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A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.
In This Book

This manual describes the two versions of Lab Advisor 2.17: Lab Advisor Basic and Lab Advisor Advanced.

1 Lab Advisor 2.17 Overview
   This chapter describes the two versions of Lab Advisor 2.17: Lab Advisor Basic and Lab Advisor Advanced.

2 Installation
   This chapter contains instructions for installing Lab Advisor 2.17.

3 Using Lab Advisor
   This chapter describes the Lab Advisor user interface and provides details about the available features.

4 Lab Advisor Data Sharing
   This chapter describes the setup and use of the Lab Advisor Data Sharing App.
This chapter describes the two versions of Lab Advisor 2.17: Lab Advisor Basic and Lab Advisor Advanced.

With its advanced diagnostic and maintenance capabilities, Agilent Lab Advisor helps you to keep your Agilent analytical instruments in top condition and thereby achieve high quality chromatographic results. Agilent Lab Advisor is an application-independent tool: it can support Agilent analytical instrumentation regardless of whether you are using Agilent or non-Agilent software to control the instruments. With add-ons, additional functionality can be added, for example, diagnostics for Agilent mass spectrometers. The Agilent Lab Advisor is available in two flavors: Lab Advisor Basic and Lab Advisor Advanced.
Lab Advisor Basic

Lab Advisor Basic provides state-of-the-art tests, tools and calibrations to support you in the daily operation, maintenance and basic troubleshooting tasks. The Basic version comes with a full set of diagnostic capabilities and full access to the Early Maintenance Feedback counters, allowing you to perform troubleshooting and calibrations efficiently and with little effort.
Lab Advisor Advanced

Lab Advisor Advanced has been designed to support users who need the highest quality data and the utmost reliability from the Agilent LC and CE instrumentation. This is provided by additional functionality that includes tools and features that allow you to carry out sophisticated diagnostic, usage-based maintenance, and generate traceable results, including features such as user log-on with password, traceable result files, advanced EMF functionality and data sharing facilities.
2 Installation

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Installing Add-ons 19

This chapter contains instructions for installing Lab Advisor 2.17.
Prerequisites

Agilent Lab Advisor can run on any Microsoft Windows 7, Windows 8 or Windows 10 PC or Windows Server 2012 R2, 2016 or 2019 with the appropriate Microsoft .NET Framework installed (see Table 1 on page 9). The software has been extensively tested with the following software packages:

Table 1  Supported Software List

<table>
<thead>
<tr>
<th>Element</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>10</td>
</tr>
<tr>
<td>Windows Server</td>
<td>2016</td>
</tr>
<tr>
<td></td>
<td>2019</td>
</tr>
<tr>
<td>.Net Framework</td>
<td>4.7.2 or later</td>
</tr>
<tr>
<td>Symantec Antivirus</td>
<td>12.0</td>
</tr>
</tbody>
</table>

For optimum performance of your Agilent Lab Advisor software, the following minimum requirements should be fulfilled. The minimum supported configuration is based on the installation on a Netbook, but for larger installations, or for higher performance, the recommended configuration should be used.

Table 2  PC Hardware Configurations

<table>
<thead>
<tr>
<th>Minimum (Netbook) Configuration</th>
<th>Recommended Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Intel Atom processor</td>
<td>Pentium D or higher, Intel Dual-Core 3.4 GHz or higher</td>
</tr>
<tr>
<td>RAM 2.0 GB or more</td>
<td>≥ 2 GB</td>
</tr>
<tr>
<td>Hard disc free space 1 GB</td>
<td>2 GB or more</td>
</tr>
<tr>
<td>Video 1024 × 600 resolution</td>
<td>1280 × 1024 resolution</td>
</tr>
<tr>
<td>Removable media (external) CD-Rom drive</td>
<td>DVD drive</td>
</tr>
<tr>
<td>Mouse MS Windows compatible pointing device</td>
<td>MS Windows compatible pointing device</td>
</tr>
<tr>
<td>LAN 10/100baseT</td>
<td>10/100baseT</td>
</tr>
</tbody>
</table>
## Installation

### Prerequisites

**Operating Systems**
- Windows 10
- Windows Server 2016 for server installations

**Printer**
- All printers supported by the operating system in use

### Table 2  PC Hardware Configurations

<table>
<thead>
<tr>
<th></th>
<th>Minimum (Netbook) Configuration</th>
<th>Recommended Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Systems</td>
<td>Windows 10</td>
<td>Windows 10 Windows Server 2016 for server installations</td>
</tr>
<tr>
<td>Printer</td>
<td>all printers supported by the operating system in use</td>
<td>all printers supported by the operating system in use</td>
</tr>
</tbody>
</table>
Deployment Modes

Lab Advisor can be deployed in different modes:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Installation</th>
<th>Start</th>
<th>Data location</th>
</tr>
</thead>
</table>
| Standard | Installed on the local hard drive using `setup.exe`, see "Hard drive installation" on page 12. | Run from desktop icon or Windows Start menu. | C:\ProgramData\Agilent Lab Advisor\AgilentLabAdvisorData\... | 1  
| Server  | Installed on Windows Server 2012/2016/2019 using `setup.exe` and published as a shareable application, see the Agilent Advisor IT Administrator's Guide. | Run using RDP link at clients' desktops. | C:\ProgramData\Agilent Lab Advisor\AgilentLabAdvisorData-[TerminalHostName]\... | 1  
| Instant | No installation required. Run `AgiInstrDiag.exe` from the installation CD, see "Running Lab Advisor from the CD-ROM" on page 18 |                              | Standard: C:\ProgramData\Agilent Lab Advisor\AgilentLabAdvisorData\... | 1  

1 The ProgramData folder is hidden by default
Hard drive installation

1 Double-click the Setup icon to start the installation.

The Lab advisor setup Wizard opens.

NOTE The Lab Advisor Setup Wizard selects the Lab Advisor language automatically depending on the language setting of your operating system. Available languages are English, Chinese and Japanese. English is used if no matching language is available.

2 Click Next to start the installation.
   The License Agreement is displayed.
3 Select to accept the terms of the license and click **Next**. The destination folder screen opens.

4 If you want to change the default installation location, click **Change** to select a new location; otherwise, click **Next**. The last page of the installation wizard is displayed.
5 Click **Install** to begin the installation process. Windows opens a User Account Control window asking for permission to install software.

6 Click **Yes** to continue the installation. An installation status bar indicates the progress of the installation.

**NOTE**

Existing data from Lab Advisor B.02.0x is migrated to Lab Advisor 2.17.
Installation

Hard drive installation

The successful end of the installation process is indicated by the following screen:

7 Click Finish to leave the Setup Wizard.

Installation Qualification

1 Launch the Agilent Installation Qualification Tool. Go to Windows Start Menu > All Programs > Agilent Lab Advisor > Installation Qualification
2 To start the Installation qualification, click **Qualify**.

The Installation Qualification Report opens in a browser window and can be printed. To access the report at a later time, go to \Program Files\Agilent Technologies\Lab Advisor\IQTool\IQProducts\Agilent Lab Advisor LC & CE\Reports.

![Installation Qualification Report](image)

Figure 1  Installation Qualification Report
Add a License Key

Additional Lab Advisor functionality can be unlocked by entering the respective license keys.

License keys are automatically shared with any Lab Advisor installations using Data Sharing ("Data Sharing" on page 67).

1. Start the Lab Advisor software and navigate to Configuration > Licenses.

2. Type your license key into the License Key field and validate it by clicking Add. Repeat the process for multiple license keys.
When you run Lab Advisor from the CD-ROM, no program files are copied to the local hard drive. However, any data that you generate will be saved in a folder `C:\ProgramData\Agilent Lab Advisor\AgilentLabAdvisorData\` on the local hard drive.

1. Insert the Lab Advisor installation CD-ROM into the drive.
2. Double-click the **Instant Diagnostic** item in the root directory of the CD-ROM.
Installing Add-ons

Add-ons are installed from the **Configuration** screen, using a Lab Advisor Extension file with the extension .LAX.

**NOTE**

You need Administrator rights in order to install Add-ons.

1. In the Global Tasks section of the Navigation Panel, click **Configuration**. The **Configuration** screen is displayed.
2. Click **Add-ons** to navigate to the **Configuration - Add-ons** screen.

![Add-ons in Configuration](image)
3 Click **Install from .lax file**.
   A file selection dialog box is displayed to allow you to select the App or Add-on to install.

4 Navigate to the folder containing the Add-on files, select the .lax file and click **Open** to install the Add-on.

5 Click **Yes** when the request to shut down Lab Advisor appears.
   Lab Advisor shuts down and the Add-on installation is started.

When the installation is finished, the newly installed Add-on is included in the table in the **Configuration - Add-ons** screen.
3 Using Lab Advisor

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This chapter describes the Lab Advisor user interface and provides details about the available features.
Navigation

The Lab Advisor User Interface is divided into six main areas. The content of these areas changes depending on the screen selected in the Agilent Lab Advisor software.

Title Bar

The Title Bar shows which of the configured systems in the System Overview is currently selected. It also hosts the buttons for maximizing, minimizing and closing the Agilent Lab Advisor application.
The primary navigation between the different screens of the Lab Advisor software is done in the Navigation Panel. The Navigation Panel consists of four areas:

- The Global Tasks lists system-independent screens that access information or configurations regardless of the configured systems and their current state.

- The System Tasks are System-specific and change with the selected system. The name of the selected system is displayed in the header of the System Tasks and in the Title Bar.

- The Instrument Tasks are Instrument-specific and change with the selected instrument. The name of the instrument is displayed in the header of the Instrument Tasks.

- At the bottom of the Navigation Panel, the Help topics provide information about the software and about the individual screens. Context-sensitive help topics can also be accessed at any time by clicking **F1**.
3 Using Lab Advisor

Navigation

The Navigation Panel can be minimized by clicking the minimize icon in the top Task bar.

Information Panel

The Information Panel contains information about the currently selected screen and the Agilent Lab Advisor software version. If the Traceability feature is in use, the Information Panel also includes information about the current logged-in user.

Application Panel

This is the primary area where the different screens selected in the Navigation Panel of the Agilent Lab Advisor software are displayed. Refer to the individual applications for more detailed information.

Group Controls

If system grouping has been activated in software configuration, these controls allow you to switch between system groups, and to add a new system group or delete an existing group.

Action Panel

Additional buttons or actions that are applicable to the selected screen may be displayed in the Action Panel. Such controls are applicable to the entire selected screen; buttons or actions that are applicable to individual items within the screen are displayed in the screen itself.

Status Bar

The left side of the Status Bar contains information about the connection used; details about the Agilent Lab Advisor revision, license level and license usage are shown on the right side.
System Overview

The System Overview screen gives a fast overview of the state of all configured and connected systems. The System Overview is also the main selection screen for the System Tasks.

Figure 5  System Overview

System hierarchy

Lab Advisor recognizes three levels of hierarchy:
3 Using Lab Advisor
System Overview

System
The System is the highest level. A system consists of one or more Instruments, each with its own communication address, for example, an LC system with ELSD detector or an LC/MS system. The System icon is always the same.

Instrument
An Instrument is characterized by having an individual connection address to Lab Advisor. Instruments may comprise multiple Devices (for example, a modular LC system), but the Devices all communicate with Lab Advisor through a single connection address. Each Instrument has its own icon.

Device
The Devices (sometimes referred to elsewhere as Modules) are the constituent parts of an Instrument, for example the pump, sampler, and detector in a modular LC system. Each Device type has its own icon.

Adding a new system
1. In the Action Panel of the System Overview, click Add System.
The Add System dialog box is displayed.

2. Enter a name in the Instrument Name field.

NOTE
If your system comprises just one instrument, the Instrument Name is copied to the System Name field.

3. Enter the connection details in the Instrument Address field.

NOTE
The Instrument Address can be an IP address, the host name or, if you are connecting using a serial cable, the COM port.

4. Click the Instrument Type down-arrow and select the type of instrument you are adding from the list. The default setting is Agilent LC/CE. Additional instrument types become available when the respective add-ons are installed.
5 If your system comprises more than one instrument, click Add Instrument and complete the details as above.

As soon as you add a second instrument, the System Name field is activated to allow you to edit the system name.

6 Click OK to finish adding the system and close the Add System dialog box. The system becomes visible in the System Overview, and Lab Advisor tries to connect to it.

NOTE
By default, the Instrument Type drop-down list contains only the entry Agilent LC/CE. Additional instrument types can be added by installing the respective add-ons (see “Installing Add-ons” on page 19).
Changing system properties

You can change the name or connection address of an existing system, add additional information or activate the automatic Reconnect feature for the system.

1. Click on the system in the System Overview screen to select it.
2. Click System Properties in the Action Panel.
   OR
   Right-click on the system and select Properties from the context menu. The System Properties dialog box is displayed.
3 Using Lab Advisor

System Overview

Note that the **System Group** field is present only when the **Activate Grouping** check box in the **Configuration - Software** screen is marked.

3 Add or modify any of the parameters in the **System Properties** dialog box.

![System Properties dialog box]

When you mark the Reconnect check box, Agilent Lab Advisor automatically tries to connect to the system whenever the application is launched. This feature can be activated for all systems configured in the **System Overview** simultaneously.

**NOTE**

4 Click **Apply** to register the changes and close the **System Properties** dialog box.

**Removing a system**

1 Click on the system in the **System Overview** screen to select it.

2 Click **Remove System** in the Action Panel.

The system is removed from the **System Overview**.

**NOTE**

The data collected for the system will still be available in the **Logs and Results** application, but will be listed as unassigned systems.

Systems that have been removed from the **System Overview** are still counted toward the module limit of the installed license. To permanently delete a module, see “Permanently deleting a hardware module” on page 37.
Adding a new system group

The system group controls are available only when the **Activate Grouping** check box in the **Configuration - Software** screen is marked.

1. Click at the right of the group controls.
   A new system group tab is added with a default name.

2. Right-click on the new tab, select **Rename** from the context menu and overwrite the default name with a new name.
   OR
   Double-click on the new tab and overwrite the default name with a new name.

3. Click **Add System** to display the **Add System** dialog box, which allows you to add a system into the new system group.

Deleting a system group

You cannot delete a system group that contains systems. Before deleting a group, move the systems into another group (see "Moving systems between groups" on page 32).

1. Right-click on the tab of the system group that you want to delete.

2. Select **Delete** from the context menu.
   If the system group is empty, it is deleted; if the group contains systems, a message is displayed.

Moving systems between groups

1. In the System Overview, select the system that you want to move and click **System Properties**.
   OR
   In the System Overview, right-click the system that you want to move and select **Properties** from the context menu.
   The **System Properties** dialog box is displayed.
2 Click the **System Group** down-arrow and select the target group that you want to move the system to.

3 Click **Apply**.
   The system is moved from the existing group to the new group and the **System Properties** dialog box is closed.

### Copying Device Details to the Clipboard

Sometimes, it can be helpful to have the details presented in the **System Information** section of a device available for copying and pasting into other applications.

1 Click on the system in the **System Overview** screen to select it.
2 If the system modules are not listed, click ▶️ to display them.
3 Right-click on the module whose details you want to copy and select **Copy details to Clipboard** from the context menu.
   The device information is copied to the clipboard, and can be pasted into another application such as Notepad, Wordpad or a Microsoft Office application.

### Fast Connect

If you are using mobile laptop computers for servicing systems, a fast connection can be established using a serial cable (RS232) or a USB cable.

All modules with a USB mini-B port can be connected using a USB cable (part number 5188-8050).

For computers without an RS232 port, an RS232-to-USB adapter cable is available (part number 8121-1013).

1 Connect the serial cable between the system and the PC (using the RS232-to-USB adapter, p/n 8121-1013, if necessary). The serial cable should be connected to the module that is providing the most data, usually the detector.
2 Click **Fast Connect** on the Action Panel.
   Lab Advisor searches all available COM and USB ports for installed systems and adds them automatically to the **System Overview** screen.
NOTE

This feature is especially helpful for connecting systems with no LAN access, because it provides easy access to data such as LAN card configuration, MAC address and IP address without having to reconfigure the Laptop internal IP address or set up a BootP server.
Configuration

Application-wide settings, information and tools are accessible from the Configuration screen.

**Configuring the General Parameters**

The **General** configuration specifies the **Path** to the data generated by the Lab Advisor software. This is a non-configurable path, and is dependent on the operating system used and the type of installation (USB stick or hard drive).

**Backup**

Backup of Lab Advisor data is provided by export and import functions, where the exported .ZIP file is stored in a safe location. Only the following information can be exported by the function:

- instrument configuration
- instrument modules
- test results

Other information (including audit trail, user settings and passwords) cannot be exported using the function.

This feature can also be used to distribute configured systems and their corresponding data, by exporting data from one Lab Advisor installation and importing it into other installations.

**Tracing**

If unexpected behavior is observed from the Lab Advisor software, you can click **Export Trace** to start a wizard that allows you to select important and relevant information to help the Agilent Technologies technicians locate the problem. The trace file is implemented as a compressed (zip) file that contains all the selected information; you can specify the name and location of the trace file.

**Language**

The Lab Advisor software supports English, Chinese and Japanese languages. The language is usually selected during installation of the software. However,
there is a possibility to change the language later by selecting the appropriate language in the **Software** configuration screen. After the language has been changed, the software needs to be restarted for the new settings to take effect.

### System Groups

Lab Advisor supports the grouping of systems, for example, by laboratory. Up to 25 systems can be assembled into a group; each system can contain up to 50 devices. An unlimited number of groups can be defined.

The grouping of systems is switched on by marking the **Activate Grouping** check box. When the check box is marked, the group controls (see “Group Controls” on page 25) are appended to the application panel in the System Overview and the Review Client.

### Licenses

The licensing scheme of Lab Advisor B.02.xx has changed compared to previous versions. The unique combinations of *Type* and *Serial number* for each configured device are counted and tracked in the license module of the software. For each configured device, a license is deducted from the total number of eligible devices; the license status can be tracked in the Status Bar.

Lab Advisor licenses acquired for previous versions of Lab Advisor and Lab Monitor and Diagnostic software are still eligible for Lab Advisor B.02.xx and are transformed according to Table 4 on page 36.

#### Table 4   Lab Advisor Licenses

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Description</th>
<th>HW Modules</th>
<th>Replaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8550A</td>
<td>Agilent Lab Advisor Advanced</td>
<td>20</td>
<td>G4800AA, G4809AA</td>
</tr>
<tr>
<td>M8551A</td>
<td>5 add-on HW modules*</td>
<td>5</td>
<td>G4801AA</td>
</tr>
<tr>
<td>M8552A</td>
<td>25 add-on HW modules*</td>
<td>25</td>
<td>G4802AA</td>
</tr>
<tr>
<td>M8553A</td>
<td>50 add-on HW modules*</td>
<td>50</td>
<td>G4803AA</td>
</tr>
<tr>
<td>M8554A</td>
<td>100 add-on HW modules*</td>
<td>100</td>
<td>New</td>
</tr>
</tbody>
</table>
Any combination of the advanced license (M8550A) and its add-on license packs is possible, and it is also possible to install a Product Number multiple times. Each unique license number adds to the number of modules supported.

The situation is quite different with the 1-year Advanced License M8556A. Here, you have only one Unlimited license per user. It is not recommended to mix the 1-year Advanced License M8556A with other license types, especially when using Data Sharing.

Permanently deleting a hardware module

If a hardware module is retired or removed from a system, it can be permanently deleted from the license count in the Agilent Lab Advisor installation by clicking **Permanently delete HW module** in the **Licenses** tab in the **Configuration** screen. **Permanently delete HW module** is active only if all systems are disconnected in the **System Overview** screen. The **Remove HW Module** window that opens lists all modules contributing to the license limit; selecting the appropriate module and pressing **OK** permanently deletes the selected device.
Add-ons

The Configuration - Add-ons screen allows you to manage the Lab Advisor software and related additional products. For information on installing Add-ons, see "Installing Add-ons" on page 19.

The currently installed Add-ons are listed in a table. The table provides information on the version, type and current status of the Add-on. You can get more information on an Add-on by selecting it in the table; the panel below the table gives an additional description of the selected Add-on.

The controls above the table allow you to select how and when to update the installed Add-ons. You can select to automatically check for updates at regular intervals, or spontaneously check for updates by clicking Check online for updates.

The controls below the table allow you to manage the Add-ons individually. You can uninstall, update or disable/enable a selected Add-on. If you change the enabled/disabled status of an Add-on, you must restart Lab Advisor to activate the change. The Add-on's status is shown in the table. Some Add-ons are

**NOTE**

When a device is permanently deleted, all data belonging to the device is also permanently deleted.
essential to the operation of Lab Advisor; in these cases, Uninstall and Disable are disabled. Update is enabled only when an update is available for the selected Add-on.

**Market**

The Market is a mechanism that provides access to the Agilent Technologies web site to allow you to download additional products related to Lab Advisor.

The products available for download are separated into channels, which you can select from the drop-down list at the top right of the Market screen. For example, the Software channel gives you access to additional Apps and Add-ons that can extend the usability of your Lab Advisor installation; the Documents channel allows you to download the current revisions of Lab Advisor documentation.

**Authentication**

The Advanced version of Lab Advisor provides two independent authentication providers:

- the Legacy Lab Advisor Authentication Provider is the equivalent of the Traceability authentication function of Lab advisor revisions prior to B.02.11.

- the NT Authentication Provider uses the authentication components of the Windows operating system.

When you enable authentication, you can select one or both providers to ensure that only authorized users have access to Lab Advisor functions and data.

**NOTE** Before you enable Authentication, you must have set up and enabled at least one authentication provider with at least one user with the Administrator role, See the Lab Advisor online help for details.

---

**Legacy Lab Advisor Authentication Provider**

Users of the Legacy Lab Advisor Authentication Provider are set up during configuration using the Add User dialog box and are assigned one or more “Lab Advisor Roles” on page 40. During configuration, the administrator can specify that the user is required to log in with a password; this is equivalent to Full Traceability in Lab Advisor B.02.10 and earlier.
During configuration, the administrator decides whether to specify a password for each user or to allow users to specify their own passwords when they first log in to Lab Advisor.

All configured users and their details are shown in a table in the Configuration screen. The Active status of each user is denoted by a check box. This status is changed in the Add User dialog box.

**NT Authentication Provider**

Users of the NT Authentication Provider are those that are already configured as Windows users. During configuration, the administrator associates the Roles that are set up in Lab Advisor (see “Lab Advisor Roles” on page 40 with the Groups that are set up in the Windows networking environment. The administrator also decides whether or not users are allowed to edit their Lab Advisor profiles.

**Lab Advisor Roles**

A Lab Advisor role is characterized by a specified set of permissions. Lab Advisor roles are of two types:

- **Built-in** roles are provided by Agilent; the permissions can be viewed, but they cannot be edited or deleted. They include the Administrator role and the Standard User role.
- **User-defined** roles are set up by the administrator. User-defines roles have permissions that are specified by the administrator during configuration. They can be viewed and edited by users with Administrator permissions.

The Administrator role must be assigned to at least one user in order to enable Authentication.

The Roles table in the Authentication screen shows the name of each role and its type.

**Data Sharing**

The Data Sharing feature of the Advanced version of Lab Advisor allows multiple Lab Advisor installations to upload and synchronize the collected instrument information and data to an upload folder.

For full details of Data Sharing, see “Data Sharing” on page 67.
Apps are small applications designed to help you perform specific non-system-related tasks.

Audit Log

The Audit Log feature of the Advanced version of Lab Advisor lists all actions that generate an entry in the Audit Log in a four-column table. The table contains the following information:

- The date and time of generation of the audit log entry.
- The name of the host computer from which the entry was generated.
- The display name of the user that was logged on when the entry was generated.
- The message that was entered into the log.

New entries are added at the top of the list, but you can reverse the order of the entries by clicking in the header line of the table.

The controls Host, Display Name and Facility allow you to filter the entries that are displayed. Click Refresh to update the list of entries.

Data Sharing

The Data Sharing feature of the Advanced version of Lab Advisor allows multiple Lab Advisor installations to upload and synchronize the collected instrument information and data to an upload folder.

For full details of Data Sharing, see “Data Sharing” on page 67.
Lab Inventory Spreadsheet

The **Lab Inventory Spreadsheet** add-on is available with Lab Advisor Advanced, and can be retrieved through the Market. It tabulates all devices with connections (previous or current) to Lab Advisor.

The default table contains 14 columns:

- **Initial Order**: An identifier in the format `<System>-<Instrument>-<Device>.
- **System Name**: The system name as specified in the **System Properties**.
- **System Status Since**: The date of the last modification to the system properties.
- **Instrument Name**: The instrument name as specified in the **System Properties**.
- **Instrument Address**: The connection details (for example, IP address) of the instrument.
- **Instrument Type**: The instrument type as identified in the system properties.
- **Instrument Description**: The **Description** string as specified in the system properties.
- **Instrument Status Since**: The date of the last modification to the instrument properties.
- **Duplicate Device Data**: Indicated if the device has duplicate data, for example, if it has been moved from one instrument to another.
- **Device Class**: The class of the device, as provided by the firmware.
- **Device Name**: The name of the device, as provided by the firmware.
- **Device Type**: The type number of the device, as provided by the firmware.
- **Serial Number**: The serial number of the device, as provided by the firmware.
- **Firmware Revision**: The firmware revision of the device.

The controls above the table allow you to customize the table and export it in Microsoft Excel format:
not System assigned Devices Mark this check box to show only orphaned devices, which have been deleted from Lab Advisor, but for which data still exists.

show Device Details Adds a new column at the end of the table:

Device Details
Shows the device details in separate rows, so that each device has multiple rows in the table.

show Logs and Results Adds three new columns at the end of the table showing the entries in Logs & Results. Each entry is given a separate line in the table:

Device Data Type
The type of data added to the Logs & Results screen.

Data Time Stamp
The time of the entry in the Logs & Results screen.

Device Data
The content of the Message in the Logs & Results screen.
... as one Cell

Collects the additional data into single line in the table, in up to two new columns:

**Device Details**

Shows the information provided by `show Device Details` (if activated) in a single cell for each device.

**Device Logs and Results**

Shows the information provided by `show Logs and Results` (if activated) in a single cell for each device.

---

**Laboratory Inventory**

<table>
<thead>
<tr>
<th>Order</th>
<th>System Group Name</th>
<th>System Name</th>
<th>Instrument Name</th>
<th>Instrument Description</th>
<th>Instrument Serial</th>
<th>Device Class</th>
<th>Device Type</th>
<th>Serial Number</th>
<th>Firmware Revision</th>
<th>Device Details</th>
<th>Device Logs and Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-1-1</td>
<td>GIC Lab</td>
<td>LC-G-A</td>
<td>Pump</td>
<td>G4201B</td>
<td>606.3</td>
<td>MicroPumps</td>
<td>G4201B</td>
<td>606.3</td>
<td>MicroPumps</td>
<td>G4201B</td>
<td>G4201B</td>
</tr>
<tr>
<td>10-1-2</td>
<td>GIC Lab</td>
<td>LC-G-A</td>
<td>Sampler</td>
<td>G4202B</td>
<td>606.3</td>
<td>ALS</td>
<td>G4202B</td>
<td>606.3</td>
<td>ALS</td>
<td>G4202B</td>
<td>G4202B</td>
</tr>
<tr>
<td>10-1-3</td>
<td>GIC Lab</td>
<td>LC-G-A</td>
<td>Orien</td>
<td>G4203A</td>
<td>606.3</td>
<td>Orien</td>
<td>G4203A</td>
<td>606.3</td>
<td>Orien</td>
<td>G4203A</td>
<td>G4203A</td>
</tr>
<tr>
<td>10-1-4</td>
<td>GIC Lab</td>
<td>LC-G-A</td>
<td>Detector</td>
<td>G4204B</td>
<td>606.3</td>
<td>MicroPumps</td>
<td>G4204B</td>
<td>606.3</td>
<td>MicroPumps</td>
<td>G4204B</td>
<td>G4204B</td>
</tr>
</tbody>
</table>

Export to MS Excel File

Exports the table in its current form to the Desktop of the local host computer in Microsoft Excel format.

Back

Returns to the Lab Advisor Apps screen.
Diagnostic Catalog

The Diagnostic Catalog is a catalog of all tests, calibrations, tools, instrument controls and EMF counters for each module at each Lab Advisor product level. The list is filtered by Device Class (that is, instrument or module type), Device Type and Product Level. The diagnostic catalog for the selected module at the selected product level is displayed in the Results table three columns:

- **Tests, Calibrations** and **Tools** available in Lab Advisor at the selected product level
- **Controls** provided in the Instrument Control screen of Lab Advisor at the selected product level
- **EMF Counters** shown the EMFs screen of Lab Advisor at the selected product level
For the tests, calibrations and tools, a short description is provided in the Details panel below the Results table. You can retrieve more information on the test, calibration or tool by double-clicking its name, which displays the online help. You can print the diagnostic catalog for the current selection by clicking Print.

**Telnet Console**

The Telnet Console app provides a Telnet connection that allows you to administer the LAN settings of an instrument. Full details of LAN configuration with Telnet are given in each module’s Service Manual.

**TCP Relay Service**

The TCP Relay Service replaces the Lab Advisor Relay service in Lab Advisor B.02.09 and later. The TCP Relay Service has a new, simplified Dashboard, and is compatible with both Lab Advisor and Agilent Remote Advisor. For full details of the TCP Relay Service, see the Agilent TCP Relay Service Administrator’s Guide, available on the installation CD-ROM in the \Support\RelayService folder.

**LC Network Setting Tool**

The LC Network Setting Tool allows you to administer the network configuration of LC modules and G1369 LAN cards.

Agilent LC Modules with LAN capability and G1369X LAN Cards can either use a default IP address (192.168.254.11), a stored IP address (user configured) or
DHCP/Bootp. To determine the correct capability refer to the Module's User manual.

- The mode is dependent on the configuration of the DIP switches at the back of the LC module (or on the G1369X LAN Card)
- The module firmware contains an active (that is, in use) configuration and a stored configuration (which may not be in use).
  - *stored* is a configuration that has been specified using Telnet, Instant Pilot or Lab Advisor and is used when the DIP switches are configured accordingly
  - *active* is the active configuration gathered by DHCP, BootP or taken from the stored section when DIPs are configured for stored IP.

The **LC Network Setting Tool** guides you through the process, and informs you:

- if you need to change DIP switches
  - only if required and if the app is able to read the actual setting from FW, otherwise it refers to the user manual
  - if you are configuring a G1369X LAN card, it will tell you to modify the DIP switches on the LAN card (DIP switches on the LAN card’s host module have no effect on the LAN card configuration)

- if you have to modify your connection settings
  - when you configure your current CAP, you may have to change connection settings in Lab Advisor/CDS/... for example, when you modify the IP address
  - that you have to restart your module to make the settings active. Without a restart, the settings are stored in the module's firmware, but are not activated until the module is next restarted.

**NOTE**

To configure a G1369X LAN Card, you must be connected with the LAN card, either by a DHCP or a stored address or via the default IP address. Configuration is not possible when Lab Advisor is connected to another module in the instrument. The **LC Network Setting Tool** then shows you the currently active configuration, which may not use the stored address (for example, when DHCP is used).
Firmware Update

Lab Advisor can be used to update the device-internal software (called firmware – FW).

The Firmware Update screen lists all systems configured in the System Overview screen. The devices of these systems can be updated individually, or the entire system can be updated at one time. It is also possible to update multiple systems at one time. To start the FW update procedure, select the Firmware Update tab in the global screens section of the Navigation Panel.

If a network connection is available, you can download firmware sets from the Market. Click Select Market Location and select the firmware set to download from the list. Firmware sets can also be downloaded from https://www.agilent.com/en-us/firmwareDownload?whid=69761. Unzip the downloaded firmware archive C:\Temp\Firmware\ or another location of your choice. Use Select Folder to point Lab Advisor to this location.
Figure 7  Firmware Update in Lab Advisor
Logs and Results

The **Logs & Results** screen presents data collected from the configured devices, and helps to review the status of the systems or devices.

The **Logs & Results** data includes:
- Test results
- Error information
- FW revision and updates
- EMF changes
- Maintenance log entries

Each line in the log shows the module identifier (type and serial number), type of information, description and a time stamp. If the **Traceability** feature is in use, user-generated data is logged with user name in the **Message** field.

![Figure 8 Lab Advisor Logs & Results](image-url)
For easy overview, you can filter the data by **Instruments, Devices, Source** or **Time**. Multiple selections are supported for **Devices** and **Source**, and can be selected by keeping **Ctrl** pressed while clicking the data required in the filter.

![Figure 9 Logs & Results filter](image)

The **Logs & Results** screen offers two modes of operation. The default mode is the **Module View**, which lists the devices by system, and presents the information per device. In the alternative **Time View**, the data is presented and sorted by time stamp. This allows for a system-wide overview of the sequence of the data.

When you click **Add Log Entry**, you can add a log entry to the device, which is stored on the device main board. You can select a **Log Template** (not available for every device), or type your own text in the **Log** field. For Agilent LC and CE devices, the information written to the device is limited to 50 characters; this is typically maintenance log data.

![Add Log Entry](image)

The data filtered by the built-in filter can be exported in ZIP format to enable it to be distributed. This is typically helpful if remote engineers need to assess data from the system. Clicking **Load external data** allows you to navigate to the storage location of the ZIP file and load the exported data.

**NOTE**

You can also use **Load external data** to load LRS files.
The Service & Diagnostics screen hosts the procedures (tests, calibrations and tools) of the Lab Advisor software. To select a procedure, select the device and then select the procedure from the list.

For a better overview, you can filter the type of procedure you want to use.
Using Lab Advisor
Service and Diagnostics

Tests

Tests are procedures that result in a Passed/Failed statement, so the results of the test are compared with predefined limits. The Pump Pressure Test is an example of a test.

Calibrations

If internal calculations in the devices need to be corrected, calibration procedures normally take care of this. An example of a calibration is the Detector Wavelength Calibration. If you are operating in a controlled environment, this type of procedure might need to be verified. This could typically be done using a System Suitability Test.

Tools

Tools are procedures that have a supporting function and that do not produce a Passed/Failed statement when finished.
System Report

The Lab Advisor **System Report** screen provides a system-wide overview of the devices in the system. The information in the **System Report** includes:

- Lab Advisor software information
- Contact information
- PC information (optional)
- System configuration
- Logbook
- EMF counters
- Test Results
- Instrument actuals (optional)

The information included in the **System Report** can be used to document the system or to share diagnostic information with a remote engineer when troubleshooting the system.

The **System Report** screen displays the information in at least two tabs: a **General** tab that includes Contact Information, Company, Logs and results and PC information, and a tab for each instrument in the system. The instrument tabs allow you to select the instrument-specific information to include.
Using Lab Advisor

System Report

Contact and Company information can be helpful for easy and precise identification if the report is sent to a Remote engineer during troubleshooting.

The Logs & Result information stored by each individual device might be extensive, so to reduce the amount of data, you can filter the data based on time.

If you mark the **Include PC information** check box, a list of Agilent programs installed on the PC is generated for the report. This includes all programs starting with *Agilent*.

The instrument actuals are the setpoints currently loaded in the system at the time of generation of the report. If a method has been loaded in the CDS (and has not been changed), then Lab Advisor can report these settings. Note, however, that the receiver of the **Status Report** will be able to see method information.
Figure 13 Example System Report
Instrument Control (LC and CE)

The **Instrument Control** screen allows you to control a connected system without having to have a CDS running. This might be helpful in complex diagnostic situations, where the built-in diagnostic tests do not give a definitive answer.

**Instrument Control** in the Basic version provides only limited functionality, whereas the Advanced version provides a full set of controls and a freely configurable Signal Plot.

The Reply Panel of the **Instrument Control** screen displays any replies generated from the device, to verify that the control used was accepted; it shows only the last three replies. In order to get a complete history of replies, click **Save Session Results** in the Action Panel. The reply history is saved and can be viewed in the **Logs & Results** screen.
Actual Status Information

Each device is displayed separately in the Control Panel, and provides information about actual values. If a device has several actual values to display, the more link gives access to these values.

Controls

When the Controls section is expanded, a complete set of buttons becomes available providing extensive control of the device. This includes setpoints, controls, special commands and module information. When the buttons are clicked, a reply for the action (reply accepted or reply error) is displayed in the Reply panel. Initially, the setpoints display the value already loaded in the device; the displayed value changes on changing the setpoint. When a setpoint is changed, the change must confirmed by clicking Send.
Signal Plot

The Signal Plot is used for monitoring specific function(s) of a system in real time. Combined with the Controls, it can provide very valuable troubleshooting information for experienced users. It can also be used to monitor the progress of certain tasks, and check when they are complete, saving time.

The Signals that you want to monitor are set up by clicking Signal Configuration in the Action Panel. The Signal Config dialog box that is displayed contains all available signals for the system. To select a signal, mark its check box and click OK.

The selected signals are visible in the Signal Plot starting in “lanes” mode, which divides the available area of the window between the number of configured signals. This gives each signal a limited size in the window, but all are easy to differentiate and each scale is shown on the left side of the plot.

Other scaling parameters can be selected by right-clicking the signal window and selecting the Auto Scaling from the context menu. The available scaling options are presented in the submenu.
Using the mouse pointer, it is also possible to scroll the scales directly. Click the scale you want to change and use the scroll wheel to change the scale. You can also change the placement of the scale by pressing the scroll wheel while moving the mouse forward and back.

Alternatively, you can specify a fixed scale window. Double-click the scale to open the Scale dialog box and enter the scale range and/or the lower starting value of the scale.
EMFs (LC and CE)

Agilent Technologies LC Instrumentation has supported the Early Maintenance Feedback (EMF) feature since the introduction of the 1100 system in 1995, and continues to support this feature. EMF helps to keep the usage of devices in focus, and facilitates usage-based maintenance, which minimizes maintenance costs.

The EMF counters can be read and reset with both the Basic and the Advanced versions of the software, but the Advanced version allows limits to be activated and set in addition. Lab Advisor provides Agilent-recommended EMF limits. These limits have been determined by measurements under standard laboratory conditions, and do not take into account any application-, user- or site-specific conditions; to maximize the lifetimes of system components, they might need to be adjusted based on experience.

Figure 15  EMFs in Lab Advisor
The EMF screen can be used to view all possible counters or, for better overview, to filter only those counters that have an activated limit.
Firmware Update Report

The **Firmware Update Report** allows you to select and print a detailed report on the firmware changes of a selection of modules from the currently connected system or any previously connected system from the **System Overview**.

![Image of Lab Advisor Firmware Update Report Setup](image)

The selected system's modules are displayed in a five-column table:

- **Include**: Mark the check boxes against the modules you want to include in the report.
- **Module**: Shows detailed information about the module: module type, serial number and current firmware revision.
- **Old Firmware**: Click the down-arrow to display a list of previous firmware revisions installed in the module. Select the firmware revision to include in the report from the drop-down list.
- **New Firmware**: Shows the current firmware installed in the module.
Using Lab Advisor
Firmware Update Report

Comment
You can add a comment to be included in the Firmware Update Report in this field.

Generate Report
Generates a PDF file of the Firmware Update Report. Select where to save it in the Save As dialog box.

When the report has been generated, a button bar at the top of the Firmware Update Report screen allows you to choose what to do with it:

• open the report
• open the folder containing the report
• copy the report path to the clipboard

The button bar closes after a few seconds.
### Firmware Updates

<table>
<thead>
<tr>
<th>Module Name/Serial No.</th>
<th>Old Firmware</th>
<th>New Firmware</th>
</tr>
</thead>
<tbody>
<tr>
<td>G7116B 1290 MCT Serial # DEBA00092</td>
<td>C.07.30 [0001]</td>
<td></td>
</tr>
</tbody>
</table>

Figure 17  Example Firmware Update Report
This chapter describes the setup and use of the Lab Advisor Data Sharing App.
Data Sharing

The Agilent Lab Advisor Advanced software features Data Sharing, a function that allows Lab Advisor to upload and synchronize collected instrument information and data to an upload folder anywhere on a Windows network share. When using the Advanced license M8550A in combination with device add-on license packs, Data Sharing also synchronizes the licenses and Authentication configuration to the data share. This allows administrators to add license keys in one installation and make them available to all installed PCs connected to the data share.

With the 1-year advanced license M8556A, only data and the Authentication configuration can be synchronized, because sharing of Module Licenses is not appropriate for this license type and therefore not possible.

Mixing Unlimited licenses with the per-module licenses will lead to unforeseen problems, especially in conjunction with Data Sharing.
Figure 18  The Data Sharing User Interface
Typical Uses of Data Sharing

Centralized monitoring of instrument performance using the Review Client of Lab Advisor Advanced

In this case, all instrument controllers are equipped with Lab Advisor Advanced software. They upload their logs and results automatically to the Data Share folder. The lab manager can use the Review Client of Lab Advisor Advanced to review any diagnostic data from any of the instruments in the lab. This allows the Lab Manager to monitor system performance, schedule preventive maintenance and keep the systems in good working condition.

Company-internal support group using Lab Advisor Advanced laptops

This case requires Lab Advisor Basic only on every instrument controller PC. The company-internal support group members, however, connect their Lab Advisor Advanced-enabled laptops to the lab instruments they are servicing, run tests or calibrations, and synchronize the generated data with the data sharing folder on the network. When another support group member connects to this lab instrument using Lab Advisor Advanced, it automatically downloads all
previously acquired data and test results for this instrument from the centralized Data Share folder, and uploads any new data and results.

Figure 20 Log and results synchronization of support laptops
Data Sharing Setup

During setup of Data Sharing, all installed device licenses are copied to the data share and can be used on any Lab Advisor installation. Therefore, you can configure Data Sharing on one PC, add all required licenses to connect to the devices, then configure and enable Data Sharing on your other PCs; the licenses are automatically synchronized.

**NOTE**

With the 1-year advanced license M8556A (*per-user license*, licenses an unlimited number of hardware modules) Module License sharing is not appropriate and therefore not possible. Note that mixing *per-user* Unlimited licenses with the per module licenses will lead to unforeseen problems in conjunction with Data Sharing.

Authentication is also synchronized by Data Sharing; the Authentication that is configured on one PC is automatically propagated to your other PCs that use Data Sharing.

Data Share folder

The Data Share folder can be located on any Windows network share. It can either be mapped as a drive letter or given as a network location.

**NOTE**

The Lab Advisor Advanced user needs WRITE access to the Data Share folder.
Data Synchronization

Select the synchronization behavior from the drop-down list that best fits your requirements.

Table 5  Data Synchronization

<table>
<thead>
<tr>
<th>Setting</th>
<th>Behavior</th>
<th>Use case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Data and information are never exchanged with the Data Share folder</td>
<td>Default setting</td>
</tr>
<tr>
<td>At startup</td>
<td>Upon startup, Lab Advisor Advanced downloads logs and results updates for all configured devices from the Data Share folder</td>
<td>Central review client</td>
</tr>
<tr>
<td>At shutdown</td>
<td>Upon shutdown, Lab Advisor Advanced uploads logs and results updates for all configured devices to the Data Share folder</td>
<td>Lab PC with Lab Advisor Advanced runs tests on a regular basis (for example, lamp intensity test)</td>
</tr>
<tr>
<td>At startup and shutdown</td>
<td>Lab Advisor Advanced synchronizes its logs and results with the Data Share folder in both directions</td>
<td>Customer support group computers stay up to date no matter who ran tests on which analytical device</td>
</tr>
</tbody>
</table>

Licenses and authentication configuration are synchronized independently of these settings whenever the data share is reachable. If a Data Share is disconnected, for example, when the mapped network location with the Data Share is not available, a local copy is used until the next time the Data Share is connected.
Data Import from the Data Share Folder

Logs & Results from devices that are not configured in this instance of Lab Advisor can be imported from the Data Share folder. It is possible to either import systems (for example, an LC) or groups of systems.

If the grouping function has been activated, systems can be imported into existing groups (“Adding a new system group” on page 32).
Data Sharing Review Client

The complete set of data uploaded to the data share folder can be accessed by the built-in Review Client, which is started from the Data Sharing user interface. The Review Client additionally supports the combination of any uploaded devices from any system to allow cross-system comparison of data. This might be helpful in finding problematic systems or devices, or systems not being used efficiently.

The Review Client requires a Lab Advisor Advanced license, but is not limited by module licenses. All modules hosted on the upload share are displayed, even when the number of module licenses available on the Review Client would not normally allow it.

There are several ways to use the Review Client:

- All portable Lab Advisor installations upload their data to the same folder. Each portable Lab Advisor is then up to date, and a Review Client has the opportunity to observe the entire data pool.
• Each portable Lab Advisor has its own folder, which is used for back-up. By changing the share folder in the Review Client, it is possible to look into each separate user’s data.

• Lab Advisor installations on local PCs connected to a single Instrument can use the synchronize function to upload data to a system-specific folder. This can be used as a backup solution, and by changing the share folder the Review Client can be used to look at each system separately.

In each case, the installation starting the Review Client needs a Lab Advisor Advanced license.

If system grouping has been activated in software configuration, you can set up groups of systems; the group controls allow you to switch between the groups. The groups you set up in the Review Client are independent of those set up in the System Overview.
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In This Book

This manual describes the two versions of Lab Advisor 2.17: Lab Advisor Basic and Lab Advisor Advanced.

The manual contains the following information:

- Lab Advisor 2.17 Overview
- Installation
- Using Lab Advisor
- Lab Advisor Data Sharing