

1 Minimum system requirements

Operating system

32-bit version of:

- Windows 10 Pro / Enterprise
- Windows 8.1 Professional / Enterprise
- Windows 8 Professional / Enterprise
- Windows 7 Professional / Ultimate / Enterprise
- Windows Vista Business / Enterprise / Ultimate
- Windows XP Professional SP2
- Windows Server 2008 R2
- Windows Server 2008
- Windows Server 2003

64-bit version of:

- Windows 10 Pro / Enterprise
- Windows 8.1 Professional / Enterprise
- Windows 8 Professional / Enterprise
- Windows 7 Professional / Ultimate / Enterprise
- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2008 R2

RAM

Windows Vista and higher: 2 GB

Windows XP: 1 GB

Hard disk space

Program: 1 GB

Data: 2 GB

Serial ports

for devices with RS-232 interface

USB ports

for devices with USB interface

Screen

Resolution: 1024 x 768

Network

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.



CAUTION

Data loss may occur if the PC switches to sleep mode during a determination. The **sleep mode** should therefore be **disabled** in the energy settings of the operating system.

2 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 The installation process starts automatically when you insert the CD into the drive. If this option is deactivated on your computer, double-click on 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 >]**.

- 2 During the installation process, the Welcome screen appears first. Click on **[Next >]** to install the software.

- 3 After having read the license agreement for **tiamo** and accepted it with **[Yes]**, a window will appear where you can enter the license code.

The screenshot shows the 'Metrohm Tiamo 2.0 Setup' window. The title bar is blue with the text 'Metrohm Tiamo 2.0 Setup' and a close button. The main area has a white header with the text 'License code' and 'Please type in your license code.' The Metrohm logo is in the top right corner. Below the header is a large gray area with a license code input field. The input field is divided into six segments by hyphens. The first segment contains the text 'TI20'. At the bottom of the window, there is a gray bar with the text 'InstallShield' on the left and three buttons: '< Back', 'Next >', and 'Cancel'.

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



NOTE

If you have entered the license code of an update license, then the license code of the previous full version will additionally be requested.

The screenshot shows the 'Metrohm Tiamo 2.0 Setup' window. The title bar is blue with the text 'Metrohm Tiamo 2.0 Setup' and a close button. The main window has a white header with the Metrohm logo on the right. Below the header, the text 'License code' is followed by 'Please type in your license code.' The main area is light gray and contains a license code input field with six segments: 'TI20', 'a1b2', 'c3d4', '4711', 'ab12', and 'ff11'. Below this, an information icon is followed by the text: 'The licence code is valid only for a program update. Please enter the licence code of the previous full version.' Below this text is another license code input field with six empty segments. At the bottom left, the text 'InstallShield' is visible. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- 5 Now confirm the target folder for the **tiamo** installation with **[Next >]** or select a different target folder with **[Browse...]**.
- 6 You can define the paths for the database and default backup files in the **Additional installation information** window:

The screenshot shows the 'Metrohm Tiamo 2.0 Setup' window. The title bar is blue with the text 'Metrohm Tiamo 2.0 Setup' and a close button. The main window has a white header with the Metrohm logo on the right. Below the header, the text 'Additional installation information.' is followed by 'Please enter the necessary information for the operation.' The main area is light gray and contains an information icon followed by the text: 'Every user needs read/write rights for the specified directories!'. Below this text are two input fields: 'Database path' with the value 'C:\Programme\Metrohm\tiamo\Data' and 'Default backup path' with the value 'C:\Programme\Metrohm\tiamo\Backup'. Each input field has a browse button ('...') to its right. At the bottom right, there is an 'Advanced...' button. At the bottom left, the text 'InstallShield' is visible. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.



NOTE

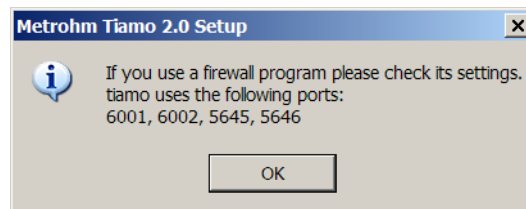
The default paths are different for Windows XP, Windows Vista, Windows 7 and Windows 8.

The database path must not be on a network drive.

The default backup path may 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 >]**.

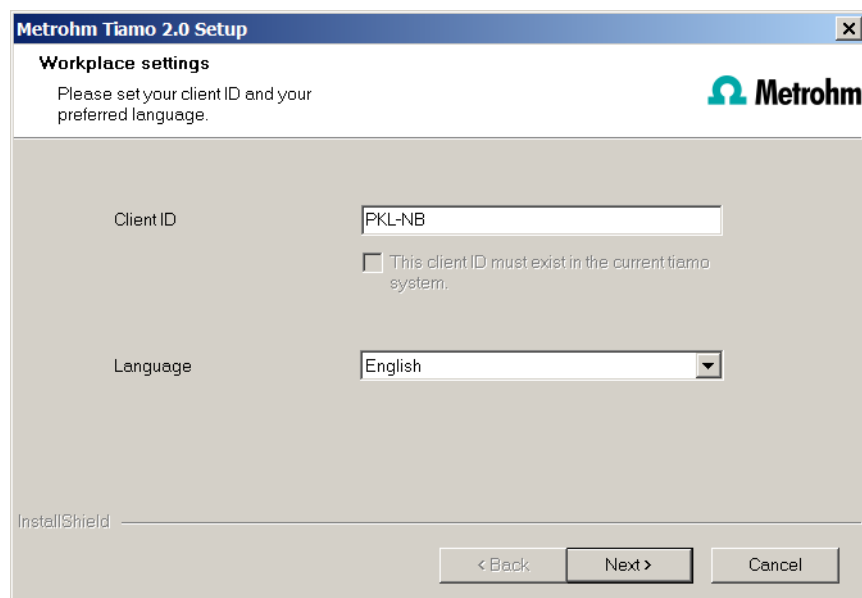
- 7 Follow the instructions of the program until the following message appears:



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.

- 8 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 on your computer or if you want to connect to a database server which is installed on another computer (the latter case 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 true 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.

- 9 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 IQ).



NOTE

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.

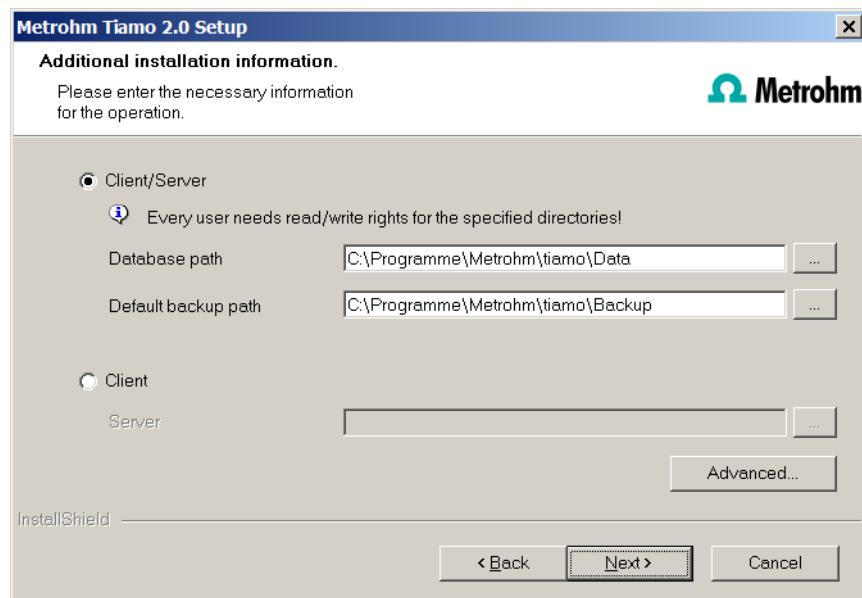
- 10 Complete the installation with **[Finish]**.

3 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 **5** of the single workplace installation (*see Chapter 2, 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.



NOTE

The default paths are different for Windows XP, Windows Vista, Windows 7 and Windows 8.

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 you have to select the database server (has to be installed in advance!) you would like to use with the button. 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 7** onwards (see *Chapter 2, page 2*).

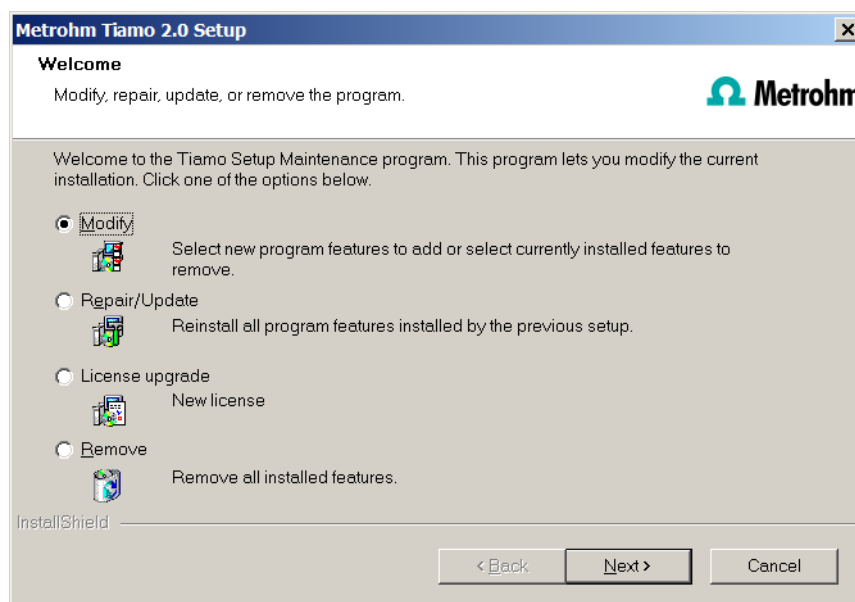
4 Modifying/repairing/removing the installation and upgrading the license

In order to carry out modifications on the current **tiamo** installation, start the **setup.exe** file on the installation CD or click under:

- Windows XP - **Control Panel ► Software**

- Windows Vista / Windows 7 / Windows 8 - **Control Panel ► Programs and Features**

on **Metrohm tiamo**. 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 *Program update with tiamo light/full* or *Program update with tiamo multi*.



CAUTION

When older tiamo versions (1.x) are updated to tiamo 2.x, the databases will be converted to the new versions; 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 or Windows 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.

5 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.



NOTE

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. Those files in these directories which are not updated during the update will be deleted. The deleted files are listed in the **Install-Log**.



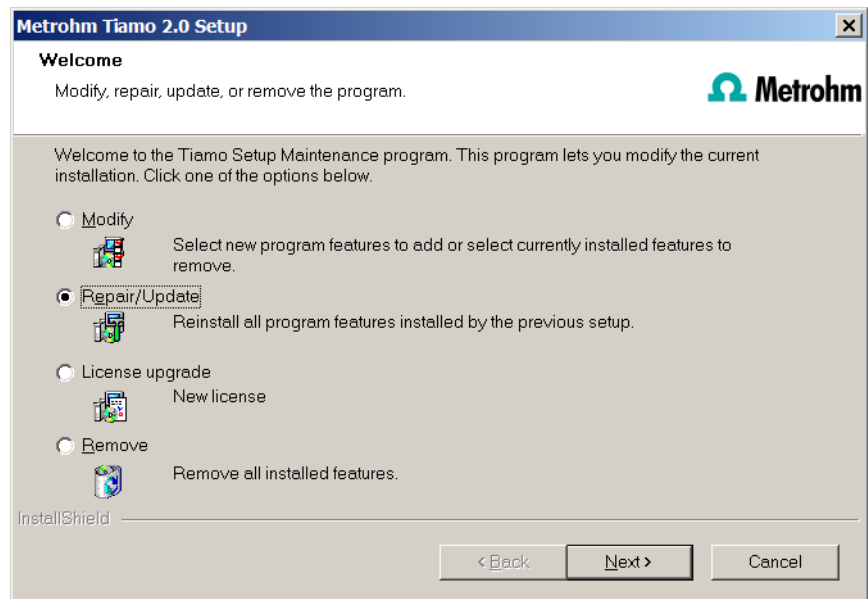
CAUTION

When older **tiamo** versions (1.x) are updated to **tiamo** 2.x, the databases will be converted to the new versions; 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.

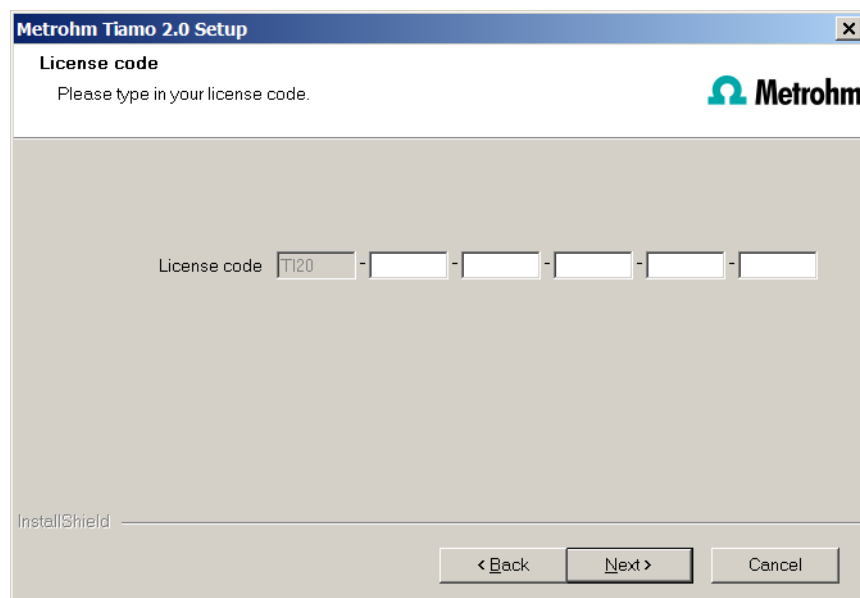
The computer must not be restarted or Windows shut down as long as the conversion is running!

- 1 Save the configuration database into an external directory using the backup function of **tiamo**. In the **Configuration** program part, select the **File ► Backup ► Manually** menu item. Select the **Backup directory**, enter a name for the backup file and click on **[Start]**. The backup is created. It is recommended to copy the backup file to CD/DVD afterwards.

- 2 If desired, export the methods in addition to the backup with the configuration database (see above) into an external directory. In the **Method** program part, select the **File ► Method manager...** menu item. Select the desired **Method group**, select all 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. Afterwards, copy the method files to CD/DVD.
- 3 Save all determination databases created by you into 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 created. Afterwards, copy the backup file to CD/DVD.
- 4 Save further files created by you in the installation directory (e.g. export files) into an external directory or to CD/DVD.
- 5 Close **tiamo**. Insert the installation CD and double-click on the **setup.exe** file. Then select **Repair/Update** and click on **[Next >]**.



- 6 When updating older tiamo versions (1.x) to tiamo 2.x, you have to enter your update license code and then click on **[Next >]**.



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



NOTE

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

6 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 sever are automatically updated for further use with the new version of **tiamo multi**.



NOTE

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. Those 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 older tiamo versions (1.x) are updated to tiamo 2.x, the databases will be converted to the new versions; 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 or Windows shut down as long as the conversion is running!

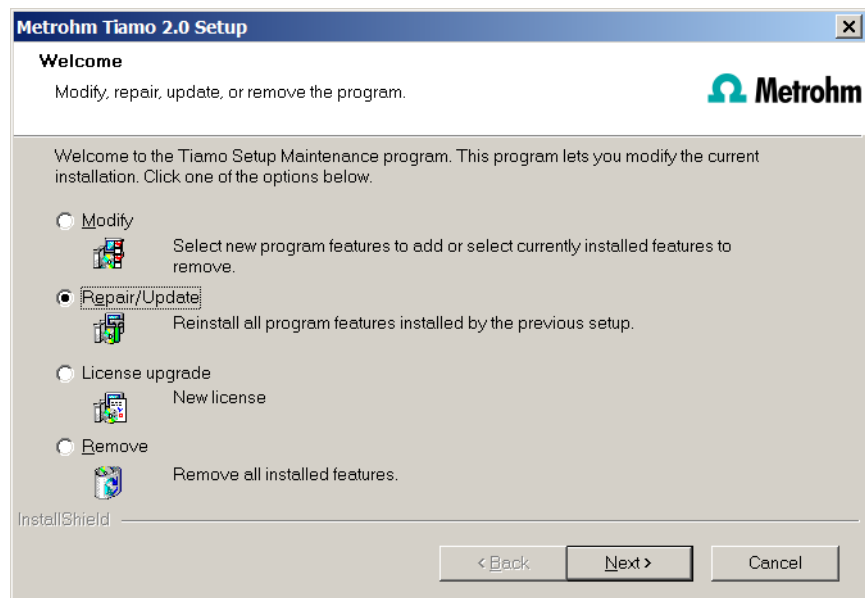
- 1 Make sure **tiamo multi** is closed on all clients.



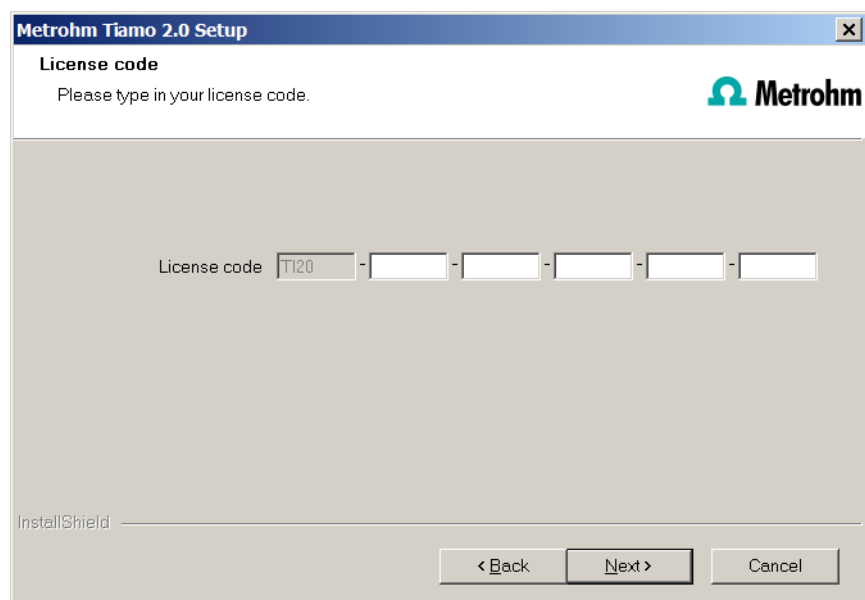
NOTE

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 into 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 created. Afterwards, copy the backup file to CD/DVD.
- 3 If desired, export the methods in addition to the backup with the configuration database (see above) into an external directory. In the **Method** program part, select the **File ► Method manager...** menu item. Select the desired **Method group**, select all 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. Afterwards, copy the method files to CD/DVD.
- 4 Save all determination databases that are present on the server into 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 created. Afterwards, copy the backup file to CD/DVD.
- 5 Save further files in the installation directory (e.g. export files) into an external directory or to CD/DVD.
- 6 **Updating the server**
Close **tiamo multi** on the server and on all clients. Insert the installation CD on the **server** and double-click on the **setup.exe** file. Then select **Repair/Update** and click on **[Next >]**.



- 7 When updating older tiamo versions (1.x) to tiamo 2.x, you have to enter your update license code and then click on **[Next >]**.



8



NOTE

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]**.



NOTE

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 in the installation folder of **tiamo** under bin\InstallLog.

- 10** In case additional licenses have been removed during the server update or if further licenses are to be added, the **Administrator** can enter them in **tiamo** (dialog: **Configuration** ► **Tools** ► **Program administration** ► **Licenses** ► **Add licenses**).

11 Updating clients

For each client, insert the installation CD and double-click the **setup.exe** file. Then select **Repair/Update** and click on **[Next >]**. Complete the installation with **[Finish]**.



NOTE

In order to facilitate the updating of many clients, the installation can be copied from the CD to a writeable medium and the file **tiamo_init.ini** can be modified. There, user-defined parameters for the installation (license code, installation path, server name, etc.) can be set in advance, which allows you to only have to click through the installation.



NOTE

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 for a successful installation is saved in the client's **tiamo** installation folder under bin\InstallLog.

7 Installation of drivers

In normal cases, the installation routine of **tiamo** automatically installs all the drivers necessary for controlling the supported devices.

If you are using a 64-bit operating system, it may be necessary to install drivers 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, e.g.

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



NOTE

The following description applies for Windows 7 (64-bit version). It may slightly vary for your system.

- 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** In the installation folder, open the **drivers** subfolder. This folder contains the **Avantes** subfolder, in which you can find the driver for the Avantes spectrometer.
- 7** In the **drivers** subfolder, open the subfolder of the corresponding device and select the driver file (*.inf).
- 8** Apply the selection with **[OK]**. A Windows safety prompt is displayed. In order to install the driver, click on **[Install]**.
- 9** After successful installation, close the Device Manager.

8 Adding additional licenses with Windows Vista or newer

General

Starting with Windows Vista, Microsoft has introduced the UAC (User Account Control), which permits running tasks either as non-administrator or as administrator (without changes of user, switching off or similar).

<http://technet.microsoft.com/en-us/library/cc709691%28WS.10%29.aspx>

<http://technet.microsoft.com/en-us/magazine/2007.06.uac.aspx>

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

Problem description

A user would like to add additional licenses for the program; the license code for an additional five licenses, for example, is 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).

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

If the user adds the five licenses and then looks at this **license.mlic** file, only the standard license code will be listed (for three licenses).

If the user highlights the **license.mlic** file and clicks on **Compatibility files** in the bar, then he or she will be taken to the **C:\Users\'User\'AppData\Local\VirtualStore\Program Files\Metrohm\tiamo\bin** directory ('User' being the unique identifier (UID) of the user logged in on the operating system). The **license.mlic** file with the license codes for the standard licenses and the five newly added licenses can be found here, i.e., the additional licenses are 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\'User\'AppData\Local\VirtualStore\Program Files\tiamo\bin** directory to the detail list of the **C:\Program Files\Metrohm\tiamo\bin** directory.

For the client/server functionality of the database server, however, the **license.mlic** file in the **C:\Program Files\Metrohm\tiamo\bin** directory is relevant, and here only the basic license is listed. Therefore, problems are to be anticipated when adding additional clients (more than the three clients present in the default settings).

Remedy

■ For new installations

- To enter additional licenses, you must start the program as an administrator (right-click on the program icon and select **Run as administrator** there).
- If you then add the license code for additional licenses in the usual way, then the **license.mlic** file in the **C:\Program Files\Metrohm\tiamo\bin** directory will contain both license codes.

- **For existing installations**

- First of all, the **license.mlic** file in the **C:\Users\'User\'AppData\Local\VirtualStore\Program Files\Metrohm\tiamo\bin** directory must be deleted.
This file must not be present in the **VirtualStore** of any user – you must check to make sure this is the case, and any such files which may be found must be deleted.
- Afterwards, you must start the program as an administrator (right-click on the program icon and select **Run as administrator** there). If you then add the license code for additional licenses in the usual way, then the **license.mlic** file in the **C:\Program Files\Metrohm\tiamo\bin** directory will contain both license codes.

9 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
Database directory Directory where the databases will be saved (...Data).	Modify	SYSTEM User*
Backup directory Directory where the backups will be stored (...Backup).	Modify	User*
%ALLUSERSPROFILE%\Anwendungsdaten\Metrohm (Windows XP)**	Modify	User*
%PROGRAMDATA%\Metrohm (Windows Vista and higher) **	Modify	User*
Export directories Directories where the exported files are to be saved.	Modify	User*
PDF directories Directories where the PDF files are to be saved.	Modify	User*
Desktop	Modify	User*
%PROGRAMFILES%\Metrohm\tiamo (32-bit version of Windows versions)	Read & execute	User*
%PROGRAMFILES(x86)%\Metrohm\tiamo (64-bit version of Windows versions)	Read & execute	User*

* **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**.