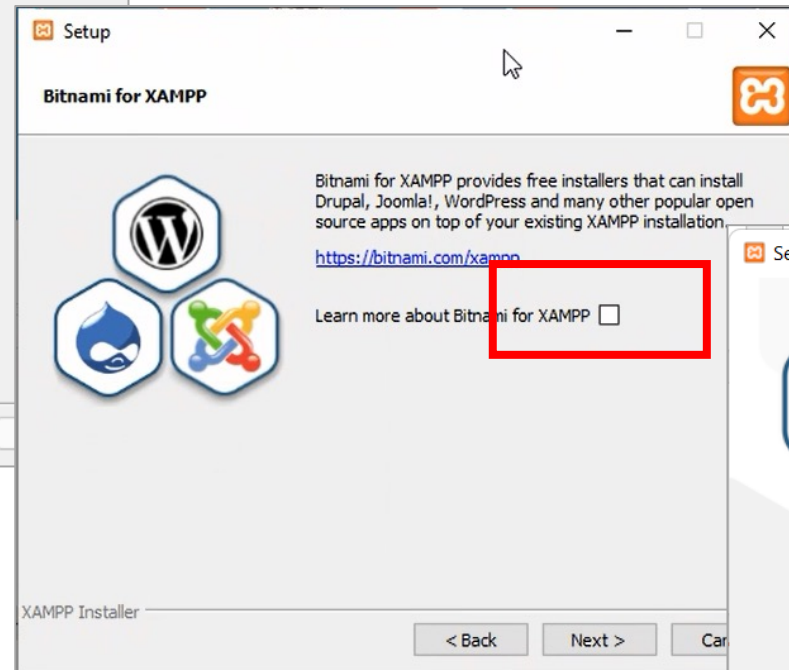
- Set the install folder `c:\xampp`



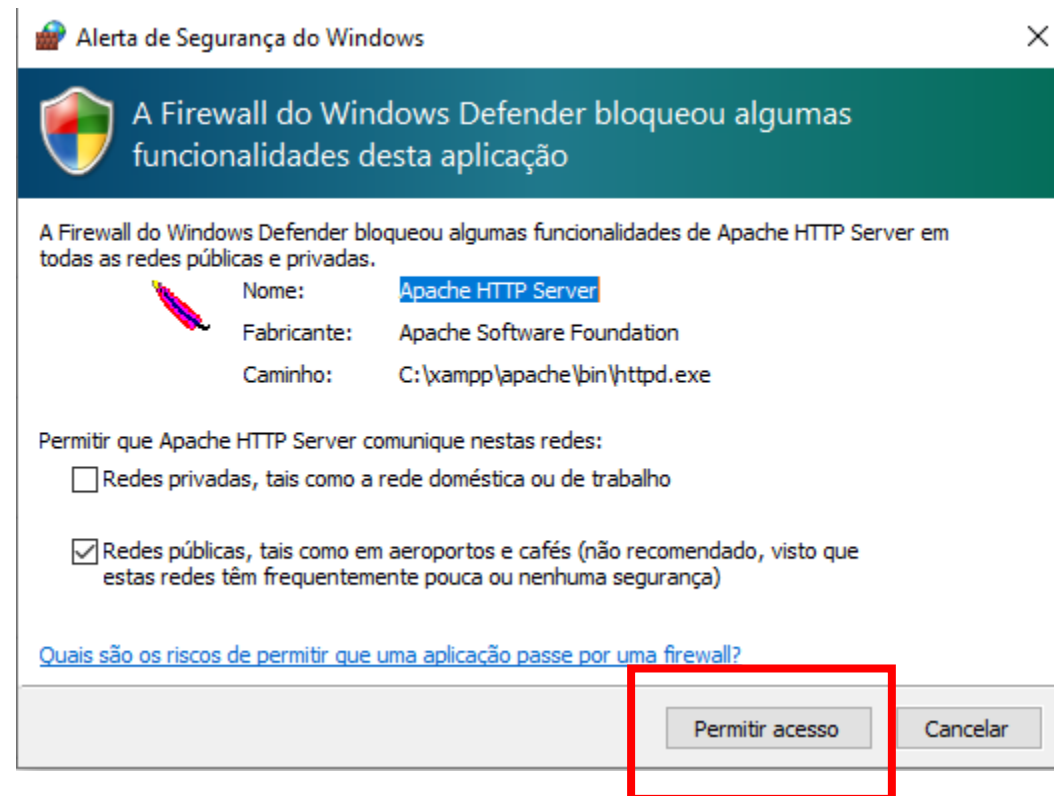
XAMPP INSTALLATION



Uncheck the option



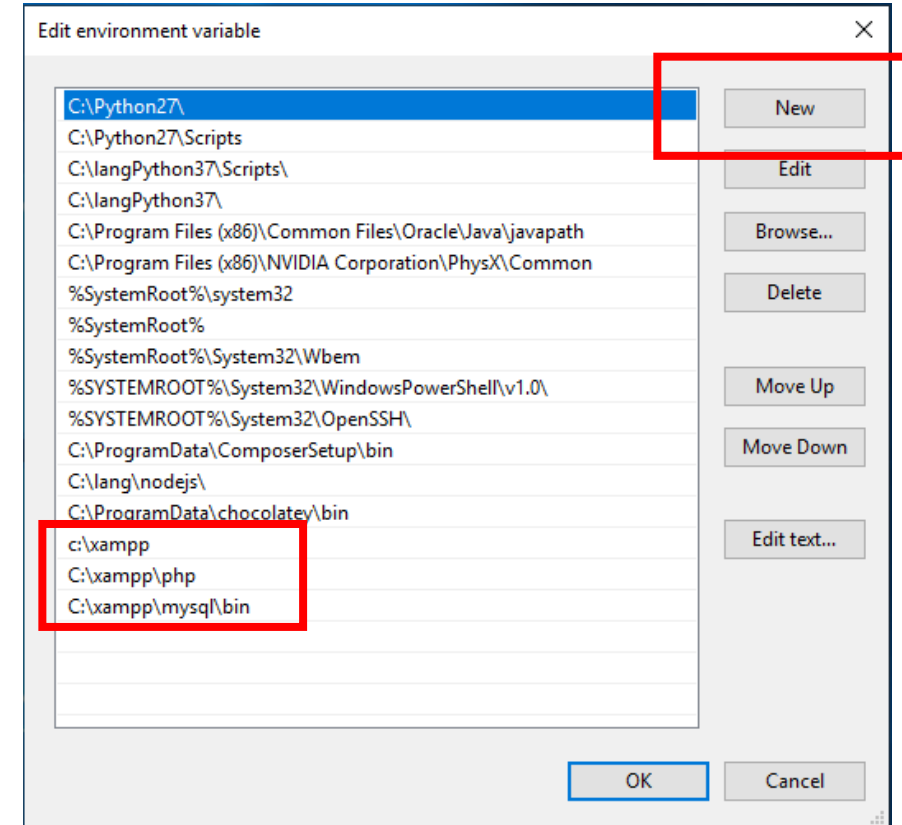
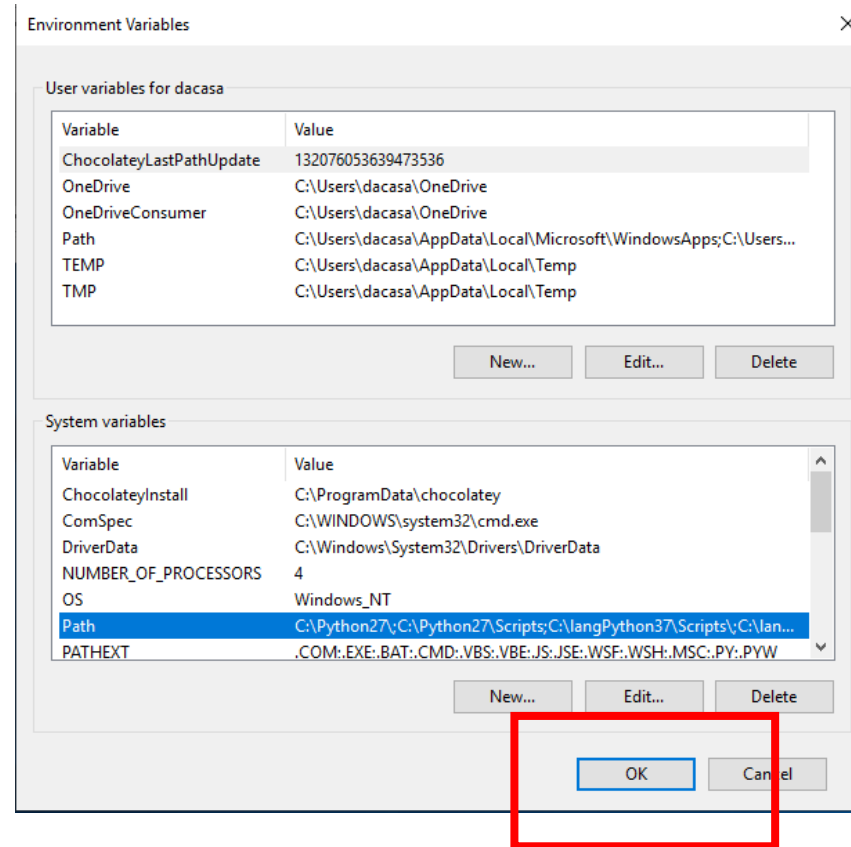
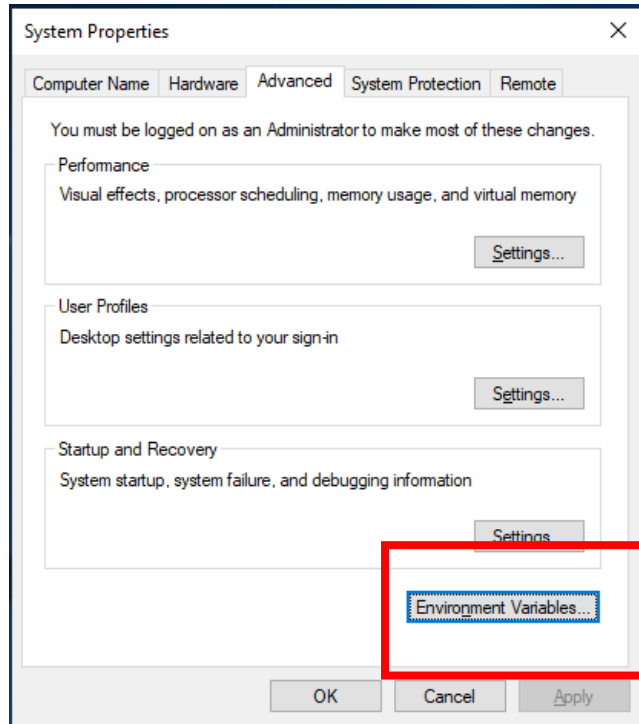
Allow in Firewall If it appears



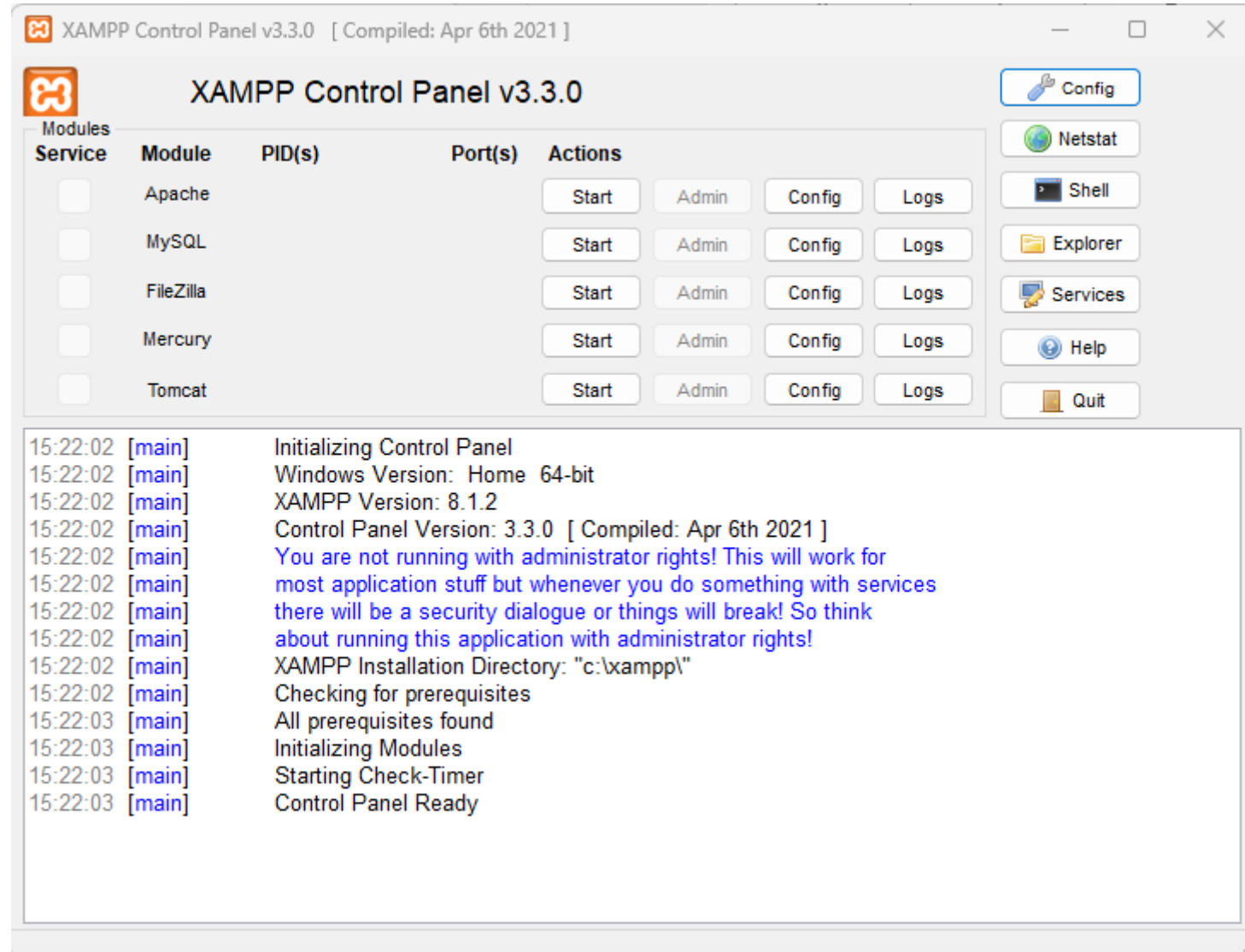
SOME CONFIGURATIONS



Not mandatory, but helpful sometimes



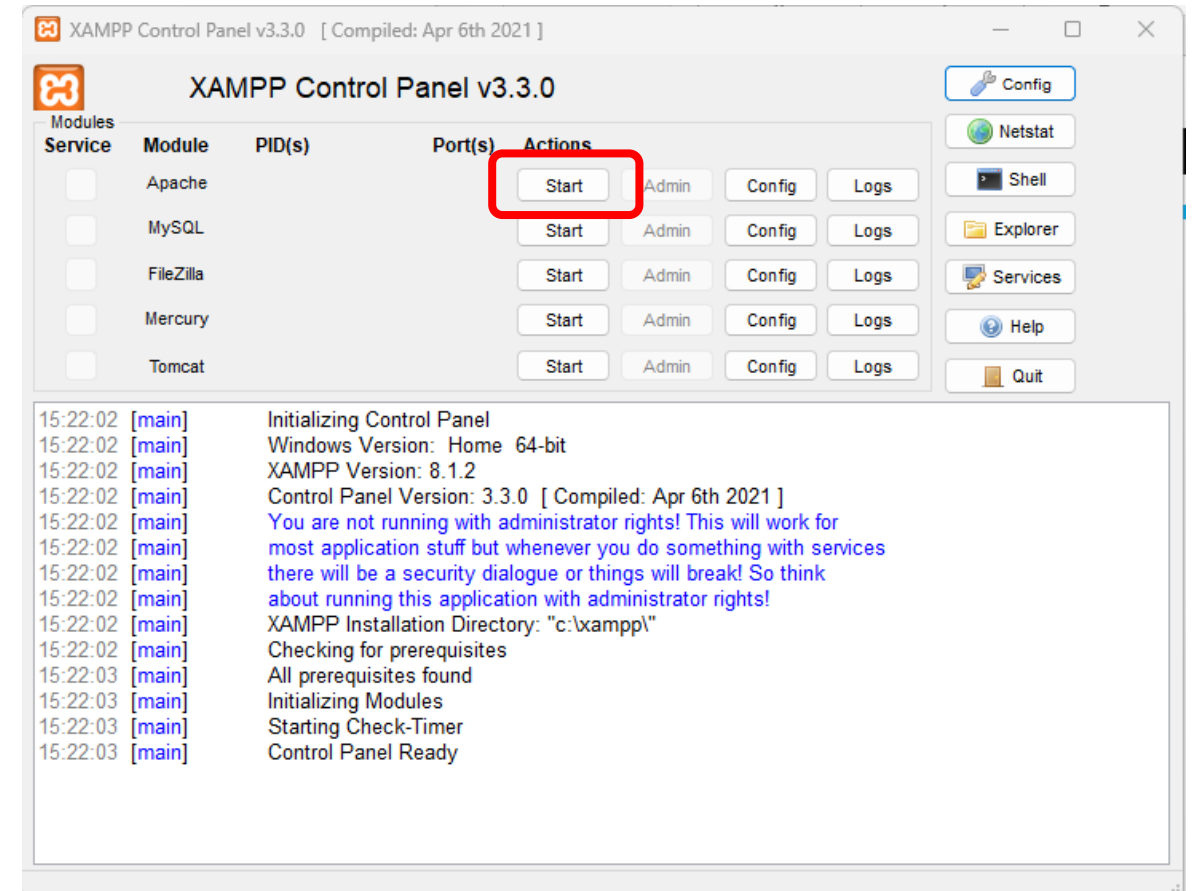
XAMPP APPLICATION



XAMPP APPLICATION – START Apache



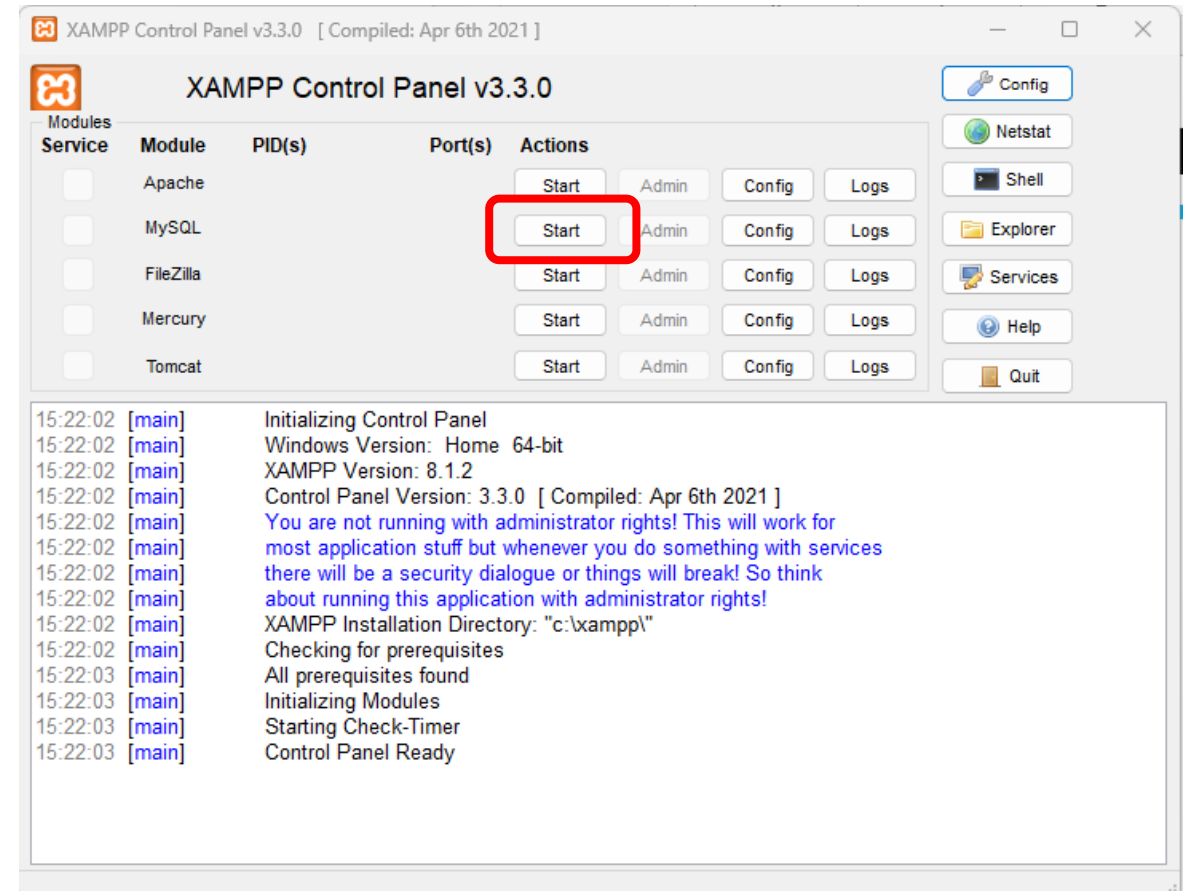
- ❑ Press the Apache start “button”
- ❑ Let firewall allow access if dialog appears



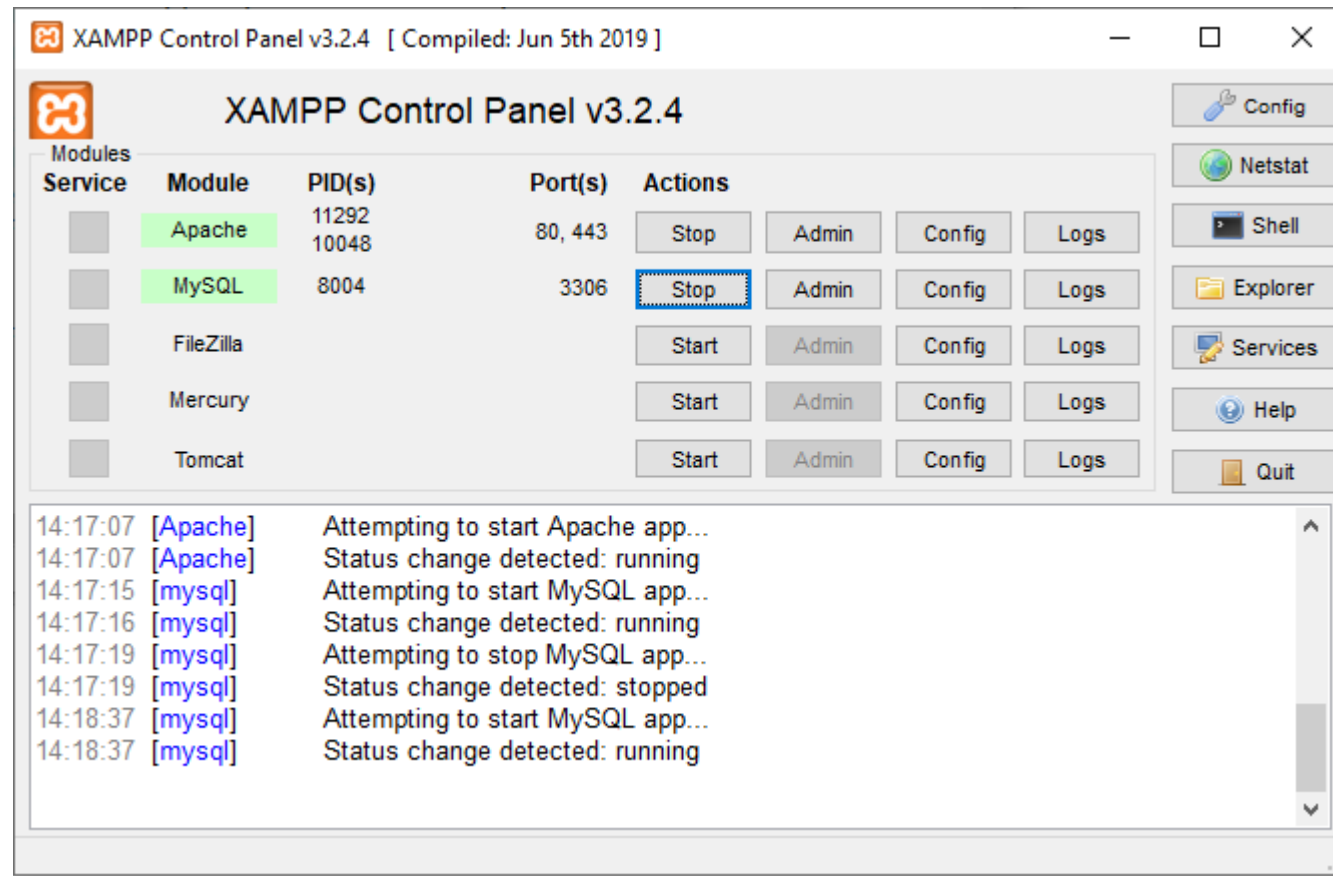
XAMPP APPLICATION – START MySQL



- ❑ Press MySQL start “button”
- ❑ Let firewall allow access if dialog appears



XAMPP APPLICATION – Apache + MySQL Running



MySQL: ROOT CONFIGURATION



At first time, mySQL is set without password:

- Open a console: `cmd.exe`
- `mysql -uroot -p`
- (press enter when asked for password, because it was not set yet)
- `ALTER USER 'root'@'localhost' IDENTIFIED BY 'mde';`

```
Command Prompt - mysql -uroot -p

C:\Users\abstr>mysql -uroot -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 8
Server version: 10.4.22-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> ALTER USER 'root'@'localhost' IDENTIFIED BY 'mde';
Query OK, 0 rows affected (0.002 sec)

MariaDB [(none)]>
```

Don't mistake or forget the password **ever!**
Due to security concerns, the recovery process is very complex.

See here:

<https://dev.mysql.com/doc/mysql-windows-excerpt/5.7/en/resetting-permissions-windows.html>

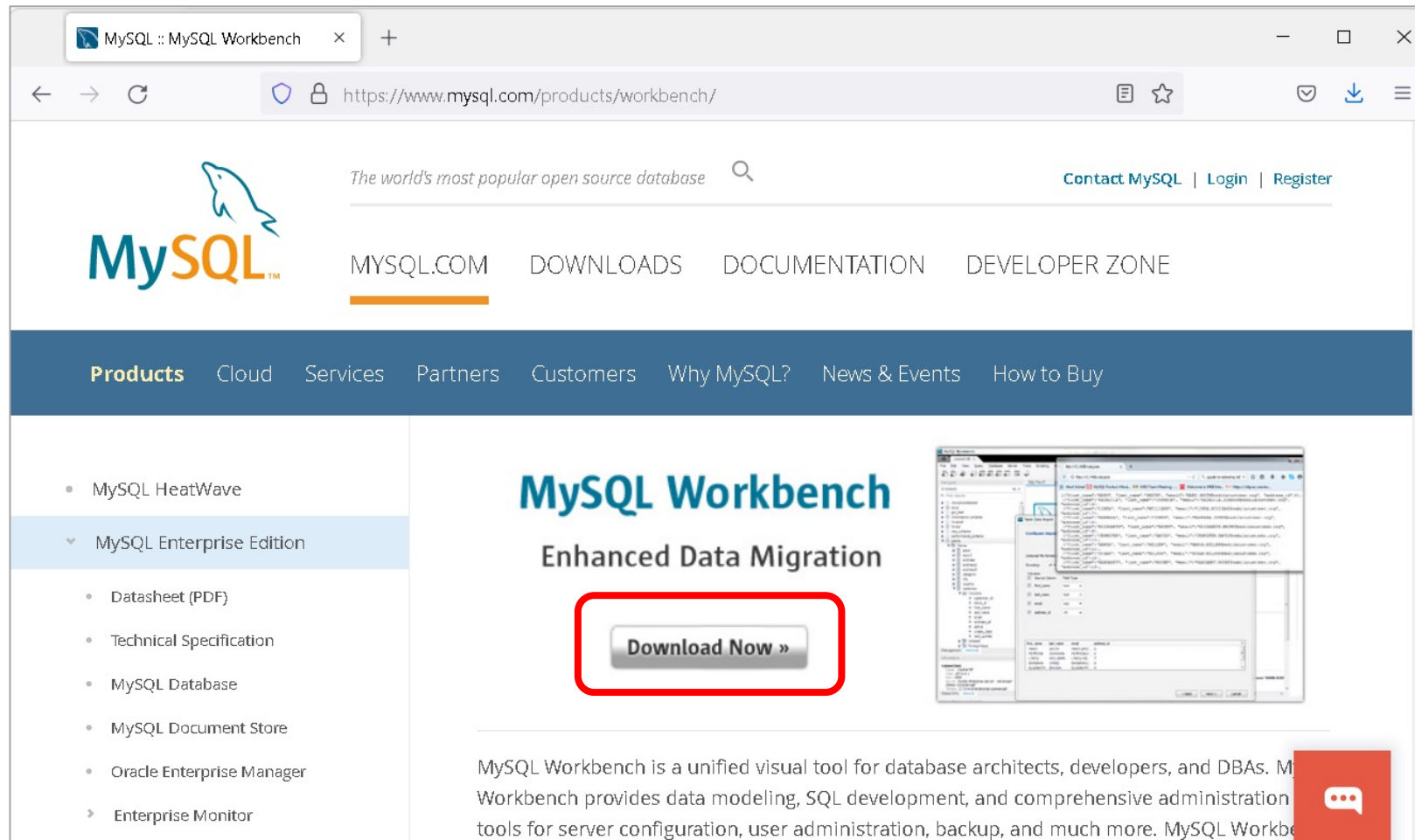


MySQL Workbench

Installation

MySQL Workbench INSTALLATION


<https://www.mysql.com/products/workbench/>



The screenshot shows the MySQL website's 'Products' section. On the left, a sidebar lists various MySQL products, with 'MySQL Enterprise Edition' expanded to show options like 'Datasheet (PDF)', 'Technical Specification', 'MySQL Database', 'MySQL Document Store', 'Oracle Enterprise Manager', and 'Enterprise Monitor'. The main content area features a large heading 'MySQL Workbench' followed by 'Enhanced Data Migration'. A prominent 'Download Now »' button is highlighted with a red rectangle. To the right of the button is a screenshot of the MySQL Workbench application interface. Below this, a paragraph describes MySQL Workbench as a unified visual tool for database architects, developers, and DBAs, listing its capabilities: data modeling, SQL development, server configuration, user administration, backup, and more. The browser's address bar shows the URL 'https://www.mysql.com/products/workbench/'.

MySQL :: MySQL Workbench

← → ↻ 🔒 https://www.mysql.com/products/workbench/ ☆ 🔔 ⌵ ☰

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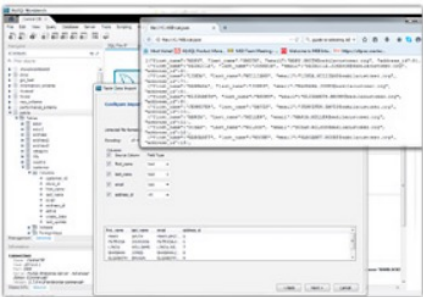
Products [Cloud](#) [Services](#) [Partners](#) [Customers](#) [Why MySQL?](#) [News & Events](#) [How to Buy](#)

- MySQL HeatWave
- ▼ MySQL Enterprise Edition
 - Datasheet (PDF)
 - Technical Specification
 - MySQL Database
 - MySQL Document Store
 - Oracle Enterprise Manager
 - › Enterprise Monitor

MySQL Workbench

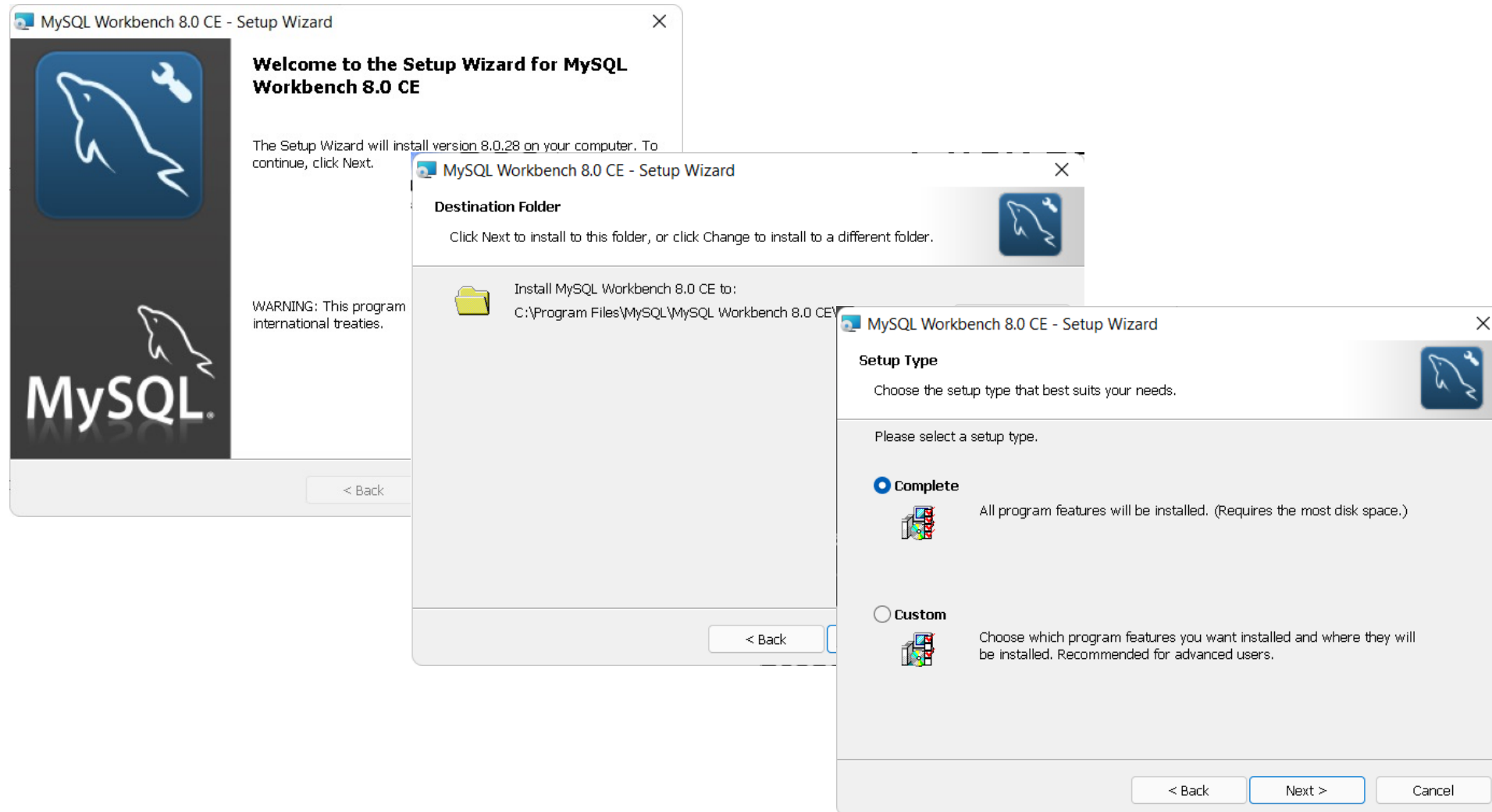
Enhanced Data Migration

[Download Now »](#)

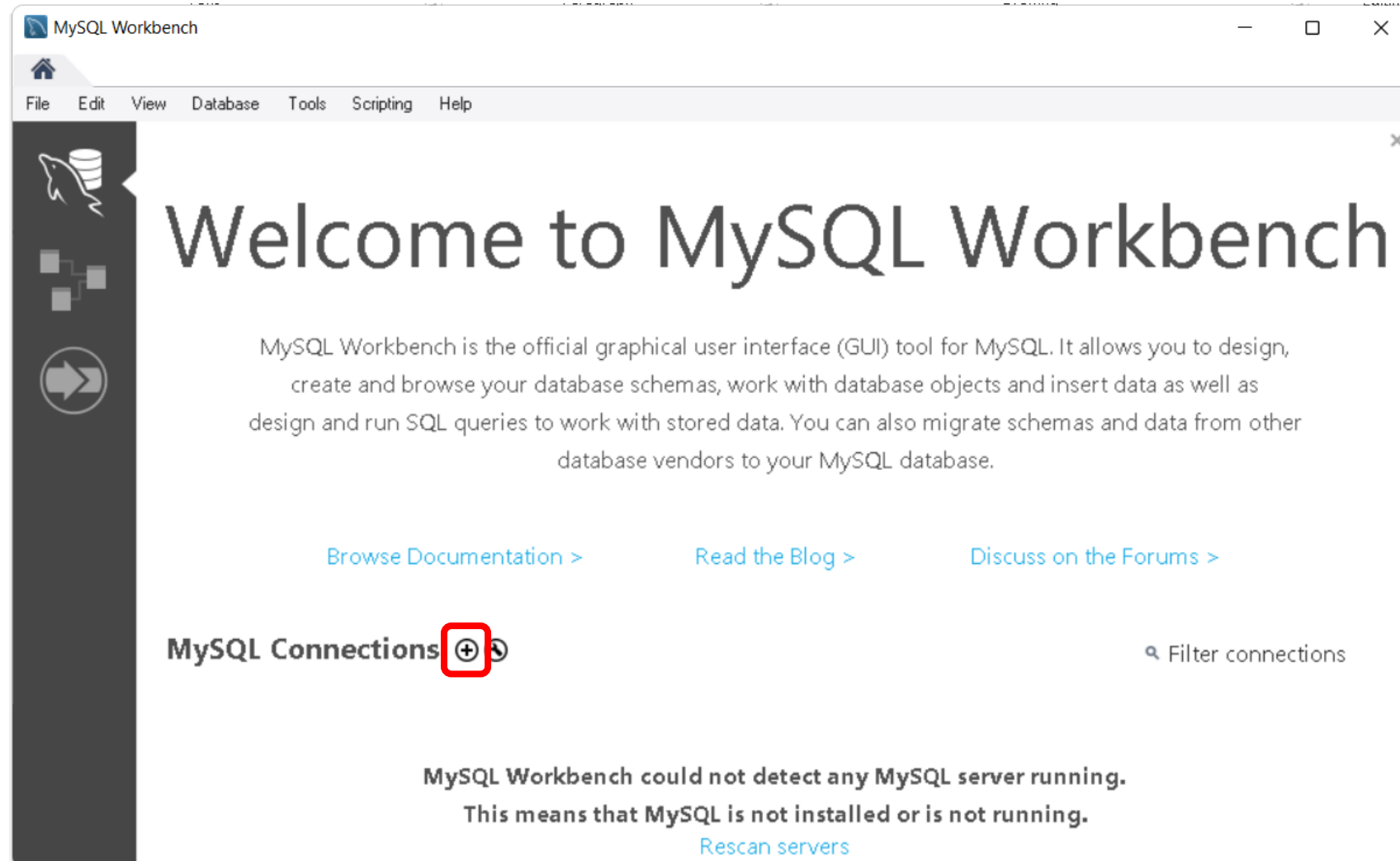


MySQL Workbench is a unified visual tool for database architects, developers, and DBAs. MySQL Workbench provides data modeling, SQL development, and comprehensive administration tools for server configuration, user administration, backup, and much more. MySQL Workbench

MySQL Workbench INSTALLATION



MySQL Workbench: CREATE CONNECTION



MySQL Workbench: CREATE CONNECTION

The screenshot shows the 'Setup New Connection' dialog box in MySQL Workbench. The 'Connection Name' is 'mde_connection', 'Connection Method' is 'Standard (TCP/IP)', 'Hostname' is '127.0.0.1', 'Port' is '3306', 'Username' is 'root', and 'Password' is masked with '***'. A red arrow points from the 'Store in Vault ...' button in the 'Password' field to the 'Store Password For Connection' sub-dialog box. The sub-dialog box has the title 'Store Password For Connection' and the text 'Please enter password for the following service:'. It shows 'Service: Mysql@127.0.0.1:3306', 'User: root', and 'Password: ***'. The 'OK' button is highlighted.

Setup New Connection

Connection Name: mde_connection Type a name for the connection

Connection Method: Standard (TCP/IP) Method to use to connect to the RDBMS

Parameters SSL Advanced

Hostname: 127.0.0.1 Port: 3306 Name or IP address of the server host - and TCP/IP port.

Username: root Name of the user to connect with.

Password: Store in Vault ... Clear The user's password. Will be requested later if it's not set.

Default Schema: The schema to use. Blank to select the default schema.

Store Password For Connection

Please enter password for the following service:

Service: Mysql@127.0.0.1:3306

User: root

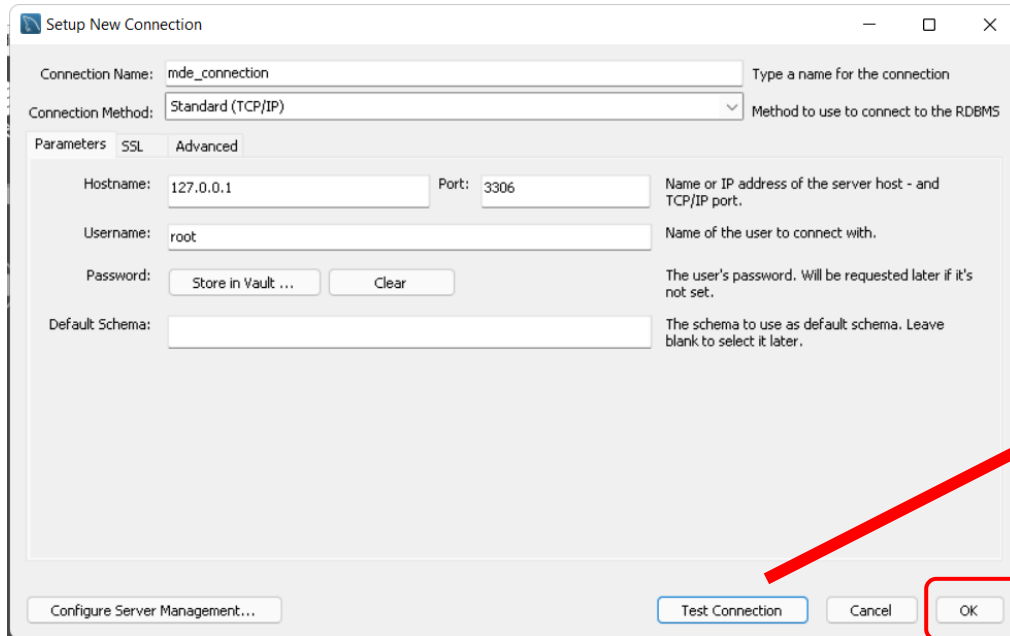
Password: ***

OK Cancel

Fill in the fields

mde

MySQL Workbench: TESTING CONNECTION



Setup New Connection

Connection Name: mde_connection

Connection Method: Standard (TCP/IP)

Parameters

Hostname: 127.0.0.1 Port: 3306

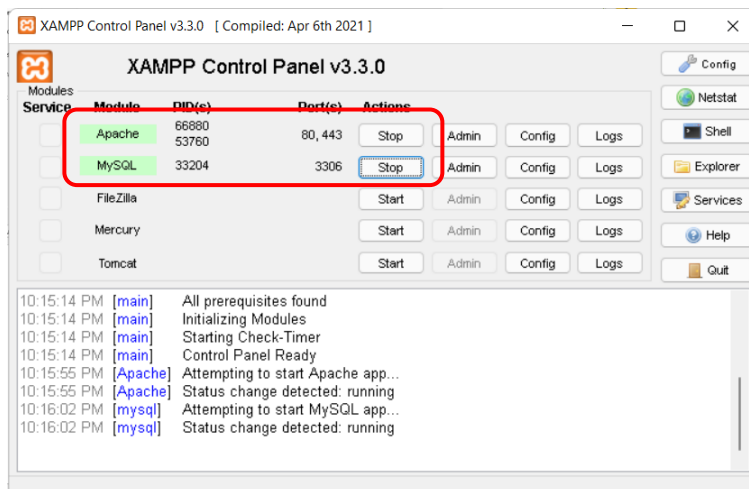
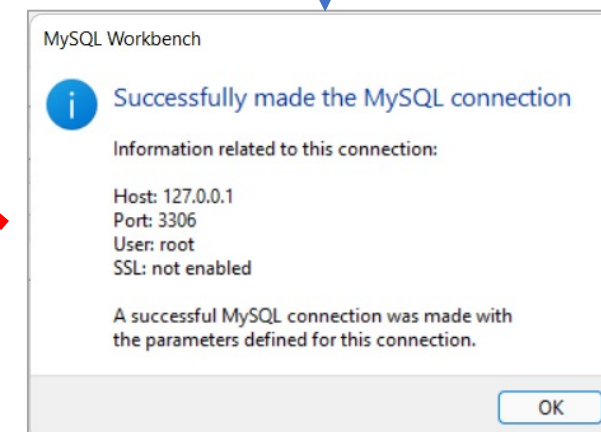
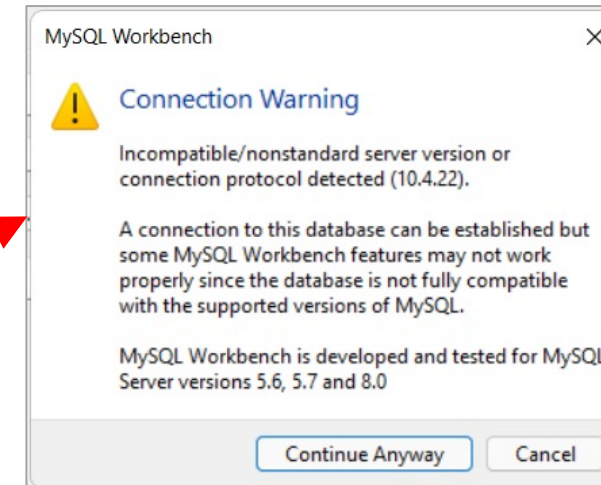
Username: root

Password: [Store in Vault ...] [Clear]

Default Schema:

Test Connection

OK



MySQL Workbench: 1st TRY



- Write each SQL statement shown in the Query1 window.
- Press CTRL+Enter at each line to execute.
- See the results appearing below.
- Statements:
 - Show databases;
 - Use mysql;
 - Show tables;
 - Describe user;
 - select user, host, password from user;

The screenshot shows the MySQL Workbench interface. The 'Query 1' window contains the following SQL statements:

```
1
2 • show databases;
3 • use mysql;
4 • show tables;
5 • describe user;
6 • select user, host, password from user;
```

The 'Result Grid' shows the results of the query:

User	Host	Password
root	localhost	*4678A62DABE08F2C1BE97016F71AF2436684...
root	127.0.0.1	
root	:::1	
pma	localhost	

The 'Output' window shows the execution log:

#	Time	Action	Message	Duration / Fetch
✓ 1	22:35:28	show databases	5 row(s) returned	0.000 sec / 0.000 sec
✓ 2	22:35:41	use mysql	0 row(s) affected	0.000 sec
✓ 3	22:35:49	show tables	31 row(s) returned	0.015 sec / 0.000 sec
✓ 4	22:36:00	describe user	47 row(s) returned	0.015 sec / 0.000 sec
✓ 5	22:36:23	select user, host, password from user LIMIT 0, 1000	4 row(s) returned	0.015 sec / 0.000 sec

MySQL Workbench: 1st EXAMPLE



The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'test' selected, showing a table named 'customers'. The main editor window shows a SQL query with the following content:

```
1
2 • use test;
3 • create table customers(
4   id      integer,
5   name    varchar(128),
6   address varchar(256),
7   city    varchar(32),
8   postal_code varchar(32),
9   email   varchar(32)
10 );
11
12 /* do queries like these */
13
14 • INSERT INTO `test`.`customers`(`id`,`name`,`address`,`city`,`postal_code`,`email`)
15   VALUES(1,'Antonio','Rua de cima, 32, 2Esq','Almada','2800-001','antonio@gmail.com');
16
17 • select id, name, city from customers;
18 • select * from customers where id =1;
19
20 • update customers
21   set email='antonio@sssapo.pt'
22   where id =1;
23
```

The 'Output' tab at the bottom shows an error message:

#	Time	Action	Message	Duration / Fetch
1	11:11:52	update customers set email='antonio@sssapo.pt' where id =1	Error Code: 1175. You are using safe update mode and you tried to update a...	0.000 sec

A red arrow points from the error message back to the SQL query, specifically to the update statement.

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

As we have not specified constraints yet, this error happens.

MySQL Workbench: 1st EXAMPLE – Disabling the error



- Save the editor.
- Click preferences:

The screenshot shows the MySQL Workbench interface with the 'Workbench Preferences' dialog box open. The 'SQL Editor' category is selected in the left sidebar. The 'Safe Updates' checkbox is unchecked and highlighted with a red box. The background shows a SQL editor with a query and a schema diagram.

Workbench Preferences

- General Editors
 - SQL Editor**
 - Query Editor
- Object Editors
- SQL Execution
- Administration
- Modeling
 - Defaults
 - MySQL
 - Diagram
- Appearance
- Fonts & Colors
- SSH
- Others

Auto-save scripts interval: 10 seconds

☐ Create new tabs as Query tabs instead of File

☒ Restore expanded state of the active schema objects

Sidebar

☒ Show Schema Contents in Schema Tree

☐ Show Metadata and Internal Schemas

MySQL Session

DBMS connection keep-alive interval (in seconds): 600

DBMS connection read timeout interval (in seconds): 30

DBMS connection timeout interval (in seconds): 60

Other

Internal Workbench Schema: .mysqlworkbench

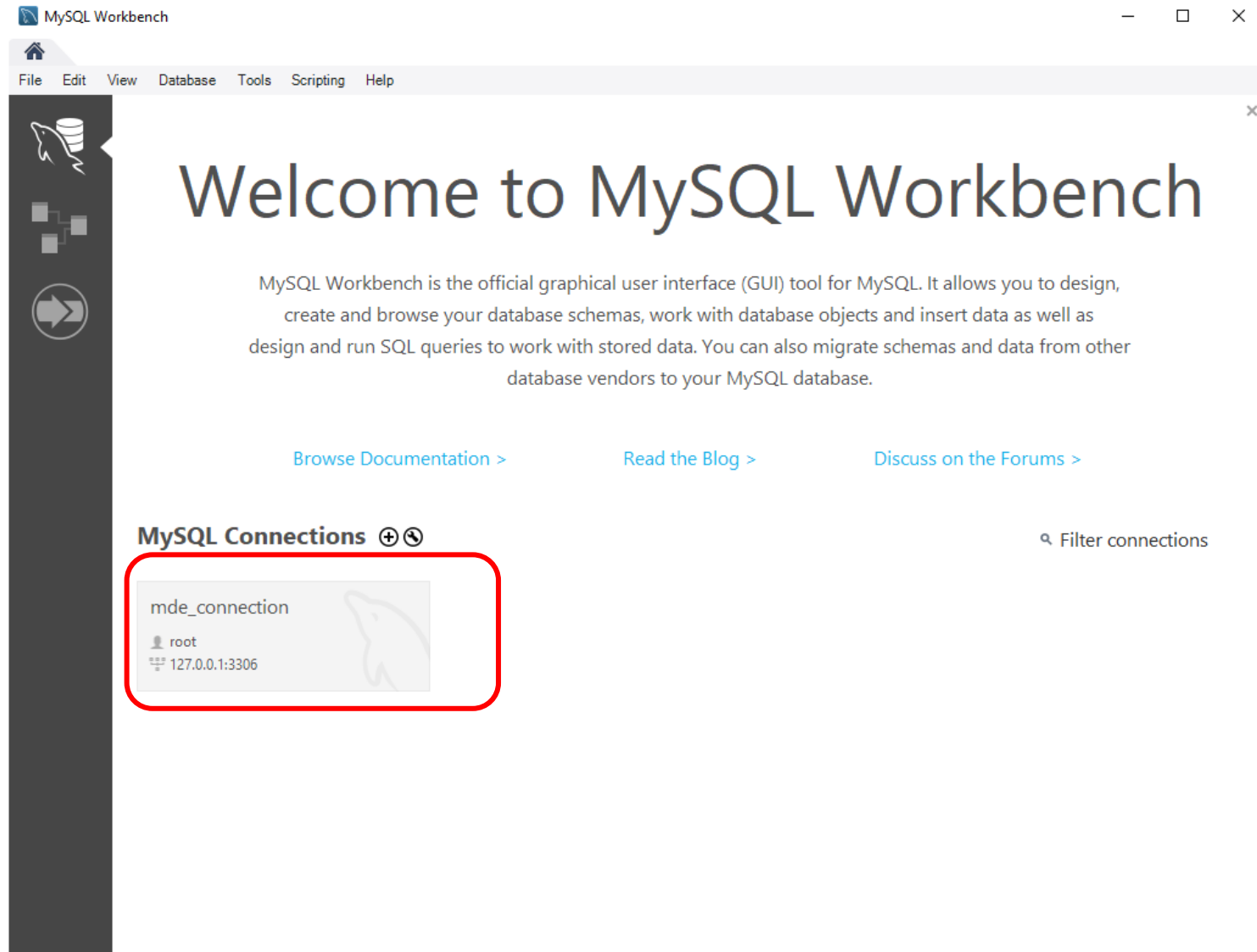
☐ Safe Updates (rejects UPDATES and DELETES with no restrictions)

OK Cancel

MySQL Workbench: 1st EXAMPLE – Disabling the error



- Close workbench
- Click connection.



MySQL Workbench: 1st EXAMPLE – Trying Again

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'test' selected. The main editor shows a SQL query with a red arrow pointing to the 'update' statement. The right sidebar shows a message about automatic context help. The bottom panel shows the 'Output' tab with a table of execution results.

SQL Query:

```
6 address varchar(256),
7 city varchar(32),
8 postal_code varchar(32),
9 email varchar(32)
10 );
11
12 /* do queries like these */
13
14 • INSERT INTO `test`.`customers`(`id`,`name`,`address`,`city`,`postal_code`,`email`)
15 VALUES(1,'Antonio','Rua de cima, 32, 2Esq', 'Almada', '2800-001','antonio@sssapo.pt');
16
17 • select id, name, city from customers;
18 • select * from customers where id =1;
19
20 • update customers
21 set email='antonio@sssapo.pt'
22 where id =1;
23
```

Output:

#	Time	Action	Message	Duration / Fetch
✓ 1	11:18:11	use test	0 row(s) affected	0.000 sec
✓ 2	11:18:17	update customers set email='antonio@sssapo.pt' where id =1	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0	0.016 sec



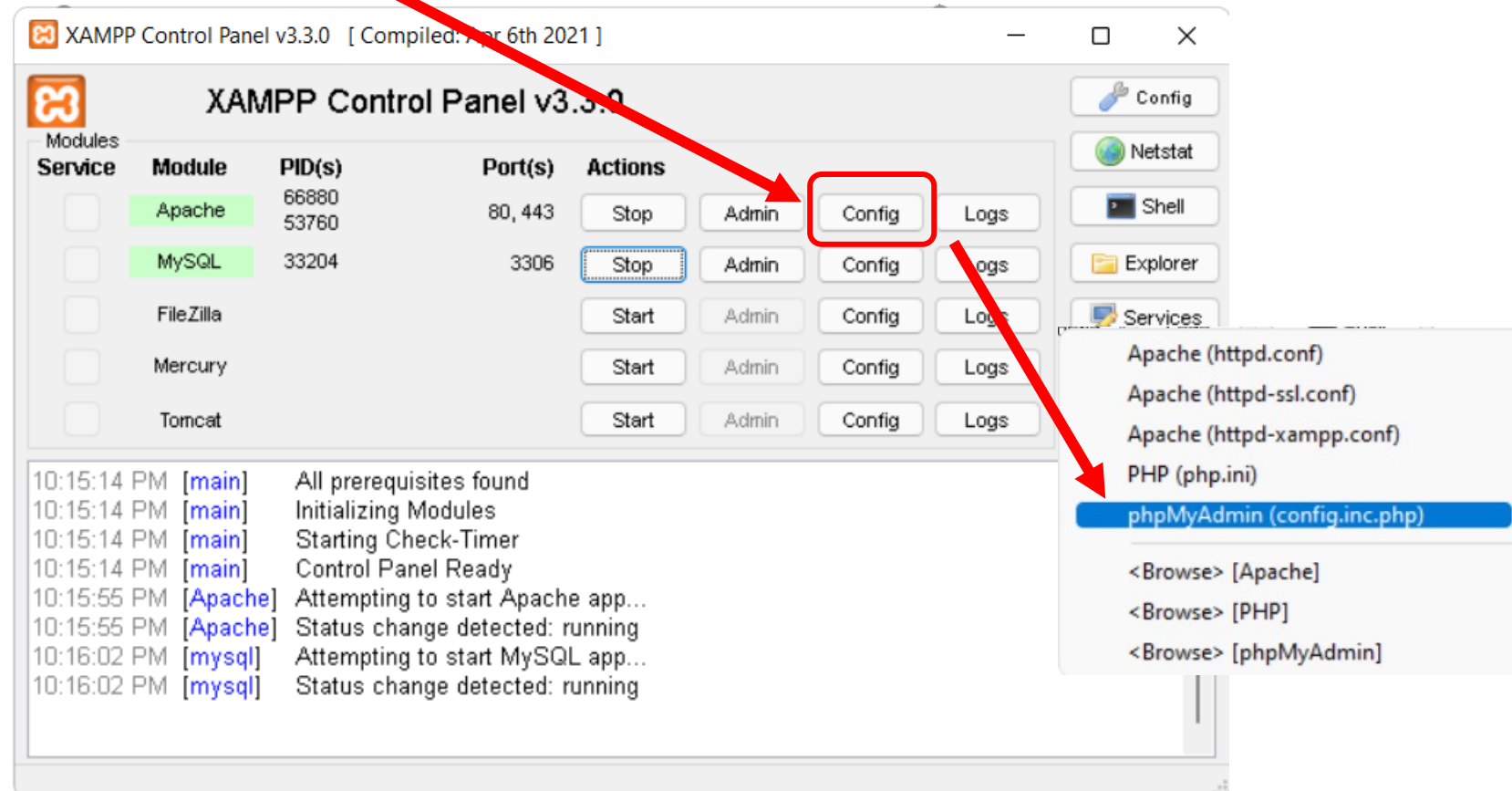
phpMyAdmin

Configuration

phpMyAdmin CONFIGURATION

- There is another way to interact with MySQL, through a Web Interface.

Press button config



phpMyAdmin CONFIGURATION: Setting the password



```
config.inc.php - Notepad
File Edit View

* First server
*/
$i++;

/* Authentication type and info */
$config['Servers'][$i]['auth_type'] = 'config';
$config['Servers'][$i]['user'] = 'root';
$config['Servers'][$i]['password'] = 'mde';
$config['Servers'][$i]['extension'] = 'mysqli';
$config['Servers'][$i]['AllowNoPassword'] = true;
$config['Lang'] = '';

/* Bind to the localhost ipv4 address and tcp */
$config['Servers'][$i]['host'] = '127.0.0.1';
$config['Servers'][$i]['connect_type'] = 'tcp';

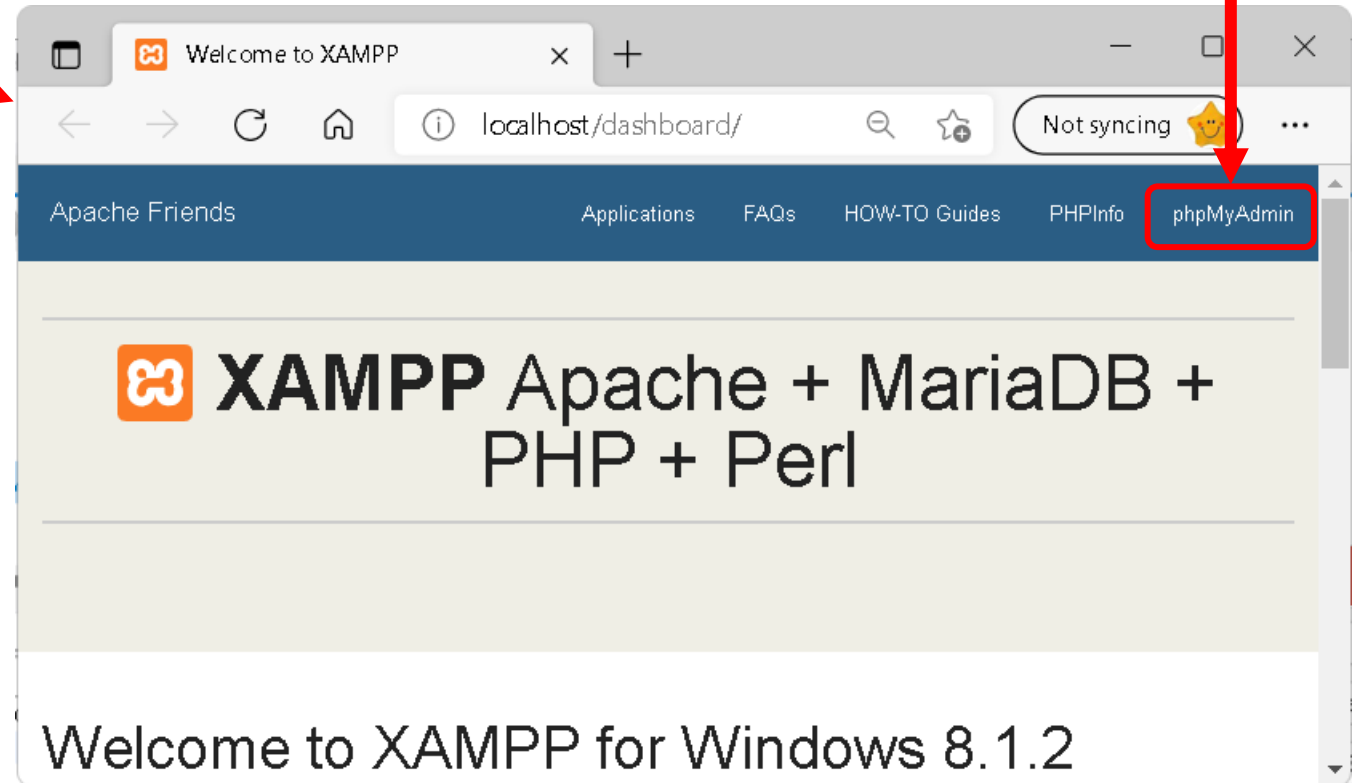
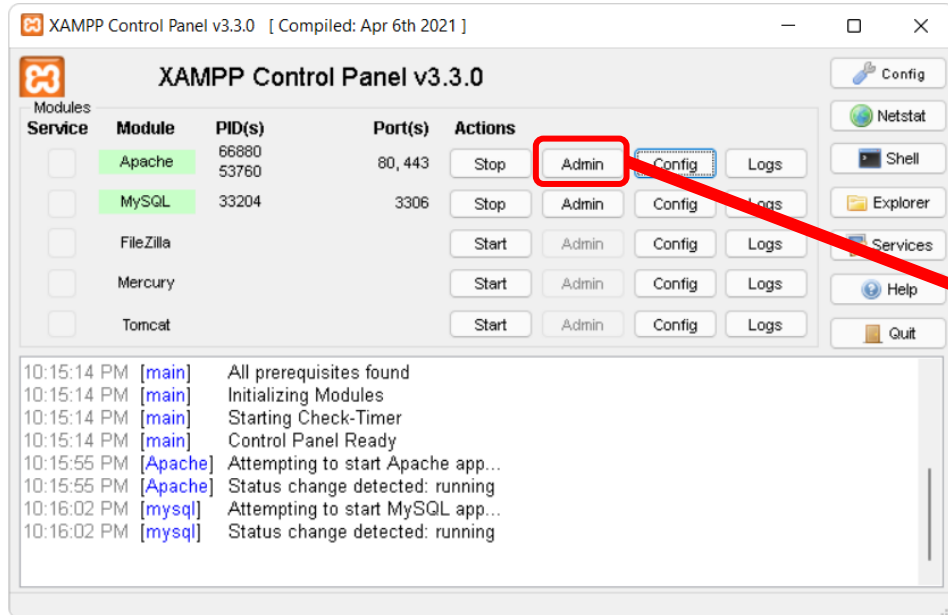
/* User for advanced features */
$config['Servers'][$i]['controluser'] = 'pma';
$config['Servers'][$i]['controlpass'] = '';

Ln 21, Col 39 | 100% | Unix (LF) | UTF-8
```

Insert the MySQL password specified before, 'mde'

Save the file

phpMyAdmin: RUN



phpMyAdmin INTERFACE



The screenshot displays the phpMyAdmin web interface in a browser window. The address bar shows the URL: `localhost/phpmyadmin/index.php?route=/database/sql&db=mysql`. The interface includes a top navigation bar with tabs for Structure, SQL, Search, Query, Export, Import, Operations, Privileges, Routines, Events, Triggers, Tracking, Designer, and Central columns. On the left, a sidebar shows the database structure with a tree view for the 'mysql' database, including tables, views, and a 'user' table. The main area is titled 'Run SQL query/queries on database mysql:' and contains a text input field with the following SQL query:

```
1 use mysql;  
2 select user, host, password from user;
```

Below the query input are buttons for 'Clear', 'Format', and 'Get auto-saved query'. There is a checkbox for 'Bind parameters' and a 'Bookmark this SQL query:' field. At the bottom of the query input area, there are checkboxes for 'Show this query here again', 'Retain query box', 'Rollback when finished', and 'Enable foreign key checks', along with a 'Go' button. The results section shows two green status messages: 'MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)' and 'Showing rows 0 - 3 (4 total, Query took 0.0025 seconds.)'. Below these, the SQL query is repeated. There are links for '[Edit inline]', '[Edit]', and '[Create PHP code]'. A 'Profiling' section is also visible with links for '[Edit inline]', '[Edit]', '[Explain SQL]', '[Create PHP code]', and '[Refresh]'. At the bottom, there are controls for 'Show all', 'Number of rows' (set to 25), and a 'Filter rows' search box. A table of results is displayed with columns 'User', 'Host', and 'Password'. The table contains four rows of data:

User	Host	Password
root	localhost	*4678A62DABE08F2C1BE97016F71AF243668477A8
root	127.0.0.1	
root	:::1	
pma	localhost	

At the very bottom, there is a 'Console' tab and another set of controls for 'Number of rows' (set to 25) and a 'Filter rows' search box.

- ❑ If you arrived successfully at this slide, then success.

- ❑ Feel free to explore the many online tutorials regarding MySQL, e.g.:
 - <https://www.mysqltutorial.org/>
 - <https://www.w3schools.com/MySQL/default.asp>
 - <https://www.tutorialspoint.com/mysql/index.htm>

- ❑ See you next class.