Agilent OpenLAB CDS Administration

Guide for Administrators

Agilent Technologies

Notices

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Software Revision

This guide is valid for revision A.01.05 of Agilent OpenLAB CDS.

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In this Guide ...

This manual describes the concepts of OpenLAB CDS (system architecture, licensing strategy, data integrity) and the administration of OpenLAB CDS with the OpenLAB Control Panel. In addition, it contains specific information on the administration of OpenLAB CDS ChemStation Edition. This Edition also includes information on the OpenLAB Data Analysis Add-on.

1 Concepts of OpenLAB CDS

This chapter gives you an overview of the general concepts in Agilent OpenLAB CDS. In the following, the terms ChemStation and EZChrom refer to OpenLAB CDS ChemStation Edition and OpenLAB CDS EZChrom Edition.

2 OpenLAB Control Panel

Using the OpenLAB Control Panel, you can access OpenLAB Shared Services control features such as security policy, central configuration, or lab status at a glance. These features are described in more detail in this chapter.

3 ChemStation-Specific Administration

This chapter describes various tools that are helpful for diagnosis, support and troubleshooting.

4 Appendix

This chapter contains information on the privileges used in OpenLAB CDS and on driver license features for instruments of other vendors than Agilent.

Contents

1
Concepts of OpenLAB CDS

This chapter gives you an overview of the general concepts in Agilent OpenLAB CDS. In the following, the terms ChemStation and EZChrom refer to OpenLAB CDS ChemStation Edition and OpenLAB CDS EZChrom Edition.

Overview

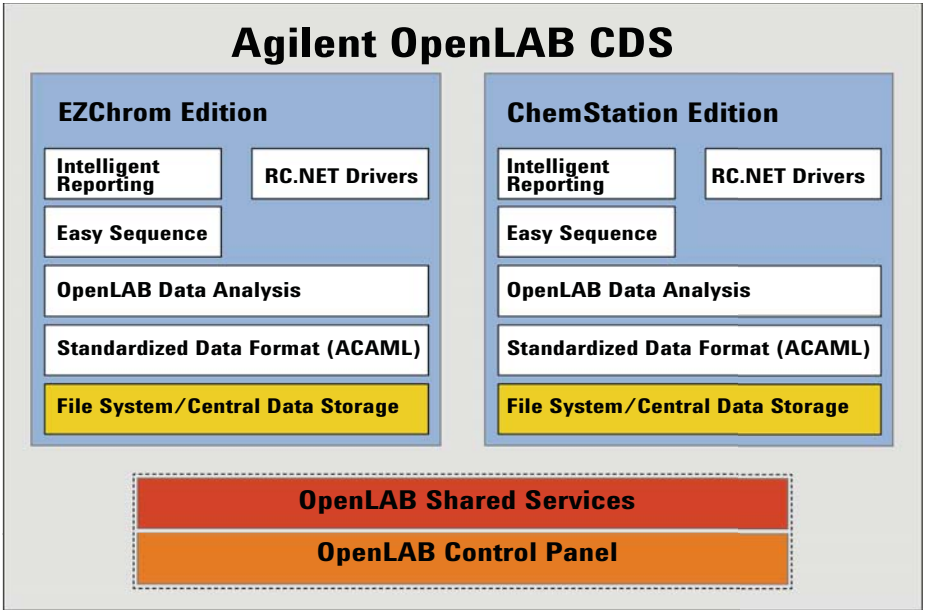


Figure 1 OpenLAB CDS architecture

OpenLAB CDS contains the following software and interface modules:

- OpenLAB Control Panel

  The OpenLAB Control Panel is the user interface that provides access to OpenLAB CDS components, as well as administrative functions used for managing OpenLAB Shared Services features.

- OpenLAB Shared Services

  These services offer central access, central configuration, lab status at a glance, and remote control of instruments. The central functions can be used by all OpenLAB modules.

- Instrument control, data acquisition and data analysis module (ChemStation/EZChrom)

  This module is available as either ChemStation or EZChrom Edition. Data acquired with previous versions of the respective software can be

processed. ChemStation and EZChrom share several common functions such as Easy Sequence, RC.NET drivers, or Intelligent Reporting. OpenLAB Data Analysis can be installed as an add-on to ChemStation or EZChrom, or as a standalone application for offline data review.

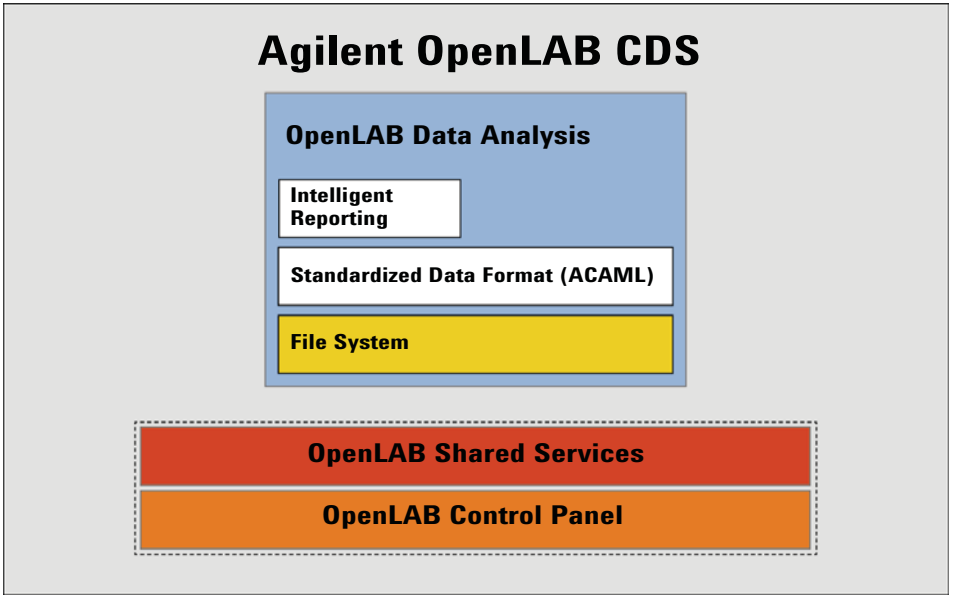


Figure 2 OpenLAB Data Analysis architecture

OpenLAB CDS System Architecture

This chapter contains an explanation of the different configuration options of OpenLAB CDS to cover different business scenarios.

Workstation

In small laboratories, you can install all components of OpenLAB CDS on one single workstation. As a consequence, OpenLAB Shared Services runs on the same PC as ChemStation or EZChrom.

The following figure shows the configuration of an OpenLAB CDS Workstation. Only one ChemStation/EZChrom instance is shown, but you can configure multiple instances and associated instruments on the workstation.

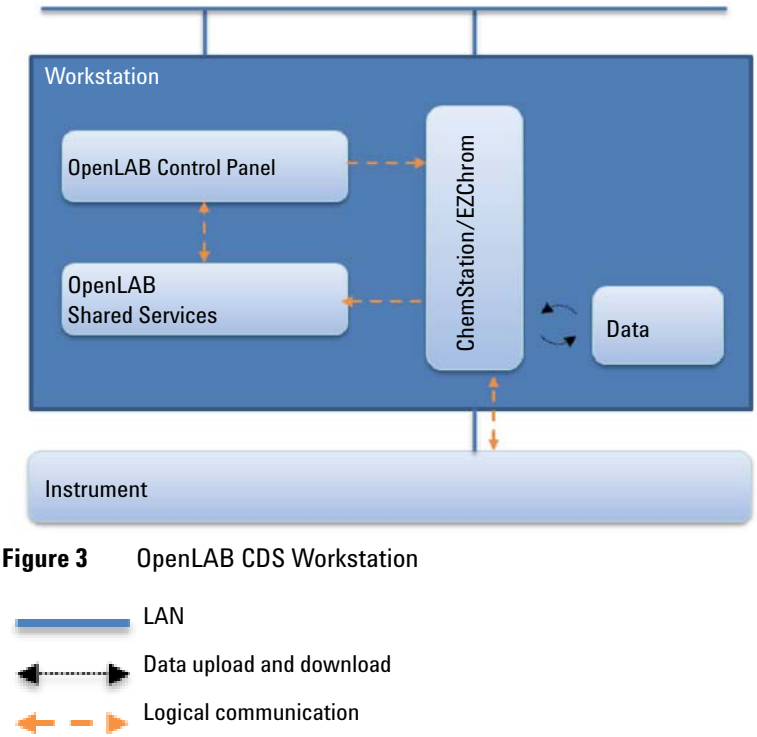


Figure 3 OpenLAB CDS Workstation

You can use the OpenLAB CDS Workstation configuration with or without OpenLAB ECM. If you are connected to ECM, the data stored on the workstation is synchronized with the central repository. OpenLAB CDS Workstation is not supported with OpenLAB Data Store.

For more information on ChemStation with OpenLAB ECM, refer to the *OpenLAB CDS ChemStation Edition with Central Data Storage - Concepts* guide.

You can install OpenLAB Data Analysis as an add-on to OpenLAB CDS on a single workstation or as a stand-alone application with OpenLAB Shared Services. With OpenLAB Data Analysis, you can process and analyze the data acquired with ChemStation or EZChrom. For more information on OpenLAB Data Analysis, refer to the *OpenLAB Data Analysis - Getting Started* guide.

Table 1 Supported scenarios

Storage Type	OpenLAB Data Analysis supported
Central Data Storage	No
Local file system	Yes

Networked Workstation

In larger laboratories with many instruments in a network, you can install OpenLAB Shared Services on a separate server that acts as an OpenLAB Shared Services server. On the Networked Workstations, the OpenLAB Control Panel accesses the dedicated OpenLAB Shared Services server. In this scenario, you can access all information provided by OpenLAB Shared Services from any workstation configured as part of the Networked Workstation system. For example, you can see on each workstation which instruments are available and which status (Online, Offline, Error, In Run, Not Ready, etc.) the instruments currently have.

Since Networked Workstations cannot be remotely controlled, you can launch and configure instruments only from the specific PC on which you configured the instrument.

The following figure shows an OpenLAB CDS Networked Workstation configuration. There can be multiple workstations that are part of the Networked Workstation system. The figure shows only one ChemStation/EZChrom instance, but you can configure multiple instances and associated instruments on the same machine.

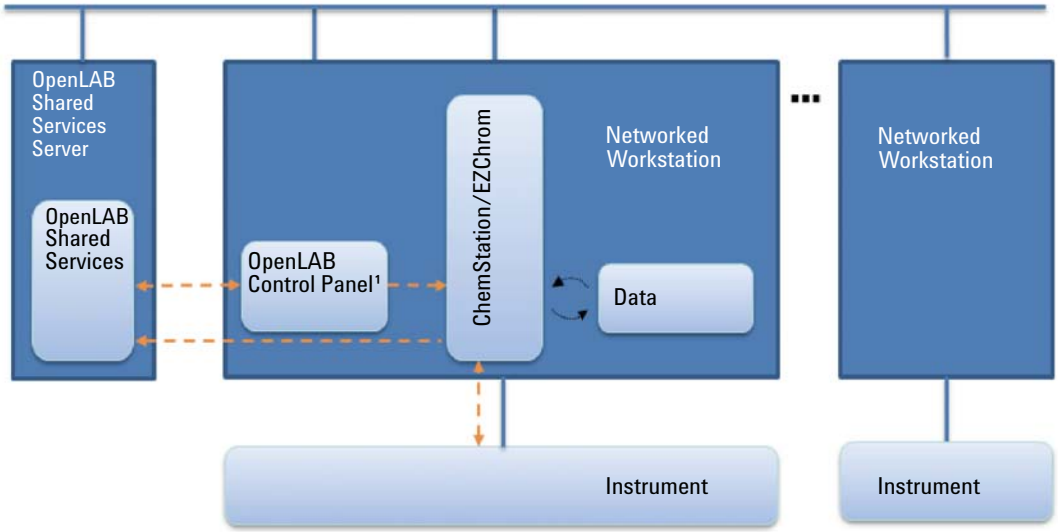


Figure 4 OpenLAB CDS Networked Workstation

You can use the OpenLAB CDS Networked Workstation configuration with or without central data storage[1]. If you are connected to a central repository, the data stored on the workstation is synchronized with the central repository. For more information on ChemStation with central data storage, refer to the *OpenLAB CDS ChemStation Edition with Central Data Storage - Concepts* guide.

OpenLAB Data Analysis is not supported on a Networked Workstation.

1 With OpenLAB Data Store, OpenLAB Control Panel and OpenLAB Shared Services are installed as one component on the OpenLAB Shared Services Server.

Distributed Systems

With OpenLAB CDS installed as a Distributed System, you are able to access and run instruments from any client PC in the system.

As in the Networked Workstation installation, OpenLAB Shared Services provide an overview of all instruments in the system. You can access all information provided by OpenLAB Shared Services from any OpenLAB CDS Client. For example, you can see which instruments are available in which location and which status (Online, Offline, Error, In Run, Not Ready, etc.) the instruments currently have.

In contrast to the Networked Workstation installation, in a Distributed System you can configure, launch and control any instrument from any OpenLAB CDS Client PC.

The Distributed System configuration enables you to work more flexibly with instrument sessions. You can, for example, launch an online instrument, start a sequence, and then disconnect only the CDS Client while the instrument continues to run on the Agilent Instrument Controller machine (AIC). You or another user can later connect to this instrument again from a different OpenLAB CDS Client to finish work on the online instrument or to analyze the data.

OpenLAB Data Analysis is not supported on a Distributed System.

ChemStation Architecture

NOTE The Distributed System configuration requires either OpenLAB Data Store A.01.02 or OpenLAB ECM. Supported ECM versions are 3.3.2 SP1 and 3.4.1 (or higher).

The instruments are configured on the AIC. You can access the ChemStation instance on the AIC machine from any OpenLAB CDS Client via Remote Desktop Services. When you disconnect the CDS Client, you disconnect the Remote Desktop Connection. ChemStation continues to run on the AIC.

The Distributed System configuration of OpenLAB CDS always includes central data storage. The data stored on each AIC is synchronized with the central repository. For more information on ChemStation with central data storage, refer to the *OpenLAB CDS ChemStation Edition with Central Data Storage Guide*.

The following figure shows the system architecture of ChemStation with OpenLAB ECM. With OpenLAB Data Store there would be no separate Data Store server, as Data Store is always installed on the OpenLAB Shared Services Server. Also, OpenLAB Control Panel and OpenLAB Shared Services would be installed as one component on the OpenLAB Shared Services Server.

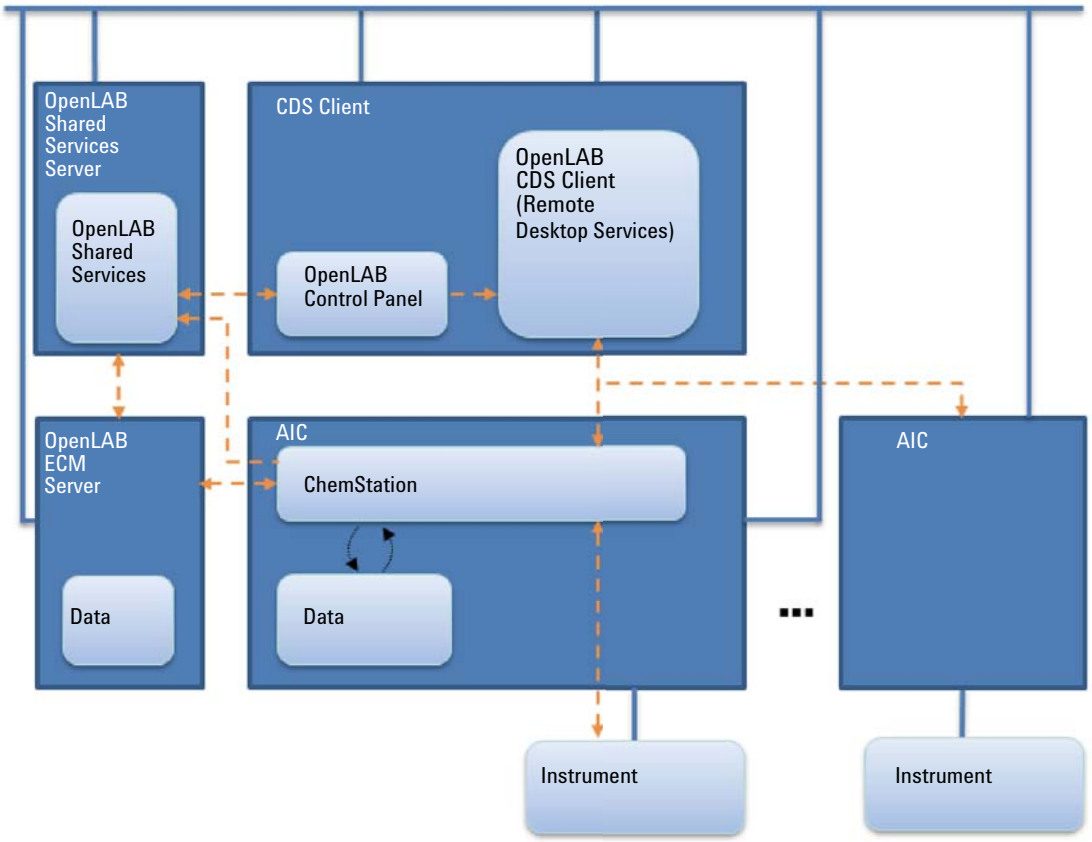


Figure 5 OpenLAB CDS Distributed System with ChemStation and OpenLAB ECM

EZChrom Architecture

NOTE The Distributed System configuration is supported with Network File Share, OpenLAB Data Store A.01.02, or OpenLAB ECM. Supported ECM versions are 3.3.2 SP1 or 3.4.1.

The instruments are configured and controlled from the Client PC through the instrument connection on the AIC. You can access the EZChrom server instance on the AIC machine from any OpenLAB CDS Client with EZChrom installed. When you disconnect the CDS Client, you close EZChrom on the CDS Client and thus break the connection to the EZChrom server instance. The EZChrom server instance continues to run on the AIC.

The data is written on a file share. If you use central data storage, the data is synchronized with the central repository. The following figure shows the system architecture of EZChrom with OpenLAB ECM. With OpenLAB Data Store there would be no separate Data Store server, as Data Store is always installed on the OpenLAB Shared Services Server. Also, OpenLAB Control Panel and OpenLAB Shared Services would be installed as one component on the OpenLAB Shared Services Server. However, EZChrom can also use central file-based data storage.

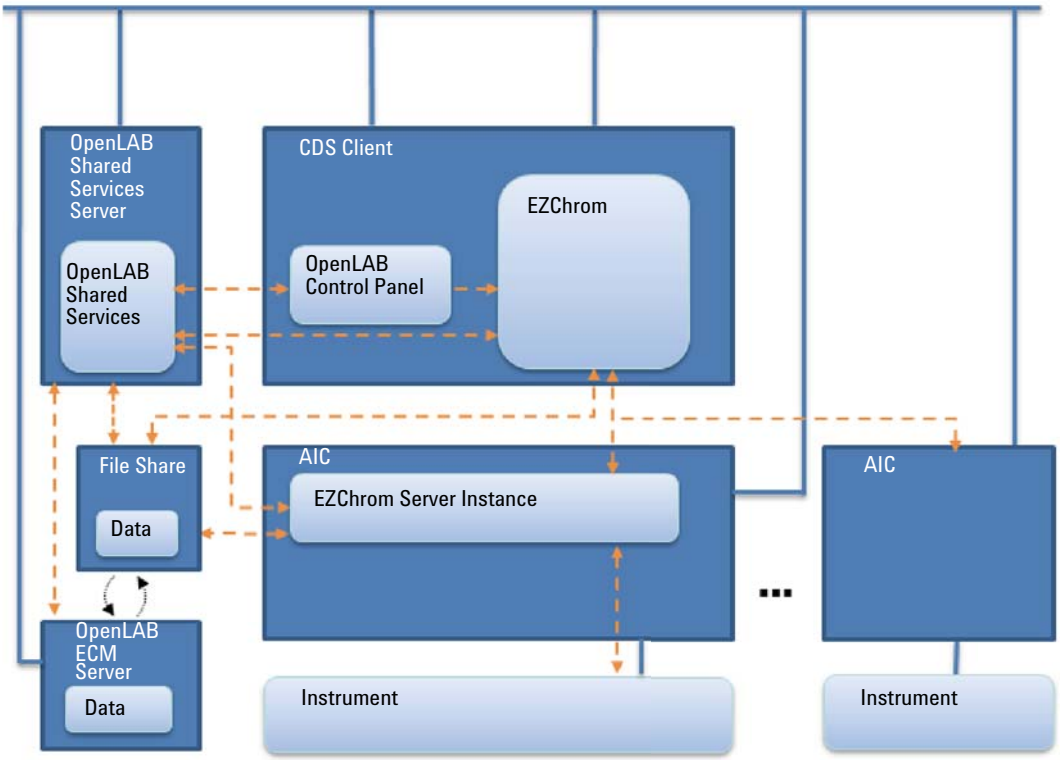


Figure 6 OpenLAB CDS EZChrom Edition with Distributed System with ECM

Mixed Topology

When an instrument cannot be controlled by an AIC or needs to be isolated and controlled by a single computer, you can add one or multiple Networked Workstations to a Distributed environment.

The following figure shows a mixed topology with one Networked Workstation, one CDS Client, one AIC, and central data storage. However, you can have multiple Networked Workstations, multiple CDS Clients, and multiple AICs in this topology.

In a mixed environment, you can use the Networked Workstation to access all instruments configured on this workstation, and you can also use it as a CDS Client for all instruments configured on AICs. Instruments configured on a Networked Workstation cannot be started from a CDS Client.

OpenLAB Data Analysis is neither supported on Distributed Systems nor on Networked Workstations.

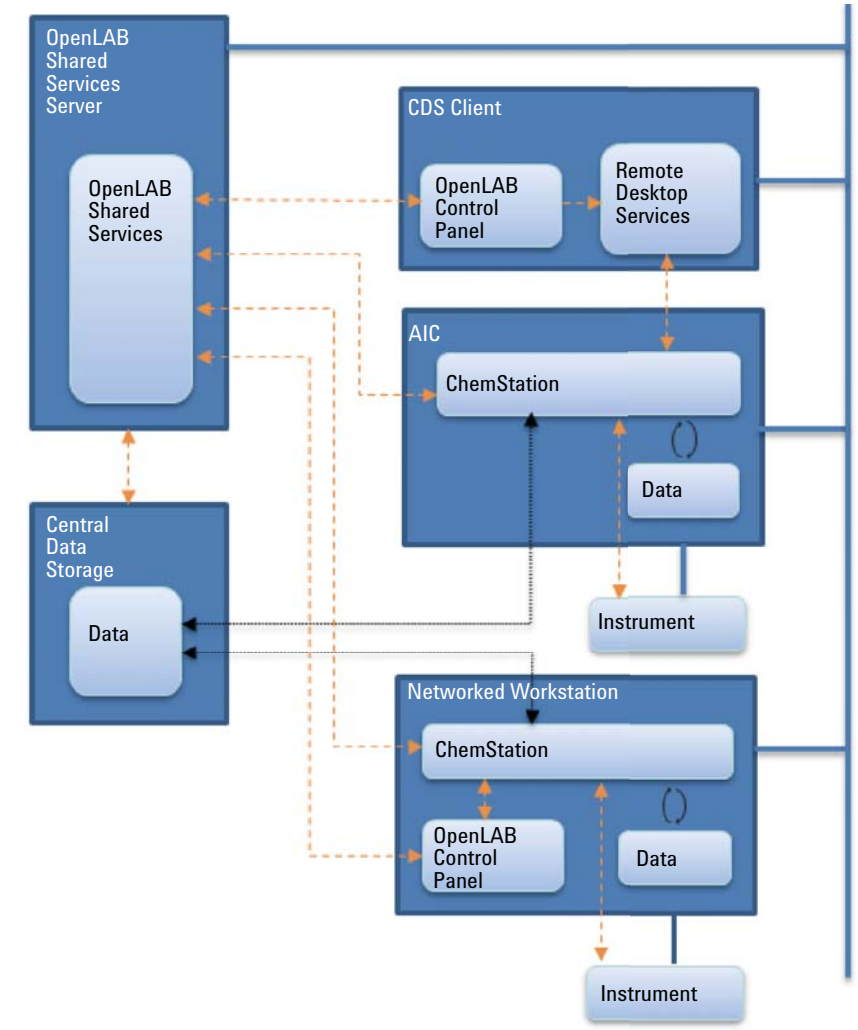


Figure 7 OpenLAB CDS mixed topology

OpenLAB CDS Licensing

This chapter summarizes the main components and features of Agilent OpenLAB CDS, and outlines the licensing strategy for these components and features.

General Product Structure

OpenLAB CDS has been designed as a combination of software modules for instrument control, data acquisition and data analysis (integration, quantification and reporting), automation and customization. Technique-specific single instrument products provide control capabilities for a given separation technique, e.g. for a Gas Chromatograph or Liquid Chromatograph. A single instrument configuration may be expanded by additional software modules (Add-ons).

The sections below describe the product modules. For more information on the product licenses, see "Licensing Scheme" on page 20.

Core module

The core module provides data analysis, automation and customization functions (no instrument control) for the following separation techniques:

- Gas chromatography (GC)
- Liquid chromatography (LC)
- Analog data acquisition with external event protocol (A/D)
- ChemStation only: Capillary electrophoresis (CE)

Instrument drivers

Technique-specific single instrument drivers provide control capabilities for the separation techniques listed above. By installing multiple instrument drivers, Agilent OpenLAB CDS is capable of controlling more than one analytical system, for example, two LCs, two GCs, or an LC and a GC.

The instrument control capability of OpenLAB CDS may be expanded by purchasing additional modules to allow mixed technique configurations.

Add-ons

The acquired data is typically two-dimensional ("2D"), that is, by measuring detector response over time. Spectroscopic detectors can deliver three-dimensional ("3D") data, by additionally measuring detector response over a third axis (for example, wavelength or mass range).

For 2D data, OpenLAB Data Analysis provides a single data analysis product for LC and GC data from both ChemStation and EZChrom.

For 3D data, the following modules permit analysis and reporting:

- OpenLAB CDS 3D UV Add-on
- ChemStation only:
  - OpenLAB CDS ChemStation CE 3D MS Add-on
  - OpenLAB CDS ChemStation LC 3D MS Add-on
  - OpenLAB CDS ChemStation LC/MS Deconvolution and Bioanalysis

License Types

The new licensing strategy introduced with OpenLAB CDS helps you use your licenses more effectively. In contrast to previous ChemStation or EZChrom revisions, licenses for instrument control, drivers and add-ons are *floating licenses*. Any instrument that starts up requests the necessary licenses from license management, and when the instrument is closed, it returns the licenses. Therefore, you only need licenses to cover the maximum number of concurrently running instruments rather than one for each installed instrument. License management is part of the OpenLAB Shared Services.

Licenses are of two types:

- *Counted licenses* are consumed once for each associated software or instrument module.
- *Shared licenses* can be shared per PC or instrument. For example, the Agilent OpenLAB CDS core license is a shared license, which means you need only one license per PC, no matter how many ChemStation or EZChrom instances you run on it.

There is a 60-day Startup License for the entire OpenLAB CDS installation. The expiration period starts with the first launch of an application.

Licensing Scheme

The following figure shows the licenses for OpenLAB CDS in the different installation scenarios:

- OpenLAB CDS Workstation
  - One OpenLAB CDS core license
  - Instrument and Add-on licenses as needed; you can run up to four 2D LC or GC instruments on the same workstation.
  - An OpenLAB Data Analysis license is automatically included. The installation is optional.
- Networked Workstation
  - One OpenLAB Shared Services server license
  - One OpenLAB CDS core license for each Networked Workstation; you can connect multiple Networked Workstations to the OpenLAB Shared Services server.
  - Instrument and Add-on licenses as needed; you can run up to four 2D LC or GC instruments on the same Networked Workstation.
- Distributed System
  - One OpenLAB Shared Services server license
  - One OpenLAB CDS core license and AIC-Add-on license for each Agilent Instrument Controller (AIC) machine; you can connect multiple AICs to the OpenLAB Shared Services server.
  - Instrument and Add-on licenses as needed; you can run up to ten 2D LC or GC instruments on the same AIC.

To control instruments from vendors other than Agilent, an Agilent Instrument Control License is required in addition to the driver license for the other vendor's instrument. A list of driver licenses that are available for instruments from other vendors can be found in the Appendix under "Driver Licenses" on page 74.

For Agilent instruments, Agilent Instrument Control licenses and Agilent Driver licenses are always bundled together. They are shown as one product license in the Shared Services License Management. Only in the license file itself can you see these items as separate lines.

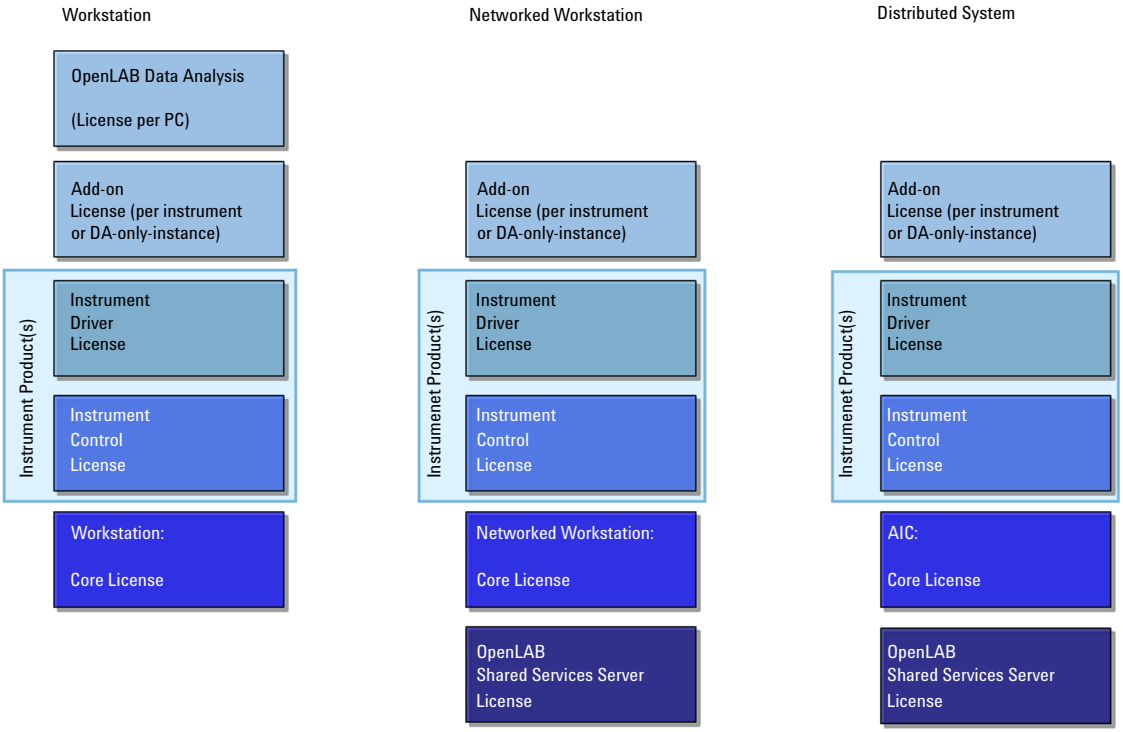


Figure 8 Licensing schema

Main Features for Licensing

The following table shows the main features that have to be licensed. If you purchase an Agilent product, the licenses for several features are already included by default. The following tables shows the license features associated with Agilent products.

Table 2 Main license features

License Feature	License Type	Required For	Comment
AgilentOpenLABCDSChemStation	Shared per PC	All ChemStation instances	This is the ChemStation full core license which is always consumed. It supports up to four instruments with the LC full driver or GC full driver package (including CE, ADC, CE/MS or LC/MS).
AgilentOpenLABCDSEZChrom	Shared per PC	All EZChrom instances	This is the EZChrom full core license which is always consumed. It supports up to four instruments with the LC full driver or GC full driver package.
AgilentOpenLABCDSChemStationVL	Shared per PC	1120/1220 Infinity LC and 7820 GC	This is the ChemStation VL core license, which is always consumed. It is sufficient to control up to four 1120/1220 Infinity LCs or 7820 GCs.
AgilentOpenLABCDSEZChromVL	Shared per PC	1120/1220 Infinity LC and 7820 GC	This is the EZChrom VL core license, which is always consumed. It is sufficient to control up to four 1120/1220 Infinity LCs or 7820 GCs.
AgilentOpenLABCDSEECompact	Shared per PC	Compact LC, Compact GC	This is the EZChrom compact core license. It is sufficient to control up to two compact instruments (1120/1220, 6820/7820, and 490 Micro GC).
AgilentOpenLABCDSAICAddon	Shared per PC	All AICs with ChemStation or EZChrom instances	This feature turns a core license into an AIC-core license.
AgilentOpenLABDataAnalysis	Shared per PC	OpenLAB Data Analysis	This is the core license for OpenLAB Data Analysis.

Table 3 Shared Services license features

License Feature	License Type	Required For	Comment
AgilentOpenLABSharedServices	Counted	Only for OpenLAB Shared Services running on a separate server	The OpenLAB Control Panel does not need an extra license. Also OpenLAB Shared Services running on an OpenLAB CDS Workstation do not need an extra license.

Table 4 Driver license features

License Feature	License Type	Required For	Comment
AgilentInstrumentControl	Counted	Only online instances	The license is consumed whether OpenLAB CDS can connect to the instrument or not. The instrument control license comes as part of the driver product.
AgilentDriversLC **AgilentDriversGC** **AgilentDriversADC**	Counted	Only online instances	The license is consumed whether OpenLAB CDS can connect to the instrument or not.
AgilentDriversLCVL **AgilentDriversGCVL**	Counted	Only online instances	VL drivers are not available separately. They are always bundled with an instrument (1220 Infinity LC or 7820 GC) The VL driver license features can be combined with a VL core license or a full core license.
AgilentDriversCE **AgilentDriversMS**	Counted	Only ChemStation online instances	The license is consumed whether ChemStation can connect to the instrument or not.
AgilentDriversLCCompact **AgilentDriversGCCompact**	Counted	Only EZChrom online instances	Compact drivers are not available separately. They are bundled with the EZChrom compact core license.
VarianCP_4900	Counted	Only online instances	The license is consumed whether OpenLAB CDS can connect to the instrument or not.
Other drivers	Counted	Only online instances	There are a several driver license features available for instruments of vendors other than Agilent. See Appendix for a complete list.

Table 5 Add-on license features

License Feature	License Type	Required For	Comment
AddOn3DUV	Shared (per instrument)	Online and offline instances (only if 3D option is selected in the Setup Wizard.)	The license is optional. If the license is not available, spectra analysis is disabled in the software.
AgilentAddOnMSDataAnalysis	Shared (per instrument)	ChemStation online and offline instances.	If MS is configured in ChemStation, the MS Data Analysis Add-on is mandatory.
AgilentAddOnMSDeconvolution	Shared (per instrument)	ChemStation online and offline instances (only if Bioanalysis option is selected in the Setup Wizard).	This license is only mandatory for LC/MS with Deconvolution in ChemStation.
AgilentAddOnSystemSuitability	Shared (per instrument)	EZChrom online and offline instances.	This license is bundled with EZChrom core licenses. If more than the bundled licenses are required, you will need to purchase them separately.

License Features Associated with Agilent OpenLAB CDS Products

When you purchase an Agilent OpenLAB CDS product, several license features are included by default.

Table 6 License Feature Associated with Agilent OpenLAB CDS Products

Description	License Feature(s) in OpenLAB CDS
OpenLAB CDS EZChrom Edition Workstation	1 x AgilentOpenLABCDSEZChrom 4 x SystemSuitability 1 x AgilentOpenLABDataAnalysis
OpenLAB CDS EZChrom Edition Workstation Right-to-copy	1 x AgilentOpenLABCDSEZChrom 4 x SystemSuitability 1 x AgilentOpenLABDataAnalysis
OpenLAB CDS EZChrom Edition AIC	1 x AgilentOpenLABCDSEZChrom 1 x AgilentOpenLABCDSAICAddon 8 x SystemSuitability
OpenLAB CDS EZChrom Edition Compact	1 x AgilentOpenLABCDSEECompact 2 x AgilentDriversLCCompact 2 x AgilentDriversGCCompact 2 x VarianCP_4900 2 x AgilentInstrumentControl 2 x SystemSuitability 1 x AgilentOpenLABDataAnalysis
Upgrade Compact to OpenLAB CDS Compact	1 x AgilentOpenLABCDSEECompact 2 x AgilentDriversLCCompact 2 x AgilentDriversGCCompact 2 x VarianCP_4900 2 x AgilentInstrumentControl 2 x SystemSuitability 1 x AgilentOpenLABDataAnalysis
OpenLAB CDS EZChrom Edition WorkStation VL	1 x AgilentOpenLABCDSEZChromVL 1 x AgilentOpenLABDataAnalysis
Upgrade Compact to OpenLAB CDS EZChrom Edition Workstation	1 x AgilentOpenLABCDSEZChrom 2 x SystemSuitability
OpenLAB CDS EZChrom Edition Agilent GC Headspace	1 x AgilentHeadspaceControl
OpenLAB CDS EZChrom Edition VICI Valve Control	1 x VICIValveControl
OpenLAB CDS EZChrom Edition PE Nelson Iface Control	1 x PENelsonInterface

Table 6 License Feature Associated with Agilent OpenLAB CDS Products

Description	License Feature(s) in OpenLAB CDS
OpenLAB CDS EZChrom Edition Hitachi LaChrom Control	1 x HitachiLC
OpenLAB CDS EZChrom Edition PE LC Series 200	1 x PerkinElmerLC
OpenLAB CDS EZChrom Edition Varian CP38/3900, CP-200X	1 x Varian_3800_3900_200x_GC
OpenLAB CDS Instrument Driver for 490uGC	1 x VarianCP_4900 1 x AgilentInstrumentControl
OpenLAB CDS EZChrom Edition Waters LC Control	1 x WatersLC
OpenLAB CDS EZChrom Edition Hitachi LC LaChrom PDA	1 x HitachiLCPDA
OpenLAB CDS EZChrom Edition GPC/SEC Subsystem	1 x AddOnGPCSEC
OpenLAB CDS EZChrom Edition System Suitability Lic.	1 x SystemSuitability
OpenLAB CDS Instrument Control License	1 x AgilentInstrumentControl
OpenLAB CDS ChemStation Edition Workstation	1 x AgilentOpenLABCDSChemStation 1 x AgilentOpenLABDataAnalysis
Right-to-copy OpenLAB CDS ChemStation Edition Workstation	1 x AgilentOpenLABCDSChemStation 1 x AgilentOpenLABDataAnalysis
OpenLAB CDS ChemStation Edition Workstation VL	1 x AgilentOpenLABCDSChemStationVL 1 x AgilentOpenLABDataAnalysis
OpenLAB CDS ChemStation AIC	1 x AgilentOpenLABCDSChemStation 1 x AgilentOpenLABCDSAICAddon
OpenLAB CDS Shared Services Server Software	1 x AgilentOpenLABSharedServices
OpenLAB CDS ChemStation Edition LC Upgrade	1 x AgilentOpenLABCDSChemStation 1 x AgilentInstrumentControl 1 x AgilentDriversLC 1 x AddOn3DUV 1 x AgilentOpenLABDataAnalysis
OpenLAB CDS ChemStation Edition GC Upgrade	1 x AgilentOpenLABCDSChemStation 1 x AgilentInstrumentControl 1 x AgilentDriversGC 1 x AgilentOpenLABDataAnalysis

Table 6 License Feature Associated with Agilent OpenLAB CDS Products

Description	License Feature(s) in OpenLAB CDS
OpenLAB CDS ChemStation Edition CE Upgrade	1 x AgilentOpenLABCDSChemStation 1 x AgilentInstrumentControl 1 x AgilentDriversCE 1 x AddOn3DUV 1 x AgilentOpenLABDataAnalysis
OpenLAB CDS ChemStation Edition LC-MS Upgrade	1 x AgilentOpenLABCDSChemStation 1 x AgilentInstrumentControl 1 x AgilentDriversLC 1 x AddOn3DUV 1 x AgilentDriversMS 1 x AgilentAddOnMSDataAnalysis 1 x AgilentAddOnMSDeconvolution 1 x AgilentOpenLABDataAnalysis
OpenLAB CDS 3D UV Add-on	1 x AddOn3DUV
OpenLAB CDS ChemStation Edition CE 3D MS Add-on	1 x AgilentDriversMS 1 x AgilentAddOnMSDataAnalysis
OpenLAB CDS ChemStation Edition LC 3D MS SQ Add-on	1 x AgilentDriversMS 1 x AgilentAddOnMSDataAnalysis
OpenLAB CDS ChemStation Edition LC/MS Deconvolution Bioanalysis	1 x AgilentAddOnMSDeconvolution
OpenLAB CDS ChemStation Edition LC Dissolution	1 x AgilentAddOnCSLCDissolution
OpenLAB CDS ChemStation Edition LC MS SQ Data Analysis Software	1 x AgilentOpenLABCDSChemStation 1 x AddOn3DUV 1 x AgilentAddOnMSDataAnalysis 1 x AgilentOpenLABDataAnalysis
OpenLAB Data Analysis	1 x AgilentOpenLABDataAnalysis
OpenLAB CDS Instrument Driver for Agilent GC	1 x AgilentInstrumentControl 1 x AgilentDriversGC
OpenLAB CDS Instrument Driver for Agilent A/D	1 x AgilentInstrumentControl 1 x AgilentDriversADC
OpenLAB CDS Instrument Driver for Agilent GC VL	1 x AgilentInstrumentControl 1 x AgilentDriversGCVL

Table 6 License Feature Associated with Agilent OpenLAB CDS Products

Description	License Feature(s) in OpenLAB CDS
OpenLAB CDS Instrument Driver for Agilent LC	1 x AgilentInstrumentControl 1 x AgilentDriversLC
OpenLAB CDS Instrument Driver for Agilent CE	1 x AgilentInstrumentControl 1 x AgilentDriversCE 1 x AddOn3DUV
OpenLAB CDS Instrument Driver for Agilent LC VL	1 x AgilentInstrumentControl 1 x AgilentDriversLCVL
OpenLAB CDS Waters Acquity LC Driver	1 x AgilentDriversWatersAcquity
OpenLAB CDS Instrument Data Store License	1 x AgilentInstrumentDataStore
OpenLAB User License for Lab Applications	1 x AgilentOpenLABDataStoreUser

NOTE

OpenLAB CDS VL driver licenses are not available separately. They are always bundled with the respective instruments:

- *LC VL Drivers*: bundled with 1220 Infinity LC instruments (OpenLAB CDS 1220 Infinity Inst Driver)
- *GC VL Driver*: bundled with the 7820 GC instrument (7820 for OpenLAB VL)

Licensing Examples

Example 1: Workstation (with ChemStation full core license)

Table 7 Purchased products and associated license features

Quantity	Product	License Feature
1	OpenLAB CDS ChemStation Workstation	AgilentOpenLABCDSChemStation AgilentOpenLABDataAnalysis
1	OpenLAB CDS Instrument Driver for Agilent LC	AgilentInstrumentControl AgilentDriversLC
1	OpenLAB CDS Instrument Driver for Agilent CE	AgilentInstrumentControl AgilentDriversCE AddOn3DUV

A ChemStation set up with the above set of licenses allows running a 2D LC and a CE instrument. If a 3D LC is started, the 3D-UV license required for the CE is consumed and the CE will not start:

- No license is required for OpenLAB Shared Services with a standalone workstation.
- An LC ChemStation with 3D option enabled is started. The following licenses are consumed: 1x OpenLAB CDS ChemStation; 1x Instrument Control; 1x LC Driver; 1x Add-on 3D UV.
- On the same PC, a CE ChemStation should be started. ChemStation would require additionally 1 Instrument Control, 1 CE Driver and 1 Add-on 3D UV. The ChemStation fails to start, because no Add-on 3D UV license is available.
- OpenLAB Data Analysis can be started multiple times. The license is shared per PC.

Example 2: Networked Workstation

Table 8 Purchased products and associated license features

Quantity	Product	License Feature
1	OpenLAB CDS Shared Services server	AgilentOpenLABSharedServices
2	OpenLAB CDS EZChrom Workstation	AgilentOpenLABCDSEZChrom SystemSuitability AgilentOpenLABDataAnalysis
2	OpenLAB CDS Instrument Driver for Agilent LC	AgilentInstrumentControl AgilentDriversLC
1	OpenLAB CDS 3D UV Add-on	AddOn3DUV

- The OpenLAB Shared Services server license is consumed when the OpenLAB Shared Services are started on the Shared Services server.
- On PC1, EZChrom with 3D option is started. The following licenses are consumed: 1x OpenLAB CDS EZChrom; 1x Instrument Control; 1x LC Driver; 1x Add-on 3D UV.
- On PC2, a second EZChrom application is started. The 3D option is not available, as the 3D UV Add-on license has already been consumed on PC1. The following licenses are consumed on PC2: 1x OpenLAB CDS EZChrom; 1x Instrument Control; 1x LC Driver.

Example 3: Distributed System

Table 9 Purchased products and associated license features

Quantity	Product	License Feature
1	OpenLAB CDS Shared Services server	AgilentOpenLABSharedServices
1	OpenLAB CDS ChemStation AIC	AgilentOpenLABCDSChemStation AgilentOpenLABCDSAICAddon
6	OpenLAB CDS Instrument Driver for Agilent GC	AgilentInstrumentControl AgilentDriversGC
2	OpenLAB CDS Instrument Driver for Agilent LC	AgilentInstrumentControl AgilentDriversLC
2	Add-on	AddOn3DUV

- The OpenLAB CDS Shared Services server license is consumed when the OpenLAB Shared Services are started on the Shared Services server.
- On an AIC machine, six GC ChemStations are remotely started. The following licenses are consumed: 1x OpenLAB CDS ChemStation; 1x AIC Add-on; 6x Instrument Control; 6x GCDriver.
- On the same AIC machine, two LC ChemStations with 3D option enabled are remotely started. No additional ChemStation or AIC Add-on licenses are required. The following licenses are consumed: 2x Instrument Control; 2x LC Driver; 2x Add-on 3D UV.

VL License Features

Agilent 1120/1220 Infinity LC systems and 7820 GC systems (7820 for OpenLAB VL) can be run using an OpenLAB CDS ChemStation or OpenLAB CDS EZChrom Workstation VL license. The VL driver licenses are bundled with the respective instruments, they are not available as stand-alone licenses. When using OpenLAB CDS VL licenses, an 1120/1220 LC system must be set up using the instrument type **Agilent 1220 LC System**, a 7820 GC system must be set up using the instrument type **Agilent 7820 GC System** during instrument configuration.

The following instrument types in OpenLAB CDS allow configuring VL systems:

- *LC VL System*

  With the instrument type **Agilent 1220 LC System**, you can control Agilent 1120/1220 Infinity LC systems, including individual 1260 Infinity LC modules except modular pumps. The LC VL System consumes an OpenLAB CDS VL core license and an LC VL driver license.

  The 3D UV Add-on always requires the full AddOn3DUV (M8360AA) license, even if used in combination with an LC VL system.

  With ChemStation, you can also control the instrument if the corresponding full licenses are available. If you use the instrument type **Agilent LC System** to configure these instruments, a ChemStation full core license (M8301AA) and a full LC driver license (M8500AA) are consumed. LC-MS configurations are not possible with an LC VL system, neither is an integration with OpenLAB ECM.

- *GC VL System*

  Of the GC systems, only the 7820 GC systems (7820 for OpenLAB VL) instrument type is considered a VL system. During instrument configuration, use the instrument type **Agilent 7820 GC System** to configure the instrument.

  The 7820 GC System consumes an OpenLAB CDS VL core license and a GC VL driver license. However, with ChemStation, you can also control the instrument if the corresponding full licenses are available.

NOTE VL systems are supported only for standalone workstation scenarios. They do not run on Networked Workstations or Distributed Systems.

With ChemStation: Combination of VL and full licenses

If you start a VL system, typically one ChemStation VL core license and one VL driver license are consumed. However, with ChemStation you can also control the VL system if one of the following scenarios applies:

- ChemStation full core license and VL driver license available
- ChemStation full core license and full driver license available

However, for the sake of clarity, we recommend setting up pure systems wherever possible. That is, set up only VL systems or only full systems on the same workstation.

Example: Pure VL configuration

Table 10 Purchased products and associated license features

Quantity	Product	License Feature
1	OpenLAB CDS EZChrom Workstation VL	AgilentOpenLABCDSEZChromVL
1	Agilent 1220 LC	AgilentInstrumentControl AgilentDriversLCVL
1	Agilent 7820 GC	AgilentInstrumentControl AgilentDriversGCVL
1	OpenLAB CDS 3D UV Add-on	AddOn3DUV

- No license is required for OpenLAB Shared Services with a standalone workstation.
- An Agilent 1220 LC with 3D option enabled is started. The following licenses are consumed: 1x EZChrom VL; 1x Instrument Control; 1x LC VL Driver; 1x Add-on 3D UV.
- On the same PC, an Agilent 7820 GC is started. As the EZChrom core license is shared, no additional EZChrom core license is required. The following licenses are consumed: 1x Instrument Control; 1x GC VL Driver.

Example: Mixed configuration with 1220 Infinity LC instrument and 1260 Infinity LC system

This example applies to EZChrom as well.

Table 11 Purchased products and associated license features

Quantity	Product	License Feature
1	OpenLAB CDS ChemStation Workstation	AgilentOpenLABCDSChemStation
1	OpenLAB CDS Instrument Driver for Agilent LC	AgilentInstrumentControl AgilentDriversLC
1	Agilent 1220 Infinity LC	AgilentInstrumentControl AgilentDriversLCVL

- No license is required for OpenLAB Shared Services with a standalone workstation.
- The Agilent 1260 Infinity LC system is started. The following licenses are consumed: 1x ChemStation; 1x Instrument Control; 1x LC Driver.
- On the same PC, an Agilent 1220 LC instrument is started. As the ChemStation core license is shared, no additional ChemStation license is required. Both systems can run with the ChemStation full core license. The following licenses are consumed: 1x Instrument Control; 1x LC VL Driver.
- If the core license were a ChemStation VL license, you could start only the 1220 LC. Starting the 1260 Infinity LC system would not be possible: First, you can not run a 1260 Infinity LC system with a ChemStation VL license, and second, the combination of a ChemStation VL core license with a full driver license for Agilent LC systems is not supported.

Flexera License Manager

OpenLAB Shared Services use a 3rd party tool called *FlexNet Producer Suite* from Flexera to manage the licenses. The required components are installed by default together with OpenLAB Shared Services. The license server can be the local PC, a remote OpenLAB Shared Services server, or a server with an already existing Flexera license manager in your environment. If you use an existing Flexera license manager, you can provide the hostname or IP address of the license server in the OpenLAB Control Panel.

License Management in OpenLAB Shared Services requires an additional Windows service to be running. This Windows service is called *Agilent OpenLAB License Server*. This service must be running on the server where you manage your licenses. Each time you start an instrument, the instrument requests licenses from the License Server service; therefore, you can only start an instrument if this service is running.

Security and Data Integrity

This chapter explains the built-in security and how it complies with the FDA 21 CFR Part 11. It also explains the system security features provided by OpenLAB Shared Services.

Security Aspects

In OpenLAB CDS, security aspects are mainly covered by OpenLAB Shared Services. In addition, some aspects that are only relevant for ChemStation are covered by the ChemStation Administration Tool.

The OpenLAB Shared Services functionality related to security includes the following (see "OpenLAB Control Panel" on page 37 for details):

- System Activity Log
- Selection of authentication provider
- User Management
- Security Policy

Data Integrity

The result data is stored either locally or in a central data repository, depending on the installed OpenLAB CDS configuration. If you store the data in the local file system, you must manually back up the data. With ChemStation, you can reach full compliance with 21 CFR Part 11 only if you use OpenLAB ECM or OpenLAB Data Store. These systems store data in compliance with 21 CFR Part 11. They provide secure data storage with access control and an audit trail. Data files are versioned to ensure data integrity and traceability. In addition, OpenLAB ECM and OpenLAB Data Store provide electronic signatures allowing users to sign off on data. The systems can be configured to automatically back-up and archive data on a regular basis.

For more information on ChemStation with central data storage, refer to the *OpenLAB CDS ChemStation Edition with Central Data Storage* guide.

With EZChrom, you can also use the central data storage system as described above. In addition, with EZChrom networked systems you can also use network file share for storing your data. In this case, you must configure Advanced File Security (AFS) to be compliant with 21 CFR Part 11. AFS provides enhanced security on the enterprise path in order to prevent any unauthorized access to project data outside of the data system. This configuration sets the appropriate Windows sharing and security settings to allow only a defined group to access the enterprise data from Windows Explorer. This may only be configured if your system uses Windows Domain as the Shared Services authentication provider.

For more information on configuring AFS, refer to the *Distributed System Installation Guide*.

2
OpenLAB Control Panel

Using the OpenLAB Control Panel, you can access OpenLAB Shared Services control features such as security policy, central configuration, or lab status at a glance. These features are described in more detail in this chapter.

Instrument Management / Lab Status at a Glance

The **Instruments** view in OpenLAB Control Panel offers an overview of all instruments in the network or on the workstation. You can see the following information for all instruments, summarized on one page:

- Status of the instrument with related color code
- Instrument Name
- Instrument location
- Instrument type
- Last change of configuration

Depending on the configuration, this information may be accessed only from a single PC or from multiple workstations in a network.

You can create a tree of different locations in the OpenLAB Control Panel, and add instruments to these locations. Using locations, you can organize your instruments for example by department, by laboratory, or by lab bench. For each instrument, you can provide basic information such as the name, description, and instrument type.

The type of instrument is preconfigured. When you install OpenLAB CDS, you can choose between ChemStation Edition or EZChrom Edition. The selected edition determines the type of instrument you can use in the Instrument Management.

NOTE Mixed scenarios with ChemStation and EZChrom instruments are not supported with OpenLAB CDS A.01.05.

Depending on your privileges in OpenLAB CDS, you can perform several operations on the instruments:

- View instrument information (instrument status, instrument details, activity log)
- View the locations and instruments tree
- Edit the instrument information
- Configure the instrument

  The instrument configuration is stored on the local PC or AIC, but you access the configuration tool from the OpenLAB Control Panel.
- Launch the instrument online or offline.

  Workstation and Networked Workstation: As the instrument configuration is stored on the local PC, you only launch instruments that are configured on this PC.

  Distributed System: As the instrument configuration is stored on an AIC, you can launch all instruments remotely from any OpenLAB CDS client in the network.

Your privileges can differ for the different locations and instruments (see "Specific Roles for Individual Instruments or Projects" on page 52).

License Management

This service includes the administration of all licenses that are required for your instrument modules and Add-ons. When you start an instrument, OpenLAB CDS automatically checks whether the required licenses are available in the license pool, and reserves the licenses needed to operate the instrument. When you stop the instrument, the freed licenses can be used by other instruments.

Before adding a license file, you must first purchase the license and generate the license file using SubscribeNet. For more information on generating new license files, refer to the *Software License Installation Guide*.

License Management in OpenLAB Control Panel provides the following functions:

- You can add license files to the license server.
- You can navigate to the license monitor and view the properties of all licenses installed on a given license server.
- You can remove license files from the license server. This may be useful if an invalid license file has been added.
- You can view or change the license server.
- You can view, copy, or save the MAC Address of the license server.
- You can navigate to the Agilent Electronic Software and License Delivery web page to get a license.

For more information on adding license files and viewing the license properties, refer to the OpenLAB Control Panel online help.

The following properties are shown for installed licenses:

- **Feature**: This indicates the type of license used, for example, AgilentOpenLABCDSChemStation, AgilentInstrumentControl, or AgilentDriversLC.
- **Version**: If a license is versioned, you can see the version number, for example 1.1 for Agilent OpenLAB CDS C.01.01. For licenses that are not versioned, the version is always shown as 1.0.
- **In Use (Available)**: This indicates the number of licenses that are currently in use and, in brackets, the total number of licenses. With the OpenLAB CDS licensing strategy, a license is only in use as long as a software instance is running (see "License Types" on page 19).
- **Expiration**: If the license is only valid for a certain period of time, the expiration date is displayed.

In the **Alerts** pane, you are informed if the number of available licenses has gone down to zero for a specific feature, or if you have started a software instance which requires a license that is unavailable.

System Activity Log

The System Activity Log allows you to centrally access all system activities. It contains information on the various events associated with OpenLAB Shared Services or with specific instruments. You can filter the list in order to view only events of a specific type, in a specific time range, created by a specific user, or containing a specific description.

The following types of events are recorded:

- System
- Instrument Management
- Instrument
- Project Management (only applicable to EZChrom)
- Instrument Controller
- User
- Group
- Security
- Printer
- License

The messages can come from other components, such as the user management, or from an instrument module. Instrument messages include error messages, system messages or event messages. ChemStation records these events in its own environment but also sends the events to the System Activity Log. The System Activity Log records these events irrespective of whether you have been alerted to them or not. To get more information on an event, expand the line of interest in the activity logbook viewer.

NOTE

By default, activity logging is disabled. To enable it in OpenLAB Control Panel, you must have the **Edit activity log properties** privilege. Once enabled, activity logging cannot be disabled again.

Diagnostics

The **Diagnostics** view allows you to access several reports and tools for diagnostic purposes:

- Ping the OpenLAB Shared Services server.
- Create a report, either for the local system or for the OpenLAB Shared Services server, with information on the operation system, processors, disk drives, processes, network and connections.
- Centrally access and download all the log files, trace files, etc. that are created by the registered modules.

Administrative Reports

In the **Administrative Reports** view, you can additionally create and export various XML or PDF reports related to the system configuration:

- **Instrument Controllers Report**

  Detailed information of all Instrument Controllers. When this report is generated on a Workstation, the information presented relates the local system. When this report is generated on a client-server system, all Instrument Controllers are included.

- **Instruments Report**

  Provides detailed information about configuration and access privileges for all instruments on the system. On client-server systems, this report includes all instruments on all Instrument Controllers.

- **Projects Report** (only applicable to EZChrom)

  Provides detailed information about configuration and access privileges for all projects on the system.

- **Roles and Privileges Report**

  Describes all roles defined on the system, including details of all privileges included in each role.

- **System Report**

  This report provides a consolidated view of the system, which includes all information about instrument controllers, instruments, projects, roles, users, and groups.

- **Users and Groups Report**

  This report provides an overview of all users and groups access rights to instruments and projects on the system. Note that users and groups that have not been granted access to instruments or projects are not included in this report.

Authentication Provider

Authentication providers are used to prove the identity of users that log in to the system. OpenLAB Shared Services support the following Authentication providers:

- **None**

  In this mode, no login screen is shown when you access the OpenLAB Control Panel. The user is automatically logged in to the application with security disabled. All log entries record the user as "Anonymous". With the authentication provider **None**, the Security Policy and User Management nodes are unavailable in OpenLAB Control Panel.

- **Internal**

  In this mode, the user's credentials are stored in the OpenLAB Shared Services database. You are asked to create an administrator account for OpenLAB Shared Services 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 Local** or **Windows Domain**

  You import existing Windows users into OpenLAB Shared Services. The authentication is done either by a local Windows user management, Windows Active Directory domain or NT 4.0 Domain within the Enterprise. OpenLAB Shared Services only use the identity and password of the mapped users; roles and privileges for OpenLAB CDS are still configured with OpenLAB Shared Services.

- **ECM**

  In this mode, an OpenLAB ECM system is responsible for authentication. When you start the OpenLAB Control Panel, the application will prompt for ECM credentials to validate a user. You must choose an existing ECM user as an administrator for OpenLAB Shared Services. The Search function helps you to find specific ECM users. OpenLAB Shared Services only use the identity and password of the mapped users; roles and privileges for OpenLAB CDS are still configured with OpenLAB Shared Services.

Security Policy

The Security Policy is only available if you select an authentication provider other than **None**.

With the authentication provider **Internal**, you can set all of the parameters described below in the OpenLAB Control Panel. With an external authentication provider (e.g. Windows Domain), you can only set the inactivity time in the OpenLAB Control Panel; all other parameters are defined by the external system.

For more information on 21 CFR Part 11 requirements for ChemStation, refer to *OpenLAB CDS ChemStation Edition with Central Data Storage*.

Table 12 Security Policy settings

Setting	Description	21 CFR Part 11 Requirements
Minimum password length	If users change their passwords, they must choose a password with at least the given number of characters. The default setting is *5*. Only available for authentication provider **Internal**.	You should require a minimum password length of at least 5 characters.
Password expiration period (days)	The default value is 30 days. When the user tries to log in after this period of time, the system will ask him to change the password. The expiration period starts with the last password change or with the creation of a user with a new default password. Only available for authentication provider **Internal**.	You should use an expiration period of 180 days or less.
Maximum unsuccessful login attempts before locking account	If a user tries to log in with invalid user credentials a number of times, the user is locked out of the system for a certain period of time (**Account lock time**, see below). Login is impossible, even with valid user credentials. You can define the number of allowed login attempts. The default setting is *3*. Only available for authentication provider **Internal**.	You should limit the number of allowed login attempts to three.

Table 12 Security Policy settings

Setting	Description	21 CFR Part 11 Requirements
Account lock time (minutes)	Once a user has exceeded the maximum number of allowed unsuccessful login attempts, this is the amount of time that must pass before he can try again. The default setting is *5 min*. Only available for authentication provider **Internal**.	
Inactivity time before locking the application	If the OpenLAB Control Panel is inactive for this amount of time, the user interface will be locked. This setting is also used to set the time-based session lock in ChemStation. The default setting is *10 min*. Set the value to zero to never lock.	
Single Sign-On	With Single Sign-On enabled, the user will not see the OpenLAB Control Panel login screen. Only available for authentication provider **Windows Domain**.	

User Management

OpenLAB Shared Services allow you to assign specific roles to users or user groups. If you manage your users within an external system (for example, OpenLAB ECM or a Windows domain), you can map those existing users into OpenLAB Shared Services.

Each user can be member of multiple groups. You must assign a specific role 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.

The roles are equipped with numerous specific privileges which define what the users are allowed to view or do in OpenLAB Control Panel and in OpenLAB CDS.

Users

The following information is required if you create a new internal user:

Table 13 User Credentials

Value	Description	Mandatory
Name	Username to login to the system.	Yes
Description	Additional information about the user (e.g. department, function etc.)	No
Password	Password for the user; minimum password length is defined in the Security Policy.	Yes
Email address	Email address of the user.	No
Full name	The full (long) name of the user.	No
Contact Information	General contact information (e.g. telephone number, pager etc.)	No

Table 13 User Credentials

Value	Description	Mandatory
User disabled	Select the check box to disable a user. Disabled users cannot log in any more. Users may be automatically disabled after too many failed login attempts. If a user is disabled, a corresponding message is displayed instead of the check box. After a given time (see **Account lock time** in the **Security Policy** settings), the user is automatically enabled again.	No
User cannot change password	Flag that indicates whether the user can change his own password. The flag is false by default (that is, users CAN change their passwords).	No
User must change password at next login	If set to true, the user has to change his password at the next login. The flag is automatically set to false after the user has changed the password successfully. The flag is true by default for new users.	No
Group Membership	Assign the user to the relevant groups.	
Role Membership	Assign roles directly to the user.	

If you use an external authentication provider (for example, OpenLAB ECM or a Windows domain), you cannot create new users, but must import users that exist in the authentication systems. A search function helps you find specific users in the authentication system. In the OpenLAB Control Panel, you can manage the roles for those external users, but not the actual user credentials such as user name and password. If you want to remove an external user, you unmap the user in the OpenLAB Control Panel. The user continues to exist in the external authentication system.

Groups

If you use an external authentication provider, you can either 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.

You can assign users to groups in the external system or in OpenLAB Control Panel. If you need additional user assignments that are relevant only for OpenLAB CDS, you create them in OpenLAB 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 where 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 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 *ChemStation Operator* will always need another role such as *Instrument User* with the privilege to run an instrument.

You can create a tree of different locations in the OpenLAB 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 52). 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 OpenLAB Control Panel. With EZChrom, you can assign different Project roles for different projects (see also "Specific Roles for Individual Instruments or Projects" on page 52). For example, a user can have the role **Project Administrator** in one project, so that he can manage the settings in the OpenLAB 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. As ChemStation does not yet support projects, you can assign the project roles only globally for ChemStation, not at a project level.

Table 14 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 OpenLAB Control Panel.
Project privileges	Privileges for accessing or modifying different levels of data. • With EZChrom, you can assign these privileges on project level. • As ChemStation does not yet support projects, these privileges are globally assigned to the users with ChemStation.

For a detailed list of privileges, see Appendix.

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 node, you can deselect the **Inherit privileges from parent** check box in the **Edit Privileges** dialog for the required node. 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.

You can assign **Project** roles to individual project groups or projects. As ChemStation does not yet support projects, these settings only have an effect for EZChrom.

Administrative roles are always set globally.

3
ChemStation-Specific Administration

This chapter describes various tools that are helpful for diagnosis, support and troubleshooting.

ChemStation Administration Tool

About the ChemStation Administration Tool

The ChemStation Administration Tool offers a number of functions related to the ChemStation configuration. As one of these functions is to break the session lock, access to the ChemStation Administration Tool is strictly limited:

- The ChemStation Administration Tool can only be opened directly on the ChemStation PC. In Distributed System installations, you must open the tool on the relevant AIC.
- The ChemStation Administration Tool can only be started by users who are a member of the local user group **CSAdministrators** (see "Enabling users to start the ChemStation Administration Tool" on page 55).

To start the ChemStation Administration Tool:

1 From the Start menu in the Task Bar, select **Start > All Programs > Agilent Technologies > OpenLAB CDS ChemStation Edition > ChemStation Administration Tool**.

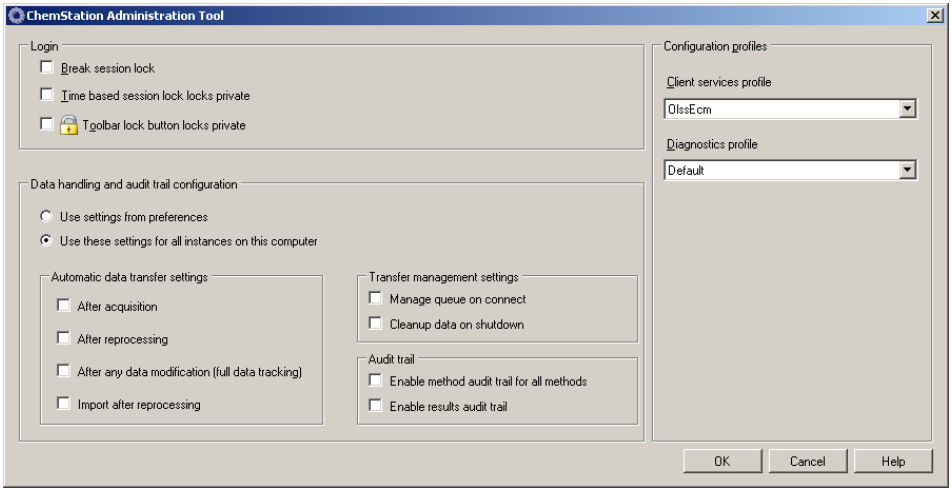


Figure 9 ChemStation Administration Tool

Enabling users to start the ChemStation Administration Tool

During the Installation of OpenLAB CDS , the local user group **CSAdministrators** is automatically created. Only members of this group are allowed to run the ChemStation Administration Tool. The user who installs ChemStation is automatically added to the **CSAdministrators** group. Additionally, the Windows group **Administrators** and the user who installs ChemStation are granted Full Control privileges on the Administration Tool program executable (Agilent.ChemStation.ECM.ECMAdmin.exe) itself, thus they are able to run the tool.

To add a Windows user to the CSAdministrators group:

1 From the Start menu in the Task Bar, select **Start > Settings > Control Panel > Administrative Tools > Computer Management**.

The **Computer Management** window opens.

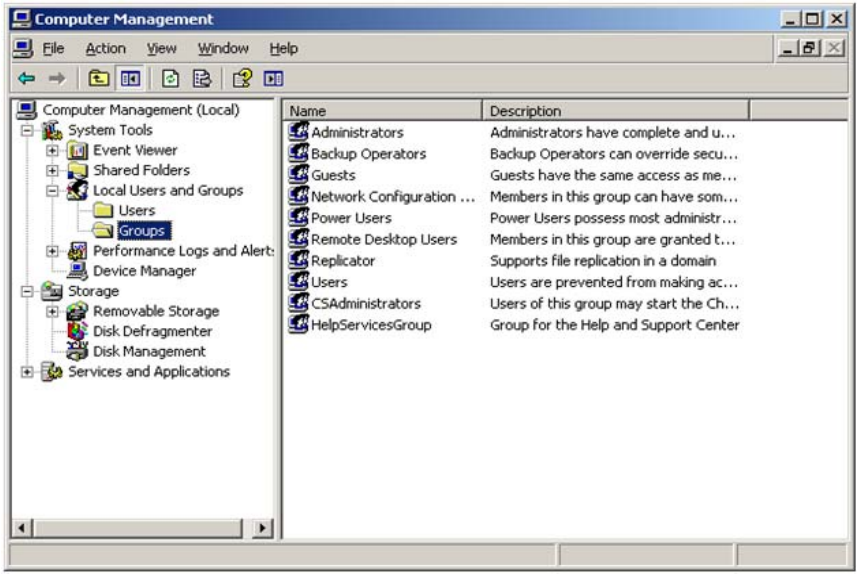
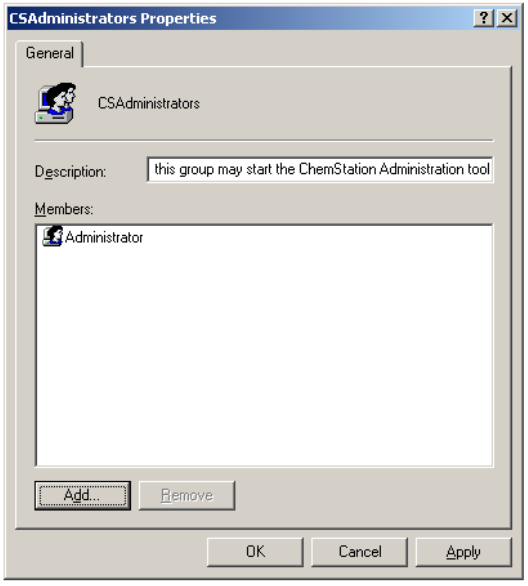


Figure 10 Computer Management window

2 Right-click the group **CSAdministrator** and select **Add to Group...** from the context menu.

The **Properties** dialog shows the users who are currently member of the group.



3 Use the **Add** button to add the required users.

After confirming with **OK**, the **Properties** dialog also contains the newly added users.

Machine-dependent encryption

When you call the ChemStation Administration Tool, it encrypts parts of the ChemStation application configuration file on the system. This encryption is machine-dependent.

NOTE If you want to create an image of a ChemStation installation that can be cloned and distributed to other PCs, you must not call the ChemStation Administration Tool prior to creating this image. ChemStation will not work on images with an encrypted ChemStation application configuration file.

ChemStation Session Locks

Concept of Session Locks

If you leave the ChemStation computer for a certain period of time, you can lock ChemStation so that no other user can access the application. This is a safety feature to ensure that there is no unauthorized access to ChemStation. When you activate the session lock, you or another user must first provide a valid login before continuing to work with ChemStation.

In ChemStation, there are the following options to activate the session lock:

- *Privately* (**User > Lock Session > privately**): Only the user who activated the session lock, or a user with the **ChemStation: Break session lock** privilege, can log in. You can set this privilege in the OpenLAB Control Panel. It is part of the project privileges (see "Roles and Privileges" on page 50).
- *Non-privately* (**User > Lock Session > non privately**): Any valid user can log in. This is useful, for example, if there is a shift change, and the personnel ending their shift secure ChemStation until the personnel of the new shift start work.
- *Toolbar lock button*: The toolbar lock button can be configured to lock the ChemStation session privately or non privately.
- *Time-based*: Depending on the configuration in OpenLAB Control Panel, ChemStation is automatically locked after a given period of time without any user interaction (see **Inactivity Timeout** under "Security Policy" on page 46).

  The time-based session lock can be configured to lock the ChemStation session either privately or non-privately (see Figure 11 on page 58).

Session Lock Settings in the Administration Tool

Figure 11 ChemStation Administration Tool

In the ChemStation Administration Tool, you can set the following options for creating and breaking session locks:

- **Break session lock**: If you select this check box, a locked ChemStation can be accessed by any user just by clicking **Cancel** in the **Login** dialog. If a ChemStation is currently locked and the authentication provider is unavailable, selecting this check box is the only way to regain access to the current ChemStation session.

NOTE Be aware that, as a consequence, the user who regained access to ChemStation now has unlimited access to all ChemStation functions.

- **Time based session lock locks private**: If ChemStation has been locked by a session time out, only the current user or a user with the required privileges can unlock this session.
- **Toolbar lock button locks private**: If ChemStation has been locked using the Lock button on the ChemStation toolbar, only the current user or a user with the required privileges can unlock this session.

Automatic Data Transfer Settings

You can apply the following options either individually in each ChemStation instance, or globally across all instances of ChemStation on a workstation or AIC.

After Acquisition

If you select this check box the data is automatically uploaded to the central repository after an acquisition. The raw data files are written to the local ChemStation file system while the sequence is still running. When the complete sequence is finished, the raw data files are packed in an SSIZip file which is then uploaded to the central repository.

After Any Data Modification

If you select this check box, the result set is automatically uploaded to the central repository after you changed the data analysis parameters for a sample. The data is uploaded even if you do not reprocess the sequence.

After Reprocessing

If you select this check box, the result set is automatically uploaded to the central repository each time after you reprocessed the sequence.

Import after Reprocessing

If you select this check box, a sequence that is only stored locally is automatically uploaded to the central repository after reprocessing. This setting is useful, for example, if you reprocess data from an older version of ChemStation.

Transfer Management Settings

You can apply the following options either individually in each ChemStation instance, or globally across all instances of ChemStation on a workstation or AIC.

Manage queue on connect

If the connection to the central data storage is interrupted for any reason, a running data upload might be interrupted. In this case, the remaining data is written to an internal queue on the workstation or AIC.

If you select the **Manage queue on connect** check box, ChemStation tries to upload the remaining data once the connection to the central data storage is established (that is, each time a user logs on to the central data storage system from ChemStation).

If you select this check box, ChemStation checks the local file system at each shutdown. It deletes all local data and sequence files that have been stored in the central repository. Methods and sequence templates remain on the local file system.

CAUTION

Inadequate check box selection

Loss of data

➔ If you select the **Cleanup data on shutdown** check box, you should also select the Automatic data transfer settings **After acquisition**, **After reprocessing**, and **After any data modification**. Otherwise, if the users forget to upload the data to the central data storage before closing ChemStation, data might be lost.

NOTE

Consider selecting the **Cleanup data on shutdown** check box when the system shall be compliant to 21 CFR Part 11. Using this function prevents unauthorized access to the local data files.

Audit Trail Settings

Audit Trail

In the **Audit Trail** group, you specify the conditions for the automatic audit trails for methods and results.

Enable Method Audit Trail for all Methods

Mark this check box to switch on the Method Audit Trail for all methods.

Enable Results Audit Trail

Mark this check box to switch on the Results Audit Trail for all results.

These settings override the settings in the **Audit Trail** tab of the **Preferences** dialog box in the ChemStation.

Configuration Profiles

Client Services Profile

By providing specific client services profiles, you activate specific functions and behaviors in ChemStation. The following profiles are relevant if you use OpenLAB Shared Services:

- **OIss**

  ChemStation communicates with OpenLAB Shared Services; it sends status information to OpenLAB Shared Services, and uses the settings defined in OpenLAB Shared Services (for example, user authentication, roles and privileges, configuration settings, audit trail settings). Use this profile for ChemStation instances that are connected to OpenLAB Shared Services, but have no connection to a central data storage system.

- **OIssEcm**

  In addition to communication with OpenLAB Shared Services, ChemStation allows transferring data files to and from OpenLAB ECM. Use this profile for ChemStation instances that are connected to both OpenLAB Shared Services and OpenLAB ECM.

In an emergency scenario, where the connection between the workstation and OpenLAB ECM is interrupted, you can set the authentication provider in OpenLAB Shared Service to **None**. This allows you to log on to ChemStation in the absence of OpenLAB ECM.

In this case, using the **OlssEcm** profile allows ChemStation to send the data files to the queue. Once the authentication provider in OpenLAB Shared Services is set back to ECM, the upload can be resumed.

- **OlssDataStore**

  In addition to communication with OpenLAB Shared Services, ChemStation allows transferring data files to and from OpenLAB Data Store. Use this profile for ChemStation instances that are connected to both OpenLAB Shared Services and OpenLAB Data Store.

Diagnostics Profile

For each ChemStation instrument, the system creates two log files with information for diagnostic purposes:

- Review.svclog for the offline instrument
- Acquisition.svclog for the online instrument

With the **Diagnostics profile** setting, you can define the level of logging information that is written to these files. You can select a level of logging between **None** and **Maximum**; the normal amount is provided by the **Default** selection. With the **ECM Troubleshoot** selection, more of the ECM specific information is added to the log files. With the **Troubleshoot** selection, the system not only adds the information to the log files but also creates small memory dump files in case of critical errors.

NOTE Only change the **Diagnostics profile** setting if instructed to do so by an Agilent Support representative.

Support Reports

ChemStation allows you to create a support report. This report contains status information on the ChemStation and its environment, for example, the serial number and firmware revision of configured instruments.

To create a support report:

1 Click **Help > Generate Agilent Support Information** in ChemStation.

The file SystemState_Review.svclog is created in a temporary ChemStation directory, typically chem32\X\temp with x as the instrument number.

NOTE Fine granular device information can only be provided for RC.NET and is not supported by classic drivers.

2 You can view this file with the Microsoft Service Trace Viewer.

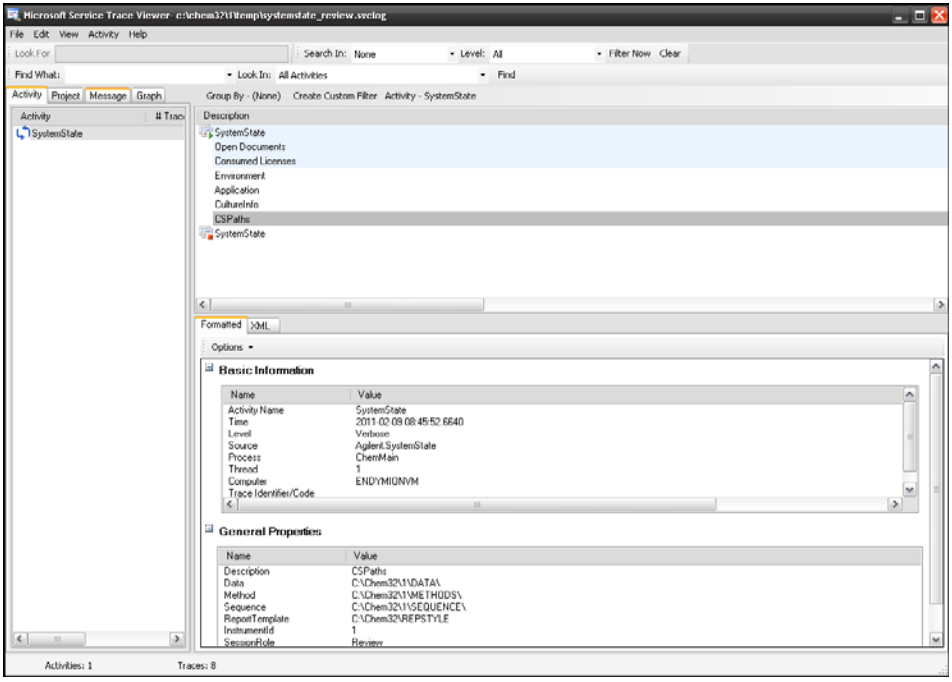


Figure 12 Support Report, opened with Microsoft Service Trace Viewer

OpenLAB CDS Config Checker

NOTE This tool is only available for OpenLAB CDS ChemStation Edition on Windows 7.

The OpenLAB CDS Configuration Checker checks and repairs all *mandatory* settings. It does not check optional settings or settings that improve the performance.

The OpenLAB CDS Configuration Checker comes as .diagcab file, which is a file format used with Microsoft Windows Troubleshooting Platform (WTP) program. Microsoft Windows Troubleshooting Platform (WTP) is a platform to locate and fix hardware and software settings in Windows. It is used specifically for diagnosing and repairing computer settings.

In general, .diagcab files are useful for deploying troubleshooting packs because they are self-contained and require no installation. They can be deployed onto Web sites, network shares, or copied to USB keys. The .diagcab file name extension is a registered file name extension that can be executed by WTP.

To start the OpenLAB CDS Configuration Checker, call the file Agilent.Wtp.ChemStation.WindowsConfiguration.diagcab. This file is located on the OpenLAB CDS Disk 6 under Tools\OpenLAB CDS ChemStation Edition\Diagnostics\WindowsConfiguration\Cab\

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Appendix

This chapter contains information on the privileges used in OpenLAB CDS and on driver license features for instruments of other vendors than Agilent.

Privileges in OpenLAB Shared Services

Project Privileges

Table 15 Project Management

Name	Description
View project or project group	User can see a project and project details but cannot edit. With Data Store: User can view the content of the Data Store repository. *Note:*This privilege is required for all users, even if ChemStation does not support projects yet.
Manage project or project group	User can create or edit project properties and can move the project but cannot access settings (EZChrom only; Projects are not supported in ChemStation).
Edit content of project	Only relevant for Data Store: User can create new versions of documents in Data Store.
Manage project or project group access	User can view and edit the project access settings (EZChrom only; Projects are not supported in ChemStation).

Table 16 E-Signature

Name	Description
E-Signature Sign Data Files	User can sign data files (with ChemStation, this privilege is only relevant if you use OpenLAB Data Store).

Table 17 Intelligent Reporter templates

Privilege	Description
Edit Intelligent Reporter report template	Only relevant for OpenLAB ECM Intelligent Reporter: This privilege is required to edit report templates in the Reporter Client

Table 18 ChemStation: Control

Privilege	Description
Run Acquisition	Start acquisition (single sample or sequence).

Table 19 ChemStation: Data

Privilege	Description
Delete Data	User can delete data files in ChemStation Explorer.
Manual Integration	User can perform manual integration.
Save data to storage	Interactive saving of data to the central data storage system.

Table 20 ChemStation: Instrument

Privilege	Description
Modify instrument configuration	User can modify the instrument configuration parameters.

Table 21 ChemStation: Logbook

Privilege	Description
Clear Logbook	Clear the current logbook.
Save Logbook	Save the current logbook.

Table 22 ChemStation: Method

Privilege	Description
Edit calibration table	Create and modify the calibration table; change calibration settings.
Delete method	Delete a method in ChemStation Explorer.
Edit integration events	Modify integration events and perform Auto Integration.
Edit ion labels	Edit options for ion labels (LC/MS only).
Edit system suitability	Edit noise ranges and performance limits.
Enable audit trail	Enable the audit trail for a specific method.
Modify instrument method	Modify instrument method parameters.
Modify method properties	Modify Run Time Checklist and Method Information.
Perform method recalibration	Perform interactive recalibration.
Save method changes	Save method changes (includes Update Sequence/Master Method in Data Analysis view).

Table 23 ChemStation: Report

Privilege	Description
Preview/print report	User can preview/print a report.
Modify report	User can modify report calculation/print style and can edit Instrument Curves dialog.
Lock/unlock report template items	Only relevant with Intelligent Reporting: User can lock or unlock report items and composite groups in a report template.

Table 24 ChemStation: Security

Privilege	Description
Break session lock	Unlock a ChemStation session locked by other users.
Command line	Turn on / off the command line
Manage transfer queue	Access to the Transfer Queue and the Queue Management.
Modify storage transfer preferences	Enable / disable the automatic upload to the central data storage system.
Take over ChemStation Remote Session	Only relevant for ChemStation in a Distributed System: User can take over a running remote session.

Table 25 ChemStation: Sequence

Name	Description
Delete sequence	User can delete sequences in ChemStation Explorer.
Edit sequence summary	User can modify sequence summary report and extended statistics settings.
Reprocess	User can reprocess a sequence.
Save sequence template	User can save sequence templates locally (on workstation or AIC).

Table 26 ChemStation: View Access

Privilege	Description
Access Data Analysis view	User has access to Data Analysis view.
Access Diagnostic view	User has access to Diagnostic view.
Access Method & Run Control view	User has access to Method and Run Control view.
Access retention time lock	User has access to the Retention Time Lock menu (GC only).
Access retention time search	User has access to Retention Time Search menu (GC only).
Access Review view	User has access to Review view
Access Tune view	User has access to Tune view (LC-MSD ChemStation only).
Access Verification view	User has access to Verification (OQ/PV) view.
Access Report Layout view	User has access to Report Layout View, ability to create/edit/save report templates.
Enable Batch view	Enables all operations in Batch view.

Instrument Privileges

Table 27 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).
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 28 System Administration

Name	Description
Manage printers	Can add/remove printers and print server.
Edit activity log properties	Can change the Activity log Settings in OpenLAB Control Panel (that is, can turn logging on for the System Activity Log).
Create administrative reports	Can create any of the system admin reports.
Manage system components	Can install/remove components (applications).
Manage Security	Can change security settings. Can edit (add, change etc) users, groups and roles. *Note:* A user with this privilege can grant himself access to all settings in OpenLAB Shared Services. Be careful who you grant the Manage Security privilege.
Manage instrument controllers	Can edit AIC configuration, manage the AICs in configuration UI.
Unlock any locked UI	Can login into any locked portal or instrument session (will be a re-login), even if privately locked.
Manage Data Store admin settings	User can access the **Admin** sub folder of the **Applications** root note in Data Store.

Table 29 Lab Applications privileges

Name	Description
Access Lab Applications	User can see the **Sample Submission** dashlet and can access the Lab Journal and Lab Apps Editor toolbar items.
Create/edit sample submission forms	User access the **Create Sample Submission** commands in the **Sample Submission** dashlet and in the Lab Applicatons Editor.
Review/validate	User can be assigned as a reviewer or validator of a lab event or service form.
Manage Lab Journal instruments	User can create, edit, delete, or deactivate a Lab Journal instrument.
Manage lab events	User can create, edit, delete, or deactivate a lab event.
Manage service forms	User can create, edit, delete, or deactivate a service forms.
Manage columns	User can create, edit, delete, or deactivate a column.
Manage samples	User can create, edit, or delete samples.

Table 30 Data Store

Name	Description
Archive content	User can archive the content of the Data Store repository.

Driver Licenses

The following driver licenses are available for instruments from vendors other than Agilent.

Driver licenses available for EZChrom:

- Add-on GPC/SEC
- Hitachi LC
- Hitachi LC PDA
- PE Nelson Interface
- Perkin Elmer LC
- System Suitability
- VICI Valve Control
- Waters Acquity
- Waters LC

Driver licenses available for ChemStation:

- Waters Acquity

NOTE To control non-Agilent instruments, both an instrument driver license and an Agilent Instrument Control License are required and must be purchased separately.

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In This Book

This manual contains information on the concepts of OpenLAB CDS, the administration of OpenLAB CDS with the OpenLAB Control Panel, and specific information on the administration of OpenLAB CDS ChemStation Edition. This Edition also includes information on the OpenLAB Data Analysis Add-on.

General concepts:

- System Architecture
- Licensing Strategy
- Security and Data Integrity

OpenLAB Control Panel

- Instrument Management
- License Management
- Log Files and Diagnostics
- Authentication Provider
- Security Policy
- User Management

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