



Agilent OpenLab CDS Workstation Plus (with Secure Storage)

Installation and Configuration

Notices

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Software Revision

This guide is valid for revision 3.0 of OpenLab CDS.

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Contents

In This Book 6

1 Prepare Your PC 7

- Install and Update Windows 8
- Install the .NET 3.5 and 4.x Framework 10
- Obtain the Software 12
- Run the System Preparation Tool 14
- Printer requirements 16

2 Install an OpenLab CDS Workstation Plus 17

- Installation Workflow Overview 18
- Before You Begin the Installation of OpenLab CDS 20
- Run the OpenLab Installer 22
- Silent Installation 26
- Install or Upgrade Driver Software 30

3 Post Installation Tasks 33

- Run a Software Verification after Software Installation 34
- Configure the Antivirus Program 35
- Prepare Centralized Printing 38
- Prepare Exports to Network Shares During Unattended Processing 40

4 Optional Procedures 44

- Improve Performance on Offline Machines 45
- Set up NIST Library Search 46
- Change the SecureFileSystem path 47

5 Licensing 48

- License types 49
- Electronic Licensing Activation 50
- SubscribeNet Licensing 56

6	Configure OpenLab CDS Workstation Plus	62
	OpenLab Control Panel	63
	Configure Authentication	64
	Configure security policy	65
	Configure users and roles	66
	Configure initial project	71
	Configure initial instrument	72
	Other settings in the Control Panel	73
7	About the OpenLab CDS Software	74
	Software architecture	75
	21 CFR Part 11 compliance	79
	Customization	81
8	System Setup and Maintenance	83
	Control Panel	84
	Shared Services Maintenance	85
	Important Information about Backup and Restore	86
	Backup Procedures	90
	Restore Procedures	101
	Routine Maintenance	107
	Troubleshooting	108
9	Upgrade to OpenLab CDS Version 3.0	110
	License Upgrade	111
	Upgrade Workstation Plus Software	112
	Post upgrade tasks	117
	New or Upgraded Items	118
10	Uninstall OpenLab CDS	120
	Uninstall OpenLab CDS	120
	Troubleshooting Tips	121

11 Appendix 122

Privileges in the Control Panel 123

Sales and Support Assistance 133

In This Book

This document provides instructions for installation, configuration, administration, and maintenance of an OpenLab CDS Workstation Plus (with Secure Storage). It includes information on the license management and operating system configuration.

Table 1: Terms and abbreviations used in this document

Term	Description
FP	Feature Pack. Contains updates to an existing software version, providing new functionality: • that will not impact existing functionality, or • includes minor changes to a selection option while maintaining backwards compatibility to existing methods and data.
Secure Storage	Component of OpenLab Server used to manage your analytical data, including a database. Always used in client/server systems, optional for Workstations.
AIC	Agilent's Analytical Instrument Controller
Control Panel	Control Panel for Agilent OpenLab software
Microsoft Control Panel	Part of the Microsoft Windows operating system
Shared Services	Set of administrative services that control, for example, the security policy and the central configuration of OpenLab CDS. Shared services are accessed via the Control Panel.



1

Prepare Your PC

Install and Update Windows 8

Install the .NET 3.5 and 4.x Framework 10

Obtain the Software 12

Set up an Agilent Online Account 12

Download the software package 13

Run the System Preparation Tool 14

Printer requirements 16

Install and Update Windows

- 1 Access the most recent edition of *OpenLab CDS Requirements and Supported Instruments (CDS_v3.0_Requirements_en.pdf, D0028027)* from the web, or open it from the **Setup\Docs** folder in the installation package. Check that your settings comply with the network requirements, and determine whether your hardware and software will support the system.
- 2 Decide on a computer name, using the following characters (to make sure that a DNS server can resolve the computer name, follow the internet standard for protocols RFC 952):
 - Letters (a-z, A-Z)
 - Digits (0-9)
 - Hyphen (-)

NOTE

Do not use an underscore. Installation is not possible if the computer name contains an underscore.

Limit the length of the computer name to a maximum of 15 characters.

The computer name will be reflected in the license. Agilent recommends to keep the computer name unchanged after installing OpenLab CDS.

NOTE

Changing the hostname after installation is not recommended. It is tedious and requires specific actions. Please contact your Agilent support representative if you need to change your hostname.

- 3 Install the Windows operating system from the Microsoft installation media or qualified PC image media provided by your IT department. During the setup, provide the computer name, administrator password, and network settings.

Choose to either join an existing domain or set up the system in a workgroup mode. Domain naming has to be consistent with RFC 1034.

- 4 Update to the recommended version of Windows.

NOTE

See the [Windows upgrade FAQ](https://www.agilent.com/) section of the OpenLab CDS page (<https://www.agilent.com/>, search for "Windows upgrade").

Prepare Your PC

Install and Update Windows

- 5 Check for Windows quality updates, and apply all critical security patches. Make sure the Windows quality updates have finished installing before proceeding to install OpenLab CDS.
- 6 In the Windows Settings under **Time & language** > **Date & time**: Choose the time zone of your regional location.

Install the .NET 3.5 and 4.x Framework

If .NET 3.5 and .NET 4.x are not installed on your system, either the System Preparation Tool or the installation wizard automatically triggers their installation. This may require a system reboot. To avoid the system reboot during installation, install .NET in advance.

NOTE

This requires an internet connection. If it does not work as expected, or the computer has no internet access, install .NET 3.5 manually. Microsoft offers several options for the installation. For details, refer to:

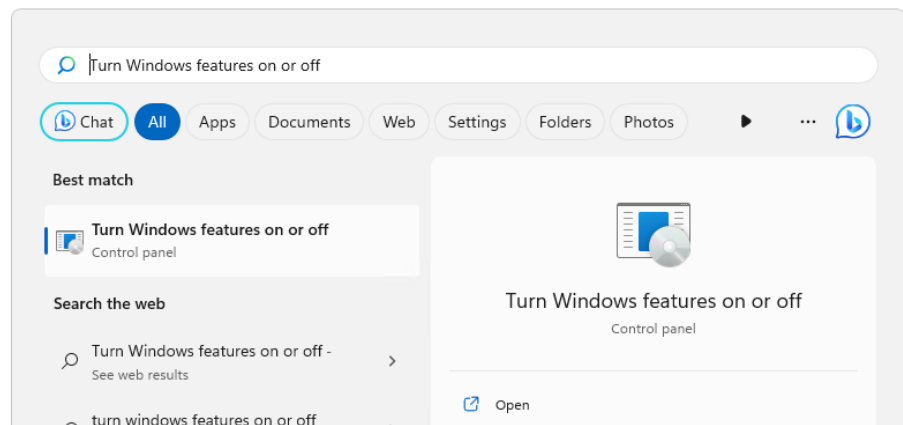
<https://docs.microsoft.com/en-us/windows-hardware/manufacture/desktop/deploy-net-framework-35-by-using-deployment-image-servicing-and-management-dism>

or

For Windows 11: <https://learn.microsoft.com/en-us/dotnet/framework/install/dotnet-35-windows-11>

For Windows 10: <https://docs.microsoft.com/en-us/dotnet/framework/install/dotnet-35-windows>

- 1 In the Windows Start menu, search for *Turn Windows features on or off*.
Open the search result found in the Microsoft Control Panel.



Prepare Your PC

Install the .NET 3.5 and 4.x Framework

- 2 Enable .NET 3.5 as follows:
 - a Expand the .NET Framework 3.5 (includes .NET 2.0 and 3.0) node.
 - b Select the Windows Communication Foundation Non-HTTP Activation check box.

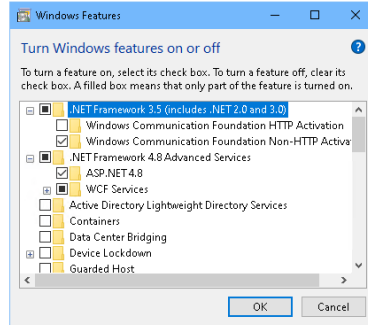


Figure 1: Enable .NET 3.5 (Win 11)

- 3 Select the .NET Framework 4.8 Advanced Services check box. Use the default values for sub items.

NOTE

Check Transport Layer Security (TLS) protocols

TLS 1.2 (or higher) supports a wide selection of cipher suites, some of which may be vulnerable to attack. OpenLab CDS supports all TLS 1.2 (or higher) cipher suites and is not impacted if any weak or vulnerable cipher suite is disabled by your IT policies. Older Transport Layer Security (TLS) security protocols TLS 1.0, TLS 1.1, and SSL 3.0 are not required by OpenLab CDS and present a security risk. Disable them according to instructions from Microsoft and in accordance to your IT policies.

Some OpenLab CDS components require Microsoft .Net 3.5. By default, this version of framework does not enforce the usage of TLS 1.2 or higher. In most IT environments, TLS 1.2 is enabled for .Net 4.5 or older frameworks. A script to assist making these changes is available in the installation package under `\Setup\Tools\Support\TLS\FixTLSVersions.ps1`. Please contact your system administrator for assistance in running the script.

Obtain the Software

After purchase, you receive an Entitlement email from Agilent. This email includes details about your software, entitlements, and a direct link to access the License and Delivery portal.

To obtain the software, click **License and Delivery Portal** in the entitlement email.

Set up an Agilent Online Account

An Agilent Online Account is required to download software packages and manage your electronic licenses.

When accessing the **License and Delivery Portal** via your entitlement email, Agilent internal systems determine your customer status. If you do not yet have an Agilent Online Account, you are asked to register yourself. If you have an Agilent Online Account, the **Sign In** page opens.

To create an Agilent Online Account:

- 1 Fill out the **Registration** form and click **Submit**.

An activation email is sent from **no-reply@mailing.agilent.com**

- 2 Follow the instructions in the email to verify the email address and set a password.

- 3 Log in to your Agilent Online Account.

On your first login, a one-time verification code is required. It will be sent via email.

NOTE

If you do not receive an email, check your email spam and junk folders. If the email is not found, contact the Agilent Global Service Contact Center (<https://www.agilent.com/en/contact-us/page>).

- 4 Enter the code to complete the verification to Agilent.com.

Download the software package

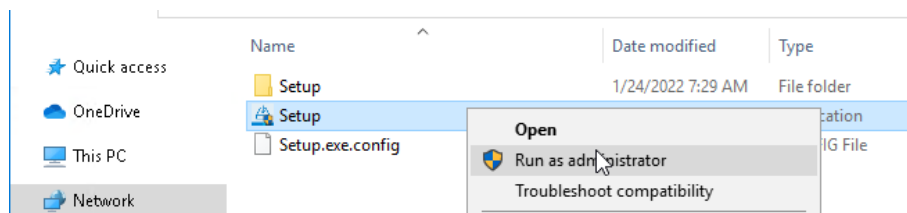
You have received an Entitlement email from Agilent and have an Agilent Online Account.

- 1 Open the Entitlement email, and click **License and Delivery Portal**.
The Agilent Online Account sign in page loads.
- 2 On the **Sign In** screen, enter your login credentials and click **Sign In**.
- 3 Filter for the entitlement of interest.
- 4 Click **Download/Activate software** for your entitlement.
The Flexnet Operations portal opens.
- 5 Click the software that you want to download.
- 6 Accept the **Software Terms and Conditions** by clicking **I Agree**.
- 7 Click the provided link and download the file.
- 8 After the download is complete, unzip the software package to a local folder.

Run the System Preparation Tool

The System Preparation Tool (SPT) checks and applies Windows settings on your machine. The OpenLab installer applies these settings automatically when run. Running the SPT in advance helps you to shorten the installation process and avoid PC reboots. For an overview of both mandatory and recommended settings, refer to the chapter *System Preparation Tool* in *OpenLab CDS Requirements and Supported Instruments (CDS_v3.0_Requirements_en.pdf, D0028027)*.

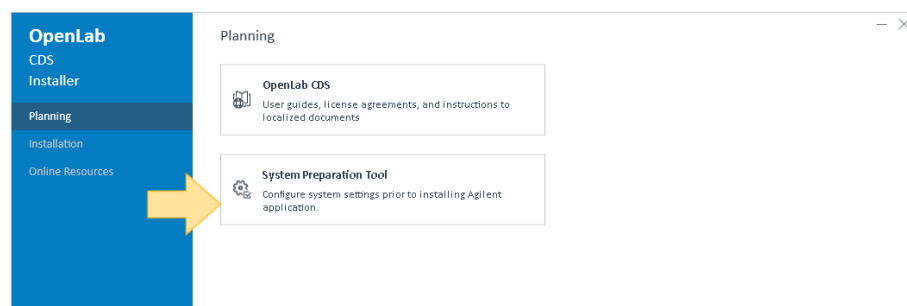
- 1 To open the installer, right-click the **Setup.exe** file, and run it as administrator.



NOTE

If User Account Control (UAC) is switched on, this step requires active confirmation to continue.

- 2 From the **Planning** tab, select **System Preparation Tool**.



The **System Preparation Tool** window opens.

- 3 Select the product configuration **OpenLab CDS~WorkstationPlus~Win10** or **OpenLab CDS~WorkstationPlus~Win11** from the drop-down list, and click **Continue**.

Prepare Your PC

Run the System Preparation Tool

The installer automatically applies all mandatory Windows settings to ensure proper installation.

- 4 Select which recommended settings to apply to the system.

Recommended settings can improve the performance and stability of your system, but do not need to be completed to deploy the application. The recommended settings are listed after the mandatory settings.

You can clear the check boxes for recommended settings. Mandatory settings cannot be cleared. Recommended actions are selected by default and will be applied unless they are cleared.

- 5 Click **Apply Fixes** to apply the correct settings.

The System Preparation Tool attempts to update the selected settings and displays the new status on the **Update Configuration** page. All actions are saved to a log file. A link to the log file is provided at the bottom of the page.

- 6 Click **Next** to proceed to the **System Preparation Report** page.

The System Preparation Report is displayed. It lists the new status for all selected settings.

The System Preparation Report is saved to disk. Its location is shown at the top of the page.

- 7 Click **Print Report** to print the System Preparation Report.

You may print to a file, for example, using the **Adobe PDF** printer, and add comments.

- 8 The System Preparation Report lists any mandatory or recommended settings that are not automatically updated by the System Preparation Tool. Follow the instructions provided in the **Actions Required** section of the System Preparation report to manually update operating system settings.

- 9 Click **Finish**.

- 10 Reboot your system if requested to do so.

Printer requirements

OpenLab CDS does not support Adobe PDF, Microsoft Print to PDF, or Microsoft XPS Document Writer as a default printer.

NOTE

Setting a PDF printer as the default printer may cause the printing of a report to fail.

- Select **Let Windows manage my default printer** to print successfully.

2

Install an OpenLab CDS Workstation Plus

Installation Workflow Overview 18

Before You Begin the Installation of OpenLab CDS 20

Run the OpenLab Installer 22

Silent Installation 26

Export installation parameters 26

Run installation 26

Return codes 27

Logging and tracing 29

Install or Upgrade Driver Software 30

Install or upgrade add-on driver software 30

Register driver software with OpenLab CDS 31

Installation Workflow Overview

Prepare

- Check OpenLab CDS Requirements guide for details
- Run System Preparation Tool



Install

1. Run installation wizard, incl. software verification
2. Post installation:
Prepare centralized printing
3. Optional:
Improve performance on offline machines



Get Licenses

1. Obtain licenses
2. Install your licenses

- Run the System Preparation Tool before starting the installation to avoid reboots during the installation. See [Run the System Preparation Tool](#) on page 14.
- If you plan scripted installations, see [Silent Installation](#) on page 26.

- See [Install an OpenLab CDS Workstation Plus](#) on page 17
- See [Post Installation Tasks](#) on page 33
- See [Optional Procedures](#) on page 44

See [Licensing](#) on page 48

**Configure**

- Authentication
- Projects, incl. audit trail settings
- Instruments

See **Configure OpenLab CDS Workstation Plus** on page 62.

Configuration tasks are performed in the Control Panel.

For more details, refer to the Control Panel section in [OpenLab Help & Learning](#).

Before You Begin the Installation of OpenLab CDS

If you plan to upgrade from a previous version of OpenLab CDS, see [Upgrade to OpenLab CDS Version 3.0](#) on page 110.

- 1 Install all required hardware, including any cables, instrument detectors, and communication cables. GPIB interfaces may be required for some non-Agilent instruments.
- 2 Ensure that the Named Pipe Activation is selected for .NET 4.x.
 - a In the Windows Start menu, search for *Turn Windows features on or off*.
 - b Open the search result found in the Microsoft Control Panel.
 - c Expand **.NET Framework 4.8 Advanced Services**.
 - d Expand **WCF Services**.
 - e Select **Named Pipe Activation**.
- 3 Ensure to open the firewall ports listed in the Firewall Settings of [OpenLab CDS Requirements and Supported Instruments \(CDS_v3.0_Requirements_en.pdf, D0028027\)](#).

Use the Windows command **netstat -aon** to display all active ports on which the computer is listening, and the respective process IDs (PID) that you would need to shut down.

Make sure that the TCP ports 80 and 443 are available.

NOTE

If these ports are occupied by other programs: Try setting the startup type of the **World Wide Web Publishing Service** to **Manual** or **Disabled**, or disable Internet Information Services (IIS).

The command **net stop http** lists all services that are dependent on the HTTP service and would also be stopped. You may need to disable one of them.

- 4 Protect your system from viruses:
 - a Install an antivirus program.
 - b Make sure that the antivirus software is disabled during the installation.

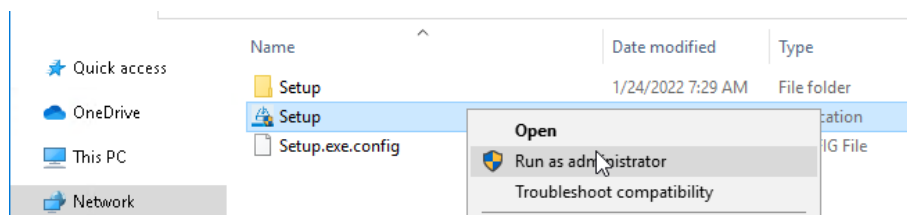
- 5 To allow the successful installation and activation of all components, make sure that the LAN-cable is connected, and a network is available.
- 6 Prepare a local administrator account with administrative privileges to run the installation. If the PC is in a domain, prepare a domain user who is a member of the local Administrators group

By default, the Windows privilege **Debug programs** is granted to all users. Do not remove this privilege, it is required for installing the OpenLab CDS software.

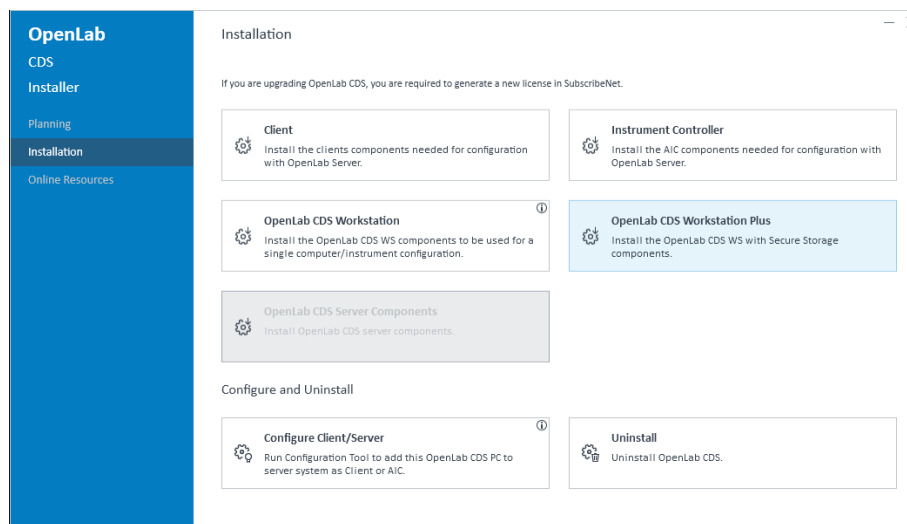
Run the OpenLab Installer

This section describes a new installation of the software. For information on upgrading an existing OpenLab CDS installation, see [Upgrade to OpenLab CDS Version 3.0](#) on page 110.

- 1 To open the installer, right-click the **Setup.exe** file, and run it as administrator.



- 2 On the **Installation** tab, click **OpenLab CDS Workstation Plus**.



- 3 **License Agreement**: Read and confirm Agilent terms and conditions. Click **Next**.
- 4 **Installation Folder**: Provide an installation folder for OpenLab CDS. Do not use the root folder of any drive. Click **Next**.

5 Secure Storage:

Shared Services 'Admin' user's password: Password to log in to the Control Panel as administrator (user *admin*).

PostgreSQL superuser's password: Password to log in directly to the PostgreSQL database as administrator (user *postgres*).

NOTE

Make sure to document the passwords at a secure location.

Click **Next** to proceed.

6 Component Credentials: Provide a password to be used by software components. You may be asked to provide a new password if existing password does not meet the requirements.

Passwords must adhere to the following general guidelines:

- Minimum 8 characters
- At least one uppercase letter
- At least one lowercase letter
- At least one number
- Only contains allowed characters

Overall Allowed Characters:

- Uppercase letters A-Z
- Lowercase letters a-z
- Numbers 0-9
- Special characters: !@#\$%^&-+_ =

NOTE

Make sure to document your password at a secure location.

Click **Next** to proceed.

7 Storage Locations:

Storage Location Name: Provide a name or label for the content management location where the application files will be stored. Do not use special characters or symbols.

Storage Location Path: Provide an absolute path or UNC share for the default file storage location.

Click **Next** to proceed.

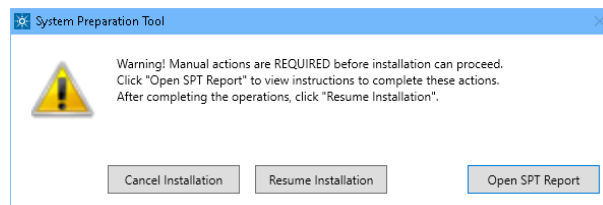
- 8 **System Preparation:** The installer shows the list of recommended settings for the system. You may clear the check boxes for items that you do not want to apply on the system. Mandatory settings will be applied automatically during installation. For an overview of both mandatory and recommended settings, refer to the chapter *System Preparation Tool* in *OpenLab CDS Requirements and Supported Instruments (CDS_v3.0_Requirements_en.pdf, D0028027)*.

Click **Next** to proceed to the **Review** page. The settings will be applied as part of the installation.

- 9 **Review:** All components that will be installed, and all settings that will be applied are listed here.

- To save a properties file for a future silent installation (see **Silent Installation** on page 26), click **Save to config File**.
- To start the installation, click **Install**.

- 10 The following warning is displayed when user actions are required in the operating system:



Options to proceed

- **Recommended:** Click **Open SPT Report**, and review the **Required Actions** section for the instructions to verify if updates are needed. After completing the operations, click **Resume Installation**.
- **Cancel Installation:** Installation is aborted. Make necessary updates and restart installation.
- **Resume Installation:** The dialog is closed, and installation continues with the installation of the CDS components even if a setting was not applied. If needed, the settings can be updated after the installation has been completed.

- 11 **Install:** After the installation has completed, click **Next**.

- 12 **Configure:** Configuration tools run in the background to configure the content management component. This takes about 10 min. When finished, click **Next**.

In case of registration problems, a potential conflict may be a blocked firewall port. For example, check if ports 80 and 443 are open. If they are blocked by the **World Wide Web Publishing** service, stop this service.

NOTE

If the **World Wide Web Publishing** does not block the ports 80 and 443: The Windows command **netstat -aon** displays all active ports on which the computer is listening, and the respective process IDs (PID) that you would need to shut down. The command **net stop http** lists all services that are dependent on the HTTP service and would also be stopped. You may need to disable one of them.

13 Finish:

- To view the report of the applied Windows settings, click the link under **System Preparation**. If you still need to apply settings manually, a warning will be displayed. You will find details in the linked report.
- To confirm everything has been installed correctly, click **Run Software Verification** ¹.
- To complete the installation, select the **Reboot the computer now** check box, and click **Finish**.

14 In case of errors during the installation: Check the installation log files under **%ProgramData%\Agilent\InstallLogs\<date and time>**. Note that **ProgramData** is a hidden folder.

The installation includes a set of standard instrument drivers. If you need other instrument driver software, install it in a separate step. See [Install or upgrade add-on driver software](#) on page 30.

¹ To start the tool separately at a later point in time, select **Start > (All apps >) Agilent Technologies > Software Verification Tool**.

Silent Installation

OpenLab CDS supports a command-line mode for installation, also referred to as *silent installation*. This mode supports installation, upgrade, and uninstallation. You can execute silent installations either manually or as part of software management systems such as LANDesk or HP CM.

Export installation parameters

The OpenLab Installer supports a feature to export the installation parameters into an XML file which you can then use for the silent installation.

- 1 Launch the OpenLab Installer.
- 2 Follow the instructions of the wizard.
- 3 When you have reached the **Review** screen, click **Save to config file**.
Save the file to a suitable location. The file will automatically be saved as an **.XML** file.

You can now use the XML file for the silent installation.

Run installation

Prerequisites

- You have prepared an XML file for silent installation. See [Export installation parameters](#) on page 26.
- .Net Framework is present on your system. If it is not, it will automatically be installed. You must then manually select **Accept** to agree with the license agreement.

- 1 Copy the content of the installation package ² to a centralized folder.

² Software can be downloaded from your Agilent Online Account. USB media are available as an option.

- 2 Copy the XML file to a suitable folder.
- 3 Right-click the executable of the command prompt or Power shell prompt, and run it as administrator.
- 4 Navigate to the location where you have saved the installation files.
For example: **C:\CDS**

- 5 To start the installation, call CDSInstaller.exe with the following syntax:

```
CDSInstaller.exe -s -norestart OpenLabProduct="CDSWorkstationSecStg"  
-LicenseAccepted=True -Configfile="<drive>\<path>\<filename>.xml"
```

where *<Path and Filename>* is the path and filename of the prepared file.

For example:

```
CDSInstaller.exe -s -norestart OpenLabProduct="CDSWorkstationSecStg"  
-LicenseAccepted=True -Configfile="C:  
\ConfigFiles\ConfigurationSecStgWS.xml"
```

With this command, you start the OpenLab Installer without a user interface.

- 6 Wait about 5 minutes to allow the installation to finish. To check the process of installation, look at the log files under
%ProgramData%\Agilent\InstallLogs.

If a required installable is missing, the OpenLab Installer will create an entry in a log file, and, depending on the component type, will continue or roll back the installation. An error code will be returned in such scenarios.

- 7 After the installation has finished, reboot the PC.

Return codes

After installation, uninstallation, or upgrade in the command-line mode, the system will return a number code which is explained below.

Table 2: Return codes: Failure

Code	Return value	Meaning
ERROR_PROCESS_ABORTED	1067	The process terminated unexpectedly.
ERROR_INSTALL_USEREXIT	1602	The user cancelled the installation.
ERROR_INSTALL_FAILURE	1603	A fatal error occurred during installation.
ERROR_INSTALL_SUSPEND	1604	Installation suspended, incomplete.
ERROR_INSTALL_ALREADY_RUNNING	1618	Another installation is already in progress. Complete that installation before proceeding with this install.
ERROR_INSTALL_PACKAGE_INVALID	1620	This installation package could not be opened. Contact the application vendor to verify that this is a valid Windows Installer package.
ERROR_FUNCTION_NOT_CALLED	1626	The function could not be executed.
ERROR_PRODUCT_VERSION	1638	Another version of this product is already installed. Installation of this version cannot continue. To configure or remove the existing version of this product, use Modify or Uninstall in Installed apps in the Windows Settings.
ERROR_ACCESS_DENIED	5(0x5)	Access is denied.
ERROR_NOT_SUPPORTED	50(0x32)	The request is not supported

Table 3: Return codes: Reboot required

Code	Return value	Meaning
ERROR_SUCCESS_REBOOT_INITIATED	1641	The installer has initiated a restart. This message is an indication of success.
ERROR_SUCCESS_REBOOT_REQUIRED	3010	A restart is required to complete the install. This message is an indication of success. This does not include installs where the ForceReboot action is run.
ERROR_FAIL_NOACTION_REBOOT	350(0x15E)	No action was taken as a system reboot is required.

Table 4: Return code: Success

Code	Return value	Meaning
ERROR_SUCCESS	0	The action completed successfully.
ERROR_SKIP_CONFIGURATION	77	Skip step configuration. Execution stopped by user command.
ERROR_NON_VITAL_PACKAGE_FAILED	4010	Installer partially completed. Non vital packages failed.

Logging and tracing

All exceptions, errors and information messages are logged under `Drive:\ProgramData\Agilent\InstallLogs\<date and time>`. Note that `ProgramData` is a hidden folder.

Install or Upgrade Driver Software

The following driver software packages are automatically installed with OpenLab CDS. For details, see *OpenLab CDS Requirements and Supported Instruments (CDS_v3.0_Requirements_en.pdf, D0028027)*.

- Agilent LC and CE
- Agilent LC/MS SQ
- Agilent LC/MS QTOF
- Agilent GC
- Agilent GC/MS SQ
- Agilent SS420x
- Agilent Data Player (Virtual Instruments)

Other instrument driver software, add-on software, or upgrades to existing driver software, must be installed and configured manually. Instrument driver software and add-on software packages can be found in the installation package under **Setup\Packages** or **Setup\Packages\Add-Ons**.

The latest Agilent drivers are available in SubscribeNet. To manage software entitlements and download software, log in to SubscribeNet by pasting this link in your browser: <https://agilent.flexnetoperations.com>. In the Product List, select **OpenLab Software > OpenLab Agilent Instrument Drivers**.

Install or upgrade add-on driver software

- 1 Run the driver installer package, and follow the installation wizard.

For details on the installation or upgrade procedures, refer to the respective driver documentation.

- 2 Register driver software with OpenLab CDS.

See **Register driver software with OpenLab CDS** on page 31.

The **OpenLab Configuration** tool will find all newly installed or updated instrument drivers and register them with the Shared Services. New instrument types will be available in the Control Panel.

Register driver software with OpenLab CDS

The following procedure must be carried out after installing drivers other than the ones listed above, and after upgrading any driver. With these steps you make the new drivers available in OpenLab CDS.

- 1 In Windows, select **Start > (All apps >) Agilent Technologies > OpenLab Configuration** .
- 2 In the **OpenLab Configuration** tool, enter *localhost* as a server hostname.

The screenshot shows the 'OpenLAB Configuration' window. It has a title bar with a gear icon and the text 'OpenLAB Configuration'. The window is divided into two main sections. The left section contains three steps: 'Step 1 - Server', 'Step 2 - Authentication', and 'Step 3 - Additional Options'. 'Step 1 - Server' is currently active and contains a 'Hostname' text box and a 'Connect' button. 'Step 2 - Authentication' contains 'Username', 'Password', and 'Domain' text boxes. 'Step 3 - Additional Options' contains a checked checkbox labeled 'Register as Instrument Controller'. The right section is a blue sidebar with three sections: 'Server' (with instructions to enter the hostname and click Connect), 'Authentication' (with instructions to enter login credentials), and 'Additional Options' (with instructions to choose options and click Register). At the bottom right are 'Cancel' and 'Register' buttons.

OpenLAB Configuration

Step 1 - Server

Hostname

Connect

Step 2 - Authentication

Username

Password

Domain

Step 3 - Additional Options

☒ Register as Instrument Controller

Server

Enter the hostname of the OpenLAB Server that you would like to connect to and click the Connect button.

Changes will be applied to the server specified.

Authentication

Enter your login credentials for the server specified.

Additional Options

Choose any additional options and click the Register button.

Cancel **Register**

- 3 Click **Connect** to enable the input boxes for the user credentials.

Install an OpenLab CDS Workstation Plus

Install or Upgrade Driver Software

- 4 Under **Step 2 - Authentication**, enter your user credentials.
- 5 Make sure the **Register as Instrument Controller** check box is cleared.
- 6 Click **Register**.
A **Registration Results** dialog will be shown.
- 7 Reboot the PC.

3

Post Installation Tasks

Run a Software Verification after Software Installation 34

Configure the Antivirus Program 35

Prepare Centralized Printing 38

Troubleshooting Print Folders 39

Prepare Exports to Network Shares During Unattended Processing 40

Set Up Domain User Account 40

Enable Automatic Printing to Network Printers 42

Run a Software Verification after Software Installation

The Software Verification Tool (SVT) provides documentary evidence that your system has been built and installed correctly, and that all design specifications have been met. You do not need to run the software verification again if it has run successfully at the end of the installation.

- 1 Using your Windows operating system, go to **Start > (All apps >) Agilent Technologies > Software Verification Tool .**
- 2 Select the components to qualify.
- 3 Select **Qualify**.
The system will run the application and generate a Software Verification Report. Reports are automatically saved to **Drive:\SVReports**.
- 4 If the report indicates failure, verify the computer requirements and reinstall the data system.
Do not use the system until the Software Verification Report gives a 'pass' result.

Configure the Antivirus Program

- 1 Be sure to open the firewall ports listed in the Firewall Settings. See [OpenLab CDS Requirements and Supported Instruments \(CDS_v3.0_Requirements_en.pdf, D0028027\)](#).
- 2 The following folders should be excluded from antivirus scan. If you want to have these folders scanned, you should do this while the system is not acquiring or doing data Analysis as scanning may cause slowness and runs to be aborted due to concurrent access to the same file by the antivirus program and the CDS application.
 - Storage location that you configured during setup (default on a fresh installation: C:\SSStorage; default on an upgraded system: C:\DsData)
 - Drive:\Program Files (x86)\Agilent Technologies
 - Drive:\ProgramData\Agilent
 - Drive:\ProgramData\Agilent IPB Files
 - Drive:\ProgramData\Agilent Technologies, Inc
 - Drive:\ProgramData\ChromatographySystem
 - Drive:\ProgramData\Firebird
 - Drive:\ProgramData\IsolatedStorage

Refer to your specific antivirus software documentation on how to configure folder exclusions.

NOTE

For antivirus software with network intrusion prevention, expect to see some degradation in general system performance. To disable network intrusion prevention, refer to your antivirus software instructions.

- 3 The following process should be excluded from Antivirus scan:
 - Drive:\Program Files (x86)\Agilent Technologies\OpenLab Acquisition\AcquisitionServer.exe

Optional configuration steps

Agilent recommends to whitelist certain applications to improve performance. Consider these settings especially if you recognize that your antivirus software consumes a high amount of CPU resources when OpenLab CDS is executed. The following settings are commonly recommended for antivirus software. Different vendors may use different terminology or interfaces; please refer to the documentation for your specific product.

1. *Web/URL Reputation or Web Protection*: If your antivirus software includes a web or URL reputation feature, consider disabling it to maximize performance.

The risk of turning off is that web traffic through browsing from the machine will not be checked.

Ensure that there is another URL/web scanner on the gateway level to protect the endpoint, or ensure that the endpoints have limited access to Internet. These production machines should not have access to Internet websites where most of the infections are coming from.

2. *Real time scanning*: Add exclusions, and modify scan direction from **Created/Modified/Retrieved** to **Created/Modified** (or the closest equivalent).

Exclusions ensure that the working directory of Agilent Technologies will not be scanned, thus improving performance.

The risk is that only files that are created and changed on this machine are scanned. Files that are just accessed will be bypassed. Dormant Files that got infected without being noticed at the time they were created or written to the machine will not be scanned.

Increase scheduled scan to daily to ensure all files on the machine are being checked for infections that are dormant or not moving.

3. *Behavior Monitoring/Application Control*: If the antivirus software includes behavior monitoring or application control, consider adding trusted folders or applications to an approved list. The following list may serve as a starting point.

NOTE

If any of the excluded files get infected, it will not be detected. Take measures to avoid the risk of non-detection. For examples, trigger a scheduled scan on a daily basis to cover these files.

Program Files (x86)\Agilent Technologies\Certificate Service\
 Program Files (x86)\Agilent Technologies\Data Collection Agent\
 Program Files (x86)\Agilent Technologies\OpenLab\Services\
 Program Files (x86)\Agilent Technologies\OpenLab Services\

Program Files (x86)\Agilent Technologies\OpenLab Acquisition\
Program Files (x86)\Agilent Technologies\OpenLab Backup Utility\
Program Files (x86)\Agilent Technologies\OpenLab Restore Utility\
Program Files (x86)\Agilent Technologies\OpenLab Data Analysis\
Program Files (x86)\Agilent Technologies\OpenLab Platform\
Data Repository\Data Repository\
Program Files (x86)\Agilent Technologies\OpenLab Platform\
Reverse Proxy\
Program Files (x86)\Agilent Technologies\OpenSearch\
Program Files (x86)\Agilent Technologies\Test Services\

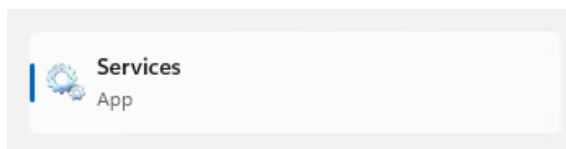
4. *Real-time monitoring*: Add below folder to the exclusion list of a real-time monitoring setting:

Drive:\Program Files (x86)\Agilent Technologies\

Prepare Centralized Printing

OpenLab CDS allows you to automatically process your data during acquisition, without opening Data Analysis. During this processing, injection reports may need to be printed. With centralized printing, these reports are copied into shared print folders. A third party program such as FolderMill then accesses the shared folders and sends the contained files to a printer.

- 1 In the Windows Start menu, search for *Services*. Open the **Services** app.



- 2 Right-click **Agilent OpenLab CopyTo Server** and select **Properties**.
- 3 Click the **Log On** tab, select **This account** and enter the login credentials of a domain user. The user must be a member of the local Administrators group and must have the privileges to write to the print folders.
- 4 Confirm your settings, and restart the service.
- 5 Set up the shared print folders in the Control Panel for OpenLab under **Administration > Print Folders**.
 - a Click **Add Print Folder**.
 - b Provide a name, folder path (UNC format), and description (optional), and click **Save**.
- 6 Optional: Configure queue size.

Each Print Folder will have its own queue. The size of each queue is defined in the configuration file

Drive:\ProgramData\Agilent\CopyToServer\CacheSizeLimit.ini. The parameter **CacheSizeLimit** can be configured to change the size of the queue.

The default value is 500 MB, which means that each queue (print folder) will have a size limit of 500 MB by default. Files will enter the queue until the maximum size of the cache is reached. When this happens, the queue will stop accepting requests. The queue will automatically restart and begin accepting requests after it has been cleared.

Troubleshooting Print Folders

Issue	Resolution
The Agilent OpenLab CopyTo Client or Agilent OpenLab CopyTo Server service has crashed	The service should automatically restart.
Network issue between workstation and print folder	Centralized printing requests will be buffered on the workstation. The files will be automatically copied to the print folder as soon as the network is back.
Print folder cache full	Check print folder access. Consider increasing the cache size (see Prepare Centralized Printing on page 38).
Print folders are not accessible due to insufficient permissions	Check that the domain user logged into the Agilent OpenLab CopyTo Server service is a local administrator and has permissions to write into the print folders.
Reports are stuck in print folders	Check that the third party software being used to access print folders for printing is functioning correctly. Check that there are no printer errors.

Prepare Exports to Network Shares During Unattended Processing

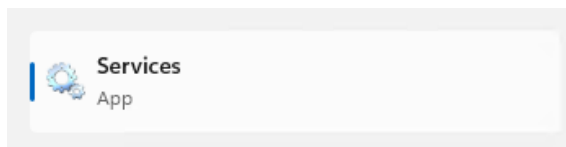
Carry out the following steps if you want to:

- Generate reports and save them as files during unattended processing. Exporting the reports to a network share is a typical way how they are sent to an external system (for example, LIMS)
- Export raw data or results during unattended processing, and save the files to a network share

For this approach, specific domain user privileges are required to access a network share and log on as a service.

Set Up Domain User Account

- 1 Log in as Windows domain user who has local administrative privileges.
- 2 In the Windows Start menu, search for *Services*. Open the **Services** app.

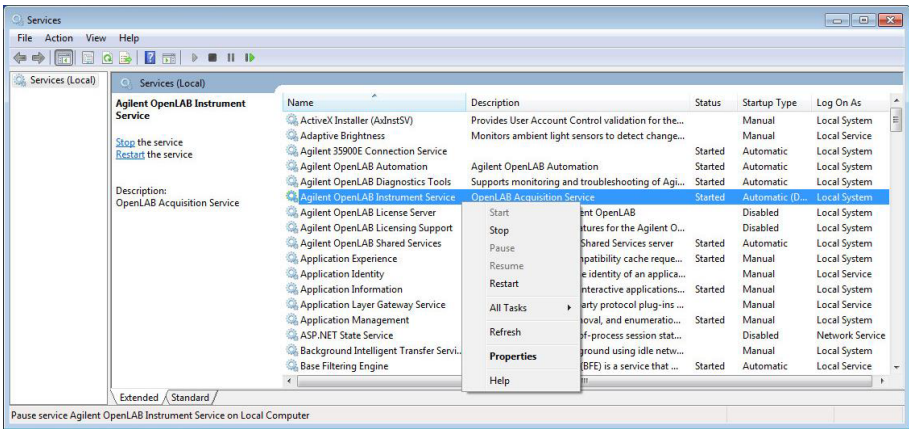


- 3 Make sure the status of **Agilent OpenLab Instrument Service** is **Started** or **Running**. If it is not, right-click and select **Start**.

Post Installation Tasks

Prepare Exports to Network Shares During Unattended Processing

- 4 Right-click Agilent OpenLab Instrument Service and select **Properties**.

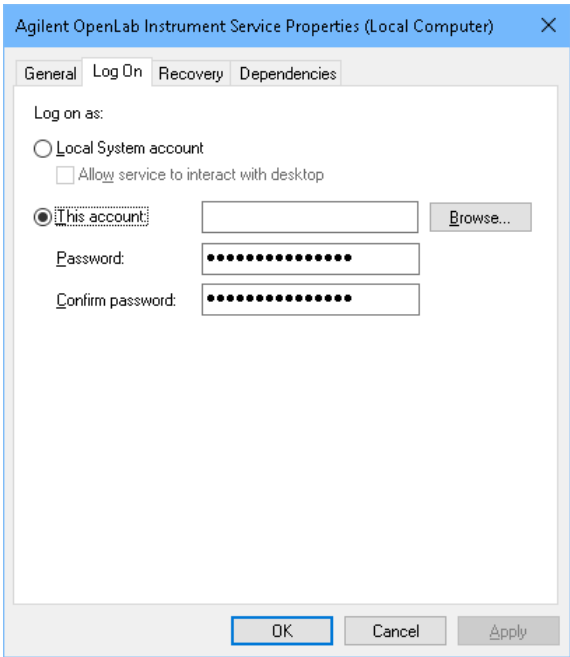


- 5 Click the **Log On** tab, select **This account** and enter the login credentials of a domain user who has network printing privileges.

NOTE

The user must be a member of the local Administrators group.

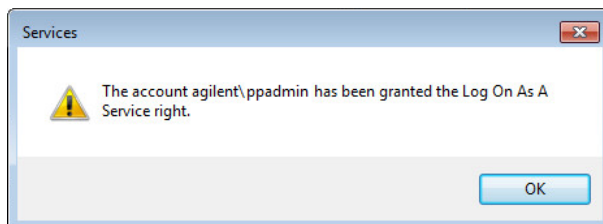
Click OK.



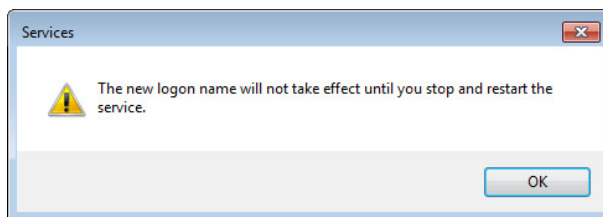
Post Installation Tasks

Prepare Exports to Network Shares During Unattended Processing

- 6 The **Services** window confirms that the account has been granted the **Log On As A Service** right. Click **OK**.



- 7 Click **OK** in the **Services** window to acknowledge that The new logon name will not take effect until you stop and restart the service.



- 8 Restart the PC. This will enable the *Log On* user specified in *Instrument Service* to automatically export files to network shares in *Data Acquisition*.

Enable Automatic Printing to Network Printers

Follow this procedure if you do not want to use centralized printing and need to print to network printers during unattended processing.

Prerequisites

- You have set up a domain user account (see [Set Up Domain User Account](#) on page 40).
- 1 Log in using the domain user account specified in the **Log On** tab of **Agilent OpenLab Instrument Service Properties** window.
 - 2 In the Windows Settings, open **Devices > Printers & scanners** and click **Add a printer or scanner**.

Post Installation Tasks

Prepare Exports to Network Shares During Unattended Processing

- 3 Select the required printer from the list. If it is not listed, click **The printer that I want isn't listed** and browse or type a shared printer name that you want to add. Once the printer is added, print a test page.
- 4 In the Windows printer settings, set the shared printer as the local default printer.



4 Optional Procedures

Improve Performance on Offline Machines 45

Set up NIST Library Search 46

Change the SecureFileSystem path 47

Improve Performance on Offline Machines

Computers running OpenLab CDS may exhibit slow performance when they are not connected to the Internet.

The windows operating system has routines built into its operation that causes it to continuously search for an online connection in order to update to all the latest Windows security certificates when using secure software.

Use the following system settings on all workstations to remedy this problem.

- 1 In the Windows Settings, search for **Internet Options**. The **Internet Properties** dialog opens. In the **Advanced** tab, clear the following check boxes:
 - **Security** > **Check for publisher's certificate revocation**
 - **Security** > **Check for server certificate revocation**
- 2 Change or add the following registry keys:
 - [HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\SystemCertificates\AuthRoot]
"DisableRootAutoUpdate"=dword:00000001
 - [HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Policies\Microsoft\SystemCertificates\AuthRoot]
"DisableRootAutoUpdate"=dword:00000001
- 3 Document that you turned off the Root Certificates, as this will cause the OpenLab CDS installer to fail. The root certificates need to be turned on to prevent installation failures.

Set up NIST Library Search

In order to use MS library searching within OpenLab CDS, the NIST MS Search program must be installed locally on the workstation (or, in a Client/Server setup, on the client or AIC) which is to perform the library search.

For details on the installation and configuration of the NIST library framework within standalone, Client/Server, or Citrix/Remote Desktop Services server setups, please refer to [*Setup and Configuration of MS Library Search \(CDS_Configure_MS_Libraries.pdf, D0020932\)*](#). That document also discusses the use and management of other commercial and user-created libraries with OpenLab CDS MS library search.

Change the SecureFileSystem path

For buffering files for transfer, OpenLab CDS creates a folder at a default fixed location **%ProgramData%\Agilent\SecureFileSystem**. The folder path can be modified if the default location is unsuitable.

For more information on changing the location of the secure file storage, please contact your local Agilent Support representative.

5

Licensing

OpenLab CDS supports two methods of license management. It depends on your product and revision number which one applies to you. Starting with v3.0, OpenLab CDS is using Electronic Licensing.

- *Electronic Licensing*, or Flexnet Operations (FNO): You receive your entitlements via Email.
- *SubscribeNet* Licensing: You receive an authorization code in a lavender envelope.

You can manage Electronic Licenses and SubscribeNet licenses in parallel. Electronic licenses are activated and managed via your Agilent Online Account, and in the OpenLab Control Panel.

Trial Period

A trial period allows you to run the system for 60 days after the installation. After that trial period, you must install a license.

The trial period starts when you launch OpenLab Control Panel the first time and click **Start Trial**.

License types

OpenLab CDS electronic licenses are located and maintained in the OpenLab Control Panel in parallel to “classic” SubscribeNet licenses that might be required for other Agilent products.

Client/Server CDS client/server topologies require a new **OpenLab CDS System** license, in addition to the **Instrument Connection** licenses for Agilent and non-Agilent instruments. An OpenLab Server / ECM XT or OpenLab Shared Services server must be present, and those products will remain on SubscribeNet licensing.

Counted licenses These licenses are part of the OpenLab CDS floating licensing strategy. They are not permanently assigned to any one component. Instead they are automatically assigned to components, such as AICs and instruments, while the components are starting up. The licenses are automatically returned when the component is closed. The license management program controls license issuance and retrieval.

In this case, the only requirement is that a component is licensed while running. You only need enough licenses for all components running concurrently, rather than for each installed component.

Electronic Licensing Activation

Prepare License Activation

To receive an electronic license, you must:

- Be named as the software contact person during purchase. If the person named becomes unavailable, contact your Agilent sales representative for help.
- Have received an email containing the entitlements to activate the software.

Online License activation requires access to Agilent's Licensing portal. Please see [OpenLab CDS Requirements and Supported Instruments \(CDS_v3.0_Requirements_en.pdf, D0028027\)](#) for url and firewall port requirements. Any non-Agilent applications that are using these ports ³ need to be uninstalled before activating your Agilent OpenLab software package online.

Online activation

- 1 Start the Control Panel from any machine connected to the system you want to install the license for.
- 2 Navigate to **Administration > Licenses**
- 3 Select **Manage Electronic Licenses**.
- 4 In the ribbon, click **Manage Licenses**.
The licensing interface opens in a web browser.
- 5 Select **Online Activation**.
- 6 Select either **Entitlement ID** or **Activation ID**.

³ In OpenLab CDS 3.0: Ports 52080, 52088, 7070, 7071

Licensing

Electronic Licensing Activation

Entitlement ID:	Using the Entitlement ID activates all entitlements that are available. The Entitlement ID cannot be used for Offline Activation .
Activation ID:	Using the Activation ID allows for granular control over quantity and products purchased under the same order.

7 Enter the respective ID.

8 If you are using the **Entitlement ID**: Click **Activate All**.

If you are using the **Activation ID**: Enter the **Number of licenses** you want to activate, and click **Activate**.

The activation screen shows an overview of all license details, such as the ID, product name, and quantity.

Offline activation

Prerequisites

- Obtain your **Activation ID** from the entitlement email.
- Validate that you are able to log into your [Agilent Online Account](#) with a device at hand.

- 1 Start the Control Panel from any machine connected to the system you want to install the license for.
- 2 Navigate to **Administration > Licenses**
- 3 Select **Manage Electronic Licenses**.
- 4 In the ribbon, click **Manage Licenses**.
The licensing interface opens in a web browser.
- 5 Select **Offline Activation**.
- 6 Enter the Activation ID in the **Activation ID** field.
- 7 Enter the **Number of licenses** you want to activate.
- 8 Click **+**.

The summary table shows an overview of all license details, such as the ID, product name, expiration date, and quantity.

NOTE

To add more licenses, repeat step 6 – 8.

Entering the same Activation ID will overwrite the respective line in the summary table. To update an existing Activation ID quantity in the summary table, edit the value in the **Total** column.

9 Click **Generate Activation Request**.

An *Activation Request* file is generated and saved to the default **Downloads** folder. The view switches automatically to the **Install Activation Response** tab

10 Transfer the *Activation Request* file to a device connected to the internet.

11 On this device, login to your [Agilent Online Account](#). On any entitlement in the **License and Agreements** tab, click **Activate Offline**.

12 Navigate to **Devices > Offline Device Management**.

13 Select **Generate license** and upload the *Activation Request* file.

A message informs you once the response has been generated successfully.

If the number of licenses entered exceeds the available licenses, an error message prompts **Activation ID copies exceeds available copies** and you won't be able to continue with activation.

14 Download the *Activation Response* file (**capabilityResponse.bin**), and transfer it back to the device with the software for which you want to activate the license.

15 On the **Install Activation Response** tab, upload the *Activation Response* file.

16 Click **Install Activation Response**.

Your license is now activated.

Return a license online

1 Start the Control Panel from any machine connected to the system you want to return the license for.

Licensing

Electronic Licensing Activation

- 2 Navigate to **Administration > Licenses**
- 3 Select **Manage Electronic Licenses**.
- 4 In the ribbon, click **Manage Licenses**.
The licensing interface opens in a web browser.
- 5 Select **Online Activation**.

To return all licenses:

- 1 Select **Entitlement ID**.
- 2 Enter your **Entitlement ID**.
- 3 Click **Return All**.
- ✓ After all licenses are deactivated, the software is also deactivated. The usage of Trial Mode is still possible if available.

To return part of your licenses:

- 1 Select **Activation ID**.
- 2 In the **Total Activated** column, enter how many licenses you want to keep.
Entering 0 means returning all counts of this Activation ID.
- 3 Click **Update**.

Return a license offline

- 1 Start the Control Panel from any machine connected to the system you want to return the license for.
- 2 Navigate to **Administration > Licenses**
- 3 Select **Manage Electronic Licenses**.
- 4 In the ribbon, click **Manage Licenses**.

Licensing

Electronic Licensing Activation

The licensing interface opens in a web browser.

5 Select **Offline Activation**.

6 Select **Activation ID**, enter how many licenses you want to keep in the **Total Activated** column. Entering 0 means returning all counts of this Activation ID.

Click **Update**.

7 Click **Generate Activation Request**.

An *Activation Request* file is generated and saved to the default **Downloads** folder. The view switches automatically to the **Install Activation Response** tab

8 Transfer the *Activation Request* file to a device connected to the internet.

9 On this device, login to your [Agilent Online Account](#). On any entitlement in the **License and Agreements** tab, click **Activate Offline**.

10 Navigate to **Devices > Offline Device Management**.

11 Select **Generate license** and upload the *Activation Request* file.

A message informs you once the response has been generated successfully.

12 Download the *Activation Response* file (**capabilityResponse.bin**), and transfer it back to the device with the software for which you want to activate the license.

13 On the **Install Activation Response** tab, upload the *Activation Response* file.

14 Click **Install Activation Response**.

15 The view automatically switches to the third tab, **Activation Confirmation**. An *Activation Confirmation* file downloads automatically into the default **Downloads** folder.

Transfer the *Activation Confirmation* file to the device connected to the FlexNet Operations Portal.

16 In the **Offline Device Management** of the FlexNet Operations Portal, select **Generate license or confirm license reduction or return**.

17 Upload the *Activation Confirmation* file.

The license return is concluded.

NOTE

If you cannot locate the original *Activation Confirmation* file, you can download a new one using the **Activation Confirmation** tab in the licensing interface.

Check for software updates

After activating your entitlements, check for software updates released for your products. Updates will be available in your Agilent Online Account in the Software Downloads area. Open the ReadMe files and follow the instructions.

SubscribeNet Licensing

SubscribeNet licenses are managed and maintained through the internet via <https://agilent.flexnetoperations.com>.

License file

A license file contains your software license. It is a collection of product, instrument, and add-on licenses (or activation keys). Information in the license file defines the number of instruments and other options that may be used concurrently with your system.

The license file is installed to the license server, that is the server to which your product was installed in a client/server system. The license file is bound to this server address, and cannot be moved to another server without regenerating the license in SubscribeNet..

Get a license

NOTE

During this process you will have to enter the MAC address of your license server. For workstations, this is the local computer. For client/server systems, this is the server.

Generate, download, and install a license with SubscribeNet

In case you do not have internet access, skip to the section [Other ways to obtain a license](#) on page 59.

If you are a new user who has not registered with SubscribeNet, continue with the section *New Users*.

If you have registered with SubscribeNet, skip to the section *Users registered with FlexNet Operations*.

Preparations You will need:

- The authorization code label provided in the lavender envelope containing your Software Entitlement Certificate. If you have not received a lavender envelope for your product, contact your vendor or internal support.
- The URL for SubscribeNet from the Software Entitlement Certificate.
- The MAC address, and host name of the computer where the Control Panel is running.

To retrieve your MAC address from a computer where your software is already installed, open the Control Panel and browse to the **Administration > Licenses** section. Use the **Copy MAC Address** or **Save MAC Address** function to obtain the MAC address for license generation.

NOTE

If any changes are made to the computer name or domain reference after the license is installed, remove the license, and create a new license in SubscribeNet, download and install it .

NOTE

If the network adapter that provides the MAC address used during license creation is removed from the machine, your license will no longer be valid. A new license will need to be generated with a currently available MAC on the license server.

New Users

- 1 Go to <https://agilent.flexnetoperations.com/> to register the product.
- 2 On the registration page, enter the authorization code from the label and complete the profile information (required fields are marked with *).
The email address you enter will become your login ID.
- 3 Click **Submit**. The system will generate and display an account name for you.
SubscribeNet will send a welcome email with your login ID and password.
- 4 Log in to SubscribeNet using your login ID and password.
Once you log in, you can use the online user manual link for help with any questions you have.
- 5 Select **Generate or View licenses** from the left navigation bar.

Licensing

SubscribeNet Licensing

- 6 Follow the prompts to generate your new license. You will be prompted for the HOST NAME of the computer.

Enter the server hostname. Do not include any DNS suffix (*domain.com*) references in the entered machine name.
- 7 When the system generates the license, view its details, then click **Download License File**. Save the license file to your computer and to a backup location (such as a portable storage device).

Use your login ID and password when you revisit the Agilent SubscribeNet site to regenerate a license file, add new authorization codes, or further configure the license for your system.

Users registered with SubscribeNet

- 1 If you already have a SubscribeNet account, use <https://agilent.flexnetoperations.com/>.

Lost your SubscribeNet password? Use <https://agilent.flexnetoperations.com/control/agil/password> to have it emailed to you.
- 2 Select the SubscribeNet account associated with this authorization code, if you have more than one account.
- 3 From the SubscribeNet navigation pane, select **Register Authorization Code**.

This will allow you to enter your new authorization code and make available the new license entitlements.
- 4 Select **Generate or View licenses** from the left navigation bar.
- 5 Follow the prompts to generate your new license. You will be prompted for the HOST NAME of the computer.

Enter the server hostname. Do not include any DNS suffix (*domain.com*) references in the entered machine name.
- 6 When the system generates the license, view its details, then click **Download License File**. Save the license file to your computer and to a backup location (such as a portable storage device).

Use your login ID and password when you revisit the Agilent SubscribeNet site to regenerate a license file, add new authorization codes, or further configure the license for your system.

Check for software updates

After registering your authorization codes in SubscribeNet, check for software updates released for your products. If updates are available, open the ReadMe files and follow the instructions.

Other ways to obtain a license

If you are unable to generate a license, contact your nearest Agilent technical support office. A representative will tell you how to submit an OpenLab License Generation Form in your location.

Offline licensing

If an internet connection is not available in your laboratory:

You or your local on-site service engineer will collect the necessary information from you to allow Agilent to create a license account on your behalf. For phone support in your region, call the sales and service number for your region. See the Appendix for contact information.

Required Customer Information for Agilent License Support:

The following information must be provided to Agilent in order to enable us to create a licensing account on your behalf.

1 Collect Account Information:

Your account name will be your company name and Lab name separated by a comma. Employee information provided here will be used to define the first administrator of your account for future access to the system as required. Please prepare the following pieces of information prior to contacting your local Agilent sales and service center in order to expedite service:

- Company Name
- Lab/Department Name
- First Name
- Last Name
- E-mail address
- Job Title

Licensing

SubscribeNet Licensing

- Phone #
- Address, City, State/Province, Postal Code, Country

2 Collect Authorization Code(s):

The authorization code is an alpha-numeric code provided on a label which is enclosed in a lavender envelope. If you have received more than one code you must provide all codes to ensure that all ordered licenses are granted to your account.

3 Receiving your license:

Once the above information is provided Agilent will then work on your behalf to generate a license file through SubscribeNet. The license file will either be sent to your shipping address (on a CD), or your local FSE will deliver it in person (usually on USB media). Once your license is received follow the below section on "Install your License" to finish installing your license on your system(s).

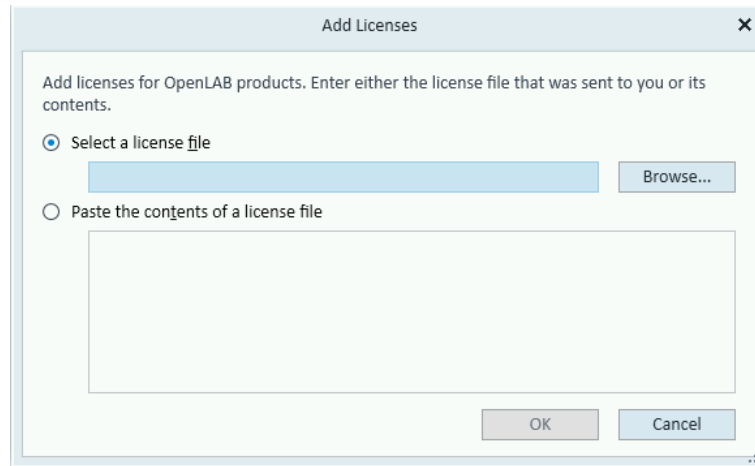
Install Your License

The license must be added to your system using the Control Panel.

Privileges

- **System Administration > Manage system components**
- 1 Start the Control Panel from any machine connected to the system you want to install the license for.
 - 2 Navigate to **Administration > Licenses**.
 - 3 Select **Manage SubscribeNet Licenses**.

- 4 In the ribbon, click **Add License** + .



- 5 Choose to install the license by:

- Using the license file option to browse to and open the license file (.lic) saved from the license generation process in SubscribeNet.
- Selecting the License Text option and copying the license text from a text file received into the provided field.

- 6 Click OK.

The **Administration** interface in the Control Panel will now display the status of installed licenses.

NOTE

A full restart is required in order for any license to have an immediate effect.



6 Configure OpenLab CDS Workstation Plus

OpenLab Control Panel 63

Configure Authentication 64

Configure security policy 65

Configure users and roles 66

Create or import users 66

Groups 67

Roles and Privileges 68

Add users or groups to a role 69

Specific Roles for Individual Instruments or Projects 70

Configure initial project 71

Configure initial instrument 72

Other settings in the Control Panel 73

OpenLab Control Panel

All configuration tasks are performed in the Control Panel for OpenLab. For more details, refer to the **Control Panel** section in [OpenLab Help & Learning](#).

Configure Authentication

OpenLab CDS supports the following authentication providers:

- **Internal**

In this mode, the user's credentials are stored in the OpenLab CDS system. You are asked to create an administrator account for OpenLab CDS before setting up other users. This is the only mode in which you can create new users within the system; in all other modes you can only map to users that exist in a different system.

- **Windows Domain**

You import existing Windows users into OpenLab CDS system. The authentication is done either by Windows Active Directory domain or NT 4.0 Domain within the Enterprise. OpenLab CDS only uses the identity and password of the mapped users; roles and privileges for OpenLab CDS are still configured in the Control Panel.

After the installation, internal authentication is configured by default. If you want to use internal authentication, nothing needs to be done. The following procedure describes how to configure domain authentication instead.

- 1 Launch the Control Panel. Log in with the username *admin* and the password you provided during installation.
- 2 Navigate to **Administration**.
- 3 In the navigation pane, select **System Configuration**.
- 4 In the ribbon, click **Edit System Settings** .
- 5 Select the authentication provider **Windows Domain** from the drop-down list, then click **Next**.

NOTE

Do not change the storage type.

- 6 Select the check box to use a domain user, and provide user credentials with the rights to obtain user and group information. Then click **Select Account** to open the **Search Users** dialog and select an administrator account.
- 7 Confirm your settings. When complete, the Control Panel will restart.

Configure security policy

If you need to comply with specific standards (for example, 21 CFR Part 11), adjust the security policy as required.

With the authentication provider **Internal**, you can set all parameters in the Control Panel.

With an external authentication provider (Windows Domain), you can set the inactivity time or enable single sign-on; all other parameters are defined by the external system.

- 1 Launch the Control Panel and navigate to **Administration**.
- 2 In the navigation pane, select **Security Policy**.
- 3 In the ribbon, click **Edit Security Policy**.
- 4 Set the parameters as required, and confirm your changes.
Restart the Control Panel to apply your changes.

NOTE

To meet 21 CFR Part 11 requirements, set the **Password expiration period** to 180 days or less. Do not change the other default values, they comply with 21 CFR Part 11.

Configure users and roles

To define what users are allowed to view or do, OpenLab CDS offers predefined roles and allows you to define your own specific roles.

Roles are equipped with numerous specific privileges. When you set up a customized role, it is therefore recommended starting from a lower role (that is, with fewer privileges) and adding specific required privileges, rather than removing privileges from a higher role.

Each user can be member of multiple groups. You must assign one or more specific roles to each group. You can also assign roles to single users; however, for the sake of clarity, it is strongly recommended to assign roles only on the group level. Every member of a group automatically has all roles of this group.

- 1 Launch the Control Panel and navigate to **Administration**.
- 2 In the navigation pane, select **Users, Groups, or Roles**.
- 3 Create new items, or edit the existing ones.

Create or import users

With internal authentication, you create the required users in the Control Panel. With Windows domain as an external authentication system, you import the Windows domain users.

Add users (Internal Authentication only)

- 1 From the navigation pane, click **Administration > Users**.
- 2 In the ribbon, click **Create User**.
- 3 In the **Create User** dialog, provide the relevant parameters:

- Enter the name and password for the new user.
- By default, the new user will need to change the password at next login. If this is not required, clear the **User must change password at next login** check box.
- In the **Role Membership** tab, assign the user to an appropriate role. You can use the default roles, or prepare your own roles in the Control Panel under **Administration > Roles**.

4 Click OK.

Import users (Windows Domain Authentication only)

To add users to your system, you must have privileges to obtain user and group information from the domain.

- 1 From the navigation pane, click **Administration > Users**.
- 2 In the ribbon, click **Import User**.
- 3 In the **Search Users** dialog box, enter search string for the Windows domain username.
- 4 From the **Search Results** list, select the user you want to import, and click **Add**. The user is added to the **Selected Users** list.
- 5 Repeat steps 2 to 4 until you have added all the user names that you want to import to the **Selected Users** list, then click **OK**.

Groups

If you use an external authentication provider, you can import the names of groups that exist in the external system, or create new internal groups. There is no limit on the number of groups that can be mapped or created.

Assign users to groups either in the external system or in the Control Panel. If you need additional user assignments that are relevant only for OpenLab CDS, create them in the Control Panel. Otherwise it is sufficient to only import the groups and assign the required roles to the groups.

If you delete or unmap a group, the users who were members in this group remain unchanged.

Roles and Privileges

Roles are used to assign privileges to a user or a user group globally or for a specific instrument, project, project group or location. The system contains a list of predefined roles which are installed as part of the system installation (for example, **Instrument Administrator**, **Instrument User**, or **Everything**). Each role has certain privileges assigned.

Privileges are grouped according to the three main role types (Project role, Instrument role, and Administrative role). When you assign privileges to a role, you first select the required role type and then select the privileges related to this role type. Each role can only have privileges of one specific role type; the only exception is the predefined role **Everything**, which has all privileges of all role types. Users or groups may require multiple roles to perform system functions. For example, a user with the role *Chemist* may need another role such as *Instrument User* with the privilege to run an instrument.

You can create a tree of different locations in the Control Panel, and add instruments to the relevant locations. For each instrument or instrument group, you can assign different instrument roles (see also [Specific Roles for Individual Instruments or Projects](#) on page 70). For example, a user can have the role **Instrument Administrator** for one instrument, and **Instrument User** for another instrument.

You can also create a tree of different projects or project groups in the Control Panel, and assign different Project roles for different projects (see also [Specific Roles for Individual Instruments or Projects](#) on page 70). For example, a user can have the role **Project Administrator** in one project, so that he can manage the settings in the Control Panel. In a second project, he may have a role that allows him to edit the content of a project, but not to change the project settings.

For more information on privileges, see the Appendix.

Table 5: Description of role types

Role Type	Description
Administrative privileges	These privileges are globally assigned to a user or group and cannot be changed on the instrument/location level. They are the typical administration privileges such as Backup and restore , Manage security , Manage printers , etc.
Instrument privileges	These privileges can be assigned globally or on the instrument/location level. Privileges for instruments are, for example, View instrument or location and Run instrument . Users need the View instrument or location privilege on the global level to see the locations and instruments tree in the Control Panel.
Project privileges	Privileges for accessing or modifying different levels of data. You can assign these privileges globally or on project or project group level.

Add users or groups to a role

- 1 From the navigation pane, click **Administration > Roles**.
- 2 In the **Roles** window, select the role you want to assign to users or groups.
- 3 In the ribbon, click **Edit Role**.
- 4 In the **Edit Role** dialog box, click the **Members** tab.
- 5 Click **Add user or group**.
- 6 In the **Search Users and Groups** dialog box, enter the name of a user or group, and click **Search** to view a list of all users and groups that meet the search criteria.
- 7 Under **Search Results**, select a user or group, and click **Add**.
- 8 Click **OK**.

Specific Roles for Individual Instruments or Projects

By default, the roles of users or groups are globally set for all locations, instruments, project groups, or projects. The role settings are inherited from the root node **Instruments** or **Projects**, respectively. In order to assign a different role to a user or group for one specific project:

1. Select the relevant project.
2. In the ribbon, click **Edit Privileges**.
3. In the **Edit Privileges** dialog, clear the **Inherit privileges from parent** check box.

Afterwards, you can assign a different role that will be valid only for the specific node.

You can assign **Instrument** roles to individual locations or instruments.

If you use projects, you can assign **Project** roles to individual project groups or projects.

Administrative roles are always set globally.

Configure initial project

- 1 Launch the Control Panel and navigate to **Projects**.
- 2 Click **Create** in the ribbon to create a new project.
- 3 Provide a name, folder path, and description for your **OpenLab CDS** project.
- 4 On the **CDS Settings** tab:
 - Enter the required file locations.
 - Consider the required audit trail settings for this project.

For more details, refer to the Control Panel section in OpenLab Help & Learning.

Configure initial instrument

- 1 Launch the Control Panel and navigate to **Instruments**.
- 2 Click **Create** in the ribbon to create a new instrument.
- 3 Select the new instrument, and click **Configure Instrument** in the ribbon.
- 4 It is recommended that you use Auto Configuration (if available) to configure your instruments: Click **Auto Configuration**, and provide the instrument's IP address or hostname.

For more details, refer to the Control Panel section in OpenLab Help & Learning.

Other settings in the Control Panel

Consider also other settings in the Control Panel, such as:

- Changing the instrument status reporting frequency
- Changing audit trail settings for a project
- Editing signature levels for a project

For more details, refer to the Control Panel section in OpenLab Help & Learning.

Software architecture 75

Components on a Workstation Plus 76

Installed components 77

21 CFR Part 11 compliance 79

Data security 79

Data integrity 79

Audit traceability 80

Customization 81

Customization via custom calculations 81

Customization via report templates 81

Customize application to start external programs 82

Export raw data and results 82

Software architecture

OpenLab CDS is a data system solution for analytical workflows that controls a wide variety of instruments including the GC and GC/MS-SQ instruments, along with LC, LC/MS-SQ, LC/MS TOF and LC/MS Q-TOF. By combining chromatography and single-quad mass spectrometry into a single solution with centralized system administration, you can streamline your laboratory workflows and maximize productivity.

The Agilent OpenLab CDS software can be downloaded from your Agilent Online Account . This includes:

- Acquisition
- Data Analysis and Reporting
- Shared Services
- Secure Storage
- Custom Calculation Editor
- Help & Learning platform including user documentation
- Instrument driver software for Agilent LC, GC, LC/MS, LC-(Q-)TOF, GC/MS, or A/D
- Instrument driver software for virtual instruments (Data Player)
- Agilent Parts Finder
- Third party tools

On a Workstation with local secure storage, all components are installed on a single PC. Results are stored in a database provided by the content management component. Users have no access to the data via the local file system. The system supports up to four instrument connections.

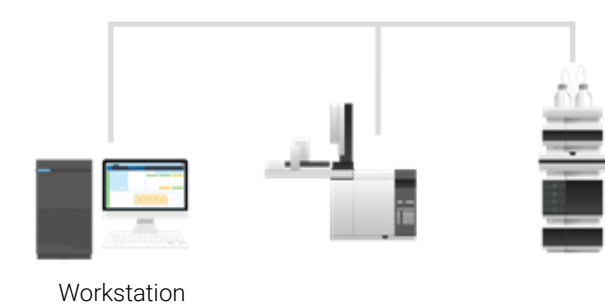


Figure 2: Workstation Plus and instruments

Components on a Workstation Plus

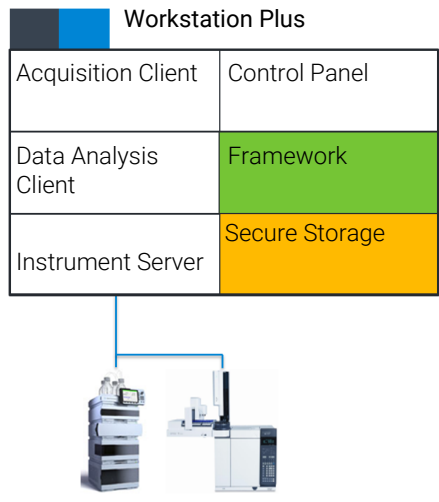


Figure 3: Components on a Workstation Plus

Acquisition client	Acquire raw data with a configured instrument.
Data Analysis Client	Analyze acquired data.
Instrument Server	Control connections to all configured instruments.
Control Panel	User interface to access Shared Services control features.

Framework	Reusable OpenLab CDS services, components, and tools.
Secure Storage	Content management component, provides the database and the Content Browser.

Installed components

The following Agilent components may be installed with your OpenLab CDS system. It depends on the type of installation (workstation, client, AIC, or server) which components are installed.

- OpenLab Backup and Restore Utility
Toolset for backup and restore operations in an OpenLab system.
- OpenLab CDS
The core application.
- OpenLab CDS instrument drivers
see section *Install or Upgrade Driver Software* for details.
- OpenLab CDS eMethod tool
Helps to import eMethods.
- OpenLab Certificate Service and Tool
Solution to secure network traffic in case commercial certificates are not available. Not used on a Workstation.
- OpenLab CopyTo Server, and CopyTo Client
Manage centralized printing.
- OpenLab Data Collection Service and Agent
Collects system and topology related information in distributed systems.
- OpenLab Data Repository
Storage infrastructure used by the system activity log and other software components and to store diagnostic and topology related information.
- OpenLab Reverse Proxy
Provides secure communication to OpenLab Components.
- Openlab SDMS and Secure Storage
Multiple individual components related to content management.

- OpenLab Storage Client Services
- OpenLab Shared Services
Set of services and tools that offer system configuration, security, application configuration, licensing, and notification capabilities.
- Software Verification Tool
Provides documentary evidence that your system has been built and installed correctly, and that all design specifications have been met.
- Test Services
Former QualA. Communicates with the Data Repository.

21 CFR Part 11 compliance

To fulfill the FDA rules and guidelines for compliant electronic records and computerized systems, it is important to understand the basic aspects of secure data handling.

- *Data security*: physical protection of data by limiting access to the system and preventing unauthorized access.
- *Data integrity*: protecting raw data and metadata and preventing these from unauthorized modification, and linking raw data and results to reproduce the original results at any time, for example, in an audit situation, and document each new result copy.
- *Audit traceability*: documenting who did what to the results and when, and tracing the user adding new reanalyzed versions to the original raw data.

Data security

The Shared Services functionality related to security includes the following (see [Control Panel](#) on page 84 for details):

- System Activity Log
- Selection of authentication provider
- Management of users, groups, roles, and privileges
- Security Policy

Data integrity

OpenLab CDS stores data in a manner that ensures compliance with 21 CFR Part 11. It provides secure data storage with access control and an audit trail. Data files are versioned to ensure data integrity and traceability. In addition, OpenLab CDS provides electronic signatures allowing users to sign off on data.

Audit traceability

There are different types of audit trails:

- The *sequence audit trail* is a record of changes made to the sequence when acquiring the data.
- The *method audit trail* provides a detailed list of modifications to a sample preparation method, an acquisition method, or a processing method.
- The *injection audit trail* is the record of a single injection that lists all modifications during the run and in Data Analysis.
- The *result set audit trail* is a superset of injection audit trails for all injections that are contained in a sequence/result set.

The specific behavior of an audit trail depends on the project settings in the Control Panel.

Customization

OpenLab CDS can be customized to support various workflows and applications. Customizing capabilities are available via different approaches.

For more information on how to use the different tools, refer to [OpenLab Help and Learning](#).

Customization via custom calculations

Data Analysis can be enriched by calculating additional values. The calculations are done with the Custom Calculation Editor and referenced by or embedded in a processing method.

These calculations can be quite complex. The calculation results are directly visible in Data Analysis, no report generation is needed.

Custom calculations are processed on result set level. They are only computed if all injections of the result set are processed together.

Customization via report templates

In a report template you can call calculation results from a method-specific custom calculation, or define additional, template-specific calculation expressions. The template-specific values are only visible in the report preview or the final report.

Reports are generated on either injection level, result set level, or across multiple result sets. Reports can be used for automated result evaluation on all the mentioned levels.

Example report templates for typical petrochemical or pharmaceutical applications are provided with the application and can be imported in Data Analysis (see *Import default templates* in OpenLab Help & Learning).

Customize application to start external programs

The customization capabilities allow to add ribbon groups and icons in the **Data Selection** and **Data Processing** views of OpenLab Data Analysis.

It is possible to start an external program via an icon and to hand over the project data path and the path of the current injection as parameters to the program.

The customization is based on a file **CustomToolsConfiguration.xml** at **Drive:\ProgramData\AgilentTechnologies\OpenLab DataAnalysis** that needs to be created by the user. An example **CustomToolsConfiguration.xml** file is included on the media at **Setup\Tools\Support\UCL\Customization**.

For more information, refer to OpenLab Help & Learning.

Export raw data and results

Data Analysis offers the possibility to execute post processing plug-ins as part of the processing method. These post processing plug-ins allow to export raw data or results as part of the processing routine of single runs as well as sequence runs, also in unattended mode. Scripts are available for the export in the following formats:

- OpenLab ChemStation Export (.D/.ch format)
- AIA Export (OpenLab CDS raw data and peak results as netCDF format (revision 3.4) according to AIA Chromatography Data Standard Specification V1.0)
- ASR Export (OpenLab CDS raw data as an ASR (Analytical Studio Reviewer) file format)
- OpenLab CDS raw data export (native .dx files for ACE)
- CSV export (OpenLab CDS raw data as comma separated values in .csv file format)

Other plug-ins such as the Allotrope Data Format (ADF) plug-in are available via SubscribeNet.

8 System Setup and Maintenance

Control Panel 84

Shared Services Maintenance 85

Important Information about Backup and Restore 86

Content of a backup 86

Space required 87

Configuration 87

Backup logs 88

Create a disaster recovery plan 88

Backup Procedures 90

Anti-virus scanning during backup 90

Encryption 91

Using the Backup Utility 92

Incremental backup support of PostgreSQL databases 98

Configure custom data directory for PostgreSQL database 100

Restore Procedures 101

Restore logs 101

Restore on an existing OpenLab CDS system 102

Rebuild the Activity Log index manually 104

Restore verification 105

Routine Maintenance 107

Troubleshooting 108

OpenLab CDS PC is slow 108

Opening the first instance of a software is slow 108

Control Panel

Using the Control Panel, you can access Shared Services control features such as security policy, central configuration, or lab status at a glance.

Accessing the functions may require specific privileges.

See **OpenLab Help & Learning** for more information on Control Panel functions.

Shared Services Maintenance

The **Shared Services Maintenance** program is automatically installed with your OpenLab software to help administrators manage the system.

To open the utility, select **Start > (All apps >) Agilent Technologies > Shared Services Maintenance** . A user must have Windows administrator rights to access this utility.

Windows Domain In this utility, the **Windows Domain** tab is relevant if you use windows domain authentication to identify your OpenLab users.

OpenLab CDS must be given access to the server where these credentials are stored. In the **Windows Domain** tab, you specify or change the credentials that OpenLab CDS will use to access your windows domain server.

For client/server systems: This feature can only access credentials that are stored on the computer where you launched the **Shared Services Maintenance** program. To specify or change the **Domain**, **User name**, or **Password** for the windows account that will be used to access your windows domain server, use the **Shared Services Maintenance** program that is installed on the server.

Server Settings The **Server Settings** tab can be used to manage different server connections. In a workstation configuration, there is typically only the connection to the local machine.

IaaS Settings The settings on this tab do not apply to a Workstation Plus.

Important Information about Backup and Restore

A prerequisite to restore an OpenLab CDS Workstation Plus database is that you back up your OpenLab CDS Workstation Plus regularly. Agilent recommends using the Backup and Restore utilities provided by the Software for this purpose.

Use the Backup utility to perform immediate or scheduled backups. The Backup utility supports periodic full backups and differential backups between the full backups.

The backup only *reduces* the amount of data loss if a catastrophic system failure occurs. Performing backups guarantees that any data that was committed at the time of the backup can be restored. Data that was queued for upload and not yet committed or was added or updated in the system after the backup was performed will not be recoverable by restoring a backup.

It is imperative that you test the restore procedures to ensure that the backups are performed properly and can be used for a restore. To do an effective restore, you must create a disaster recovery plan. See [Create a disaster recovery plan](#) on page 88.

NOTE

The Restore utility included in OpenLab CDS v3.0 can restore backups from OpenLab CDS v2.8 or higher. It does not support software upgrades from v2.7 or previous versions. To restore an OpenLab CDS 2.7 backup in a 2.7 environment, use the Backup and Restore utilities from the OpenLab CDS v2.7 installation media. For information on upgrade, see [Upgrade to OpenLab CDS Version 3.0](#) on page 110.

NOTE

The Backup and Restore utilities do not back up or restore any license information. Please refer to the Agilent Licensing documentation for details on restoring license information.

Content of a backup

OpenLab CDS Workstation Plus stores files and indexes on your local file system. The location of this folder is determined during product installation. Other data, such as folder information, audit trails, and signatures are stored in a database.

System Setup and Maintenance

Important Information about Backup and Restore

A full backup captures a complete set of data from OpenLab CDS Workstation Plus, including databases, config and installer files, and all files that have been uploaded into the content management system. An incremental backup contains changes that have occurred since the last full backup. The incremental backup process is faster than the full backup.

The complete backup includes:

- Configuration file
- Databases for Shared Services, local secure storage, and the Data Repository
- Content storage locations
- Certificate server

Space required

The free space required for the backup procedure depends on several factors, including the system configuration, backup location, and database backup size. Free space should be at least twice as much as is stored on-prem. This is needed to avoid overwriting a previous successful backup with a backup that finished in the middle for any reason.

Configuration

Backup and restore utilities use specific folders as temporary backup locations during backup/restore. See [Configure custom data directory for PostgreSQL database](#) on page 100.

If you plan to use incremental backups, you must configure the OpenLab CDS and Data Repository PostgreSQL databases first. See [Incremental backup support of PostgreSQL databases](#) on page 98.

Backup logs

The Backup utility collects logs in the folder provided on the **Backup options** page (by default, %ProgramData%\Agilent\LogFiles\Backup). During the backup procedure, all steps are checked, and the procedure will stop on the first failed step. A link with the failed step opens the current backup log file to help identify the issue. In case of a failed backup, the partial backup is stored in a Temp folder in the backup location.

Create a disaster recovery plan

Prepare a recovery plan for the unlikely case that OpenLab CDS becomes inoperable due to a hardware or software failure. This plan must include all information and procedures for completely restoring the operating system, and provide back-up locations for the software and data on a physically different machine. Ensure that the disaster recovery plan has been tested and confirmed to be working.

The disaster recovery plan must include the following:

- Hardware information: CPU, memory, and hard disk configuration information.
- Computer identity: Name, IP, domain, URI, etc.

Computer administrator information: username and passwords

NOTE: It is required that all usernames and passwords for the database on the target system (where you want to restore the backup) are the same as on the source system (where you have taken the backup). The **Password Change Tool** can help you to synchronize passwords before a restore. Please contact your Agilent support representative to get this tool.

- Software information: OS version, Patch level.
- Installation parameters:
 - OpenLab CDS installation path
NOTE: It is required that the installation path on the target system is the same as on the source system.
 - Installation log file
 - Storage locations
 - Shared Services database name
 - Installed licenses

- 3rd party software information: applications and their revisions and install paths.
- Backup procedures (see [Backup Procedures](#) on page 90).
- Backup media location and organization details.
- Restore procedures (see [Restore Procedures](#) on page 101).

Backup Procedures

For manual backup procedures, please follow the instructions in the *Agilent OpenLab Server and OpenLab ECM XT Administration Guide* ([openlab-server-ecmxt-v2.8-administration-guide-en.pdf, D0035354](#)).

Anti-virus scanning during backup

CAUTION

Anti-virus scanning during backup can prevent successful completion of the backup.

- 1 Make sure that the backup location is excluded for both regular/scheduled scans and real-time protection.

If the backup location cannot be excluded from real-time protection and real-time protection cannot be turned off, the final backup tasks might not finish successfully.
- 2 If you have an anti-virus scan running during backup, verify that the backup finished successfully:
 - After the backup completes, check that the backup location contains only "Current" (or "Current" and "Incremental") sub-folder(s).
 - Check that the log file corresponding to the backup time contains an entry stating "The backup has completed" at the end. Backup logs are placed in the
%ProgramData%\Agilent\LogFiles\Backup folder.
- 3 Modify the Retry policy:

By default, the Backup Utility tool tries 3 times to finalize the backup, with a time gap (delay) of 10 seconds in between.

To modify the backup finalization settings, change the **Delay** and **Retry** properties in the
<Backup><BackupFinalizationSettings> section of the **BackupUtility.config** file located in the <CDS_installation_directory>\Agilent Technologies\

OpenLab Backup Utility folder. Only a user with System Administrator privileges can update this file. Acceptable values are more than 0 for Delay, and more than 1 for Retry.

A new value will be applied during a backup; for **Backup now** at the Processing page before the first step, for **Backup by schedule** when a backup is started.

Encryption

In Windows, data is transferred to a Windows file share using the SMB (Server Message Block) protocol. By default, this protocol is not encrypted. This means that data that is backed up to a network share may be exposed to unauthorized access. To protect your data during the transfer, consider enabling SMB encryption on both the source and the destination system.

For detailed information about SMB encryption, refer to the *Microsoft Learn* article **SMB security enhancements** (<https://learn.microsoft.com/en-us/windows-server/storage/file-server/smb-security>).

Using the Backup Utility

Prerequisites

- If you run the Backup utility using a Windows account other than the built-in local Administrator, the account must be a member of the local **Administrators** group. In most environments, no additional user rights are required because local Administrators already inherit them.

However, if security policies in your environment remove default Administrator privileges, you may need to confirm that the account also has:

Log on as a batch job

Log on as a service

- You need an OpenLab CDS account with the following privileges:

System Administration > Manage security

System Administration > Manage system components

Activity log access > View Activity Log

Instrument Management > View instrument or location

Project Management > View project or project group

- To use incremental backups, you must have configured them first (see [Incremental backup support of PostgreSQL databases](#) on page 98). A full backup based on that configuration must exist.

- 1 Start Backup utility from **Start > (All apps >) Agilent Technologies > Backup Utility**. If a request for User Account Control access appears, click **Yes**.

The **Status** page displays the date and time of the latest successful backup. Click the link to go to the backup location.

If a backup is scheduled, the page displays the current backup status and the next backup start date and time.

If a backup is currently running, the status shows **Running**. If a scheduled backup has failed, the status shows **Failed**.

The **Last successful backup** shows the date/time when the latest successful backup (**by scheduler** or **backup now** type) was made, and its location. It will contain information right after the first successful backup.

NOTE

If the time zone has been changed, reboot the system . Otherwise, the date and time on the **Status** page can show mismatched values.

- 2 On the **Backup options** page, select the options as required:

- **OpenLab backup type**

Select **Set backup schedule** to configure an automatic backup procedure. Scheduling automatic backups is recommended.

Select **Backup now** to start the backup immediately. There is no impact on a scheduled backup.

This option can be helpful for checking the correctness of the backup settings, how much disc space and how much time a single backup requires. In addition, this option can be a part of testing the whole recovery procedure

- **Backup logs path**

Provide a folder path the local file system for the backup log files (by default: %ProgramData%\Agilent\LogFiles\Backup). Mapped drives are not supported.

The log files are:

A **BackupUI_log** file. It logs all user interface activities. It is created on starting the Backup utility.

A **Backup_log** file. It logs all backup activities. It is created on each backup execution.

- **Backup compression**

Select **Use maximum database backup compression** to reduce the file size of the database backup as much as possible.

NOTE: Compression will be done only on the full backup of the database. For the incremental backup, PostgreSQL WAL files will not be compressed.

To configure WAL file compression, see [Incremental backup support of PostgreSQL databases](#) on page 98.

- **Skip file verification**

File verification can take a long time, depending on the amount of data in your projects. Select **Skip file verification** to check only Shared Services records during backup and restore verification.

3 On the **Configure** page, configure your backup settings.

- For backup schedule, enable and set up schedule for backups.

It is highly recommended to enable the backup by schedule. Clearing the **Enable backup schedule** check box turns off the scheduled backup. Disable scheduled backups, for example, during maintenance periods. Be sure to enable the scheduled backups again when maintenance is completed.

Select if you want your system to be available during backup (**Yes** for hot backup, **No** for cold backup).

Select to enable incremental backups. Enter the time and days for incremental backups. The schedule time uses a 24-hour format.

When full and incremental backups are scheduled on the same day, the full backup will be performed.

If a scheduled full backup fails, the subsequent incremental backups will fail until the next successful scheduled full backup. To prevent failure of the incremental backups, perform an immediate backup to the location designated for the scheduled backups.

- For Backup now, select if you want your system to be available during backup. Select **Yes** for hot backup, or **No** for cold backup.
 - Hot backup: System remains operational during backup.
 - Cold backup: The Backup utility will automatically stop all OpenLab CDS processes before the backup.

4 On the **Backup location** page, choose where the backup will be stored.

- **Backup path:** path to the backup location on a local or remote system.

On the local system, the backup can be configured to a folder without permission for the current Windows user. The backup is always executed by the built-in Windows user SYSTEM to allow a successful backup. In the case of scheduled backup, the backup will be executed, but the current Windows user will not be able to view the results without the appropriate privileges.

For a remote system, specify a UNC path.

- **User and Password:** To store backups on a remote system, enter the login details of a domain user. This user must have administrator rights on the local system and read/write access to the backup path on the remote system.

5 On the **Shared Services Credentials** page, provide a Shared Services administrator's username and password. Click **Validate** to confirm that the credentials are valid.

Credentials used for a previous backup are preloaded. When no backup has been executed yet, the default administrator's credentials are preloaded.

6 If you scheduled a backup: On the **Notifications** page, enable and set up backup notifications. If you selected to backup now, this is skipped.

- Provide a *From* address. For information on how to set up email addresses, see the Control Panel online help.
Use a comma to separate multiple *To* addresses. Each address can be represented in long-form (name and email) or in short-form (only email).
 - Under **Subject starts with**, specify a prefix in the notification email subject.
 - Use **Send test message** to ensure that the notification settings are correct.
- 7 On the **Review** page: Review your settings. Click **Apply** to start the backup or save the backup schedule.
- 8 Progress is tracked on the **Processing** page.
A step may be listed as **Skipped** if an Add-on (for example, Library Manager for OpenLab CDS) is not installed.
- 9 When backup is complete, click **Done**.

Result of the backup

Backup folders are created in the specified location when you run the Backup utility. A backup log is created in the same location.

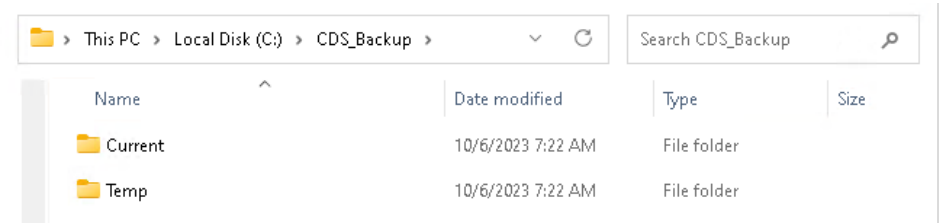
This PC > Local Disk (C:) > CDSBackup > Current >				
Name	Date modified	Type	Size	
CertificateService	12/13/2023 2:54 PM	File folder		
CM	12/13/2023 2:54 PM	File folder		
Installation	12/13/2023 2:53 PM	File folder		
PostgreSQLDataDir	12/13/2023 2:54 PM	File folder		
ReverseProxy	12/13/2023 2:54 PM	File folder		
Verification	12/13/2023 2:54 PM	File folder		
backup	12/13/2023 2:54 PM	XML Document	5 KB	
Backup_log_12-13-2023(14_53_16.9507113)	12/13/2023 2:54 PM	Text Document	41 KB	

NOTE

Backups can take a long time. If a backup is not complete by the time the next backup is scheduled, the next scheduled backup is skipped. Once the first backup is complete, the configured backup schedule resumes.

Information regarding the status and duration of a backup are available in the backup logs. Adjust the schedule if necessary.

If a backup failed during the execution of the final backup tasks, a partial backup may be saved in a Temp folder in your backup location.



The backup can still be considered successful if the **Temp** folder contains **backup.xml** file. In this case, you may rename the **Temp** folder as follows:

- If a full backup has been performed, rename the **Temp** folder to **Current**.
- If an incremental backup has been performed, rename the **Temp** to **Incremental**.

If your backup failed, check the backup log. For example, a backup may be skipped due to Shared Services credentials that have become invalid before the scheduled backup execution. In that case, change the invalid credentials through the Backup utility.

NOTE

It is possible to change storage locations settings such as address or storage types. Also, it is possible to relocate data from one storage location to another. If full or incremental backup is executed during these procedures, the system could be in the intermediate state which cannot be correctly restored later. Therefore, if you changed storage location settings, execute the full backup again before running the next restore procedure. In addition, reconfigure the incremental backup schedule.

Backup verification

The backup verification step verifies the backed-up data after the completion of the backup procedure. This step generates two reports. Both reports are located in the Verification sub folder.

- *VerificationReport.xml* - This file contains the technical information about the backed-up entities such as files, their hashes, or databases' entities. In case of restoration, this report will be used for comparison of the files and databases' entities.
- *VerificationReport.html* - This report contains information about backup, number of verified files, information about failed file verification, and database entity verification results in a human-readable view.

The verification step checks that main entities (files, database entities) are backed up properly. The number of files for verification is specified in the configuration file after backup configuration (10 % by default). Files will be verified and included in the report after the backup procedure. In case of restoration, all entities included in the report will be verified. Any entity (or its version) modified after the backup start time will not be included in the reports and will not be verified during the restoration procedure.

Files Verification For the file verification, the following logic is used:

- The Backup utility first counts all backed up files and randomly uses 10 % of the amount of the files. The used percent of the files for the verification is rounded up, for example, for 3 files 10% is 0.3, and this value is rounded to 1. In this way, the tool guarantees that at least 1 file will be verified.
- Then the utility takes a random version of each file. For example, if a file has three revisions (1.0, 2.0, and 3.0), the utility will randomly take one of them.
- The verification excludes deleted files.
- The verification procedure compares the checksum and size of backed up files with file information from the content management system. If the checksums are equal, the verification is passed. Otherwise, the verification fails.

The number of files for verification can be configured in the **BackupUtility.config** file, located in the **<CDS_installation_directory>\Agilent Technologies\OpenLab Backup Utility** folder. Only a user with System Administrator privileges can update this file. Modify the following properties in the Backup section:

- **PercentFilesVerification**: the percentage of files verified (10% by default). Acceptable values are in the range from 1 to 100. Negative, fractional, and values above 100 are not accepted.
- **TotalFilesVerificationLimit**: the upper limit files for verification (10 000 by default). Acceptable values are greater than 0. Negative and fractional values are not acceptable.

A new value will be applied during a backup; for *Backup now* at the Processing Page before the first step, for *Backup by schedule* when a backup is started.

- Shared Services Records Verification** The Shared Services records verification checks the number of records at the moment of the backup. The following records are counted:
- Projects
 - Instruments
 - Users
- Activity Log Records Verification** A fixed number of Activity Log records is randomly selected. Information on these records is collected in the background. After a restore, these Activity Log records will be verified.
- By default, 10,000 Activity Log records are selected. You can change the number in the **BackupUtility.config** file located in the **<CDS_installation_directory>\Agilent Technologies\OpenLab Backup Utility** folder. The minimum value is 1, the maximum value is 10,000.

Incremental backup support of PostgreSQL databases

PostgreSQL has an incremental backup strategy (*Continuous Archiving*). With Continuous Archiving enabled, PostgreSQL records every change made to the database's data files in a log (process called Write Ahead Log, WAL). You can combine a file-system-level backup with a backup of the WAL files.

To recover successfully using Continuous Archiving, you need a continuous sequence of archived WAL files that extends back at least as far as the start time of your backup. Therefore, before your first base backup, set up and test your procedure for archiving WAL files as described in the following.

Configure archiving of WAL files for PostgreSQL

The *Incremental Config Tool* allows you to configure incremental backup support automatically for all PostgreSQL instances used by OpenLab CDS Workstation Plus. The tool performs the following actions:

- Update settings for incremental backups of OpenLab CDS PostgreSQL.
- Restart required PostgreSQL services after updating.
- Update the BackupUtility.config file to enable incremental backups in the Backup Utility.

- 1 Run a Command Prompt as administrator.

- 2 Navigate to the installation path of the tool. By default, this is
C:\Program Files (x86)\Agilent Technologies\OpenLab Backup Utility\
Incremental Config Tool\.
- 3 Run the Incremental Config Tool using the following parameters:

<code>-on</code> or <code>-off</code> <code>-pgwalDir <path></code>	mandatory; enable incremental backup and set up default paths, or disable incremental backup optional; set up specified path for the OpenLab CDS PostgreSQL database. Applicable only with "on" parameter.
---	--

Examples:

- Enable incremental backup, set up default paths:
`PgIncrementalConfigTool.exe -on`
- Disable incremental backup: `PgIncrementalConfigTool.exe -off`
- Enable incremental backup and set up specified paths:
`PgIncrementalConfigTool.exe -on -pgwalDir D:\wal\pg`

The tool configures the PostgreSQL databases and restarts the PostgreSQL services. On successful completion, it shows the message **Configuration completed successfully**. If an error occurs, it shows the message **PgIncrementalConfigTool has failed**. The log files: `<log file path>`.

Configure custom data directory for PostgreSQL database

- 1 To get the current PostgreSQL service settings, run a command line and execute the following command: `sc qc postgresql-x64-17-dr`
In the output, the value after the -D option shows the current data location.

- 2 Stop the PostgreSQL service: `postgresql-x64-17-dr`.

- 3 Move the content of the current data location to the new location.

- 4 To modify the PostgreSQL service settings and set up a new data location, enter the corresponding command. For example:

```
sc config postgresql-x64-17-dr binPath="\"C:\Program Files  
(x86)\PostgreSQL\17\bin\pg_ctl.exe\" runservice -N \"postgresqlx64-17-  
dr\" -D \"E:\NewDataLocation\" -w\"
```

- 5 Update the registry values for PostgreSQL service. Set up the new data location in the following keys:

- HKEY_LOCAL_MACHINE\SOFTWARE\PostgreSQL\021C31D3-C59B-4DED-BCBC-5EBFC034498C\Installations\postgresql-x64-17\DataDirectory
- HKEY_LOCAL_MACHINE\SOFTWARE\PostgreSQL\021C31D3-C59B-4DED-BCBC-5EBFC034498C\Services\postgresql-x64-17\DataDirectory

- 6 Start the service: `postgresql-x64-17-dr`.

Restore Procedures

The Restore utility can restore a system from cold and hot backups created with the Backup utility. Use the Restore utility to restore your Workstation Plus from an existing backup if it becomes inoperable due to a hardware or software failure.

The restore procedure will restore only committed data captured by the successful backup procedure. Data that was created or updated after the backup started is not recovered by restoring a backup. Reconfiguring or restoring from AWS S3 locations is not supported for Workstation Plus.

NOTE

The Restore utility included in OpenLab CDS v3.0 can restore backups from OpenLab CDS v2.8 or higher. It does not support software upgrades from v2.7 or previous versions. To restore an OpenLab CDS 2.7 backup in a 2.7 environment, use the Backup and Restore utilities from the OpenLab CDS v2.7 installation media. For information on upgrade, see [Upgrade to OpenLab CDS Version 3.0](#) on page 110.

NOTE

If you are using non-default paths for configuring PostgreSQL for incremental backup in a backed-up system, please follow the instructions under [Incremental backup support of PostgreSQL databases](#) on page 98 after the restore.

Restore logs

The Restore utility collects logs in the %ProgramData%\Agilent\LogFiles\Restore folder. During the restore procedure, all steps are checked and the whole restore procedure stops on the first failed step. A link with the failed step opens the current restore log file to help identify the root cause of the problem. There are validations on each page during restore configuration to prevent possible errors with no access to backup data and incorrect format.

Restore on an existing OpenLab CDS system

Use the Restore utility to restore to a system with OpenLab CDS Workstation Plus installed. Use the procedure below to restore a previously installed system that was backed up using the Backup utility.

NOTE

Ensure that the target OpenLab CDS system uses the same authentication mode (for example, domain authentication) as the backed-up system. Also, both systems must map the same Admin users. This ensures that the restore will be successful. The restore will not be possible if the backup was done on a system with a different type of authentication.

NOTE

Users must have the same passwords in the source and the target system. If you need to restore your Control Panel settings on a system where users have different passwords, the **Password Change Tool** can help you to synchronize them before a restore. Please contact your Agilent support representative to get this tool.

NOTE

The OpenLab CDS system must have the same Update version as the system where the backup has been taken.

Prerequisites

- You need an OpenLab CDS account with the following privileges:
 - System Administration > Manage security**
 - System Administration > Manage system components**
 - Activity log access > View Activity Log**
 - Instrument Management > View instrument or location**
 - Project Management > View project or project group**
 - To access the folder with the backup, the application must be launched by a user with reading rights in this folder.
- 1 Stop all OpenLab CDS Workstation Plus operations before performing the restore process.
 - 2 Make sure that no instruments or other parts of the system use the system during the restore process.
 - 3 In **Start > (All apps >) Agilent Technologies** right-click **Restore Utility**, and run it as administrator. The Restore utility must always be started using the option **Run as administrator**, even if logged on as local Windows Administrator.

- 4 On the **Restore configuration** page, choose your backup location and restore mode.

Select **File system** as the backup location if the backup is located locally or on Windows share. Select the backup folder that was used by the Backup Utility.

Choose an appropriate restore mode.

- Select **Restore only** to skip verification
- **Restore and partial verification** is selected by default. This option requires a manual step afterwards to rebuild the Activity Log Index .
- Select **Restore and full verification** to automatically rebuild the Activity Log Index. Note that the time required to rebuild the Activity Log Index depends on the amount of Activity Log records. It may take up to a few hours.
- Select **Verify only** if you have already restored the system before.

Click **Next**.

- 5 If you selected a mode that includes verification, and enabled domain authentication on your system: Provide a Shared Services administrator's username and password on the **Shared Services Credentials** page. The credentials of the last backup are preloaded.

Click **Validate** to confirm that the credentials are valid.

- 6 On the **Review** page, review the settings and click **Apply**.

The restore procedure progress is tracked on the **Processing** page.

A step may be listed as Skipped if an Add-on (for example, Library Manager for OpenLab CDS) is not installed.

- 7 If a verification step was included, click the verification status **Done** to open the verification report.
- 8 When the restore procedure is complete, click **Done** in the Restore utility.
- 9 Reboot the restored OpenLab CDS Workstation Plus system.

Select **Yes** to reboot the system immediately. Select **No** if you want to postpone the reboot and perform it manually

- 10 If you selected **Restore only** or **Restore and partial verification**: Rebuild the Activity Log index (see [Rebuild the Activity Log index manually](#) on page 104).
- 11 Back up the complete system after a restore on an already installed OpenLab CDS system. This ensures that all relevant settings are updated in the BackupUtility.config file. See [Backup Procedures](#) on page 90.

Possible errors

The Agilent OpenLab Shared Services service is not started. More help is available by typing NET HELPMMSG 3521.

Probable cause	Suggested actions
The Agilent OpenLab SharedServices service is already stopped.	Use the following command instead: <code>del /s /f /q %ProgramData%\Agilent\OLSS\Index\ActivityLog && net start SharedServicesHost</code>

System error 5 has occurred. Access is denied.

Probable cause	Suggested actions
The Command Prompt has insufficient privileges.	Make sure the Command Prompt has been started as an Administrator.

Rebuild the Activity Log index manually

After a restore, searching the Activity log requires a fully rebuilt index.

Use the manual rebuild procedure in case you restored your system without verification, or with partial verification. The Activity Log Index must be rebuilt before you verify restored Activity Log records.

The time required to rebuild the index depends on the amount of Activity Log records. It may take up to a few hours. During this time, you cannot search the Activity Log in the application.

To rebuild the Activity Log:

- 1 Start the command prompt as an administrator.
- 2 Navigate to `Drive:\Program Files (x86)\Agilent Technologies\OpenLab\Services\Activity Log Service`.
- 3 Execute the file `Agilent.OpenLab.ActivityLog.Tools.Albit.exe` with the following parameters:

<code>rebuild-index</code>	Ask for confirmation before deleting the old index. Then build a new one.
<code>--force</code>	Optional: Do not ask for confirmation.
<code>--continue</code>	Optional: Continue rebuilding from where the last execution left off, without deleting the old index first. This option prevents the need to start the whole process again after a timeout.

Restore verification

Verification is available only for systems on which the OpenLab software has already been installed.

Verification reports are saved at
`%ProgramData%\Agilent\Restore\Verification`.

The Restore Utility collects logs at
`%ProgramData%\Agilent\LogFiles\Restore`.

During the restore procedure, validations on each page prevent possible errors, such as no access to content and archive locations, or incorrect formats. The procedure will stop on the first failed step. A link with the failed step opens the current restore log file to help identify the issues.

Shared Services records verification The restore verification includes counting the following restored item:

- Projects
- Instruments
- Users

The verification process compares the numbers of backed up items with the numbers of restored items. A restore verification is shown as **Failed** if the numbers differ from the ones in the backup verification.

- Files verification** The restore of files stored in the content management system is verified. This step is skipped if you selected the **Skip file verification** option on backup creation.
- Activity Log Records Verification** Verification of Activity Log Records confirms that all records that were randomly selected during the backup are available in the restored system. If any of them is missing after the restore, the verification of the Activity Log Records is considered failed.

Routine Maintenance

Routine maintenance procedures should be carried out on a regular basis. They are related to the Secure Storage database, the Shared Services, and the Data Repository databases. They are also provided by OpenLab Server.

Please refer to *Agilent OpenLab Server and OpenLab ECM XT Administration Guide (openlab-server-ecmxt-v2.8-administration-guide-en.pdf, D0035354)* for more information on the following topics:

- Monitor resource usage
- Update database statistics
- Additional best practices

Troubleshooting

OpenLab CDS PC is slow

It takes a long time to start a new Data Analysis or Acquisition client. Many CDS instances are running on the PC.

Probable cause	Suggested actions
The PC is running low on available memory, Microsoft Windows starts to swap out memory to the hard drive (memory paging).	• Close unnecessary applications to free up memory. Close OpenLab clients that are no longer required, and consider closing other applications that run on the same machine. • Consider using SSD hard drive instead of HDD (spinning drives). Any memory swapping process will become significantly faster. • If the problem persists: Consider adding memory.
Response times for nslookup are too long.	Configure a Reverse Lookup Zone on the DNS server

Opening the first instance of a software is slow

Opening the first instance of a software application appears slower than subsequent use. This delay may also appear for applications that are infrequently used (for example, when loading OpenLab CDS Data Analysis from Sample Scheduler, Data Analysis may seem slow(er)) ⁴.

4 After a certain period of inactivity, the cache is emptied, so infrequent use can be equivalent to first-time use.

Probable cause	Suggested actions
Loading application DLL's the first time takes longer than subsequent loading of the same application due to memory caching for subsequent uses of the same application. The initial time is dependent on reading the DLL from media, whereas subsequent use of the DLL is from memory. This may cause an application to have a different startup time for first (or infrequent) use compared to subsequent use. ²	Consider using SSD hard drive instead of HDD (spinning drives). Read times from SSD is significantly faster than HDD and in many cases this Initial Application launch time (DLL read) is eliminated.



9

Upgrade to OpenLab CDS Version 3.0

License Upgrade 111

Upgrade Workstation Plus Software 112

Manual steps required after the wizard finished 115

Post upgrade tasks 117

New or Upgraded Items 118

License Upgrade

When you purchase OpenLab CDS, you will receive an email that contains your entitlements.

Activate your electronic OpenLab CDS licenses following the steps under [Electronic Licensing Activation](#) on page 50.

NOTE

Licenses for other co-installed products, such as 2D-LC Software, GPC/SEC Software, or MS Spectral Deconvolution, may remain unchanged (SubscribeNet licences). These should not be removed. Dual licensing is supported in these cases.

Upgrade Workstation Plus Software

Confirm that the current version can be directly upgraded to OpenLab CDS revision 3.0; direct upgrades are supported from revision 2.6 and higher

Versions older than OpenLab CDS v2.6 require an intermediate step to a version supporting a direct upgrade. Agilent recommends to upgrade those systems to v2.7 first.

Obtain the latest version of all installed add-ons and instrument drivers.

Verify there is enough disk space on the system drive to complete the upgrade, or the installer may fail during caching or later during the upgrade. Free disk space should be 50 GB.

If upgrading the software, all uploads must be stopped and the File Upload Queue must be empty before upgrading.

Back up the complete system before starting the upgrade, and after finishing the upgrade.

NOTE

The Restore utility included in OpenLab CDS v3.0 can only restore backups from OpenLab CDS v2.8 or higher.

- 1 Uninstall add-on software such as ADFExport or 2D-LC. Do not manually uninstall Sample Scheduler for OpenLab.

NOTE

Older revisions of add-on software may not be supported with OpenLab CDS v3.0. Running incompatible add-ons, or uninstalling them after the upgrade, may cause the Data Analysis application to fail.

Please check the documentation of each add-on for information on compatibility.

- 2 Right-click the **Setup.exe** file, and run it as administrator.
- 3 From the **Planning** tab, select **System Preparation Tool** to check and update the Windows settings on the machine. See [Run the System Preparation Tool](#) on page 14.
- 4 From the **Installation** tab, select **OpenLab CDS Workstation Plus**.
- 5 In the **Upgrade Preparation** screen, confirm that you have backed up your system. Click **Next**.

- 6 In the **License Agreement** screen, read and confirm Agilent terms and conditions. Click **Next**.
- 7 In the **Server Information** screen, click **Connect**. If your previous installation required user authentication, provide the Control Panel login credentials of an administrator. Click **Next**.
- 8 **Component Credentials:** Provide a password to be used by software components. You may be asked to provide a new password if existing password does not meet the requirements.

Passwords must adhere to the following general guidelines:

- Minimum 8 characters
- At least one uppercase letter
- At least one lowercase letter
- At least one number
- Only contains allowed characters

Overall Allowed Characters:

- Uppercase letters A-Z
- Lowercase letters a-z
- Numbers 0-9
- Special characters: !@#\$%^&-+_ =

NOTE

Make sure to document your password at a secure location.

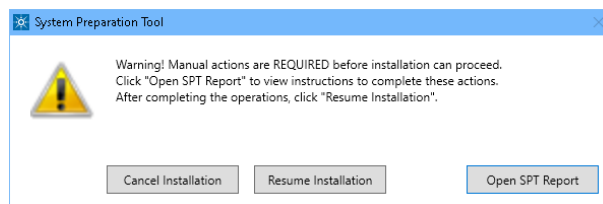
Click **Next** to proceed.

- 9 In the **System Preparation** screen, the upgrade wizard shows the list of recommended settings for the system. You may clear the check boxes for items that you do not want to apply on the system. Mandatory settings will be applied automatically during the upgrade. For an overview of both mandatory and recommended settings, refer to the chapter *System Preparation Tool* in [OpenLab CDS Requirements and Supported Instruments \(CDS_v3.0_Requirements_en.pdf, D0028027\)](#).

Click **Next** to proceed to the **Review** page. The settings will be applied as part of the installation.

- 10 In the **Review** screen, click **Upgrade** to start the upgrade.

- 11 The following warning is displayed when user actions are required in the operating system:



Options to proceed

- *Recommended:* Click **Open SPT Report**, and review the **Required Actions** section for the instructions to verify if updates are needed. After completing the operations, click **Resume Installation**.
- **Cancel Installation:** Installation is aborted. Make necessary updates and restart installation.
- **Resume Installation:** The dialog is closed, and installation continues with the installation of the CDS components even if a setting was not applied. If needed, the settings can be updated after the installation has been completed.

- 12 On the **Upgrade** tab, click **Next** after all components are installed.

- 13 In the **Configure** screen, click **Next**.

14 On the **Finish** page, click **Run Software Verification**.

15 On the **Finish** page:

- a** Keep the **Reboot** check box selected
- b** If you upgraded from v2.6 or v2.7: Confirm that, to complete the upgrade, you will run the OpenLab Database Import/Transfer Service tool after reboot.
- c** Click **Finish**.

Manual steps required after the wizard finished

Transfer your data

NOTE

This step is only required if you upgraded from v2.6 or v2.7. It is not required after upgrading from v2.8.

- 1** Transfer your v2.6 or v2.7 data to v3.0.

To help you transfer your data, the OpenLab Database Import/Transfer Service tool is automatically installed when upgrading to OpenLab CDS v3.0.

For a standard Workstation Plus, the transfer is expected to take 60-90 min.

- a** After reboot, navigate to the OpenLab Database Import/Transfer Service tool in the Start menu. Right-click the tool, and select **Run as administrator**. The tool automatically runs all required health checks.
- b** When they succeeded, click **Start**.
- c** When the data transfer is complete, click **View Reports** to view a confirmation report.
- d** Click **Acknowledge** to mark the transfer as complete. If you do not click **Acknowledge**, the OpenLab Database Import/Transfer Service tool will continue to appear when Windows reboots.

Update add-ons and drivers

- 1** Install compatible revisions of your add-ons.

- 2 Upgrade instrument drivers to the latest revisions. If you updated an LC/MS or GC/MS driver, ensure the firmware for your instruments is updated to the latest revision.

For more information on driver upgrades, see [Install or upgrade add-on driver software](#) on page 30.

- 3 Check if you need to adjust privileges or signature levels (see [New or Upgraded Items](#) on page 118).
- 4 Back up the complete system after finishing the upgrade. See [Backup Procedures](#) on page 90.

NOTE

If you upgraded a v2.6 or v2.7 system: The last backup before the upgrade of is no longer usable, since it is not compatible with the upgraded system.

Consider updating your processing methods

Updates may be needed after migrating methods and data from older CDS versions into OpenLab CDS 3.0.

- Area counts/heights may change due to dynamic EIC/SIM RT signal extraction. Integration results might be different due to small changes in the baseline of the peak.
- Since the reference signal for qualifier ratios is now configurable, Agilent recommends updating the qualifier ratios for methods created with OpenLab CDS v2.6 or earlier.

For details, refer to *Use data from previous version* in [OpenLab Help and Learning](#).

Post upgrade tasks

An upgrade from version 2.6 or 2.7 to version 3.0 replaces the PostgreSQL database instance for OpenLab CDS. Proceed as follows to disable the previous database.

- Stop and disable the legacy service **olcm-postgresql-x64-11** (v2.5 or v2.6) or **olcm-postgresql-x64-14** (v2.7) or **olcm-postgresql-x64-15** (v2.8). Do *not* stop the service **PostgreSQL 17.x**.

Verification: Open a web browser, and enter

<https://localhost/openlab-storage/> .

If the Content Browser login page opens with no error message, the disabling of the legacy service did not impact the updated content management system.

The following steps are optional. They can free up disk space. Follow the instructions carefully to avoid data loss:

- Go to **Settings** > **Apps & features**, and uninstall legacy PostgreSQL database **PostgreSQL - OLCM**.

Verification: Open a web browser, and enter

<https://localhost/openlab-storage/> . If the Content Browser login page opens with no error message, uninstalling the legacy PostgreSQL database did not impact the updated content management system.

- Open the file explorer, and delete the legacy database folder
 %ProgramData%\Agilent\PostgreSqlData-11-OLCDS (v2.5 or v2.6) or
 %ProgramData%\Agilent\PostgreSqlData-14-OLCDS (v2.7) or
 %ProgramData%\Agilent\OpenLab Platform\PostgreSQL\15 (v2.8).

Note that, while the service **PostgreSQL 17.x** is running, the system prevents an accidental deletion of actively used database folders.

- For versions before CDS v2.8, delete the content of the **Drive:\DSdata\DSIndex** folder. Do not modify or delete any other content in the **Drive:\DSdata** folder!
- From file explorer, delete the index folder inside
 %ProgramData%\Agilent\OLSS. It contains the legacy Activity Log Index.

New or Upgraded Items

Licensing

OpenLab CDS 3.0 supports Electronic licenses in addition to SubscribeNet licenses. Electronic licenses offer an **Openlab CDS System** license, which automatically covers any number of AICs in a Client/Server system.

The AIC licenses will need upgrade of the core feature to v3.0 using an **OpenLab CDS System** license.

Privileges and roles

On upgrade from a previous version, new privileges and roles may be created (see Appendix for details on roles and permissions).

For example:

- With OpenLab CDS 3.0, privileges are reorganized. There are less categories, and category names include the functional area.
For example, the **Import raw data** privilege is moved from the category **Data**, to **OpenLab CDS: Data Analysis**. The reorganization has no impact on the assignment of privileges to roles.
- In previous revisions, importing raw data was included in the **Import data** privilege for the role **Chemist**. Starting with Shared Services version 3.7 / OpenLab CDS 2.8, the privilege **Import raw data** has been added. This privilege is now required, for example, to import raw ChemStation or EZChrom data.
The new privilege is not added automatically to any role. If you still want the role **Chemist** to allow importing raw data, you must add the new privilege manually.
- Starting with Shared Services version 3.6 / OpenLab CDS 2.7, the privilege **View activity log** has been added. This privilege is now required to view activity logs and audit trails. This privilege is by default assigned to the new role **Activity Log Access**. During the upgrade, this new role is automatically assigned to all existing users and groups.
The **View activity log** privilege is also automatically added to the **System Administrator** default role.

Signature levels

Starting with OpenLab CDS 2.8, signature levels for electronic signatures can include or exclude authors of a result set. For details on adding authors to a signature step, see OpenLab Help and Learning.

Uninstall OpenLab CDS

- 1 Log in as an administrator.
- 2 In the Windows Settings, open **Apps > Apps and features**.
- 3 Uninstall OpenLab CDS add-ons that you installed separately (for example, **ADExport for OpenLab**).
- 4 Select **Agilent OpenLab CDS**, and confirm uninstallation.

The OpenLab CDS Uninstallation Wizard opens ⁵. In the wizard, click **Uninstall**, and follow the wizard.
- 5 In the Windows Settings under **Apps > Apps and features**, continue the uninstallation by removing the following components:
 - **Agilent Software Verification Tool**
 - **PostgreSQL - OLCM**

When uninstalling PostgreSQL, a warning will be shown that the data directory has not been removed. If you want to remove it, manually delete the folder that you defined during installation (for example, **C:\DSDData**).
 - **Instrument drivers**

Drivers installed by the OpenLab installer with OpenLab CDS are uninstalled automatically. If you installed other drivers, uninstall them manually.
- 6 Reboot.

⁵ The Uninstallation wizard can also be started from the Installation Wizard used to install the software.

Troubleshooting Tips

Required disk space

For upgrading an OpenLab CDS application to revision 3.0, a minimum of 10 GB of free disk in the system drive is required, as all installed packages will be copied to

Drive:\ProgramData\Package Cache. If you copy the content of the USB to your computer, you will need additional 10 GB of free disk space.

Privileges in the Control Panel 123

Project privileges 124

Instrument privileges 130

Administrative privileges 131

Sales and Support Assistance 133

Privileges in the Control Panel

The privileges described in the following can be associated with different roles in the Control Panel. The following roles are available:

- Everything
- Activity Log Access
- Bulk Importer
- Chemist
- File Storage Location Manager
- Instrument Administrator
- Instrument User
- Lock Schedule Manager
- Project Administrator
- Project Content Deletion
- Secure Storage Administrator
- Secure Storage Approver
- Secure Storage Archivist
- Secure Storage Contributor
- Secure Storage Delete Content
- Secure Storage Viewer
- Storage Configuration Manager
- Storage Location Manager
- System Administrator
- Technician
- View Storage Administration Content

In the Control Panel under **Administration > Roles**, you can view or change the associated privileges, or create your own roles.

Project privileges

Table 6: OpenLab CDS: Sample Submission

Name	Description	Dependencies
Cancel my pending run	Cancel own pending runs in the run queue.	
Create and modify sequence	Create, edit and save sequences (*.sqx)	Edit content of project
Edit method override parameters	Override parameters in a predefined acquisition method.	Edit content of project Create and modify acquisition method
Edit users own running sequences	Edit your own running sequences (with status Acquiring in the Run Queue).	Edit content of project
Run priority sample	Submit <i>Priority</i> single samples.	Edit content of project Run single sample
Run single sample	Submit regular single samples.	Edit content of project
Use generic acquisition methods	Use acquisition methods that have the status Generic .	Edit content of project Create and modify sequence Run single sample
Use generic processing methods	Use processing methods that have the status Generic .	Edit content of project
Use generic sample prep methods	Use sample prep methods that have the status Generic .	View instrument or location Run instrument Edit content of project Create and modify sequence Run single sample

Table 7: OpenLab CDS: Administration

Name	Description	Dependencies
Access Custom Tools section	Start external programs that were added to the application via the customization tool	
Add manual audit trail entry	Add a manual entry to document your own actions in the audit trail.	Edit content of project Save result set method Save master method
Change method audit trail settings	Edit and save method audit trail settings (project properties in the Control Panel).	Manage project or project group Edit content of project

Name	Description	Dependencies
Change method status	Change the status (Generic, Approved, Obsoleted) of sample prep methods, acquisition methods and processing methods.	Edit content of project Create and modify sample prep Create and modify acquisition method Save master method
Review audit trail	Confirm that you reviewed a changed audit trail.	Edit content of project Save result set method Save master method

Table 8: OpenLab CDS: Data Analysis

Name	Description	Dependencies
Create new result set	Combine single samples or sequences from different sources in a new, self-assembled result set.	Edit content of project
Disable/enable calibration points	Disable or enable individual points of a calibration curve.	Edit content of project
Do manual chromatogram extraction	Manually extract MS (EIC or SIM) chromatograms from your data.	Edit content of project
Do manual compound identification	Manually assign a compound to a peak.	Edit content of project
Do manual integration	Activate manual integration in the Chromatograms window.	Edit content of project
Do manual MS library search	Manually search for matches in an MS library.	Edit content of project
Do manual MS Spectral Deconvolution	Manually run MS spectral deconvolution, remove MS spectral deconvolution results.	Edit content of project
Do manual spectrum extraction	Manually extract UV or MS spectra from your data; also required to remove extracted spectra	Edit content of project
Edit sample information	Edit information in the Injection List window.	Edit content of project
Export data	Export data into an OpenLab archive (*.olax).	Edit content of project
Import data	Import data from OpenLab archives (*.olax) into the OpenLab system.	Edit content of project
Import raw data	Import raw data (for example, from ChemStation or EZChrom, the AIA data format, GC/MSD MassHunter, or MSD ChemStation).	Edit content of project
Launch Custom Calculation Editor	Start the Custom Calculation Editor from Data Analysis.	Edit content of project
Lock Results	Lock a result set to protect it from being changed.	Edit content of project

Name	Description	Dependencies
Print results reports	Create reports for your methods or results.	Edit content of project
Reprocess data	Reprocess injections or result sets.	Edit content of project
Save reports to disk	Save or export a report to a location on a disk or network share.	Edit content of project

Table 9: E-Signature

Name	Description	Dependencies
E-Signature Sign Data Files	Sign data files	Edit content of project Save result set method
Revoke E-Signature	Revoke the e-signature.	Edit content of project Save result set method

Table 10: OpenLab CDS: Method Development

Name	Description	Dependencies
Create and modify acquisition method	Create, edit and save an acquisition method file (*.amx)	View instrument or location Run instrument Edit content of project
Create and modify sample prep	View, edit, and save an autosampler sample prep method (*.smx)	View instrument or location Run instrument Edit content of project
Create and modify sequence template	Create, edit and save sequence creation templates (*.stx).	View instrument or location Run instrument Edit content of project
Create and modify task	Create, edit and save task file (*.tmx).	View instrument or location Run instrument Edit content of project
Create processing method	Create a new processing method (*.pmx), or save a method under a new name.	Edit content of project
Create report template	Create and edit report templates (*.rdl) in the Reporting view.	Edit content of project
Delete methods	Delete processing methods (*.pmx) or acquisition methods (*.amx) in the Data Selection view of Data Analysis (requires also the Project Management > Delete content of project privilege).	Edit content of project Delete content of project

Name	Description	Dependencies
Delete report templates	Delete report templates (*.rdl) in the Data Selection view of Data Analysis (requires also the Project Management > Delete content of project privilege).	Edit content of project Delete content of project
Delete sequence templates	Delete sequence templates (*.stx) files in the Data Selection view of Data Analysis (requires also the Project Management > Delete content of project privilege).	Edit content of project Delete content of project
Edit calibration parameters	View and edit the parameters in the Compounds > Calibration section of method.	Edit content of project
Edit chromatogram extraction parameters	View and edit the parameters in the Extraction > Chromatogram section of a method.	Edit content of project
Edit custom calculation parameters	View and edit the parameters in the Tools > Custom Calculation section of a method.	Edit content of project
Edit general parameters	View and edit the parameters in the General > Properties section of a method.	Edit content of project
Edit identification parameters	View and edit the parameters in the Compounds > Identification section of a method.	Edit content of project
Edit integration parameters	View and edit the parameters in the Integration Events section of a method.	Edit content of project
Edit MS library search parameters	View and edit the parameters in the Spectral Analysis > MS Library Search section of a method.	Edit content of project
Edit MS Spectral Deconvolution parameters	View and edit the parameters in the Spectral Analysis > MS Spectral Deconvolution section of a method.	Edit content of project
Edit Post Processing Plugins parameters	View and edit the parameters in the Post Processing Plugins section of a method.	Edit content of project
Edit reporting parameters	View and edit the parameters in the Reports > Injection Report section of a method.	Edit content of project
Edit sample purity parameters	View and edit the parameters in the MS Sample Purity section of a method.	Edit content of project
Edit signal parameters	View and edit the parameters in the General > Signals section of a method.	Edit content of project
Edit spectra parameters	View and edit the parameters in the Compounds > Spectra section of method.	Edit content of project
Edit spectrum extraction parameters	View and edit the parameters in the Extraction > Spectrum section of a method.	Edit content of project

Name	Description	Dependencies
Edit system suitability parameters	View and edit the parameters in the System Suitability section of method.	Edit content of project
Integration Optimizer: Display peak results	Show the retention time, area, and area % for each integrated peak in the Integration Optimizer.	Edit content of project
Load older master method	Only with content management: Load an older version of a master method.	Edit content of project
Save master method	Save changes to a processing method in the Methods folder.	Edit content of project
Save result set method	Save changes to a processing method in the result set folder.	Edit content of project
Unlock/lock report template items	Lock and unlock report template items (tables, chromatograms, groups of items, ...) to control who is allowed to modify those.	Edit content of project
Use Integration Optimizer	Edit parameters for the integration optimizer, step through the wizard, and use functions offered by the wizard.	Edit content of project Save result set method
Validate report template	Confirm usage of report templates that have been modified outside OpenLab CDS.	Edit content of project

Table 11: Project Management

Name	Description	Dependencies
Delete content of project	Required to delete templates and methods in the Data Selection view of Data Analysis.	Edit content of project Delete report templates Delete sequence templates Delete methods
Manage project attachments	Can be required to use OpenLab CDS Add-ons. See Add-on documentation.	
Edit content of project	Create new versions of documents (e.g. data, methods, or templates). Delete methods or templates.	
Manage project or project group	Create, move, edit, and delete projects and project groups; edit project properties; cannot edit privileges for projects or project groups.	
Manage project or project group access	View and edit the project access settings.	
View project or project group	View a project and project details but cannot edit. <i>Note:</i> This privilege is required for all users.	

Table 12: Secure Storage (Content Browser privileges)

Name	Description	Dependencies
Check-in/out	Check out, check in, and undo checkout for files checked-out by yourself	View content
Copy files/folders	Copy files and folders to another location in secure storage.	View content
Create/Rename folder	Create or rename folder.	View content
Delete files/folders	Delete files and folders from secure storage.	View content
Download files/folders	• Download files and folders • Download as zip • Preview files • Create file/folder link • Use file/folder link	View content
E-Sign files	Add electronic signature to data files.	View content
Lock files/folders	Lock files and folders so that they cannot be changed, moved, or deleted.	View content
Move files/folders	Move files and folders to another location in secure storage.	View content
Undo checkout for other users	Undo checkout for files checked-out by other users	View content
Unlock files/folders	Unlock files and folders.	View content
Upload files/folders	Upload files and folders to secure storage.	View content
View content	Access core capabilities. • Log in • Browse content • View file properties • View folder properties • Quick Search	
View storage administration content	Browse storage content structure	View content

Table 13: OpenLab CDS: Instrument Operations

Name	Description	Dependencies
Abort any running sample	Abort any running sequence or single run submitted by other users.	
Cancel any pending run	Cancel pending runs in the run queue submitted by other users.	

Name	Description	Dependencies
Edit any users running sequence	Edit other user's running sequence (with status Acquiring in the Run Queue).	Edit content of project
Enable Ad Hoc mode	Enable and disable Ad Hoc mode for an instrument	
Manual control (in run)	Access manual control functions while the instrument is running.	
Manual control (only when instrument idle)	Access manual control functions while the instrument is idle.	
Modify Instrument configuration in CDS Client	Change instrument configuration directly from a running Acquisition client . Note: This privilege is not yet used by all instrument drivers.	
MS autotune	Perform MS autotune and check tune.	
MS autotune and manual tuning	Access all MS tune and maintenance functionality, including manual tune, autotune, and check tune.	
Override Ad Hoc mode	Disable Ad Hoc mode that was enabled by any other user	
Reorder pending runs	Reorder pending run queue items in the run queue. Moving items around in the run queue.	
Request access	Request access to a sequence, run queue, or instrument that is currently locked by another user.	
Review snapshot results	From Acquisition, open a currently running sample in Data Analysis.	View instrument or location Run instrument View project or project group

Instrument privileges

Table 14: Instrument Management

Name	Description
View instrument or location	User can view and access a location in the tree, but not edit access security, can view properties.
Manage Instrument or location	User can create and move locations and edit properties (name, description, etc).

Name	Description
Manage instrument or location access	User can view and edit the location access settings.
Run instrument	User can start an instrument session.
Service instrument	User can lock or unlock an instrument (to service it).

Administrative privileges

Table 15: Secure Storage (Storage Administration privileges)

Name	Description
Import files/folders	Bulk import files and folders
Manage file storage	Access and move files between storage locations (relocate files).
Manage storage locations	Access and add/edit storage locations
Schedule file locking	Access and manage file locking schedules

Table 16: Activity Log Access

Name	Description
View activity log	Access to the System Activity Log (recording of log entries is not impacted)

Table 17: System Administration

Name	Description
Manage printers	Can add/remove printers and print server.
Create administrative reports	Can create any of the system admin reports.
Edit activity log properties	Change the Activity log settings in the Control Panel.
Manage system components	Can change Licenses and Instrument Options in the Control Panel. Can register Add-on software.
Manage security	Can change security settings and assign security roles. Can add, change, or remove users, groups and roles. Note: A user with this privilege can grant himself access to all settings in Shared Services. Use with care!

Appendix
Privileges in the Control Panel

Name	Description
Manage instrument controllers	Can view instrument controllers in the Control Panel and administrate them.
Unlock any locked UI	Can log in to another user's locked session.

Sales and Support Assistance

Local Contact

Software technical support contacts:

<https://www.agilent.com/en/support/software-technical-support-contacts>

Agilent Community

To get answers to your questions, join over 10,000 users in the Agilent Community. Review curated support materials organized by platform technology. Ask questions to industry colleagues and collaborators. Get notifications on new videos, documents, tools, and webinars relevant to your work.

<https://community.agilent.com/>

In This Book

This document provides instructions for installation, configuration, administration, and maintenance of an OpenLab CDS Workstation Plus (with Secure Storage). It includes information on the license management and operating system configuration.

The manual describes the following:

- Install OpenLab CDS Workstation Plus
- Activating your software
- Configure OpenLab CDS Workstation Plus
- Optional Procedures
- Customization
- About the OpenLab CDS software
- System Setup and Maintenance

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