Demo project in github link: https://github.com/Dorisombongi/demo

1. Select Your Operating System (OS): Choose an operating system that best suits your preferences and project requirements.

STEPS OF INSTALLING WINDOWS

Go to https://www.microsoft.com/software-download/windows11 to download windows 11 to download windows.

WHAT DO YOU NEED.

1. Windows installation media. This could be an installation ISO or DVD.
2. USB flash drive with at least 5GB free space, ensure the flash disk has nothing important since it will be formatted.
3. Technician PC - Windows PC that you'll use to format the USB flash drive
4. Destination PC - A PC that you'll install Windows on

Step 1 - Format the drive and set the primary partition as active.

- Connect the USB flash drive to your technician PC.
- Open Disk Management: Right-click on Start and choose Disk Management.
- Format the partition: Right-click the USB drive partition and choose Format. Select the FAT32 file system to be able to boot either BIOS-based or UEFI-based PCs.
- Set the partition as active: Right-click the USB drive partition and click Mark Partition as Active.

Step 2 - Copy Windows Setup to the USB flash drive.

- Use File Explorer to copy and paste the entire contents of the Windows product DVD or ISO to the USB flash drive.

Step 3 - Install Windows to the new PC.

- Connect the USB flash drive to a new PC.
- Turn on the PC and press the key that opens the boot-device selection menu for the computer, such as the Esc/F10/F12 keys. Select the option that boots the PC from the USB flash drive.
- Windows Setup starts. Follow the instructions to install Windows.
- Remove the USB flash drive.

2. Install a Text Editor or Integrated Development Environment (IDE)

Download and Install Visual Studio Code.

1. Go to https://code.visualstudio.com/Download to download Visual Studio Code

2. Follow the on-screen instructions to download the installer.
3. Run the downloaded installer.
4. Choose the "Visual Studio" workload during installation, which includes the necessary components for general development.
5. In the Visual Studio Installer, select the workloads and components you need based on your development requirements. Common workloads include ".NET Desktop Development" or "Web Development."
6. If needed, you can customize the installation by clicking on the "Individual components" tab in the installer and selecting or deselecting specific components.
7. Click the "Install" button to start the installation process.
8. This may take some time, as it involves downloading and installing the selected components.
9. Once the installation is complete, launch Visual Studio.
10. On the welcome screen, select your development environment. For example, you can choose "Development Settings" based on your preferred coding style.
11. Start Coding.

3. Set Up Version Control System

Install Git and configure it on your local machine. Create a GitHub account for hosting your repositories. Initialize a Git repository for your project and make your first commit.

INSTALLING GIT

1. Go to https://git-scm.com/downloads to download Git.
2. Select operating system (Windows).
3. Press “Click here to download” to start downloading the installer.
4. After the downloading has finished launch the installer.
5. Follow the instructions to install: On select components check the ‘Additional icons’ tab.
6. After the installing is complete launch Git

CONFIGURING GIT IN LOCAL MACHINE

Use git config –global –user.name “user name” to add a user name and git config –user.email “email” to add name and email to git

CREATING GITHUB ACCOUNT

Go to www.github.com to create a github account

Verify account to complete setup.

Use mkdir “directory name” to create directory

Use cd “directory name” to change into the directory

Go to explorer and create a text file under the directory folder

Create a repository in the github account

Add description and complete the repository creation.

INITIALIZING A REPOSITORY

Use git init to initialize a repository.

Use git add test.txt to add file

COMMITING A FILE TO GITHUB

Use git commit -m "Text to commit" to commit a file to github.

Use git remote add origin git@github.com:username/repository name-git to link a repository in git to a repository in github.

Use git push -u origin "branch name" to push the repository to github.

4. Install Necessary Programming Languages and Runtimes

Install Python from http://wwww.python.org programming language required for your project and install their respective compilers, interpreters, or runtimes. Ensure you have the necessary tools to build and execute your code.

Go to http://wwww.python.org to download python installer.

Select the version of python to download.

After the download is complete, run the installer and follow the instructions to install python.

5 Install Package Managers

Install package managers pip and numpy.

Go to command prompt and run "winget install pip" to install pip.

Enter yes for the requested prompt to continue installing pip.

Run "pip install numpy" to install numpy.

6. Configure a Database (MySQL)

Download and install MySQL database.

Go to https://dev.mysql.com/downloads/windows/installer/5.7.html to download MySQL.

Select and download your preferred version. I selected the **Full MySQL Package**.

After selecting a version, you are provided with the option of signing up for a MySQL Community account. I selected ***No thanks, just start my download*** option at the bottom of the page.

Once the download is complete, run the MySQL Installer file.

Accept the Oracle license agreement terms to install MySQL.

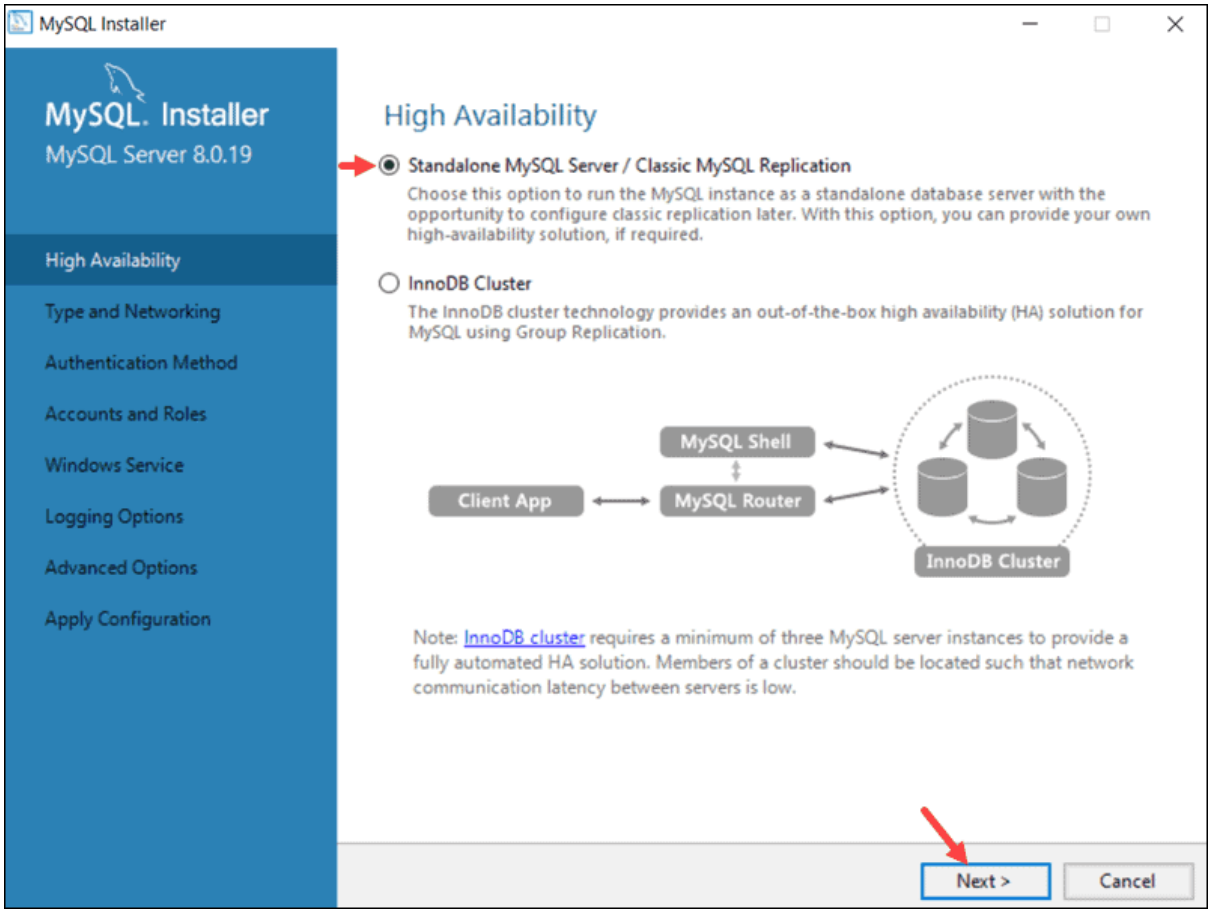
Select the **Server Only** option and click **Next**.

Configure MySQL Server on Windows

Once the status of the installation status is labeled as *Complete*. MySQL Server is ready to be configured. Initiate the process by clicking **Next.**

1. High Availability

The first configuration option affects database availability. It allows you to decide if you want to set up a Standalone MySQL Server or an InnoDB server cluster to improve availability. In this instance, i selected the classic, single server option.

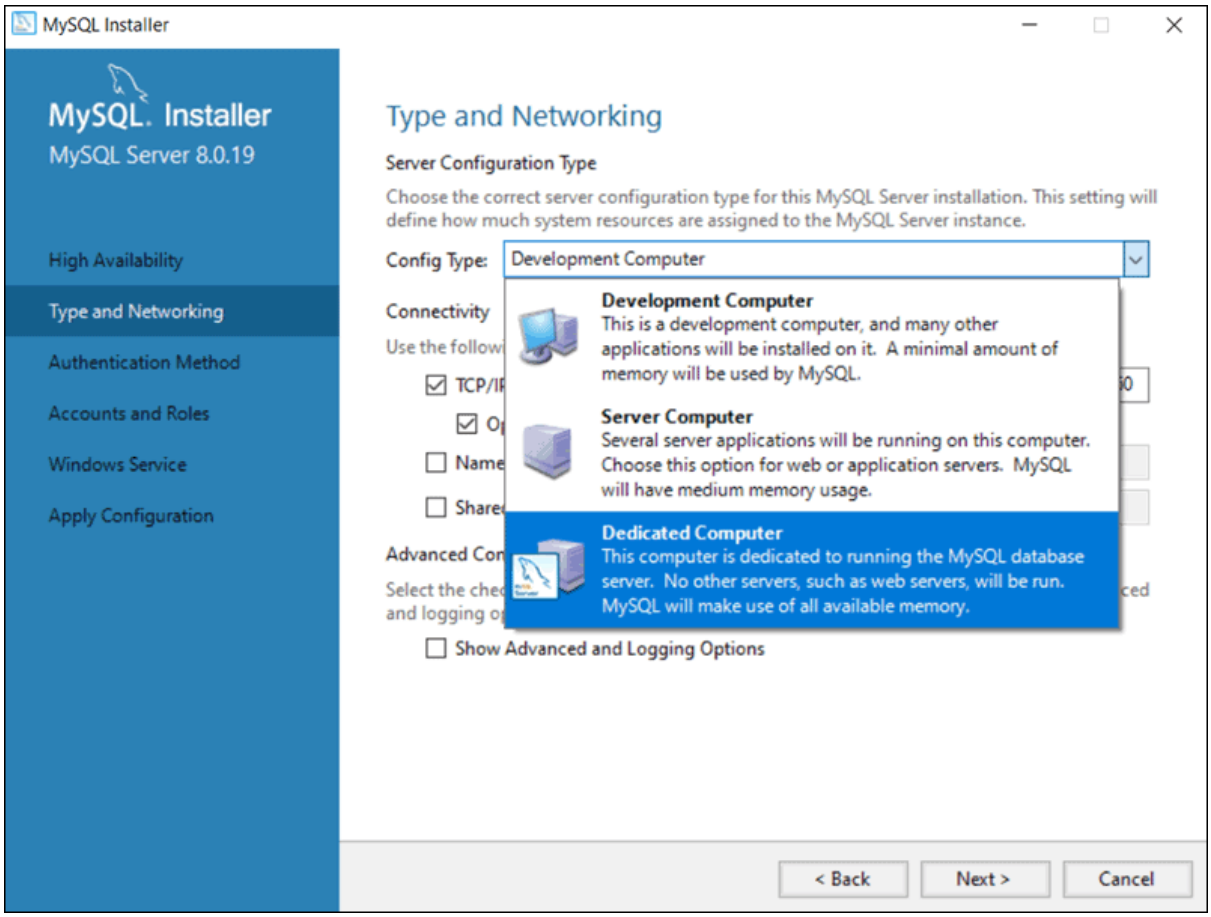


2. Type and Networking

The **Type and Networking** section is used to define several essential features.

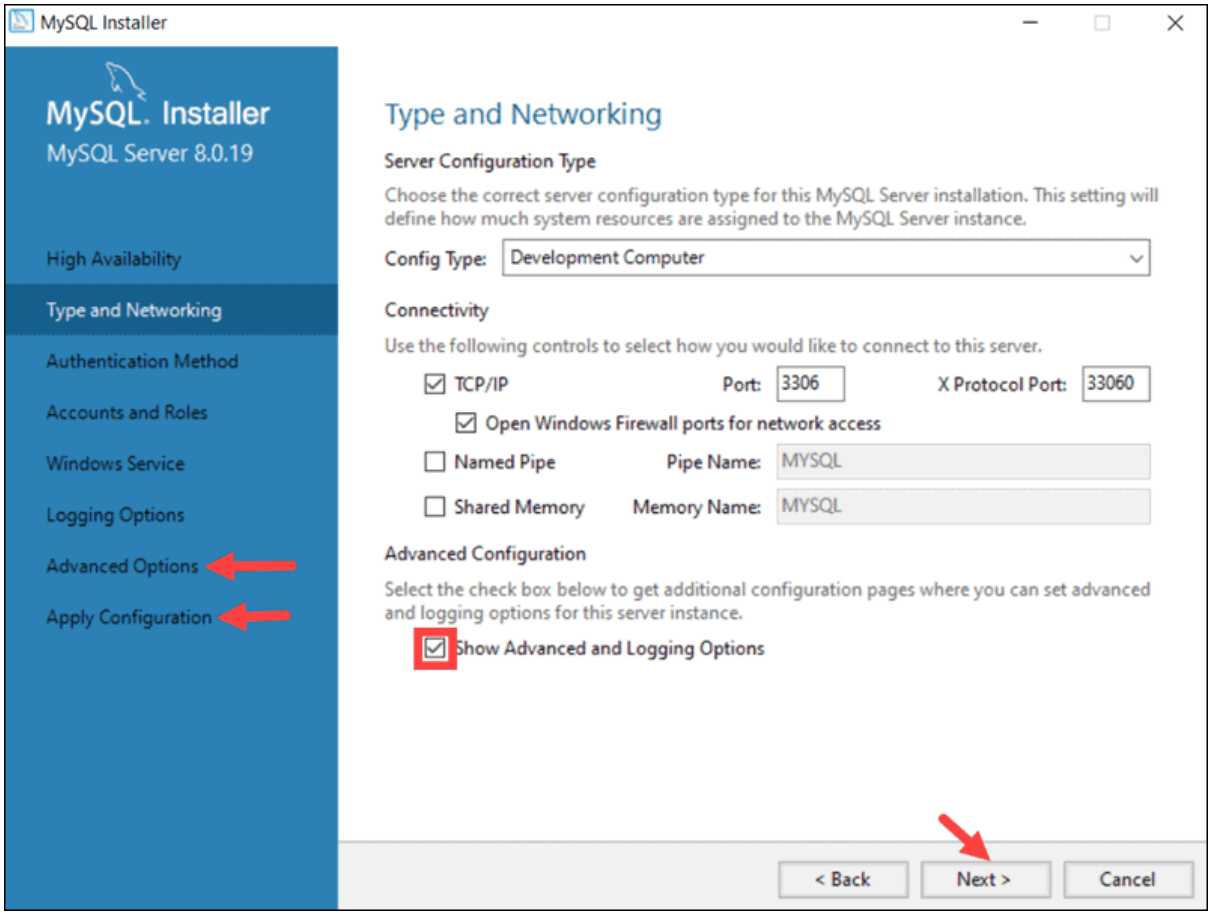
The *Config Type* option lets you choose between three server configuration types. *Development Computer*, *Server Computer*, and *Dedicated Computer* define whether the server is dedicated solely to running your MySQL database or is going to share the underlying system with other applications.

I decided to create a dedicated MySQL server.



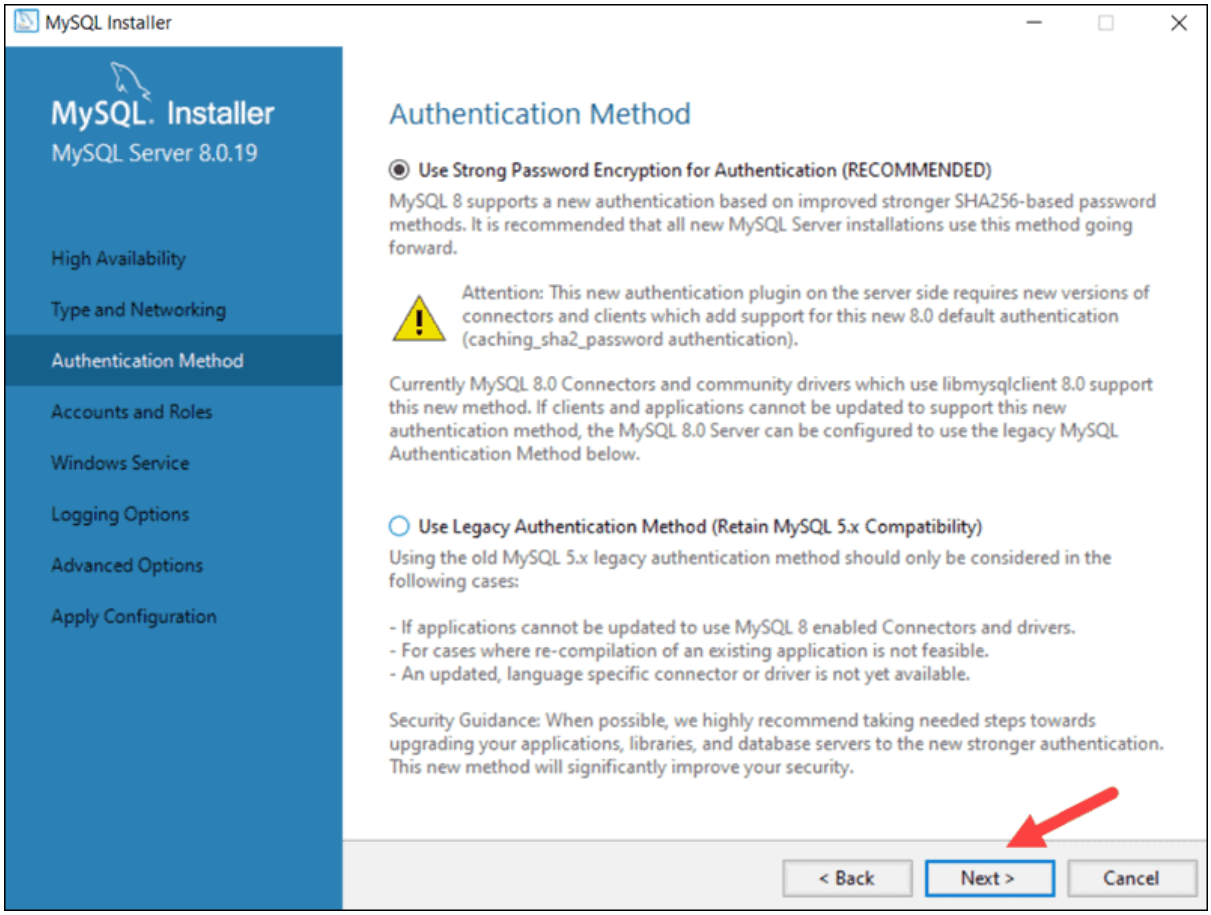
By checking the *Show Advanced and Logging Option* box, you can set additional logging options at a later stage.

Click **Next** once you've selected the options you feel meet your requirements.



3. Authentication Method

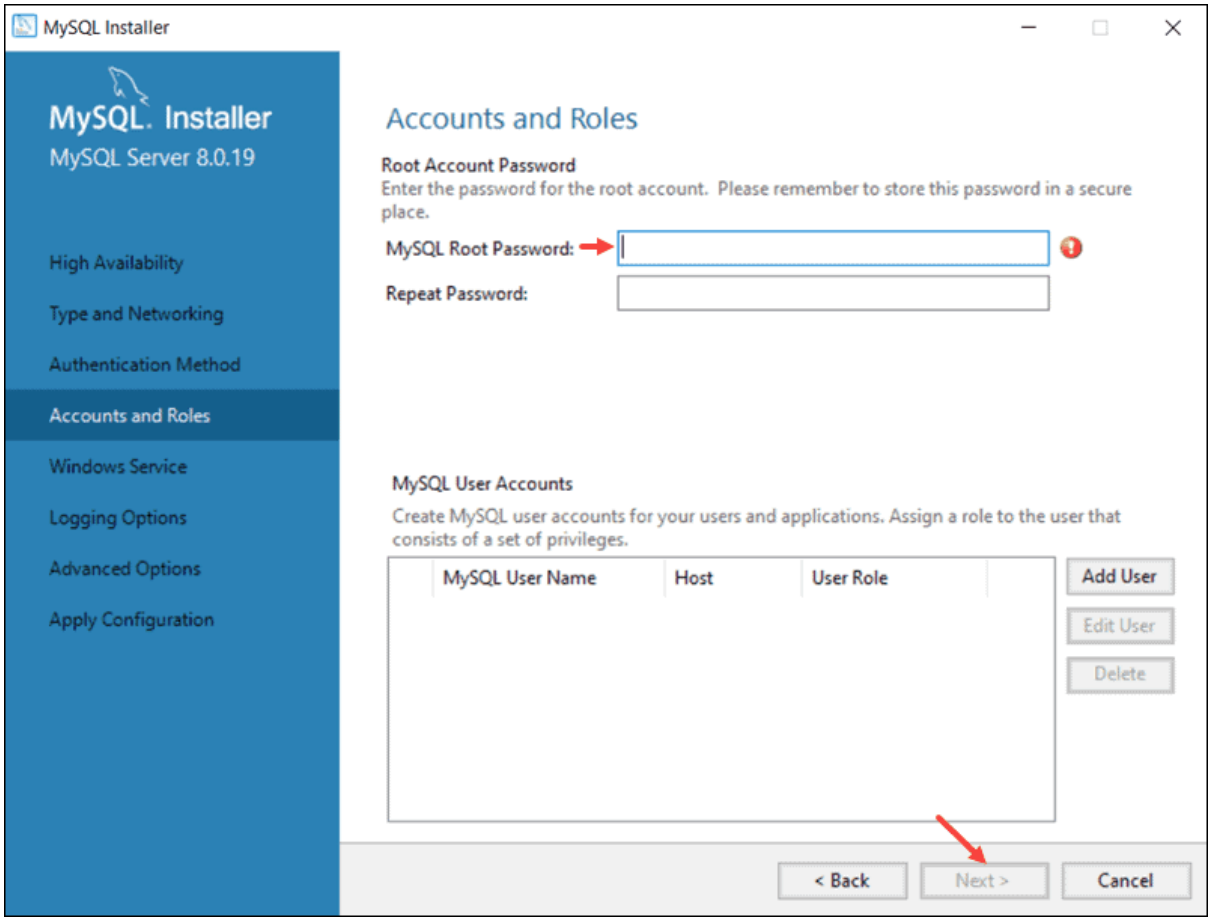
Select the recommended **Use Strong Password Authentication** option.



4. Accounts and Roles

You are now prompted to enter a password for your MySQL root user. You can also create additional roles for various users and purposes.

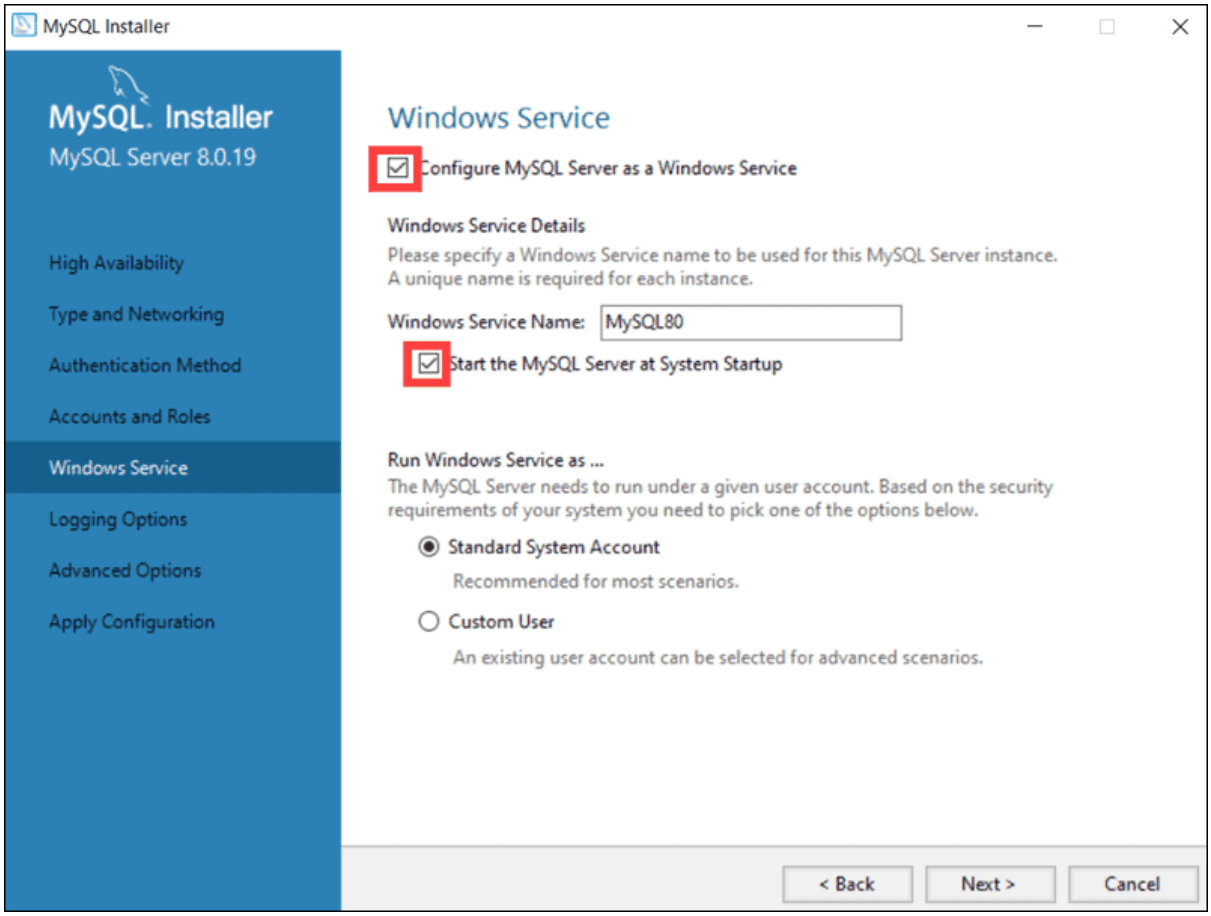
This is only an initial setup, and credentials can be edited once the installation is complete.



5. Windows Service

By defining MySQL as a Windows Service, it can now start automatically whenever the Windows system boots.

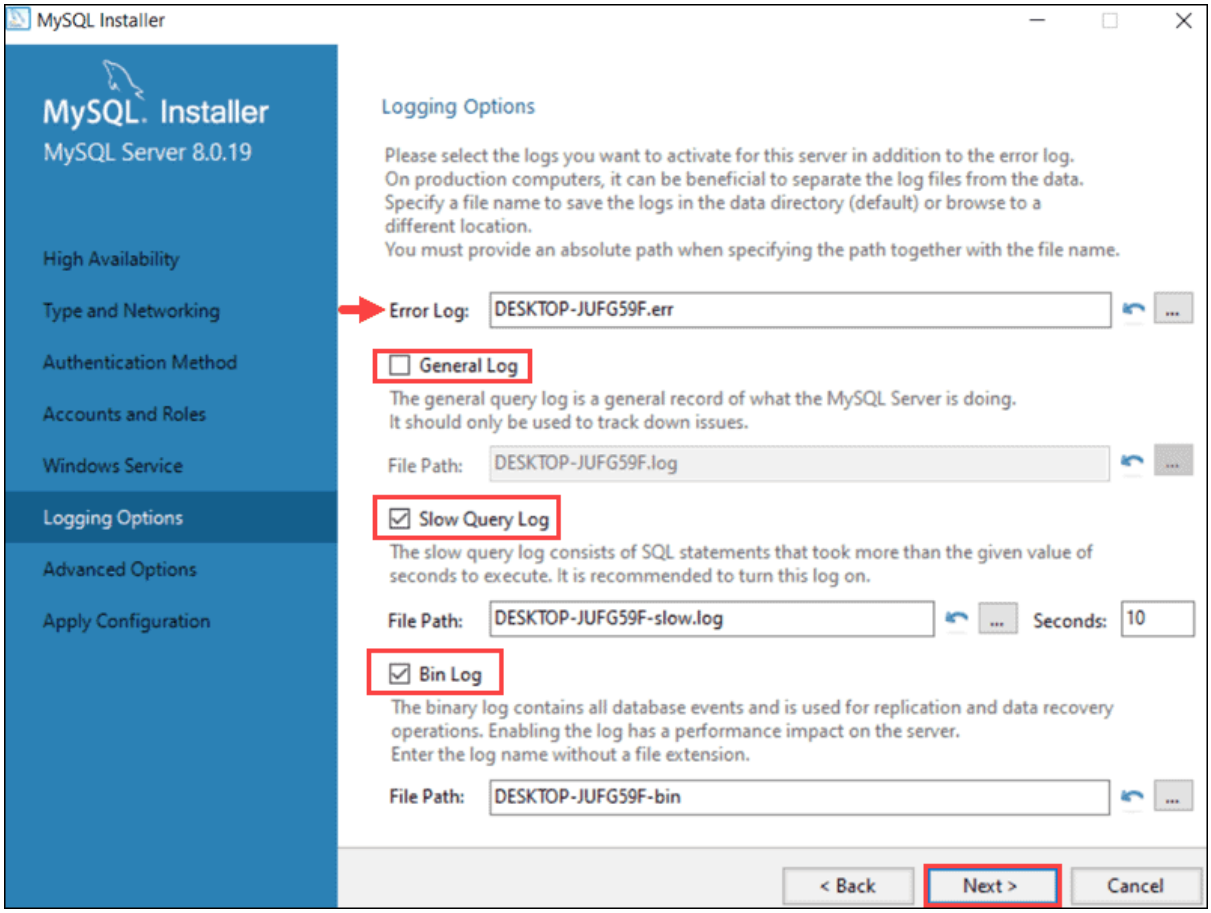
If you decide to start MySQL as an executable application, you would need to configure it manually.



6. Logging Options (Optional)

If you have selected the *Show Advanced Logging* option in the **Type and Networking** tab, you are now able to set up MySQL log preferences.

Logging options let you select the types of logs you want to activate and define the log directories.



Click **Next** to reach the **Advanced Options** section.

7. Advanced Options (Optional)

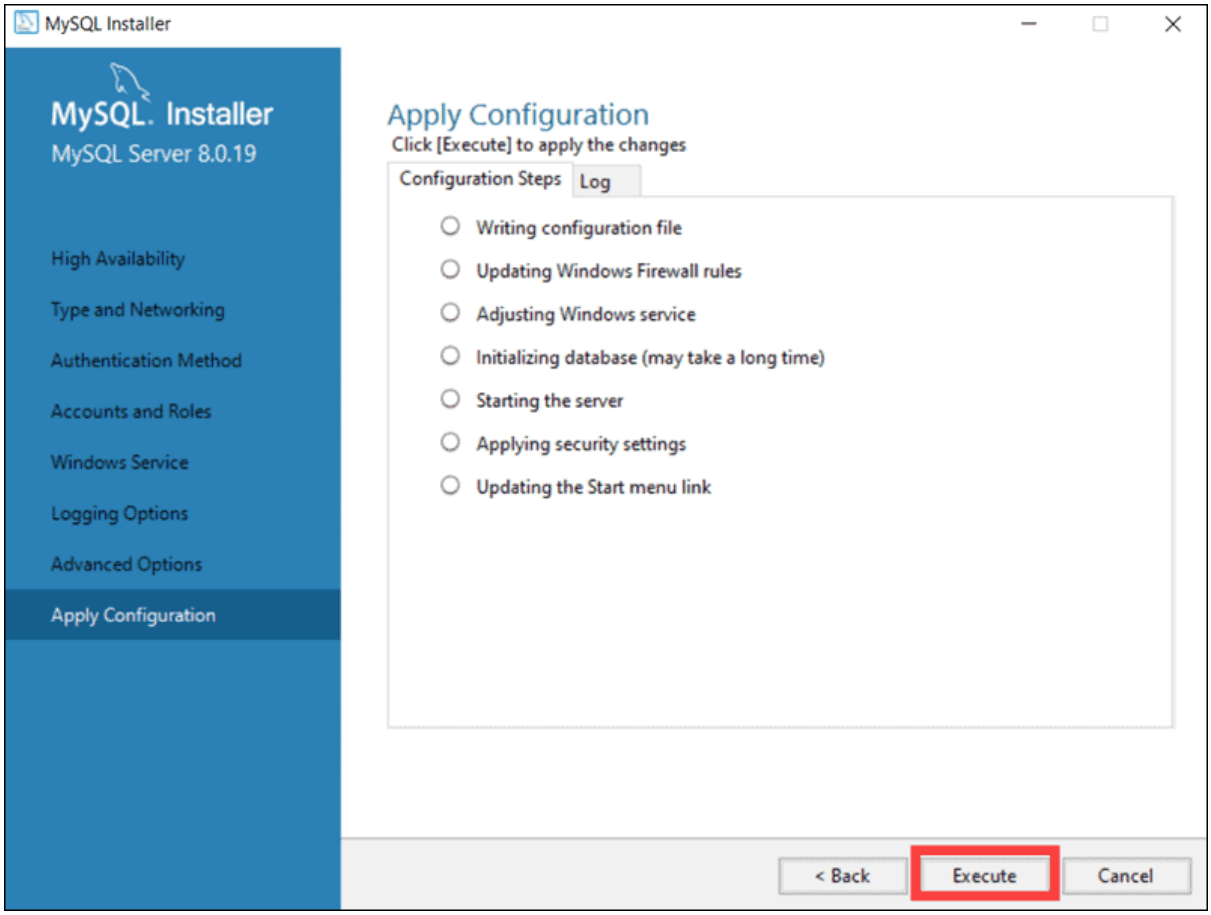
Advanced Options include setting a unique server identifier, and the type of case (Lower/Upper) to be used for *Table Names*.

These settings are only available if you have checked the *Show Advanced Options* box in the **Type and Networking** tab.

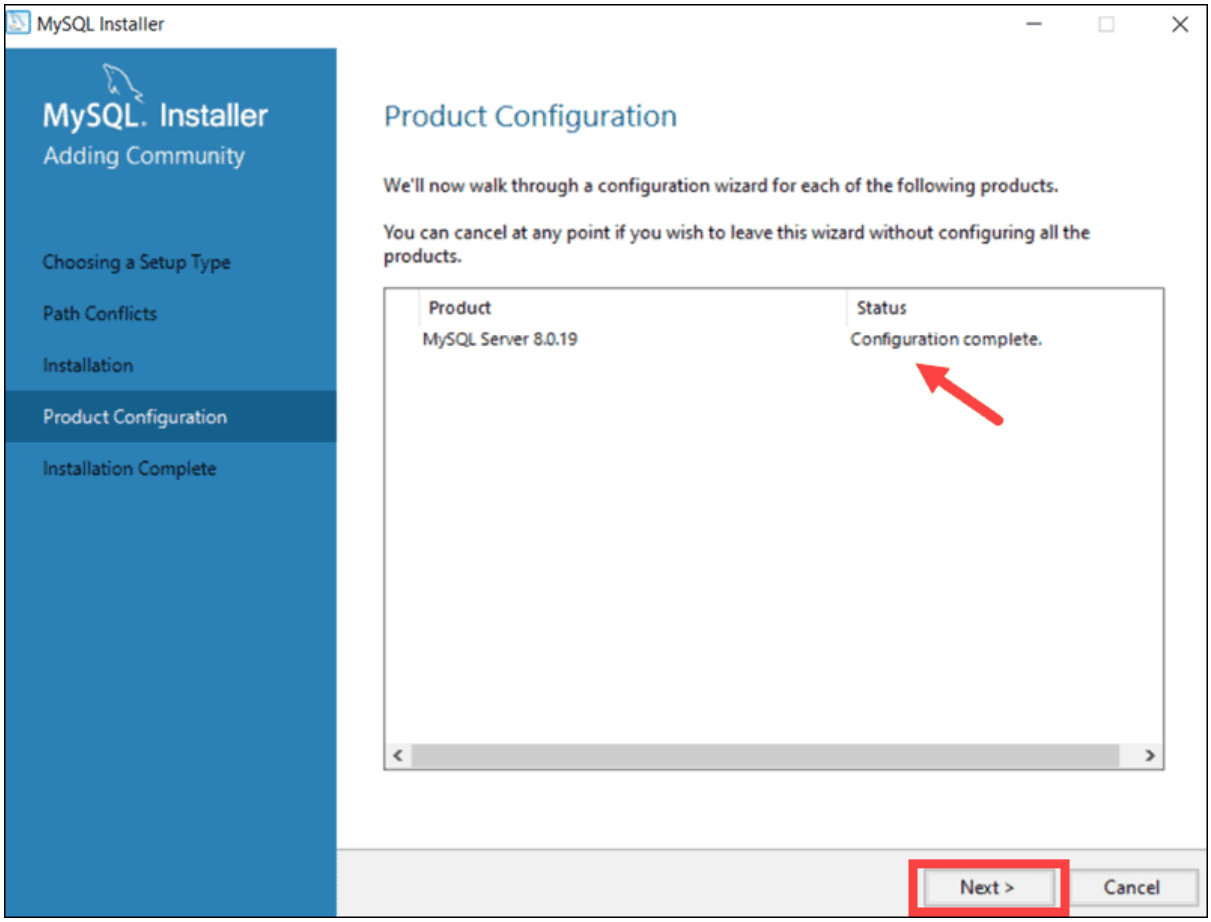
8. Apply Configuration

You have successfully configured the MySQL server and need to confirm for the MySQL Installer to apply the configuration.

An overview of the configurations steps appears on the screen. Click **Execute** to apply the configuration.

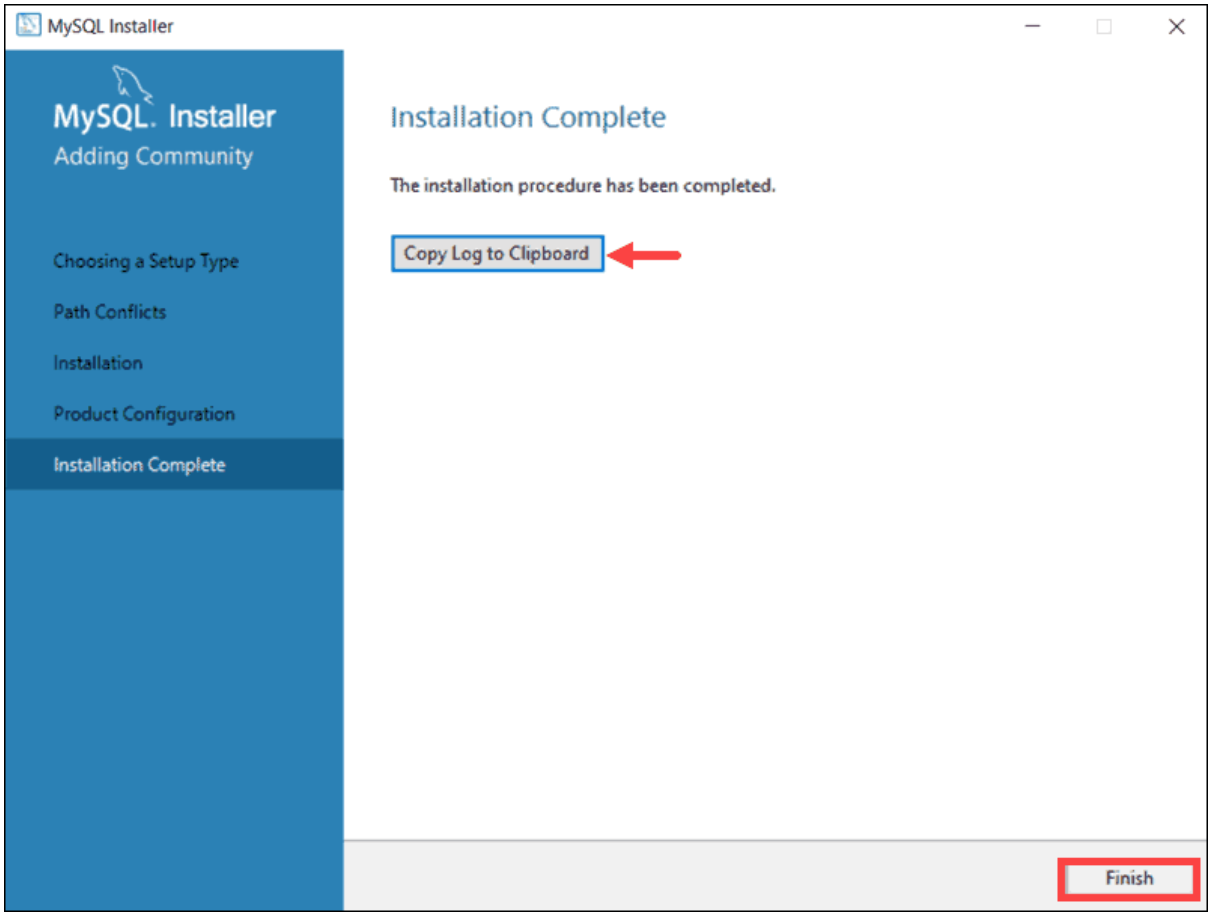


The system informs once the configuration process is completed. Select **Next** to continue the installation process.



Complete MySQL Installation on Windows Server

After clicking **Next,** you are given the option to copy the installation process log to the Windows Clipboard.



Click **Finish** to complete the MySQL server installation on Windows.

7. Explore Extensions and Plugins.

Explore available extensions, plugins, and add-ons for your chosen text editor or IDE to enhance functionality, such as syntax highlighting, linting, code formatting, and version control integration.

To explore available extensions in the chosen IDE which is Visual Studio Code:

Open Visual Studio Code and click CTLR+SHIFT+X or click the extension tab in the left side to view the installed extensions.

Challenges faced during setup and strategies employed to overcome them.

The only problem i faced was pushing a repo to github. When pushing a repo to github i got an error **git@github.com: Permission denied (publickey).** But after i cleared git bash and started configuring it afresh, the situation resolved and i pushed the repo to github with no problem.