

## 1 Minimum system requirements

<b>Operating system</b>	<b>64-bit version of:</b> <ul style="list-style-type: none"><li>▪ Windows 10 Pro/Enterprise</li><li>▪ Windows Server 2019</li><li>▪ Windows Server 2016</li><li>▪ Windows Server 2012 R2</li></ul>
<b>RAM</b>	8 GB
<b>Storage capacity</b>	Program: 1 GB Data: 10 GB
<b>Serial ports</b>	for devices with RS-232 interface
<b>USB ports</b>	for devices with USB interface
<b>Screen</b>	Resolution: 1024 x 768
<b>Network</b>	10 Mbit/s, stable and permanent Communication via TCP/IP

The Windows user must have administrator rights in order to be able to install the **tiamo** software.

## 2 Customizing energy options

During the determination, data loss may occur with certain energy options of the operating system. Proceed as follows to customize the energy-saving plan settings:

- 1** Under **Control Panel ► System and Security ► Energy Options**, open the system settings that specify the behavior when the power switch is pressed or the computer is folded shut.
- 2** Change the following settings:
  - **When pressing the power switch:** Do nothing
  - **When pressing the energy saving button:** Do nothing
  - **When closing the lid:** Do nothing

- **Enable fast start-up:** Deactivated



#### NOTICE

To change the **Turn on fast start-up** option, you may need to enable it first as an administrator. To do this, click on **Some settings are currently unavailable** in the window.

- 3 Open the energy-saving plan settings under **Control Panel ► System and Security ► Energy Options**. Now click on **Change advanced energy settings**.
- 4 Change the following settings:
  - Under **Saving energy**:
    - **Deactivation after**: Never
    - **Allow hybrid standby mode**: Off
    - **Hibernate after**: Never
  - Under **USB settings**:
    - **Selective USB energy-saving settings**: Disabled

## 3 Single workplace installation

With the single workplace version **tiamo light** or **tiamo full**, you can install both the tiamo client and the server on the computer.

- 1 Before the installation is started, disconnect all USB devices from the PC on which **tiamo** is to be installed.

If the OMNIS Software is already installed on the PC, stop the **Metrohm OMNIS DeviceServer** service via the Windows Task Manager.

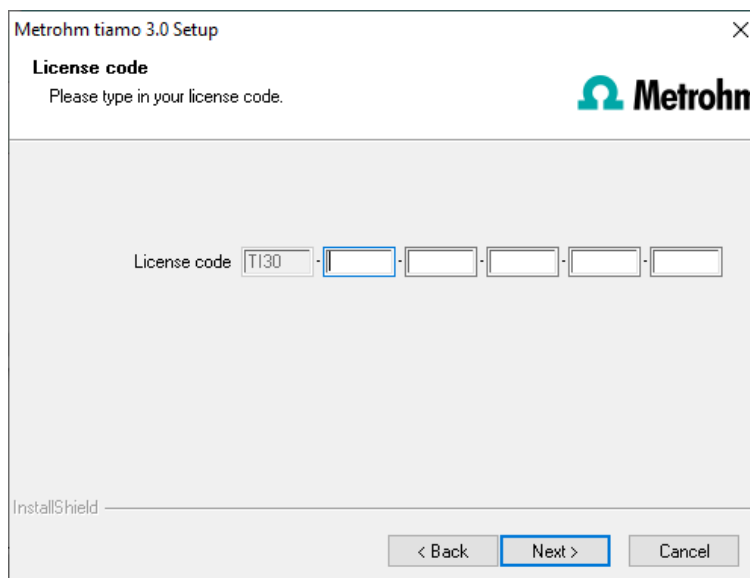
- 2 Connect the USB stick with the **tiamo** installation file to the PC and start the **setup.exe** file.

If the minimum system requirements are not met (see above) an appropriate message appears. Click on **[Yes]** if you would like to install the program nonetheless.

Afterwards, click on **[Next >]**.

- 3 During the installation process, the Welcome screen appears first. Click on **[Next >]** to install the software.
- 4 Read the license agreement for **tiamo** and accept it with **[Yes]**.
- 5 After having accepted the license agreement, a window will appear where you can enter the license code.

Enter the license code for **tiamo light** or **tiamo full** and then click on **[Next >]**.

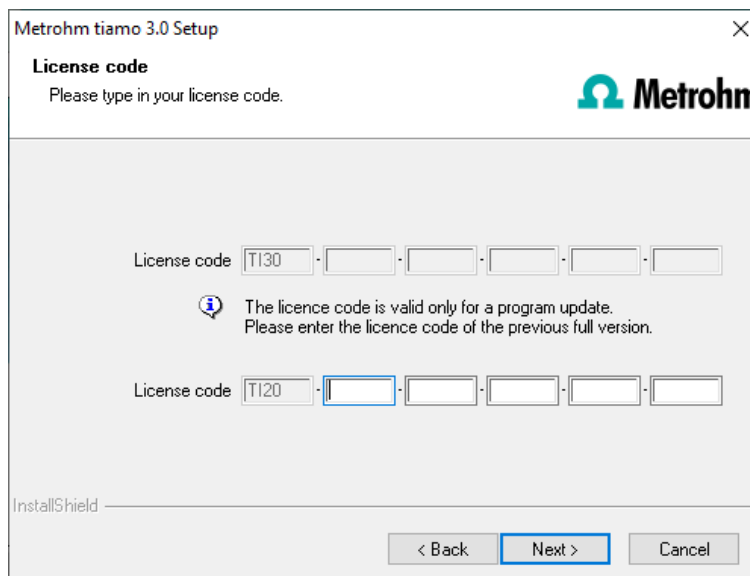


The screenshot shows the 'Metrohm tiamo 3.0 Setup' window. At the top, it says 'License code' and 'Please type in your license code.' The Metrohm logo is in the top right. Below, there is a license code input field with the text 'License code' followed by a series of boxes: 'T130', an empty box, and four more empty boxes separated by dots. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a blue border.



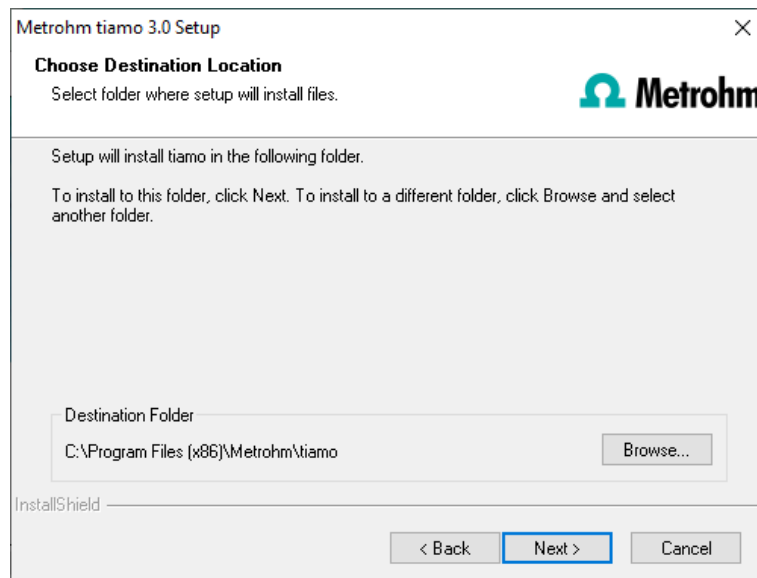
## NOTICE

If you have entered the license code of an update license, then the license code of the previous full version will additionally be requested. For more information about updating the program from a tiamo 2.x version, see *chapter 6, page 10* or *chapter 7, page 13*.

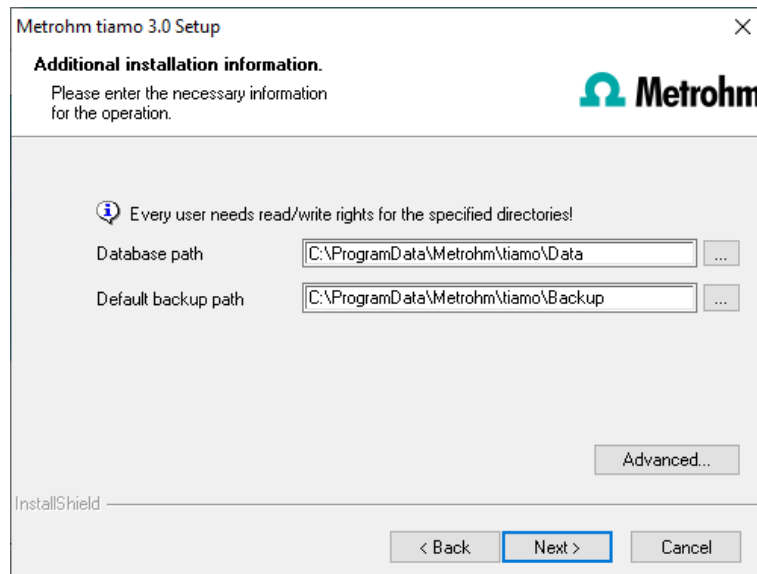


The screenshot shows the 'Metrohm tiamo 3.0 Setup' window. At the top, it says 'License code' and 'Please type in your license code.' The Metrohm logo is in the top right. Below, there is a license code input field with the text 'License code' followed by a series of boxes: 'T130', an empty box, and four more empty boxes separated by dots. Below this, there is a notice icon (i in a blue circle) and the text: 'The licence code is valid only for a program update. Please enter the licence code of the previous full version.' Below the notice, there is another license code input field with the text 'License code' followed by a series of boxes: 'T120', an empty box, and four more empty boxes separated by dots. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a blue border.

- 6** Confirm the target folder for the **tiamo** installation with **[Next >]** or select a different target folder with **[Browse...]**.



- 7** You can define the paths for the database files and default backup files in the **Additional installation information** window:

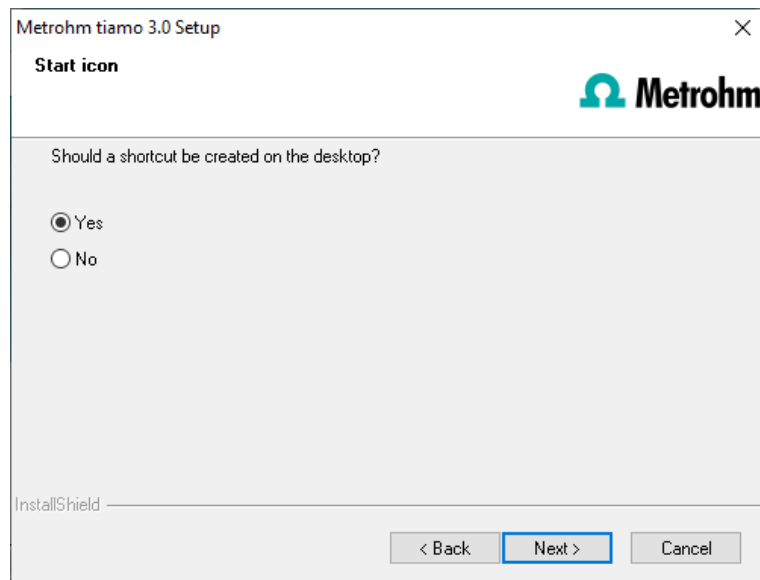


## NOTICE

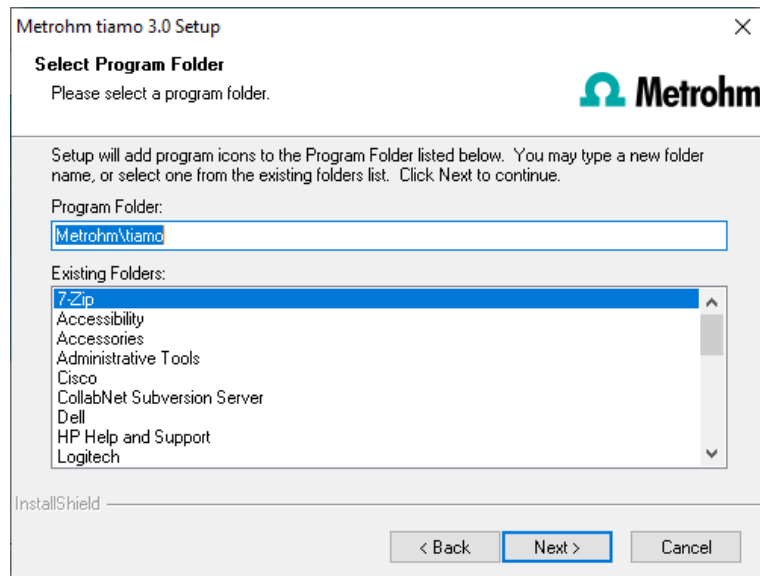
The database path must not be on a network drive. The default backup path may also be on a network drive.

You can change the ports **tiamo** uses to communicate with the database server and the administration server with the **[Advanced...]** button. If the ports are already used, an appropriate error message will appear. Ask your system administrator for more information about this. Continue with **[Next >]**.

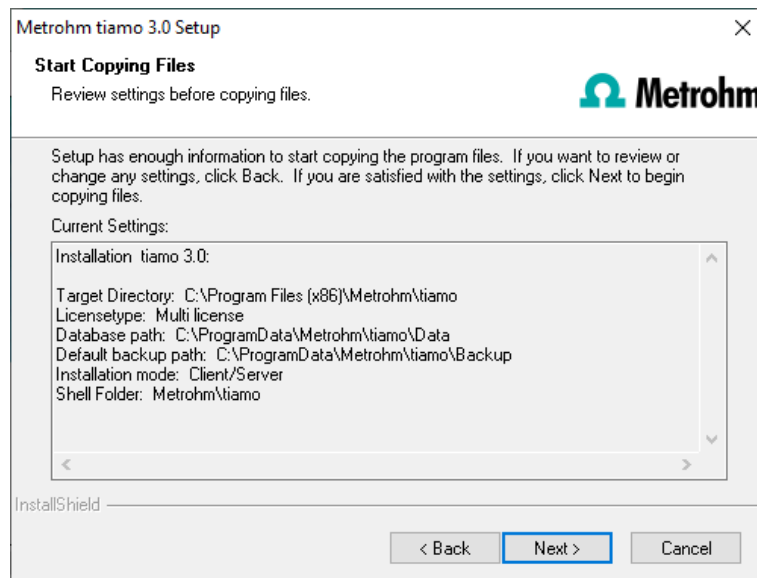
- 8** If you would like to create a shortcut on your desktop to start the **tiamo** software, activate **[Yes]** and then click on **[Next >]**.



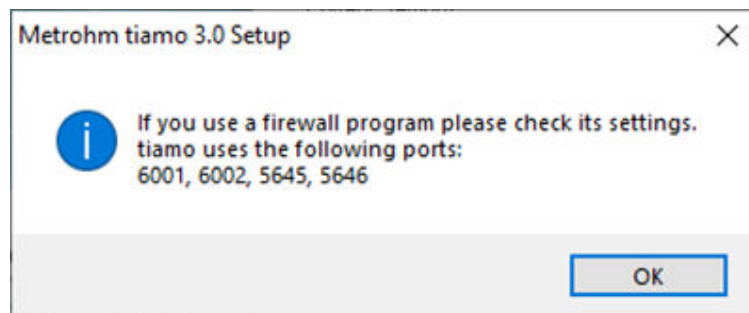
- 9 Confirm the selection of the program folder with **[Next >]** or select a different program folder.



- 10 The installation settings can now be checked. Start the copying procedure with **[Next >]**.



- 11** Follow the instructions of the program until the following message appears:



This message points out again which ports **tiamo** uses. Write down these ports and inform your system administrator in case **tiamo** is not able to connect to the database. Confirm the message with **[OK]**.

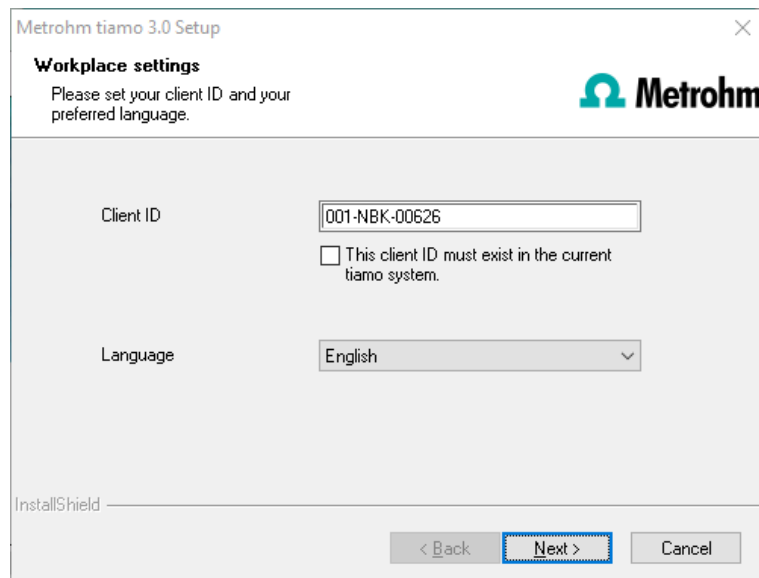
**tiamo** will now be installed.



#### NOTICE

During the installation, all device drivers that are required for controlling the supported USB devices are installed or updated. If the driver software by Thesycon needs to be updated, a message may appear. Confirm the installation by clicking on the **[Install]** button.

- 12** Once the copying procedure has been completed you can make further workplace settings:



The option **This client ID must exist in the current tiamo system.** can only be activated if a database from a previous installation already exists or if you want to connect to a database server on another computer (the latter only applies to **tiamo multi**).

If you enable this option, then **tiamo** checks whether the identifier you have entered exists in the database. If this is the case, the identifier and all associated settings will be adopted. With this option, reinstalling a client is much easier.

Click on **[Next >]**. If the database ports are not available, an appropriate error message will appear and the installation will be canceled. In this case, check your server and firewall settings before installing the program again.

- 13** At the end of the installation, the file **info.txt** will be created. This file contains all relevant information concerning your current **tiamo** installation. Save this file on your hard drive for future reference and print it (add to installation qualification).



#### NOTICE

An **InstallLog** file can be found in the installation directory of **tiamo** under **...bin\InstallLog**. It contains a listing of all files copied to your computer during the installation and a confirmation that the installation has been successfully completed.

- 14** Complete the installation with **[Finish]**.

If the OMNIS Software is already installed on the PC, restart the **Metrohm OMNIS DeviceServer** service via the Windows Task Manager.



## NOTICE

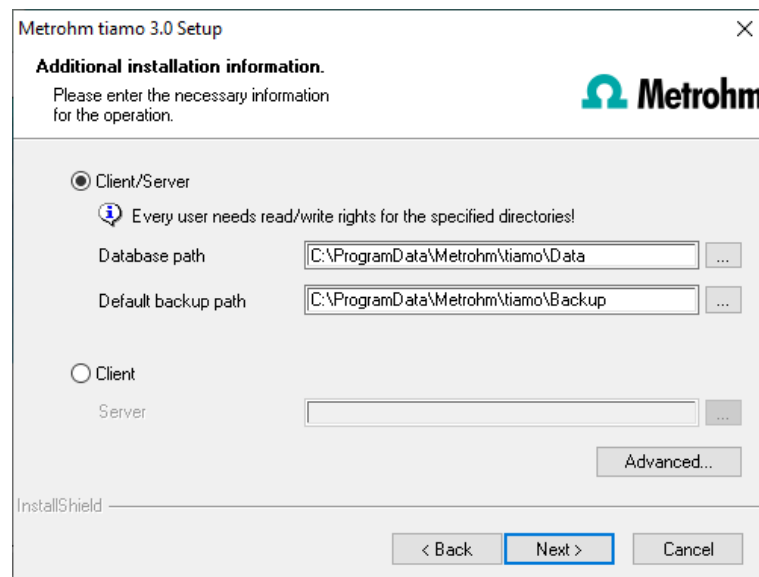
On the Windows 10 operating system, not all fonts are installed by default anymore. This can lead to East Asian fonts missing and reports created in MagIC not being displayed correctly. To solve this problem, you must install the required fonts by adding the corresponding language in the Windows settings.

## 4 Client/server installation

With the **tiamo multi** version (multi-client version with three licenses), you can select during the installation whether you want to install only a **client** or a **client** and a **server** (database server) on your computer.

If you want to install only a client on your computer, a server to which the client will be connected must have been previously installed on another computer.

- 1 Follow steps **1** to **6** of the single workplace installation (*see chapter 3, page 2*).
- 2 The **Additional installation information** dialog appears. Here you can select whether you want to install only a **client** or a **client** and a **server** (database server) on your computer.




The option **Client/Server** installs the client and the database server on your computer. Select this option if your computer will be used as server.





## NOTICE

The database path must not be on a network drive. The default backup path may be on a network drive.

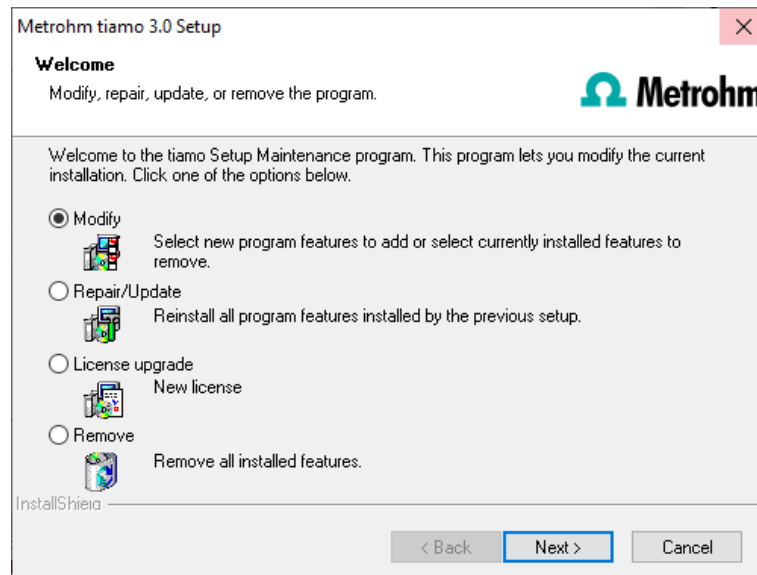
With **Client**, only the **client** will be installed, and, with the button , you have to select the database server (has to be installed in advance!) you would like to use. The network server name or the IP address is accepted as the name.

You can change the ports which **tiamo** uses to communicate with the database and administration server under **[Advanced...]**. If the ports are already used, an appropriate error message will appear. Ask your system administrator for more information about this. Continue with **[Next >]**.

- 3** All further installation steps correspond to those of the single workplace installation from **point 8** onwards (see chapter 3, page 2).

## 5 Modifying/repairing/removing the installation and upgrading the license

In order to carry out modifications on the current **tiamo** installation, start the **setup.exe** file from the USB stick or click on **Metrohm tiamo** under **Control Panel ► Programs ► Programs and Features**. Then select **Change/Remove**:



### Modify

With this option you can adjust the paths to the database and backup files, and change the ports which **tiamo** uses for communication. With the **tiamo multi** version, you can additionally change the path to the database server.

If the database path is changed, the existing databases are automatically copied to the new location.

## Repair/Update

With this option you can **repair** an existing defective installation or **update** an older installation.

- **Repairing the installation**

In case of a defective **tiamo** installation because, for instance, a DLL file is missing or a program file has been deleted by mistake, **tiamo** can be repaired with this option.

- **Updating the installation**

In case an older version of **tiamo** is installed, it will be updated to the new version of **tiamo**, see *chapter 6, page 10* or *chapter 7, page 13*.



### CAUTION

When a **tiamo** 2.x version is updated, the databases will be converted to the new version; depending on the size of the database, this may take some time. For each database a progress bar which informs about the status of the conversion is displayed.

The computer must not be restarted and Windows must not be shut down as long as the conversion is running!

## License upgrade

A direct upgrade of your current installation to a **tiamo** version with additional features is possible with this option:

- **tiamo light** to **tiamo full** or **tiamo multi**
- **tiamo full** to **tiamo multi**

In order to do this, enter your new license code in the next dialog window.

## Remove

This option removes your **tiamo** installation. Data which has been generated after the installation (e.g. database entries, log files, exported data, etc.) will not be deleted.

## 6 Program update with **tiamo light/full**

During the program update, the configuration database (system configuration, methods, templates) and the determination databases are automatically updated for further use with the new version.



## NOTICE

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The program update to tiamo 3.0 is possible only from a 2.x-tiamo-version.

The files in the database and backup directory will be retained when the program is updated.

Files in the subdirectories **bin**, **jre**, **lib**, **res**, **doc** and **examples** will be overwritten by the update. The files in these directories which are not updated during the update will be deleted. The deleted files are listed in the **Install-Log**.



## CAUTION

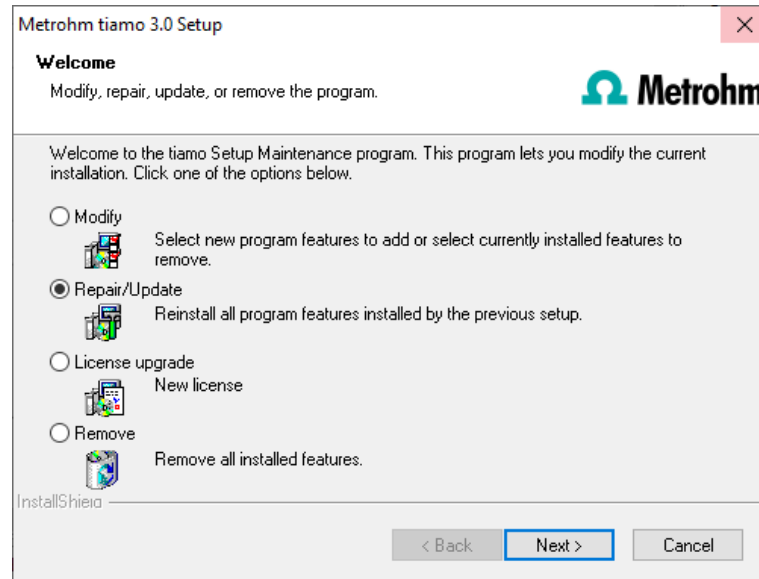
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When a 2.x-tiamo version is updated, the databases will be converted to the new version; depending on the size of the database, this may take some time. A progress bar showing the status of the conversion is displayed for each database.

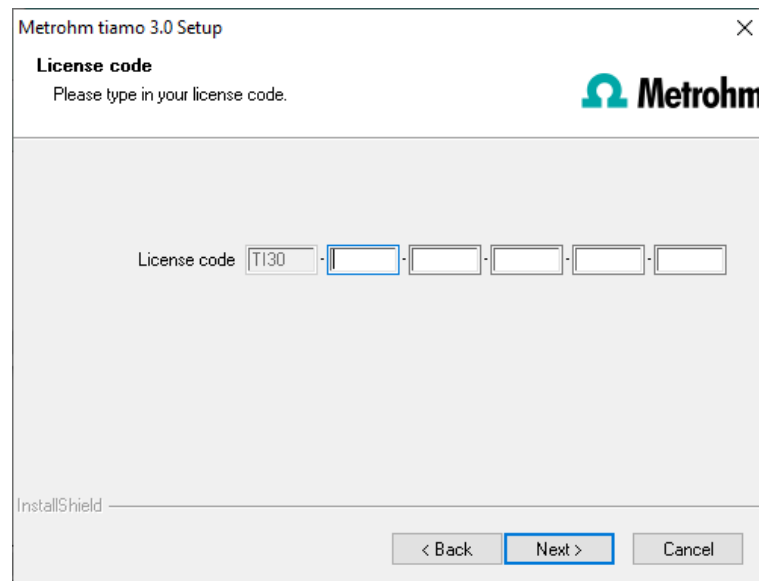
The computer must not be restarted and Windows must not be shut down as long as the conversion is running!

- 1** Save the configuration database to an external directory using the backup function of **tiamo**. In the **Configuration** program part, select the **File ► Backup ► Manually** menu item. Select **Backup directory**, enter a name for the backup file and click on **[Start]**. The backup is carried out. If necessary, copy the backup file to an external storage medium.
- 2** If desired, export the methods to an external directory in addition to the backup with the configuration database (see above). In the **Method** program part, select the **File ► Method manager...** menu item. Select the desired **Method group**, mark all methods to be exported and click on **[Edit] ► Export....** Select the desired export directory and click on **[OK]**. The methods are exported to the desired directory. If necessary, copy the method files to an external storage medium.
- 3** Save all determination databases created by you to an external directory using the backup function of **tiamo**. In the **Database** program part, select the **File ► Database manager...** menu item. Select the desired database and click on **[Backup]**. Select the **Backup directory**, enter a name for the backup file and click on **[Start]**. The backup is carried out. If necessary, copy the backup file to an external storage medium.
- 4** Also save further files created by you in the installation directory (e.g. export files) to an external storage medium.
- 5** Close **tiamo**. Connect the USB stick with the **tiamo** installation file to the PC and start the **setup.exe** file.

Then select **Repair/Update program** and click on **[Next >]**.



- 6** When updating a 2.x-tiamo version, you must enter your update product code and then click on **[Next >]**.



- 7** Complete the installation with **[Finish]**.



#### NOTICE

An **UpdateLog** file with a list of all files that have been copied to your computer during the program update and with a confirmation of a successful installation is saved in the **tiamo** installation folder under ...bin\InstallLog.

## 7 Program update with **tiamo multi**

During the program update, the configuration database (system configuration, methods, templates, user-specific data for all clients) and the determination databases on the server are automatically updated for further use with the new version of **tiamo multi**.



### NOTICE

The files in the database and backup directory will be retained when the program is updated.

Files in the subdirectories **bin**, **jre**, **lib**, **res**, **doc** and **examples** will be overwritten by the update. The files in these directories which are not updated during the update will be deleted. The deleted files are listed in the **Install-Log**.



### CAUTION

When a 2.x-tiamo version is updated, the databases will be converted to the new version; depending on the size of the database, this may take some time. A progress bar showing the status of the conversion is displayed for each database.

The computer must not be restarted and Windows must not be shut down as long as the conversion is running!

- 1 Make sure **tiamo multi** is closed on all clients.



### NOTICE

In the **bin** subdirectory of the **tiamo** installation, you can find the **Clients.exe** application, with which all clients and their status can be displayed.

- 2 Open **tiamo multi** on the server and save the configuration database to an external directory using the backup function of **tiamo**. In the **Configuration** program part, select the **File ► Save ► Manually** menu item. Select the **Backup directory**, enter a name for the backup file and click on **[Start]**. The backup is carried out. If necessary, copy the backup file to an external storage medium.
- 3 If desired, export the methods in addition to the backup with the configuration database (see above) to an external directory. To accomplish this, select the **File ► Method manager...** menu item in the **Method** program part. Select the desired **Method group**, mark all of the methods to

be exported and click on **[Edit] ► Export....** Select the desired export directory and click on **[OK]**. The methods are exported into the desired directory. If necessary, copy the method files to an external storage medium.

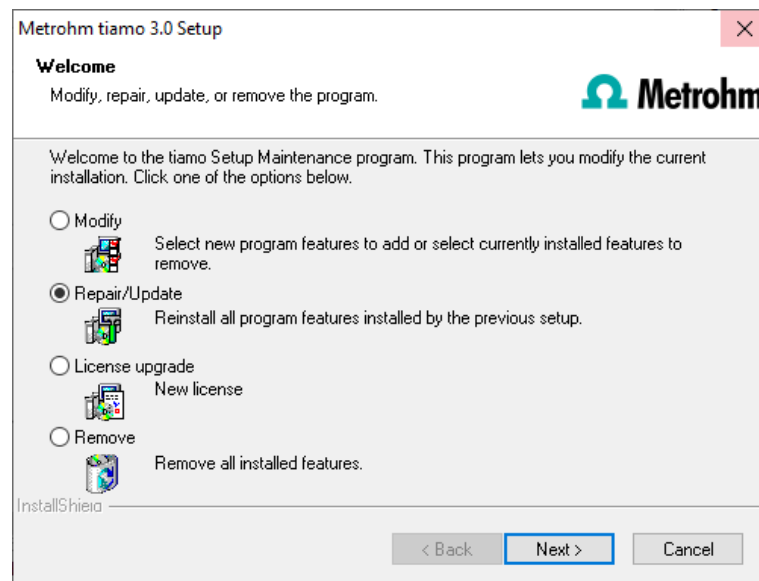
- 4 Save all of the determination databases on the server to an external directory using the backup function of **tiamo**. In the **Database** program part, select the **File ► Database manager...** menu item. Select the desired database and click on **[Backup]**. Select the **Backup directory**, enter a name for the backup file and click on **[Start]**. The backup is carried out. If necessary, copy the backup file to an external storage medium.

- 5 Save other files which were created in the installation directory (e.g. export files) to an external storage medium.

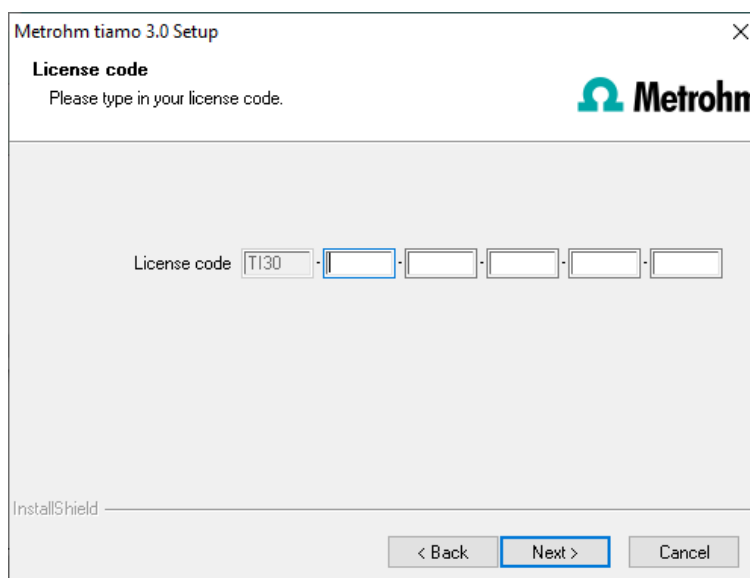
## 6 Updating the server

Close **tiamo multi** on the server and on all clients. Connect the USB stick with the **tiamo** installation file to the PC and start the **setup.exe** file.

Then select **Repair/Update program** and click on **[Next >]**.



- 7 When updating a 2.x-tiamo version, you must enter your update product code and then click on **[Next >]**.



8



## NOTICE

The update of **tiamo multi** consists of the server license and three client licenses. If an existing installation contains additional client licenses, these will be deleted.

Click on **[OK]** in the corresponding message in order to continue the installation.

9

Complete the installation with **[Finish]**.



## NOTICE

An **UpdateLog** file with a list of all files that have been copied to the server during the program update and with a confirmation of a successful installation is saved on the server in the installation folder of **tiamo** under bin\InstallLog.

## 10 Updating clients

Connect the USB stick with the **tiamo** installation file to each client in turn and start the **setup.exe** file.

Then select **Repair/Update program** and click on **[Next >]**. Complete the installation with **[Finish]**.



#### NOTICE

To facilitate the updating of many clients at once, the installation can be copied from the USB stick to a writable medium and the file **tiamo\_init.ini** can be modified. There, user-defined parameters for the installation (product code, installation path, server name, etc.) can be set in advance, so that one needs only click through the installation.



#### NOTICE

An **UpdateLog** file with a list of all files that have been copied to the client computer during the program update and with a confirmation of a successful installation is saved in the client's **tiamo** installation folder under **bin\InstallLog**.

If additional licenses were removed at the time of the server update or if further additional licenses are to be added, proceed as follows:

#### Adding additional licenses

- 1 Open the directory **C:\Users\'Username\AppData\Local\VirtualStore\Program Files (x86)\Metrohm\tiamo\bin**. If there is a file there named **license.mlic**, delete it. Repeat this for each user.
- 2 Right-click on the file **setup.exe** and select **Run as administrator**.
- 3 Add the desired licenses in the **Configuration** program part under **Extras ► Program administration ► Licenses ► Add licenses**.

The file **license.mlic**, which contains the standard product code and the additional product codes, is stored in the **bin** directory of the program installation (e.g. **C:\Program Files (x86)\Metrohm\tiamo\bin**).



#### NOTICE

For more information on adding additional licenses, refer to *Chapter 9, page 18*

## 8 Installation of drivers

In normal cases, the installation routine of **tiamo** automatically installs all the driver software necessary for actuating the supported devices.

It may be necessary to install individual driver software manually in combination with a few devices. This is the case if the operating system displays a message when connecting a device to the computer, as e.g. **Device driver soft-**



**ware was not installed. No driver software found.** The message should also show the name of the corresponding device. Write down this name and proceed as follows to install the driver software manually:

- 1** Open the Windows Device Manager. The corresponding device can be found under **Other devices**.
- 2** Right-click on the device. The context menu opens.
- 3** In the context menu, select **Update driver software**. A dialog window opens.
- 4** Select **Browse my computer for driver software**. The file selection dialog opens.
- 5** Navigate to the installation folder of **tiamo** (default: C:\Program Files (x86)\Metrohm\tiamo).
- 6** Open the **drivers** subfolder. This contains a subfolder with the required (\*.inf) driver software file for each of the corresponding devices. For example, the **Avantes** subfolder contains the driver software for the Avantes spectrometer.
- 7** Apply the selection with **[OK]**. A Windows safety prompt is displayed. In order to install the driver, click on **[Install]**.
- 8** After successful installation, close the Device Manager.

## 9 Adding additional licenses

### General

Windows 10 has a UAC (User Account Control), which permits running tasks either as non-administrator or as administrator (without changes of user, switching off or similar). For more information about this function, see <https://docs.microsoft.com/en-us/windows/security/identity-protection/user-account-control/how-user-account-control-works>.

This function can cause difficulties with client/server installations of **tiamo**.

### Problem description

Additional licenses for the program should be added. For this purpose, the product code for an additional 5 licenses, for example, has been added (on the server) in the **Configuration** program part in the **Program administration** dialog window (accessible via the **Tools ► Program administration...** menu item, **Licenses** tab).

Normally the **license.mlic** file, which contains the standard product code and the additional product codes, is stored in the **bin** directory of the program installation (e.g. **C:\Program Files (x86)\Metrohm\tiamo\bin**).

However, it may happen that the 5 licenses have been added and the **license.mlic** file contains only the standard product code (for 3 licenses). If this is the case, check whether there is a file named **license.mlic** in the **C:\Users\'Username\AppData\Local\VirtualStore\Program Files (x86)\Metrohm\tiamo\bin** directory. This file contains the product codes for the standard licenses and the 5 newly added licenses, i.e. the additional licenses were stored in the **VirtualStore** only for the Windows user who was logged in on the PC at the time the additional licenses were added.

On the server, the program recognizes all of the licenses. The operating system adds the **license.mlic** file from the **C:\Users\'Username\AppData\Local\VirtualStore\Program Files (x86)\tiamo\bin** directory to the detail list of the **C:\Program Files (x86)\Metrohm\tiamo\bin** directory.

The **license.mlic** file in the **C:\Program Files (x86)\Metrohm\tiamo\bin** directory determines the client/server functionality of the database server, however, and here only the basic license is listed. Therefore, problems are to be anticipated when adding additional clients (more than the 3 clients present in the default settings). To fix this, the **license.mlic** file must be deleted from the **VirtualStore**.

### Remedy

- **For new installations**
  - Start the program as an administrator.
  - Add the product code for additional licenses as usual. The **license.mlic** file in the **C:\Program files (x86)\Metrohm\tiamo\bin** directory contains both product codes.
- **For existing installations**
  - In the **C:\Users\'Username\AppData\Local\VirtualStore\Program Files(x86)\Metrohm\tiamo\bin** directory, check whether there is a file present named **license.mlic** and delete it if necessary.
  - Start the program as an administrator.
  - Add the product code for additional licenses as usual. The **license.mlic** file in the **C:\Program files (x86)\Metrohm\tiamo\bin** directory contains both product codes.

## 10 User rights for tiamo

In order for the logged-in user to be able to access all functions with **tiamo**, the Windows system administrator must ensure that the permissions are set for the directories as listed below:

Directory	Permission	Group name or user name
<b>Database directory</b> Directory where the databases will be saved (...Data).	<b>Modify</b>	<b>SYSTEM</b> <b>User*</b>
<b>Backup directory</b> Directory where the backups will be stored (...Backup).	<b>Modify</b>	<b>User*</b>
<b>%PROGRAMDATA%\Metrohm**</b>	<b>Modify</b>	<b>User*</b>

Directory	Permission	Group name or user name
<b>Export directories</b> Directories where the exported files are to be saved.	<b>Modify</b>	<b>User*</b>
<b>PDF directories</b> Directories where the PDF files are to be saved.	<b>Modify</b>	<b>User*</b>
<b>Desktop</b>	<b>Modify</b>	<b>User*</b>
<b>Installation directory, e.g. %PROGRAMFILES(x86)%\Metrohm\tiamo</b>	<b>Read &amp; execute</b>	<b>User*</b>

\* **User** = name of the user who is logged in

\*\* During installation of **tiamo** the permission **Full Control** is set for the following groups: **SYSTEM, Administrators, Users, Guests, Main users**.



#### NOTICE

The **BackupServer.exe** process must be started for carrying out a backup (backup of the configuration database and of the determination databases). You can check this under "Windows Task Manager".

The **user** must be logged in during the whole backup process.