

# **Agilent OpenLab CDS ChemStation Edition**

## **Instrument Configuration Guide**



**Agilent Technologies**

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Hewlett-Packard-Strasse 8  
76337 Waldbronn

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## In This Guide ...

This guide describes how to configure your instruments to work with Agilent OpenLab CDS ChemStation Edition. It includes instructions on how to add instrument modules and configure them.

Throughout this guide, the term ChemStation always refers to Agilent OpenLab CDS ChemStation Edition and Control Panel refers to the Agilent OpenLab Control Panel.

### **1 Quick Configuration Guide**

This chapter provides a quick guide to adding and configuring standard instruments using the Agilent OpenLab Control Panel.

### **2 Overview of Instrument Communications**

This chapter describes the communication between ChemStation and the instruments.

### **3 General Instrument Configuration Considerations**

This chapter contains information on instrument paths and on the number of supported instruments.

### **4 Adding and Configuring Instruments**

This chapter describes how to add instruments using the Agilent OpenLab Control Panel.

### **5 Troubleshooting**

This chapter summarizes helpful hints for troubleshooting potential problems you might see during the configuration process.

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# 1

## Quick Configuration Guide

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This chapter provides a quick guide to adding and configuring standard instruments using the Agilent OpenLab Control Panel.

### NOTE

The figures in this chapter show the Windows 7 user interface. If you have installed Windows 10, your user interface is different, but the instructions are still applicable.



## Configuration using the Control Panel

### Quick Configuration Guide

#### NOTE

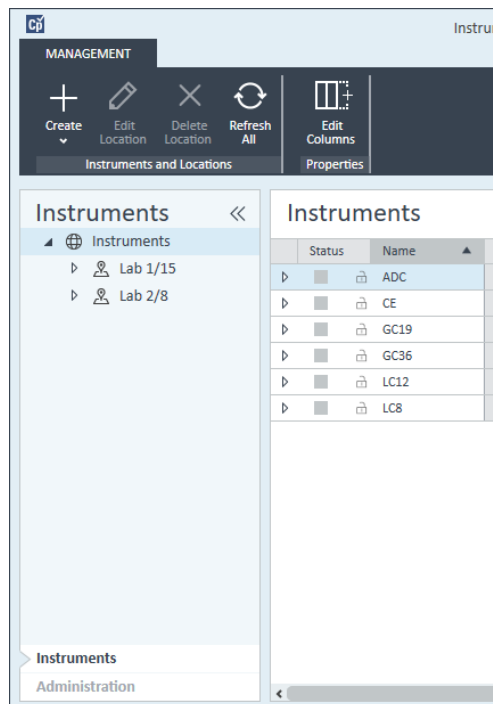
If you want the instruments allocated to a specific instrument number, you must configure the instruments in the required sequence. The first instrument you configure will be allocated to instrument 1 (..\Users\Public\Documents\ChemStation\1\), the second to instrument 2 (..\Users\Public\Documents\ChemStation\2\) and so on. However, the Control Panel lists the instruments in alphabetical order of their names.

---

- 1 Open the **Agilent OpenLab Control Panel**:



**2** Select the **Instruments** tab:



**Figure 1** Control Panel, **Instruments** Tab

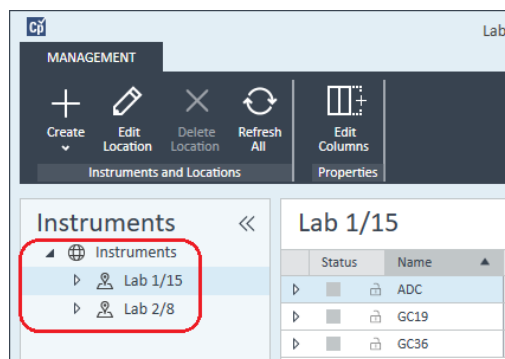
**3** Select the location of the new instrument:

**NOTE**

To create and edit locations, refer to the Control Panel online help.

## 1 Quick Configuration Guide

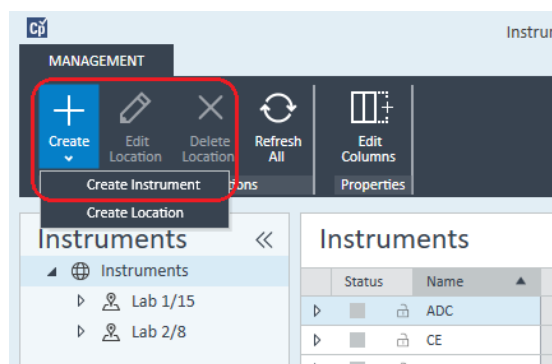
### Configuration using the Control Panel



#### NOTE

You can also add instruments directly in the **Instruments** node.

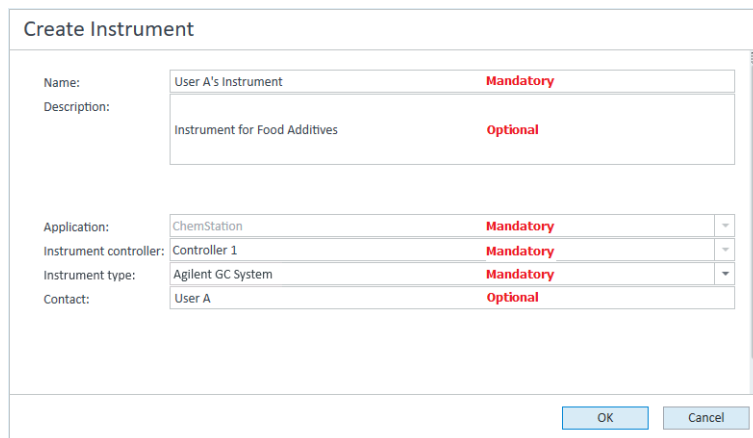
#### 4 Click **Create** > **Create Instrument**



**Figure 2** Control Panel, **Create Instrument**



- 5 Enter the instrument details and click **OK**.



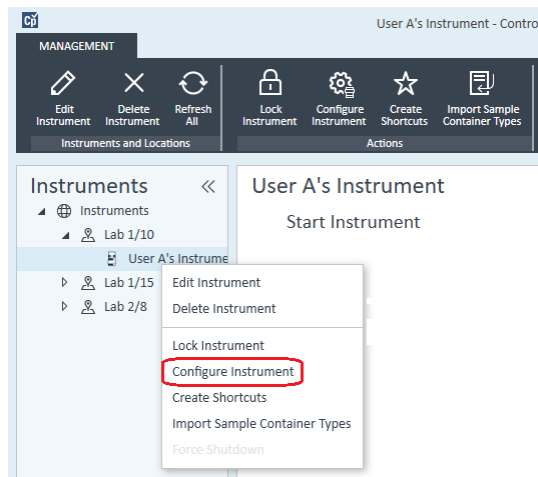
The 'Create Instrument' dialog box contains the following fields and options:

Name:	User A's Instrument	Mandatory
Description:	Instrument for Food Additives	Optional
Application:	ChemStation	Mandatory
Instrument controller:	Controller 1	Mandatory
Instrument type:	Agilent GC System	Mandatory
Contact:	User A	Optional

Buttons: OK, Cancel

**Figure 3** Create Instrument panel

- 6 Navigate to the new instrument and click the **Configure Instrument** icon or right click on the instrument name and select **Configure Instrument**.



The **Configure Instrument** dialog box is displayed.

- 7 Use Autoconfiguration if possible.

OR

Select the module(s) for the instrument configuration and click the > button.

## 1 Quick Configuration Guide

### Configuration using the Control Panel

- 8 Select any unconfigured modules and click **Configure**. Click **OK** when configuration is complete.
- 9 In the upper pane of the **Configure Instrument** dialog box, click the **Method load on startup** down-arrow and select which method to load when ChemStation is started.
- 10 Select the options you want to install from the **Options** section in the upper pane, then click **OK** to complete the configuration.
- 11 See [“Adding Instruments to a ChemStation Installation”](#) on page 26 for full details of installing and configuring additional options.



## 2 Overview of Instrument Communications

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This chapter describes the communication between ChemStation and the instruments.



## Overview of Instrument Communications

For standard communication with the instrument, ChemStation provides LAN communication using TCP/IP. For many Agilent instruments, you can set the IP address from the instrument's front panel, over telnet, or using the G4208A Instant Pilot (a handheld controller for Agilent LC devices that allows direct access to the settings of the devices). For other LAN instruments, you use the Agilent Bootp service to administer IP addresses.

## Network Communication

The ChemStation software provides network-based instrument control and data acquisition for network-capable Agilent LCs, GCs, CEs and A/D controllers. You can easily control and monitor instruments by connecting them to the same network on which the ChemStation PC resides. This allows the ChemStation PC to be located anywhere within a TCP/IP-based environment.

ChemStation communication uses the TCP/IP version 4 protocol, which needs to be installed as a network protocol on your PC. The instrument and the PC controlling it (workstation or AIC) need to be in the same subnet. Consult the *OpenLab CDS Requirements Guide* on the installation media for more details.

The G1369A/B/C network cards used to connect an analytical instrument to a network require the bootstrap protocol (BootP). Agilent supports only the Agilent Bootp Service, provided on the installation media, for this use. For more information on instrument compatibility related to G1369A/B/C, see the *Agilent G1369C LAN Interface Card, User Manual* ( G1369-90002).

### About Networks

Each device on the network requires a *unique* IP address, a subnet mask, and an optional gateway.

If installing on a site network, contact the site network administrator. If installing on an isolated network, Agilent recommends the following addresses:

Device	Address
PC	10.1.1.100
GC, LC, CE or ADC	10.1.1.101 through 10.1.1.255
Subnet mask	255.255.255.0
Gateway	10.1.1.100

ChemStation supports instruments and PCs with self-assigned, or fixed addresses.

## Upgrading to Network Communication

If you connect your instrument using a standard TCP/IP protocol, it needs to be installed as a network protocol on your PC. The current configuration of the LAN Assembly or G1369A/B/C network cards that are used to connect the analytical instrument to the network remains during the upgrade.

When upgrading from a GPIB control instrument to network connection, you must install the required network communication components and reconfigure your instrument.

## Installing Network Communication

If you decide to connect your instrument using a standard network connection, you must ensure proper communication between the PC and the analytical instruments. The communication uses the TCP/IP protocol, which needs to be installed as a network protocol on your PC. For the configuration of the G1369A/B/C card that is used to connect the analytical instrument to the network, the bootstrap protocol is used, which requires a BootP Service.

The installation of the TCP/IP protocol on supported operating systems is outlined below. Instructions are also included for the Agilent Bootp Service program required to configure TCP/IP parameters for your instrument.

- 1** From the **Start** menu in the **Task Bar**, select **Start > Control Panel > Network and Sharing Center**.
- 2** Click on **Change Adapter Settings**, select **Local Area Connection** and right-click to access the properties.
- 3** In the **General** tab, select the internet protocol **TCP/IP Version 4** and choose **Properties**.
- 4** Select **Use the following IP address** to ensure that the system does not use the DHCP address.
- 5** If your PC is connected to a site network, ask your IT department for a valid IP addresses, gateway, subnet mask, DNS and WINS server. If you are setting up your own internal network for instrument communication and are not connected to any other network, you may use the example settings from [Table 1](#) on page 15.

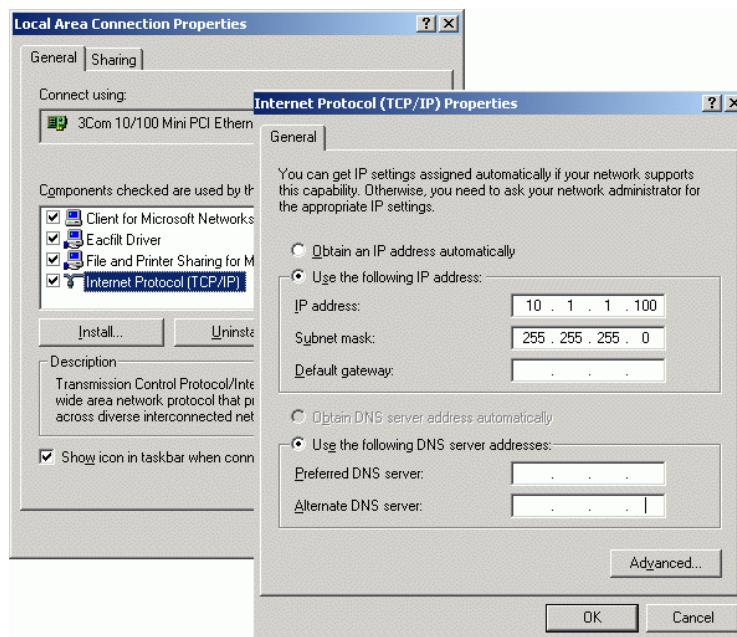
**Table 1** Example IP addresses

PC or instruments	IP address	Subnet mask
PC 1	10.1.1.100	255.255.255.0
LC instrument module (1100/1200/1260/1290)	10.1.1.101	255.255.255.0
GC Instrument	10.1.1.102	255.255.255.0
Optional 35900E A/D converter	10.1.1.103	255.255.255.0

**NOTE**

You need one IP address per device.

Gateway, DNS, and WINS IP addresses do not need to be configured in this case, as you do not connect to any other part of a network. [Figure 4](#) on page 15 shows an example of the TCP/IP configuration.



**Figure 4** TCP/IP Configuration Screen

**6** Select **OK** to finish the configuration.

#### NOTE

Use the IPCONFIG utility to verify the PC's TCP/IP settings by opening a command window and typing  
`ipconfig /all`

---

## Instrument configuration using the Agilent BootP service

### Assigning IP addresses to instruments using the Agilent BootP service

Agilent BootP Service maintains association between a unique identification code (MAC address) provided with the LAN card installed in a given instrument and the specific IP address assigned to that instrument. Therefore, you must define, or redefine this association whenever you add a new instrument, exchange an instrument (or its LAN card), or change the IP address assigned to an instrument.

### Configuring instruments using the Agilent Bootp service

- 1 Use the Agilent Bootp Service to determine the MAC address of the instrument with the network card installed:
  - a Power cycle the instrument.
  - b After the instrument completes self-test, open the logfile of the BootP Service using Notepad.
    - The default location for the logfile is C:\Program Data\Agilent\BootP\LogFile.
    - The logfile will not be updated if it is open.
    - Assign an address only to devices that cannot set their own address. See the instrument's operating documentation for more information.

The contents will be similar to that shown below: **02/25/04 15:30:49 PM Status: Bootp Request received at outer most layer Status: Bootp Request received from hardware address: 0010835675AC Error: Hardware address not found in BootpTAB: 0010835675AC Status: Bootp Request finished processing at outer most layer**

  - c Record the MAC address (0010835675AC) from screen, here called the hardware address.
  - d Close the logfile before turning on another instrument.



- 2 Add the instrument to the network.
  - a Follow **Start > Programs > Agilent Bootp Service** and select **EditBootPSettings**. The **BootP Settings** screen appears.
  - b Uncheck **Do you want to log BootP requests?**  
The **Do you want to log BootP requests?** box must be unchecked when finished configuring instruments or the logfile will quickly fill up disk space.
  - c Click **Edit BootP Addresses....** The **Edit Bootp Addresses** screen appears.
  - d Click **Add....**  
The **Add Bootp Entry** screen appears.

**Figure 5** Add BootP Entry screen

- e Make these entries:
  - MAC Address, as previously obtained and recorded
  - Host Name

- IP Address
  - Comment, if desired
  - Subnet Mask
  - Gateway address (optional)
- f** Click **OK**.
- g** Leave Edit BootP Addresses by pressing **Close**.
- h** Use the PING utility to verify the LAN connectivity by opening a command window and typing  
**ping <ip.address>** (e.g. ping 10.1.1.101) “[Verify that the IP Address is correct](#)” on page 89 .
- i** Exit BootP Settings by pressing **OK** and power cycle the instrument.  
If changing the IP address, it will be necessary to power cycle the instrument for the changes to take effect.
- 3** Add an additional instrument or device to the network.
- a** Repeat step 2 on page 17 for each instrument or device on the network that requires the Bootp service.
  - b** When finished, click **Exit Manager**.
  - c** Click **OK**.

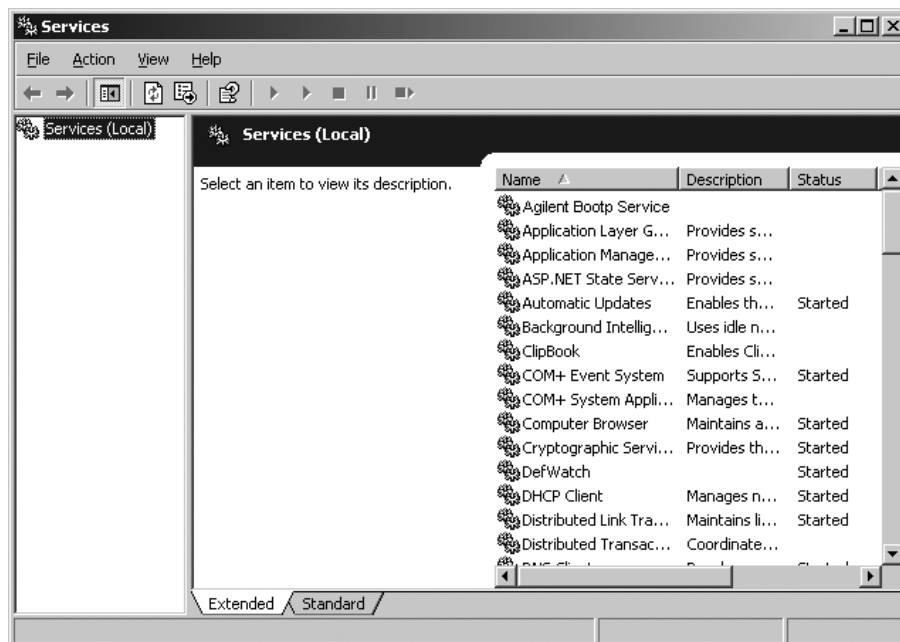
## Configuring the Agilent BootP Service

Agilent BootP Service starts automatically when your PC reboots.

To change Agilent BootP Service settings, you must stop the service, make the changes, and then restart the service. Follow the procedures below to configure your Agilent BootP Service.

## Stopping the Agilent BootP service

- 1 From the Windows Control Panel, select **Administrative Tools > Services**. The **Services** screen appears.



- 2 Right-click **Agilent BootP Service**.
- 3 Select **Stop**.
- 4 Close the **Services and Administrative Tools** screens.

## Editing the settings

- 1 Follow **Start > Programs > Agilent BootP Service** and select **EditBootPSettings**. The **BootP Settings** screen appears.  
The **BootP Settings** screen appears.
- 2 When the **BootP Settings** screen is first opened, it shows the default settings from installation.

## Editing BootP Addresses

- 1 Press **Edit BootP Addresses...** to edit the existing tabfile.

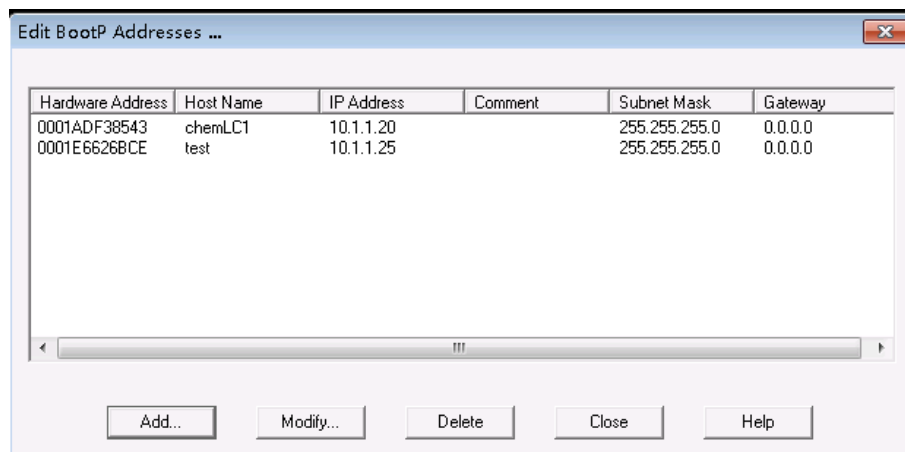


Figure 6

A default TabFile with configuration information entered on this screen is created at installation. It is located at C:\Program Data\Agilent\BootP\TabFile.

- 2 In the **Edit BootP Addresses...** screen press **Add...** to create a new entry or select an existing line from the table and press **Modify...** or **Delete** to change the TabFile.

If you change the IP address, it will be necessary to power cycle the instrument for the changes to take effect.

- 3 Leave **Edit BootP Addresses...** by pressing **Close**.
- 4 Exit **BootP Settings** by pressing **OK**.

## Configuring logging

- 1 **Do you want to log BootP requests?:** Check to enable logging

OR

Uncheck to stop logging.

A default log file was created at installation and is located at C:\Program Data\Agilent\BootP\LogFile. It contains an entry for every time a device requests configuration information from Bootp.

- 2 Click **OK** to save the values or **Cancel** to discard them. The editing ends.

### Restarting the Agilent BootP service

- 1 In the Windows Control Panel, select **Administrative Tools > Services**. The **Services** screen appears.
- 2 Right-click **Agilent BootP Service** and select **Start**.
- 3 Close the **Services** and **Administrative Tools** screens.  
This completes configuration.

## Instrument Connections

Be sure to set up the communication channel between the instrument and the PC prior to operating the system.

### Connecting an Agilent GC system

Agilent supports network communications with its GCs.

**Table 2** Supported GC communications

Model	Supported communications
9000, 7890 Series, 7820A, 6890N, 6850	Network (LAN)
6890A, 6890 Plus	Network (LAN)
35900E ADC	Network (LAN)

**Table 3** Additional device communications

Device	Supported communications
7697A, G1888 Headspace samplers	Network (LAN)
PAL-3, PAL-xt samplers	Network (LAN) or RS232

### Connecting an Agilent LC system via the Network

Installation and interconnection of your Agilent Modular LC modules are described in more detail in the Agilent Modular LC module user manual supplied with each module.

- Connect a controller-area network (CAN) cable between each of your Agilent Modular LC modules except the vacuum degasser and a G1330 ALS cooler. One CAN cable is included with each Agilent Modular LC module.

- Connect a remote cable (part number 5061-3378) between the Vacuum Degasser and one other Agilent Modular LC module, preferably a pump.
- Connect the Agilent Modular LC module with the G1369A/B/C network card inserted into your network (LAN) component (use the detector), using the appropriate EtherTwist 10BaseT cable.
- Several modules have on-board network communication; use the appropriate EtherTwist 10BaseT cable.

#### NOTE

We recommend that you connect the network (LAN) cable to an Agilent Modular LC detector (mandatory for DAD and MWD detectors). If no Agilent detector is used, please contact your Agilent representative for information about the insertion point of the communication card.

## Connecting an Agilent Integrated LC System via the Network

The Agilent 1220 Infinity LC system connects to ChemStation via the network (LAN). You can connect the LC system either directly to the computer containing the ChemStation software, using a crossover network cable (point-to-point), or to the local area network hub, using a standard network cable. The network (LAN) connector is situated on the left side of the electronic box at the rear of the instrument.

For details about configuring the integrated LC system for network communications, see the system's User Manual.

## Connecting a 35900E ADC

### 35900E Communication

The Agilent 35900E ADC uses network (LAN) connection for communication.

### Remote Control Cabling

All modules of an instrument that accept timetable entries or that go into run mode during an analysis must be included in the remote control loop. In general, each module must be connected to the other devices with a remote control cable (for APG or ERI interfaces).

The 35900E dual channel interface uses APG remote, but the two remote connectors are not pass-through connections. When you operate the 35900E with both channels simultaneously, only the A-channel remote is connected; the B-channel acts in synchronization with the A-channel and reacts to the remote signals from the A-channel remote connector. If you wish to operate the B-channel independently, you connect a remote cable to the B-channel remote connector. In this mode, one instrument may start and stop the A-channel while another instrument has control of the B-channel.

#### NOTE

The independent control of two channels by separate instruments is possible beginning with the 35900 RC.Net software driver on AICs.

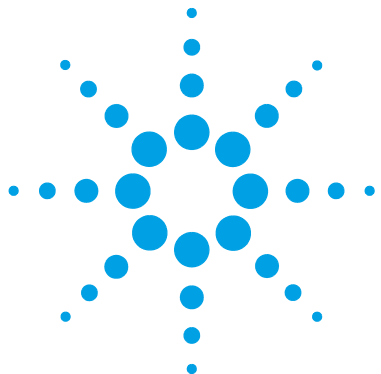
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## Connecting an Agilent 7100 CE System

The Agilent 7100 CE System connects to ChemStation via the network (LAN). You can connect the 7100 CE System either directly to the computer with the ChemStation software, using a crossover network cable (point-to-point), or to the local area network hub, using a standard network cable. The network (LAN) connector is situated on the right side of the electronic box at the rear of the instrument.

For details about configuring the 7100 CE System for network (LAN) communications, see the *Agilent 7100 Capillary Electrophoresis System User Manual*.





## 3 General Instrument Configuration Considerations

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This chapter contains information on instrument paths and on the number of supported instruments.



## Adding Instruments to a ChemStation Installation

Much of the Agilent Technologies analytical hardware is modular, and can be combined in various ways. Refer to the document *ChemStation Supported Instruments* guide (CDS\_SupportedInstFirmware.pdf) in the Docs/ENU folder on Disk 1 of the installation media for supported configurations.

### NOTE

If you want the instruments allocated to a specific instrument number (for example, if you are upgrading from a previous ChemStation revision) you must configure the instruments in the required sequence. The first instrument you configure will be allocated to instrument 1 (..\Users\Public\Documents\ChemStation\1\), the second to instrument 2 (..\Users\Public\Documents\ChemStation\2\) and so on. However, the Control Panel lists the instruments in alphabetical order.

## Instruments and OpenLab CDS ChemStation Edition licenses

### OpenLab CDS ChemStation Edition - Full License

- Use the **Agilent LC System** instrument type for LC instrument configuration, **Agilent GC System** for GC instrument configuration, or **Agilent LC/MS System** for configuration of a LC/MSD. This allows configuration and control of several instruments as indicated at “[Number of Instruments Supported](#)” on page 28.
- Additional instrument types are available for special instruments such as **Agilent 7100 CE System**, **Agilent 7100 CE/MS System**, **Agilent ADC GC**, **Agilent ADC LC System**, or **Agilent 490 Micro GC System**.
- Some additional instrument types are available to be used in an upgrade scenario.

## OpenLab CDS ChemStation VL Licence: M8311AA

A **OpenLab CDS ChemStation VL** license allows you to configure and control *one* of the following instruments per workstation:

- One 1260 Isocratic Infinity LC system, or one 1260 Quaternary Infinity LC system: use instrument type **Agilent LC Core System**. Selected supplemental 1260 Infinity LC modules may be added.
- One Agilent 1220 Infinity LC system, or one 1120 Compact LC system: use instrument type **Agilent LC Core System**.

Note that the instrument type **Agilent 1220 LC System** is still available for backwards compatibility, but is more restrictive in configuration and may also consume a Full ChemStation license.

- One 7820 GC: use instrument type **Agilent GC Core System (VL)**.
- One 490 Micro GC: use instrument type **Agilent 490 Micro GC System**.

## Number of Instruments Supported

There is a limit to the number of instruments (for example, GCs, LC module stacks or CEs) that can be configured on a single ChemStation workstation or Agilent Instrument Controller (AIC), as shown in [Table 4](#) on page 28.

**Table 4** Maximum Number of Instruments

	WorkStation	AIC	Secure Workstation	ChemStation Edition VL
GC, LC (2D) <sup>1</sup>	4	10	2	1
LC (3D) <sup>2, 3</sup>	2	5	2	1
CE	2	5	2	0
LC/MS, 7100 CE/MS	1	2	1	0

<sup>1</sup> 2D: no spectral acquisition

<sup>2</sup> 3D: with spectral acquisition

<sup>3</sup> for every installation, an additional license for each 3D instrument is required

When acquiring data in three- and four-instrument configurations, interactive data reprocessing is not recommended.

1100/1200 LC modules may be used in mixed configurations with Agilent gas chromatographs (GC). The configuration limits for these instrument combinations are:

<i>1100/1200 LC mixed-module combinations:</i>	The 35900E Dual Channel Interface counts as the equivalent of one 1100/1200 module.
<i>1100/1200 and GC combinations:</i>	1100/1200 instrument without DAD: up to three Agilent GCs 1100/1200 instruments with DAD: up to two Agilent GCs.

Depending on the number of modules attached to the system, and the differences in the applications in use (for example, data rate), we recommend that you contact your Agilent representative to identify the supported

configuration for very complex systems. The following list outlines some considerations:

- 1100/1200 chromatography instrument configurations that do not include diode array detectors (DADs) on a single workstation are limited to a total of around 18 individual modules, configured as up to four instruments with a limit of four detectors per instrument.
- The maximum number of 18 modules can consist of about 12 modules such as pumps, detectors and injectors, and about six can-slave modules such as valves and UIB interfaces. The maximum number depends on the exact module configuration and the LAN connection point.
- If detectors of the same type are used in one stack, two detectors of the same type are supported, or, in the case of the VWD, up to three. If DADs are included in the configuration, there is a limit of two DADs and about eight modules that may be configured as two separate instruments.
- When an instrument configuration includes an LC/MS, there is a limit of one LC/MS and one DAD on the instrument; no additional instruments are supported on the workstation.
- When an instrument configuration includes a CE/MS, there is a limit of one CE/MS including the DAD on the instrument. No additional instruments are supported on the CE/MS or CE ChemStation.

#### Agilent Instrument Controller (AIC)

Only instruments with a LAN connection can be controlled by an AIC. This excludes the ELSD detectors using RS232.

One AIC can control up to:

GC, LC (2D):	Ten instruments
LC (3D), CE:	Five instruments
LC/MS, CE/MS:	Two instruments

A 3D/DAD instrument is equivalent to two 2D instruments; therefore, an AIC can control, for example, three LCs with DAD and up to four Agilent GCs.

A single AIC can control two LC/MS Single Quad instruments and two 2D LC instruments.

There is no limit to the number of AICs in a distributed system.

#### NOTE

Interactive data reprocessing is not recommended when acquiring data in a three- or four-instrument configuration on a workstation or an AIC at full load (for example, 7–10 2D instruments).

---

## Printer Configuration

Ensure that a default printer is configured in Windows. This is done in the Windows Control Panel application. If no default printer is configured, the following problems have been reported:

- printing of a report preview fails.
- the **Copy To Clipboard** menu command gives an error
- the **Custom Report View** gives problems with new templates

### PDF XChange printer

During the installation of ChemStation C.01.09, a PDF XChange 6 printer driver is installed (revision 6.0.317.1).

### Print Limitations

The maximum number of pages for one print job is 1500; for example, a sequence summary report is one print job.

When printing Multi-Page chromatograms (specified in the **Specify Reports** dialog box), the maximum number of pages that can be printed properly depends on the resolution of the printer. 300 dpi allows ten pages per chromatogram, 600 dpi allows up to six pages per chromatogram.

## Configuring Physical Printers in Distributed Systems

In a Distributed System, instruments and their configuration are running on an Agilent Instrument Controller (AIC). Users access the instruments from ChemStation Client computers.

The **Configure Instrument** dialog box in the Control Panel allows you to choose a default printer. In a Distributed System, always choose a physical printer as a default printer to ensure that the settings work correctly in the entire system.

### **3 General Instrument Configuration Considerations**

#### **Printer Configuration**





## 4 Adding and Configuring Instruments

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This chapter describes how to add instruments using the Agilent OpenLab Control Panel.

### NOTE

The figures in this chapter show the Windows 7 user interface. If you have installed Windows 10, your user interface is different, but the instructions are still applicable.

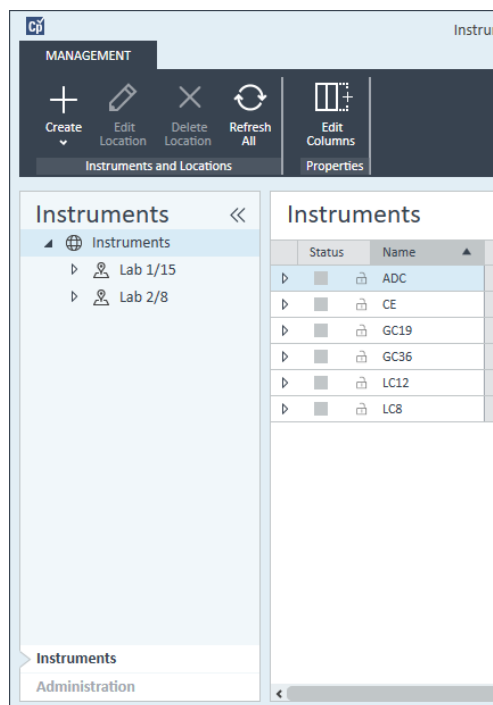


## Adding an LC System

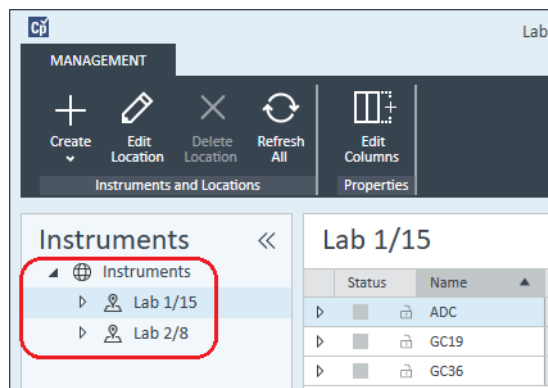
### NOTE

The G1315C/D DAD and the G1365C/D MWD are equipped with on-board LAN communication, and require a LAN connection. These detectors must be the communication entry point to the PC when they are used in an 1100/1200 stack.

- 1 In the **Navigation** pane of the **Agilent OpenLab Control Panel**, select **Instruments**.



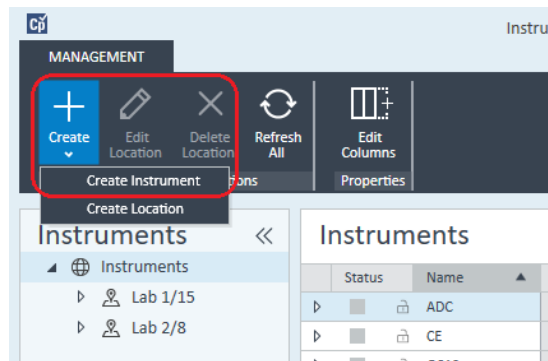
- 2 Select the location of the new instrument; if no locations are configured, select **Instruments**.



- 3 Click the **Create** tool in the top toolbar and select **Create instrument** from the menu.

OR

Right-click **Instrument** and select **Create instrument**.



The **Create Instrument** panel is shown.

## 4 Adding and Configuring Instruments

### Adding an LC System

Create Instrument

Name:	User A's Instrument	Mandatory
Description:	Instrument for Food Additives	Optional
Application:	ChemStation	Mandatory
Instrument controller:	Controller 1	Mandatory
Instrument type:	Agilent LC System	Mandatory
Contact:	User A	Optional

OK

Cancel

- 4 Enter the information for the new instrument.
  - a Enter a name for the new instrument in the **Name** field.
  - b Enter a description of the new instrument in the **Description** field. The description is optional.
  - c If you are working in a networked environment, display the **Application** drop-down list and select the application. (Otherwise, the **Application** is selected automatically.)
  - d If you are working in a networked environment, display the **Instrument controller** drop-down list and select the computer that you are currently using as the instrument controller. (Otherwise, the **Instrument Controller** is selected automatically.)
  - e Display the **Instrument type** drop-down list and select one of the LC instrument types: **Agilent LC System**, **Agilent LC Core System**, or **Agilent 1220 LC System**.

## NOTE

Be sure to make the correct selection.

Using the incorrect **Instrument type** may cause restrictions in instrument use.

- The **Agilent LC System** instrument type allows access to four LC instruments per Workstation using a combination of any Agilent LC modules and Integrated LC systems. Requires a full OpenLab CDS ChemStation Edition license.
- If you have a M8311AA ChemStation VL license, use **Agilent LC Core System**. The **Agilent LC Core System** instrument type restricts the configuration to one of the following instruments per workstation: one Agilent 1220 Infinity LC system / 1120 Compact LC system, one 1260 Isocratic Infinity LC system, or one 1260 Quaternary Infinity LC system with selected 1260 Infinity LC modules.
- The **Agilent 1220 LC System** instrument type may also be used with Integrated 1220 Infinity LC systems or 1120 LC systems, but provides less options than **Agilent LC Core System**. Use only if needed for backwards compatibility. It requires a full OpenLab CDS ChemStation Edition license or a VL license.

**f** Enter details of the contact person in the **Contact** field. The contact details are optional.

**5** Click **OK**.

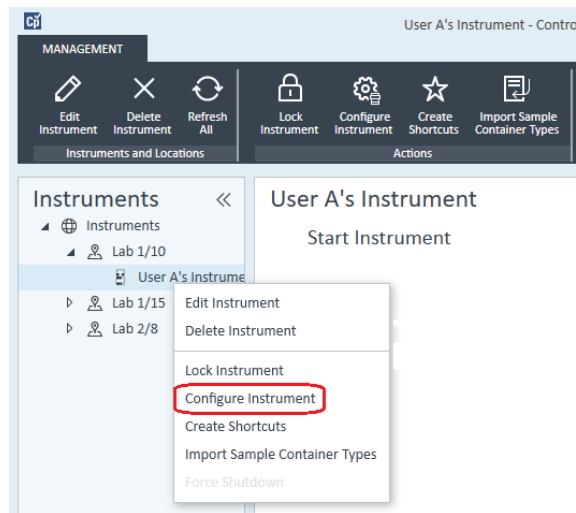
The new instrument is created in the **Instruments** tree.

**6** In the **Instruments** tree, select the newly created instrument.

## 4 Adding and Configuring Instruments

### Adding an LC System

- Click **Configure Instrument** in the toolbar or right-click the instrument name and select **Configure Instrument**.



The **Configure Instrument** dialog opens.

#### NOTE

Access to instrument configuration is disabled if the **Instrument Type** or the **Agilent Instrument Controller** are not specified.

- If **Auto Configuration** is offered, accept it. Enter either the **IP address** of the LC or the **Host name**; all recognized modules will be copied from the **Configurable Modules** panel to the **Selected Modules** panel.

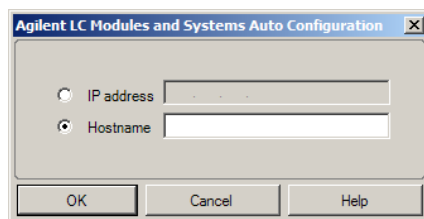
#### NOTE

Use **Auto Configuration** if possible. If you use manual configuration, you must enter all configuration parameters correctly; if the configuration does not match the module exactly, the module will not be recognized.

OR

Select the module(s) that you want to configure from the **Configurable Modules** panel and click > to copy them to the **Selected Modules** panel.

- Specify the instrument's LAN access parameters either by IP address or by instrument Hostname.



## NOTE

For manual configuration of instruments with multiple modules, specify the LAN access parameters for each module.

- 10 Complete the configuration dialog box(es) for the module(s) you have selected.

If you skip this step, you will be asked to configure your new LC system the first time you launch it.

- 11 Add and configure any additional modules from the **Generic Modules** section of the **Configurable Modules** panel.
- 12 Click the **Method load on startup** down-arrow and select which method to load when ChemStation is started.
- 13 Mark the check box(es) for the **Options** that you want to install.

## NOTE

Select **Enable Intelligent Reporting** to enable expanded reporting features. Clearing the check box will not install these features for this instrument and they will never be available.

If you enable Intelligent Reporting, the classic Report Layout will not be available for this instrument. However, existing classic reports can be used in parallel with Intelligent Reports.

- 14 To specify the size of the software window, select **Additional configuration > Initial screen window size** and select the window size from the menu.
- 15 Click **OK** to complete the instrument configuration.

When you expand the **Details** section of the instrument information in the **Agilent OpenLab Control Panel**, the new configuration data and details are shown.

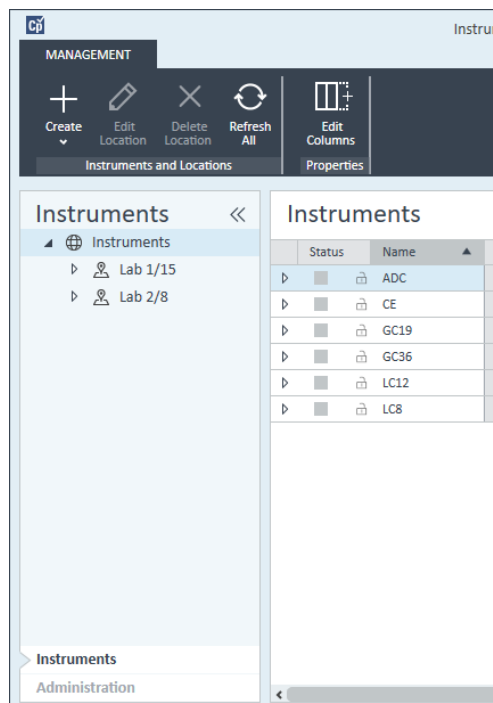
## Configuring a Device Cluster

If Autoconfiguration detects the presence of specific combinations of modules, it allows you to create clusters that work in concert as a single device. The following device clusters can be created:

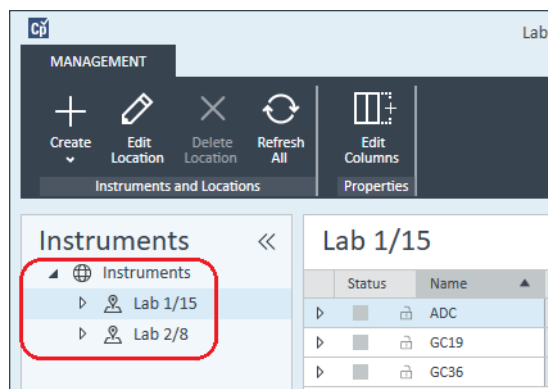
- Valve Thermostat Cluster
- Pump Valve Cluster
- Fraction Collector Cluster (multiple fraction collectors must always be clustered)
- Prep Pump Cluster
- HDR-DAD Cluster
- Column Comp Cluster (Legacy)
- Fraction Collector Cluster (Legacy)



- 1 In the **Navigation** pane of the **Agilent OpenLab Control Panel**, select the **Instruments** tree.



- 2 Select the location of the new instrument; if no locations are configured, select **Instruments**.



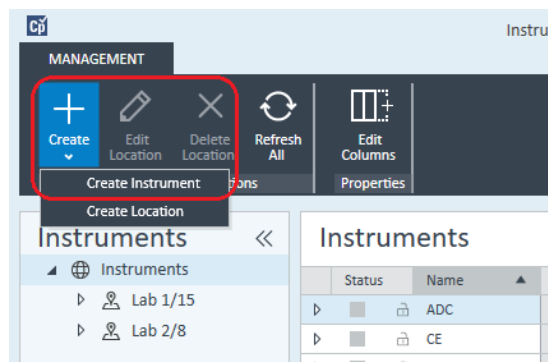
## 4 Adding and Configuring Instruments

### Configuring a Device Cluster

- 3 Click the **Create** tool in the top toolbar and select **Create instrument** from the menu.

OR

Right-click **Instrument** and select **Create instrument**.



The **Create Instrument** panel is shown.

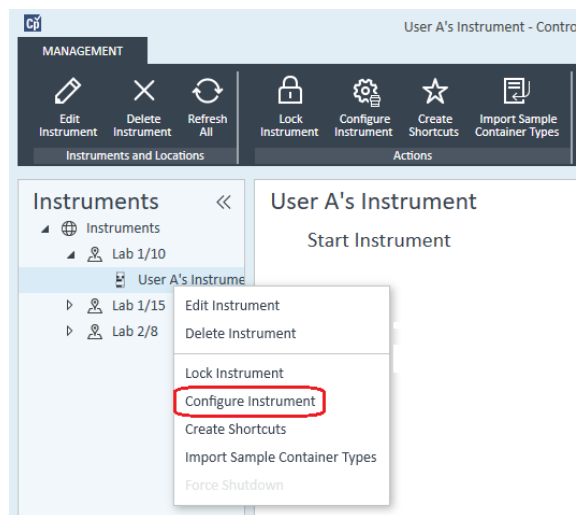
### Create Instrument

Name:	User A's Instrument	Mandatory
Description:	Instrument for Food Additives	Optional
Application:	ChemStation	Mandatory
Instrument controller:	Controller 1	Mandatory
Instrument type:	Agilent LC System	Mandatory
Contact:	User A	Optional

OKCancel

- 4 Enter the information for the new instrument.
  - a Enter a name for the new instrument in the **Name** field.
  - b Enter a description of the new instrument in the **Description** field. The description is optional.

- c If you are working in a networked environment, display the **Application** drop-down list and select the application. (Otherwise, the **Application** is selected automatically.)
  - d If you are working in a networked environment, display the **Instrument controller** drop-down list and select the computer that you are currently using as the instrument controller. (Otherwise, the **Instrument Controller** is selected automatically.)
  - e Display the **Instrument type** drop-down list and select **Agilent LC System** for modular LC systems, or **Agilent 1220 LC System** for Integrated LC systems (only HDR-DAD cluster is supported).
  - f Enter details of the contact person in the **Contact** field. The contact details are optional.
- 5 Click **OK**.  
The new instrument is created in the **Instruments** tree.
  - 6 In the **Instruments** tree, select the newly created instrument.
  - 7 Click **Configure Instrument** in the toolbar or right-click the instrument name and select **Configure Instrument**.



The **Configure Instrument** dialog opens.

#### NOTE

Access to instrument configuration is disabled if the **Instrument Type** or the **Agilent Instrument Controller** are not specified.

- 8 If **Auto Configuration** is offered, accept it. Enter either the **IP address** of the LC or the **Host name**; all recognized modules will be copied from the **Configurable Modules** panel to the **Selected Modules** panel.

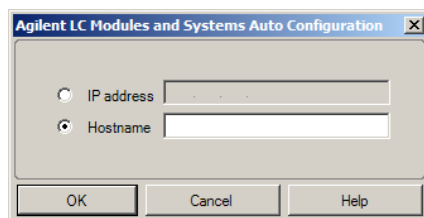
**NOTE**

Use **Auto Configuration** if possible. If you use manual configuration, you must enter all configuration parameters correctly; if the configuration does not match the module exactly, the module will not be recognized.

OR

Select the module(s) that you want to configure from the **Configurable Modules** panel and click > to copy them to the **Selected Modules** panel.

- 9 Specify the instrument's LAN access parameters either by IP address or by instrument Hostname.



**NOTE**

For manual configuration of instruments with multiple modules, specify the LAN access parameters for each module.

- 10 If modules that can be clustered are detected during Autoconfiguration, or such modules are configured manually, the **Create Cluster** dialog box is displayed.

The **Cluster Options** panel shows the list of possible cluster types. All possible cluster types are listed, but only those that can be formed using the available modules are enabled.

- 11 Select the cluster that you want to create in the **Cluster Options** panel.

All configured modules that can be used in the cluster are listed in the **Available Modules** panel on the right.

- 12 In the **Available Modules** panel, mark the check boxes against the modules that you want to include in the cluster.

- 13 Click **Create Cluster**.

The cluster is created using the marked modules; the individual modules in the **Available Modules** panel are replaced by the cluster, and a configuration dialog box is displayed that allows you to configure the cluster.

**NOTE**

You can decluster the cluster into its individual modules by right-clicking on the cluster and removing all components from the cluster. Note that declustered fraction collectors are not supported; only the last one may be used as a recovery collector).

---

## Adding an ELSD to an LC System

Depending on the module, the ELS detector is fitted with a LAN or standard RS232 3-wire serial interface.

An ELS Detector that is connected via LAN interface can be configured similarly as an LC module, see [“Adding an LC System”](#) on page 34.

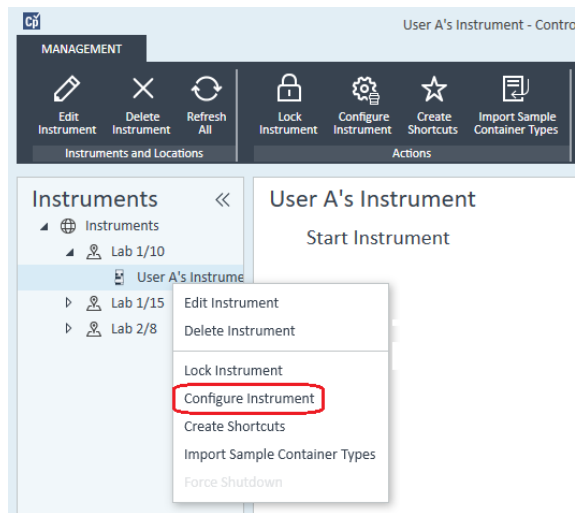
Some older ELS detectors only have an RS232 serial interface though. Autoconfiguration does not detect these ELSDs. The device must be configured manually, since it has a separate network connection. This procedure describes how to add an Agilent ELSD to an LC instrument that has already been configured.

### NOTE

Serial communication is not supported on an Agilent Instrument Controller (AIC) in a Distributed System.

- 
- 1 Create and configure the LC system to which the ELSD is connected. See [“Adding an LC System”](#) on page 34 for full details.
  - 2 In the **Instruments** tree, select the newly created instrument.

- 3 Click **Configure Instrument** in the toolbar or right-click the instrument name and select **Configure Instrument**.



The **Configure Instrument** dialog opens.

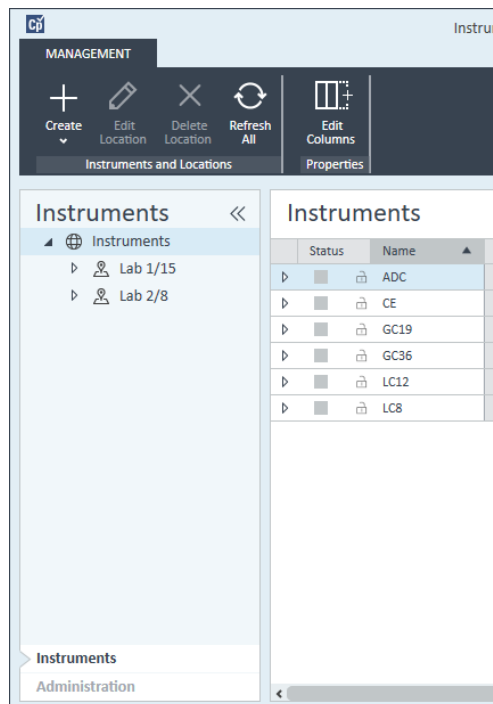
## NOTE

Access to instrument configuration is disabled if the **Instrument Type** or the **Agilent Instrument Controller** are not specified.

- 4 In the **Configurable Modules** panel of the **Configure Instrument** dialog box, double-click **ELSD**.  
OR  
Select ELSD in the left panel, then click > to copy it to the **Selected Modules** panel.
- 5 Select the ELSD in the **Selected Modules** panel and click **Configure**  
A configuration dialog box is displayed. The parameters required for configuration depend on the model of ELSD that is connected.
- 6 If the ELSD is connected to the system by a serial cable, select the COM port to which the ELSD is connected.  
OR  
If the ELSD is connected to the system via LAN, enter the IP address.
- 7 Complete the configuration and click **OK**.  
The ELSD is now available in the instrument.

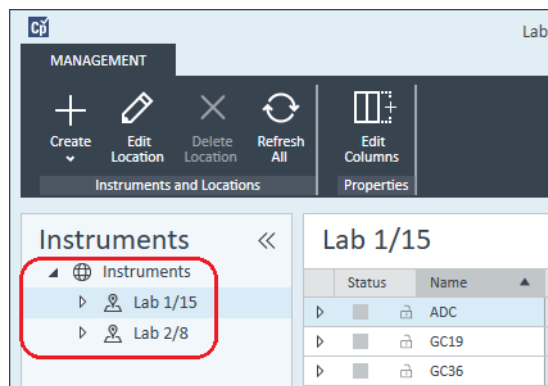
## Adding an Agilent 7100 CE System

- 1 In the **Navigation** pane of the **Agilent OpenLab Control Panel**, select the **Instruments** tree.





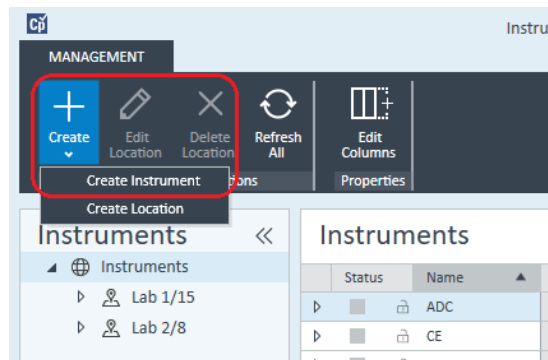
- 2 Select the location of the new instrument; if no locations are configured, select **Instruments**.



- 3 Click the **Create** tool in the top toolbar and select **Create instrument** from the menu.

OR

Right-click **Instrument** and select **Create instrument**.



The **Create Instrument** panel is shown.

## 4 Adding and Configuring Instruments

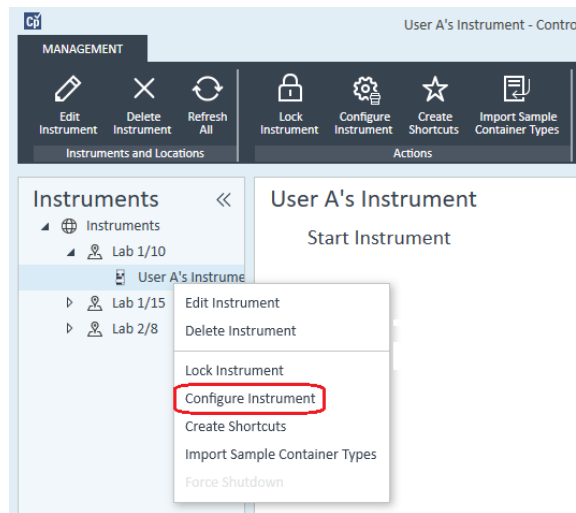
### Adding an Agilent 7100 CE System

Field	Value	Requirement
Name:	User A's Instrument	Mandatory
Description:	Instrument for Food Additives	Optional
Application:	ChemStation	Mandatory
Instrument controller:	Controller 1	Mandatory
Instrument type:	Agilent 7100 CE System	Mandatory
Contact:	User A	Optional

- 4 Enter the information for the new instrument.
  - a Enter a name for the new instrument in the **Name** field.
  - b Enter a description of the new instrument in the **Description** field. The description is optional.
  - c If you are working in a networked environment, display the **Application** drop-down list and select the application. (Otherwise, the **Application** is selected automatically.)
  - d If you are working in a networked environment, display the **Instrument controller** drop-down list and select the computer that you are currently using as the instrument controller. (Otherwise, the **Instrument Controller** is selected automatically.)
  - e Display the **Instrument type** drop-down list and select **Agilent 7100 CE System**.
  - f Enter details of the contact person in the **Contact** field. The contact details are optional.
- 5 Click **OK**.

The new instrument is created in the **Instruments** tree.
- 6 In the **Instruments** tree, select the newly created instrument.

- 7 Click **Configure Instrument** in the toolbar or right-click the instrument name and select **Configure Instrument**.



The **Configure Instrument** dialog opens.

#### NOTE

Access to instrument configuration is disabled if the **Instrument Type** or the **Agilent Instrument Controller** are not specified.

- 8 If **Auto Configuration** is offered, accept it. Enter either the **IP address** of the LC or the **Host name**; all recognized modules will be copied from the **Configurable Modules** panel to the **Selected Modules** panel.

#### NOTE

Use **Auto Configuration** if possible. If you use manual configuration, you must enter all configuration parameters correctly; if the configuration does not match the module exactly, the module will not be recognized.

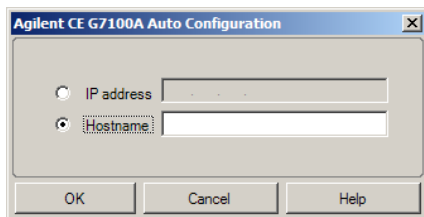
OR

Select the module(s) that you want to configure from the **Configurable Modules** panel and click > to copy them to the **Selected Modules** panel.

## 4 Adding and Configuring Instruments

### Adding an Agilent 7100 CE System

- 9 Specify the instrument's LAN access parameters either by **IP address** or by instrument **Hostname**.



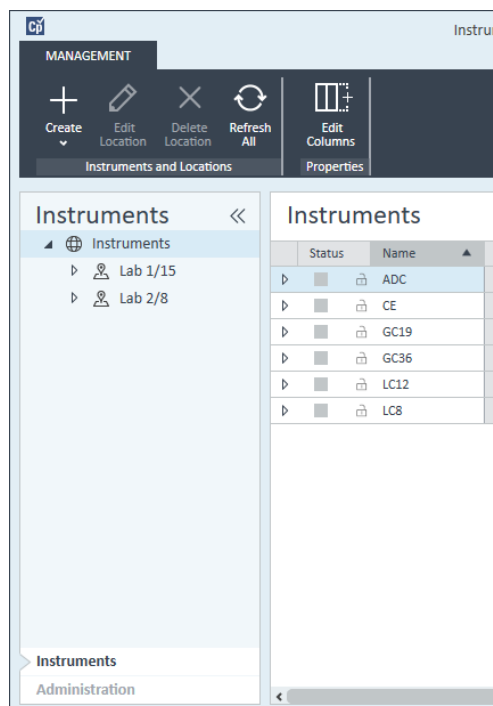
- 10 Complete the configuration dialog box(es) for the module(s) you have selected.  
  
If you skip this step, you will be asked to configure your new LC system the first time you launch it.
- 11 Add and configure any additional modules from the **Generic Modules** section of the **Configurable Modules** panel.
- 12 In the upper pane of the **Configure Instrument** dialog box, click the **Method load on startup** down-arrow and select which method to load when ChemStation is started.
- 13 In the **Configure Instrument** dialog box, mark the check box(es) for the **Options** that you want to install.
- 14 To specify the size of the software window, select **Additional configuration > Initial screen window size** and select the window size from the menu.
- 15 Click **OK** to complete the instrument configuration.  
  
When you expand the **Details** section of the instrument information in the **Agilent OpenLab Control Panel**, the new configuration data and details are shown.

## Adding an Agilent GC System

This section is applicable to the Agilent 9000, 78xx and 68xx GC systems. For 490 Micro GC please see “[Adding an Agilent 490 Micro GC](#)” on page 59.

Beginning with OpenLab CDS ChemStation C.01.09, the instrument types used for a new installation are either **Agilent GC System** or **Agilent GC Core System (VL)**. For upgrade installations, the following instrument types, **Agilent 9000**, **Agilent 78xx**, or **Agilent 68xx** GC Systems are used.

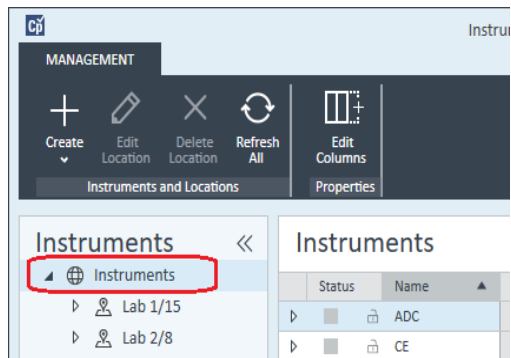
- 1 In the **Navigation** pane of the **Agilent OpenLab Control Panel**, select the **Instruments** tree.



## 4 Adding and Configuring Instruments

### Adding an Agilent GC System

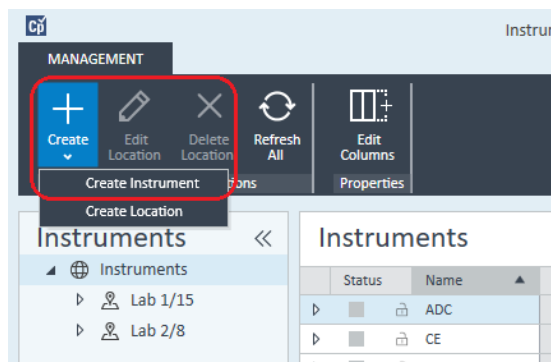
- 2 Select the location of the new instrument; if no locations are configured, select **Instruments**.



- 3 Click the **Create** tool in the top toolbar and select **Create instrument** from the menu.

OR

Right-click **Instrument** and select **Create instrument**.



The **Create Instrument** panel is shown.

Create Instrument

Name:

User A's Instrument

Mandatory

Description:

Instrument for Food Additives

Optional

Application:

ChemStation

Mandatory

▼

Instrument controller:

Controller 1

Mandatory

▼

Instrument type:

Agilent GC System

Mandatory

▼

Contact:

User A

Optional

OK

Cancel

- 4 Enter the information for the new instrument.
  - a Enter a name for the new instrument in the **Name** field.
  - b Optionally enter a description of the new instrument in the **Description** field.
  - c If you are working in a networked environment, display the **Application** drop-down list and select the application. (Otherwise, the **Application** is selected automatically.)
  - d If you are working in a networked environment, display the **Instrument controller** drop-down list and select the computer that you are currently using as the instrument controller. (Otherwise, the **Instrument Controller** is selected automatically.)
  - e Display the **Instrument type** drop-down list and select the correct type. Using the incorrect instrument type may cause restrictions in instrument use.
    - If you have a full license, use **Agilent GC System**. It allows access to four GC instruments per Workstation.
    - If you have a VL license, use **Agilent GC Core System (VL)**. It restricts the configuration to one 7820A per workstation.

For more information about a VL license, see [“Instruments and OpenLab CDS ChemStation Edition licenses”](#) on page 26.
  - f Optionally enter details of the contact person in the **Contact** field.

## 4 Adding and Configuring Instruments

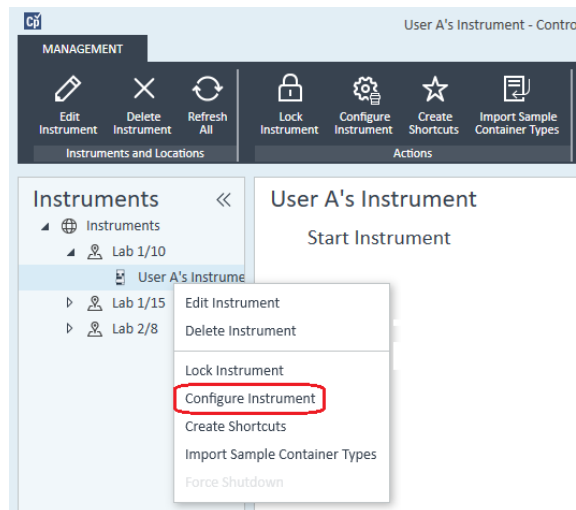
### Adding an Agilent GC System

5 Click **OK**.

The new instrument is created in the **Instruments** tree.

6 In the **Instruments** tree, select the newly created instrument.

7 Click **Configure Instrument** in the toolbar or right-click the instrument name and select **Configure Instrument**.



The **Configure Instrument** dialog opens.

#### NOTE

Access to instrument configuration is disabled if the **Instrument Type** or the **Agilent Instrument Controller** are not specified.

8 In the **Configurable Modules** panel of the **Configure Instrument** dialog box, double-click the GC's instrument type icon.

OR

Select the GC's icon in the left panel, then click > to copy it to the **Selected Modules** panel. The format of the configuration window depends on the GC you are adding.

9 Enter configuration details as needed. The fields available depend on the GC type.

- In the **IP address** field, enter either the IP address or the host name.
- Select the **Get GC Configuration** button to connect to the GC and display the **Configuration** tab.



- Click the **Keypad Lock** down-arrow and make a selection from the drop-down list.
- Select the **Prep Run on Manual Request** check box if required.

**10 Click OK.**

The new instrument is shown in the **Selected Modules** panel of the **Configure instrument** dialog box.

**11 In the upper pane of the **Configure Instrument** dialog box, click the **Method load on startup** down-arrow and select which method to load when ChemStation is started.**

**12 Mark the check box(es) for the **Options** that you want to install.**

**NOTE**

Select **Enable Intelligent Reporting** to enable expanded reporting features. Clearing the check box will not install these features for this instrument and they will never be available.

If you enable Intelligent Reporting, the classic Report Layout will not be available for this instrument. However, existing classic reports can be used in parallel with Intelligent Reports.

**13 To specify the size of the software window, select **Additional configuration > Initial screen window size** and select the window size from the menu.**

**14 Click OK to complete the instrument configuration.**

When you expand the **Details** section of the instrument information in the **Agilent OpenLab Control Panel**, the new configuration data and details are shown.

**NOTE**

For the 7890, if you use the 35900 for additional signals, it replaces two of the four native signals (the maximum number of signals is still four).

## GC ChemStation demonstration methods and data files

When you install a GC instrument, several demonstration methods and data files are placed in the instrument's subdirectories. The methods are placed in the methods subdirectory (for example; ..\Users\Public\Documents\ChemStation\1\Methods). The data files are placed in a subdirectory called Demo in the data subdirectory (for example; ..\Users\Public\Documents\ChemStation\1\Data\Demo). Three of the methods have associated data files.

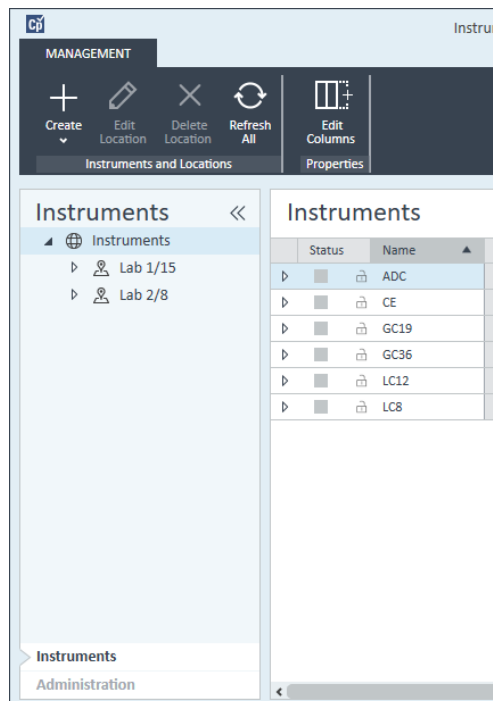
The following table explains the methods and datafiles:

**Table 5**                      GC ChemStation demonstration methods and data files

Method	Data File	Purpose
ESTD_EX.M	ESTD1.D	This is a calibrated external standard method with three levels of calibration for two peaks. The three ESTD data files are the calibration files.
	ESTD3.D	
	ESTD5.D	
ISTD_EX.M	ISTD1.D	This is a calibrated internal standard method with three levels of calibration for two peaks. The three ISTD data files are the calibration files.
	ISTD3.D	
	ISTD5.D	
100FID.M		This method can be used to display the three 100FID files.
	100FID5.D	These are examples of the Ultra column test mix run on a 10m x 100 $\mu$ M id x 0.17 $\mu$ M film HP-5 column in an 6890 Series GC. They were collected at 5, 20, and 50 Hz data rates, respectively.
	100FID20.D	
	100FID50.D	

## Adding an Agilent 490 Micro GC

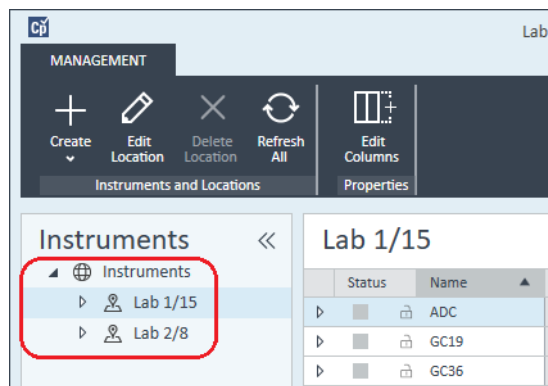
- 1 In the **Navigation** pane of the **Agilent OpenLab Control Panel**, select **Instruments**.



## 4 Adding and Configuring Instruments

### Adding an Agilent 490 Micro GC

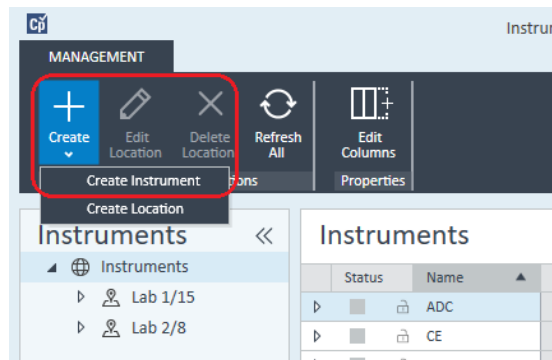
- 2 Select the location of the new instrument; if no locations are configured, select **Instruments**.



- 3 Click the **Create** tool in the top toolbar and select **Create instrument** from the menu.

OR

Right-click **Instrument** and select **Create instrument**.



The **Create Instrument** panel is shown.

Create Instrument

Name:

User A's Instrument

Mandatory

Description:

Instrument for Food Additives

Optional

Application:

ChemStation

Mandatory

Instrument controller:

Controller 1

Mandatory

Instrument type:

Agilent 490 Micro GC System

Mandatory

Contact:

User A

Optional

OK

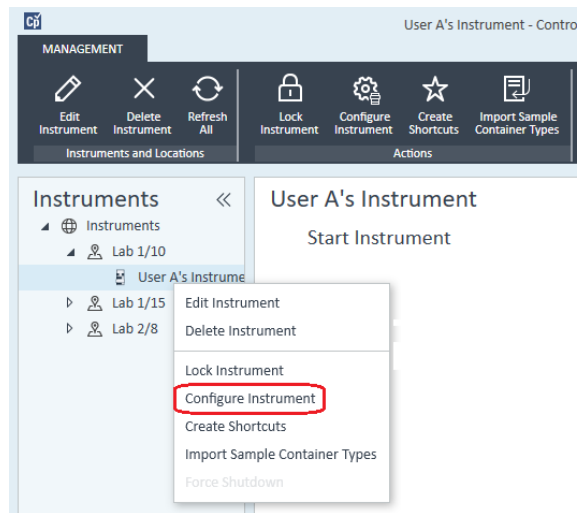
Cancel

- 4 Enter the information for the new instrument.
  - a Enter a name for the new instrument in the **Name** field.
  - b Enter a description of the new instrument in the **Description** field. The description is optional.
  - c If you are working in a networked environment, display the **Application** drop-down list and select the application. (Otherwise, the **Application** is selected automatically.)
  - d If you are working in a networked environment, display the **Instrument controller** drop-down list and select the computer that you are currently using as the instrument controller. (Otherwise, the **Instrument Controller** is selected automatically.)
  - e Display the **Instrument type** drop-down list and select **Agilent 490 Micro GC System**. This is used for both the full and VL license.
  - f Enter details of the contact person in the **Contact** field. The contact details are optional.
- 5 Click **OK**.  
The new instrument is created in the **Instruments** tree.
- 6 In the **Instruments** tree, select the newly created instrument.

## 4 Adding and Configuring Instruments

### Adding an Agilent 490 Micro GC

- 7 Click **Configure Instrument** in the toolbar or right-click the instrument name and select **Configure Instrument**.



The **Configure Instrument** dialog opens.

#### NOTE

Access to instrument configuration is disabled if the **Instrument Type** or the **Agilent Instrument Controller** are not specified.

- 8 In the **Configurable Modules** panel of the **Configure Instrument** dialog box, double-click the 490 Micro GC icon.

OR

Select the 490 Micro GC icon in the left panel, then click > to copy it to the **Selected Modules** panel.

The GC's configuration window opens.

**Agilent 490 Micro GC Configuration: Instrument 2**

IP address: 0.0.0.0  
 Activate communication  
 Driver version: 1.6.1.0

**Instrument information**  
 GC client version: 1.40002  
 Serial number: -  
 MPU version: -  
 IO controller version: -

**Instrument hardware** | Instrument configuration | Automation and remote control

Channel	Heated injector installed	Backflush to vent installed	Max. column temperature (°C)	Firmware IO Ext	Analytical module serial	Part number
1	<input type="checkbox"/>	<input type="checkbox"/>		-	-	-
2	<input type="checkbox"/>	<input type="checkbox"/>		-	-	-
3	<input type="checkbox"/>	<input type="checkbox"/>		-	-	-
4	<input type="checkbox"/>	<input type="checkbox"/>		-	-	-

Heated sample line Not installed      Extension boards Not connected

OK Cancel Help

- 9 In the **IP address** field, enter the IP address of the 490 Micro GC and click **Activate communication** to register the system access parameters.  
 The GC's details are added to the **Instrument Information** field.
- 10 Complete the instrument configuration.
  - a Enter the hardware parameters in the **Instrument Hardware** tab.
  - b Click the **Instrument configuration** tab and enter the configuration parameters.
  - c Click the **Automation and remote control** tab and specify the remote control and automation parameters. You can also configure the VICI valve here.
  - d Click **OK** to complete the 490 Micro GC configuration.
- 11 Click the **Method load on startup** down-arrow and select which method to load when ChemStation is started.
- 12 Mark the check box(es) for the **Options** that you want to install.

## 4 Adding and Configuring Instruments

### Adding an Agilent 490 Micro GC

#### NOTE

Select **Enable Intelligent Reporting** to enable expanded reporting features. Clearing the check box will not install these features for this instrument and they will never be available.

If you enable Intelligent Reporting, the classic Report Layout will not be available for this instrument. However, existing classic reports can be used in parallel with Intelligent Reports.

---

**13** To specify the size of the software window, select **Additional configuration > Initial screen window size** and select the window size from the menu.

**14** Click **OK** to complete the instrument configuration.

When you expand the **Details** section of the instrument information in the **Agilent OpenLab Control Panel**, the new configuration data and details are shown.



## Adding an Agilent Headspace Sampler

- 1 Install the headspace software.

### NOTE

In a client/server environment, the headspace software must be installed on the Agilent Instrument Controller (AIC).

- 2 In the **Agilent OpenLab Control Panel**, select the GC to which the headspace is to be configured.
- 3 Select **Configure instrument** by right-clicking on the GC.  
OR  
Click **Configure Instrument** in the toolbar.
- 4 Select the headspace module to configure from the **Configurable Modules** panel and click > to copy the module to the **Selected Modules**.  
The **Agilent Headspace Sampler Configuration** dialog box opens. If it does not open automatically, select **Configure** or double-click on the Configured module to open the **Agilent Headspace Sampler Configuration** dialog box.
- 5 Select the **Preferences** tab to specify **Method Editor** and **Instrument Actuals** for how information should appear when editing the method and reviewing headspace sampler (HS) status.
- 6 Enter the **IP Address** or **Hostname** on the **Connection** tab.
- 7 Select **OK**.  
This establishes a connection and uploads the Configuration.
- 8 Select **OK** to complete configuration.

## Adding a Standalone ADC

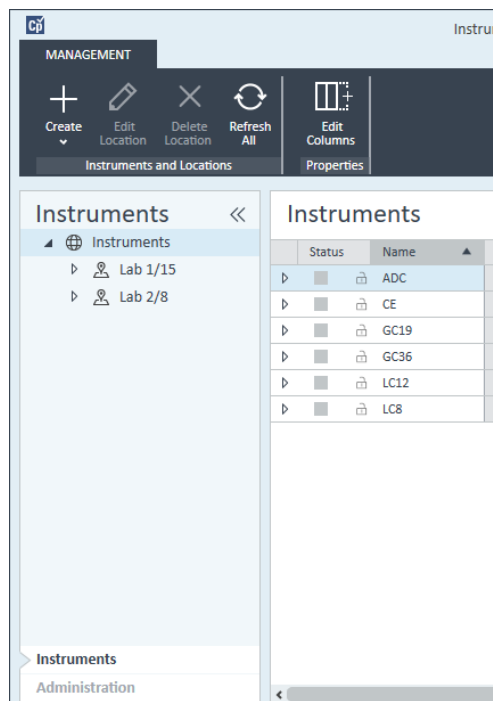
The Agilent 35900 is a dual-channel interface that connects analytical instruments to Agilent data systems. The 35900 is intended for use with both Agilent and non-Agilent laboratory instruments.

The 35900 can be configured for either single or dual channel operation from a single instrument. Also, the 35900 can operate as two independent single channel devices, each channel assigned to a different instrument.

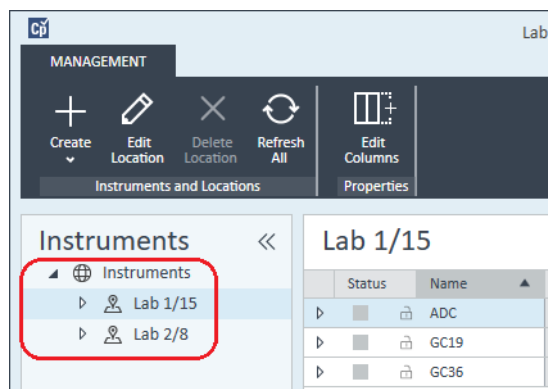
### Configuring the Agilent ADC Instrument - Dual Channel

In dual-channel operation, the Agilent 35900E provides two channels of data acquisition to a single device. A dual-channel configuration will have one common start/stop and one digital I/O port.

- 1 In the **Navigation** pane of the **Agilent OpenLab Control Panel**, select the **Instruments** tree.



- 2 Select the location of the new instrument; if no locations are configured, select **Instruments**.



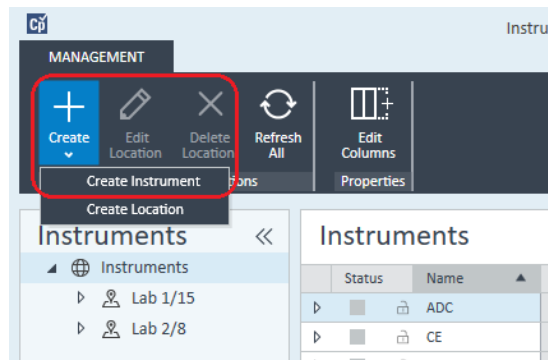
## 4 Adding and Configuring Instruments

### Adding a Standalone ADC

- 3 Click the **Create** tool in the top toolbar and select **Create instrument** from the menu.

OR

Right-click **Instrument** and select **Create instrument**.



The **Create Instrument** panel is shown.

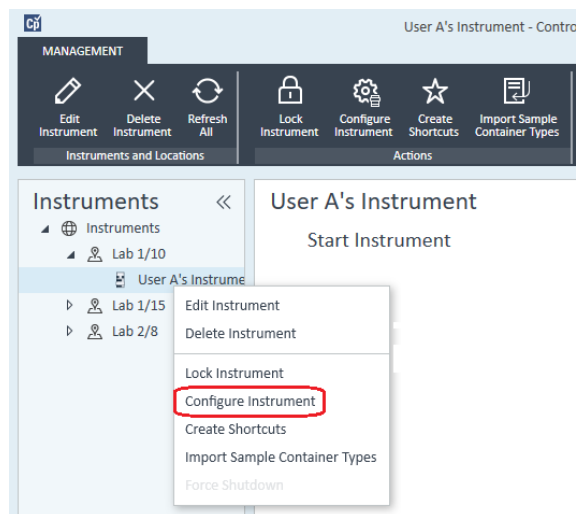
### Create Instrument

Name:	User A's Instrument	Mandatory
Description:	Instrument for Food Additives	Optional
Application:	ChemStation	Mandatory
Instrument controller:	Controller 1	Mandatory
Instrument type:	Agilent ADC LC System	Mandatory
Contact:	User A	Optional

OKCancel

- 4 Enter the information for the new instrument.
  - a Enter a name for the new instrument in the **Name** field.
  - b Enter a description of the new instrument in the **Description** field. The description is optional.

- c If you are working in a networked environment, display the **Application** drop-down list and select the application. (Otherwise, the **Application** is selected automatically.)
  - d If you are working in a networked environment, display the **Instrument controller** drop-down list and select the computer that you are currently using as the instrument controller. (Otherwise, the **Instrument Controller** is selected automatically.)
  - e Display the **Instrument type** drop-down list and select either **Agilent ADC LC System** or **Agilent ADC GC System**.
  - f Enter details of the contact person in the **Contact** field. The contact details are optional.
- 5 Click **OK**.
- The new instrument is created in the **Instruments** tree.
- 6 In the **Instruments** tree, select the newly created instrument.
- 7 Select **Configure instrument** from the newly created instrument's context menu (right-click) or click **Configure Instrument** in the toolbar.



The **Configure Instrument** dialog box is displayed.

#### NOTE

Access to instrument configuration is disabled if the **Instrument Type** or the **Agilent Instrument Controller** are not specified.

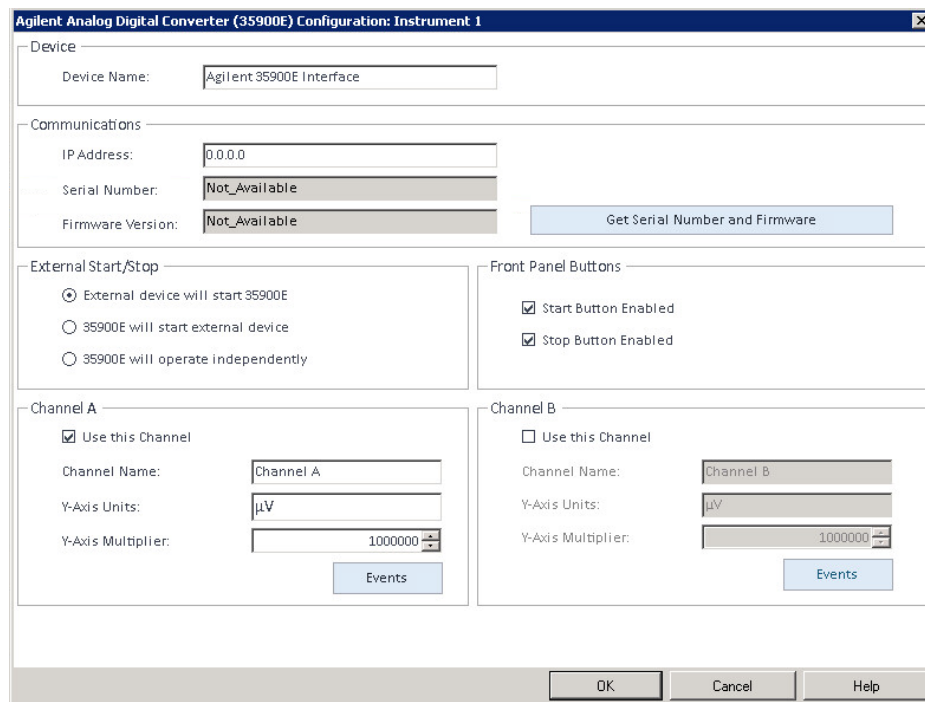
## 4 Adding and Configuring Instruments

### Adding a Standalone ADC

- 8 In the **Configurable Modules** panel of the **Configure Instrument** dialog box, double-click **35900E**.

OR

Select **35900E** in the left panel, then click > to copy it to the **Selected Modules** panel.



The dialog box is titled "Agilent Analog Digital Converter (35900E) Configuration: Instrument 1". It contains several sections for configuring the instrument:

- Device:** Device Name: Agilent 35900E Interface
- Communications:** IP Address: 0.0.0.0, Serial Number: Not\_Available, Firmware Version: Not\_Available. A button "Get Serial Number and Firmware" is present.
- External Start/Stop:** Radio buttons for "External device will start 35900E" (selected), "35900E will start external device", and "35900E will operate independently".
- Front Panel Buttons:** Checkboxes for "Start Button Enabled" and "Stop Button Enabled", both checked.
- Channel A:** Checkbox "Use this Channel" is checked. Channel Name: Channel A, Y-Axis Units:  $\mu V$ , Y-Axis Multiplier: 1000000. An "Events" button is at the bottom.
- Channel B:** Checkbox "Use this Channel" is unchecked. Channel Name: Channel B, Y-Axis Units:  $\mu V$ , Y-Axis Multiplier: 1000000. An "Events" button is at the bottom.

At the bottom right are buttons for "OK", "Cancel", and "Help".

The dialog box is displayed.

- 9 Enter the IP address.

**10** Select the **Get Serial Number and Firmware** button.

The serial number and firmware version are updated upon successful connection to the 35900E.

**11** Mark the check box(es) for the channel(s) that you want to use.

**NOTE**

Two channels can be assigned to different instruments when using the 35900 RC.Net driver.

**12 Specify the start/stop conditions for external devices in the **External Start/Stop**.**

External Start/Stop

☒ External device will start 35900E

☐ 35900E will start external device

☐ 35900E will operate independently

**13 Specify the actions of the 35900E buttons in the **Front Panel Buttons**.**

Front Panel Buttons

☒ Start Button Enabled

☒ Stop Button Enabled

**14 Click the **Events** button for each channel to assign the TTL digital I/O states.**

**15 Enter a unique descriptive label you want to use to define the instrument's energized state (high) and de-energized state (low). You may use any combination of characters and numerals (maximum of 20). Refer to Help and the 35900 User's Guide for more information on the Digital I/O connection.**

35900E Event Configuration

Events

	High	Low
<input checked="" type="checkbox"/> Pin 2:	Valve 1 On	Valve 2 Off
<input checked="" type="checkbox"/> Pin 3:	N2 Valve On	N2 Valve Off
<input type="checkbox"/> Pin 4:		
<input type="checkbox"/> Pin 5:		
<input type="checkbox"/> Pin 6:		
<input type="checkbox"/> Pin 7:		
<input type="checkbox"/> Pin 8:		
<input type="checkbox"/> Pin 9:		

OK Cancel Help

**NOTE**

For example, if you are going to control a normally closed valve (a valve that opens only when energy is applied), you could assign the events like the one shown in the figure. This event indicates that the valve is normally closed (Low state) and when energy is applied it goes to the opened state (High state).

You could also use the more descriptive labels, such as *Open Nitrogen Valve* and *Close Nitrogen Valve*, if you prefer.



- 16** Click **OK** to return to the **Device Configuration** dialog box.
- 17** Click **OK** to register the system access parameters and close the **Configure Selected Module** dialog box.
- 18** In the upper pane of the **Configure Instrument** dialog box, click the **Method load on startup** down-arrow and select which method to load when ChemStation is started.
- 19** In the **Configure Instrument** dialog box, mark the check boxes for the **Options** that you want to install.
- 20** To specify the size of the software window, select **Additional configuration > Initial screen window size** and select the window size from the menu.
- 21** Click **OK** to complete the instrument configuration.

When you expand the **Details** section of the instrument information in the **Agilent OpenLab Control Panel**, the new configuration data and details are shown.

## Configuring the Agilent ADC Instrument - Two Independent Channels

The Agilent 35900E can operate as two independent single channels, each channel assigned to a different instrument. For this configuration, the 35900 must be configured as two separate instruments using the same IP address. Channel A will be cabled to one device and channel B cabled to the second device.

Refer to the section [“Configuring the Agilent ADC Instrument - Dual Channel”](#) on page 66 for the full instructions for adding and configuring an ADC.

Here is an example on how to configure the 35900E for *two* independent instruments:

- Configure instrument 1 of the 35900E to use channel A
- Configure instrument 2 of the 35900E to use channel B

### For instrument 1:

- 1** Create the instrument in **Agilent OpenLab Control Panel**.
- 2** Select either **Agilent ADC LC System** or **Agilent ADC GC System**.
- 3** Move the 35900E from **Configurable** to **Selected**.

## 4 Adding and Configuring Instruments

### Adding a Standalone ADC

- 4 Click **Configure**.
- 5 Enter the IP address.
- 6 Select only Channel A, then click **OK**.

Agilent Analog Digital Converter (35900E) Configuration: Instrument 1

**Device**

Device Name: Agilent 35900E Interface

**Communications**

IP Address: 10.1.1.101

Serial Number: CN14240022

Firmware Version: HP35900E, Rev E.02.04.40

Get Serial Number and Firmware

**External Start/Stop**

☒ External device will start 35900E

☐ 35900E will start external device

☐ 35900E will operate independently

**Front Panel Buttons**

☒ Start Button Enabled

☒ Stop Button Enabled

**Channel A**

☒ Use this Channel

Channel Name: Channel A

Y-Axis Units:  $\mu\text{V}$

Y-Axis Multiplier: 1000000

Events

**Channel B**

☐ Use this Channel

Channel Name: Channel B

Y-Axis Units:  $\mu\text{V}$

Y-Axis Multiplier: 1000000

Events

OK Cancel Help

#### For Instrument 2:

- 1 Create the instrument in **Agilent OpenLab Control Panel**.
- 2 Select either **Agilent ADC LC System** or **Agilent ADC GC System**.
- 3 Move the 35900E from **Configurable** to **Selected**.
- 4 Click **Configure**.
- 5 Enter the same IP address as for Instrument 1.

**6** Select only Channel B, then click **OK**.

Agilent Analog Digital Converter (35900E) Configuration: Instrument 2

**Device**  
Device Name: Agilent 35900E Interface

**Communications**  
IP Address: 10.1.1.101  
Serial Number: Not\_Available  
Firmware Version: Not\_Available  
Get Serial Number and Firmware

**External Start/Stop**  
☒ External device will start 35900E  
☐ 35900E will start external device  
☐ 35900E will operate independently

**Front Panel Buttons**  
☒ Start Button Enabled  
☒ Stop Button Enabled

**Channel A**  
☐ Use this Channel  
 Channel Name: Channel A  
 Y-Axis Units: µV  
 Y-Axis Multiplier: 1000000  
 Events

**Channel B**  
☒ Use this Channel  
 Channel Name: Channel B  
 Y-Axis Units: µV  
 Y-Axis Multiplier: 1000000  
 Events

OK Cancel Help

Each channel will start and stop independently.

## Adding a 35900E ADC to an LC or GC System

This procedure describes how to configure a 35900E ADC connected to an Agilent LC or GC system to acquire additional signals.

- 1 Start the **Agilent OpenLab Control Panel**.
- 2 Select the GC or LC instrument that is already configured in the Instruments tree.
- 3 In the **Generic Modules** section of the **Configurable Modules** panel of the **Configure Instrument** dialog box, double-click **35900E**.

OR

Select **35900E** in the left panel, then click > to copy it to the **Selected Modules** panel.

The dialog box is displayed.

- 4 Enter the IP address.
- 5 Select **Get Serial Number and Firmware**.

The serial number and firmware version are updated upon successful connection to the 35900E.

- 6** Mark the check boxes for the channel(s) that you want to use.
- 7** Click **OK** to complete the instrument configuration.

When you expand the **Details** section of the instrument information in the **Agilent OpenLab Control Panel**, the new configuration data and details are shown.

#### NOTE

When configured as part of a GC system, the 35900E adds two signals to a 68xx and replaces two signals for the 78xx.

## Adding an Agilent PAL-xt or PAL3 Sampler with LC or GC

There are two different Agilent PAL Sampler models, PAL3 and PAL-xt. Ensure that you install the correct software driver and firmware for your instrument configuration.

### Adding a PAL3 Sampler for GC

- 1 Install the PAL3 Sampler software. In a client/server environment, the PAL3 Sampler software must be installed on the Agilent Instrument Controller (AIC).
- 2 In the **Agilent OpenLab Control Panel**, select the GC to which the PAL3 is to be configured.
- 3 Click **Configure Instrument** in the toolbar or right-click on the GC and select **Configure instrument**.
- 4 Select the PAL3 Sampler module from the **Configurable Modules** panel and click > to copy it to the **Selected Modules** panel.

The Agilent PAL3 Sampler **Configuration** dialog box should open automatically.

- 5 If the Agilent PAL3 Sampler **Configuration** dialog box does not open, double-click on the PAL3 module (or select **Configure...**) to open the PAL3 Sampler **Configuration** dialog box.
- 6 In the **Connection** tab of the **Configuration** dialog box, enter the IP address or Hostname of the PAL3, then select **Update Configuration**.

Valid connection and configuration will be indicated by the text **Configuration Loaded from Instrument**, completion of the PAL3 Serial Number, firmware version information, and an updated **Configuration Report** for the PAL3.

- 7 Click **OK** to close the dialog box and save the configuration.
- 8 Launch the instrument to view the user interface for the PAL.

Method development is based on the Tool Scripts configured within the instrument control module.

The **Tool Configuration** and **Tray Configuration** tabs are now available in the **PAL3 Configuration** dialog box.

OpenLab CDS ChemStation Edition offers **Script Manager**, **Tray Map**, and **PAL3 Configuration** within an online session.

## Adding a PAL-xt Sampler

- 1 Install the PAL-xt Sampler software. In a client/server environment, the PAL-xt Sampler software must be installed on the Agilent Instrument Controller (AIC).
- 2 In the **Agilent OpenLab Control Panel**, select the instrument to which the PAL-xt is to be configured.
- 3 Click **Configure Instrument** in the toolbar or right-click on the instrument and select **Configure instrument**.
- 4 Select the PAL-xt Sampler module from the **Configurable Modules** panel and click > to copy it to the **Selected Modules** panel.

The Agilent PAL-xt Sampler **Configuration** dialog box should open automatically.

- 5 If the Agilent PAL-xt Sampler **Configuration** dialog box does not open, double-click on the PAL-xt module (or select **Configure...**) to open the PAL Sampler **Configuration** dialog.
- 6 In the **Configuration** dialog box, enter the IP address or Hostname of the PAL-xt; then select **Update Configuration**.

Valid connection and configuration will be indicated by the text **PAL Configuration has been updated**, completion of the PAL-xt Device ID, firmware version information, and presence of the new tabs **Configuration** and **Tray Map**.

### NOTE

For Agilent Customer Engineers or Field Service Engineers, insertion of the FSE serial key at this point offers access to programmatic cycle modification for a single session **ONLY**.

- 7 Click **OK** to close the dialog box and save the configuration.
- 8 Launch the instrument to view the user interface for the PAL.

## 4 Adding and Configuring Instruments

### Adding an Agilent PAL-xt or PAL3 Sampler with LC or GC

Methods for the PAL-xt are based on installed or imported cycles and syringes that are configured within the control module of the instrument.

OpenLab CDS ChemStation Edition offers **PAL Configuration**, the ability to **Import Cycle...** and **Reset PAL** within an online session.



## Adding an LC/MS or CE/MS System

This task shows you how to add an LC/MS system or a CE/MS system to a standalone ChemStation workstation.

### NOTE

If you want to use an Agilent PAL Sampler with your LC/MS system, install the Agilent PAL Control software before you configure your LC/MS system. See [Adding an Agilent PAL Sampler](#) for details (“[Adding an Agilent PAL-xt or PAL3 Sampler with LC or GC](#)” on page 78).

---

### NOTE

When secure file I/O is **ON** you can start the ChemStation of an MSD instrument, only if the new MSD tune directory is protected.

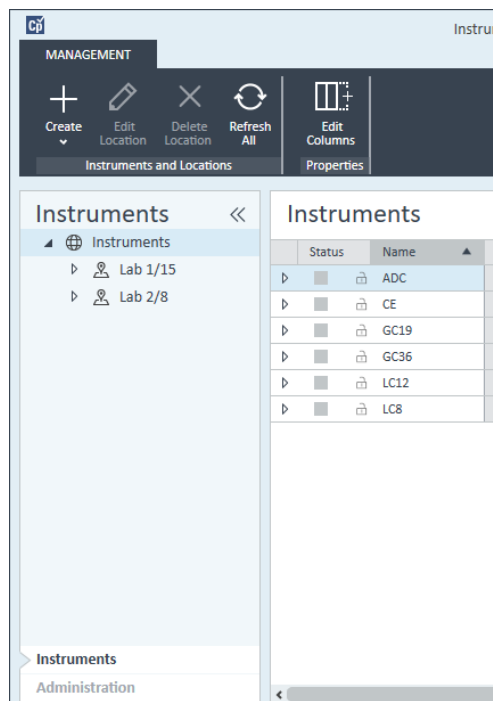
To protect the MSD tune dir do the following:

- 1 Open the **CSAdmin** tool
  - 2 Look for the new MSTune directory for MS instruments.
  - 3 Set the checkmark to protect this directory.
  - 4 Close **CSAdmin** tool.
-

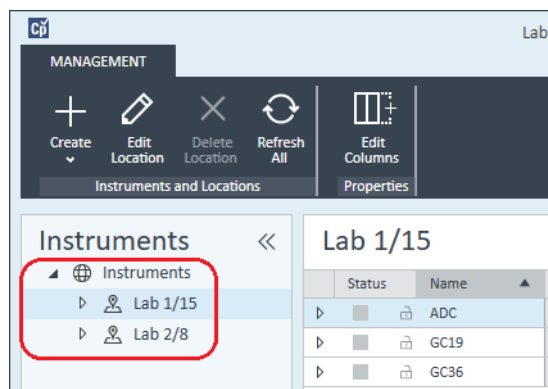
## 4 Adding and Configuring Instruments

### Adding an LC/MS or CE/MS System

- 1 In the **Navigation** pane of the **Agilent OpenLab Control Panel**, select the **Instruments** tree.



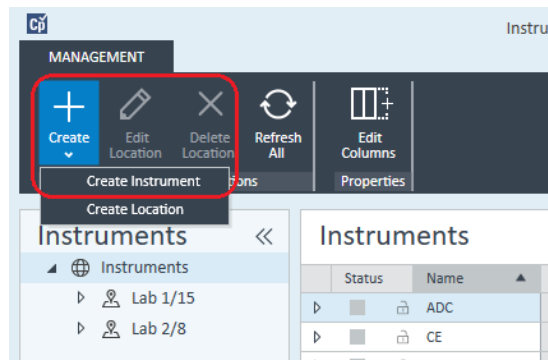
- 2 Select the location of the new instrument; if no locations are configured, select **Instruments**.



- 3 Click the **Create** tool in the top toolbar and select **Create instrument** from the menu.

OR

Right-click **Instrument** and select **Create instrument**.



The **Create Instrument** panel is shown.

Create Instrument

Name:

User A's Instrument

Mandatory

Description:

Instrument for Food Additives

Optional

Application:

ChemStation

Mandatory

Instrument controller:

Controller 1

Mandatory

Instrument type:

Agilent 7100 CE/MS System

Mandatory

Contact:

User A

Optional

OK

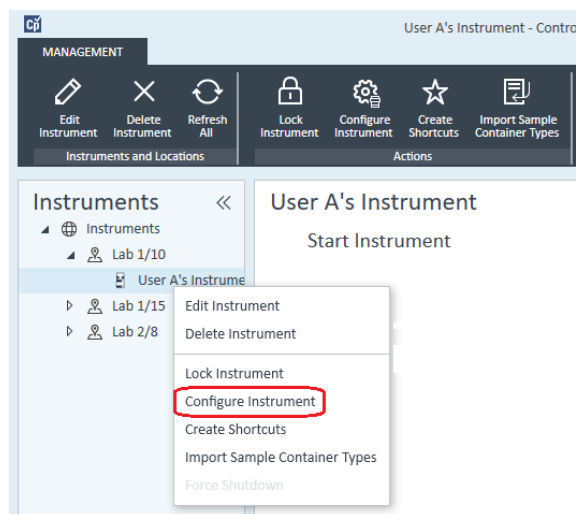
Cancel

- 4 Enter the information for the new instrument.
  - a Enter a name for the new instrument in the **Name** field.
  - b Enter a description of the new instrument in the **Description** field. The description is optional.

## 4 Adding and Configuring Instruments

### Adding an LC/MS or CE/MS System

- c If you are working in a networked environment, display the **Instrument controller** drop-down list and select the computer that you are currently using as the instrument controller. (Otherwise, the **Instrument Controller** is selected automatically.)
  - d Display the **Instrument type** drop-down list and select the instrument that you want to create: **Agilent LC/MS System** or **Agilent 7100 CE/MS System**.
  - e Enter details of the contact person in the **Contact** field. The contact details are optional.
- 5 Click **OK**.
- The new instrument is created in the **Instruments** tree.
- 6 In the **Instruments** tree, select the newly created instrument.
- 7 Click **Configure Instrument** in the toolbar or right-click the instrument name and select **Configure Instrument**.



The **Configure Instrument** dialog opens.

#### NOTE

Access to instrument configuration is disabled if the **Instrument Type** or the **Agilent Instrument Controller** are not specified.

- 8 Configure the LC or CE system as described in the appropriate instructions:
- “[Adding an LC System](#)” on page 34
  - “[Adding an Agilent 7100 CE System](#)” on page 48

**NOTE**

Do *not* click **OK** to close the **Configure Instrument** dialog box at this stage.

- 9 From the **Generic Modules** section of the **Configurable Modules** panel, add **Single Quad MSD** to the **Selected Modules**.

The **Configure Selected Module** dialog box is displayed.

You can choose to set the LC/MS or CE/MS access by either the host name or the IP address.

- 10 To set the system access by host name:

- Select the **Identify by Host Name** option.
- Enter the network name of the LC/MS or CE/MS in the **Host Name** field.

OR

To set the system access by IP address:

- Select the **Identify by IP Address** option.
- Enter the IP Address name of the LC/MS or CE/MS in the **IP Address** field.

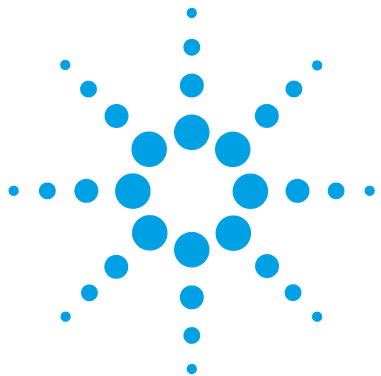
See the documentation that came with your LC/MS or CE/MS for more information about network parameters.

- 11 Add and configure any additional modules from the **Generic Modules** section of the **Configurable Modules** panel.
- 12 In the **Configure Instrument** dialog box, mark the check box(es) for the **Options** that you want to install.
- 13 Click **OK** to complete the instrument configuration.

When you expand the **Details** section of the instrument information in the **Agilent OpenLab Control Panel**, the new configuration data and details are shown.

## **4 Adding and Configuring Instruments**

### **Adding an LC/MS or CE/MS System**



## 5 Troubleshooting

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Troubleshooting Network Communication 89

### LC Instrument Start-up Problems 91

System remains in a wait-state waiting for a module that has been taken out of the configuration 91

Data File is empty (contains no signal) 91

Devices report “Buffer Overflow” in the logbook 91

This chapter summarizes helpful hints for troubleshooting potential problems you might see during the configuration process.



## Troubleshooting the Network

This section provides information designed to help you resolve problems related to TCP/IP network (LAN) communications when running ChemStation. A basic knowledge of network communications (including the TCP/IP protocol), a basic understanding of networks and networking, and a basic understanding of the hardware and functions of networks (cabling types, hubs, switches, routers, static versus dynamic IP addresses, DNS servers, subnets, gateways) are assumed.

Network-based communications problems can appear with any of the following symptoms:

- Cannot connect to an instrument
- Intermittent loss of communications with an instrument
- Sudden loss of communications to an instrument

### General Information

DHCP cannot be used to assign IP addresses to Agilent instruments used with ChemStation. The ChemStation computer and all connected instruments must use static IP addresses assigned at the PC, instrument front panel, or in the G1369 network card.

Each computer and instrument uses a Network Interface Card (NIC) to provide network communications. In some instruments, such as the 7890 Series GC, the NIC is built-in. For other instruments, the NIC is a separate accessory or “card” that is installed. In either case, the NIC provides communications programming and the physical connector for the network cable.

To increase stability of communication, it is recommended to disable the Aero look on the AIC, install the SP1 for Windows Server 2008 R2 and disable the Application Experience Service. See also <http://support.microsoft.com/kb/902196>



## Troubleshooting Network Connections

Ensure that all the network (LAN) cables are tightly plugged at both ends. Check the connection in the hub/switch and the one in the network card of the PC or instrument. When properly connected and working, network cards provide green and yellow LEDs as a visual indicator of network connectivity. Look on the back of the NIC adapter of the PC and the back of the instrument.

- *If there is no green LED*, there is no connectivity. Look for a hardware problem such as a disconnected cable, dead network, defective hub/switch, router, or defective NIC.
- *If there is a red LED*, there is a problem with the NIC.
- *If the green LED is lit, with a flashing yellow or orange LED*, the network card is properly connected and working. This condition indicates an active network, and verifies that the jack in the wall is working.

Disconnect the network cable and confirm that the PC reports that the network is disconnected. Reconnect the network cable and confirm that the PC reports the connection.

If you suspect a problem with the network cable or connectors, try the following:

- Test the cable by plugging it into another socket that you know is working. If this also fails, replace the cable.
- Test the socket by plugging in another device with a working network connection, such as a laptop. If this also fails, use a different socket.
- Power-cycle the router.

## Troubleshooting Network Communication

If your ChemStation cannot connect to the analytical instrument configured using a network (LAN) communication, perform the following troubleshooting steps.

### Verify that the IP Address is correct

- 1 Check the IP address and subnet mask of the Agilent 1100/1200 system by using the control module or Instant Pilot, if available. In the System view of the control module, select **Configure > MIO** for the module where the

G1369A/B LAN card is inserted and scroll down to the IP address of the G1369A/B LAN card.

**NOTE**

When the MIO dialog box is opened on the Agilent 1100/1200 control module, ChemStation cannot communicate with the Agilent 1100/1200 system.

### Verify that Basic Communication is possible

Use the ping command, to verify that the IP address is operational.

**1** Open a command prompt window on your PC.

**2** Type

**ping 10.1.1.102** where *10.1.1.102* needs to be replaced by the appropriate IP address or by the selected host name; and press **Enter**

The command ping will send a request for reply to the IP address, bypassing part of the Windows TCP/IP settings. A successful ping would look like this:  
**Reply from 10.1.1.102: bytes=32 time<10ms TTL=128**

If **request timed out** is displayed, the IP address can not be reached by the ping command.

**3** If the ping request was answered successfully by the instrument, you need to verify that your Windows TCP/IP settings are correct for the selected network, especially the subnet mask and gateway settings should be checked.

**4** Check that the IP address is not duplicated:

- a** Disconnect the LAN cable from the instrument.
- b** Repeat the ping command.

If there is NO response, the IP address is unique (not duplicated) and you can reconnect the LAN cable.

### Identify by host name

If you identify the Agilent 1100/1200 system by host name, ensure that the used host name and IP address are correctly set up in the DNS server or the corresponding entry in the HOSTS file exists. Try using the IP address in the Configuration Editor.

## LC Instrument Start-up Problems

### System remains in a wait-state waiting for a module that has been taken out of the configuration

On systems that are frequently reconfigured, i.e. devices are added or removed from the current configuration, the system may remain in a wait-state as long as the unused devices are still connected to the APG or ERI remote cable. The only possible work-around is to disconnect/connect the remote cable when deleting/adding the external module from/to the current configuration.

If a second detector is not needed for certain experiments, but for convenience reasons is not taken out of the configuration, selecting a very short run-time for the unneeded detector is not recommended.

For example, when acquiring data on an FLD while the DAD is configured with a short stop-time, it may happen that the DAD lamp is switched off before the LC analysis is finished. This produces a *not ready* condition so that the next analysis does not start. Alternatively, acquiring with the DAD and selecting a short stop time for the FLD does not produce this problem as a *lamp off* status is a perfectly valid operational mode with the FLD.

### Data File is empty (contains no signal)

Check the remote cabling of the detectors. A detector does not change into the run-status unless the start signal is transmitted over the remote line. Refer to the cabling diagrams in your instrument hardware manuals.

### Devices report “Buffer Overflow” in the logbook

This message usually indicates a badly performing PC, when the data transfer from the instrument to the PC is not capable of handling the data stream. The bad performance can be caused by

- Power save features of the PC.

## 5 Troubleshooting

### LC Instrument Start-up Problems

- Bad network performance.
- Bad hard disk performance.
- Other programs accessing the hard disk or using the computer's resources, such as scheduled defragmentation, backup, or virus scanning.



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## **In This Book**

Use this handbook when you need to set up your instruments to work with the Agilent OpenLab CDS ChemStation Edition. Learn how to add instrument modules and configure them.

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