

Installation Guide

Chromeleon 7 Chromatography Data System

Software Version 7.2.7 • November 2017

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1 About the Documentation

1.1 About this Document

Welcome to the Thermo Scientific™ Dionex™ Chromeleon™ 7 Chromatography Data System. This guide provides instructions for performing the following operations on stand-alone Chromeleon workstations:

- Installing/updating Chromeleon 7 main and service releases (Chapter 5.3) or maintenance updates (Chapter 5.4), as well as required third-party software components
- Basic configuration of Chromeleon 7 including basic instructions for installing instruments
- Configuring Microsoft™ Windows™ for use with Chromeleon 7.2.7

It also describes:

- Hardware and software requirements for installing Chromeleon 7
- Software and data compatibility with previous Chromeleon versions

To install multiple workstations that will be networked together, or to add a station to an existing domain installation, please contact the Thermo Fisher Scientific Service for support.

1.2 Document Conventions

The following formatting is used throughout the document to indicate text with special importance.

Caution: Indicates text that must be followed carefully to avoid potential problems.

Note: Indicates information of special interest.

Tip: Indicates information that will help you to use the software more efficiently.

1.3 Other Documents

Other documents provided with Chromeleon will help you to learn more about the Chromeleon software. Their scope is described in the Documentation Overview, which is included with the Chromeleon installation medium in printed form. The documents are also available in electronic form via the installation medium in the **Documents** folder.

2 System Requirements/Compatibility

2.1 Licensing Requirements/Compatibility

In order to use Chromeleon you must have a valid license matching the software version you are about to install.

A Chromeleon 7 license has two components:

- A hardware component called a USB license key (dongle)
- A license file that contains the license information

To activate a valid license, these two components must have the same serial number and must be present at the same time.

You will be asked to insert the license key and to provide a license file during the software installation process (Section 5.3). If you do not have them at hand, you can activate a license later (Section 5.7).

2.1.1 The License Key (Dongle)

The license key is a USB device (dongle). Together with a matching license file, which is normally provided on the dongle, it allows you to use Chromeleon software on the computer where the license key is present. The license key and license file must be present on the same computer but the licenses may be distributed across a Chromeleon domain.

Caution: When you insert the dongle into a USB port on a computer where Chromeleon 7 is installed, the license file is transferred automatically to that computer. Before inserting the dongle, you should therefore make sure that you have selected the correct computer. If the license file is automatically transferred to the wrong computer, you will have to transfer it manually to the correct computer afterwards.

Note: If the connection to the dongle is lost while Chromeleon is running, Chromeleon will switch to grace period mode and a corresponding message will be displayed until the issue is resolved or the grace period expires (usually one week). The same message will also be displayed when you start Chromeleon Console.

Caution: The license key represents your purchase of Chromeleon. Protect it as you would protect any other valuable object.

2.1.2 The License File

The license file contains the license information, such as the software version and the purchased software options.

The name of the license file is **Chromeleon7_XXXXXX.cmlic**, where XXXXXX is the serial number of the license.

Note: The license file is automatically moved to the appropriate location during the setup/license activation.

The license file is stored in the following location:

C:\ProgramData\Dionex\Chromeleon

Note: The path contains folders that are hidden by default. To see the folders, enter the path in the Windows Explorer address bar or press the Windows logo key + H.

2.1.3 License Key (Dongle) Compatibility

Chromeleon 7 has a different licensing mechanism compared to Chromeleon 6.8 and older releases, including all PeakNet 6 releases. It still uses a USB license key (dongle), but instead of using a key code, Chromeleon 7 requires the installation of a matching license file.

The most recent generation of Chromeleon 6 license keys (green USB dongles) can be used with Chromeleon 7, when a matching license file is available.

It is possible to upgrade any previous Chromeleon/PeakNet license key to a new Chromeleon 7 USB license key in conjunction with a software upgrade.

2.1.4 License File Compatibility

Chromeleon 7 license files are bound to main versions of Chromeleon. For example, a license file that was provided with version 7.1 will support 7.1 SR1, but will not work with version 7.2. For the latter an upgrade must be purchased. The updated license file will be provided with the upgrade. However, it is still possible to operate 7.1 SR1 once the license has been upgraded to 7.2.

2.2 Supported Chromatography Instruments & Modules

Chromeleon 7 provides full control of a wide range of Thermo Scientific instruments. In addition, some third-party instruments are also supported. For details, refer to the List of Supported Instruments in the **Documents** folder of the installation medium.

The List of Supported Instruments also lists the firmware versions recommended for using various instruments with Chromeleon 7.

2.3 PC Hardware Requirements

The requirements described in this document represent recommended configurations. Configuring your infrastructure to less demanding specifications may be sufficient for some applications, but is unlikely to provide satisfactory performance overall.

Note: The hardware requirements in the table below have been updated to reflect currently available computer hardware to be used for optimal performance of the system. Pre-installed hardware according to previous versions of the Installation Guide is still supported.

Processor	Recommended:	Quad Core Desktop CPU
RAM	Recommended:	16 GB or higher
	With 2 DADs:	16 GB or higher
	With MS:	16 GB or higher
Hard Disk	Recommended:	120 GB*
	With 2 DADs:	1 TB
	With MS:	1 TB

* These hard disk requirements are set to enable storage of a substantial amount of data. The software itself requires approximately 8 GB disk space on the C drive (twice as much during an update). In addition, a few GB disk space must always be available on the C drive for sequences cached in the XVault (→ Section 9.4.1).

Optical Drive	DVD	
Display	Recommended:	1440 x 900 or higher resolution
USB Ports	license device:	1 port
	Thermo Scientific modules:	1 or more additional port(s)
Refer to the <i>Chromeleon 7 Online Help</i> for further information with regard to specific modules.		

Caution: Check with Thermo Fisher Scientific to determine any additional requirements for the instruments you want to connect. For example, expansion slots for controlling third-party instruments via RS-232 or GPIB.

Tip: Contact Thermo Fisher Scientific for details about requirements for installing Chromeleon in a domain.

2.4 Supported Operating Systems

Chromeleon 7.2.7 has been validated for stand-alone use on the operating systems listed in the following subchapters.

Tip: Chromeleon 7 can also be installed on a server operating system (Windows Server versions). Contact Thermo Fisher Scientific for details.

2.4.1 Microsoft Windows 10 Enterprise / Pro

Chromeleon 7.2.7 can be operated on the 64-bit editions of Microsoft Windows 10 Enterprise and Microsoft Windows 10 Pro.

Note: The option **Turn on fast startup (recommended)** should be disabled in the Windows 10 shutdown settings. This ensures that the Chromeleon Instrument Controller Service is stopped correctly on system shutdown and prevents potential instrument connection issues when the computer is powered up again.

2.4.2 Microsoft Windows 8.1 Pro

Chromeleon 7.2.7 can be operated on the 64-bit edition of Microsoft Windows 8.1 Pro. Microsoft Windows 8 is not supported.

Note: An internet connection is required for installing Chromeleon 7 on a Microsoft Windows 8.1 Pro operating system.

2.4.3 Microsoft Windows 7

Chromeleon 7.2.7 can be operated on the 64-bit edition of Windows 7 Professional SP1.

Use of the 32-bit version is strongly discouraged. An exception is the MSQ Plus, which can only be run on 32-bit Windows 7 operating systems.

2.4.4 Windows Monthly Rollups and Security-only Updates

For optimum security, it is recommended that you keep your systems up to date with the latest Windows Monthly Rollups and Security-only updates. However, there is always a risk that an update may affect operation of Chromeleon. For example, database transactions could be interrupted by updating Microsoft™ SQL Server™ Express, or instrument control could be interrupted while related system components are being updated.

Note: Thermo Fisher Scientific does not formally validate Windows Monthly Rollups or Security-only updates. Installation and testing of Monthly Rollups and Security-only updates is the responsibility of the respective installation site. Compatibility with every Monthly Rollup or Security-only update cannot be guaranteed.

Install Monthly Rollups and Security-only updates as soon as practicable in order to keep the window of vulnerability as small as possible. You should briefly test the Monthly Rollup or Security-only update in the context of the laboratory's installation and operating procedures.

One possible approach to verifying software integrity is as follows:

1. Install the Monthly Rollup or Security-only update and Chromeleon on a test PC.
2. Run a Chromeleon installation qualification (IQ) and a Chromeleon operational qualification (OQ) in the Chromeleon Console via **Tools > Station Qualification**. More information on station qualification is provided in the *Chromeleon 7 Online Help under Administrating Chromeleon > Station Qualification*.

3. Perform further performance qualification tests according to the routines in your laboratory.

2.5 Installed Third-Party Software

The sections below are provided for reference only.

If not already present, the required third-party software components are installed automatically during the setup. The Chromeleon Installation Qualification (IQ, Section 5.6) reports the status of many of these components. Should you experience problems with any of the third-party software components, see Section 5.8 for troubleshooting hints.

2.5.1 Microsoft .NET Framework

Chromeleon 7 requires and installs Microsoft .NET Framework, versions 3.5 SP1 and 4.6.2.

Note: If you install Chromeleon on a PC with Windows 8.1 Pro or later, an internet connection is required. If no internet connection is available, you have to manually install .NET 3.5 SP1 from the original Windows installation medium.

If the required .NET version is not already present, the necessary files are installed before the actual Chromeleon 7 installation starts. After installing .NET, a reboot may be required.

The Chromeleon Installation Qualification (IQ) reports the installed .NET version(s).

Note: A change in the algorithm of Microsoft .NET Framework version 4.5 may lead to very small relative differences between calibration results that were calculated using .NET 4.5 compared to results obtained using previous .NET Framework versions. These differences may be seen in polynomials of the 6th and 7th order and only in very rare occasions.

2.5.2 Microsoft SQL Server Express

Chromeleon 7 uses Microsoft SQL Server 2014 Express SP2 (including the software development kit (SDK)) as the database engine for working with standard (local) data vaults.

The following older SQL Server Express versions are also supported:

- SQL Server 2012 Standard Edition
- SQL Server 2008 (R2) Standard Edition

If no SQL Server Express edition is present at all, SQL Server 2014 Express SP2 is installed automatically during the Chromeleon setup, including the necessary server and client components and the corresponding software development kit (SDK). This takes place before the actual Chromeleon 7 installation starts.

If an SQL Server version other than 2014 Express SP2 is already present, the SQL Server will not be updated and the existing SQL Server version will be used. In this case, the IQ report will just contain a warning that a different version than SQL Server 2014 Express SP2 was found (also see Section 5.4).

The installation events are logged in the following location (64-bit computer): **C:\Program Files (x86)\Microsoft SQL Server\100\Setup Bootstrap\LOG**.

To understand the details in the log files, refer to the Microsoft article "*How to: View and Read SQL Server Setup Log Files*" at [http://technet.microsoft.com/en-us/library/ms143702\(v=sql.105\).aspx](http://technet.microsoft.com/en-us/library/ms143702(v=sql.105).aspx).

Note: With Chromeleon 7 you can only create standard data vaults locally on the hard drive of the PC that runs Chromeleon 7. Standard data vaults can be shared over the domain, but the connectivity, performance, and capacity are limited by SQL Server Express.

Tip: To create multi-user data vaults, you need multi-user optimized databases, namely Oracle™ and the multi-user (non-Express) edition of MS SQL Server. Contact Thermo Fisher Scientific for details.

2.5.3 WibuKey Software

Chromeleon 7 uses the WibuKey software as part of the software licensing infrastructure.

The necessary files are automatically installed during the installation process.

After the Chromeleon installation is complete, the Chromeleon IQ checks whether the WibuKey Software is properly installed. If not, an error is issued.

If you experience problems with licensing, you may try to reinstall the WibuKey software from the Chromeleon 7 installation medium by running **\Packages\WibuKey Runtime\WkRuntime.exe**.

The installation log file for the WibuKey software setup can be found here (64-bit computer): **C:\Program Files (x86)\WIBUKEY\Setup**.

2.6 Required Third-Party Software

2.6.1 Adobe Reader

A PDF viewer such as the Adobe Reader is required for displaying PDF content, for instance in the ePanel.

Tip: You can download the latest Adobe Reader version here:
<https://acrobat.adobe.com/us/en/products/pdf-reader.html>.

2.7 Additional Software

2.7.1 NIST Mass Spectral Search Program

The NIST Mass Spectral Search Program is not included in the Chromeleon Setup.

If required, e.g. for the MS Library search, you can manually install a demo version of the program from the installation medium (**Tools** folder).

Note: An upgrade from an earlier Chromeleon version to Chromeleon 7.2 SR5 or later may remove the NIST Mass Spectral Search program (if installed) from your computer. Please reinstall the NIST Mass Spectral Search program after the Chromeleon upgrade, if necessary.

3 Configure Windows for Chromeleon 7

This chapter describes how to prepare Windows for correct operation of Chromeleon 7.

Caution: If you change the name or network path of the computer after installing Chromeleon 7, data vaults will become inaccessible. It is therefore recommended that you define the computer name and path before you install Chromeleon 7. If you need to change the computer name after the installation of Chromeleon, contact Thermo Fisher Scientific for support.

3.1 Ensure that Windows Is Up To Date

Before installing Chromeleon 7, make sure that Windows is updated as described in Section 2.4.4. Wait until all updates have successfully installed before installing Chromeleon 7.

3.1.1 Non-Internet Connected Computers

An internet connection is required for automatic Windows updates and patches.

3.2 Firewall Settings

This section describes firewall settings used by Chromeleon.

Tip: The setup will attempt to configure the built-in Windows firewall. For this, the **Windows Firewall** service must be running. If you need to turn off the Windows firewall for some reason, use the **Windows Firewall** program in the **Control Panel**, but leave the **Windows Firewall** service running.

Chromeleon uses the **Net.Tcp Port Sharing Service** for communication between Chromeleon software components. The Chromeleon setup therefore starts this service and changes the **Startup Type** to **Automatic**.

Most Chromeleon software components use the TCP port 1325 (which is registered with IANA for use by Thermo Fisher Scientific, see <http://www.iana.org/assignments/port-numbers>). Port 1325 is added to the **Exceptions** list as **Chromeleon 7 Services**.

On all supported Windows operating systems the configuration enables the following:

- Incoming local port 1325
- Outbound remote port 1325

This is relevant for both public and domain profiles (specify this under the **Advanced** settings of the Windows firewall).

The following software components are also added to the **Exceptions** list:

Chromeleon components

- Chromeleon 7 Real Time Kernel (**CmDriver.exe**)
- Chromeleon 7 Device Driver Host (**CmDDKHost.exe**)

SQL Server components

- SQL Database Service (**sqlservr.exe**)
- SQL Browser (**sqlbrowser.exe**)

Other components

- Accela PDA Manager (**PDAManager.exe**)

When ISQ Control is specified:

- ISQ (**ISQ.InstControlServer.exe**)
- ISQ Dashboard (**ISQ.Dashboard.exe**)
- ISQ Instrument Control App
(**ISQ.InstrumentControlApp.exe**)

When TSQ-8000 Control is specified:

- TSQ (**TSQ.InstControlServer.exe**)
- TSQ Dashboard (**TSQ.Dashboard.exe**)
- TSQ Instrument Control App
(**TSQ.InstrumentControlApp.exe**)

Note: The Chromeleon setup cannot configure third-party firewalls. These have to be configured manually. Third-party firewalls may cause problems during the installation process. Make sure that third-party firewalls are turned off before you install Chromeleon.

Depending on the instruments configured, there could be additional firewall exceptions and rules required. Full details are available in the *Chromeleon 7 Online Help*.

3.3 Disable Power Management

This section describes settings that should only be made on Chromeleon stations that are directly connected to instruments.

Note: It is not recommended to disable power management on Chromeleon client stations to which no instrument is connected.

3.3.1 Disable Windows Power Management

If a computer goes into **Standby** or **Hibernate** mode while the Chromeleon 7 Instrument Controller is running, the USB subsystem will become unavailable. As a result, USB-dependent devices (instruments and the license key) will stop functioning and operation is interrupted.

To disable Windows power management:

1. From the **Control Panel** open the **Power Options**.
2. Select **High Performance**.
3. Click **Change plan settings**.
4. Set every drop-down list to **Never**.
5. Click **Save Changes**.

3.3.2 Disable USB Power Management

To avoid problems during instrument control, USB specific power saving options must be turned off as well.

To disable USB power management:

1. From the **Control Panel** open **Hardware and Sound**.
2. Click **Device Manager**.
3. Expand **Universal Serial Bus Controllers**.

Tip: On some systems, **Universal Serial Bus Controllers** may be called **USB Controller**.

4. Right-click the **USB Root Hub** or **Generic USB Hub** (multiple instances of each are possible) for which you want to change the power savings options, and click **Properties**.
5. On the **USB Root Hub** (or **Generic USB Hub**) **Properties** dialog box, click the **Power Management** tab.
6. Clear the **Allow the computer to turn off this device to save power** option.
7. Repeat steps 4 to 6 above for all remaining USB instances.

Note: For instruments controlled by LAN, power management of the LAN card that controls the instrument must be disabled. This is achieved by performing steps similar to those described above.

3.4 Third-Party Software Interference

Certain software, such as virus scanners and support assistance tools, can be scheduled to perform tasks when the computer is idle or has a low-level of CPU activity. This type of software can interfere with data collection. It is recommended that programs that can be scheduled in this way are either switched off or set to run manually when the computer is not collecting data.

Tip: It is useful to know if any Chromeleon queues are running when you install, update, or uninstall any Microsoft products or other third-party software. You can use the Chromeleon Activity Check to find out whether Chromeleon related systems are active. See Section 5.2 for further information.

4 Compatibility with Previous Chromeleon and PeakNet Versions

4.1 Software Compatibility – Chromeleon 7 and 6

Chromeleon 7 can co-exist with Chromeleon 6 (or PeakNet™ 6) on the same computer. Chromeleon 7 is installed in a different folder and does not affect the Chromeleon 6 installation. You can use the Chromeleon 6 and 7 clients at the same time.

However, you cannot control instruments using the two software versions at the same time.

Caution: You cannot control an instrument using the Chromeleon 6 server and the Chromeleon 7 Instrument Controller at the same time. When running Chromeleon 6 and 7 on the same computer, an instrument allocated to the Chromeleon 6 server is not available to the Chromeleon 7 Instrument Controller (and vice versa).

To avoid conflicts between the Chromeleon 7 Instrument Controller and the Chromeleon 6 server, do not enable the options to start these services automatically.

4.2 Software Compatibility – Chromeleon 7.2 and 7.1

Parallel installation of different Chromeleon 7 versions (or service releases) on the same PC is not supported. When Chromeleon 7.2.7 is installed on a PC where an earlier version of Chromeleon 7 is present, the earlier version will be upgraded. For more details refer to Section 5.3.

4.3 Data Compatibility – Chromeleon 7 and 6

Chromeleon 7 provides access to Chromeleon 6 data and maintains backward compatibility as much as possible. Chromeleon 7 has been designed with focus on future development. In rare scenarios this may result in minor deviations when looking at legacy data in Chromeleon 7.

With Chromeleon 7, you can connect to datasources created with previous Chromeleon 6/PeakNet 6 versions. You can view the data, do temporary modifications and see the effect on the results.

However, you cannot save the changes inside a Chromeleon 6 datasource. To permanently modify data originating from Chromeleon 6, you must first copy the data from the Chromeleon 6 datasource to a Chromeleon 7 data vault.

Note: (Oracle datasources only) To access Chromeleon 6 data on a computer that does not have Chromeleon 6 installed, first install the Microsoft ODBC driver for Oracle that is part of the MDAC package. This is the only validated ODBC driver for the connection to Oracle databases (the Oracle-provided driver for ODBC will not work with Chromeleon).

You cannot connect to a Chromeleon 7 data vault from older Chromeleon/PeakNet versions.

It is not possible to import Chromeleon 6 panels to Chromeleon 7, nor the other way around.

4.4 Data Compatibility – Chromeleon 7.2 and 7.1

Chromeleon 7.2 introduces features that require an update for the database schema of 7.1 data vaults. It adds support such as for MS instrument control, data visualization and processing, import/export options, and intelligent run control functionality.

This update may prevent backward compatibility of data created with the Chromeleon 7.2 Client software.

4.5 Chromeleon 7.2 SR5 and 7.2

4.5.1 SDK and DDK Add-Ins

If your Chromeleon installation (< Chromeleon 7.2 SR1) includes SDK and/or DDK add-ins that are installed using a third-party setup, the existing SDK and DDK add-ins will not be moved to the new **Thermo** installation location.

To make the DDK and SDK add-ins available in 7.2 SR1 and later, the following steps are required:

1. Uninstall the DDK and SDK drivers before you upgrade to Chromeleon 7.2 SR1 and later.
2. Upgrade Chromeleon.
3. Re-install the DDK and SDK drivers again.

Alternatively, you can change the Chromeleon installation folder to **Program Files (x86)\Dionex\Chromeleon** (Section 5.3 *Install Chromeleon 7*).

5 Install the Software

5.1 Do you have Chromeleon 6?

If you do not have Chromeleon 6, start installing Chromeleon 7. Follow the steps starting in Section 5.3.

If you have Chromeleon 6, read Chapter 4 about compatibility, and decide whether you want to install Chromeleon on the same PC where Chromeleon 6 is running, or on a different one:

- To use Chromeleon 7 on the same PC where Chromeleon 6 is running, follow Section 5.3.
- To install Chromeleon 7 on a different PC with access to your Chromeleon 6 data, follow Section 5.3. Read Section 9.4.4 about mounting Chromeleon 6 datasources.

5.2 Chromeleon Activity Check

When you install, update, or uninstall Chromeleon or any other software, it is useful to know whether any of the following Chromeleon actions are active:

- Running queue(s)
- Running Smart Startup/Smart Shutdown
- Baseline monitoring

Chromeleon Activity Check is a stand-alone command-line program that checks if Chromeleon related systems are ready. You will find the program (**ChromeleonActivityCheck.exe**) on the installation medium in the **Tools > Chromeleon Activity Check** folder.

Note: Chromeleon Activity Check requires Microsoft .NET 4.0 or higher. However, it does not require a Chromeleon license or a Chromeleon system login.

To start the activity check:

1. On your installation medium, go to **Tools > Chromeleon Activity Check**.
2. Copy the **ChromeleonActivityCheck.exe** file to a location of your choice.
3. Open the Windows **Command Prompt**.
4. Navigate to the location of the **ChromeleonActivityCheck.exe** file and run the program.
5. The following exit codes can be returned:
 - **0**: indicates that all Chromeleon actions are inactive
 - **1**: indicates active Chromeleon actions

You can use the **wait** command **w** to specify a wait time (minutes) for the Chromeleon actions to become inactive. The program will check for active actions until the wait time has elapsed. The program will exit as soon as the actions have become inactive or after the wait time has elapsed.

Example 1:

```
ChromeleonActivityCheck.exe /wait:5
```

The program will check the system status for active actions every 5 seconds over a wait time of 5 minutes.

Example 2:

```
ChromeleonActivityCheck.exe /wait:-1
```

The program will check the system status for active actions every 5 seconds infinitely until the system becomes inactive.

5.3 Install Chromeleon 7 – Main and Service Release

Follow the subsequent steps to install Chromeleon 7.2.7. The steps are similar for new installations and for upgrading existing Chromeleon 7 installations. However, there are preliminary considerations to take into account before upgrading an existing Chromeleon 7 installation (Section 5.3.2)

5.3.1 Installation Requirements

Make sure the following requirements are fulfilled:

- The built-in **Windows Firewall** service must be running. If you need to turn off the Windows firewall for some reason, use the Windows Firewall Control Panel program (**Control Panel\System and Security\Windows Firewall**), but leave the **Windows Firewall** service running.
- Ensure that the person performing the installation has local administrator privileges in Windows. Reboot the computer if you are asked to do so. After the reboot, the administrator who started the setup must log in again so that the installation process can be completed correctly.
- Ensure that third-party firewalls are turned off.

Caution: Make sure that there is enough free drive space on your PC. Otherwise, the installation will fail (Section 2.3 *PC Hardware Requirements*).

Setup time varies depending on the presence of third-party components. For example, installing .NET Framework libraries may take a considerable amount of time.

5.3.2 Upgrade Chromeleon 7

It is not required to uninstall previous versions of Chromeleon/PeakNet 6 before installing Chromeleon 7.

The Chromeleon **Setup** checks current activities, for example, running queues. If a queue is running, Chromeleon will report a warning. You can select one of the following actions:

- **Ignore** – Select this option if you want to ignore the warning and continue the installation. The Instrument Controller will be stopped and the queue will be aborted.
- **Retry** – Select this option if you want to wait for the queue(s) to finish and retry the installation of Chromeleon 7.2.7. The state of the queues will be checked again during the new installation attempt.
- **Cancel** – Select this option to cancel the installation.

5.3.3 Install Chromeleon

Note: Do not connect new instruments/modules via USB to your PC until the Chromeleon software installation has finished and the Chromeleon Installation Qualification (IQ) has completed and passed.

1. Check Chapters 2 and 3 of this document and verify that all requirements are met.
2. It is best to close all applications before starting the setup to ensure that it can update relevant system files.

Note: Certain IT tools and anti-virus software may lock system files and therefore require rebooting after the setup. The installation of some of the third-party components (such as .NET Framework) usually requires a reboot.

3. Start the installation: Insert the installation medium into your PC. The **AutoPlay** window opens automatically. The **AutoPlay** window offers links for exploring the installation medium and for launching the setup program:

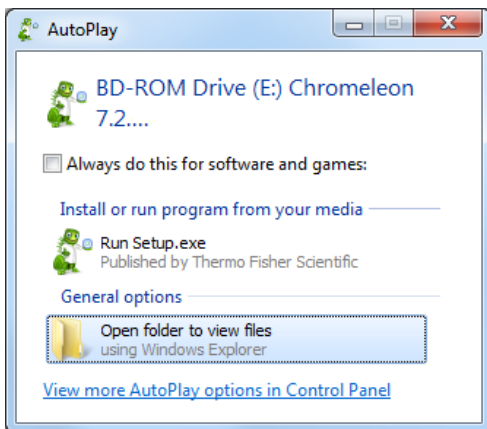


Figure 1: Chromeleon “AutoPlay” window

4. Click **Run Setup.exe** to start the installation procedure. If the Microsoft .NET Framework is not yet present, the necessary files are installed before the actual Chromeleon 7 installation starts. After installation of the .NET software, a reboot may be required.

If the .NET 4.6.2 software is already present on the computer, the Chromeleon setup window appears:



Figure 2: Chromeleon setup window

Before you can launch the installation, you must read and accept the Chromeleon license terms and conditions. By accepting the license terms and conditions, the **Install** and **Advanced options** buttons will be enabled (Figure 2):

- **Install:** Launches the Chromeleon default installation that includes all software components that are needed to control most of the Thermo Scientific instruments, to view Thermo Scientific mass spectrometry instrument methods, and to control a large number of third-party instruments.
- **Advanced options:** Allows you to change the installation path. This option is only available for a pristine installation of Chromeleon. It is not available if you upgrade Chromeleon

from 7.2 SR1 or later. By default, Chromeleon is installed in the following location:

- **C:\Program Files\Thermo\Chromeleon** (32-bit systems)
- **C:\Program Files (x86)\Thermo\Chromeleon** (64-bit systems)

Note: The location of any other third-party software package, for example, Microsoft SQL Server, cannot be changed.

The **Advanced options** button also allows installation of the following optional software components:

- Agilent Instrument Control Framework
- Agilent Chromeleon Drivers
- Waters Driver Pack 4
- Thermo Scientific mass spectrometry drivers

Note: The software components for Agilent (**Agilent Instrument Control Framework** and **Agilent Chromeleon Drivers**) can be installed together.

Select the check box(es) of the required software component(s) and click **Install** to start the installation.

Tip: When you click **Install**, a **User Account Control** (UAC) message is displayed. If you do not acknowledge it, the message will time-out after 2 minutes and you will be asked whether you want to cancel the setup. Click **No** to proceed with the installation. To avoid this, do not leave the installation unattended until the UAC prompt was displayed.

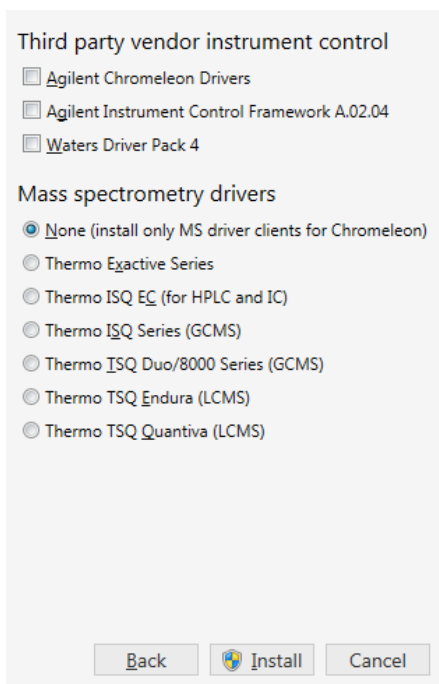


Figure 3: Advanced installation options

Tip: You can install the optional software components any time later (Section 5.5 *Install Optional Software Components*). Detailed information about installing the Thermo Scientific mass spectrometry drivers is provided in the MS Software Installation Guide that is available on the Chromeleon installation medium.

5. The setup program is executed that installs the different software packages. Follow the on-screen instructions as they appear. The setup starts with installing the required third-party software components (Section 2.5), if they are not already present.

Note: The installation of SQL Server Express and .NET libraries can take 5-20 minutes. The installation of Chromeleon files usually takes less than 5 minutes.

Note that the installation of the USB instrument drivers package might trigger a Windows Security message depending on your operating system:

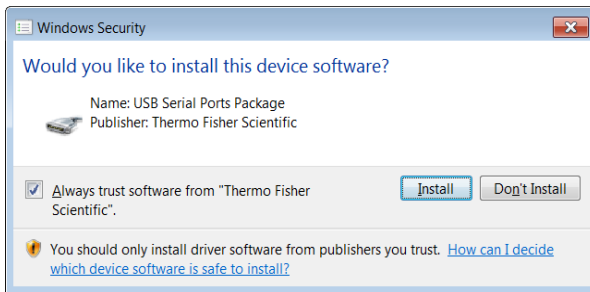


Figure 4: USB driver installation

To install the Chromeleon USB Driver package, select **Always trust software from "Thermo Fisher Scientific"** and click **Install** to continue.

Caution: (Windows 7 Professional Service Pack 1 and Windows Server 2008 R2 SP2 only) The USB instrument driver package requires the Windows Update KB3033929. If the Update is not installed, the connection of all USB modules might be interrupted. It is possible to install the update after installing Chromeleon. The USB modules that failed to connect will function after the update.

After installation of the software components, the license setup window appears:



Figure 5: License setup window

Do one of the following:

- If a new blue dongle is available and the license file is still stored on the dongle:
 - a. Insert the dongle into a USB port of the computer.

- b. Wait until the setup confirms that it found both the dongle and the file and transferred the file to the computer.
 - c. Save a backup copy of the license file by following the **Save license file** link in the dialog.
 - d. Click **Continue**.
- If a dongle and a license file are both available, but the license file is stored on other media:
 - a. Select the **Dongle** option.
 - b. Insert the dongle into a USB port of the computer
 - c. Wait until the setup confirms that it found the dongle.
 - d. **Install the license file** by following the corresponding link in the dialog.
 - e. Save the original medium with the dongle as a safety copy.
 - f. Click **Continue**.
 - If either the dongle or the license file is missing, or if the previous procedures failed (for example, due to a mismatch between the dongle and the file):
 - Click **Skip**.
 - You will have to provide a license after the setup has finished, as described in Section 5.7.

Tip: The **Chromeleon Domain Controller** option is for domain installations. Contact Thermo Fisher Scientific to learn more about the advantages a networked Chromeleon installation may provide to your laboratory.

- An installation qualification report will be created (Section 5.6). To open the report, click the **Installation Qualification report** link provided in the setup dialog (Figure 6).

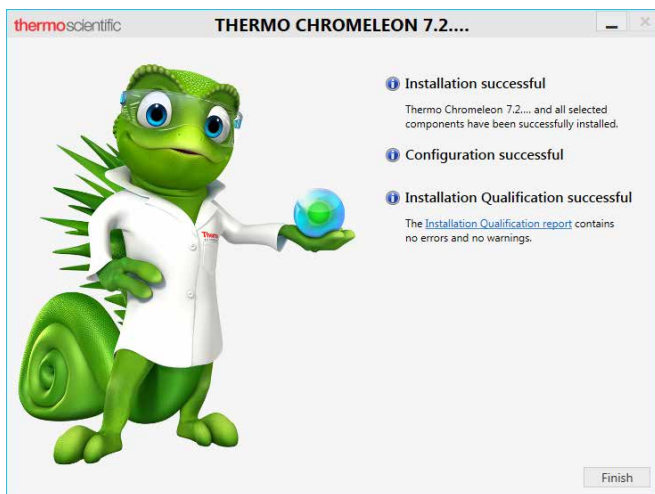


Figure 6: Chromeleon installation complete

You can also install Chromeleon using a command line for remote installation (Chapter 8 *Command-Line Installation*).

5.4 Install Chromeleon 7 – Maintenance Update

In order to install a Chromeleon maintenance update, an installed Chromeleon main or service release is required. The maintenance update can only be installed over the respective main or service release it is based on.

If not yet present, install the Chromeleon main or service release according to 5.3 *Install Chromeleon 7 – Main and Service Release*.

To install the maintenance update:

1. Insert the maintenance update installation medium into your PC. The **AutoPlay** window opens.
2. Click **Run Setup.exe** to start the installation procedure.
3. Read and accept the Chromeleon license terms and conditions.
4. Click **Install** to start the installation. The setup program is executed. Follow the on-screen instructions.

5.5 Install Optional Software Components

5.5.1 Software Packages Included in the Chromeleon Setup

The software components described as follows are part of the Chromeleon setup package and can be installed at the user's option to enable control of the corresponding instruments.

THERMO SCIENTIFIC MASS SPECTROMETRY DRIVERS

The mass spectrometry drivers are required for controlling the Thermo Scientific mass spectrometry instruments.

Tip: The MS Software Installation Guide provides detailed instructions about installing the individual MS instrument drivers. The document also includes a list of the MS instruments that are currently supported by Chromeleon. The MS Software Installation Guide is provided on the Chromeleon installation medium.

AGILENT INSTRUMENT CONTROL FRAMEWORK (ICF) AND LC DRIVER PACKAGE

This software is required for controlling Agilent™ liquid and gas chromatographs from Chromeleon.

The **Packages** folder provided on the Chromeleon installation medium contains a **ReadMe** file with instructions for manual installation. The Chromeleon and Agilent ICF - Quick Start Guide in the **Documents** folder provides further information. It contains basic information on how to configure the systems and how to get started.

Note: The Agilent LC driver replaces the Agilent 1100 and 1200 drivers that are obsolete and will no longer be maintained. The Agilent GC driver currently only supports the Agilent 7697A Headspace Sampler.

WATERS DRIVER PACK 4

This software is required for controlling Waters™ Acquity UPLC™ system modules. For further information, the following references are available:

- **Driver Pack 4 Installation and Configuration Guide:** Guide provided by Waters with information about installation and configuration of the Waters Driver Pack. The guide is

available on the Chromeleon installation medium
(Packages\Waters Driver Pack\Driver Pack).

- **Chromeleon Instrument Configuration Manager Help:** The topic *Installing Third-Party Modules – Waters Acquity UPLC System* contains instructions for installing the driver in Chromeleon.
- **List of Supported Instruments:** The List of Supported Instruments provides details about which Waters modules can be controlled by Chromeleon and which of them requires the installation of the Acquity driver. The List of Supported Instruments is provided in the **Documents** folder of the Chromeleon installation medium.

INSTALL OPTIONAL SOFTWARE COMPONENTS

1. Insert the Chromeleon installation medium into the PC.
2. Click **Run Setup.exe** to start installing the software (Section 5.3, steps 1 to 3).
3. When the Chromeleon setup window appears:
 - Click the **Advanced options** button:

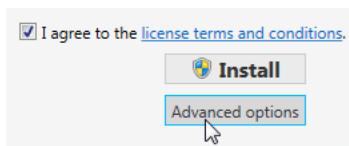


Figure 7: “Advanced options” button (Chromeleon setup window)

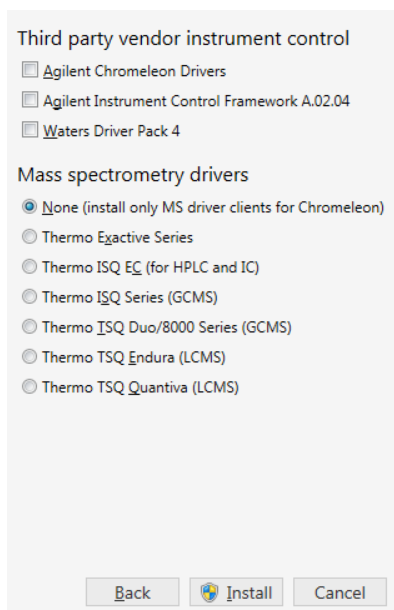


Figure 8: Optional software packages (Chromeleon setup window)

Note: When you upgrade Chromeleon from version 7.2 SR1 or later, some of the advanced options may be disabled. To install or remove an optional package, install Chromeleon with the original settings first. Then run a **Modify** installation.

4. Select the respective check box of the package that you want to install. Note that although multiple driver packages can be selected, only one mass spectrometry driver is allowed per computer. In addition, the MS driver must be installed on the PC that is connected to the MS instrument.

Note: Depending on the Chromeleon software version not all of the MS drivers might be included in the Chromeleon setup program. You may have to install some of the drivers manually. Refer to the MS Software Installation Guide, which provides detailed instructions about installing the individual MS instrument drivers.

5. Click **Install** to start installation of the selected software package(s). The installation procedure will then continue as described in Section 5.3 *Install Chromeleon 7*.

5.5.2 Software Packages requiring Separate Installation

MASS SPECTROMETRY DRIVERS

For Chromeleon 7.2.7 the following MS drivers are provided as separate installation package:

- MSQ Plus™ mass spectrometer

Please refer to the Chromeleon MS Software Installation Guide and the Chromeleon Instrument Configuration Manager Help for detailed installation instructions.

USB VIRTUAL COM PORT

Some of the Chromeleon drivers require the installation of a USB virtual COM port. The driver software is provided as a separate installation package.

The **USB Virtual COM Port** folder provided in the **Drivers** folder of the Chromeleon installation medium contains the tested driver version. The **USB Virtual COM Port** folder also contains a **ReadMe** file with installation instructions.

5.6 Installation Qualification

At the end of the installation process, Chromeleon automatically runs an installation qualification (IQ), and creates a report. You can view the report by clicking the **Installation Qualification report** link on the last page of the setup.



Figure 9: Last page of installation wizard

Tip: To read the report later, click **Start > All Programs > Thermo Chromeleon 7 > Station IQ > Current IQ report**. The report opens in your default web browser.

Installation qualification compares current information about the installed files against a reference list supplied by Thermo Fisher Scientific. If there are any differences, a warning, or an error message appears to indicate the following:

- **Warning:** A warning can indicate an obvious problem that can be easily corrected; for example, by providing a valid license file, installing more RAM in the PC, or starting Windows services. A warning can also indicate that a file does not have the expected time stamp or version. Usually, no action is required for minor file discrepancies. If a problem occurs nevertheless, try to repair the installation as described in Section 5.8.2. If the problem persists, follow the steps described in Section 5.8 to troubleshoot the installation.
- **Error:** A vital component is missing or corrupt. Try to repair the installation (Section 5.8.2). If this does not help, follow the steps provided in Section 5.8 for troubleshooting.

Note: After initial installation of Chromeleon 7, the installation qualification report may contain a warning about a missing license. This is also the case if you click **Skip** in the license setup dialog during the software installation. Follow the steps in Section 5.7 to provide a valid license.

Tip: You can run the installation qualification at any time to check if your installation is intact. To start installation qualification, click **Start > All Programs > Thermo Chromeleon 7 > Station IQ > Station IQ**. For more information, press **F1** in the **Chromeleon IQ** window.

Tip: All installation qualification reports (and also the installation log files) can be easily accessed by clicking **Start > All Programs > Thermo Chromeleon 7 > Station IQ > All IQ Reports**. The physical location of the files is a (normally hidden) directory. The location depends on the operating system:

C:\ProgramData\Dionex\Chromeleon\IQ

5.7 Activate/Update a License

The license is normally activated during the software installation process (Section 5.3). This section describes how to do the following:

- Activate a license when the license setup step was skipped during the software installation
- Update the license for an existing installation (for example after purchasing new licensed features for an existing installation)

The processes are similar, but there is a difference depending on where the license file is located:

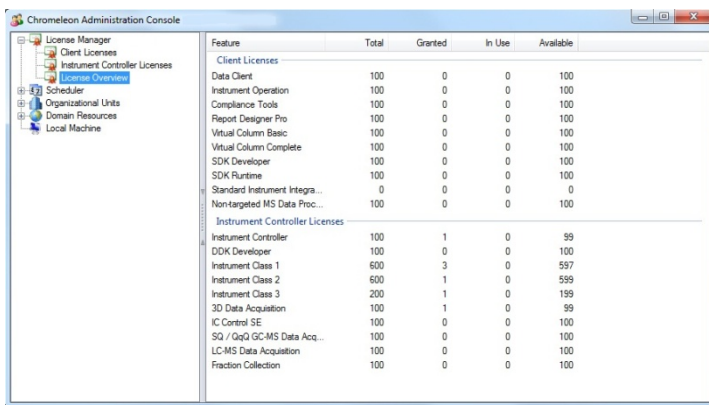
- If a new light blue dongle containing the license file is used, follow Section 5.7.1.
- If a license file is available on separate media, follow Section 5.7.2.

5.7.1 Use a New Chromeleon 7.2 Dongle that Contains a License File

Follow the steps below to activate or update a Chromeleon 7 station using a light blue dongle that has never been used before and thus still contains the corresponding license file.

1. Make sure that Chromeleon 7 is already installed.
2. Connect the dongle to a USB port of the PC where the license will be used. The Windows **Found New Hardware** wizard may start at this point and install the necessary drivers.

3. After a few seconds, the license file is automatically moved (without a warning) to the computer, to the appropriate location.
4. To check the installed licenses, start the Administration Console: **Start > Thermo Chromeleon 7 > Administration Console**. Select **License Overview**, Figure 10. The **Total** column should display the appropriate number of licensed options, Figure 10.



Feature	Total	Granted	In Use	Available
Client Licenses				
Data Client	100	0	0	100
Instrument Operation	100	0	0	100
Compliance Tools	100	0	0	100
Report Designer Pro	100	0	0	100
Virtual Column Basic	100	0	0	100
Virtual Column Complete	100	0	0	100
SDK Developer	100	0	0	100
SDK Runtime	100	0	0	100
Standard Instrument Integra...	0	0	0	0
Non-targeted MS Data Proc...	100	0	0	100
Instrument Controller Licenses				
Instrument Controller	100	1	0	99
DDK Developer	100	0	0	100
Instrument Class 1	600	3	0	597
Instrument Class 2	600	1	0	599
Instrument Class 3	200	1	0	199
3D Data Acquisition	100	1	0	99
IC Control SE	100	0	0	100
SQ / QqQ GC-MS Data Acq...	100	0	0	100
LC-MS Data Acquisition	100	0	0	100
Fraction Collection	100	0	0	100

Figure 10: License overview of the Administration Console

5. Back up your license file and store it in a safe location. You may need it in the future, for example if you want to move the license to another computer, or if you want to restore your Chromeleon station after a hard disk failure. Section 2.1.2 describes the location where you can find the license file that was moved from the dongle to the computer.

5.7.2 Use an Empty Dongle and a Separate License File

Follow the steps below to do the one of the following:

- Activate a Chromeleon 7 station using a Chromeleon 6 (green) dongle
- Activate a Chromeleon 7 station using a Chromeleon 7 (light blue) dongle that has been used before
- Modify licensing for a Chromeleon 7 station, for example when a new license file has been received after an upgrade, or when moving a license to another computer

Note: Make sure you have the license file that you want to use. The serial number of the license file must match the serial number of the dongle.

1. Connect the dongle to a USB port of the PC (Chromeleon 7 must be installed first).The Windows **Found New Hardware** wizard may start at this point and install the necessary drivers.
2. Open the Administration Console: Click **Start > Thermo Chromeleon 7 > Administration Console**, and select **License Manager**, Figure 11.
3. Click the **Update License File** link (Figure 11) and browse to the license file you want to use. Select the file and click **Open**. The license file is copied to its desired location (Section 2.1.2).

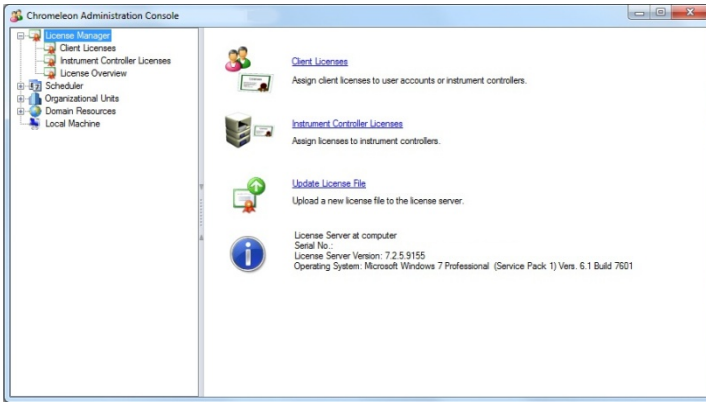


Figure 11: License details

4. To check the installed licenses, select **License Overview** (Figure 10). The **Total** column should display the appropriate number of licensed options (Figure 10).
5. Store your license file in a safe location. You may need it in the future, for example if you want to move the license to another computer, or if you want to restore your Chromeleon station after a hard disk failure.

5.8 Troubleshoot Software Installation

The setup process itself checks for various conditions and provides useful hints/warnings for preventing installation issues. Therefore always observe the instructions during setup. For example, the setup checks the following:

- Does the user who started the setup have local administrator privileges?
- Are the operating system requirements fulfilled?

Make sure that all requirements and Windows configuration steps described in Chapters 2 and 3 are fulfilled/performed.

To identify installation issues, check the installation qualification report (Section 5.6) for errors and warnings. If you find errors, try to repair the installation as described in Section 5.8.2.

Tip: Remember, that you can re-run installation qualification at any time.

If you face installation problems, send the installation log files to Thermo Fisher Scientific for support:

- Setup logs are located in:
C:\ProgramData\Dionex\Chromeleon\SetupLogs.
- Chromeleon logs are located in:
C:\ProgramData\Dionex\Chromeleon\Log.
- Installation qualification reports are located in:
C:\ProgramData\Dionex\Chromeleon\IQ.

Alternatively, you may access the installation qualification reports via the **Start** menu:

Start > All Programs > Thermo Chromeleon 7 > Station IQ > All IQ Reports

Large log files (> 25 MB) can be compressed (zipped).

You may also use the **System Status Report** to troubleshoot installation problems. This status report can also be accessed via the **Start** menu:

Start > All Programs > Thermo Chromeleon 7 > System Status Report

Note: If you attempt to reinstall, modify or repair Chromeleon, this action may fail. A sub-folder in the %temp% folder of the first installation may not have been removed and therefore interrupt the reinstallation, modification or repair. To solve this problem do the following:

1. Reboot your computer.
2. Delete the remaining folders in the %temp%.
3. Restart the Chromeleon setup.

5.8.1 Installation on a PC with Identical Computer Name and User Name

Caution: The Chromeleon installation will fail on a PC where the name of the computer and the logged-in user are identical.

The reason is a limitation in SQL Server Express, which cannot install if computer name and default user name are the same.

Before the installation, make sure that the computer name and the name of the logged-in user are different.

If you accidentally tried to install before changing the computer name, the setup will be cancelled. Change the PC name to something other than the logged in user name. Restart the Chromeleon setup process.

5.8.2 Repair an Installation

Follow the instructions below to repair a Chromeleon 7 installation:

Note: You will need access to the Chromeleon installation medium to repair an installation.

1. Insert the Chromeleon installation medium into the PC.
2. Click **Run Setup.exe**. This starts the Chromeleon setup in **Maintenance mode**.

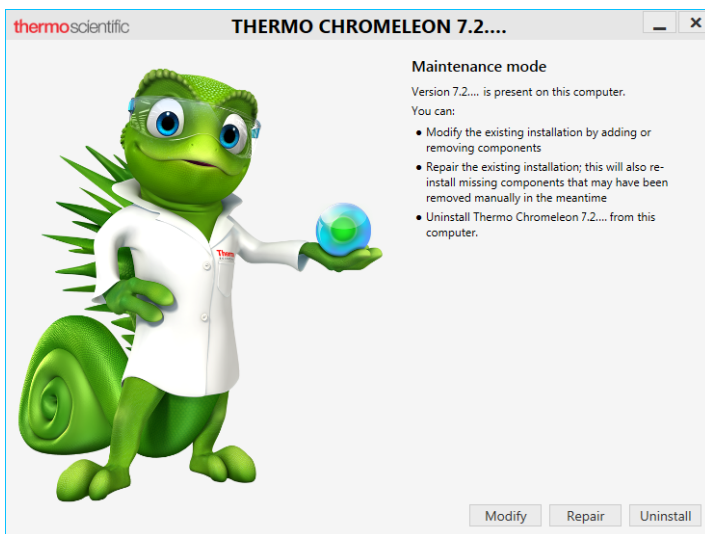


Figure 12: Maintenance mode

3. Click **Repair** to run a repair installation.
4. Follow the on-screen instructions to repair the installation.

Note: It is not possible to repair the following Thermo Scientific MS instrument drivers: ISQ Series, Exactive Series, TSQ Series and MSQ Plus.

Note: It is not possible to repair a **Thermo Foundation** software component.

6 Post Installation Configuration

The Post Installation Configuration is automatically executed at the end of the Chromeleon setup. Thus it is separated from the core installation of Chromeleon. In case of errors in the Chromeleon configuration, fix the problem and re-run the post installation program.

The Post Installation Configuration includes several configuration tasks, such as:

- Configuring the license
- Connecting to a Chromeleon domain
- Installing standard local data vaults
- Updating local data vaults to the current database schema

You can also execute it as a standalone application (**PostInstallation.exe**) after the Chromeleon installation:

1. Navigate to
C:\Program Files (x86)\Thermo\Chromeleon\bin
2. Click **PostInstallation.exe** to execute the Post Installation Configuration application.

If you want to enable or disable tasks run by the Post Installation Configuration, you must use command-line options. Refer to Chapter 8 for further information.

7 Install Thermo Scientific Instruments

This chapter describes how to install chromatography instruments that are connected via USB to the PC.

Chromeleon can control chromatography instruments from other manufacturers. (The List of Supported Instruments in the **Documents** folder of the installation medium provides an overview). Setup and requirements differ for each module. The Chromeleon Instrument Configuration Manager Help provides information about the supported modules and how to install them.

Caution: Do not connect new instruments/modules via USB to your PC until the Chromeleon software installation has finished and the Chromeleon Installation Qualification (IQ) has completed and passed.

To set up a system connected via USB do the following:

1. Connect all modules to each other and to the PC according to the *Operating Instructions* of the modules and according to Section 7.1.
2. Load the USB drivers for the module(s) according to Section 7.2.
3. Add your chromatography instrument(s) to the system configuration using the **Instrument Configuration Manager** according to Section 9.2.

7.1 Connect Modules via USB

Most Thermo Scientific instruments are connected to the PC or to each other via USB. Some of them (such as detectors that

acquire data at high rates) require USB 2.0 connections. Others can be connected to USB 1.1 connections as well.

Some Thermo Scientific instruments have a built-in USB hub. The hub may be USB 2.0 or 1.1; it may be powered or unpowered.

The following guidelines must be observed when connecting modules via USB:

- **Modules with USB 2.0** connection must be connected directly to the PC (recommended for detectors) or to another module with a USB 2.0 hub.
- **Modules with USB 1.1** connection can be connected directly to the PC or to another module with any kind of USB hub.
- A **powered hub** continues to function when the module is switched off, maintaining communications for devices connected to the hub.
- An **unpowered hub** only maintains connections while the device is switched on.

The List of Supported Instruments (see **Documents** folder of the installation medium) specifies what kind of USB connection an instrument requires (and provides, if it has a hub).

7.2 Load the USB Driver for a Module

1. Turn on the computer first, but not the module.
2. Under the Windows operating system, log on using an account with local administrator privileges.
3. Turn on the module using the main power switch.
4. Windows automatically detects the new module and performs the USB installation.

7.3 Troubleshoot USB Issues

Problem	Remedial Action
<p>Windows fails to detect the module and launches a wizard instead</p>	<p>This indicates that you connected the module to the computer and turned on the power for the first time before you installed Chromeleon. To resolve the problem do the following:</p> <ol style="list-style-type: none"> 1. Click Cancel to exit the wizard. 2. Turn off the module and unplug the USB cable from the computer. 3. Install Chromeleon. 4. Reconnect the USB cable to the computer and turn on the power to the module. Windows will now detect the module and install the USB software for the module automatically.
<p>Chromeleon audit trails include error messages that indicate interruption of USB communications, such as: <i>"Error receiving status: Error reading from <device name> @ USB <address>. The I/O operation has been aborted because of either a thread exit or an application request. The license is invalid."</i></p>	<p>This indicates that the Instrument Controller PC entered Standby or Hibernate mode while Chromeleon was operating instruments / collected data.</p> <p>Follow Sections 3.3.1 and 3.3.2 to disable (USB) power management.</p>

Problem	Remedial Action
<p>Windows Application and System Event Logs may include error messages related to one or several of the following:</p> <ul style="list-style-type: none">• Chromeleon• The disk I/O system• W32time• Other functions	

8 Command-Line Installation/Setup

This chapter describes how to do the following:

- Use command-line options (“switches”) and properties to modify/override the tasks related to the installation and the system configuration phases of the installation process → 8.2
- Automate the installation process using a so-called response file → 8.3.

Caution: The procedures described in this chapter should be performed by qualified administrators only. Perform tasks at your own risk.

8.1 Introduction to the Setup Process

The Chromeleon setup process consists of three phases:

- Installation
- System Configuration
- Installation Qualification (IQ)

Aspects of these can be configured using command-line switches.

8.2 Command Line Switches and Properties

The setup program (**Setup.exe**) accepts command-line options and properties. These can be used by system administrators to trigger an unattended installation and to fine-tune the installation and the configuration process.

8.2.1 Restrictions: Unattended Installation of the Chromeleon USB Driver Package

Note: The restrictions described below are only applicable for IPCs. They are also only relevant for customers who use Thermo Fisher USB drivers for IC, LC, A2D and TRACE1110 equipment.

Do not use unattended (silent) mode if you are installing Chromeleon 7 for the first time on a new Windows 7, Windows 8.1 or Windows Server 2008 computer. Doing so will prevent the Chromeleon USB Driver package from being installed. To install the Chromeleon USB Driver package, you must confirm the Windows Security prompt by selecting **Always trust software from “Thermo Fisher Scientific”** and clicking **Install** as shown in Figure 4. This prompt is only issued during routine installation of Chromeleon 7 using the Chromeleon setup kit.

Note: The Chromeleon USB Driver package can be installed in unattended mode on Windows 7, Windows 8.1 or Windows Server 2008 in the following cases:

- You are upgrading an existing installation of Chromeleon where the Windows security prompt for the Chromeleon USB Driver package was previously confirmed as described above.

- You are using image deployment to install Chromeleon, and installation of the Chromeleon USB Driver package was confirmed on the reference computer before the image file was created.

8.2.2 Properties

Properties are defined via the command line using the following syntax:

PROPERTY=PropertyValue

The following properties are available:

Property	Description
InstallFolder	Specifies the installation folder. The default installation folder (64-bit computers) is C:\Program Files (x86)\Thermo\Chromeleon\ .
LogFilesBackupDir	Specifies the backup location of the setup log files. The default location is C:\ProgramData\Dionex\Chromeleon\SetupLogs Note: Using a different location will prevent the System Status Report tool from including the setup log files for troubleshooting.
SuppressTeamViewerInstallation	Prevents installation of the TeamViewer client application. To actually suppress the installation set the value to something else than 0.
WaitTimeMinutesForSequenceQueuesIdle	The Chromeleon setup will abort the installation if an active sequence queue is detected. Use this property to specify a wait time (minutes) for the sequence queue(s) to become idle. Chromeleon will check for active queues every minute until the wait time has elapsed:

Property	Description
	<ul style="list-style-type: none"> • If there are still active queues, the installation will be aborted. • If no active queues can be detected, the installation will be continued.

Note: Property names are case sensitive.

8.2.3 Command-Line Switches

In addition to properties, the setup program (**Setup.exe**) also accepts numerous “switches”.

The following options are available:

Option	Description
<code>/?, /HELP</code>	Shows a summary of the information below.
<code><no option>, /package, /update</code>	Installs or configures the product using the default settings.
<code>/repair</code>	Repairs the product (or installs if not installed).
<code>/uninstall</code>	Uninstalls the product.
<code>/q, /quiet, /s, /silent</code>	Installs or configures the product in quiet mode without user interaction.
<code>/promptrestart</code>	Prompts the user for restart if necessary (default, recommended). When used with the <code>/q</code> or <code>/s</code> switch, the prompt will be suppressed and the computer will be restarted automatically when

Option	Description
	needed.
/forcerestart	Always restarts the computer after installation.
/norestart	Does not restart after the installation is complete. NOT RECOMMENDED!
/ib, /ignoreblockers	Ignores all blockers and forces setup to continue. NOT RECOMMENDED! Blockers are circumstances that the setup considers critical and would therefore stop.
/l <path\file>, /log <path\file>	Logs the installation events to the specified file/location (default location is the %TEMP% folder.)
/c:<argument>, /config:<argument>	Determines the system configuration tasks. → 8.2.4
/sc, /skipconfig	Skips the System Configuration phase. → 8.2.4
/sq, /skipiq	Skips installation qualification.
/lc, /listcomponents	Lists all selectable components. The installation of these components can be enforced or suppressed using a response file. → 8.3
/rf:<path\file>, /responsefile:<path\file>	Specifies the response file to be used. → 8.3

8.2.4 System Configuration Tasks/Parameters

In the System Configuration phase (Post Installation Configuration, see Chapter 6) the installation process performs several tasks. These tasks can be suppressed using the `/config:` setup option.

For most arguments use **True** or **False** to enable or disable it. By default these tasks will be executed (**True**).

The tables below list the system configuration tasks to be used as arguments with the `/config:` option.

All system configuration steps can also be defined in a response file, → 8.3.2.

DATA VAULT RELATED TASKS

Argument	Task
<code>CreateChromeleonLocal</code>	Enables or disables the creation of the ChromeleonLocal data vault.
<code>CreateXVault</code>	Enables or disables the creation of the standard XVault .
<code>DataVaultsConfiguration</code>	<p>Group Argument:</p> <p>Enables or disables all data vault related tasks:</p> <ul style="list-style-type: none"> • Create Chromeleon local data vault • Create XVault • Update data vaults • Update local data vault security

Argument	Task
<code>UpdateDataVaults</code>	Enables or disables updating the database schema of existing local data vaults.
<code>UpdateDataVaultSecurity</code>	Runs a security update for local data vaults.

DISCOVERY RELATED TASKS

Argument	Task
<code>DiscoveryUpdatePollingInterval</code>	Specifies the update polling interval in seconds. Values must be between 1-600 seconds.
<code>Domain</code>	Specifies the Chromeleon domain to be joined (i.e. the host name of the Chromeleon domain controller)
<code>InheritCurrentDomainSettings</code>	Can be used together with the <code>Domain</code> switch. Uses the settings of the current Chromeleon domain controller for the new domain controller.
<code>OrgUnit</code>	Specifies the organizational unit of the Chromeleon client. This operation fails if a non-existing organizational unit is specified.
<code>PollForDiscoveryUpdates</code>	Specifies whether the Chromeleon client should poll for Chromeleon domain controller updates.
<code>ReceiveDiscoveryPushNotifications</code>	Specifies whether the Chromeleon client should receive push notifications form the Chromeleon

Argument	Task
<p><code>RequireEnhancedConnectionSecurity</code></p>	<p>domain controller.</p> <p>With Chromeleon 7.2 SR5 new certificates for the communication between different Chromeleon services and Chromeleon client applications have been introduced in order to enhance transport security.</p> <p>If you install Chromeleon 7.2 SR5 or later on your server computers, but keep older Chromeleon versions on client computers, it is required to run the outdated certificates in parallel to ensure compatibility. Note that this poses a security risk.</p> <p><code>RequireEnhancedConnectionSecurity</code>:</p> <ul style="list-style-type: none"> • If you enable the argument, the Chromeleon services will communicate based on the new certificate. • If you disable the argument, the old legacy hosts will be started additionally and enable clients with Chromeleon versions <7.2 SR5 to connect.

SERVICE CONFIGURATION TASKS

Argument	Task
<p><code>EnableAndStartSqlServerService</code></p>	<p>Enables or disables starting of the</p>

Argument	Task
	SQL Server service.
EnableAndStartSqlBrowserService	Enables or disables starting of the SQL Browser service.
ServicesConfiguration	Group Argument: Enables or disables all service related tasks: <ul style="list-style-type: none"> • SQL Server services tasks • Chromeleon services tasks
StartCacheService	Enables or disables starting the Chromeleon Cache Service.
StartDataVaultService	Enables or disables starting the Chromeleon Data Vault Service.
StartDiscoveryService	Enables or disables starting the Chromeleon Discovery Service.
StartInstrumentService	Enables or disables starting the Chromeleon Instrument Controller Service.
StartLicenseService	Enables or disables starting the Chromeleon License Service.
StartSchedulerService	Enables or disables starting the Chromeleon Scheduler Service.
StartServicesManager	Enables or disables starting the Chromeleon Services Manager.
StartUserService	Enables or disables starting the Chromeleon User Management Service.

OTHER TASKS

Argument	Task
AgilentICFApplicationCustomization	Enables or disables the Agilent ICF application customization.
EncryptUserDatabase	Enables or disables encryption of the user database.
FirewallRulesConfiguration	Enables or disables the configuration of the Windows firewall by creating rules for <ul style="list-style-type: none">• SQL Browser• SQL Server
MigrateSequenceQueues	Enables or disables the migration of sequence queues from isolated storage.
PurgeChromeleonAddinsDatabase	Removes an existing Chromeleon Addins database.
SetMachineConfigurationTransactionsTimeout	Enables or disables the setting of the machine configuration transactions timeout.

The example below shows how to use the **/config:** option for the following:

- Suppressing the update of the database schemas
- Defining a Chromeleon domain during a silent installation (the command must be typed in one line)

```
setup.exe /s /c:UpdateDataVaults=False;Domain="MyCMD"
```


8.3 Response File

A response file can be used to customize unattended installations. More specifically, use the response file for the following:

- Provide command line properties/arguments in a structured manner (Sections 8.3.1 and 8.3.2).
- Define which selectable components should be installed (Section 8.3.1).

A response file is an XML document with up to three sections as illustrated in the example in Section 8.3.3:

- **Properties:** defines optional setup properties to be used (Section 8.2.2)
- **Components:** defines the requested install states of the selectable components (Section 8.3.1)
- **ConfigurationTasks:** defines the requested run states of the system configuration tasks (Sections 8.3.2 and 8.2.4)

8.3.1 Components Section

The default installation behavior when installing Chromeleon is as follows:

- Standard components are always installed.
- Optional components must be expressly activated during installation. Otherwise, they will not be installed.

However, you can override the default installation behavior using the response file. This means that you can suppress or enforce installation of standard and optional components.

To always enforce installation of a Chromeleon component:

1. Add the component to the response file (see the example in Figure 13).
2. Set the following switch: **RequestState="Present"**

To always suppress installation of a Chromeleon component:

1. Add the component to the response file (see example in Figure 13).
2. Set the following switch: **RequestState="Absent"**

Note: For an up-to-date list of selectable components, run the setup with the `/1c` switch on the command prompt.

8.3.2 ConfigurationTasks Section

The tables in Section 8.2.4 list the system configuration tasks within the response file.

8.3.3 Response File Example

The example below shows a response file with the following characteristics:

- Installation of Chromeleon in a specific folder
- Installation of selected optional software components (Agilent ICF and Thermo Scientific TSQ Series), with exclusion of standard components (Thermo Scientific Accela PDA Boot Utility)
- Preventing schema updates of local data vaults
- Defining a Chromeleon domain

```
<ResponseFile>
  <Properties>
    <Property Name="InstallFolder"
      Value="C:\Chromeleon" />
  </Properties>
  <Components>
    <Component Name="AgilentICF"
      RequestState="Present" />
    <Component Name="ThermoAccelaPDABootUtility"
      RequestState="Absent" />
    <Component Name="ThermoTSQSeries"
      RequestState="Present" />
  </Components>
  <ConfigurationTasks>
    <Task Name="UpdateDataVaults"
      Value="False" />
    <Task Name="Domain"
      Value="MyDomainServer" />
  </ConfigurationTasks>
</ResponseFile>
```

Figure 13: Response file

8.4 Exit Codes

Exit codes indicate the level of success for a command. The following table provides exit codes for **Setup.exe**.

Setup Status	Restart not required	Restart required	Description
Success	0x00000000 [0]	0x00000bc2 [3010]	Successful installation
Success but incomplete	0x80040000 [-2147221504]	0x80048000 [-2147188736]	Successful installation of all vital packages, but at least one non-vital package failed
Block	0x80044000 [-2147205120]	0x8004c000 [-2147172352]	A blocking condition was encountered during installation.
Cancel	0x00000642 [1602]	0x80048642 [-2147187134]	Installation was canceled, or the UAC failed or timed out.
Incomplete – restart required	N/A	0x80048bc7 [-2147185721]	A restart is required before installation can continue.
Failure	0x00000643 [1603]	0x80048643 [-2147187133]	A fatal error occurred during installation.

9 Configure Chromeleon 7

This chapter describes configuration steps likely to be performed for most stand-alone Chromeleon installations.

Note: You need Windows (local) administrator privileges and/or the appropriate Chromeleon privileges to perform some of the tasks described in this chapter. The UAC/admin shield icon indicates whether administrator rights are required.

Note: The paths mentioned in this chapter contain folders that are hidden by default. If you do not see them, follow instructions in the *Windows Help* on how to display hidden files and folders.

9.1 Starting Points for Configuring Chromeleon 7

You can start all configuration work for Chromeleon 7 from two starting points:

- From the Chromeleon Services Manager, which is a Chromeleon tool that appears minimized as the Chromeleon tray icon in the notification area of the Windows taskbar
- From the Administration Console, which is a Chromeleon tool that can be started via the **Start** menu

9.1.1 Chromeleon Services Manager

The Chromeleon Services Manager (Figure 14) does the following:

- It shows the overall status of the Chromeleon service components (Figure 14B).
- It provides a starting point for instrument control related configuration work (Figure 14C, D, E).

Tip: Refer to the Glossary in the online help file for further information on Chromeleon services.

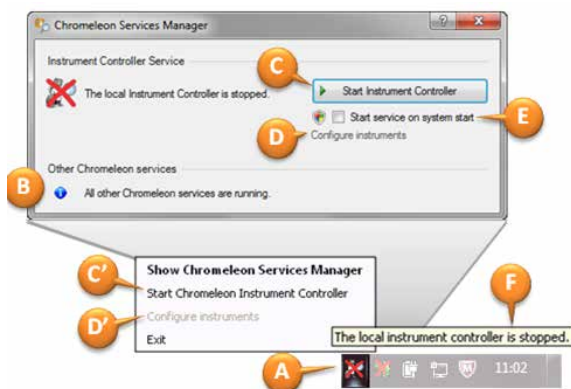


Figure 14: “Chromeleon Services Manager” window and tray icon

The Services Manager usually starts automatically. It appears minimized as the Chromeleon tray icon (Figure 14A) next to the clock in the notification area (also called system tray) of the Windows taskbar.

To open the **Chromeleon Services Manager** window, click (or right-click) the Chromeleon tray icon, Figure 14A.

If the Chromeleon tray icon is not present, you can start the Services Manager by selecting **Start > All Programs > Thermo Chromeleon 7 > Services Manager**.

Close the **Chromeleon Services Manager** window to minimize it to the Chromeleon tray icon.

If a Chromeleon service does not start automatically, although the **Start service on system start** check box is enabled, start the service manually:

1. Windows 10: Type **services.msc** in the **Search the web and Windows** box.
In Windows 7 / 8.1 Pro: Click **Start** and type **services.msc** in the search box. In the search results, click **services.msc**.
2. In the search results, click **services.msc**. The Services window opens.
3. In the list on the right side of the **Services** window, double-click the respective Chromeleon service.
4. Click **Start**.

Note: If SQLEXPRESS and the Data Vault Service are not started, first start SQLEXPRESS, then start the Data Vault Service. If you first start the Data Vault Service, the data vaults might not be available.

9.1.2 Chromeleon Tray Icon

The Chromeleon tray icon (Figure 14A) appears next to the clock in the notification area (also called system tray) of the Windows taskbar. It is the minimized version of the Services Manager. It has the following functionality:

- It provides an easy way to open the Services Manager window (via a click or a right-click on the tray icon).
- The tray icon and its tooltip (Figure 14F) show the status of the Instrument Controller Service.

- Its context menu provides a shortcut for starting/stopping the Instrument Controller Service (Figure 14C) and launching the Instrument Configuration Manager (Figure 14D).

If the Chromeleon tray icon is not present in the notification area, start it by clicking **Start > All Programs > Thermo Chromeleon 7 > Services Manager**.

9.1.3 Chromeleon Administration Console

The Chromeleon Administration Console (Figure 15) provides the starting point for most administrative tasks in Chromeleon:

- Managing licenses
- Scheduling data transfer among data vaults, for example for archiving purposes
- Managing Chromeleon users, groups and privileges
- Configuring **Global Policies**, for example enabling **User Mode**
- Monitoring **Discovery**, in other words, checking which resources (instruments and data vaults) are available in a Chromeleon domain
- Managing data vaults installed on the local computer

Tip: Some of these features are only available in a domain installation and are therefore not covered in this document. Contact your local Thermo Fisher Scientific support to learn more about the advantages a networked Chromeleon installation may bring to your laboratory.

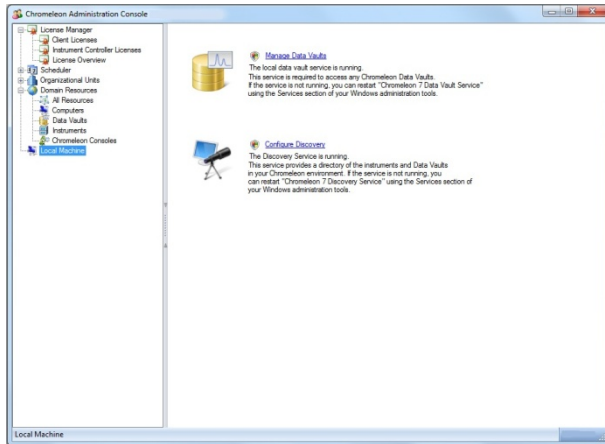





Figure 15: Chromeleon Administration Console with left and right pane

To open the Chromeleon Administration Console select **Start > All Programs > Thermo Chromeleon 7 > Administration Console**.

9.2 Configure Instruments/Modules

After the USB software for the module has been installed (Section 7.1), install and configure the module in Chromeleon:

1. Start the Instrument Controller Service, either by right-clicking the Chromeleon tray icon (Figure 14A) and selecting **Start Chromeleon Instrument Controller** (Figure 14C'), or via the Services Manager (Figure 14C).
2. The Chromeleon tray icon  changes to indicate that the Instrument Controller Service is starting . Wait until the Instrument Controller Service is running idle .

Note: If the Chromeleon tray icon is not visible on the taskbar, click **Start > All Programs > Thermo Chromeleon 7 > Services Manager** to open the Services Manager and click **Start Instrument Controller**.

3. Start the Chromeleon Instrument Configuration Manager by choosing one of the following options:
 - Right-click the Chromeleon tray icon (Figure 14D') and click **Configure Instruments**.
 - OR-
 - Click **Configure Instruments** in the Services Manager.

Note: You can close the **Services Manager** window if it is open. If you close the window, the Instrument Controller Service is not stopped.

4. You can click the plus sign next to the PC name to display the items underneath (Figure 16A).
5. Select the instrument to which the module will be assigned, or create a new instrument:
 - To create a new instrument, on the **Edit** menu, click **Add instrument...**, or click the corresponding icon in the toolbar, Figure 16B.
6. Click **Add Module** on the **Edit** menu, or click the corresponding icon in the toolbar, Figure 16C.
7. On the **Manufacturers** list (Figure 16D), click **Thermo Scientific**. On the **Modules** list (Figure 16E), click the module.
8. Chromeleon connects to the module, transfers the settings from the module to Chromeleon, and automatically sets the

options on the configuration dialog pages (Figure 16F) accordingly. Confirm the related message with **OK**.

Tip: Most modules are connected via a USB interface. The USB address is used by Chromeleon to detect a module. It typically contains the serial number of the module, allowing you to distinguish between modules when two or more identical modules are present (such as two pumps of the same model).

Click **Browse** and double-click on the USB number. Only the USB addresses of corresponding modules are shown. For example, when adding a UV detector, only the address(es) of the UV detector(s) are shown.

9. On each configuration page, verify that the settings are correct and define additional settings if needed. For assistance, click **Help** (or press **F1**).
10. On the **File** menu, click **Save Instrument Configuration**, or click the corresponding icon in the toolbar, Figure 16G. Close the Instrument Configuration Manager.

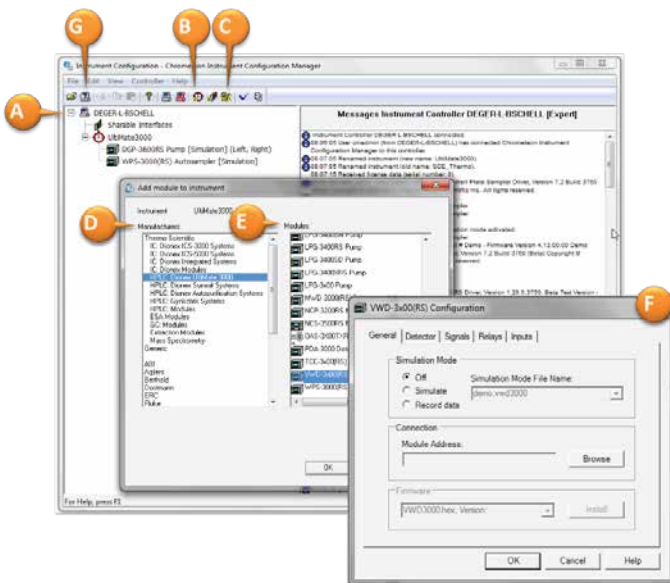


Figure 16: Using the Instrument Configuration Manager

9.3 Enable Automatic Start of the Instrument Controller Service

On computers that are physically connected to instruments (Chromeleon workstations and Instrument Controller stations), especially if they are controlled remotely from another PC with Chromeleon (a Remote Client station), Thermo Fisher Scientific recommends starting the Instrument Controller Service every time the computer is started.

Tip: If the PC is not connected physically to instruments (Chromeleon Data Client and Remote Client stations), you should not follow these steps, which would result in using additional PC resources unnecessarily.

To enable automatic start of the Instrument Controller Service:

1. Open the Services Manager by clicking the Chromeleon tray icon (in the notification area of the taskbar), or by clicking: **Start > All Programs > Thermo Chromeleon 7 > Services Manager**.
2. Enable the **Start service at system start** check box, Figure 14E.
3. To start the service this time, click the **Start Instrument Controller** button in the Services Manager, Figure 14C.
4. Close the Services Manager.

9.4 Configure Data Vaults

Tip: The *Chromeleon 7 Help* contains a chapter about *Backing Up Chromeleon Data*, see **Chromeleon 7 Help > Administrating Chromeleon**.

9.4.1 Default Data Vault, XVault and Default Location

During the software installation, the standard data vault **ChromeleonLocal** is automatically generated (in the corresponding sub-folder) in the default location.

During the installation, another local data vault (an **XVault™**) will be created. This is a special data vault that stores a cached copy

of the running sequences. The purpose of the XVault is to keep instruments running and data accessible for processing during network outages, but it is an essential part of stand-alone installations as well. The XVault is hidden.

Tip: The default standard data vault and the XVault need no configuration.

The default location for standard data vaults (Windows 7) is:

C:\ProgramData\Dionex\Chromeleon\DataVaults\`<data vault name>`

9.4.2 The Data Vault Manager

The Data Vault Manager is a Chromeleon tool that helps you with the following tasks:

- **Creating a new data vault** (Section 9.4.3):
 - You want to have data vaults with and without data audit trails/versioning.
 - You want to separate data at a high level.

Note: You can separate data in various folders inside the same data vault, and you can specify different access rights/privileges for different folders.

- To save space you want to move (archive) some data from your “live” data vault.

Note: The database part of a standard data vault has a 10 GB size limit. The database holds sample information, the methods, and the audit trails, but not the raw data.

Tip: Do not create too many data vaults. Running queries (searching for data) is more efficient if the data is not scattered across many different data vaults, because queries can only work in one data vault at a time.

- **Mounting/dismounting a Chromeleon 6 datasource** (Section 9.4.4): You may want to mount Chromeleon 6 datasources (read-only) that exist locally or on the network.
- **Mounting/dismounting a Chromeleon 7 data vault:** The Discovery Service automatically finds Chromeleon 7 data vaults in the domain. Manual dismounting/mounting is only necessary for advanced administrative tasks like moving or renaming a data vault. These are not covered in this document.

To start the Data Vault Manager:

1. Open the Administration Console, click **Local Machine** in the left pane (Figure 17).
2. Click **Manage Data Vaults** in the right pane.
3. Alternatively, click **Start > All Programs > Thermo Chromeleon 7 > Data Vault Manager**.
4. The Data Vault Manager opens in a separate window (Figure 17).

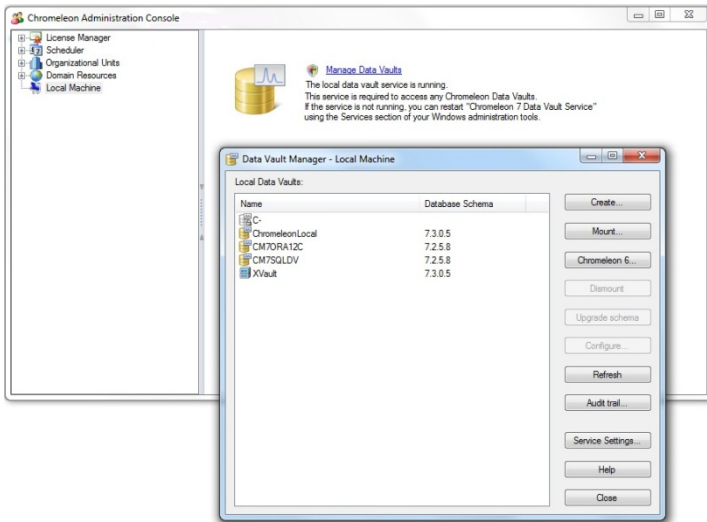


Figure 17: Starting the Data Vault Manager

9.4.3 Create a Standard Data Vault

With Chromeleon 7.2.7 a special SQL account for Chromeleon will be created. This account will be used for administrative tasks in the Data Vault Manager. If you want to do administrative tasks without using the Data Vault Manager, for example, directly in the database, only the user who installs Chromeleon will have the administrative rights to do so. If additional administrative SQL Server accounts are required, the user who installed Chromeleon must add them.

Note: If you update Chromeleon from a previous version, note that Chromeleon will not remove existing administrative accounts. To increase security it might be necessary to remove these administrative accounts.

To create a standard data vault:

1. Start the Data Vault Manager as described in Section 9.4.2.
2. In the **Data Vault Manager – Local Machine** window, click **Create...**, Figure 17
3. Select the **Create standard data vault** option, Figure 18A. Click **Next**.
4. Enter a name for the new data vault, Figure 18B.
5. Click **Finish**.

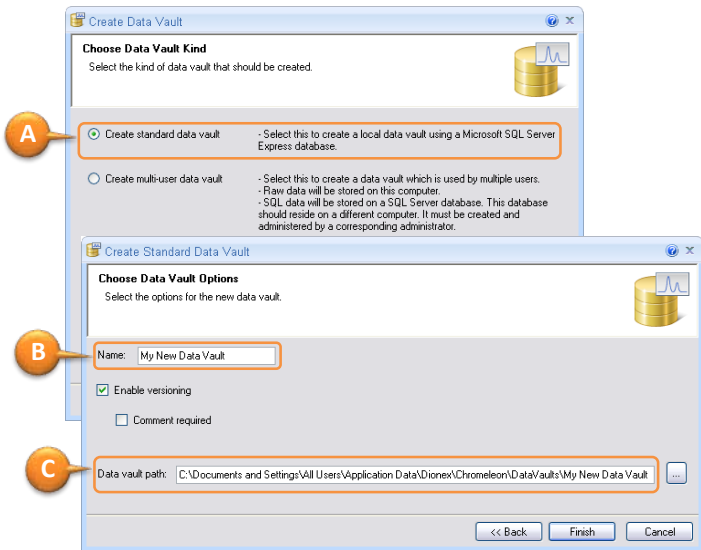


Figure 18: Creating a standard data vault.

Note: Thermo Fisher Scientific recommends keeping the default path (Figure 18C).

This has the following advantages:

- It ensures automatic protection of the data vault via standard Windows user rights.
- It allows easy backup of all your data from a single location (see Chromeleon 7 Help: **Administrating Chromeleon > Backing Up Data**).

If you create the data vault in a different location, such as on a different hard drive, take care of protecting the data vault by configuring Windows user rights:

- Deny access for ordinary users.
- Grant access for SQL Server and local system accounts.

9.4.4 Mount Chromeleon 6 Datasources

If you install Chromeleon 7 on a PC where Chromeleon 6 is already installed, your mounted Chromeleon 6 datasources will automatically become available (read-only) in Chromeleon 7. For connecting other Chromeleon 6 datasources, follow the subsequent steps.

To mount a Chromeleon 6 datasource:

1. Start the Data Vault Manager as described in Section 9.4.2
2. In the Data Vault Manager, click **Chromeleon 6...**, (Figure 17E)

Note: When you try to access a Chromeleon 6 datasource where access control is enabled, you have to provide a valid Chromeleon 6 user ID and password.

3. Click **Browse...** (Figure 19A) or **Datasource manager...** (Figure 19B) in the dialog that opens.
4. Follow the familiar Chromeleon 6 steps.

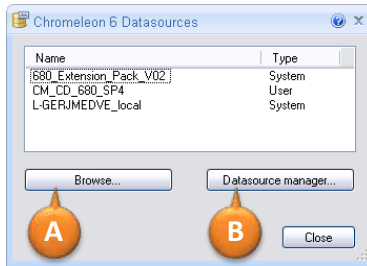


Figure 19: Initial steps for mounting Chromeleon 6 datasources

Note: Chromeleon 7 actually utilizes the same registry keys for storing datasource connection data as Chromeleon 6 does.

For **common** datasources:

HKEY_LOCAL_MACHINE\Software\Dionex\Chromeleon\Datasources\...

For **not common** datasources:

HKEY_CURRENT_USER\Software\Dionex\Chromeleon\Datasources\...

Consequently, when Chromeleon 6 is installed on the same PC, changes in Chromeleon 7 and Chromeleon 6 mutually affect each other.

Note: On 64-bit Windows systems, the 32-bit registry editor has to be used.

9.5 Enable and Configure User Management

When **User Mode** is enabled, a logon is required to open Chromeleon. Additionally, you can configure which resources (such as data and instruments) certain users are allowed to work with (**Access Groups**), and what they are allowed to do (**Roles**).

Two basic steps are necessary to start working with **User Mode**:

1. Enable **User Mode**:

In the left pane of the Administration Console (Section 9.1.3), select **Global Policies** (Figure 20). On the **Security** tab, select the **User mode enabled** option. Click **Save Changes**.

In the confirmation dialog, enter the credentials of a Chromeleon user that has the privilege to **Manage Global Policies** (Figure 20). For the default credentials, see the subsequent note.

2. Configure **User Mode**:

In the left pane of the Administration Console, expand the **User Database** tree and use the sub-categories to configure user management (Figure 21).

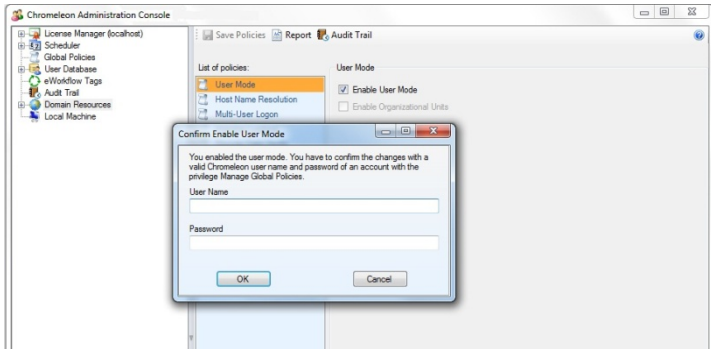


Figure 20: Enable User Mode

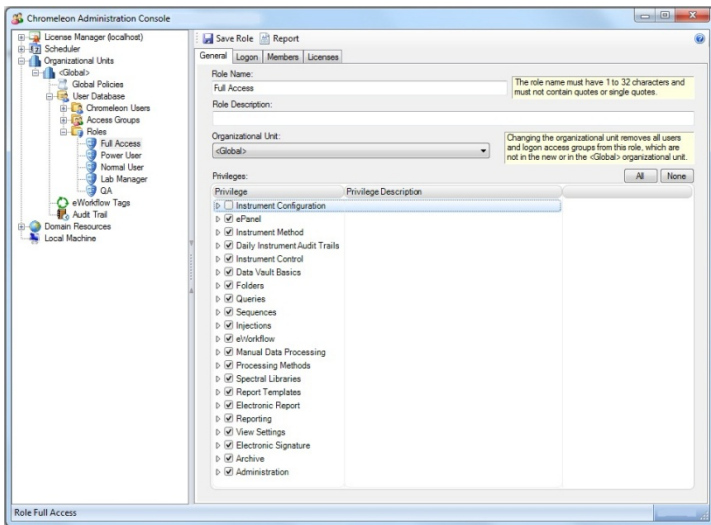


Figure 21: Window for configuring roles

Note: The default **User Name** and **Password** are **cmadmin** and **admin**, respectively. Do not delete the **cmadmin** user and keep the **Full Access** role assigned to it. Change the password, write it down and store it at a safe location. You can then use this account for emergency situations, for example, when ordinary administrators forget their passwords or lock themselves out from certain areas.

Tip: To learn more about how to create user accounts, define access groups and roles, refer to the Chromeleon 7 Help, topic *Administrating Chromeleon > User Management*.

Tip: There is an example user database on the installation medium: **\Contributed Content\User Management Templates\User Management**.

The user database is an encrypted XML file (**UserDb.EXML**). It is stored in the following location (location and file name cannot be changed):

C:\ProgramData\Dionex\Chromeleon\UserManagement

10 Remove Chromeleon 7 from a PC

Note: You must log on with local administrator privileges to Windows to perform some of the steps in this chapter.

Note: The paths mentioned in this chapter contain folders that are hidden by default. If you do not see them, follow instructions in the *Windows Help* on how to display hidden files and folders.

10.1 Uninstall Chromeleon 7

You can remove the Chromeleon program files from your computer by following the instructions below.

Tip: These steps only remove the software components. All your data and settings will be preserved. This has the advantage that you can safely uninstall the software without affecting your data.

1. Insert the Chromeleon installation medium into the PC. Click **Run Setup.exe**. This starts the Chromeleon setup in **Maintenance mode**.

-OR-

1. Alternatively, click **Control Panel > Programs and Features**. Double-click the current Thermo Chromeleon program. This starts the Chromeleon setup in **Maintenance mode**.

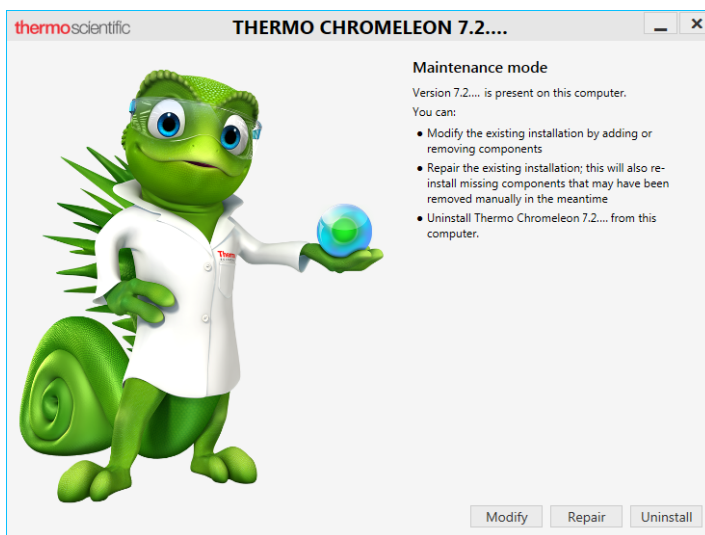


Figure 22: Maintenance mode

2. Click **Uninstall**.
3. Follow the onscreen instructions to remove the program from the computer.

Note: Uninstalling Chromeleon will **not** remove the Thermo Scientific MS software components.

10.2 Uninstall Thermo Scientific MS Software Components

Uninstalling Chromeleon does **not** remove the following Thermo Scientific software packages for mass spectrometry:

- Thermo Foundation

- Thermo Scientific mass spectrometry drivers:
 - ISQ Series
 - ISQ EC (for HPLC and IC)
 - Exactive Series
 - TSQ Series
 - TSQ Quantiva
 - TSQ Endura
 - MSQ Plus

This is to ensure that these software packages continue to work with other Thermo Scientific MS software packages.

If a software package is no longer useful to you, you can remove it manually as follows:

1. In the **Windows Control Panel**, click **Programs and Features**.
2. Find the program you want to uninstall, right-click and select **Uninstall/Change**.
3. Follow the on-screen instructions to remove the program.
4. If the wizard requests it, reboot your computer.

10.3 Uninstall Third-Party Software

Chromeleon relies on several third-party software components (Section 2.5), which are installed during the setup process. To avoid problems with software installed after Chromeleon, most of them are not removed automatically when uninstalling Chromeleon 7. You can remove several of these software components manually following steps similar to removing Chromeleon 7 (Section 10.1).

Caution: The software components listed below may be used by various applications on your computer, not only Chromeleon 7. Removing them may corrupt those applications.

The following components will not be removed by the Chromeleon 7 uninstall process:

- Microsoft SQL Server Express

The uninstall process will attempt to remove the following components:

- Microsoft Visual C++ Redistributables

10.4 Remove Chromeleon 7 Data

Caution: The following steps will delete all locally stored Chromeleon data (including chromatograms, custom ePanels, instrument configuration, user database, etc.) from the PC.

If you want to save the data, follow the steps in the section *Administrating Chromeleon > Backing Up Data > Backup Procedure and Data File Location* of the *Chromeleon 7 Help* before you continue.

Reboot the computer (or stop the SQL Server (**SQLSERVER**) service), then delete the following folder:

C:\ProgramData\Dionex\Chromeleon

Note: If you created local data vaults in locations other than the default path, you will have to delete these separately.

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