THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Fall, 2020

COMP2121 E-Business

Lab 1: Setup Development Environment and Launch your first Website

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Tentative Plan

There are 10 or 11 labs for building e-commerce websites with HTML, CSS, Javascript, and Mysql.

No revision class in Week 13.
Please work on your group project.

- Lab 1: Development and Deployment Environment
- Lab 2: HTML
- Lab 3: CSS
- Lab 4: JavaScript
- Lab 5: JavaScript
- Lab 6: PHP
- Lab 7: PHP
- Lab 8: MYSQL
- Lab 9: MYSQL
- Labs 10 & 11: API such as React.js, AJAX

Lab 1: Learning outcomes

After this class, you should be able to

1. Deploy and Launch your first Hello world web page in your PolyU web application server from your home.
2. Set up the development environment (Apache HTTP server, MySQL, , PHP Engine, Xdebug, and Apache Netbeans IDE) in your own computer.
3. Run some Demo's
4. Understand and use some HTML

Accessing your personal page from UNIX/Linux

All COMP students may set up their personal homepages in their Unix accounts. You have to write your own html file(s) before following the procedures below:

1. Create a directory named `public_html` in `/webhome/<Your COMP ID>/`.
   Enter `mkdir /webhome/<Your COMP ID>/public_html`.
2. Make the `public_html` readable and executable for the others.
   Enter `chmod a+rx /webhome/<Your COMP ID>/public_html`.
3. Copy your html file(s) to the `public_html` directory.
4. Make all your html files readable to the others.
   Enter `chmod a+r *.html` in the `public_html` directory.

The URL of your personal homepage is

> `http://www2.comp.polyu.edu.hk/~<your COMP ID>`
>
> `e.g. http://www2.comp.polyu.edu.hk/~01234567d`

http://www4.comp.polyu.edu.hk/~kf2yuen/

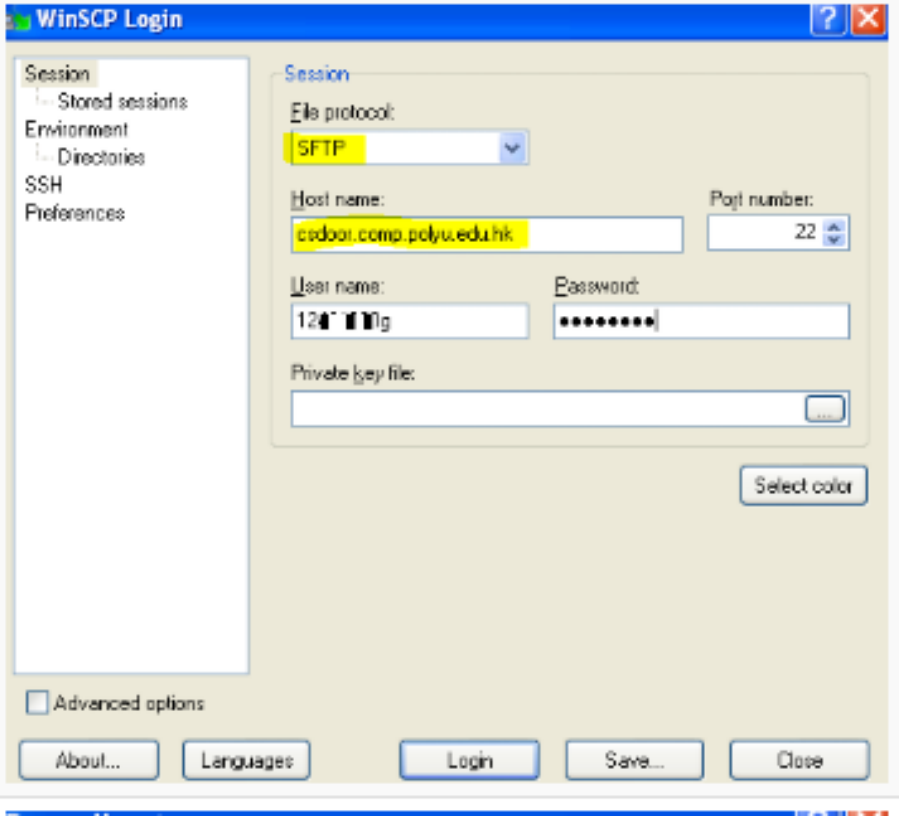
https://intranet.comp.polyu.edu.hk/TechServices/TechnicalTips/89
You need to login by your COMP account.

Accessing your personal page directory from LAB PCs

- You can access your profile in the Lab Computer with W: Drive.

Accessing your personal page directory with WinSCP

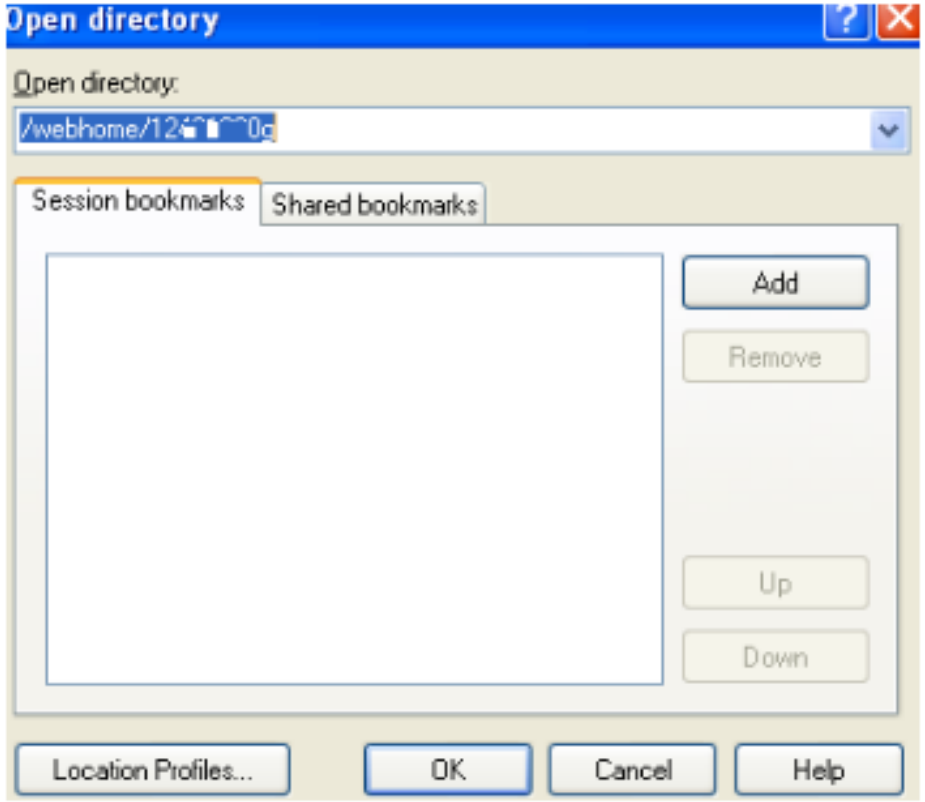
1. Download and install WinSCP. Start WinSCP and connect to our UNIX/Linux Host, e.g. `csdoor.comp.polyu.edu.hk`



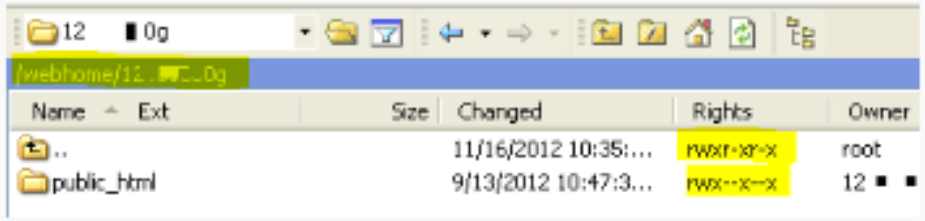
http://winscp.net/eng/index.php

`csdoor.comp.polyu.edu.hk`

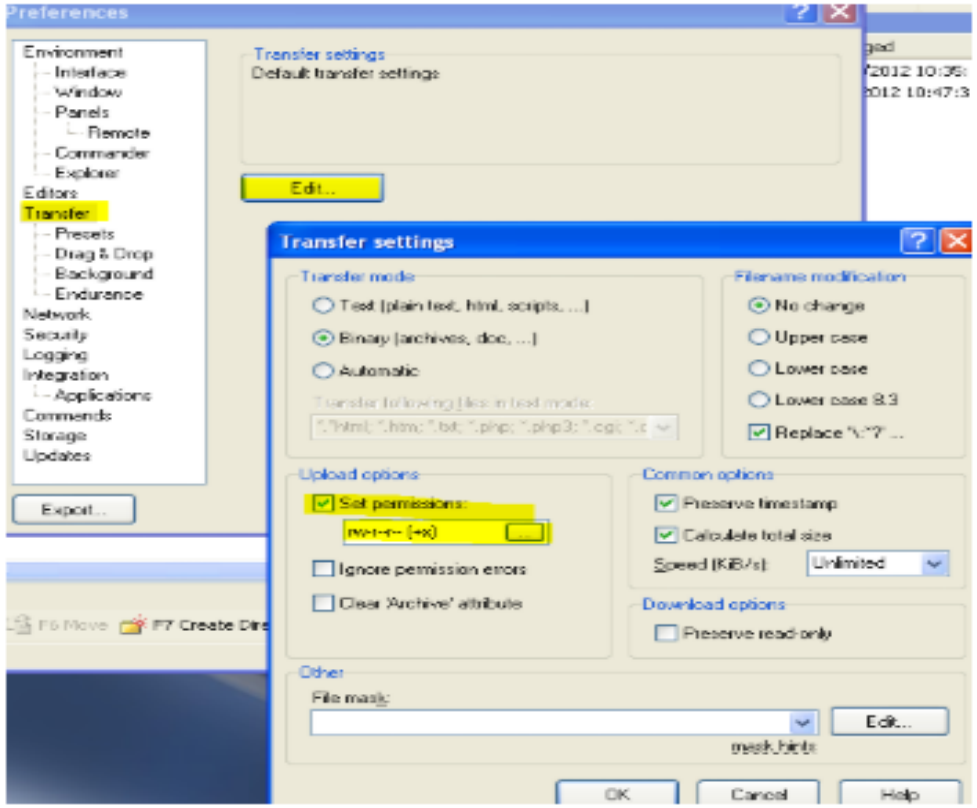
2. Click to open directory and type `/webhome/<your_comp_id>` in `Open Directory` and `OK`.



3. You are in your `/webhome/<your_comp_id>`, you have to make sure the access right of your web directory at least `rwx--x--x` or `rwxr-xr-x`



4. Setup default rights of your upload files
   - You can do so by click `Optoins -> Preferences -> Transfer -> Edit -> Set Permissions in Upload Options`



About using PHP Session

By default, COMP web server uses `memcache` as session handler. It is not necessary to use `session_save_path()` to define the path to store session. Otherwise, error message will be shown.

Lab 2: Set up local Environment

Notes

- Create a folder containing everything in the lab environment for this course
  - E.g. D:\eBusinessKevinYuenLabs, the name is just based on your preference.
- Or install components in separate locations

- This lab is based on window platform. If you use the other platform (e.g. Linux or MacOX), please refer to the related documents by yourself.
- Or install virtual machine of window 10 in your machine to perform this lab.

1.1 Install Apache HTTP Server

- Download the Apache2 HTTP server.

1. http://httpd.apache.org/download.cgi , choose apachelounge
2. https://www.apachelounge.com/download/

Apache 2.4.46 Win64

httpd-2.4.46-win64-VS16.zip 05 Aug '20 10.224k

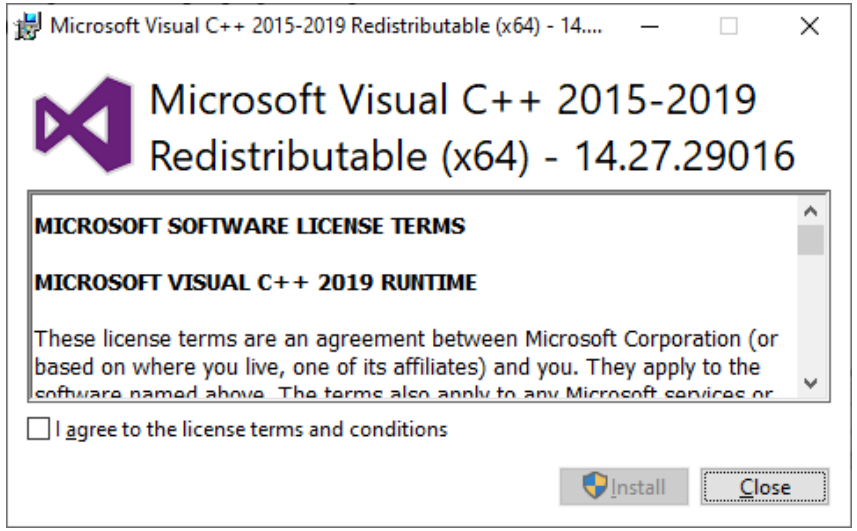
PGP Signature (Public PGP key), SHA1-SHA512 Checksums

Apache 2.4.46 Win32

httpd-2.4.46-win32-VS16.zip 05 Aug '20 9.344k

PGP Signature (Public PGP key), SHA1-SHA512 Checksums

Be sure you installed latest 14.26.28720.3 Visual C++ Redistributable for Visual Studio 2015-2019
: **vc_redist_x64** or **vc_redist_x86** see **Re distributable**
https://aka.ms/vs/16/release/vc_redist.x64.exe



1.2. Run and Test your Apache Server

- For more information, Click the readme.txt after unzip the apache zip file downloaded.

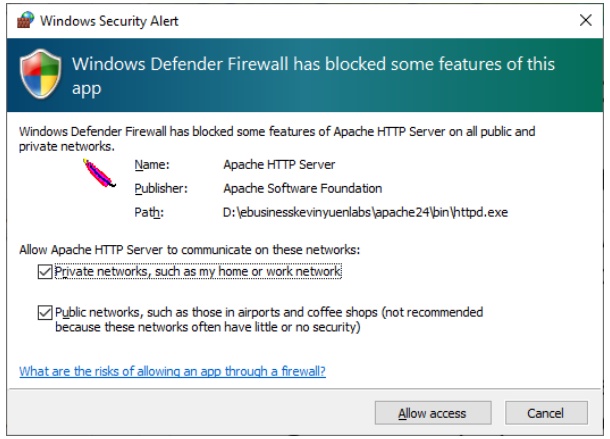
Open a command prompt window and cd to the D:\eBusinessKevinYuenLabs \Apache24\bin folder.
To Start Apache in the command prompt type:
>httpd.exe

Press Enter. If there are any errors it, will tell you.
Warnings will not stop Apache from working, they do need to be addressed none the less.
If there are no errors the cursor will sit and blink on the next line.

```
D:\eBusinessKevinYuenLabs\Apache24\bin>httpd
httpd: Syntax error on line 39 of D:/eBusinessKevinYuenLabs/Apache24/conf/httpd.conf: Server
Root must be a valid directory
```

Use notepad or the other editor to open \Apache24\conf\ httpd.conf

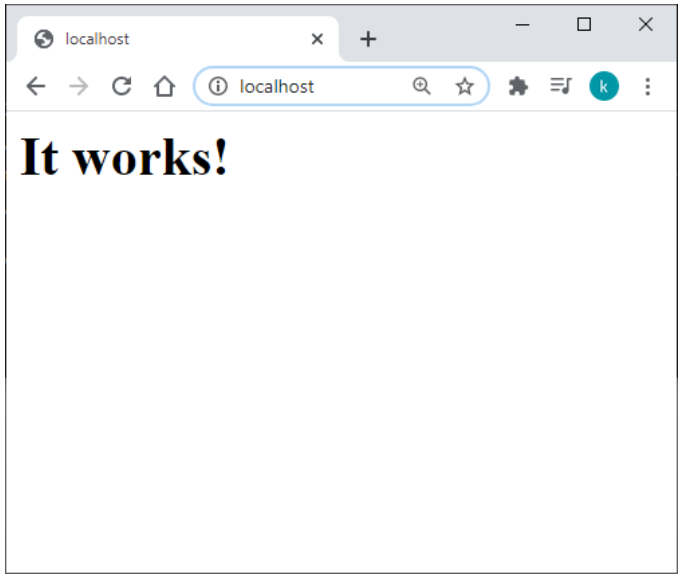
```
37  #Define SRVROOT "c:/Apache24"
38  Define SRVROOT "D:/eBusinessKevinYuenLabs/Apache24"
39
40  ServerRoot "${SRVROOT}"
41
```



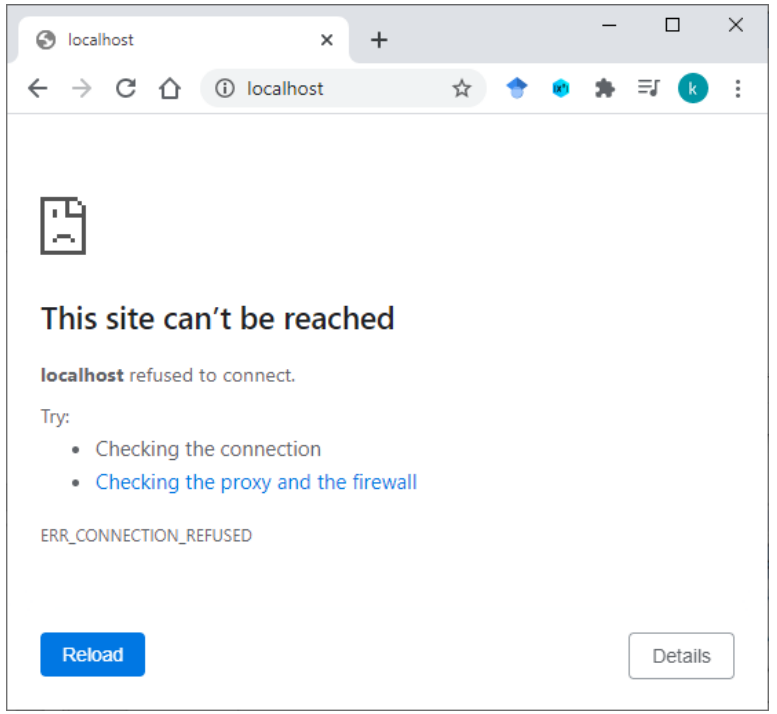
1.2. Run and Test your Apache Server

You can test your installation by opening up your Browser and typing in the address:

http://localhost



shut down Apache
by pressing Ctrl+C (It may take a few seconds)



The index.html in .\Apache24\htdocs

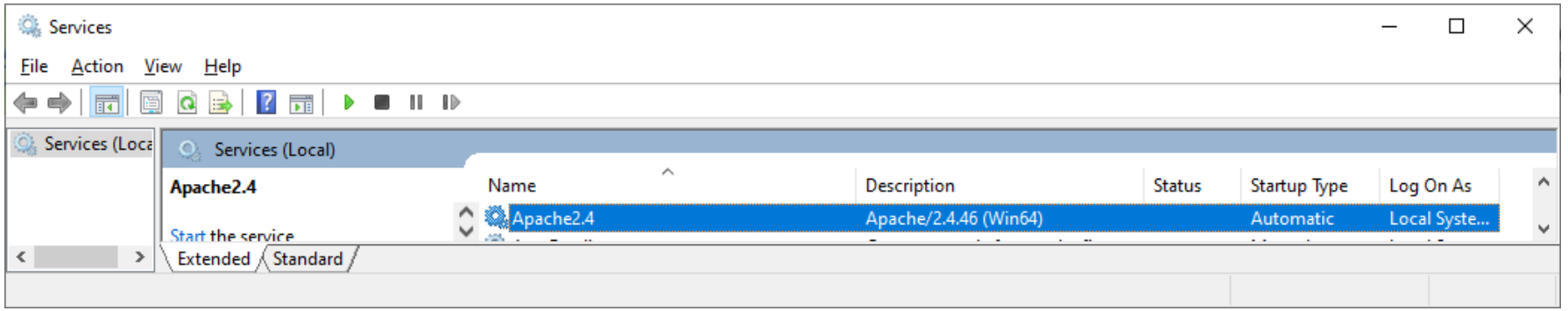
1.3. Apache Server in Window Services

To install as a service. Open command prompt as Administrator and type:

>httpd.exe -k install

You can start/stop the service with the command:

>services.msc



Start the Apache service and Try again: http://localhost

1.4. Set ServerName

How can we solve the error/warning messages of “ServerName”??

https://cwiki.apache.org/confluence/display/HTTPD/CouldNotDetermineServerName

Use notepad or the other editor to open \Apache24\conf\ httpd.conf

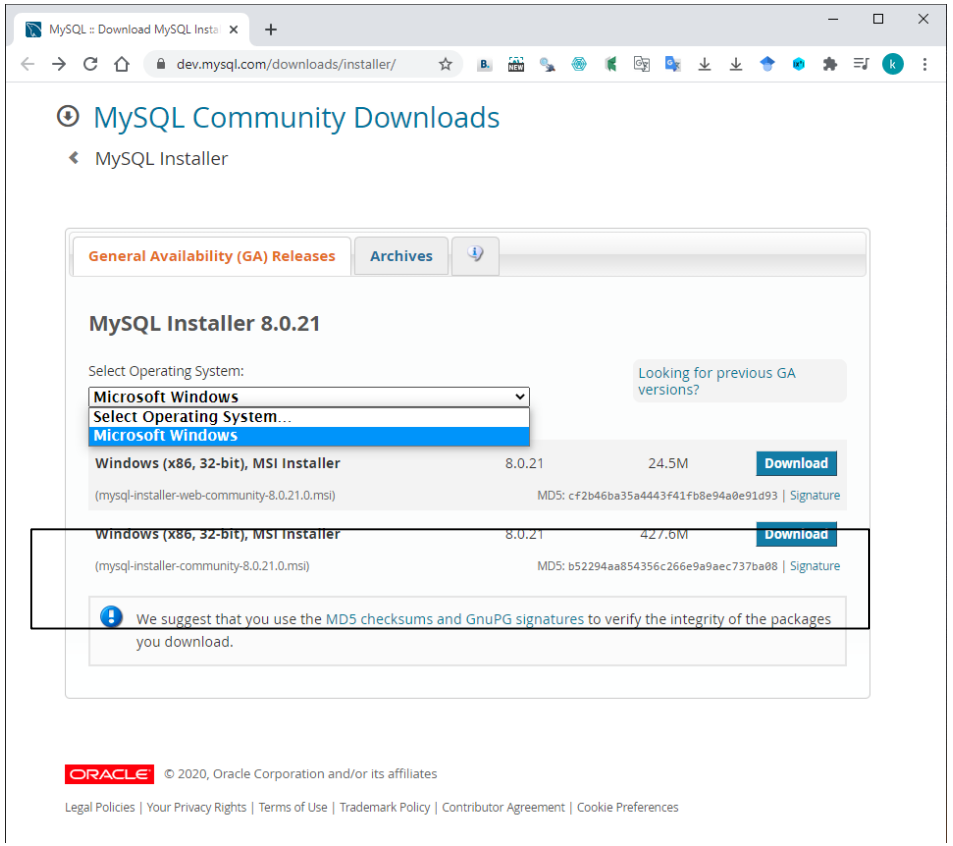
```
222   # ServerName gives the name and port that the server uses to identify itself.
223   # This can often be determined automatically, but we recommend you specify
224   # it explicitly to prevent problems during startup.
225   #
226   # If your host doesn't have a registered DNS name, enter its IP address here.
227   #
228   #ServerName www.example.com:80
```

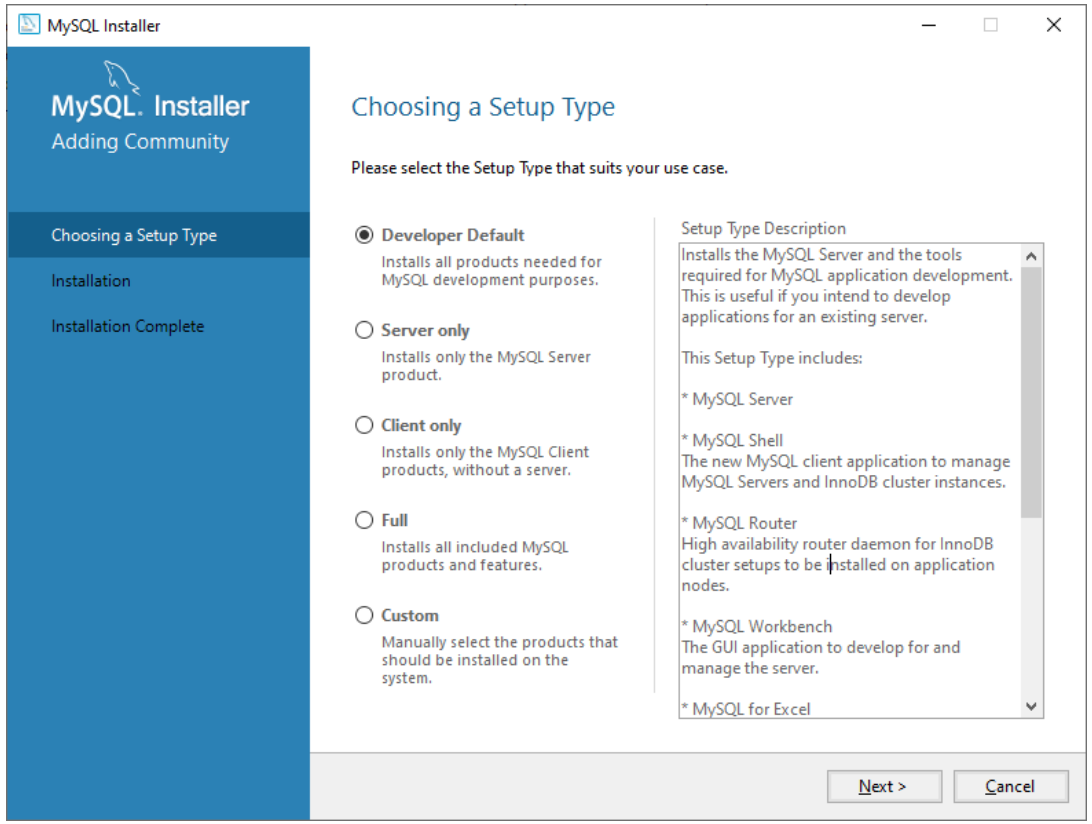
To see all Command line options:

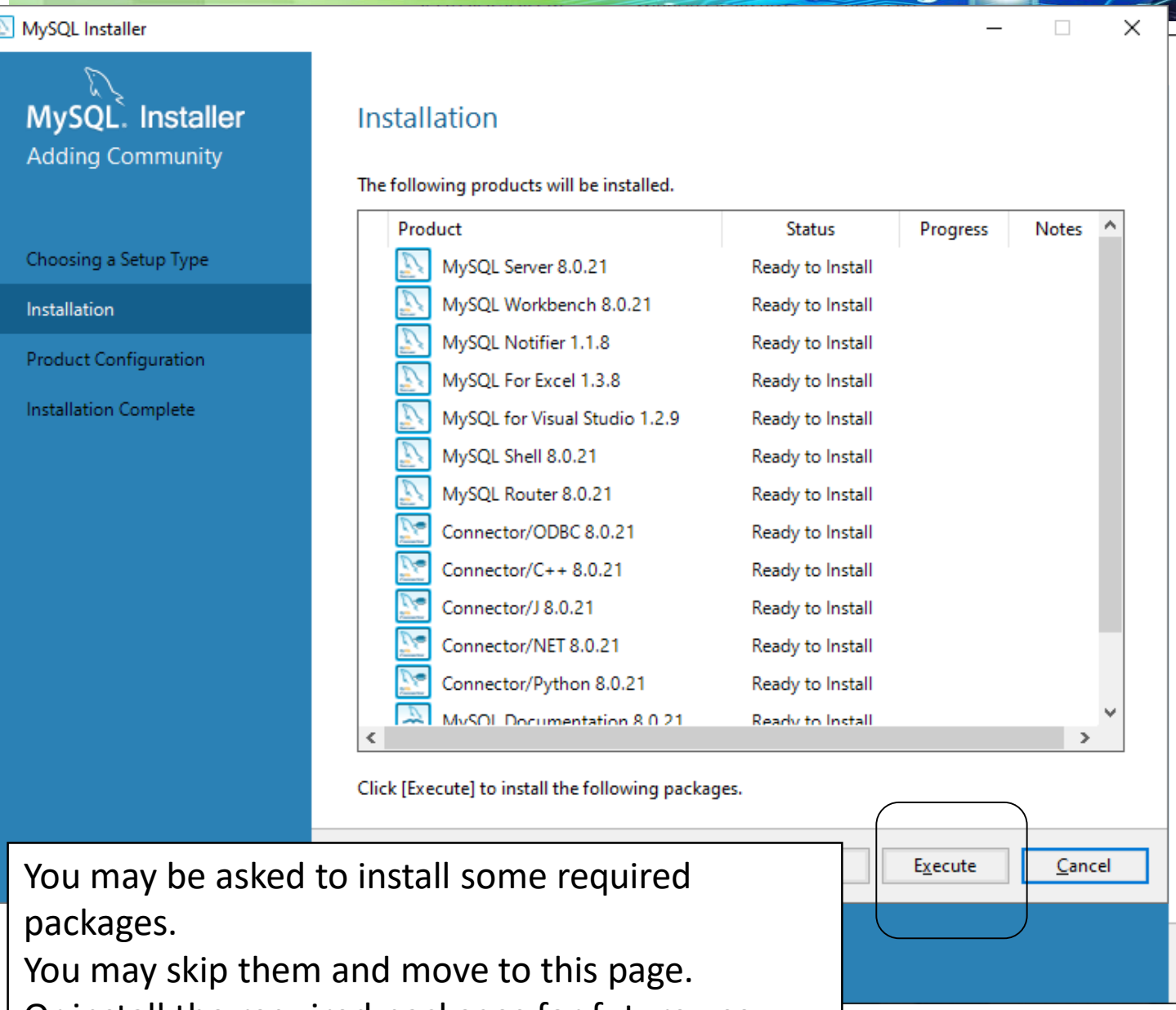
```
>httpd -h
```

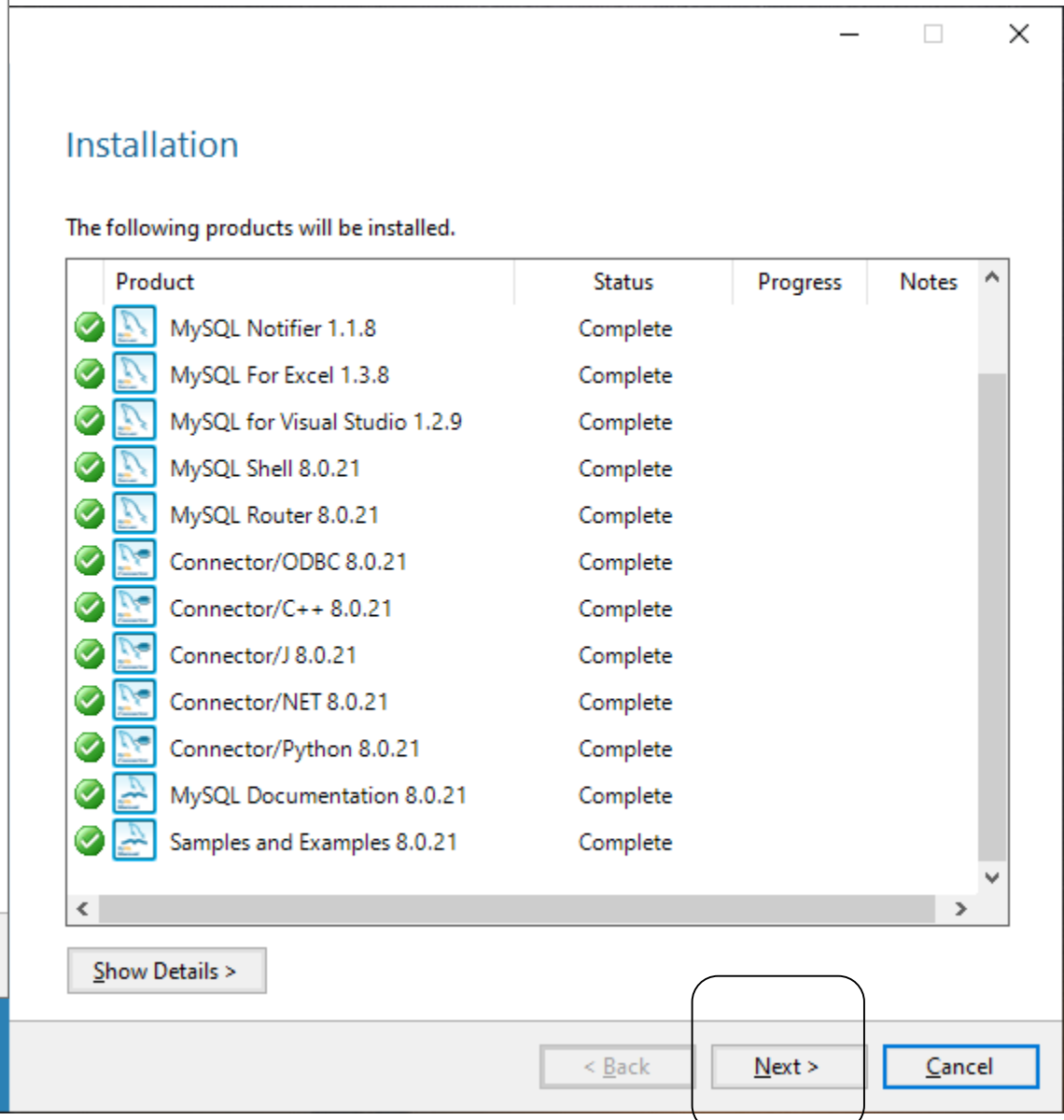
2. Install MySQL Server

- https://dev.mysql.com/doc/mysql-installation-excerpt/5.7/en/
- https://dev.mysql.com/downloads/









You may be asked to install some required packages.
You may skip them and move to this page.
Or install the required packages for future use.

Product Configuration

We'll now walk through a configuration wizard for each of the following products.

You can cancel at any point if you wish to leave this wizard without configuring all the products.

Product	Status
MySQL Server 8.0.21	Ready to configure
MySQL Router 8.0.21	Ready to configure
Samples and Examples 8.0.21	Ready to configure

MySQL Installer

MySQL. Installer
MySQL Server 8.0.21

- High Availability
- Type and Networking
- Authentication Method
- Accounts and Roles
- Windows Service
- Logging Options
- Advanced Options
- Apply Configuration

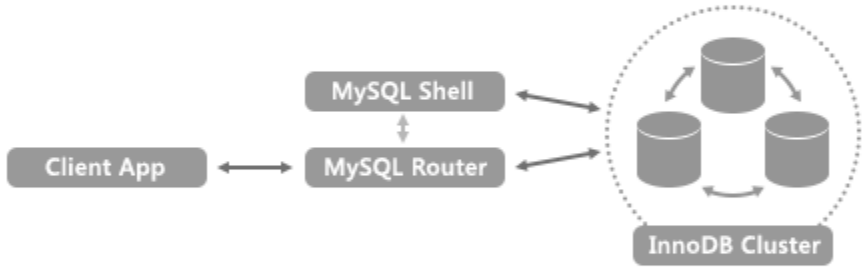
High Availability

(•) Standalone MySQL Server / Classic MySQL Replication

Choose this option to run the MySQL instance as a standalone database server with the opportunity to configure classic replication later. With this option, you can provide your own high-availability solution, if required.

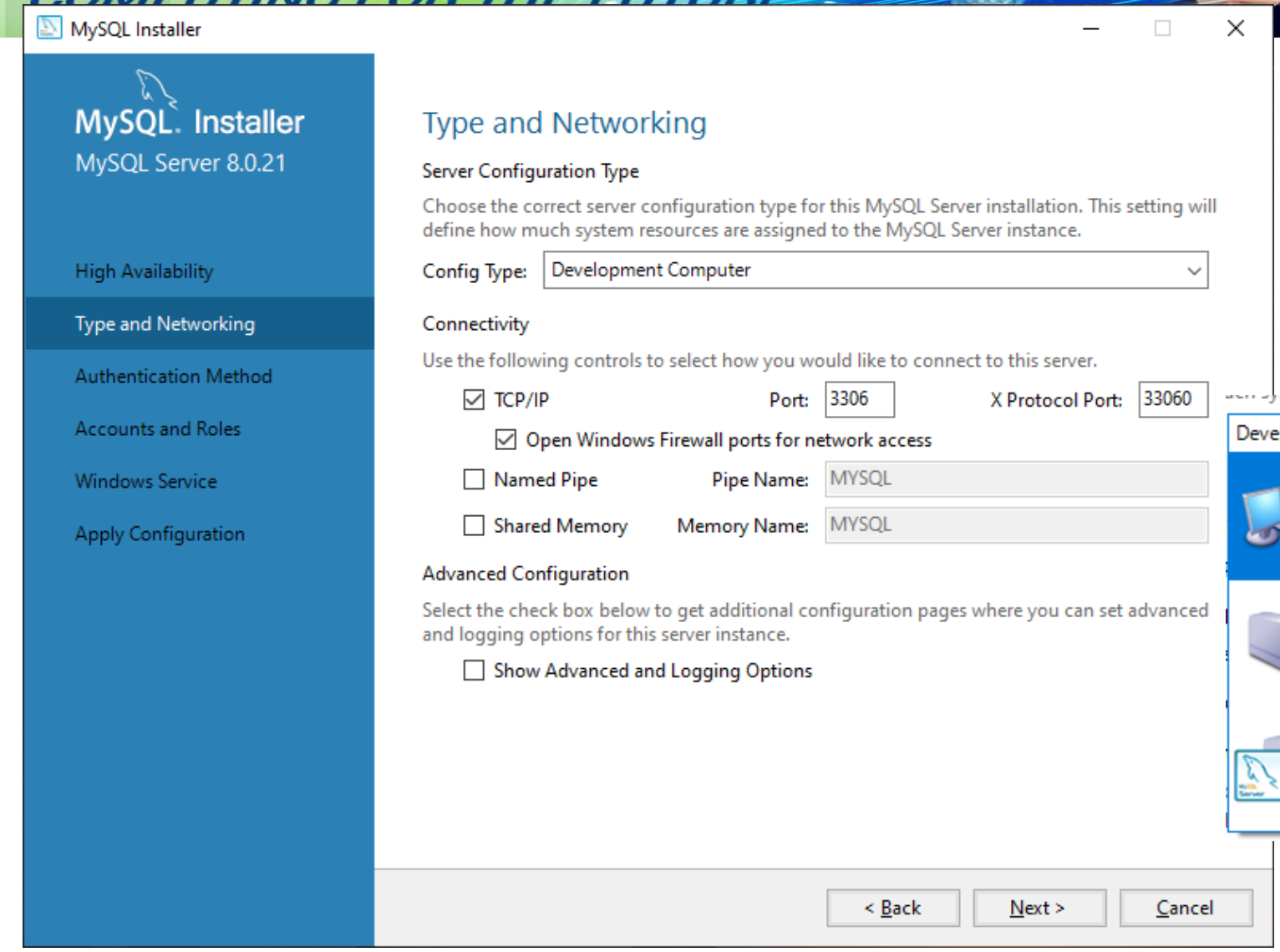
( ) InnoDB Cluster

The InnoDB cluster technology provides an out-of-the-box high availability (HA) solution for MySQL using Group Replication.

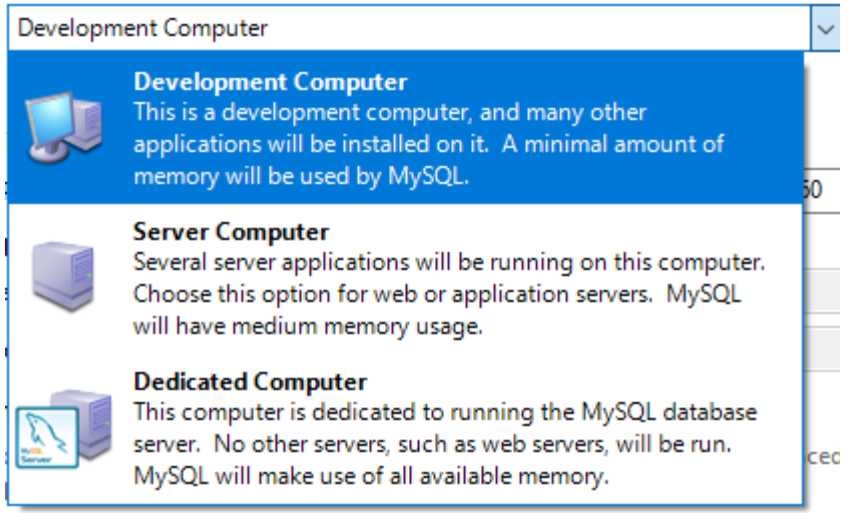


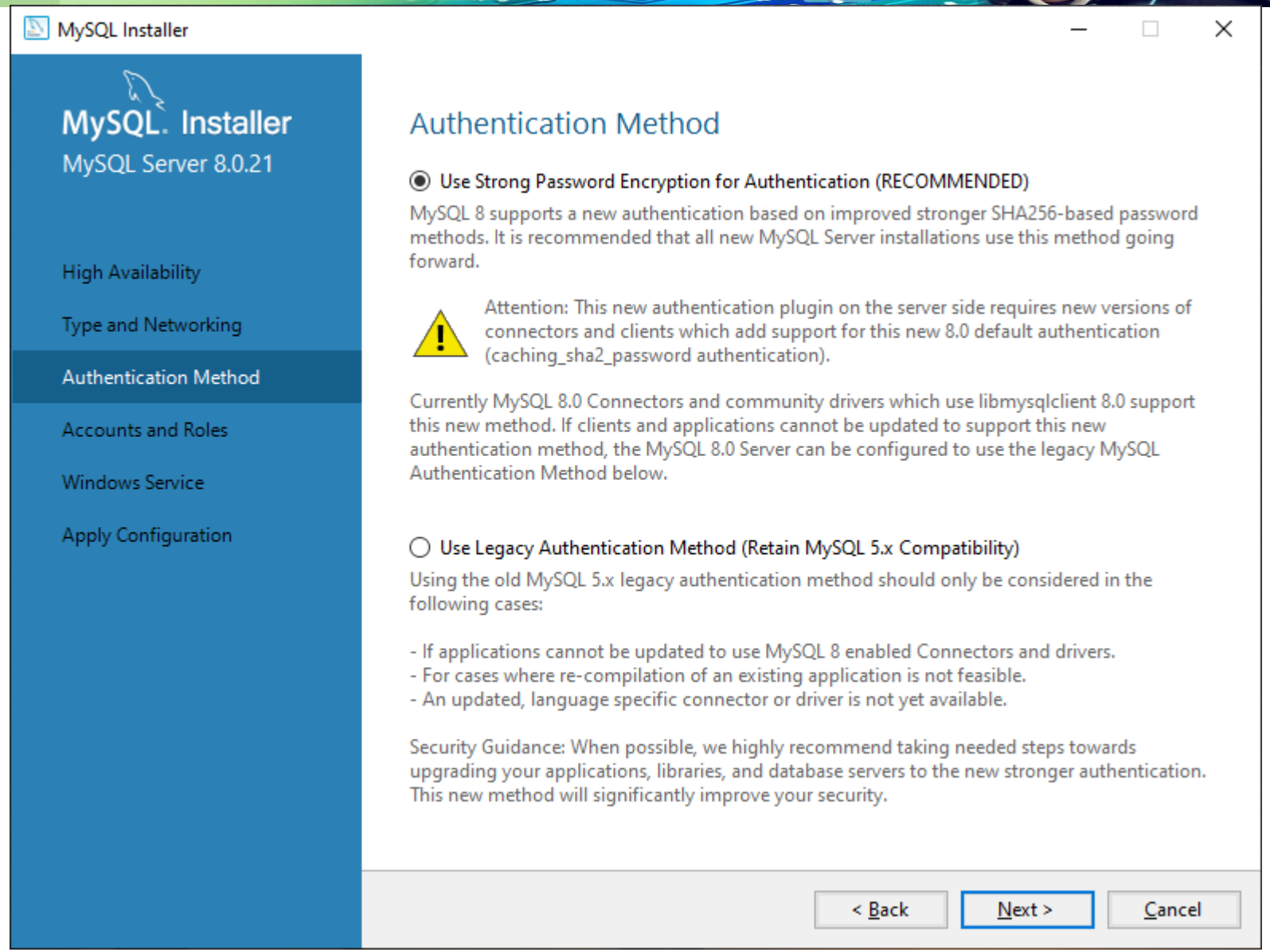
Note: InnoDB cluster requires a minimum of three MySQL server instances to provide a fully automated HA solution. Members of a cluster should be located such that network communication latency between servers is low.

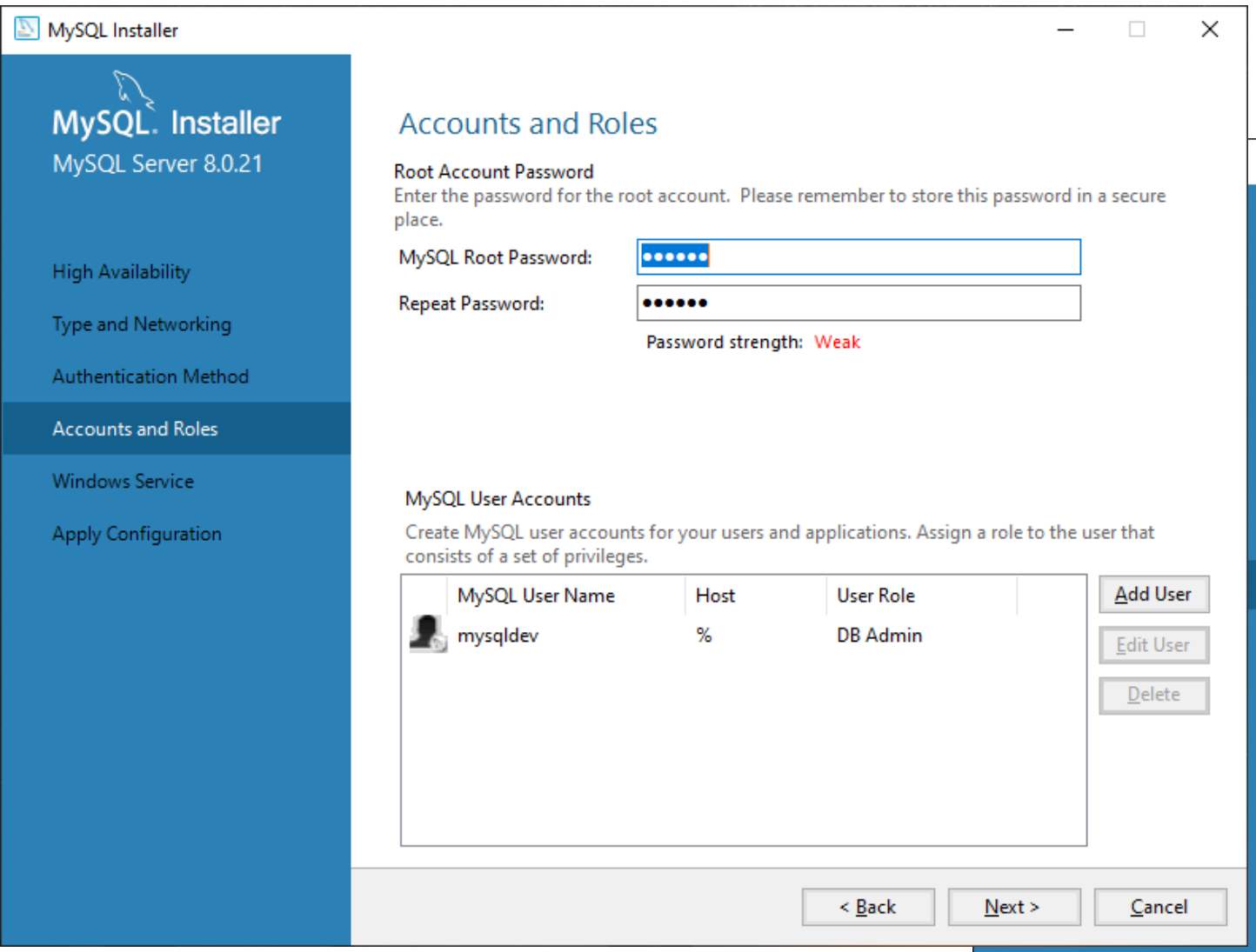
Next > Cancel

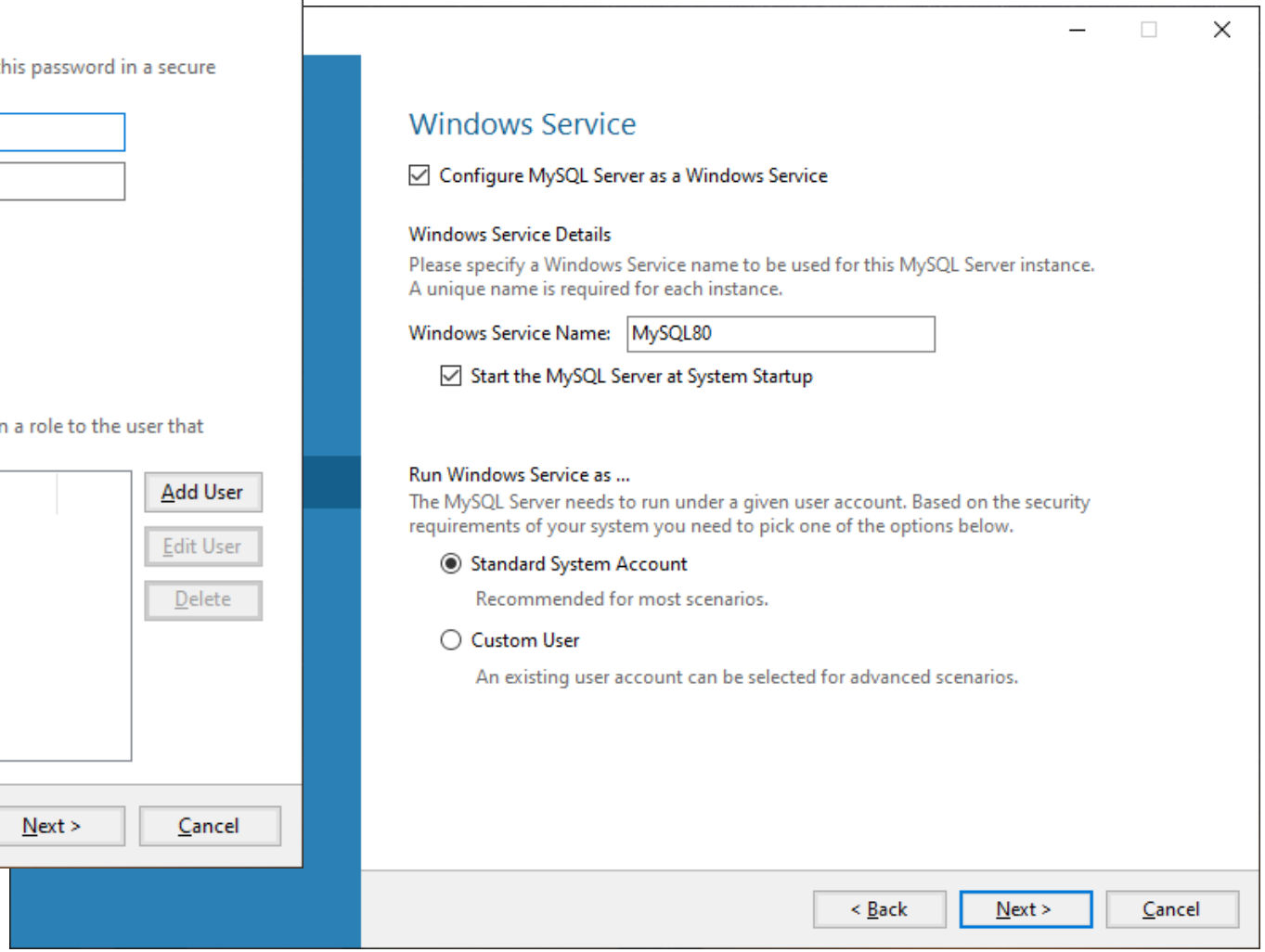


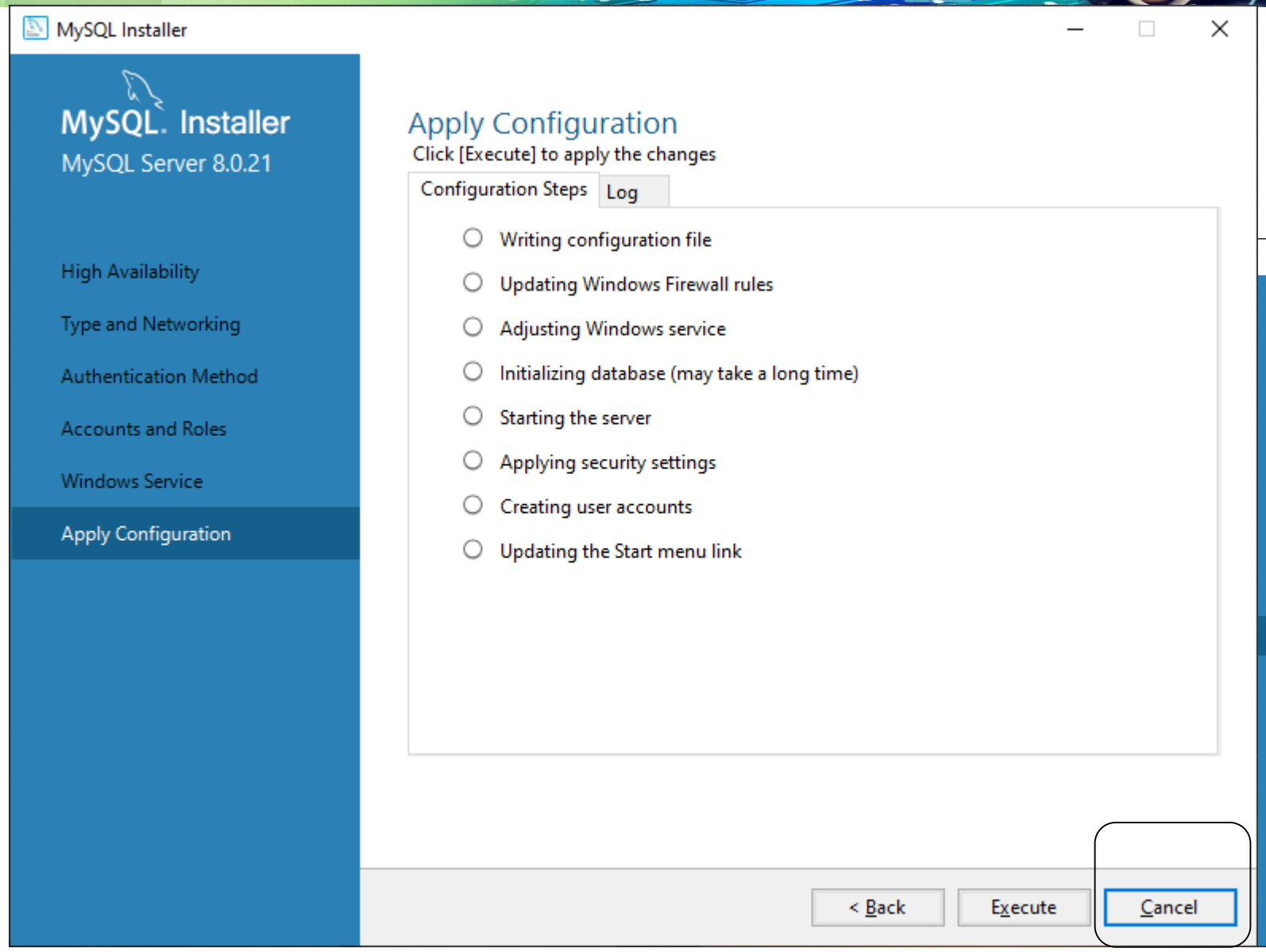
Accept Default setting

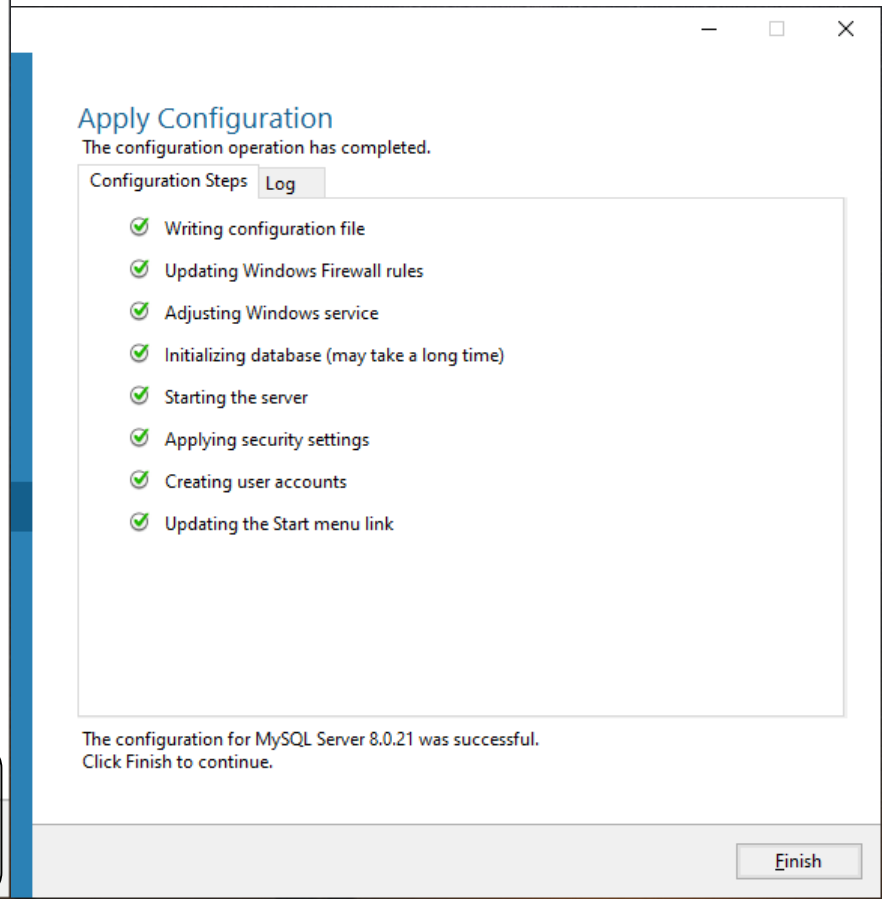


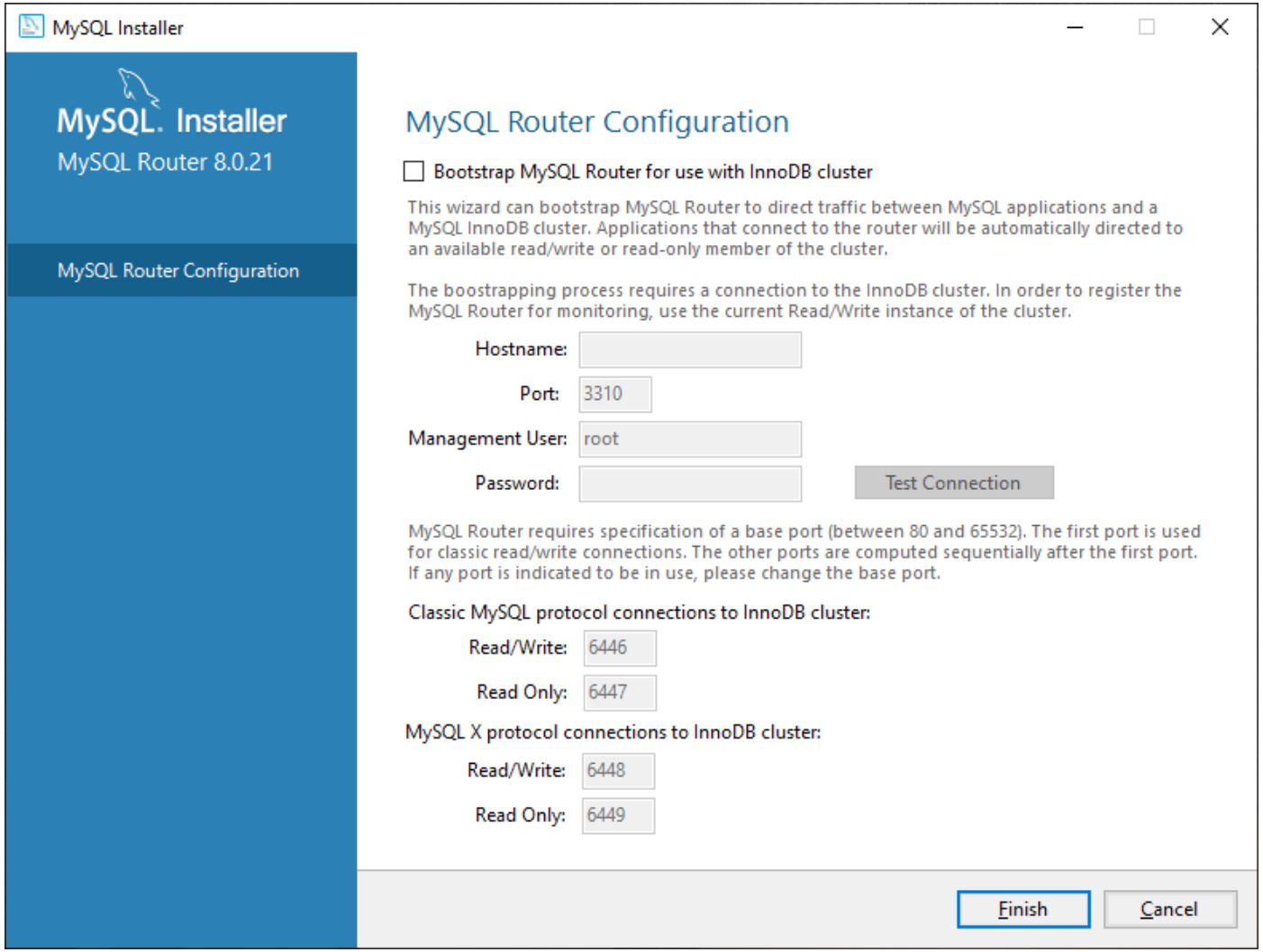

MySQL Installer
MySQL. Installer
MySQL Server 8.0.21
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Authentication Method
Use Strong Password Encryption for Authentication (RECOMMENDED)
MySQL 8 supports a new authentication based on improved stronger SHA256-based password methods. It is recommended that all new MySQL Server installations use this method going forward.
Attention: This new authentication plugin on the server side requires new versions of connectors and clients which add support for this new 8.0 default authentication (caching_sha2_password authentication).
Currently MySQL 8.0 Connectors and community drivers which use libmysqlclient 8.0 support this new method. If clients and applications cannot be updated to support this new authentication method, the MySQL 8.0 Server can be configured to use the legacy MySQL Authentication Method below.
Use Legacy Authentication Method (Retain MySQL 5.x Compatibility)
Using the old MySQL 5.x legacy authentication method should only be considered in the following cases:
- If applications cannot be updated to use MySQL 8 enabled Connectors and drivers.
- For cases where re-compilation of an existing application is not feasible.
- An updated, language specific connector or driver is not yet available.
Security Guidance: When possible, we highly recommend taking needed steps towards upgrading your applications, libraries, and database servers to the new stronger authentication. This new method will significantly improve your security.
< Back
Next >
Cancel


MySQL Installer
MySQL. Installer
MySQL Server 8.0.21
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Accounts and Roles
Root Account Password
Enter the password for the root account. Please remember to store this password in a secure place.
MySQL Root Password:
Repeat Password:
Password strength: Weak
MySQL User Accounts
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.
MySQL User Name
Host
User Role
mysqldev
%
DB Admin
Add User
Edit User
Delete
< Back
Next >
Cancel

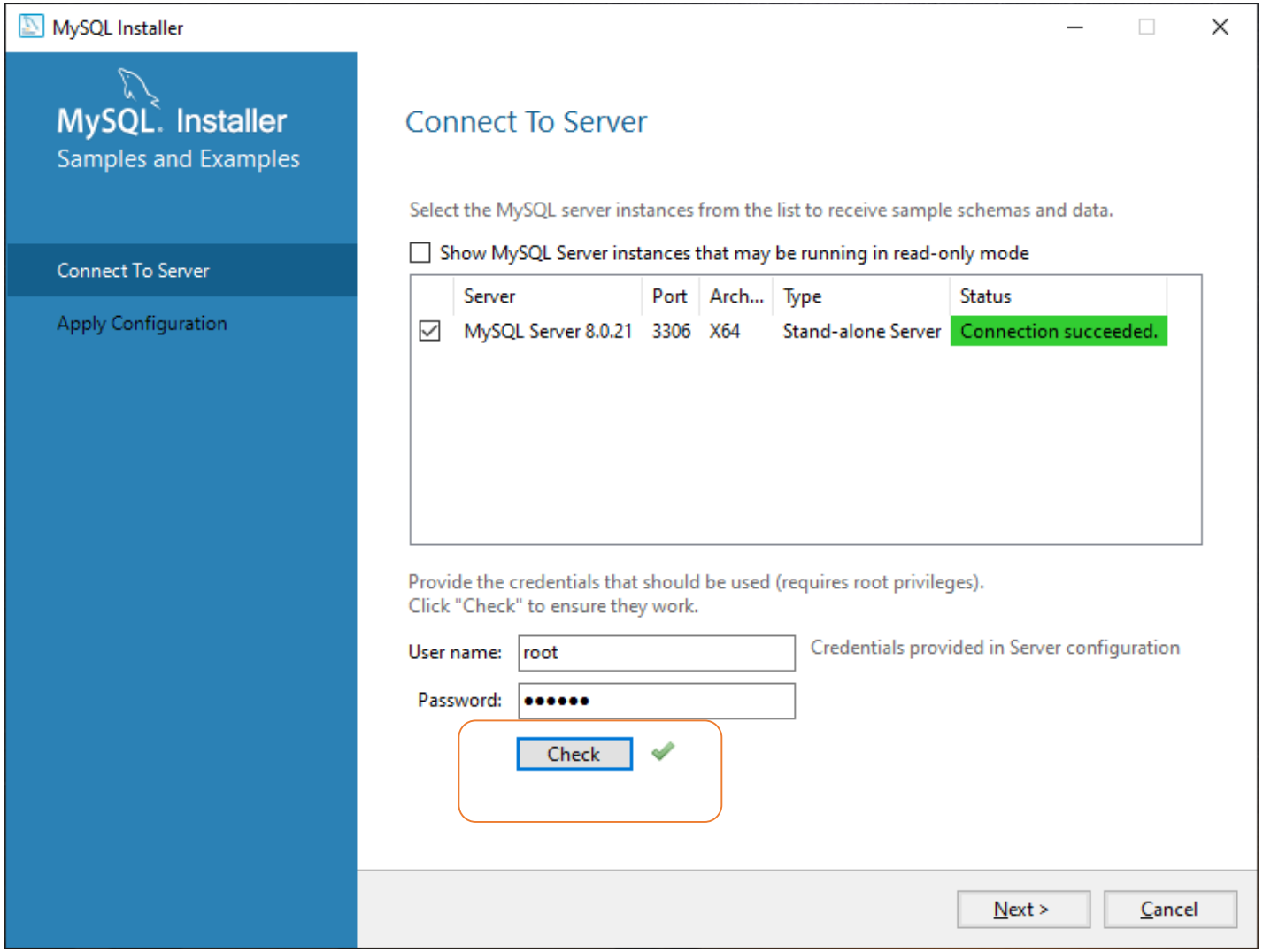

Windows Service
Configure MySQL Server as a Windows Service
Windows Service Details
Please specify a Windows Service name to be used for this MySQL Server instance. A unique name is required for each instance.
Windows Service Name:
MySQL80
Start the MySQL Server at System Startup
Run Windows Service as ...
The MySQL Server needs to run under a given user account. Based on the security requirements of your system you need to pick one of the options below.
Standard System Account
Recommended for most scenarios.
Custom User
An existing user account can be selected for advanced scenarios.
< Back
Next >
Cancel


MySQL Installer
MySQL. Installer
MySQL Server 8.0.21
High Availability
Type and Networking
Authentication Method
Accounts and Roles
Windows Service
Apply Configuration
Apply Configuration
Click [Execute] to apply the changes
Configuration Steps
Log
Writing configuration file
Updating Windows Firewall rules
Adjusting Windows service
Initializing database (may take a long time)
Starting the server
Applying security settings
Creating user accounts
Updating the Start menu link
< Back
Execute
Cancel

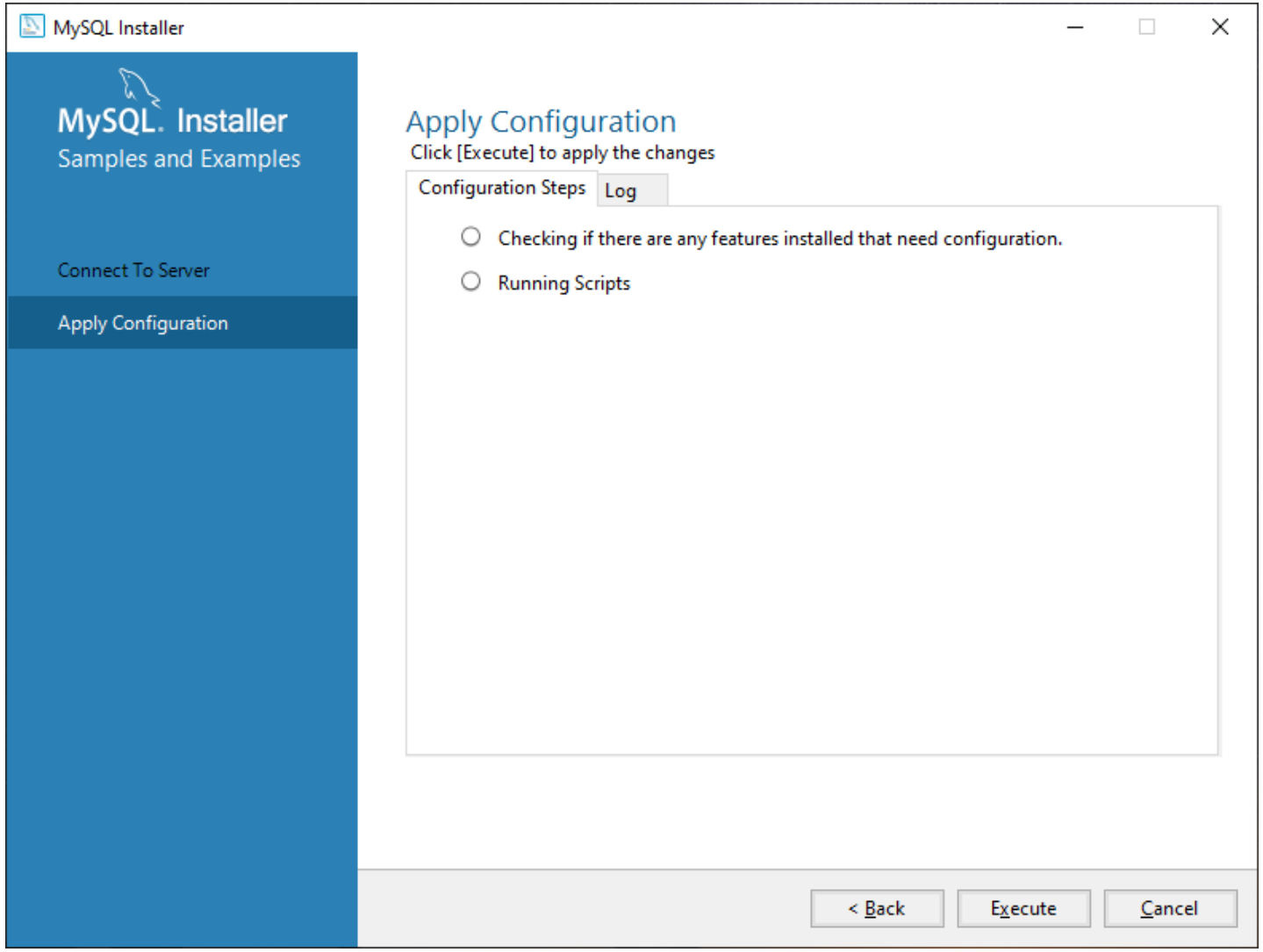

Apply Configuration
The configuration operation has completed.
Configuration Steps
Log
Writing configuration file
Updating Windows Firewall rules
Adjusting Windows service
Initializing database (may take a long time)
Starting the server
Applying security settings
Creating user accounts
Updating the Start menu link
The configuration for MySQL Server 8.0.21 was successful.
Click Finish to continue.
Finish

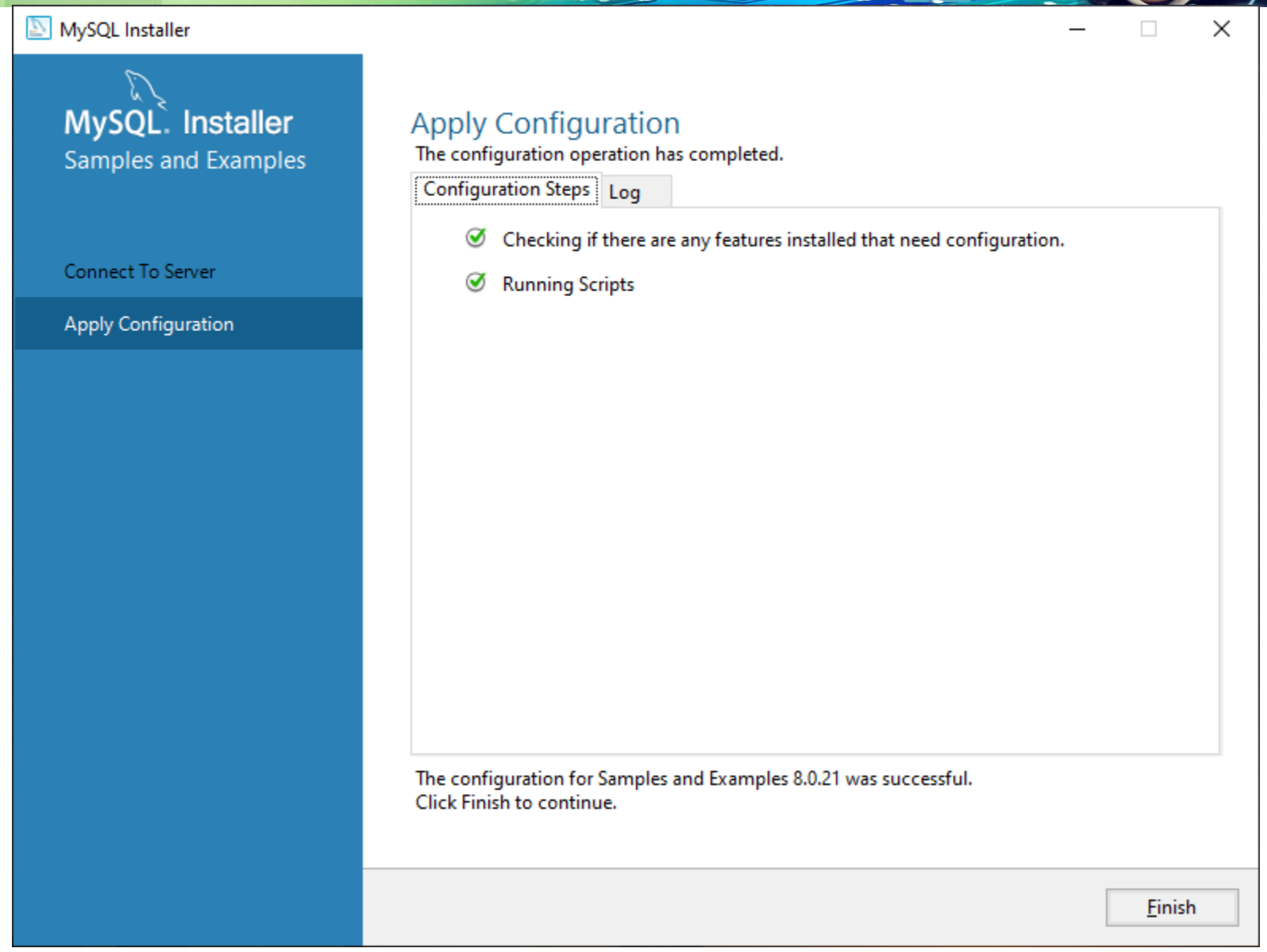


Accept by default and finish

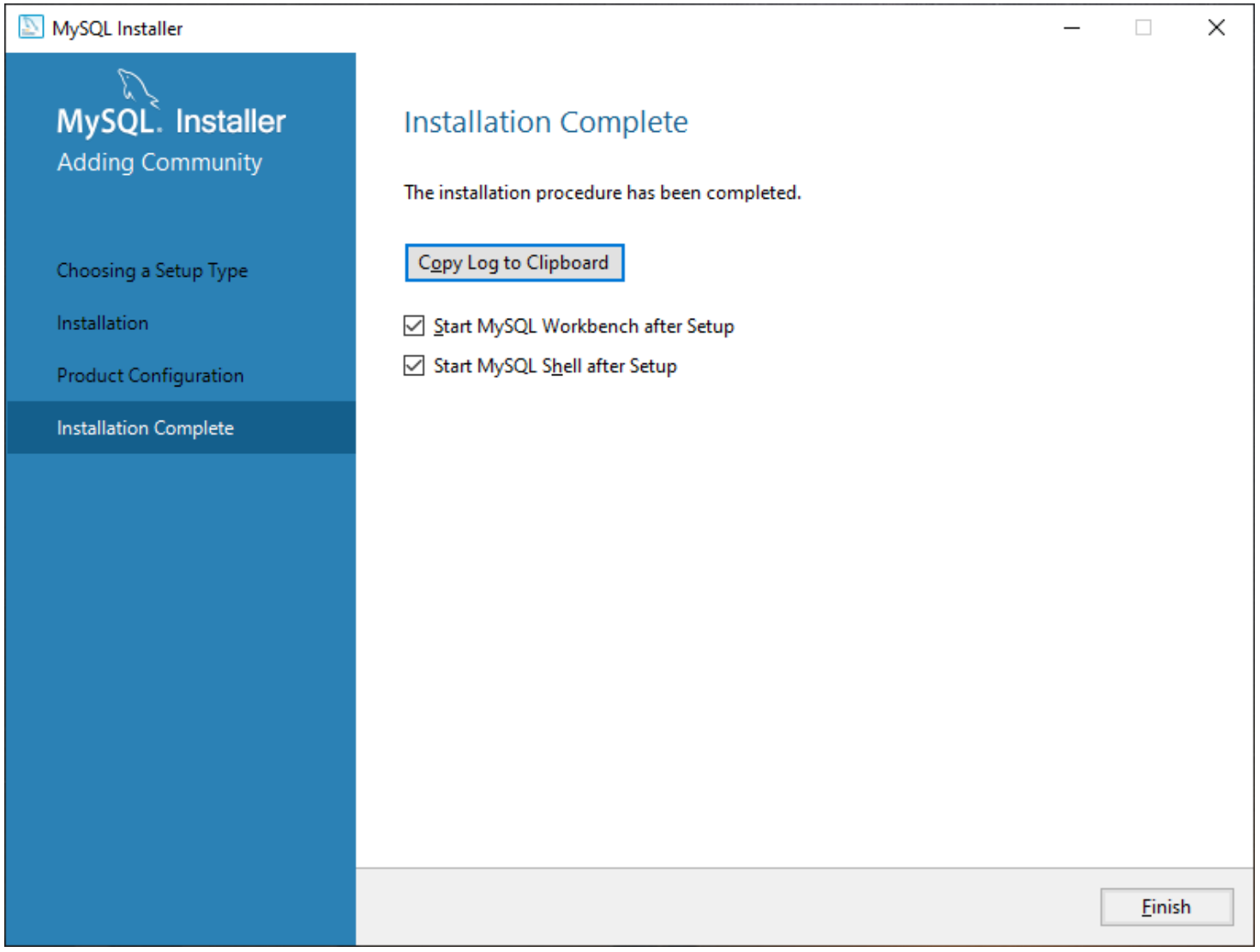


Don’t forget the password that you have just created.


MySQL Installer
MySQL. Installer
Samples and Examples
Connect To Server
Apply Configuration
Apply Configuration
Click [Execute] to apply the changes
Configuration Steps
Log
Checking if there are any features installed that need configuration.
Running Scripts
< Back
Execute
Cancel



Congratulations!
Installation has been completed.

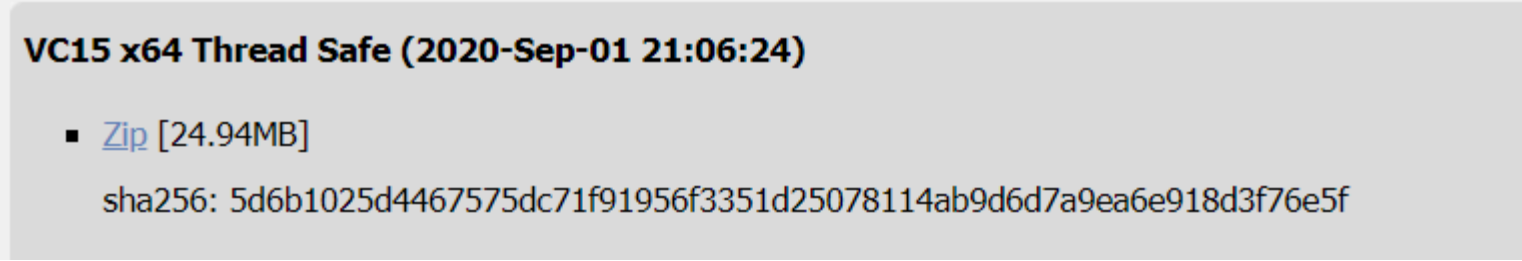


We can start and use Workbench and Shell.
We still study these in the future.

3. Install PHP to Apache

- https://www.php.net/manual/en/install.php
- https://windows.php.net/download/

If you use x64 system, download the file below. Otherwise, choose the appropriate one.

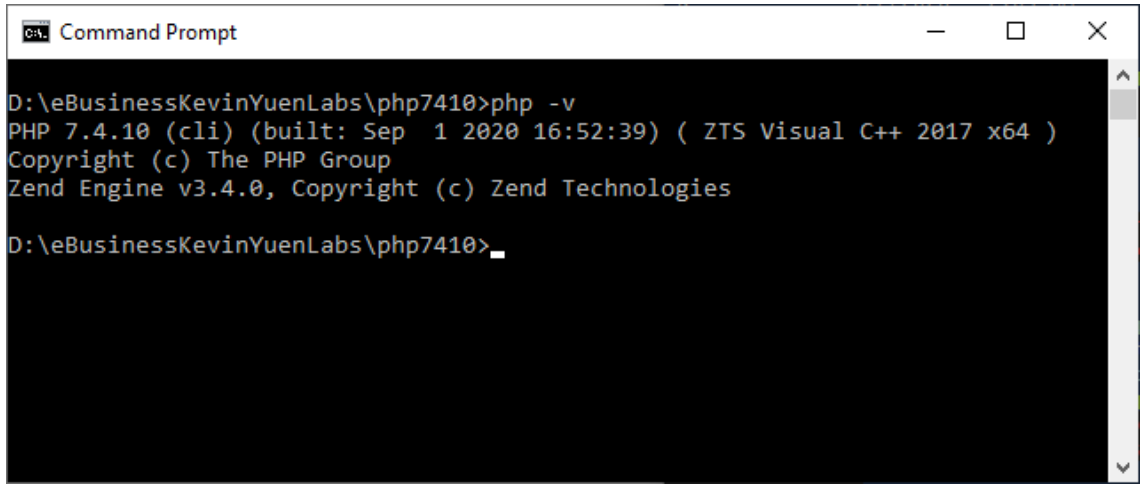


https://windows.php.net/downloads/releases/php-7.4.10-Win32-vc15-x64.zip

3.1 unzip the file

- Unzip the file,
  - E.g. D:\eBusinessKevinYuenLabs\php7410
- Check the installation
- Use cmd to open Command Prompt; under the *php* folder, type

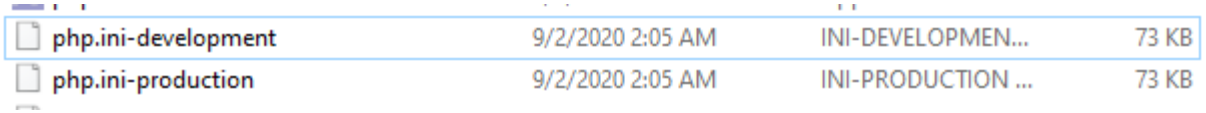
> php -v



Successful!

3.2 Change php.ini in php foleder

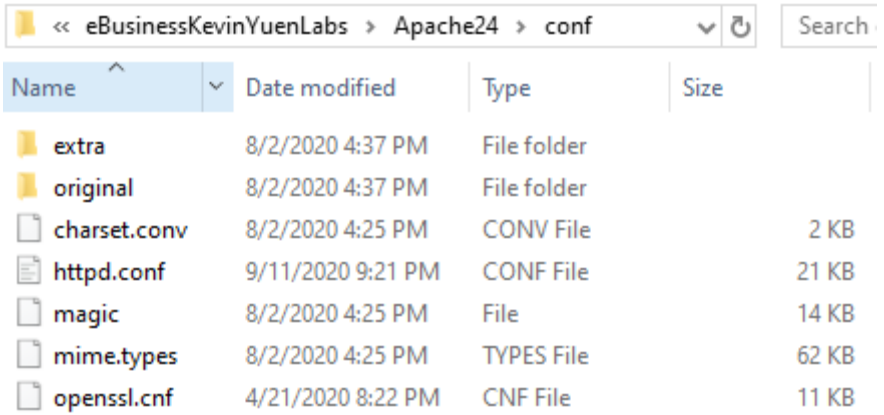
Under the unzipped *php* folder,



Change **php.ini-development** to **php.ini**

3.3 Install PHP to Apache

- Open the \Apache24\conf\httpd.conf file,



add the codes as below

```
543   LoadModule php7_module "D:/eBusinessKevinYuenLabs/php7410/php7apache2_4.dll"
544   AddHandler application/x-httpd-php .php
545   # configure the path to php.ini
546   PHPiniDir "D:/eBusinessKevinYuenLabs/php7410"
```

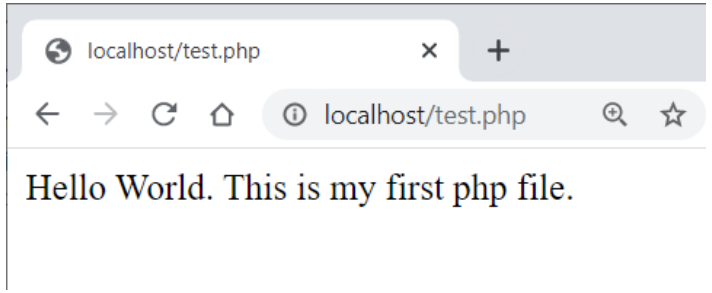
3.4. Test

- Restart the apache services
- Under D:\eBusinessKevinYuenLabs\Apache24\htdocs, create a *php* file, e.g. test.php with the content below. You can simply use notepad (or other IDE) to handle it.

D: > eBusinessKevinYuenLabs > Apache24 > htdocs > test.php

```
1   <?php
2   echo 'Hello World. This is my first php file.'
3   ?>
```

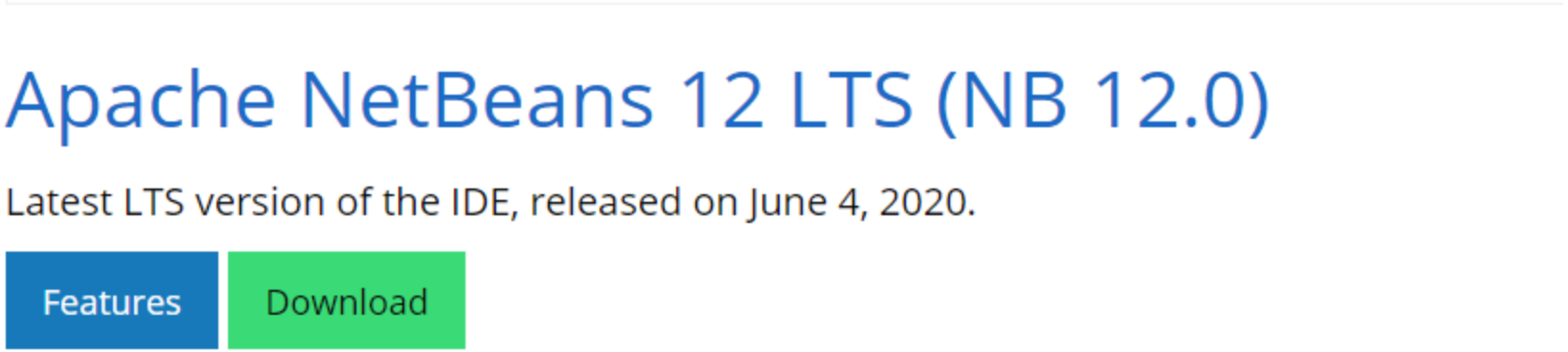
- Use the browser to test it



Successful!

4. Install Apache NetBeans IDE

- You can use the other IDE as you like. For this course, we will use netbeans.
- https://netbeans.apache.org/download/index.html



4. Install Apache NetBeans IDE

https://netbeans.apache.org/download/nb120/nb120.html

Downloading Apache NetBeans 12.0

Apache NetBeans 12.0 was released on June 4, 2020. See Apache NetBeans 12.0 Features for a full list of features.

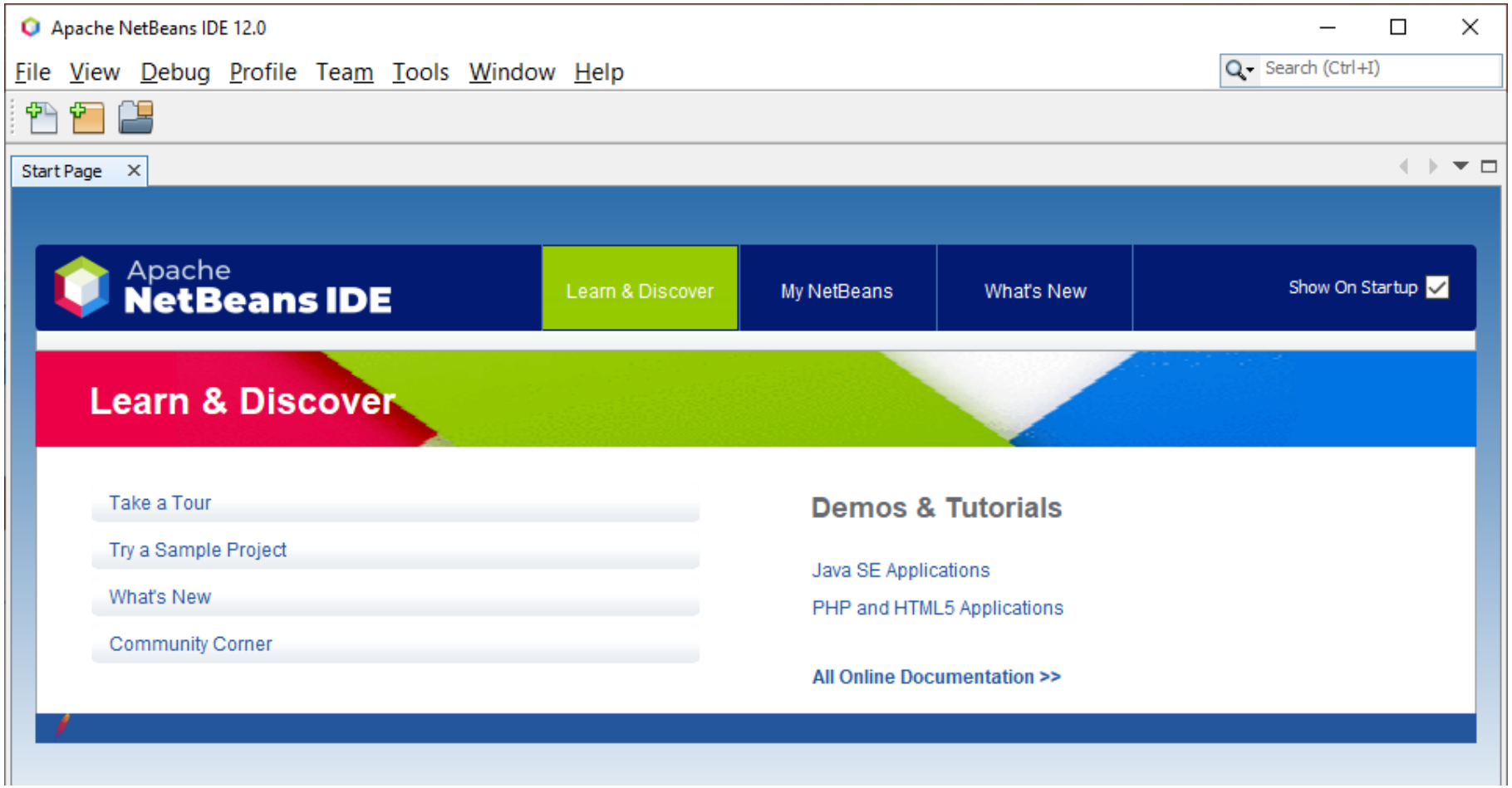
Apache NetBeans 12.0 is available for download from your closest Apache mirror.

- Binaries: netbeans-12.0-bin.zip (SHA-512, PGP ASC)
- Source: netbeans-12.0-source.zip (SHA-512, PGP ASC)
- Installers:
  - Apache-NetBeans-12.0-bin-windows-x64.exe (SHA-512, PGP ASC)
  - Apache-NetBeans-12.0-bin-linux-x64.sh (SHA-512, PGP ASC)
  - Apache-NetBeans-12.0-bin-macosx.dmg (SHA-512, PGP ASC)
- Javadoc for this release is available at https://bits.netbeans.org/12.0/javadoc

http://apache.communilink.net/netbeans/netbeans/12.0/Apache-NetBeans-12.0-bin-windows-x64.exe

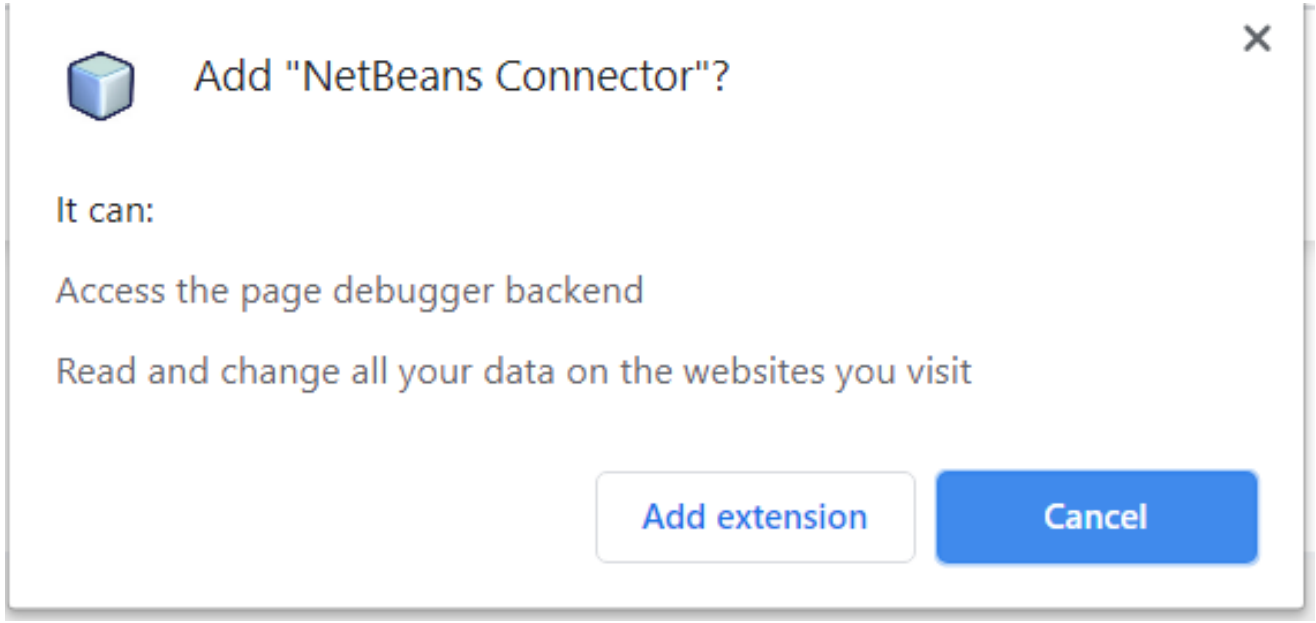
Use all Default setting to install

4. Open Apache NetBeans IDE

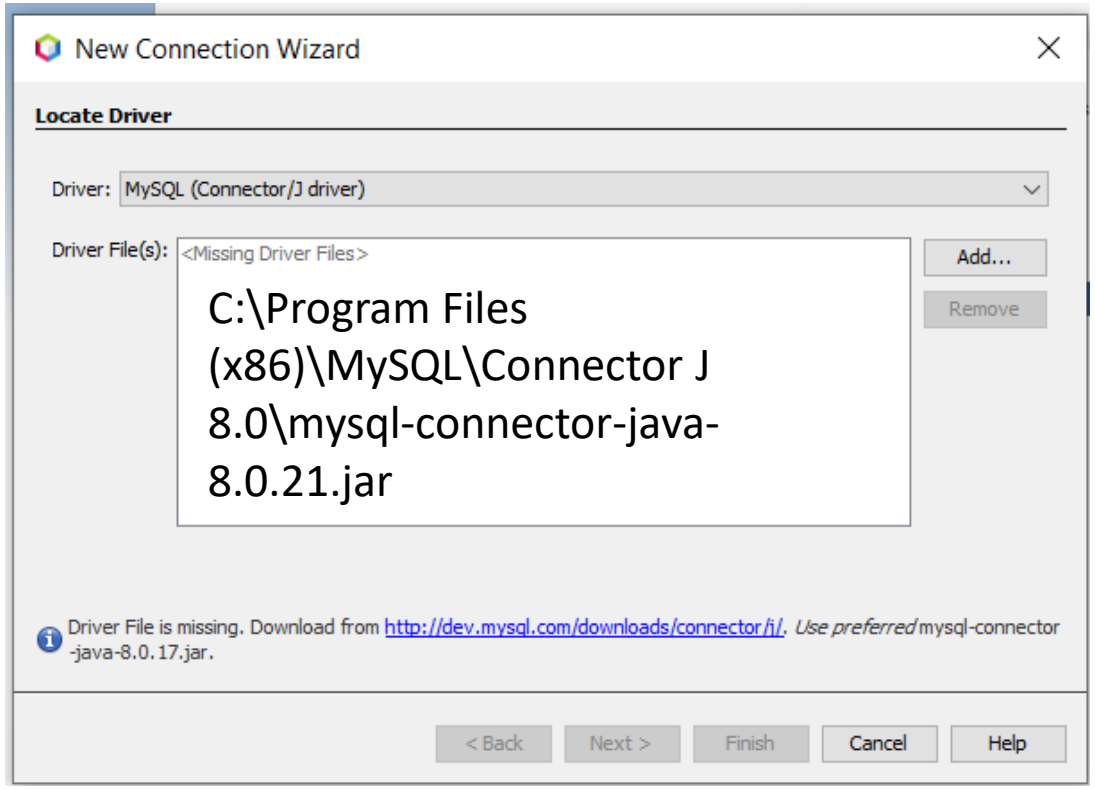


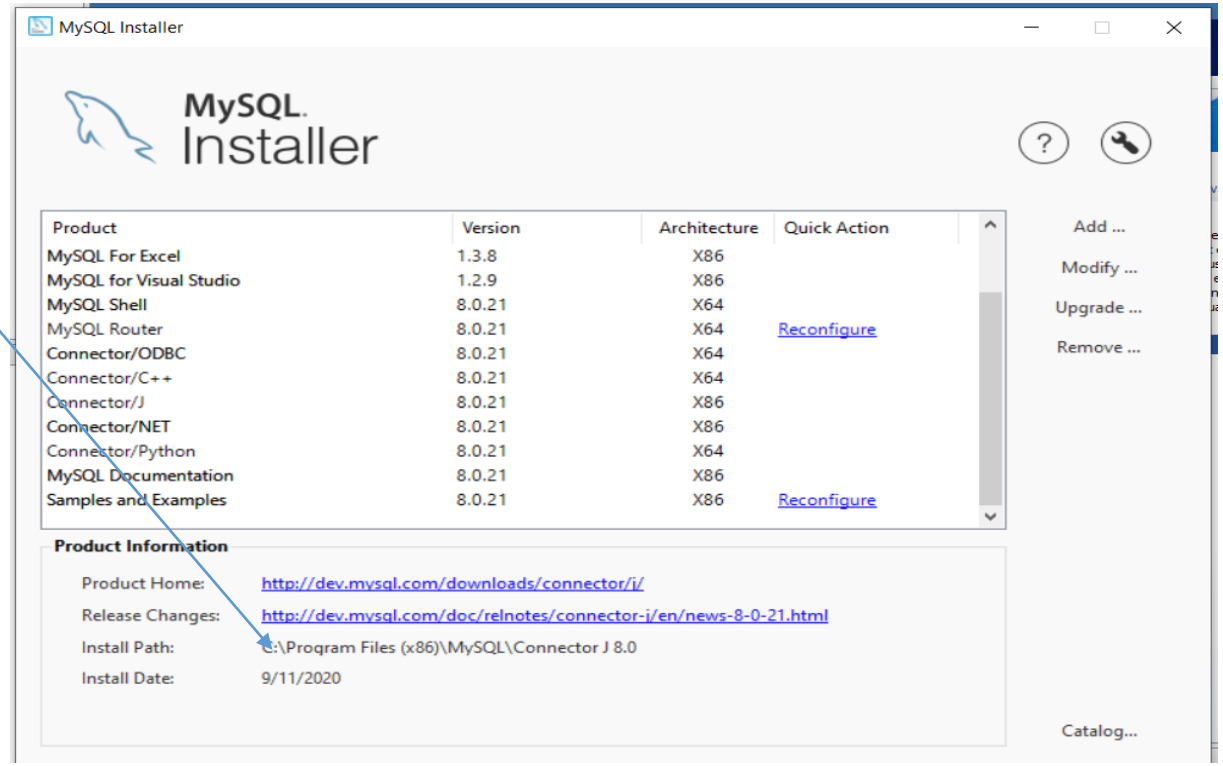
Use Chrome browser

1. Go to https://chrome.google.com/webstore
2. Search and install *netbeans-connector*

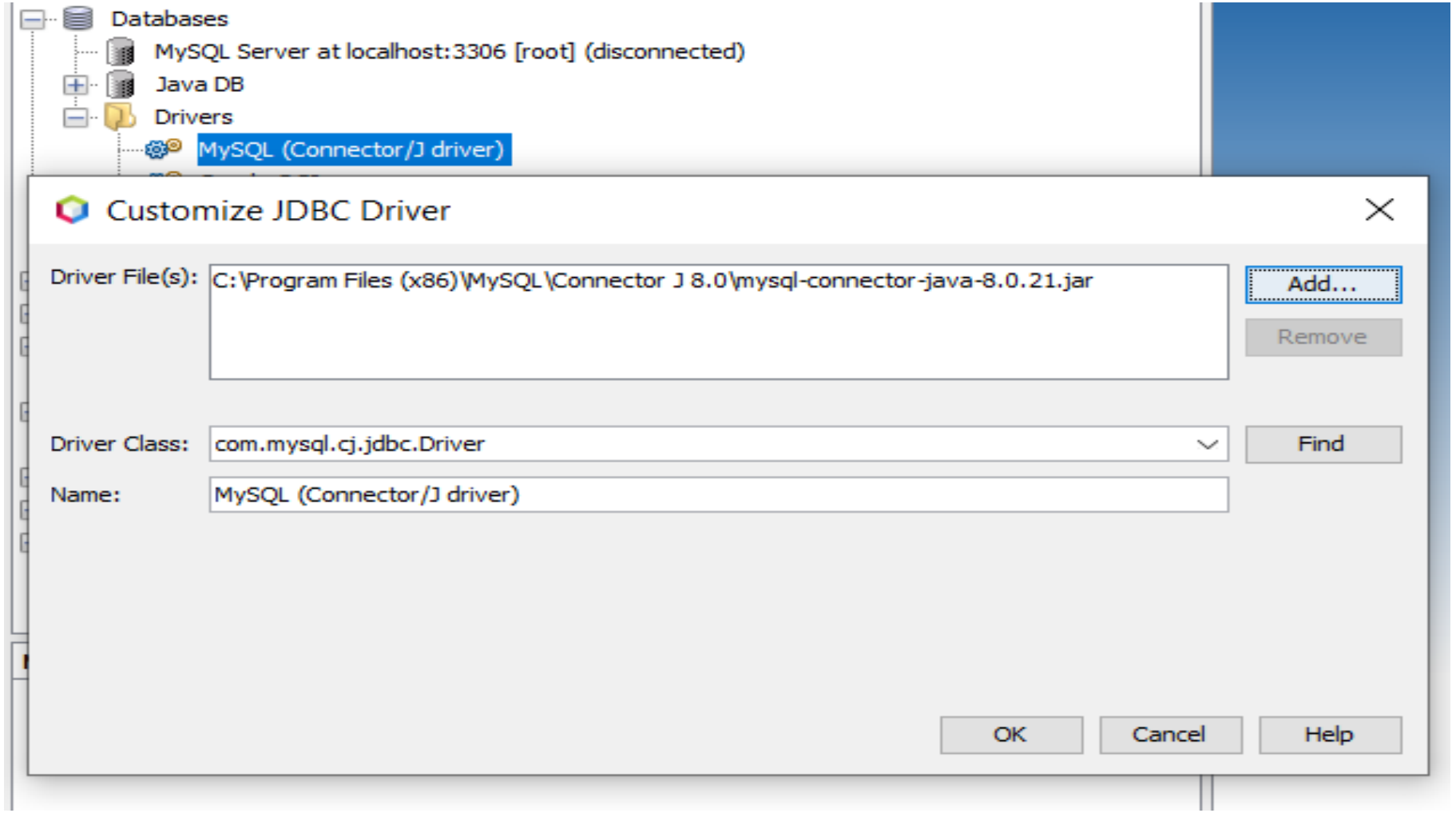


Setup MySQL Connector/J driver

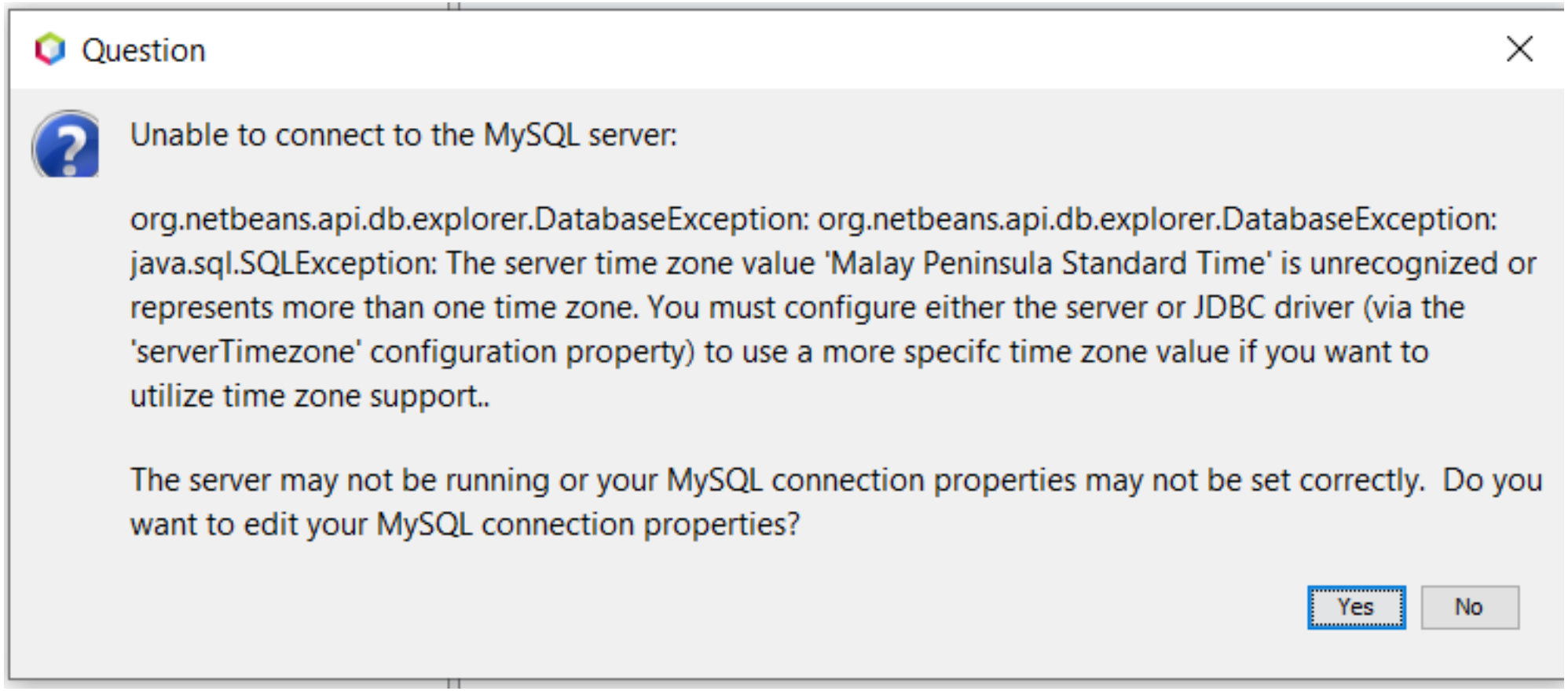




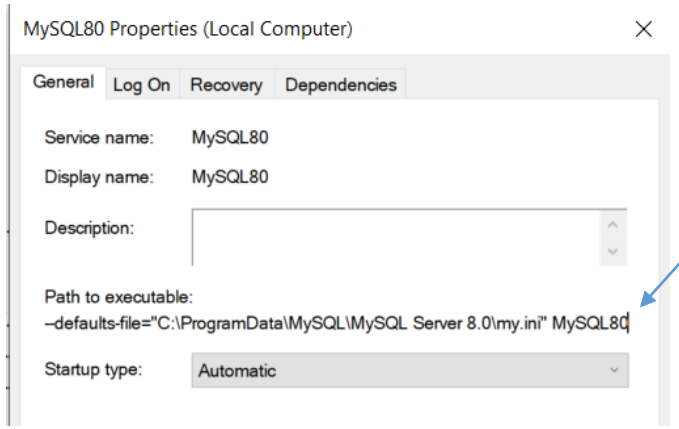
Setup MySQL Connector/J driver



Error: Unable to connect to the MySQL server due to time zone setting



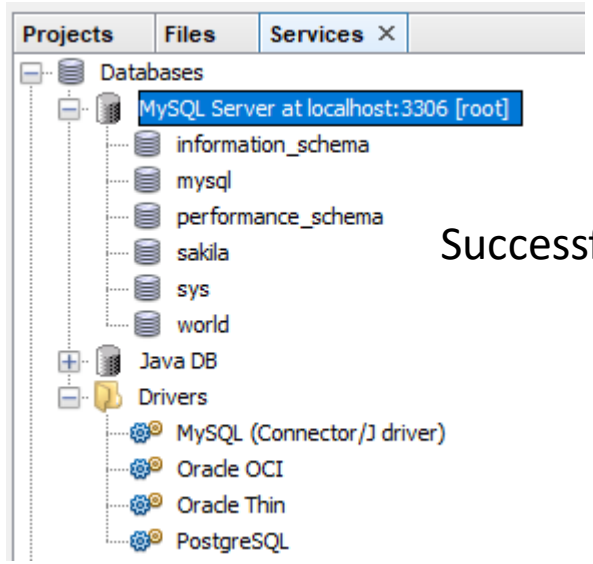
- Open MySQL window services to find the location of my.ini, the MySQL configuration file.



"C:\Program Files\MySQL\MySQL Server 8.0\bin\mysqld.exe" --defaults-file="C:\ProgramData\MySQL\MySQL Server 8.0\my.ini" MySQL80

- After the end of the file, my.ini, add the code to set a default time zone

```
405  # Set default time zone
406  # Hong Kong, Singapore time zone
407  default-time-zone = '+08:00'
```

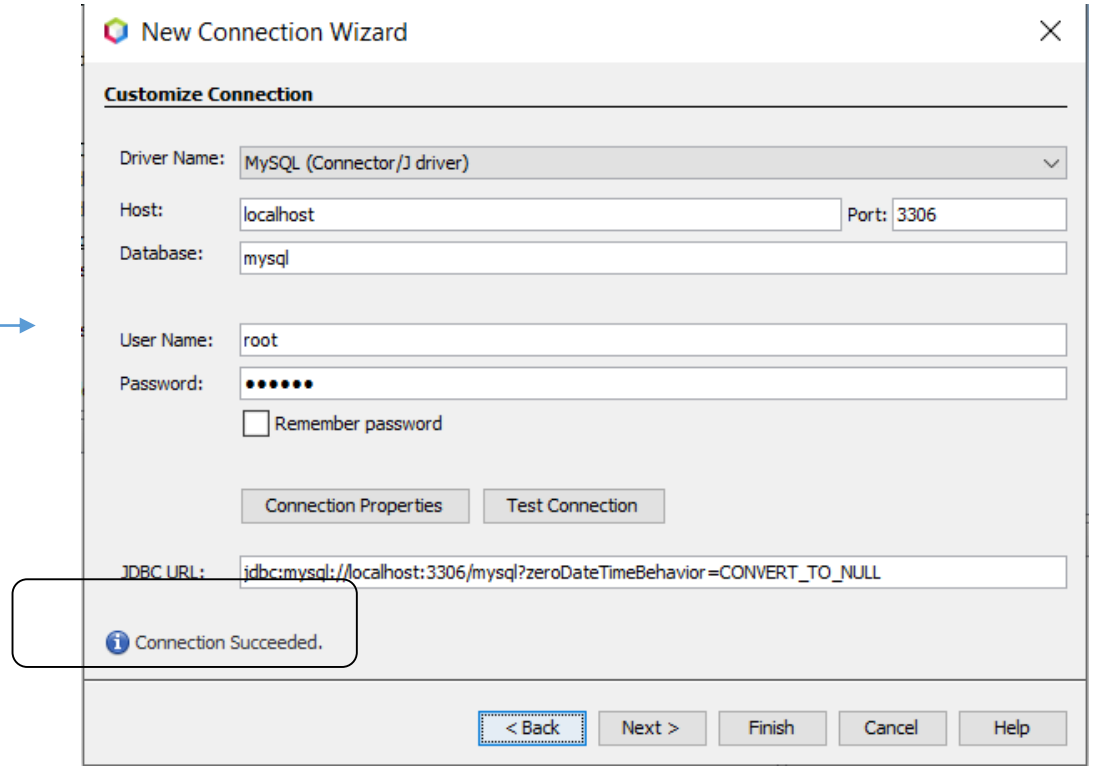


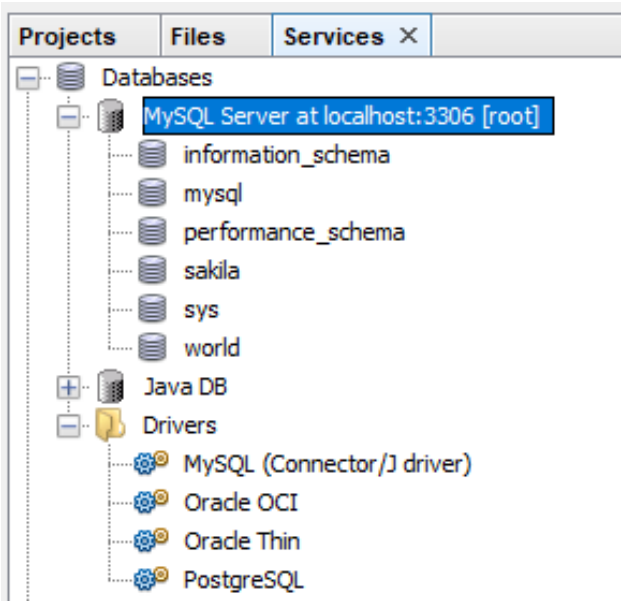
Successful!

- Save the file and Restart the MySQL window services.

New database Connection

Right Click Databases
and
Add new connection





End
Thank you