

HyperLab 2023
Gamma Spectroscopy Software
Installation Guide



HyperLabs Software

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About this document

To install HyperLab System quickly, start reading this *Installation Guide*. For detailed instructions on using the installed components, see either the *Quick Start Guide for Main Module* or the *Quick Start Guide for Spectrum File Batch Evaluator*.

1. Setup Types

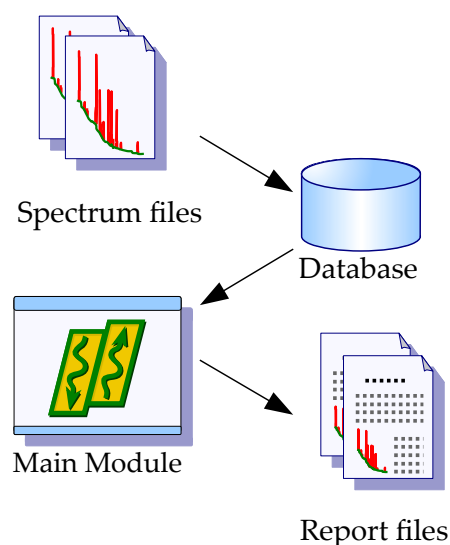
This Installation Guide describes two possible setup types: **HyperLab Main Module** application and **Spectrum File Batch Evaluator** utility setup.

1.1. Main Module overview

Main Module provides gamma spectrum evaluation and fit refinement on a rich graphical user interface, as well as system nonlinearity, detector efficiency and resolution determination.

To efficiently accomplish these tasks, it uses a relational database as a back-end, even for storing spectrum details, including counts.

This setup type is recommended for most users. For detailed installation instructions, see Chapter 2, “Installing HyperLab Main Module” on page 6.



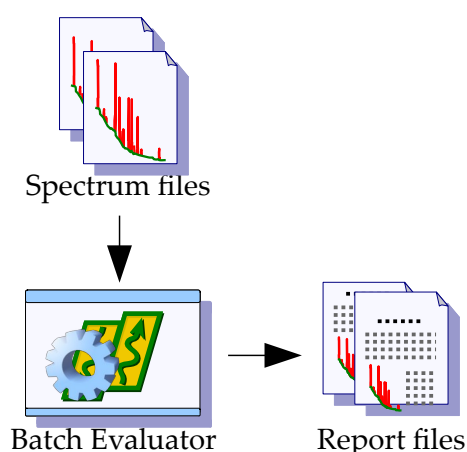
1.2. Spectrum File Batch Evaluator overview

Spectrum File Batch Evaluator utility provides fully automatic evaluation of a series of spectrum files, even without using a database.

This is suggested for specific users only, who do not require Main Module's advanced visual environment during their daily work.

Note: Main Module has a different batch evaluation utility, which works from the database and its results are also stored in the database. With this approach, you can also use nonlinearity calibration, which results in much more exact peak positions.

For detailed installation instructions, see Chapter 4 “Installing Spectrum File Batch Evaluator” on page 13.



2. Installing HyperLab Main Module

This module utilizes relational databases to store all measurement and evaluation information as well as provides several advanced features and options, thus requires more software components to be installed.



Before installing a new HyperLab version, always make a database backup with your older HyperLab software!
See the Reference Guide for details.

Warning to users of previous HyperLab versions:

Although in general more than one HyperLab installations may peacefully coexist on the same computer, please keep in mind the followings:

- HyperLab 2002 or 2005 versions require an old version of the Sentinel hardware key driver, so they will stop functioning when a newer version is installed.
- Almost all HyperLab installation will upgrade your database to a slightly improved format. This newer format sometimes may cause minor problems with the older HyperLab versions. Thus using the same database with different HyperLab versions is not recommended.
- HyperLab installers neither changes the existing database management software of the existing versions, nor its database password. For a clean installation, however, the latest version of the database management software will be installed, with a new password.

2.1. Database topologies for Main Module

Two arrangements are common for Main Module regarding the database management server:

- Local database exists (common case): user installs a local Microsoft database server, and uses it, among possibly other remote databases (located on another computers).
- No local database exists (for advanced users): user does not install a local Microsoft database server, because it is unnecessary; it uses only other machines' SQL server remotely, e.g. a central SQL server of the Institution. Requires a high-quality permanent network connection and an SQL Server administrator person at the central server.

In the latter case, you should manually de-select the Microsoft database component during setup, because it is unnecessary. This way the setup also becomes much simpler.

See further database topologies in Reference Guide.

2.2. System requirements

System requirements for the Main Module of HyperLab:

Operating systems

- Windows 10 (32-bit and 64-bit versions), at least version 1809, or
- Windows 11, recently updated version

Hardware requirements

CPU:

- For automatic analysis of complex gamma spectra, at least 8th generation Intel Core5 or compatible recommended.

RAM:

- Minimum: 4 GB, recommended 8 GB

Hard disk:

- Minimum: 5 GB free space, recommended 15 GB free space.

Display devices:

- Minimum: 1024x768 resolution, 256 colors

Notes: the most resource-hungry operation is the peak evaluation of complicated gamma spectra in HyperLab, so its performance will be most effectively enhanced by a faster CPU.

Software environment requirements

Possible conflicting software applications:

- As the Main Module installs a new version of Microsoft' SQL Server as database management software, there is a small chance that some application may conflict with it.
- Software applications which require Sentinel hardware keys to run. In this case it may be problematic that HyperLab requires the newest version of the **Sentinel hardware key driver** to be installed, while the other application requires an older driver version.
- Using of *Large font size* or a custom DPI setting may be problematic, so we recommend Windows default fonts.

2.3. Preparing to the installation

HyperLab gamma spectroscopy system requires a multi-step installation procedure. Please read carefully and follow the instructions below.

2.3.1. Administrator privileges

HyperLab requires that you have *Administrator security privileges* during setup. Please start Setup.exe by "Run as Administrator".

2.3.2. Removing existing Sentinel hardware key driver

Some other applications on your computer also may require another Sentinel hardware key to run. These keys require a Windows driver for functioning.

HyperLab sets up a recent version of these Rainbow key drivers, which will automatically replace the existing driver. However, this driver replacement is not always done automatically. Therefore it is the safest to remove the old driver manually before HyperLab installation.

Automatic removal

To remove a successfully installed Sentinel driver, follow the steps below:

- Start *Control Panel* and select *Add or Remove programs*.
- Select "SuperProNet Combo Installer", "Sentinel protection driver", "SafeNet hardware key driver" or similar software component which may refers to the driver of Sentinel's parallel or USB key.
- Click *Remove* to uninstall it from your system.

Manual removal

If the regular uninstall could not be successfully finished, try with manual removal:

- Run "SSDCleanUp" or the "SSDCleanUp64" utility from the distribution media, by opening the folder `AddOns\HardwareKey\RemoveOldDriver` .

This will silently remove the old driver, thus it cannot interfere with the new one.

2.3.3. Removing unnecessary SQL Server instances

In order to use Main Module's advanced database back-end, a reliable database management application must be used. HyperLab utilizes Microsoft's "SQL Server" for this purpose.

Microsoft SQL Server is designed to be installable on a single computer multiple times (may have “multiple instances”), and each installation or “instance” must have a unique name.

One server instance is capable of serving one or more concurrent applications.

HyperLab 2002 and 2005 installed an older version of SQL server, called “MSDE” (Microsoft SQL Server Desktop Engine), and used its so-called “Default Instance”, which has the name “MSSQLSERVER”.

If this instance exists on your machine, then the new installer assumes that it was created by a previous HyperLab installation. In this case the HyperLab setup will not initiate another, new database server installation, just simply use the existing one.

If you detected that an unnecessary installation of the old MSDE exists, which is not used by any known application, you should remove it by the usual *Control Panel / Add or Remove programs* way, because HyperLab setup may interfere with this previous installation.

After modifying the MSDE installation, please restart your computer.

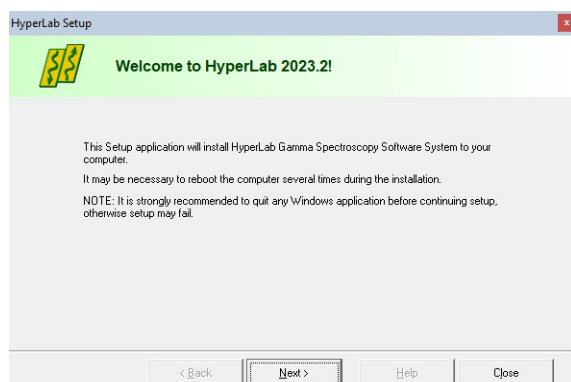
2.4. Installing HyperLab software components – overview

HyperLab Setup application (`Setup.exe`) will install the necessary HyperLab software components to your computer. The installation may require to restart your computer several times, and typically takes half an hour to complete.

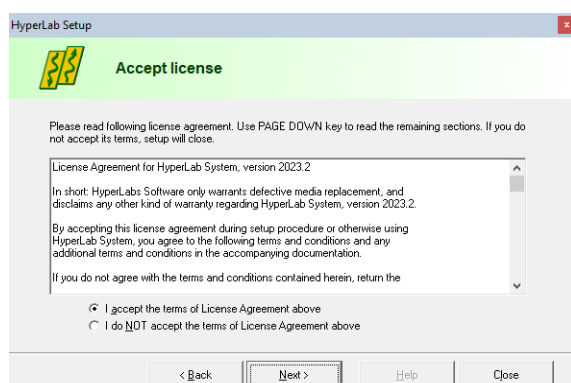
If the setup program requires you to restart your computer after the installation of a specific software component, do so. HyperLab Setup should automatically start again when your Windows system restarts. If Setup is not starting automatically after a reboot, start it manually again by running `Setup.exe`. HyperLab Setup will then continue the installation process where it has been interrupted.

2.4.1. Starting the main setup application

Start the Setup program by right-clicking the `Setup.exe` program icon in the root folder of the distribution media, and select “Run as Administrator”.



HyperLab Setup’s Welcome window appears. Click **Next** to proceed.



The License window appears now with the HyperLab License Agreement. Use scrollbar at the right or press **PgDn** key to read the License Agreement entirely.

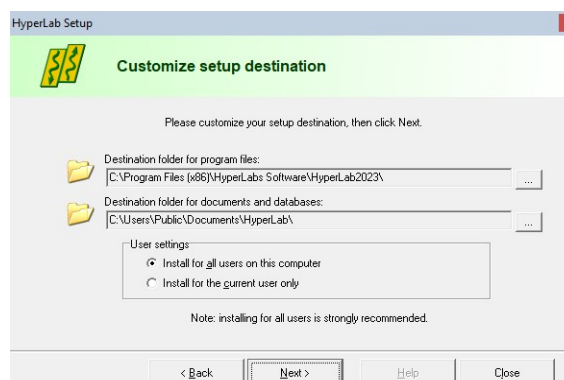
Accept the License Agreement in order to continue setup, then click **Next**.

Destination customizing window appears now. You can set folders for HyperLab program files and documents here.

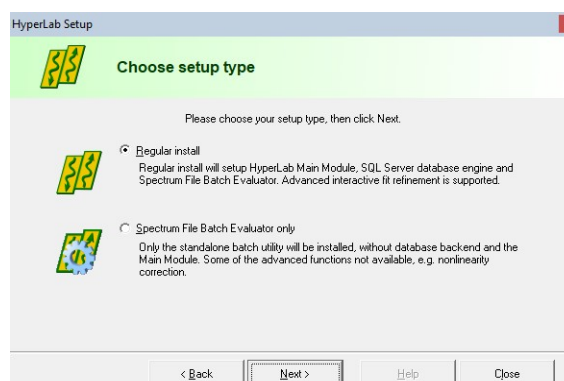
Notes:

- Program files folder may be a read-only location, but documents folder must reside in a writable directory.
- The size of documents folder will be continuously growing, so you must always keep free space on the destination drive.

You can set here the type of installation: you can choose either the application to be installed in a common folder - to be used by all users on the computer, or just install it for the current user. We recommend to install HyperLab for all users. When your settings are appropriate, click **Next**.



The Setup type window appears. Select Full Install option here, then click **Next**.

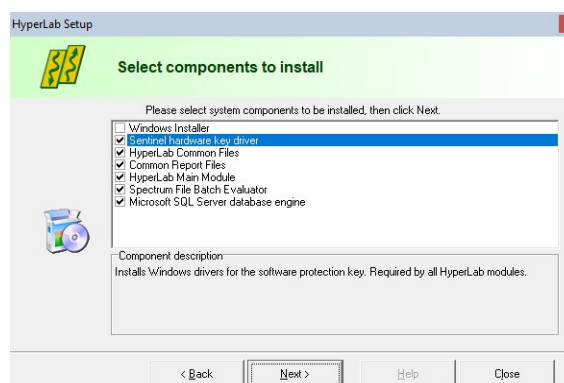


The software component customization window appears. You can check here the software components you want to set up.

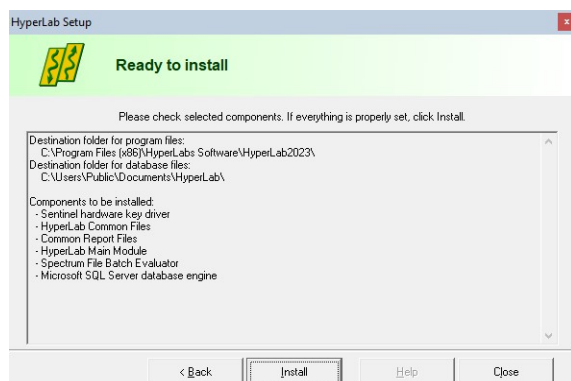
HyperLab Setup tries to determine the software components to be installed, and designates these components with check marks on the component list.

If a check box is empty, it means that Setup detected a previous installation for that component, and its setup is not required.

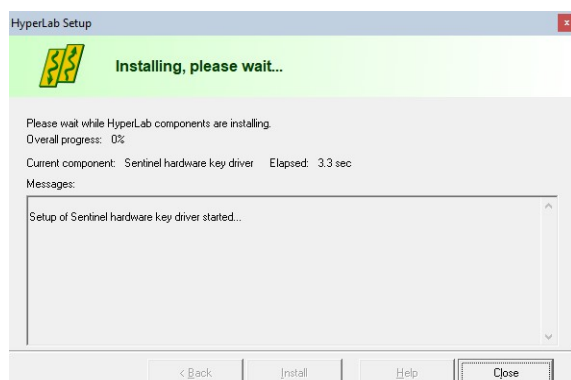
After you selected the components, click **Next**.



Installing HyperLab Main Module

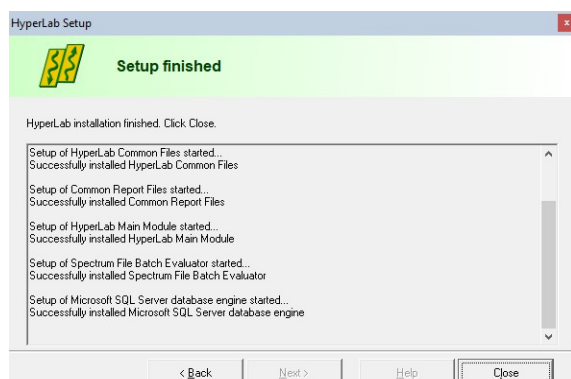


You are ready to start setup process now. Check the listed components which are selected for installation. If the list is complete, click Install.

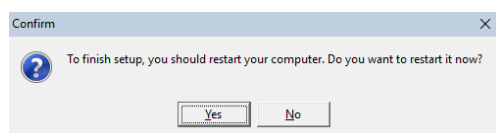


Installation starts now, and you can follow the progress of the setup steps in this window. Name of the currently installed component and elapsed time is displayed at the top, while the interpreted responses of the setup applications are displayed in the Messages area.

Note: Installation process of each specific component is detailed in the section 2.5 “Installing Main Module software components – details” on page 11.



When setup has finished, a message window appears. Click Close to finish setup.



After Setup, a dialog may appear requiring a computer reboot. Click on Yes to perform a reboot.

After reboot, SQL server database management software should start in the background in order to serve HyperLab Main Module's database requests. You should check immediately the status of the local SQL server. See details in *Appendix A*.

2.5. Installing Main Module software components – details

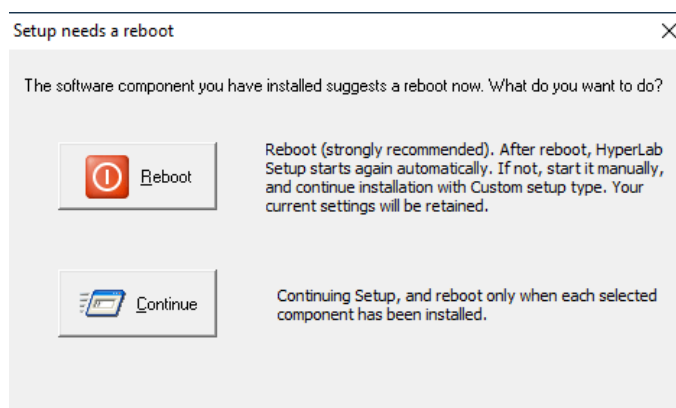
Following sub-sections will contain the detailed steps necessary to install specific HyperLab software components.

2.5.1. Setting up Windows Installer component

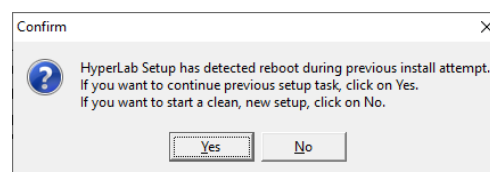
If you selected Windows Installer component in the main setup program, it installs first. This requires minimum interaction from the user.

Result of setup process will be indicated in the Messages panel of the main setup program.

Sometimes necessary to reboot your computer after setting up Windows Installer. In this case, a warning message box appears. Press **Yes** to reboot your computer.



After reboot, HyperLab setup automatically restarts itself, and lets you choose continuing the installation interrupted before, or starting a new, clean install. Click on **Yes** to continue your previous setup procedure.



2.5.2. Setting up Sentinel Hardware Key Driver component

If you selected Sentinel Hardware Key Driver component in the main setup program, its setup application will appear on the screen for a few seconds, and the status of the installation will be written into the message pane.

2.5.3. Setting up HyperLab Main Module component

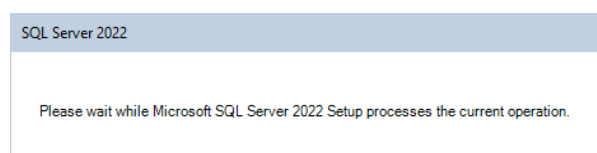
This software component performs core spectrum evaluation and post-processing tasks. If you selected Main Module component in the main setup program, its setup starts now, and requires no interaction from you.

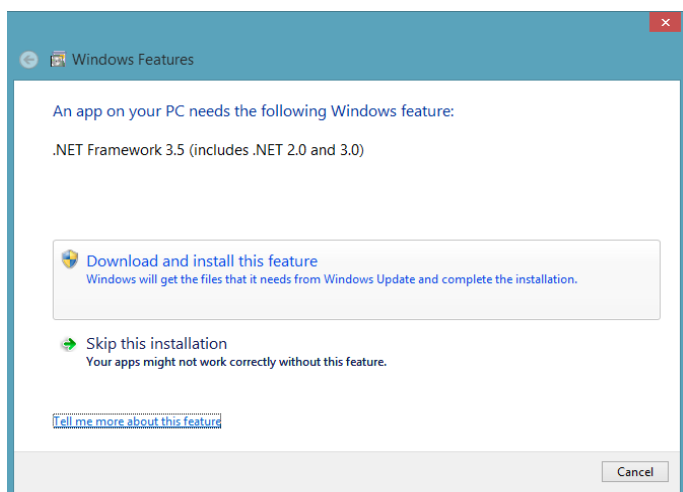
2.5.4. Setting up Microsoft SQL Server component

The Database Engine is a required component for HyperLab Main Module, if you are planning to use a local database, because it makes it possible to store and retrieve spectroscopic and evaluation data in a relational database.

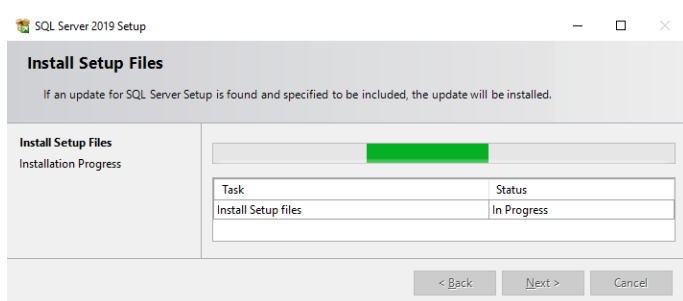
See also “Database topologies for Main Module” on page 6.

When the SQL Server setup application is started, a Windows Installer window appears on your screen, and displays the installation progress.





If your computer has no .NET 3.5 SP1 software component installed, a confirmation message appears, requiring to download and install it automatically. Please acknowledge the request. Wait until the component installation finishes, then close the .NET 3.5 installer window.



Setup of SQL Server starts now, and it may take 5-10 minutes. If it is successfully finished, the window disappears, and main setup continues. Sometimes a reboot is required at this point. After reboot, HyperLab Setup should start automatically. If it is not started, run Setup.exe again.

2.5.5. Setting up HyperLab Common Files component

This component contains the software utilities necessary to run any HyperLab application, such as energy and resolution calibration, nuclide library handling, reporting and others. The installation requires no interaction from you.

2.5.6. Setting up Common Report Files component

This component contains the report template files necessary to create HyperLab reports, and requires no interaction from you.

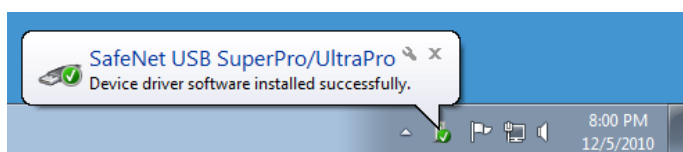
2.6. Hardware key installation

Please attach the accompanying hardware key to your computer now.

2.6.1. Installing parallel-port keys

If you have a parallel port based HyperLab key, then no additional software installation steps are necessary.

2.6.2. Installing USB keys



In majority of the cases, after attaching the hardware key, you should see an informational message about the driver installed.

If you have a USB-port-based HyperLab key, however, then sometimes – depending on your hardware and software configuration – the Windows system requires you the installation of additional drivers.

In this case, allow the system to install the newest driver software beside your current one.

If the system prompts you about the file to be copied is older than the one found on your computer, it is strongly recommended to keep the newer files.

3. Post-installation steps

After you have successfully installed HyperLab Main Module to your computer, start reading “**Quick Start Guide for Main Module**” on getting HyperLab started.

4. Installing Spectrum File Batch Evaluator

This module provides advanced features for users, while utilizes relational databases to store all measurement and evaluation information, thus requires more software components to be installed.

Warning to HyperLab users with previous software versions:

Although in general more than one HyperLab installations may peacefully coexist on the same computer, please keep in mind the followings:

- HyperLab 2002 or 2005 versions require an old version of the Sentinel hardware key driver, so they will stop functioning when a newer version is installed.
- If you want to step back to your previous HyperLab 2002 or 2005 installation of Batch Evaluator, simply uninstall the new Sentinel driver and install the older one again (uninstalling the whole HyperLab package is not necessary).

4.1. System requirements

System requirements for the Spectrum File Batch Evaluator identical to those of the HyperLab MainModule version. Please ensure that your system meets them.

4.2. Preparing to the installation

HyperLab gamma spectroscopy system requires a multi-step installation procedure. Please read carefully and follow instructions below.

4.2.1. Administrator privileges

HyperLab requires that you have *Administrator security privileges* during setup. Please start Setup.exe by “Run as administrator”.

4.2.2. Removing existing Sentinel hardware key driver

Some other applications on your computer also may require another Sentinel hardware key to run. These keys require a Windows driver for functioning.

HyperLab sets up a recent version of these Rainbow key drivers, which will automatically replace the existing driver. However, this driver replacement is not always done automatically. Therefore it is the safest to remove the old driver manually before HyperLab installation.

Automatic removal

To remove a successfully installed Sentinel driver, follow the steps below:

- Start *Control Panel* and select *Add or Remove programs*.
- Select “SuperProNet Combo Installer”, “Sentinel protection driver”, “SafeNet hardware key driver” or similar software component which may refers to the driver of Sentinel's parallel or USB key.
- Click *Remove* to uninstall it from your system.

Manual removal

If the regular uninstall could not be successfully finished, try with manual removal:

- Run “SSDCleanUp” or the “SSDCleanUp64” utility from the distribution media, by opening the folder `AddOns\HardwareKey\RemoveOldDriver` .

This will silently remove the old driver, thus it cannot interfere with the new one.

4.3. Installing software components – overview

HyperLab Setup application (`Setup.exe`) will install the necessary HyperLab software components to your computer. The installation may require to restart your computer several times, and typically takes several minutes complete.

If the setup program requires you to restart your computer after the installation of a specific software component, do so. HyperLab Setup should automatically start again when your Windows system restarts. If Setup is not starting automatically after a reboot, start it manually again by running `Setup.exe`. HyperLab Setup will then continue the installation process where it has been interrupted.

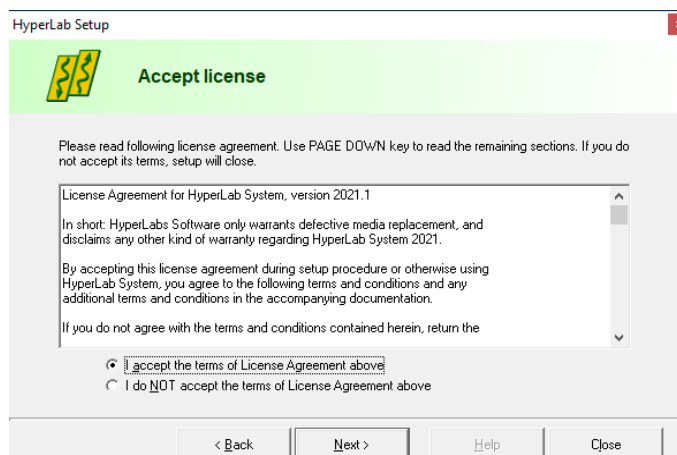
4.3.1. Starting the main setup application

Start the Setup program by double-clicking the `Setup.exe` program icon in the root folder of the distribution media.



At first, the Welcome window appears. Click `Next` to proceed.

The License window appears now with the HyperLab License Agreement. Use scrollbar at the right or press PgDn key to read the License Agreement entirely. Accept the License Agreement in order to continue setup, then click **Next**.

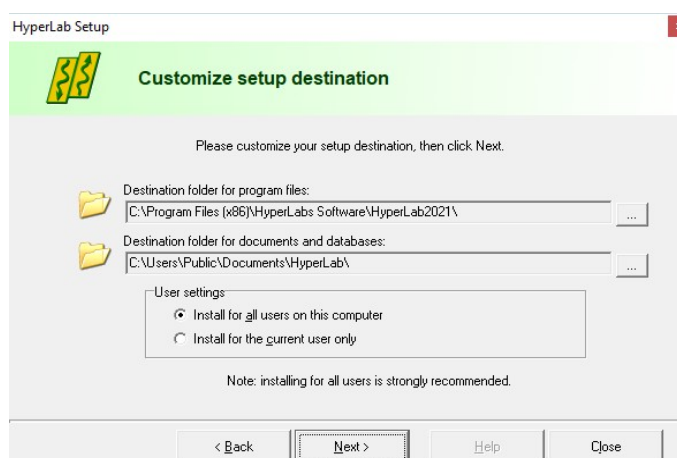


Destination customizing window appears now. You can set folders for HyperLab program files and databases here. Please note that the size of databases folder will be continuously growing, so you must always keep free space on the destination drive.

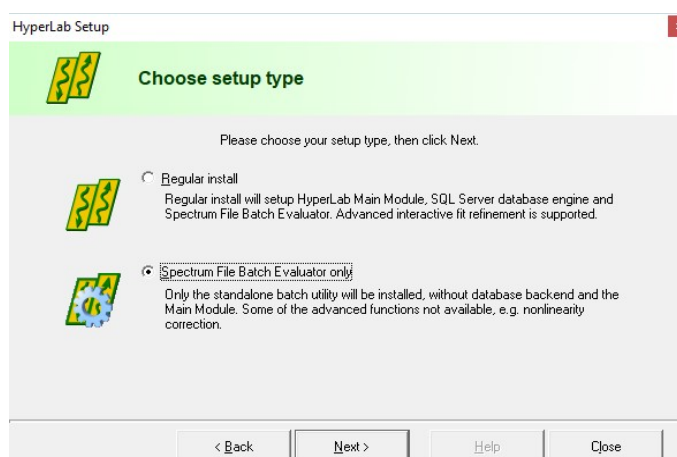
Note:

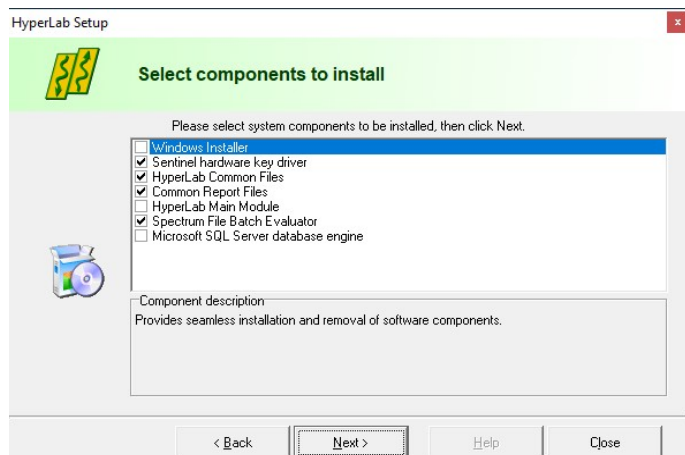
If you were using previous HyperLab versions on the same computer, it is advisable to use the same *database* folder as before.

You can set here the type of installation: you can choose either the application to be installed in a common folder – to be used by all users on the computer, or just install it for the current user. We recommend to install HyperLab for all users in these cases. If you are ready, click **Next**.



The Setup type window appears. Select Spectrum File Batch Evaluator option here, then click **Next**.



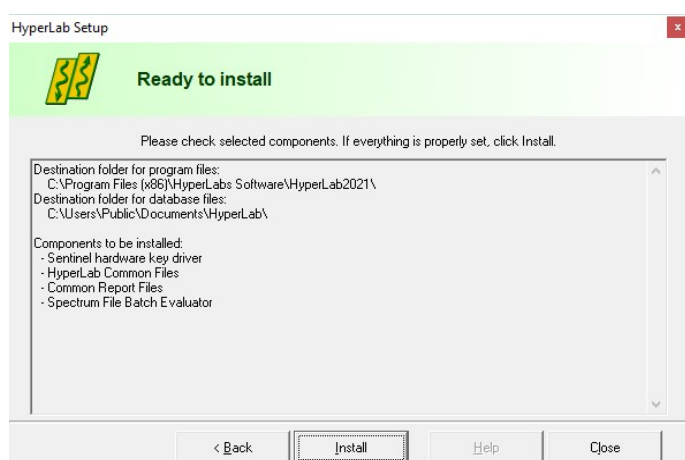


The software component customization window appears. You can check here the software components you want to set up.

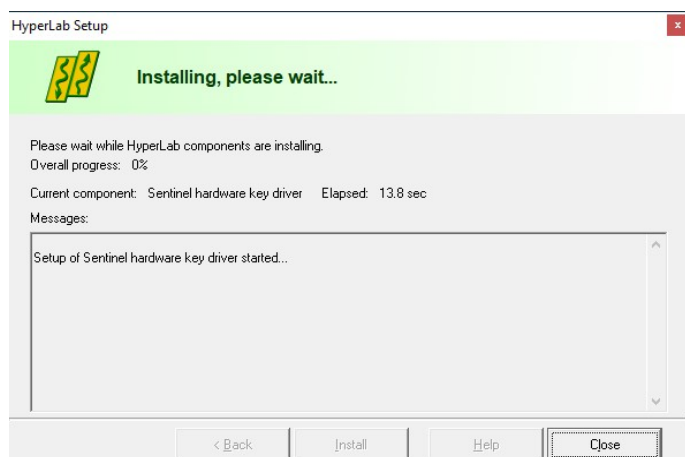
HyperLab Setup tries to determine the software components already installed, and adjust the check marks accordingly on the component list.

If a check box is empty, it means that Setup detected a previous installation for that component, and its setup is not recommended.

After you selected the components you require, click **Next**.



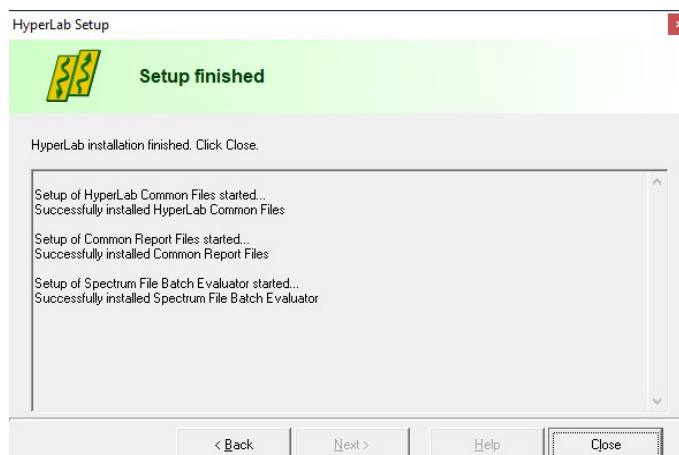
You are ready to start setup process now. Check the listed components which are selected for installation. If the list is complete, click **Install**.



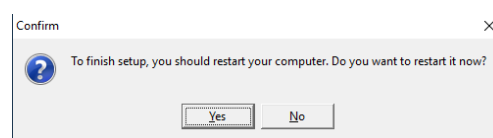
Installation starts now, and you can follow the progress of the setup steps in this window. Name of the currently installed component and elapsed time is displayed at the top, while the interpreted responses of the setup applications are displayed in the Messages area.

Note: Installation process of each specific component is detailed in section 4.4 “**Installing Batch Evaluator software components – details**” on page 17.

When setup has finished, a message window appears. Click **Close** to finish setup.



During Setup, a dialog may appear requiring a computer reboot. Click on **Yes** to perform a reboot.



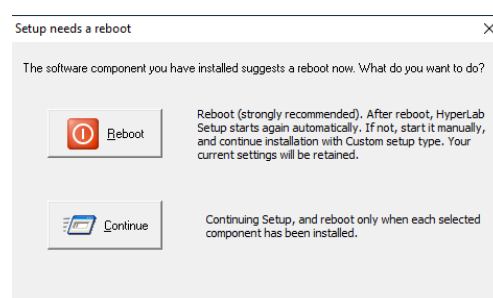
4.4. Installing Batch Evaluator software components – details

Following sub-sections will contain the detailed steps necessary to install specific HyperLab software components.

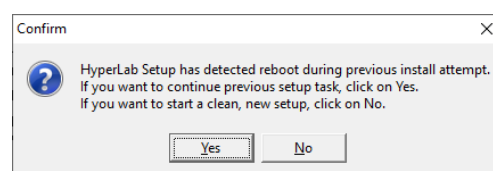
4.4.1. Setting up Windows Installer component

If you selected Windows Installer component in the main setup program, it installs first. This requires minimum interaction from the user. Result of setup process will be indicated in the Messages panel of the main setup program.

Sometimes necessary to reboot your computer after setting up Windows Installer. In this case, a warning message box appears. Press **Yes** to reboot your computer.



After reboot, HyperLab setup automatically restarts itself, and lets you choose continuing the installation interrupted before, or starting a new, clean install. Click on **Yes** to continue your previous setup procedure.



4.4.2. Setting up Sentinel Hardware Key Driver component

If you selected Sentinel Hardware Key Driver component in the main setup program, its setup application will appear on the screen for a few seconds, and the status of the installation will be written into the message pane.

4.4.3. Setting up Spectrum File Batch Evaluator component

This software component performs evaluation of spectrum files. If you selected Batch Evaluator setup type in the main setup program, the setup of this component starts, and requires no interaction from you.

4.4.4. Setting up HyperLab Common Files component

This component contains the software utilities necessary to run any HyperLab application, such as energy and resolution calibration, nuclide library handling, reporting and others. The installation should finish silently, requiring no interaction from you.

4.4.5. Setting up Common Report Files component

This component contains the files necessary to create HyperLab reports, and requires no interaction from you.

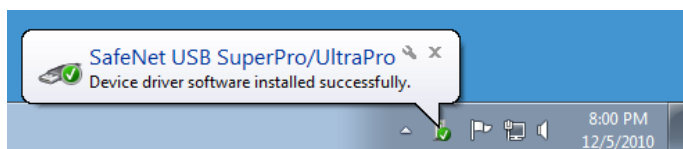
4.5. Hardware key installation

Please attach the accompanying hardware key to your computer now.

4.5.1. Installing parallel-port keys

If you have a parallel port based HyperLab key, then no additional software installation steps are necessary.

4.5.2. Installing USB keys



In majority of the cases, after attaching the hardware key, you should see an informational message about the driver installed.

If you have a USB-port-based HyperLab key, however, then sometimes – depending on your hardware and software configuration – the Windows system requires you the installation of additional drivers.

In this case, allow the system to install the newest driver software beside your current one.

If the system prompts you about the file to be copied is older than the one found on your computer, it is strongly recommended to keep the newer files.

4.6. Post-installation steps

After you have successfully installed the Batch Evaluator to your computer, start reading “Quick Start Guide for Spectrum File Batch Evaluator” on getting HyperLab started.

Appendix A. Managing SQL Server

As HyperLab Main Module operates on one or more of your HyperLab databases, it requires Microsoft SQL Server database service to be started before using it. Generally, this software component works silently in the background, and does not need interactions from the end user.

Checking status and starting of SQL Server

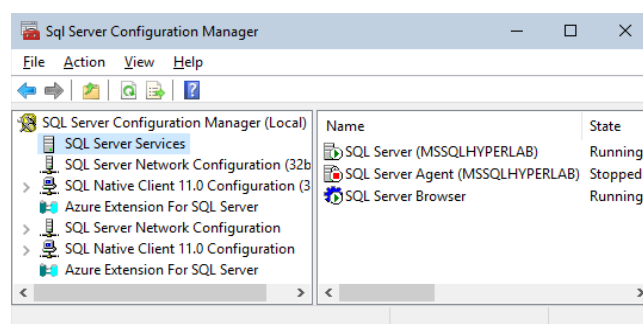
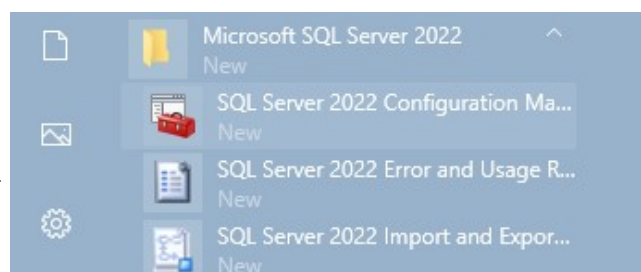
Please start *SQL Server Configuration Manager* manually from the Start menu to configure network protocols.

Start the utility by clicking on Start / Microsoft SQL Server 2022 / SQL Server 2022 Configuration Manager shortcut.

This requires Administrator privileges.

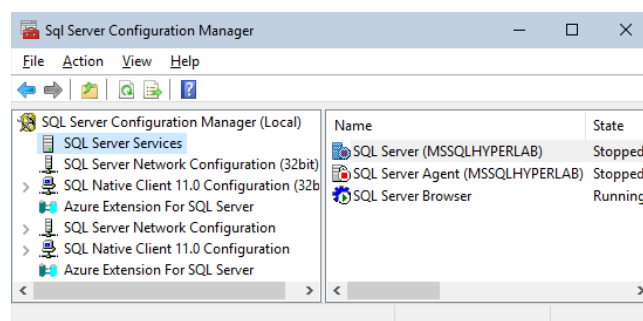
When the configuration starts, click on the SQL Server Services item on the left.

Check at the right if the status of the “SQL Server (MSSQLHYPERLAB)” is *Running*. If that is the case, then the database server is running. In this case, you can immediately use HyperLab.



If a SQL Server is in stopped state, that means the service is installed, but presently is not running (stopped). You must start database service to use HyperLab.

To achieve this, right-click over the SQL Server line, and select Start from the pop-up menu. After a few seconds, status of the server will change to Running. You can start using HyperLab now.



Stopping SQL Server temporarily

If you do not want SQL Server to interfere with the installation process of some other application, you can temporarily stop it using the same row in the Configuration Manager.