

Module 1: Getting Started with SQL

Lecture Notes

This module will guide you through the installation process for **PostgreSQL**, **MySQL**, and **Visual Studio Code (VSCode)** on different operating systems. Screenshots of key steps and installation confirmations are included but commented out for now.

Installing PostgreSQL

PostgreSQL is a powerful open-source relational database system. Follow the step-by-step instructions based on your operating system.

macOS

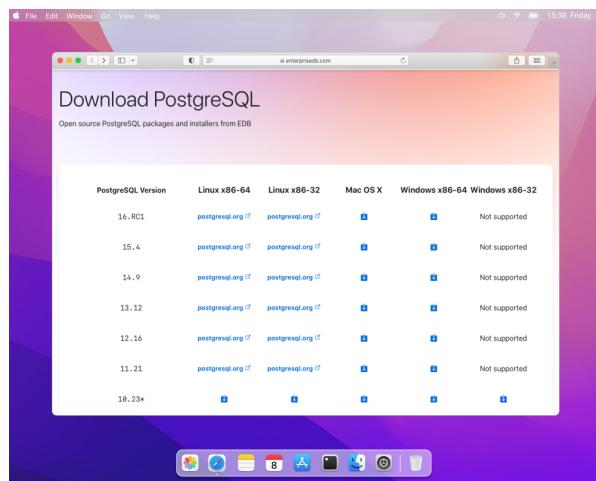


Figure 1: Download the PostgreSQL installer for macOS

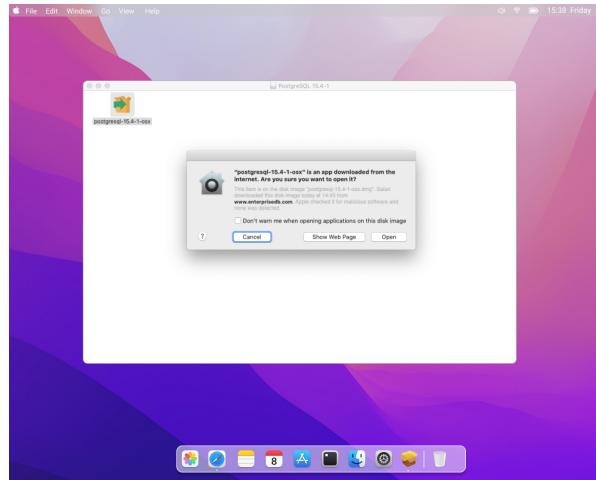


Figure 2: Open the downloaded .dmg file

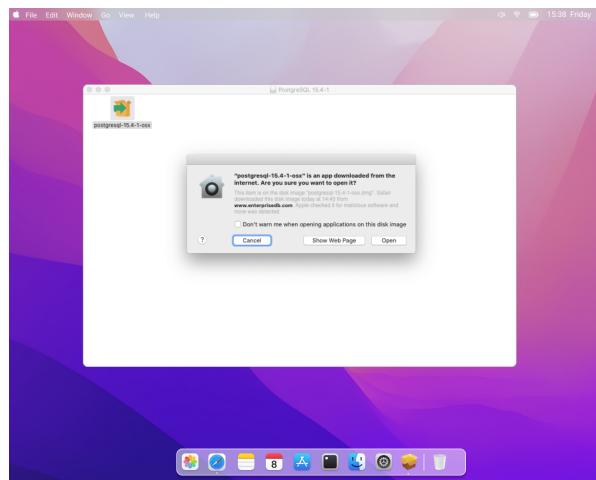


Figure 3: Open the installation wizard

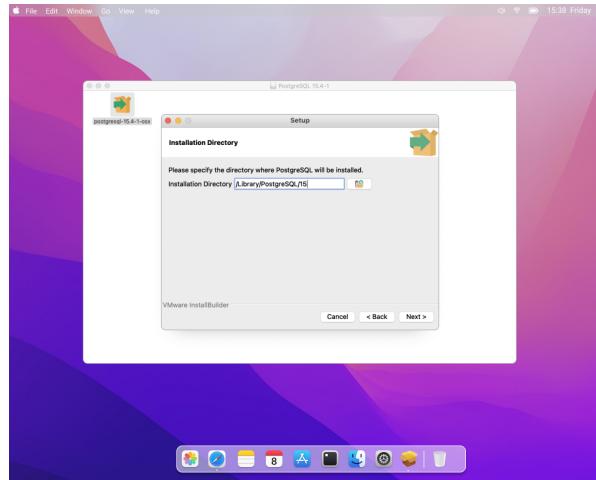


Figure 4: Specify the installation directory

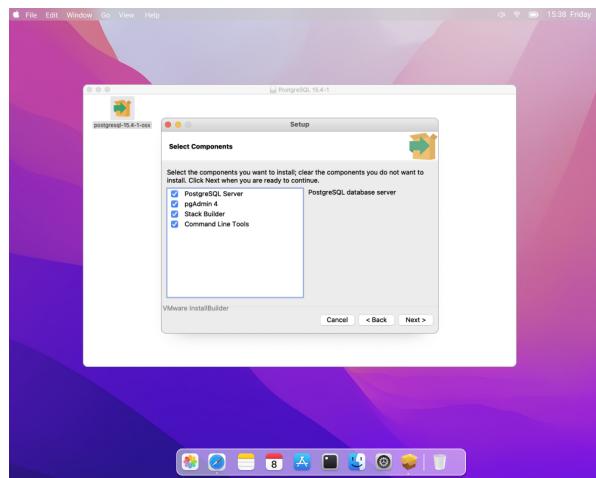


Figure 5: Select the required components

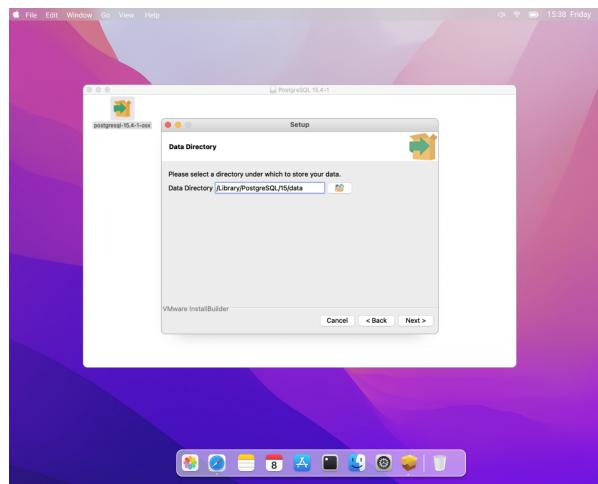


Figure 6: Specify the data directory

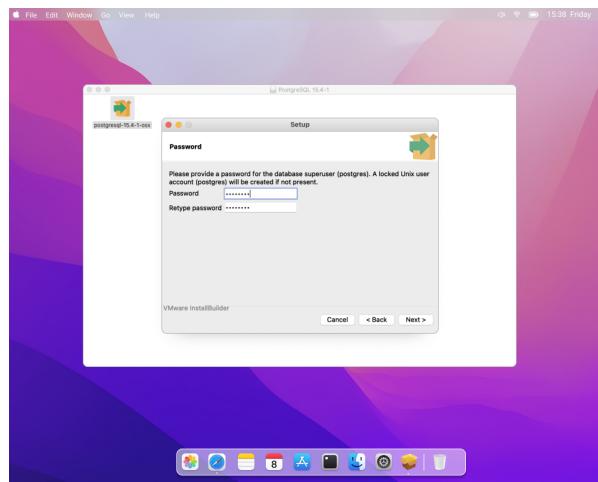


Figure 7: Provide a password

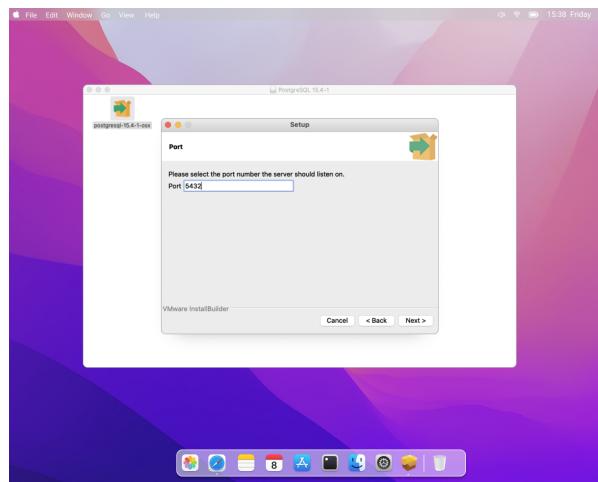


Figure 8: Specify the port



Figure 9: Select the locale

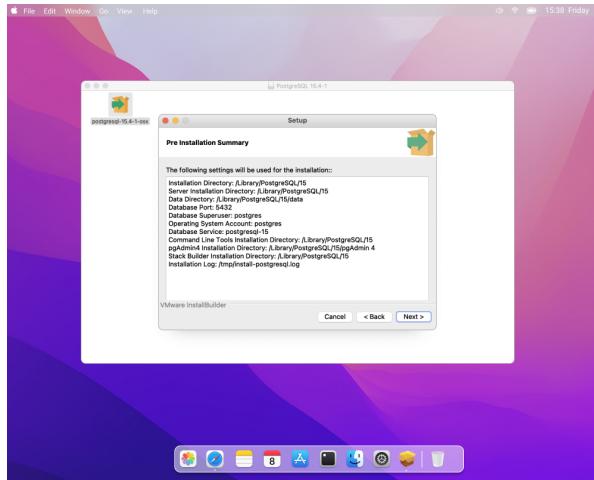


Figure 10: Review the pre-installation summary

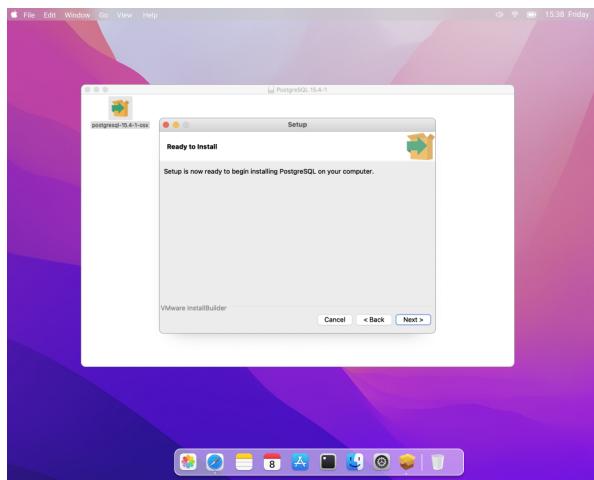


Figure 11: Launch the installation

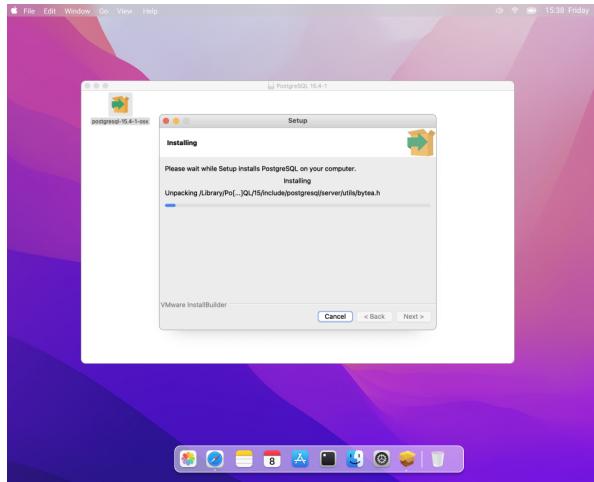


Figure 12: Let the installation proceed



Figure 13: Complete the installation

Windows

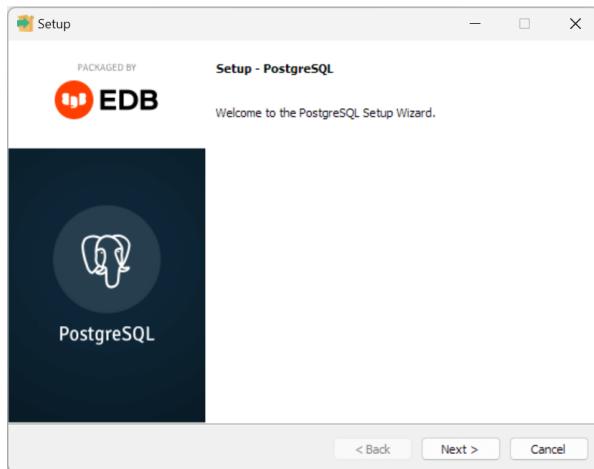


Figure 14: Open the installation wizard

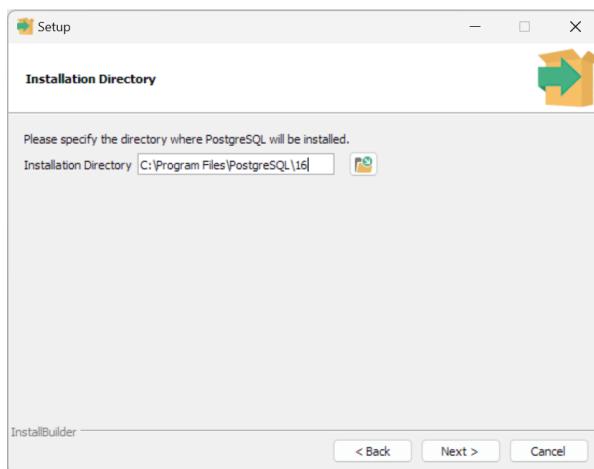


Figure 15: Select the installation directory

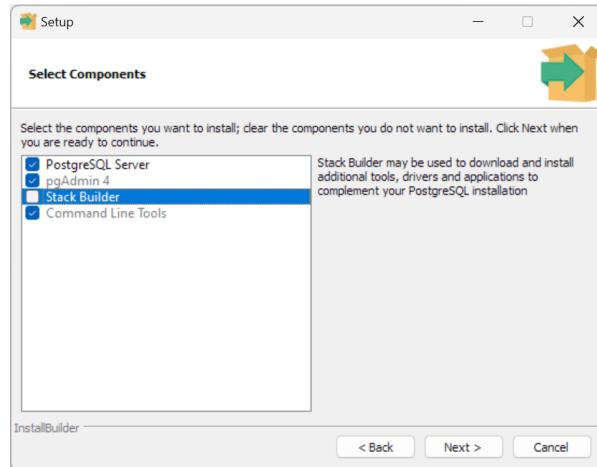


Figure 16: Select the components to install

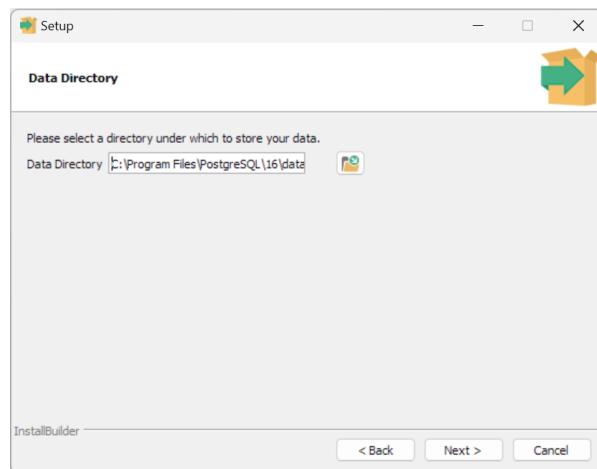


Figure 17: Specify the data directory

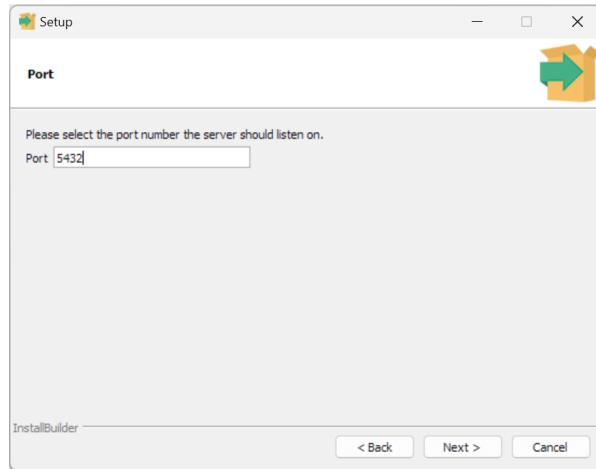


Figure 18: Specify the port

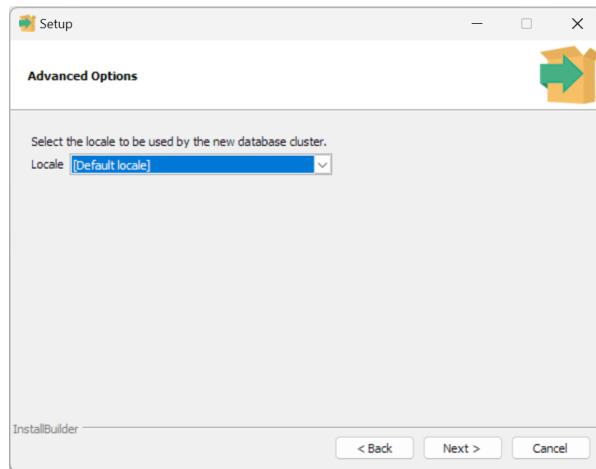


Figure 19: Select the locale

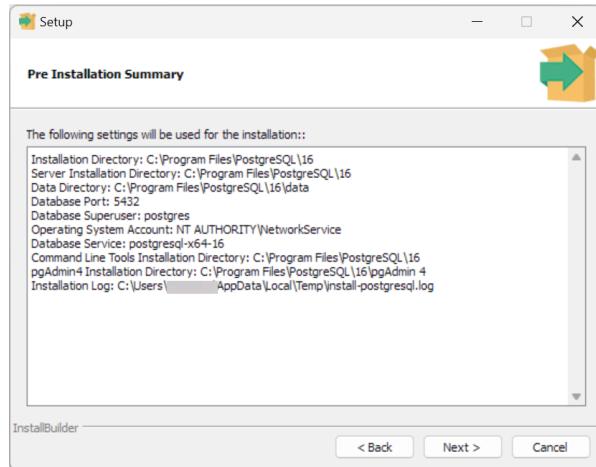


Figure 20: Review the pre-installation summary

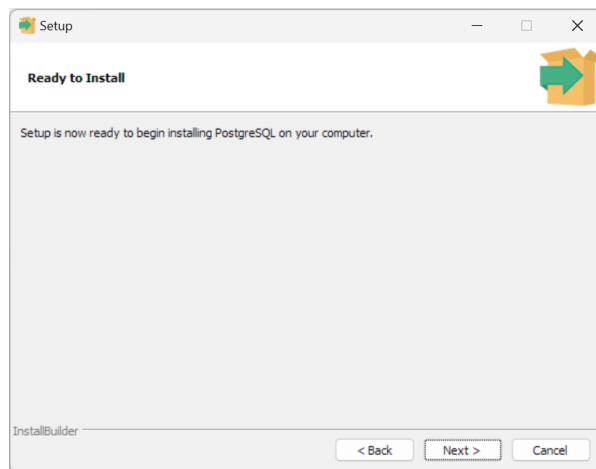


Figure 21: Launch the installation

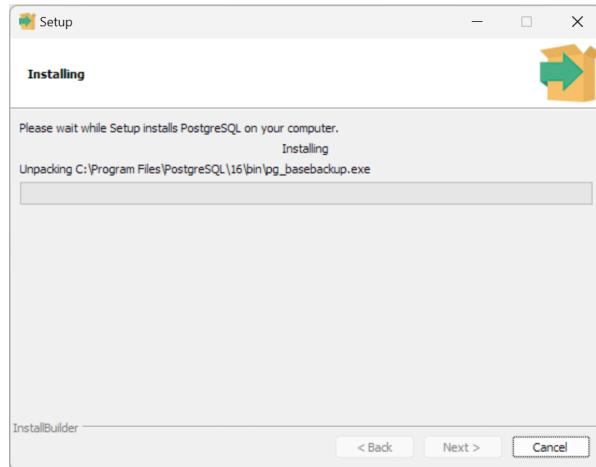


Figure 22: Let the installation proceed

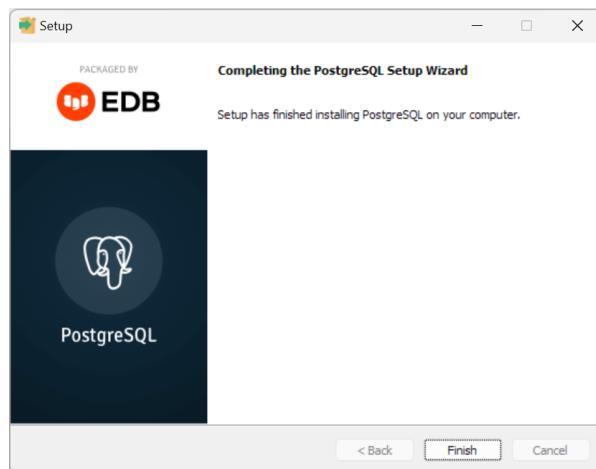


Figure 23: Complete the installation

Linux (Ubuntu/Debian)

1. Install PostgreSQL:

- Open Terminal and run the following commands to install PostgreSQL:

```
sudo apt update  
sudo apt install postgresql postgresql-contrib
```

2. Start PostgreSQL Service:

- Enable and start the PostgreSQL service:

```
sudo systemctl enable postgresql
sudo systemctl start postgresql
```

3. Access PostgreSQL:

- Access the PostgreSQL console by typing:

```
sudo -i -u postgres
psql
```

Installing MySQL

Windows

- Go to the official website of [MySQL](#) and download the community server edition software. Here, you will see the option to choose the Operating System, such as Windows.

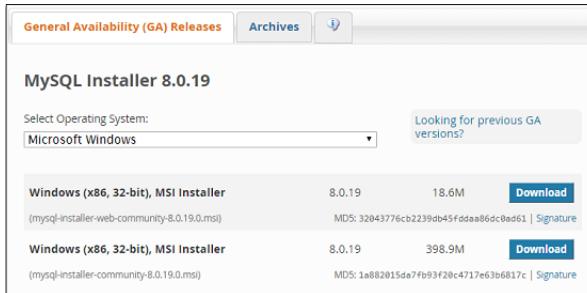


Figure 24: Download Installer

- After downloading the setup, unzip it anywhere and double click the MSI installer .exe file. It will give the following screen:

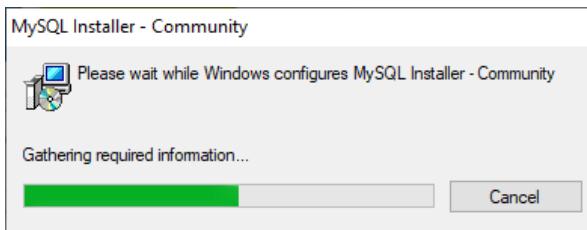


Figure 25: Run Installer

- In the next wizard, choose the Setup Type. There are several types available, and you need to choose the appropriate option to install MySQL product and features. Here, we are going to select the Full option and click on the Next button.

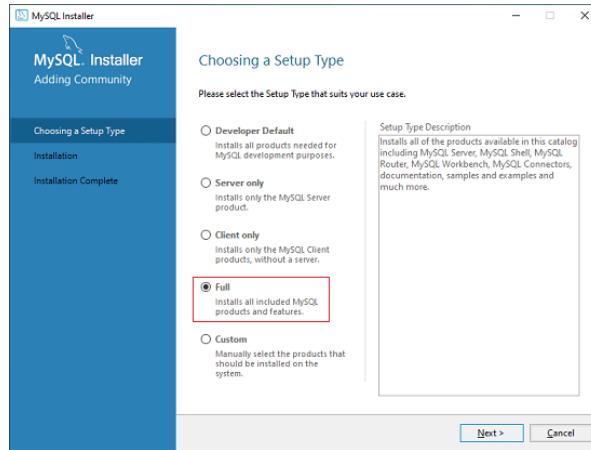


Figure 26: Choose Setup Type

- This option will install the following things: MySQL Server, MySQL Shell, MySQL Router, MySQL Workbench, MySQL Connectors, documentation, samples and examples, and many more.
- Once we click on the Next button, it may give information about some features that may fail to install on your system due to a lack of requirements. We can resolve them by clicking on the Execute button that will install all requirements automatically or can skip them. Now, click on the Next button.

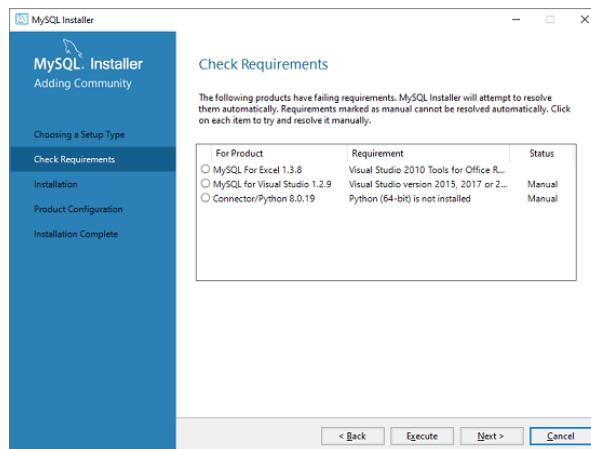


Figure 27: Confirm Installation

- In the next wizard, we will see a dialog box that asks for our confirmation of a few products not getting installed. Here, we have to click on the Yes button.

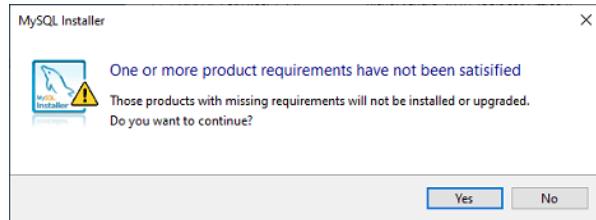


Figure 28: Confirm Installation

- After clicking on the Yes button, we will see the list of the products which are going to be installed. So, if we need all products, click on the Execute button.

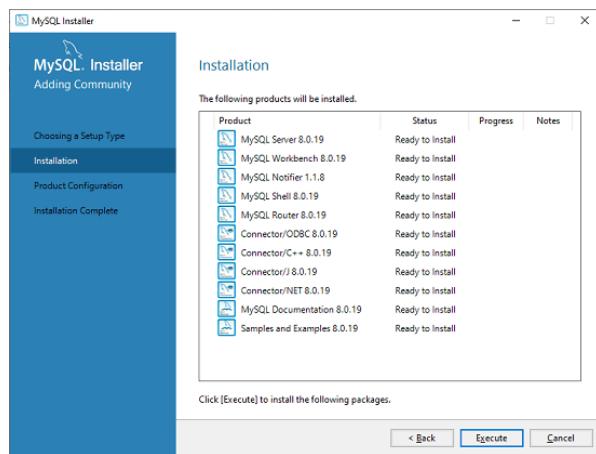


Figure 29: Confirm Installation

- Once we click on the Execute button, it will download and install all the products. After completing the installation, click on the Next button.
- In the next wizard, we need to configure the MySQL Server and Router. Here, I am not going to configure the Router because there is no need to use it with MySQL. We are going to show you how to configure the server only. Now, click on the Next button.
- As soon as you will click on the Next button, you can see the screen below. Here, we have to configure the MySQL Server. Now, choose the Standalone MySQL Server/Classic MySQL Replication option and click on Next. Here, you can also choose the InnoDB Cluster based on your needs.
- In the next screen, the system will ask you to choose the Config Type and other connectivity options. Here, we are going to select the Config Type as 'Development Machine' and Connectivity as TCP/IP, and Port Number is 3306, then click on Next.

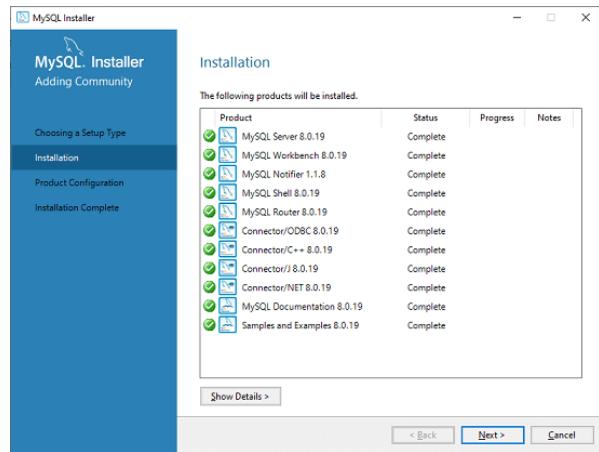


Figure 30: Confirm Installation

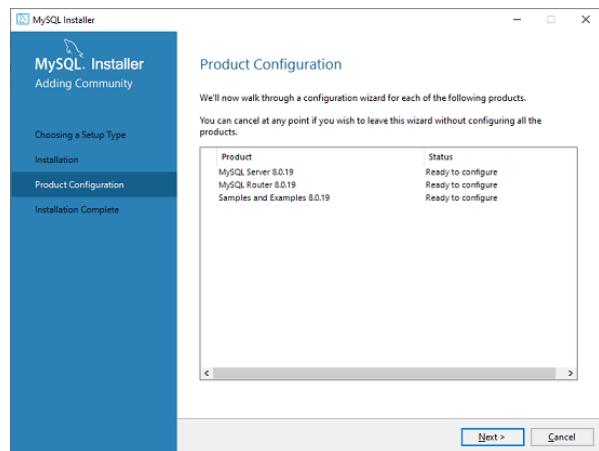


Figure 31: Configure Server

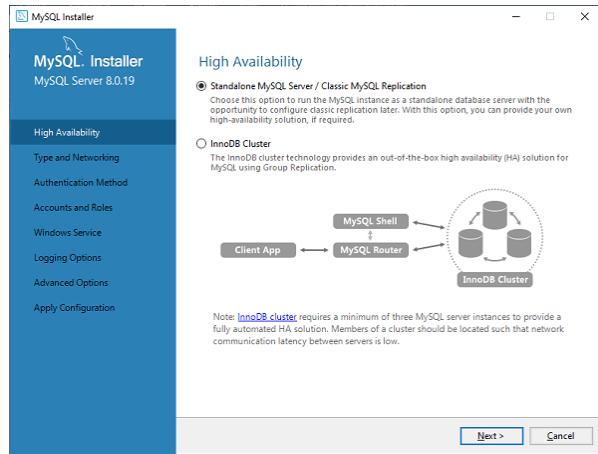


Figure 32: Configure Server

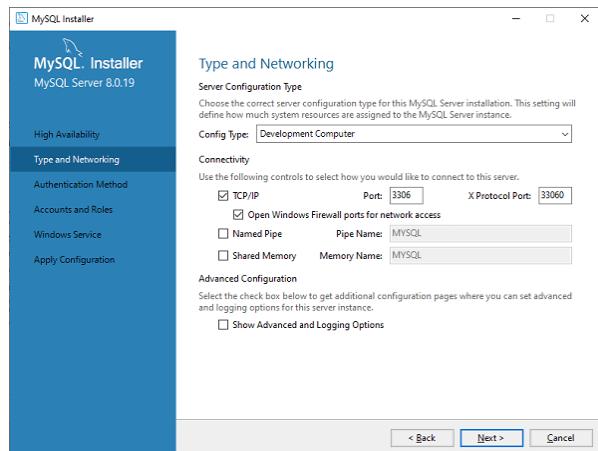


Figure 33: Configure Server

- Now, select the Authentication Method and click on Next. Here, I am going to select the first option.

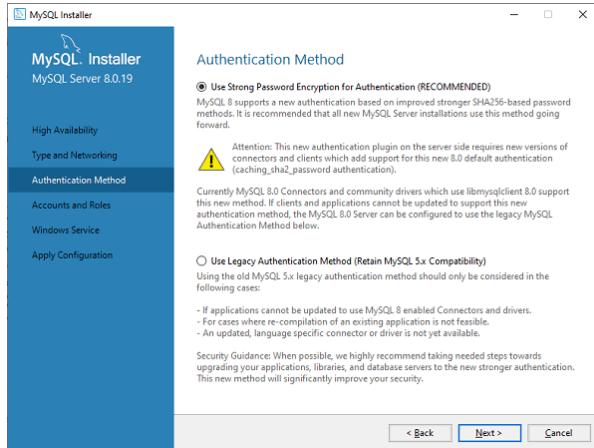


Figure 34: Configure Server

- The next screen will ask you to mention the MySQL Root Password. After filling the password details, click on the Next button.

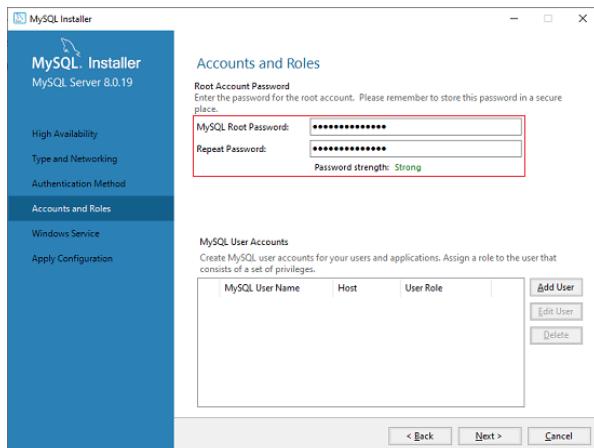


Figure 35: Configure Server

- The next screen will ask you to configure the Windows Service to start the server. Keep the default setup and click on the Next button.
- In the next wizard, the system will ask you to apply the Server Configuration. If you agree with this configuration, click on the Execute button.

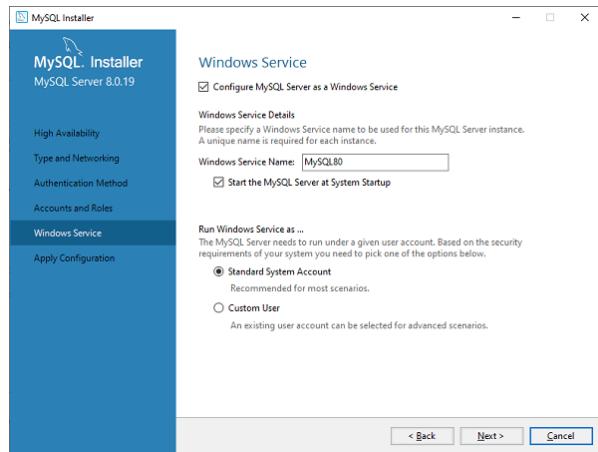


Figure 36: Configure Server

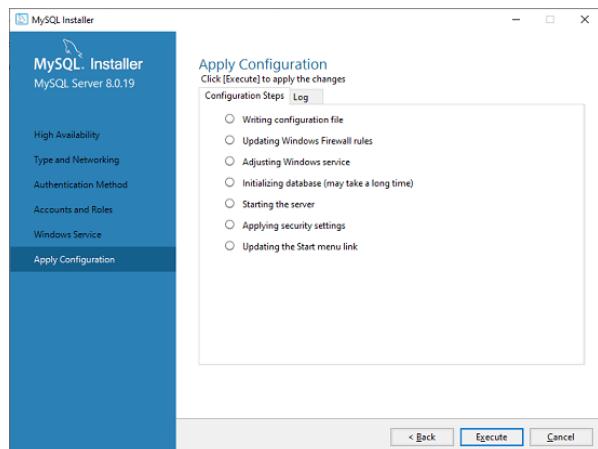


Figure 37: Configure Server

- Once the configuration has completed, you will get the screen below. Now, click on the Finish button to continue.

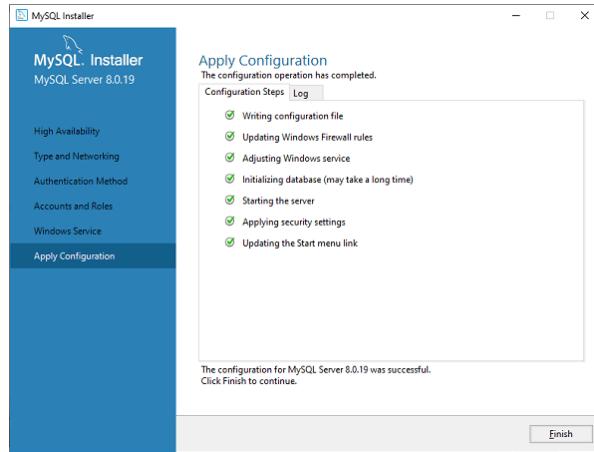


Figure 38: Configure Server

- In the next screen, you can see that the Product Configuration is completed. Keep the default setting and click on the Next-> Finish button to complete the MySQL package installation.

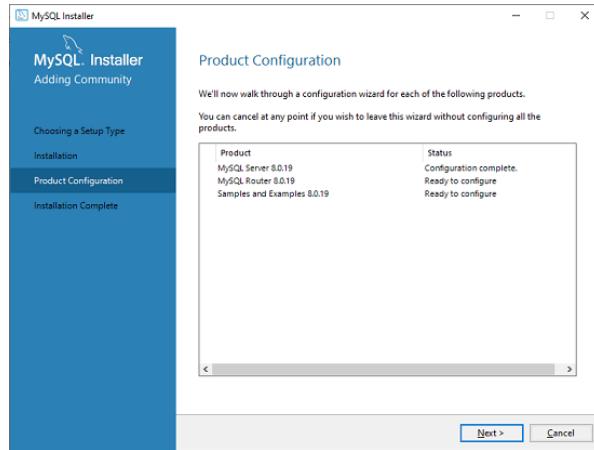


Figure 39: Configure Server

- In the next wizard, we can choose to configure the Router. So click on Next->Finish and then click the Next button.
- In the next wizard, we will see the Connect to Server option. Here, we have to mention the root password, which we had set in the previous steps.

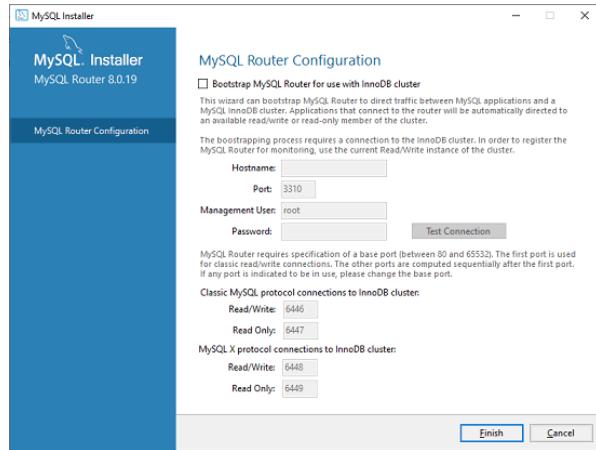


Figure 40: Configure Server

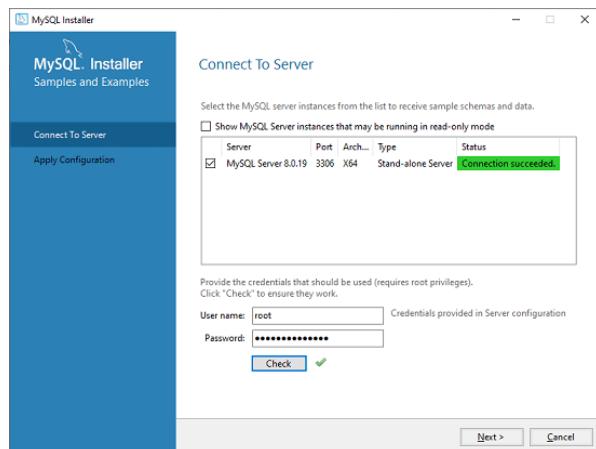


Figure 41: Configure Server

- In this screen, it is also required to check about the connection is successful or not by clicking on the Check button. If the connection is successful, click on the Execute button. Now, the configuration is complete, click on Next.

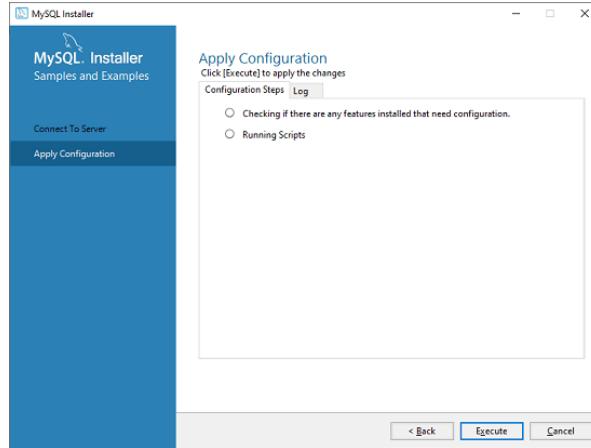


Figure 42: Configure Server

- In the next wizard, select the applied configurations and click on the Execute button.

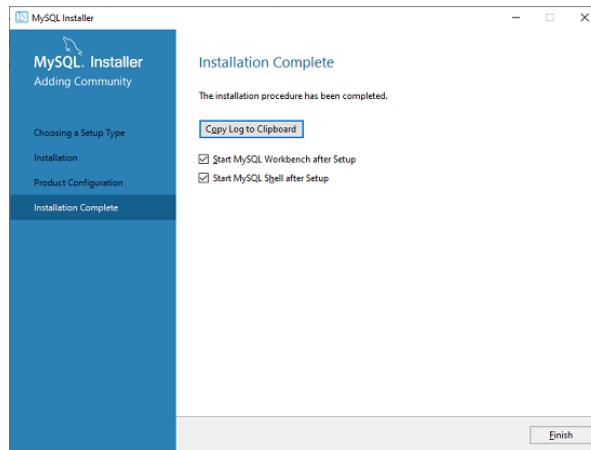


Figure 43: Configure Server

how to install mysql Step 18: After completing the above step, we will get the following screen. Here, click on the Finish button.

how to install mysql Step 19: Now, the MySQL installation is complete. Click on the Finish button.

how to install mysql Verify MySQL installation Once MySQL has been successfully installed,

the base tables have been initialized, and the server has been started, you can verify its working via some simple tests.

Open your MySQL Command Line Client; it should have appeared with a mysql> prompt. If you have set any password, write your password here. Now, you are connected to the MySQL server, and you can execute all the SQL command at mysql> prompt as follows:

For example: Check the already created databases with show databases command:

HR sample data

Here we will use a sample Database called HR that manages the HR data of the small businesses which is collected from www.sqltutorial.org. And to create the database, a SQLite script file was used when rendering the document. Read the [extension docs](#) for details.

ERD of HR database

The following database diagram illustrates the HR sample database:

Editable Example

And now, you can run all sort of queries from the tables of the HR databases.

```
select * from regions;
```

Not editable example

You can also create “not-editable” code chunk (that is, you simply can run the query but won’t be able to edit/modify it) for HR database. And to do this, just use another instance of database under the `database` key in the yaml with a different name and use the option `editable: false`.

Not editable example

```
select * from employees;
```

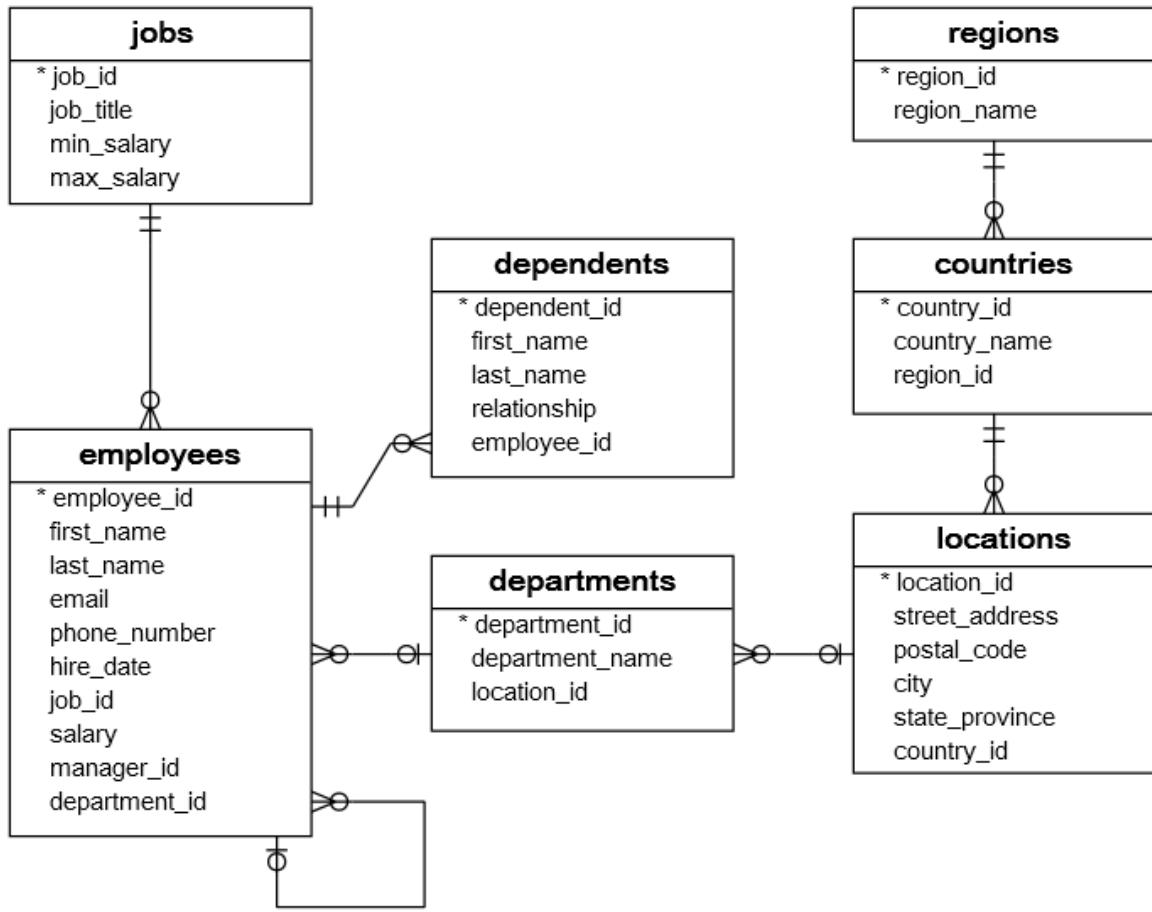


Figure 44: ERD of HR database