Agilent ICF Support Layer for Waters CDS

Installation & Configuration Guide – Rev. 4.0

Notices

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Software Revision

This guide is valid for the Agilent ICF Support Layer for Waters CDS 4.0.

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1 Introduction

The purpose of this document is to provide guidance on how to install, configure, upgrade, or uninstall WICF 4.X on any instrument controller (LAC/E or Personal Workstation) or Client according to the specifications. For more details on ICF or the specific driver packages, please review the respective Release Notes on the installation media.

Table 1 Terms and abbreviations used in this document

Terms	Description
CDS	Chromatographic Data System
DSA	Data System Adapter
FR	Feature Release
HF	Hotfix
ICF	Instrument Control Framework
ICF SL	Waters ICF Support Layer
ICL	Instrument Control License
ICS	Instrument Component Software
Instrument controller	LAC/E or Personal Workstation
LAC/E	Laboratory Acquisition Control Environment
SFC	Supercritical Fluid Chromatography
SP	Service Pack
SR	Service Release
SSB	Software Status Bulletin
SVT	Software Verification Tool
U	Update
Waters	Waters Corporation
WICF	Agilent ICF Support Layer for Waters CDS

Trademarks

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2 Prerequisites

The following Prerequisites must be met before starting the installation of WICF:

- Waters CDS must be installed and fully functional before starting the installation of WICF.
- The compatibility and system requirements must be fulfilled as listed in the Release Notes.
- Former Waters ICF SL installations must be completely uninstalled including the removal of ICF Support, Agilent ICF, Agilent Instrument Drivers, and Agilent Software Verification Tool.
- No sample set must be scheduled or in progress.
- The installation must be executed with a Windows user account (domain or local) having local administrator rights.
- Only Agilent instruments adhering to the specifications in the Release Notes can be configured.
- To configure an instrument, an Empower user account with the appropriate privileges must be used.

NOTE

In case ICF SL 3.7.01 project extension (ICF 3.2 Update 3) is installed the GC/HS drivers must be uninstalled manually via Windows Programs and Features.

DCOM and local security policy settings

To ensure the functionality of ICF based instrument control in Empower, the following DCOM (Distributed Component Object Model) and local security policy must be set on each instrument controller. Please restart the device after completion of the settings.
The settings are typically set during Empower installation but should be checked when installing WICF or during troubleshooting.

- Component Services > Computers > Properties > COM Security > Access Permission

Select the **Allow** check boxes for Local Access and Remote Access for Everyone and Domain Users[1] (listed in the "Group or user names" section).

- **Component Services > Computers > Properties > COM Security > Launch and Activation Permissions**
  Select the **Allow** check boxes for Local Launch, Remote Launch, Local Activation, and Remote Activation Permissions for Everyone and Domain Users[1].
- **Local Security Policy > Security Settings > Local Policies > Security Options > DCOM: Machine Access Restrictions in Security Descriptor Definition Language (SDDL) syntax > Edit Security**
  Select the Allow check boxes for Local Access and Remote Access for Everyone and Domain Users[1].
- **Local Security Policy > Security Settings > Local Policies > Security Options > DCOM: Machine Launch Restrictions in Security Descriptor Definition Language (SDDL) syntax > Edit Security > Launch and Activation Permissions**
  Select the Allow check boxes for Local Launch, Remote Launch, Local Activation, and Remote Activation Permissions for Everyone and Domain Users[1].
- **Local Security Policy > Local Policies > Security Options > Network Access: Let Everyone permissions apply to anonymous users**
  Set to Enabled

Firewall settings

If third-party firewalls or anti-virus software are used on a network with WICF, the firewall ports listed in this section must not be in use by other applications to allow communication between the instruments and the LC/CE and GC/HS drivers. These restrictions apply to both Personal Workstations and Enterprise systems since component communications rely on these communication channels.

The WICF installer will automatically setup the necessary firewall inbound rules. If you encounter communication issues, the following table gives an overview about the utilized ports as a reference.

[1] If you are in a domain environment, you may need to add the Domain Users manually.

Table 2 Instrument Inbound Rules for the instrument controller.

Protocol	Port/Program	Description
TCP	4879	Instrument communication (Headspace)
TCP	10000-10020	Instrument communication (GC 78xx, 88xx, 9000)
TCP	58080/PreConfigClient.exe	Waters ICF Port
TCP	Any/AgilentPlugInServer	Default path: C:\Empower\Instruments\AgilentLC\AgilentPlugInServer.exe
TCP	Any/PlugInRunner	Default path: C:\Empower\Instruments\AgilentLC\PlugInRunner.exe
TCP	Any/preconfigservice	Default path: C:\Empower\Instruments\AgilentLC\preconfigservice.exe

Table 3 Instrument Outbound Rules for the instrument controller in case the firewall setting is not "Outbound connections that do not match a rule are allowed".

Protocol	Port/Program	Description
TCP	23	Instrument communication (LC, CE)
TCP	53	DNS Server
TCP	67, 68	DHCP Server (DNS or BootP)
TCP	9001, 9002, 9100	Instrument communication (GC, LC, 35900)
TCP	9101, 9110	Instrument communication (GC, LC, 35900)

3 Installation

Installing WICF is a two-step process. In the first step, the Software Verification Tool (SVT) is installed. In the second step, WICF that includes ICF and Agilent instrument drivers is installed. The WICF installer will prevent the installation if specific prerequisites are not met, for example, SVT version, Waters CDS version, OS version, as described in Chapter 2.

To use WICF in an Empower Enterprise environment, the drivers must be installed on every LAC/E and client or Citrix Server interacting with the Agilent instrument, its methods, and results. WICF does not need to be installed on database servers or controllers without Agilent instrument connection or interaction. For incremental upgrade scenarios, the interoperability between different WICF and Waters ICF Support Layer versions is possible. See WICF Release Notes for details.

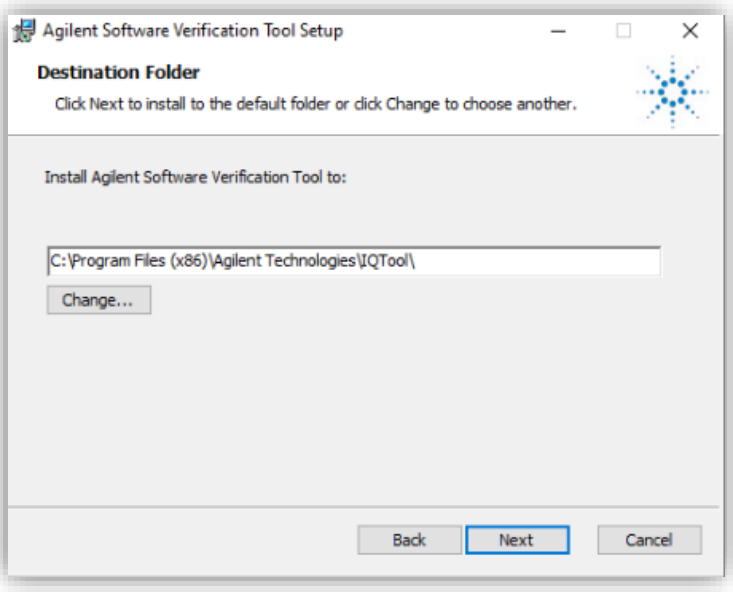
NOTE

Before starting the installation of SVT and WICF, ensure that no sample sets are running or in the queue, reboot the PC and log in with an account having full local Windows administrator privileges.

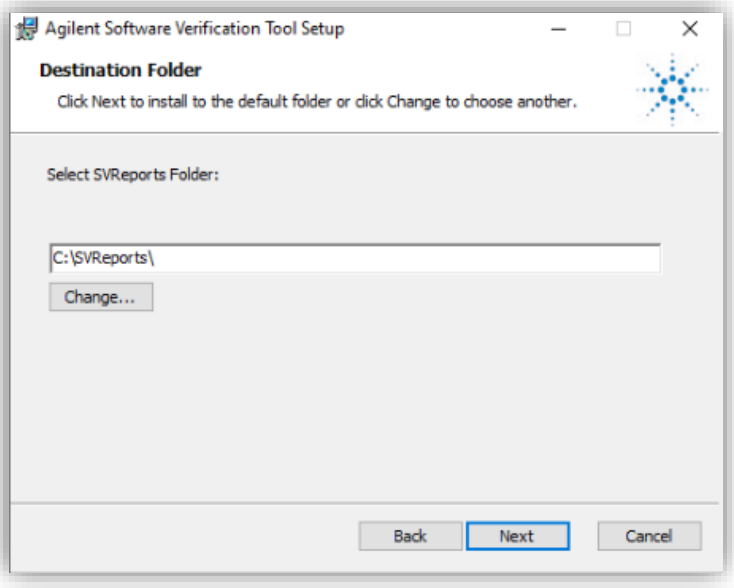
Interactive Installation of the Agilent Software Verification Tool (SVT)

SVT is required for the installation of WICF. To install the SVT, perform the following steps:

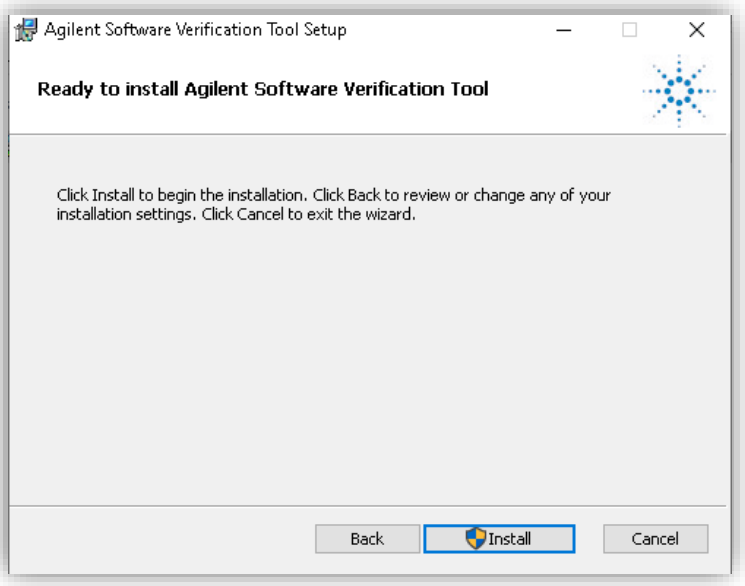
1. Locate the installation file in the subdirectory \Setup\Agilent Software Verification Tool.
2. Double-click the file SFVtool.msi to start the installation of the Software Verification Tool.
3. On the prompted End-User License Agreement, click **Next** and follow the on-screen instructions. The default settings should be appropriate in most cases.
4. If required, adjust the destination folders for the installation.



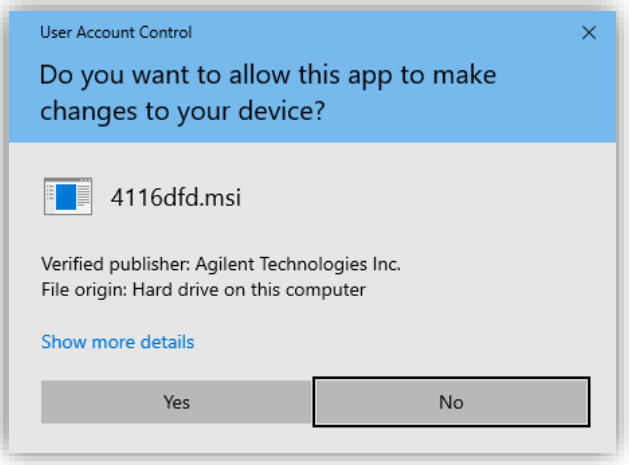
5 Specify the destination of the verification reports. The report of the installation verification can be found in this location.



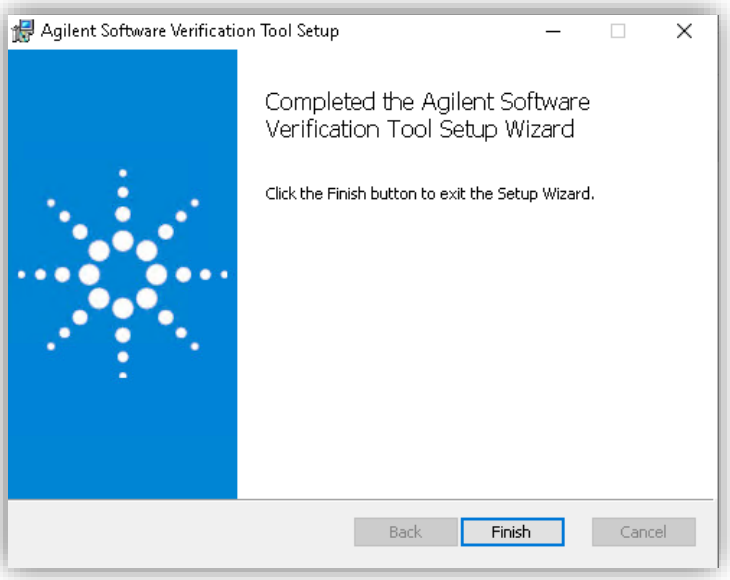
6 Continue with **Next** and, on the next screen, click **Install** to start the installation.



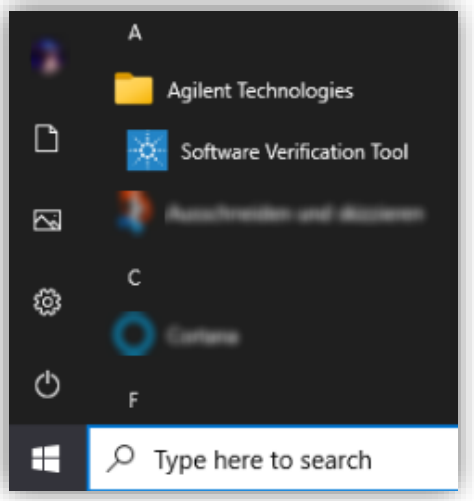
7 If the User Account Control Notification is turned on, click **Yes** to allow the installation of SVT.



8 After completion, click **Finish** to close the installation wizard.



9 The Software Verification tool is now available in the Windows Start menu: **Start > Agilent Technologies > Software Verification Tool**.



Interactive Installation of the Agilent ICF Support Layer for Waters CDS (WICF)

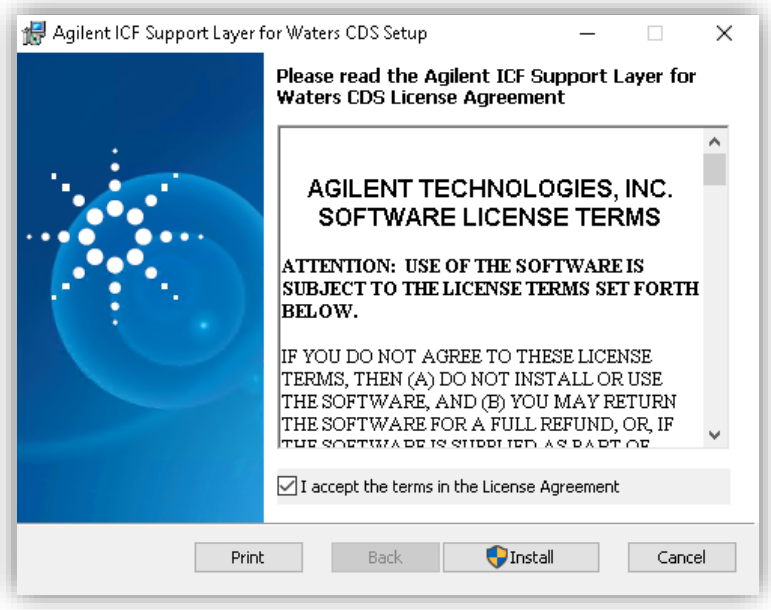
The Agilent Drivers are delivered as a single Windows Installer file named AgilentICFSupportLayerForWatersCDS.msi that includes the supported ICF and instrument drivers. To install WICF, perform the following steps:

1 Ensure that all Prerequisites are fulfilled (see Chapter 2)

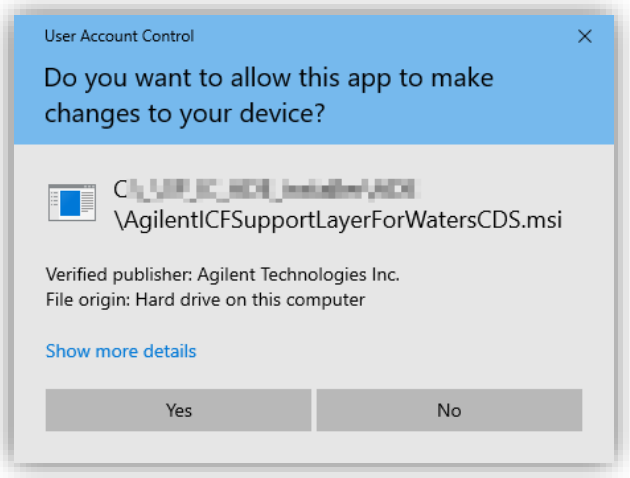
2 Locate the installation file in the subdirectory \Setup\Agilent ICF Support Layer for Waters CDS.

3 Double-click the file AgilentICFSupportLayerForWatersCDS.msi to start the installation of WICF.

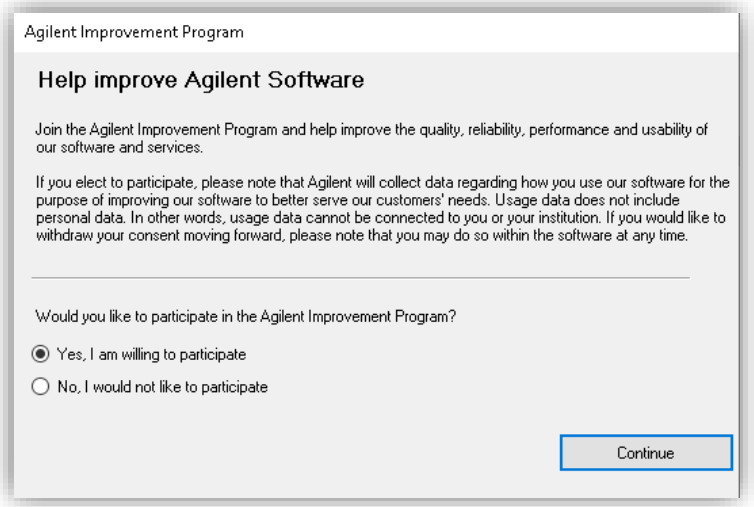
4 On the setup dialog, accept the license terms and continue with **Install**.



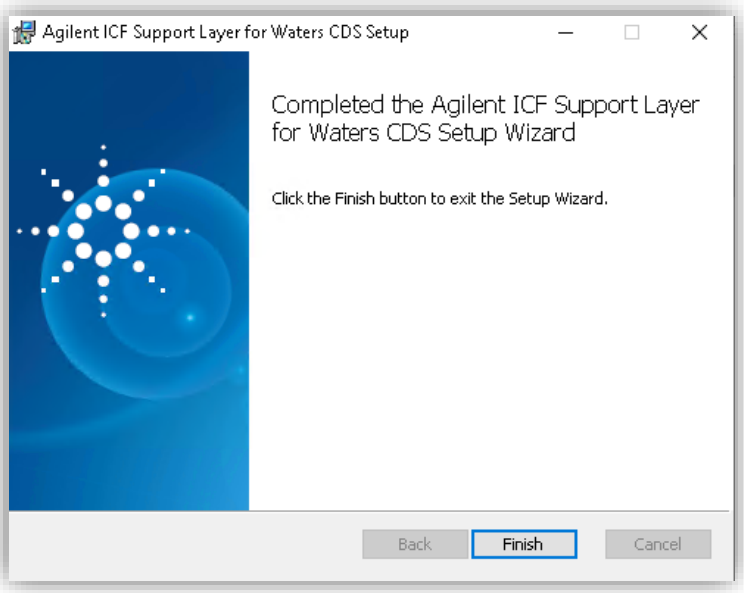
5 If the User Account Control Notification is turned on, click **Yes** to allow the installation of WICF.



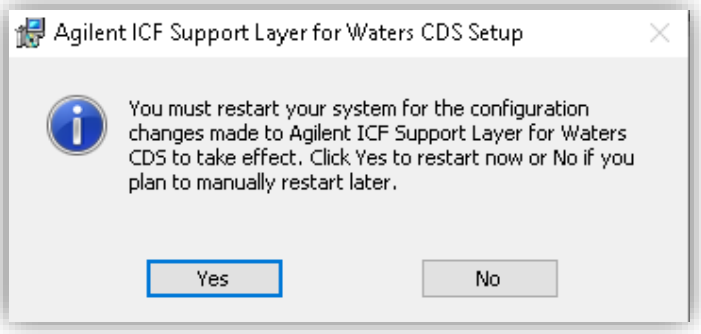
6 Choose if you want to join the Agilent Improvement Program for LC and click **Continue**.



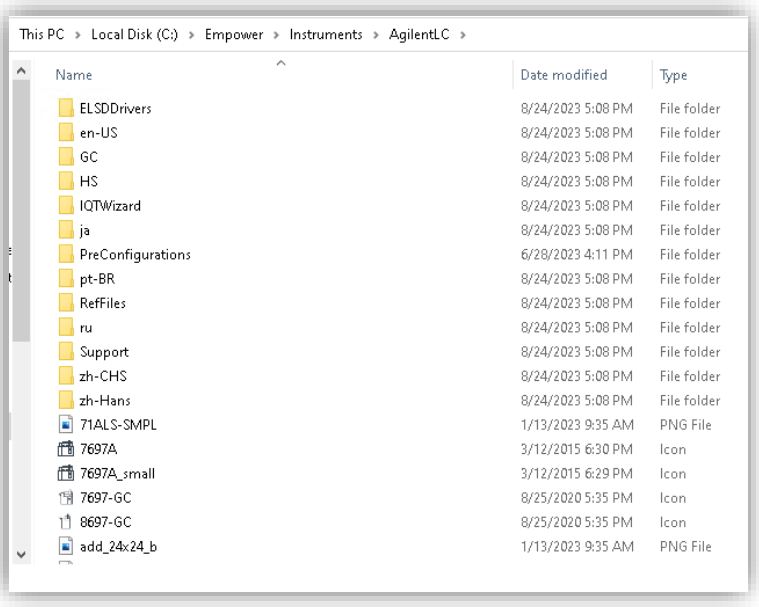
7 Wait until the installation process completes and click **Finish**.



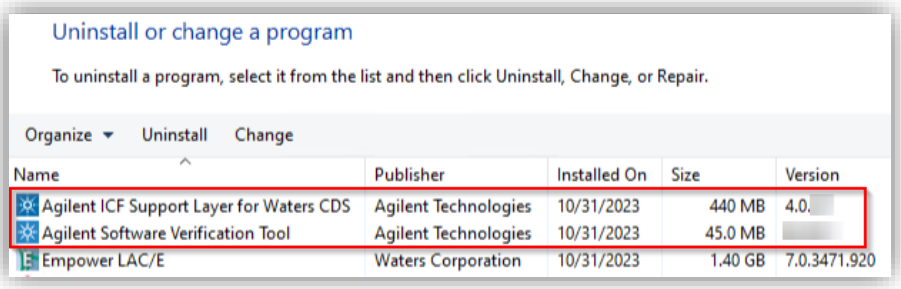
8 To finalize the installation, click **Yes** to restart the PC.



The location for the files of the default installation is C:\Empower\Instruments\AgilentLC.



SVT and WICF will be listed in Windows Programs and Features.



Silent Installation of SVT and WICF

It is possible to install the Agilent Software Verification Tool and WICF in silent mode by executing the following commands in the command console. Refer to the Microsoft documentation for Microsoft installer functionality. Make sure to log on

to the PC with an account having full local Windows administrator privileges. Start the command line with **Run as administrator**.

Silent SVT Installation via msiexec

```
msiexec.exe /i "<path_to_msi>\SFVtool.msi"
[/quiet][/passive][/q{n|b|r|f}]
```

An installation using this syntax will install the msi to the default installation path (C:\Program Files (x86)\Agilent Technologies\IQTool) without logging or restart instructions.

Examples

- Installation with no user interaction and no user interface:

  ```
  msiexec.exe /i "C:\Temp\SFVtool.msi" /qn
  ```

- Installation with no user interaction, no user interface, defined installation directory, and enabled installation logs:

  ```
  msiexec.exe /i "C:\Temp\SFVtool.msi" /qn INSTALLDIR="C:\Program
  Files (x86)\Agilent Technologies\IQTool" /l*v "C:\Temp\SFV.log"
  ```

NOTE

The **Temp** folder in the examples must be created and the msi placed in there upfront.

Silent WICF Installation via msiexec

```
msiexec.exe /i
"<path_to_msi>\AgilentICFSupportLayerForWatersCDS.msi"
[/quiet][/passive][/q{n|b|r|f}] [/norestart][/forcerestart]
[/L{i|w|e|a|r|u|c|m|o|p|v|x+|!|*}] ["<path_to_log>\install.log"]
```

An installation using this syntax will install the msi to the default installation path with the defined restart and logging instructions. Unless otherwise stated, the WICF installer will restart by default at the end of the installation.

Examples

- Installation with no user interaction, no user interface and automatic restart:

  ```
  msiexec.exe /i "C:\Temp\AgilentICFSupportLayerForWatersCDS.msi"
  /qn
  ```

- Installation with no user interaction, no user interface, enabled installation logs, and no restart:

```
msiexec.exe /i "C:\Temp\AgilentICFSupportLayerForWatersCDS.msi"
/norestart /qn /l*v "C:\Temp\install.log"
```

NOTE Do not change the default installation location for WICF.

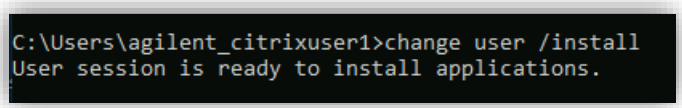
Push Installations

To install, upgrade, or remove WICF on multiple Empower clients, LAC/Es, or Citrix servers from a host computer, the Microsoft PsExec utility can be used. For further information and How-tos, refer to the Microsoft documentation.

Installing WICF on a Citrix server

WICF can be deployed and used in a Citrix environment. Refer to the Waters Empower documentation for the supported Citrix versions and operating systems. For installation, perform the following steps:

1 Open the command prompt as administrator and put the server in Install mode by typing "**change user /install**". The message "**User session is ready to install applications**." Should appear.



2 Either interactively install WICF or perform a silent installation as described in the sections above.

Put the server back to Execute mode by opening the command prompt as administrator and type "**change user /execute**". The message **"User session is ready to execute applications."** Should appear.

```
C:\Users\agilent_citrixuser1>change user /execute
User session is ready to execute applications.
```

Upgrade Installation

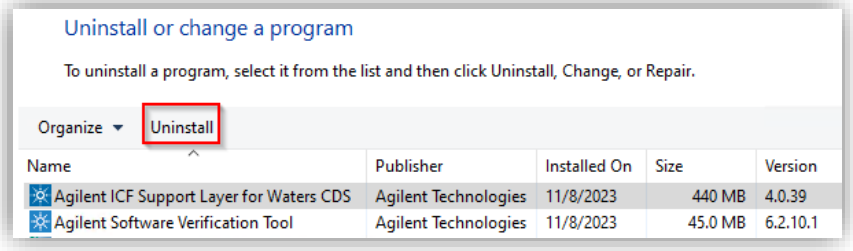
A direct upgrade from ICF SL to WICF is not supported. All included components of ICF SL must be removed completely before installing WICF.

Uninstallation

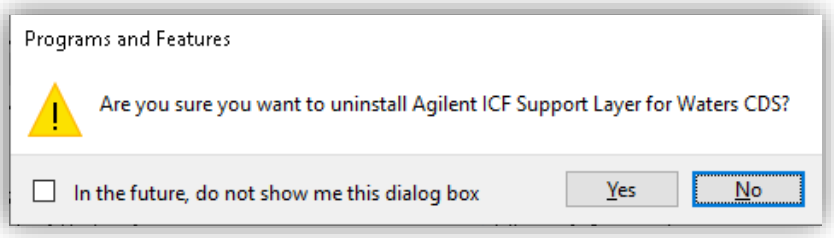
Before starting the uninstallation of SVT and WICF, ensure that no sample sets are running or in the queue, reboot the PC and log in with an account having full local Windows administrator privileges.

To interactively uninstall SVT or/and WICF:

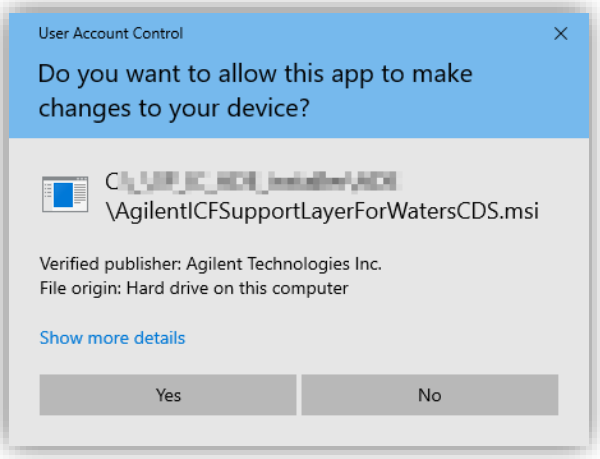
1 Go to Windows Programs and Features, highlight the program, and select **Uninstall**.



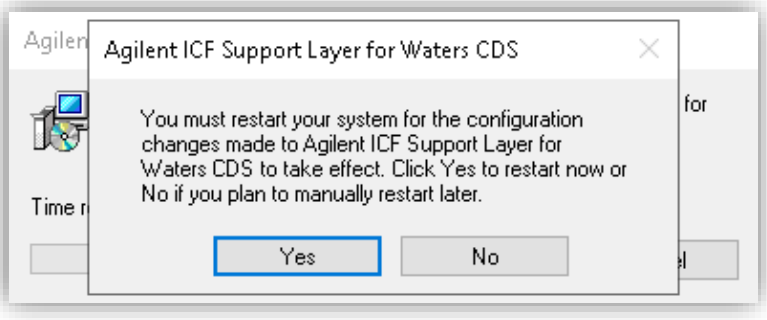
2 Select **Yes** when asked to uninstall.



3 If the User Account Control Notification is turned on, click **Yes** to allow the uninstallation of WICF.



Wait for the uninstallation to be completed and chose **Yes** when prompted for restart after the uninstallation of WICF.



Silent Uninstallation

To silently uninstall the software, use the proper Microsoft Installer function as described in the section above. For example

- SVT

```
msiexec.exe /x "<path_to_msi>\SFVTool.msi" /qn
```

- WICF

```
msiexec.exe /i "<path_to_msi>"\
AgilentICFSupportLayerForWatersCDS.msi /norestart /qn /l*v
"<path_to_log>\install.log"
```

A restart is necessary to successfully finish the uninstallation. Unless otherwise defined, the successful silent WICF uninstallation will automatically restart the PC.

4 Installation Verification

The installation and integrity of WICF and its components is verified by the Agilent Software Verification Tool (SVT).

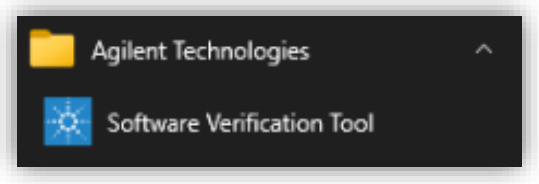
In addition, the WICF files are checked by the Waters Empower Verify Files Utility. This utility does not check for the ICF and instrument driver components.

Perform the installation verification on every instrument controller and every client or Citrix server, with WICF installed.

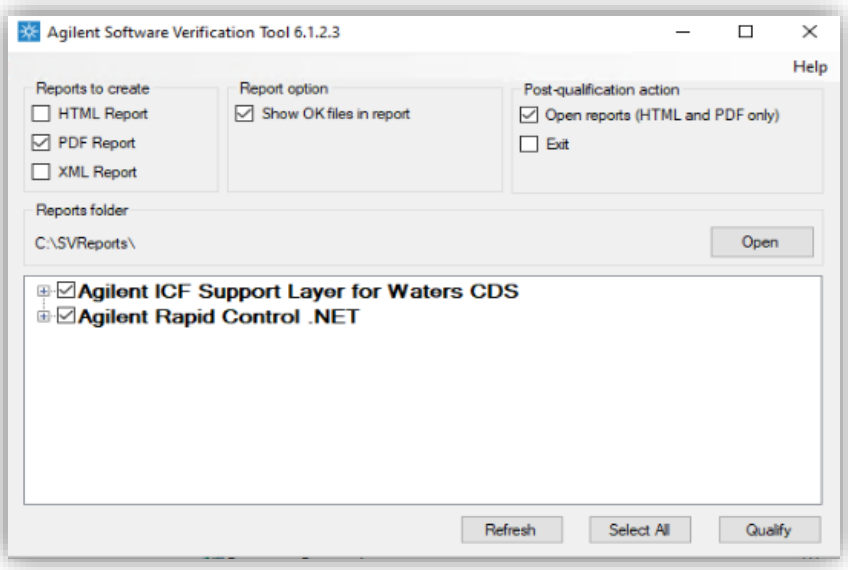
Agilent Software Verification Tool (SVT)

The SVT provides documentary evidence that WICF and its included components have been installed correctly. To execute the SVT, perform the following steps:

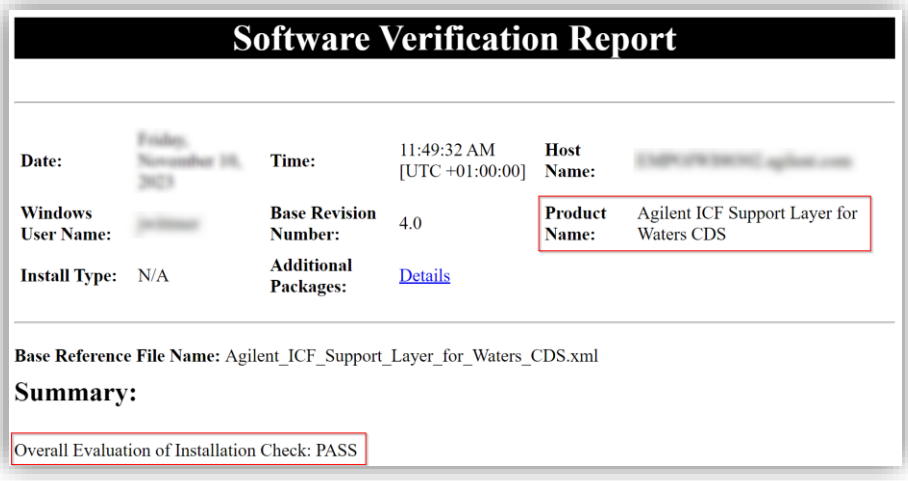
1 Go to **Start > Agilent Technologies > Software Verification Tool.**

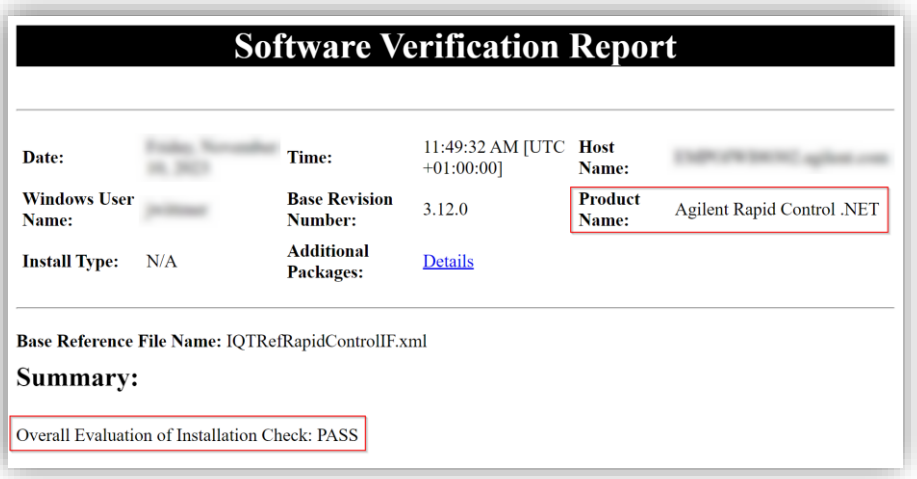


2 Select the required report type and the components to qualify.



3 Select **Qualify**: The system will run the application and generate a Software Verification Report which should give a **PASS**. Reports are automatically saved to C:\SVReports, if not defined differently during SVT installation.





Software Verification Report

Date:	[redacted]	**Time:**	11:49:32 AM [UTC +01:00:00]	**Host Name:**	[redacted]
Windows User Name:	[redacted]	**Base Revision Number:**	3.12.0	**Product Name:**	Agilent Rapid Control .NET
Install Type:	N/A	**Additional Packages:**	Details		

Base Reference File Name: IQTRefRapidControlIF.xml

Summary:

Overall Evaluation of Installation Check: PASS

4 If the report indicates failure, verify the computer requirements, and try to troubleshoot, for example, re-install, or reach out to your support representative.

Silent execution of SVT

Run the Agilent SVT in silent mode by executing the following command with below syntax in the command console:

Examples

- Execution of SVT with no UI for Agilent ICF Support Layer for Waters CDS, showing progress bar, saving, and opening a pdf report:

```
"C:\Program Files (x86)\Agilent Technologies\IQTool\Bin\SFVTool.exe" -qt -p:"Agilent ICF Support Layer for Waters CDS" -pdf -open
```

- Execution of SVT with no UI for all products hiding command window and progress bar, showing details of qualified files, saving a html report:

```
"C:\Program Files (x86)\Agilent Technologies\IQTool\Bin\SFVTool.exe" -silent -ok -p:"all"
```

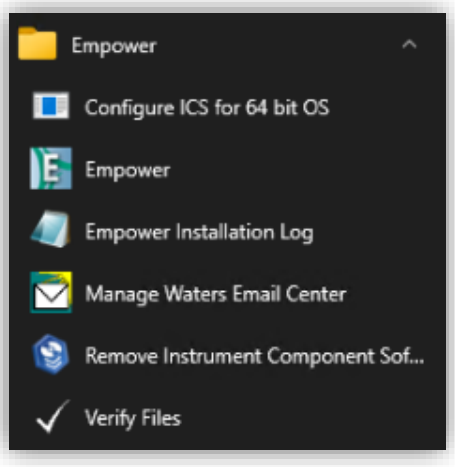
NOTE

For all available options, use the SVT help function:
`"<path_to_SFVTool.exe>\SFVTool.exe" -h`

Waters Empower Verify Files Utility

The Empower **Verify Files** utility verifies the integrity of the WICF layer together with the Empower Installation. To execute the **Verify Files** utility, perform the following steps:

1 Using your Windows operating system, go to Start > Empower > Verify Files.



2 The Verify Files tool is automatically executed and displayed. The Checksum_[DATE]_[TIME].txt file is saved in C:\Empower\Script.

Installation Verification

```
Installation Information.

Current Date and Time -
Computer Name -
Installation Type - Personal
S/W Version - Empower 3 Software Build 3471
Registered User - system
Company Name - Agilent
Support Plan ID -
Operating System Name - Windows 10 Enterprise
Operating System Version - 6.3
Operating System Upgrades - None


4.0.    -  Agilent ICF Support Layer for Waters CDS
****************************************************************
```

```
Checksum values for files in c:\empower\instruments\agilentlc\ directory:
24 files to check:

 1: AgilentPlugIn.dll          OK    - Size:  148992, CRC: 13869
 2: AgilentPlugInServer.exe    OK    - Size:  148480, CRC: 62357
 3: AgilentPluginCommon.dll    OK    - Size:   81920, CRC: 63737
 4: AsyncIO.dll                OK    - Size:   30720, CRC: 43490
 5: ConfigurationEditor.dll    OK    - Size:    8192, CRC: 40421
 6: ICFAdaptor.dll             OK    - Size:   96768, CRC:  2047
 7: MQPlugIn.dll               OK    - Size:   35840, CRC: 34776
 8: MQPlugIn.dll.config        OK    - Size:     103, CRC: 65093
 9: MethodEditor.dll           OK    - Size:   80384, CRC: 62985
10: NaCl.dll                   OK    - Size:   30208, CRC: 21439
11: NetMQ.dll                  OK    - Size:  262656, CRC: 29568
12: PlugInRunner.exe           OK    - Size:   38400, CRC: 20284
13: PlugInRunner.exe.config    OK    - Size:     103, CRC: 65093
14: PreConfigClient.exe        OK    - Size:  242688, CRC: 35391
15: PreConfigService.exe       OK    - Size:    9216, CRC: 10708
16: PreConfigService.exe.config    OK    - Size:     219, CRC: 64889
17: StatusControlContainer.dll    OK    - Size:   29696, CRC:  6210
18: System.Buffers.dll         OK    - Size:   27992, CRC: 23118
19: System.Json.dll            OK    - Size:   37760, CRC: 23094
20: System.Memory.dll          OK    - Size:  148760, CRC: 12273
21: System.Numerics.Vectors.dll    OK    - Size:  115936, CRC: 37816
22: System.Runtime.CompilerServices.Unsafe.dll    OK    - Size:   16768, CRC: 56691
23: System.Threading.Tasks.Extensions.dll    OK    - Size:   25984, CRC: 17549
24: System.ValueTuple.dll      OK    - Size:   25232, CRC: 27825

24 files,  1643017 bytes total
 0 file(s) found changed
 0 file(s) missing
```

```
Waters Installation Qualification - Summary

No Installation changes were detected.

This verifies your software installation on this node.
```

Compliance Recommendation

If the site is in a regulated environment, we recommend following your standard operating procedures (SOP). Known and resolved Issues are listed in the Release Notes. Together with the Software Verification Tool and the Software Status and Release Bulletins it may assist to determine if any qualification tasks are required. If required, Agilent offers the (re-) qualification of the hardware or the functional verification of the WICF driver installation/upgrade (not Empower) as a service. Please contact your Agilent sales representative.

5 Instrument Configuration

The configuration of an Agilent Instrumentation in Waters Empower consists of the following steps:

1 PreConfiguration

2 DHCP Configuration

3 Chromatographic System Creation

Whereas steps 1 and 2 slightly differ for LC and GC, step 3 is the same for both. The steps are described in detail below.

NOTE

For interoperability scenarios, instrument configuration is only supported directly on the LAC/E.

Agilent LC configuration in Waters Empower

To configure an Agilent LC in Waters Empower, perform the following steps. To configure an Agilent Capillary Electrophoresis system, please consider the technical note Agilent 7100 Capillary Electrophoresis System in Empower.

Prerequisites

1 Ensure that Empower and WICF are properly installed on the instrument controller and clients that are going to use the system.

2 Turn on all modules of the LC system and ensure that only the modules you want to configure are in the CAN bus and one is connected to the instrument controller via LAN (detector recommended).

3 Restart the LAC/E or Personal Workstation that is going to be connected to the instrument. Do not open Run Samples before configuring the instrument.

4 Assign a static IP address to the instrument in the subnet of the instrument controller, for example, using the Agilent Instant Pilot or Telnet, see instrument user manual or Agilent community for help (How to Check, Configure and Use the IP Address of an Agilent HPLC Module - Articles - LC Portal - Agilent Community). Verify the successful network communication (for example, via ping).

5 Ensure the firmware of the LC modules meet the minimum requirements for the used WICF version (see WICF Release Notes). Agilent recommends always using the latest firmware revision to provide the highest level of system capability.

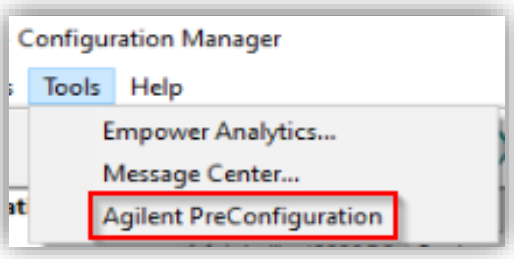
NOTE

When an Agilent Instant Pilot (G4208A) is in use, make sure to turn on the 3rd party backward compatibility mode, so it is invisible to other controllers. Do not hot plug the Instant Pilot when the LC stack is switched on. Switch off all HPLC modules, before plugging/unplugging the Instant Pilot.

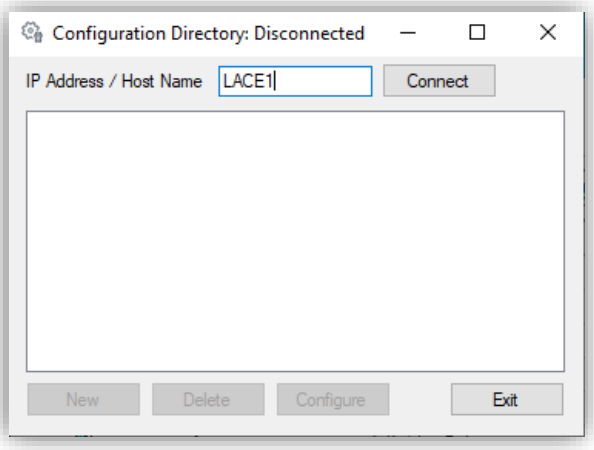
PreConfiguration Utility

1 Log in to Empower from the LAC/E or workstation connected to the instrument (recommended) or from any client and open the Configuration Manager.

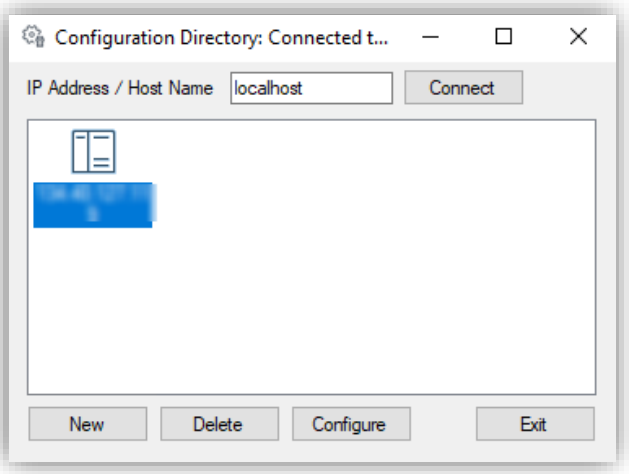
2 Select Tools > **Agilent PreConfiguration.**



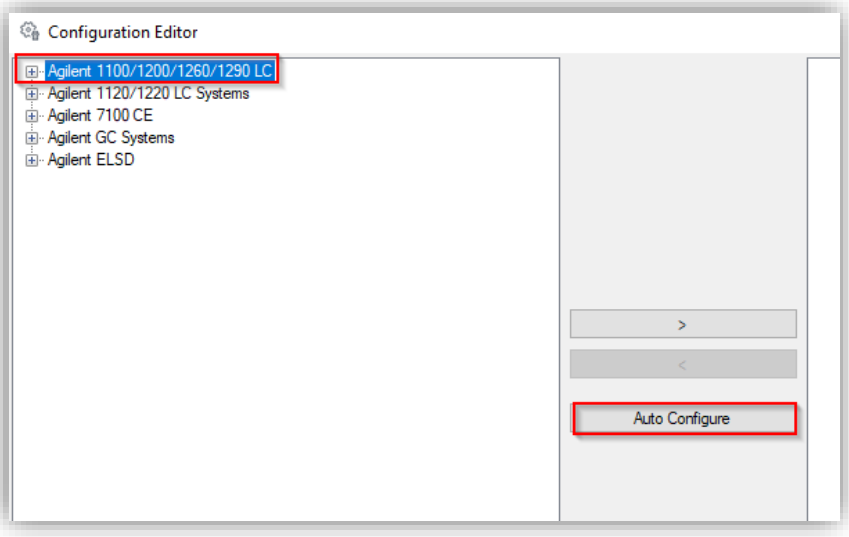
3 Enter the IP address or hostname of the LAC/E or workstation connected to the instrument ("localhost" if you are logged in to the instrument controller directly) and press **Connect**.



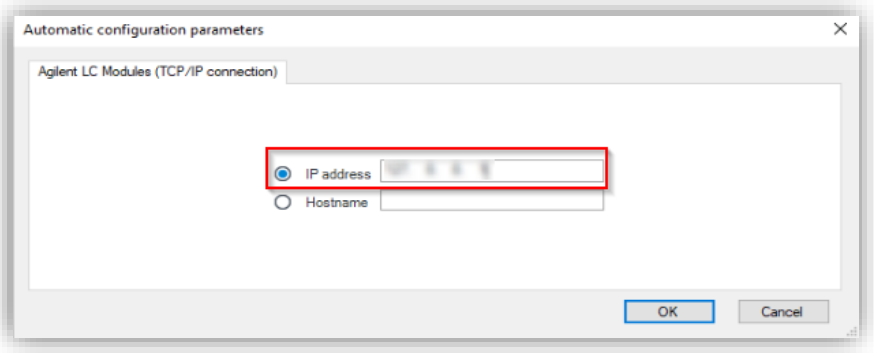
4 When successfully connected, already configured instruments are shown and **New** option at the bottom becomes available. From here, new configurations can be created, existing instruments can be re-configured, or the existing pre-configurations can be deleted.



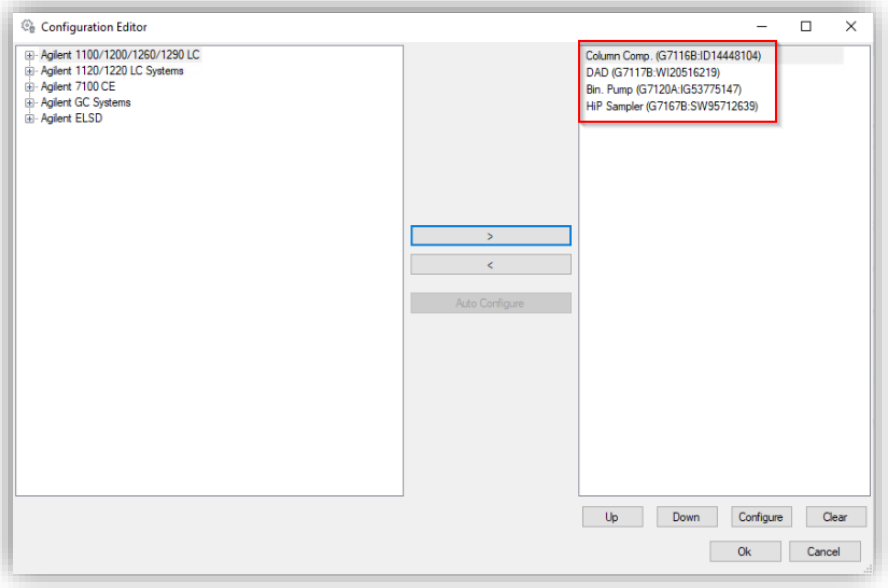
5 Selecting **New** opens the Agilent Configuration Editor. Highlight **Agilent 1100/1200/1260/1290 LC** (or Agilent 1120/1220 LC Systems) and select **Auto Configure**.



6 In the Auto Config dialog, enter the **IP address** of the instrument access point and press **OK**. The hostname must not be used.



7 With successful connection, all online LC modules are automatically detected along with their current configurations and are added to the right panel.



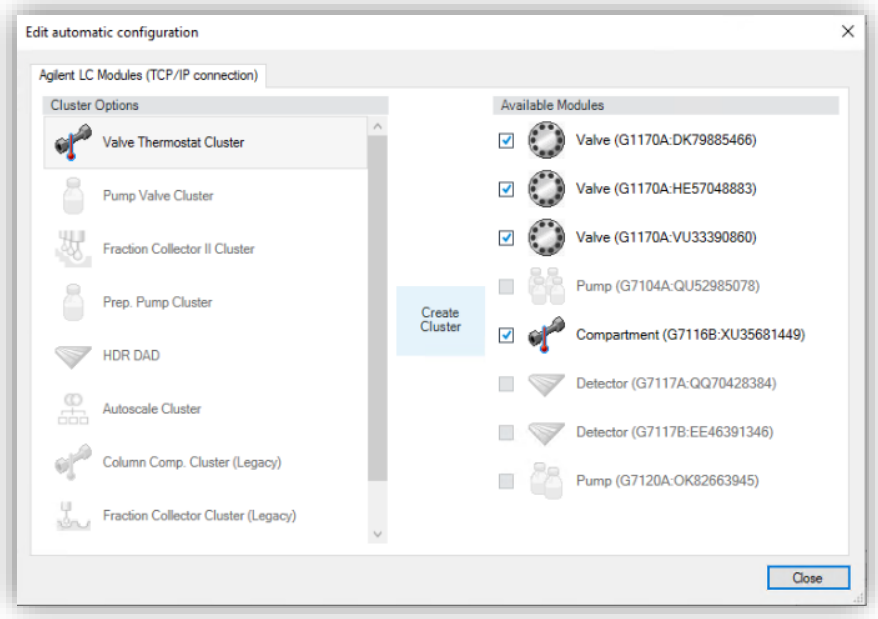
NOTE

Do not modify the module configuration at this point to avoid mismatches between the automatically detected hardware configuration and software configuration at startup. An exception is when the config parameters are not read by RFID tag or cannot be changed via „modify“ in the LC Status dashboard (for example, G1330A/B Thermostat, loop, or seat capillary for 1100 LCs).

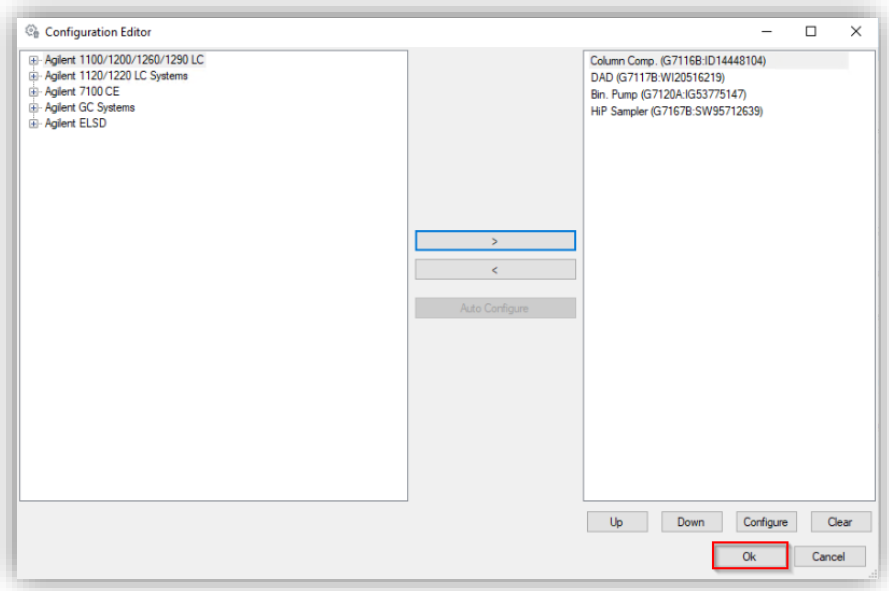
8 [Optional] Cluster Configuration

a In case a potential Cluster is detected during an auto-configuring, possible configurations are proposed, and the Cluster can be created by selecting the available modules pressing **Create Cluster** and specifying the required cluster settings (press F1 in the cluster dialog box for more information).

b If clustering is not required, click Close to proceed with the configuration of an unclustered system.



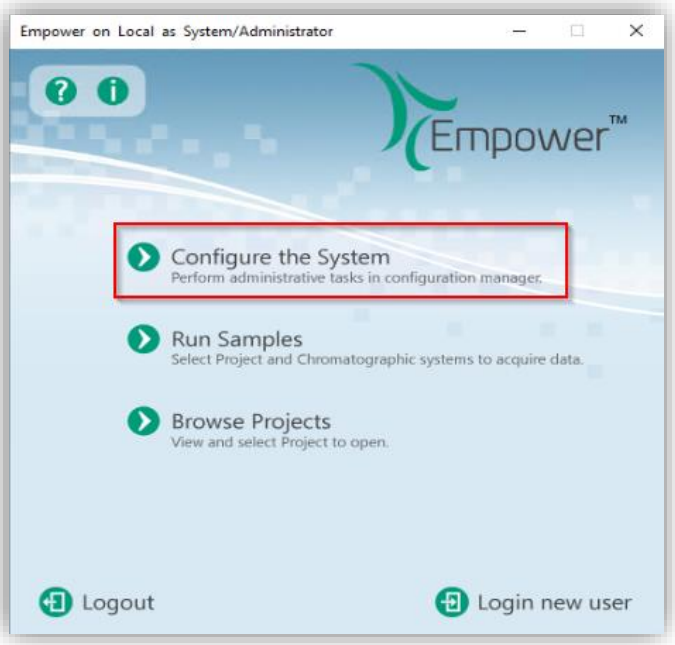
9 Press **OK** and **Exit** the PreConfiguration and proceed with the Empower DHCP Configuration (next section).



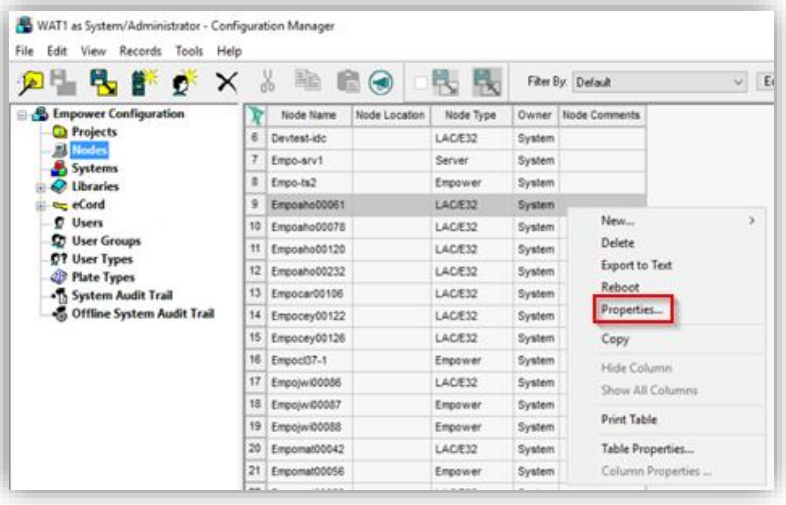
Empower DHCP Configuration

After the successful PreConfiguration, the Agilent instrument must be configured in the Empower software by performing the following steps:

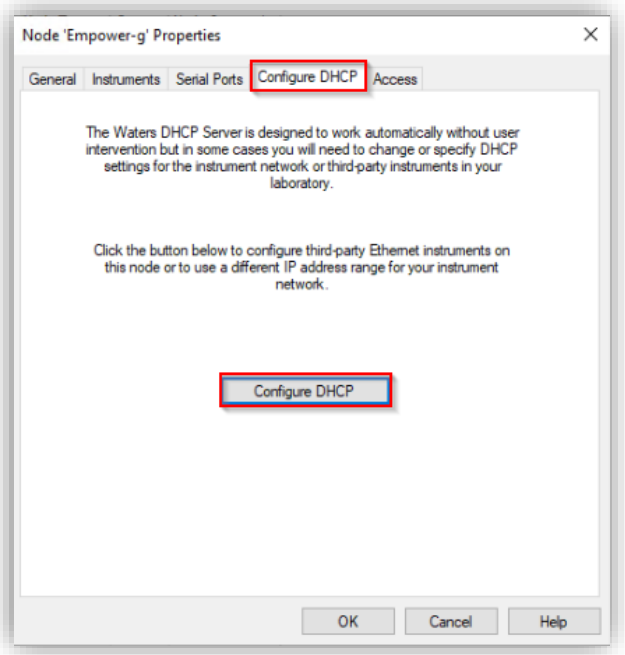
1 Log in to Empower from the LAC/E or workstation connected to the instrument (recommended) or from any client and open the Configuration Manager.



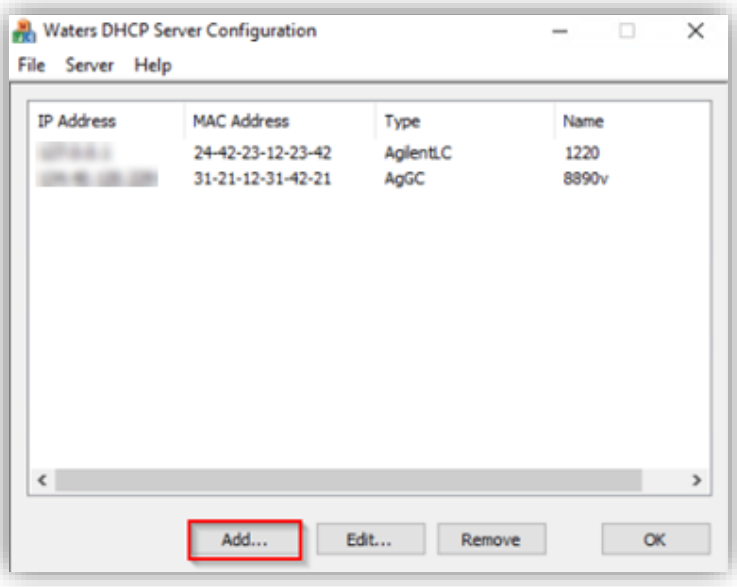
2 Select **Nodes** from the Empower configuration tree, **right-click** the desired node (LAC/E or workstation) and select **Properties**.



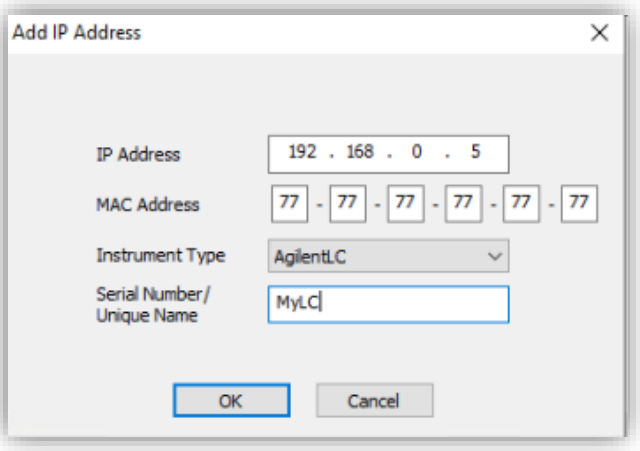
3 Switch to the tab **Configure DHCP** and click the **Configure DHCP button.**



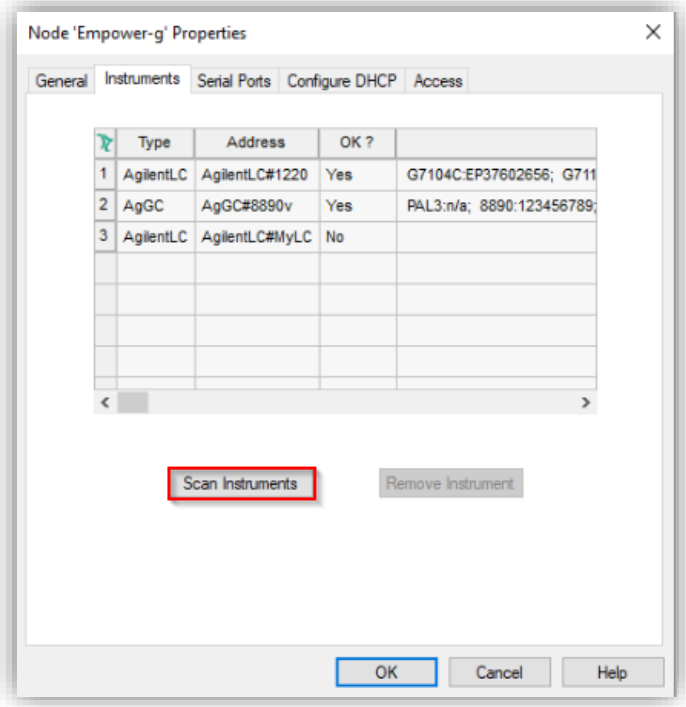
4 In the Waters DHCP Server Configuration window, click **Add** to manually add the static IP address of the Agilent LC (same instrument access point as used during the PreConfiguration).



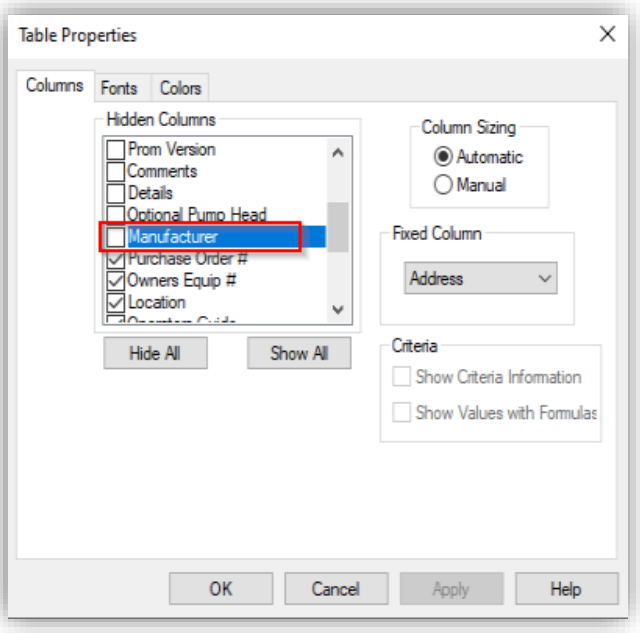
5 Enter the **IP Address, MAC Address** (can be arbitrary), and **Serial Number** or a **Unique Name**. Select the Instrument Type **AgilentLC** from the drop-down list. Confirm with **OK**. IP and MAC address are checked for duplicates on the same instrument controller. Once created editing existing DHCP configurations is not possible. The system must be removed and added again.

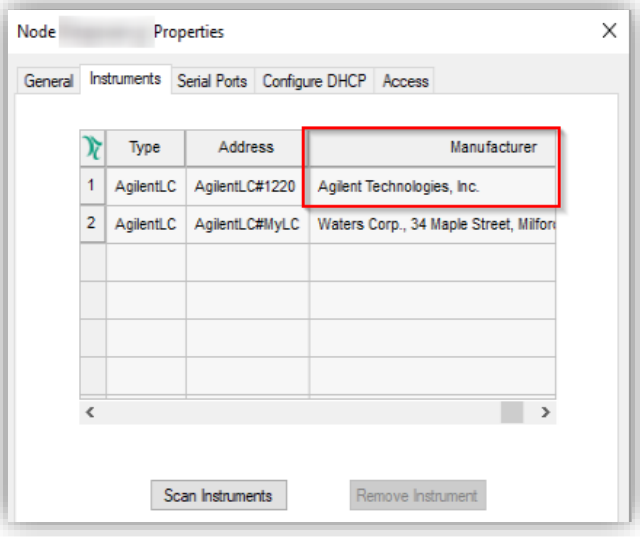


6 Press **OK** to close the Waters DHCP Server Configuration. Browse to the **Instruments** tab and **Scan Instruments** to check the successful configuration. **OK?** column must indicate Yes, check the **Details** column for the read instrument configuration.



7 Right-Click > Table Properties and unhide the Manufacturer column. Click **OK**, browse to the manufacturer column and change the name to “Agilent Technologies, Inc.”. Close and update the Node Properties by clicking **OK**.





8 You may proceed with the section Chromatographic System Creation.

Importing and using Alphanumeric Trays or Wellplates

Agilent samplers utilize two types of tray/plate schema:

- The classic schema uses continuous numbering, for example, Vial 1, 2, 3
- The alphanumeric schema uses alphanumeric positions, for example, P1-A1, P1-A2, P2-B1 which translates in Empower to 1:A1, 1:A2, 2:B1

Whereas the classic schema works by default, Empower cannot handle the alphanumeric schema and needs imported definition files (.txt) to make use of those trays/plates. The definition files of the most common trays/plates are delivered together with the installation media (\Supplementary material\AgilentPlatesForImport. Table 4 gives an overview of the files. The files are available in English, Japanese, and Chinese (simplified) localized format.

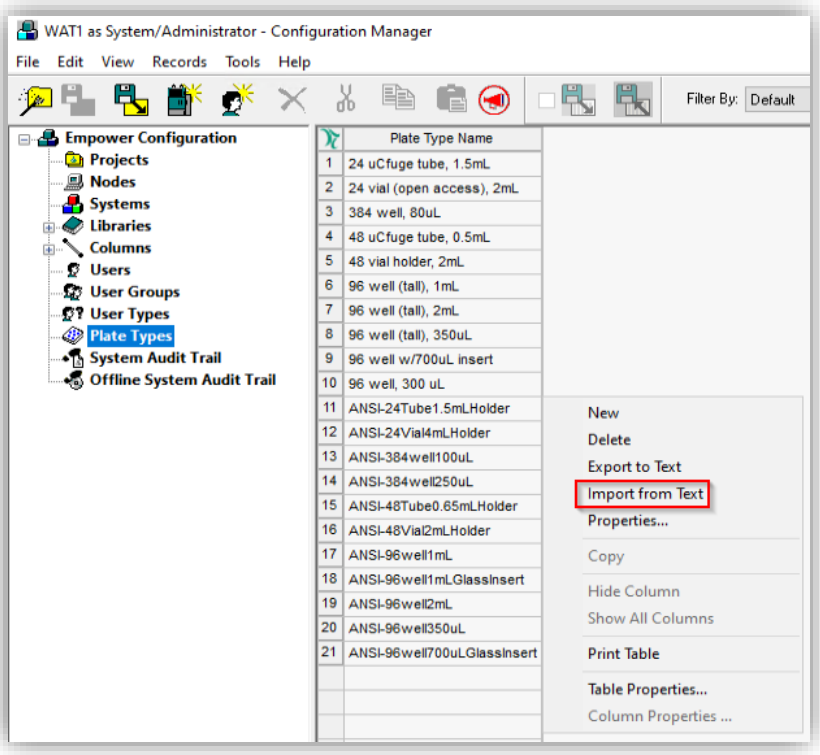
NOTE

Classic vial drawers for Vialsamplers (50 x 2 mL vials; G7129-60210, G7129-60220) use continuous numbering and will work by default without importing alphanumeric definition files.

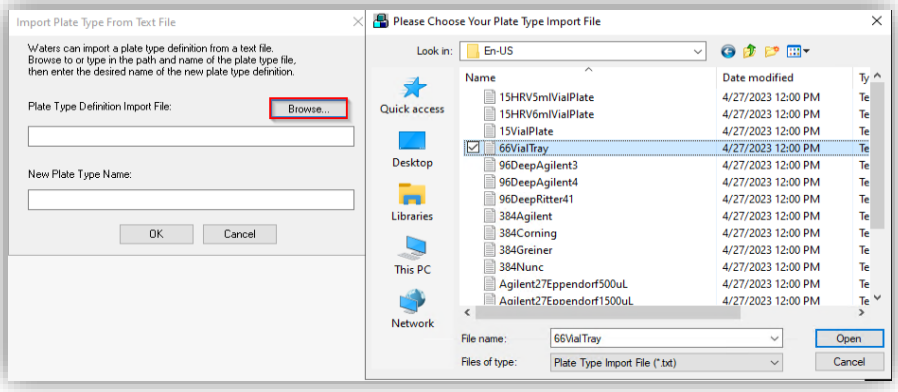
To import alphanumeric plate definition files, the following steps must be performed:

1 Browse to **Configuration Manager > Plate Types**

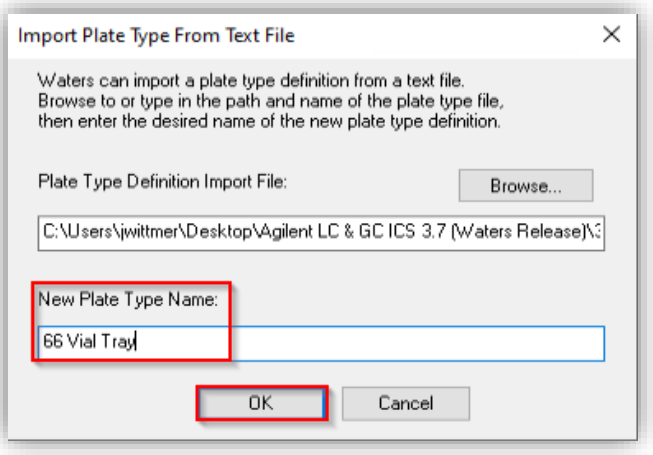
2 Check if the desired Plates are already present. If not, **right-click** inside the table and select **Import from Text.**



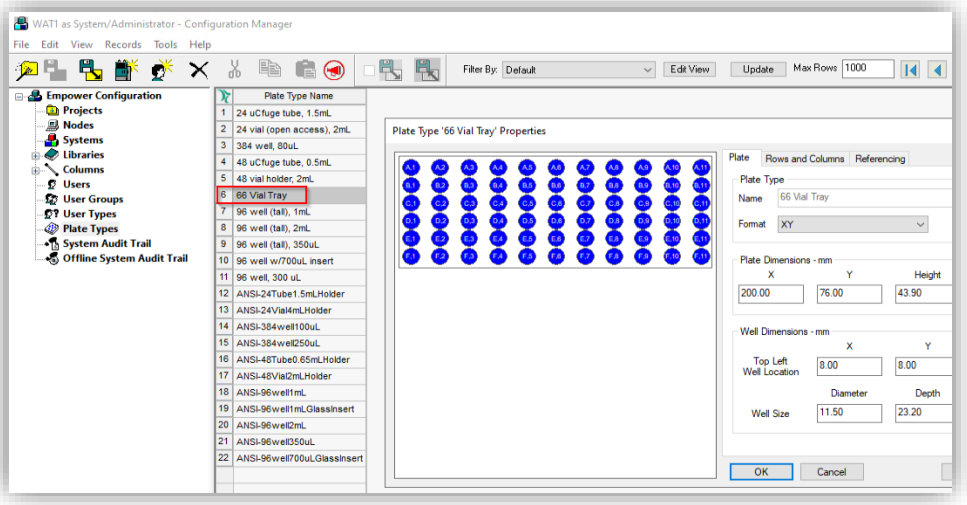
3 Select Browse, navigate to the plate definition files on the installation media, **highlight** the desired tray/plate and click **Open**.



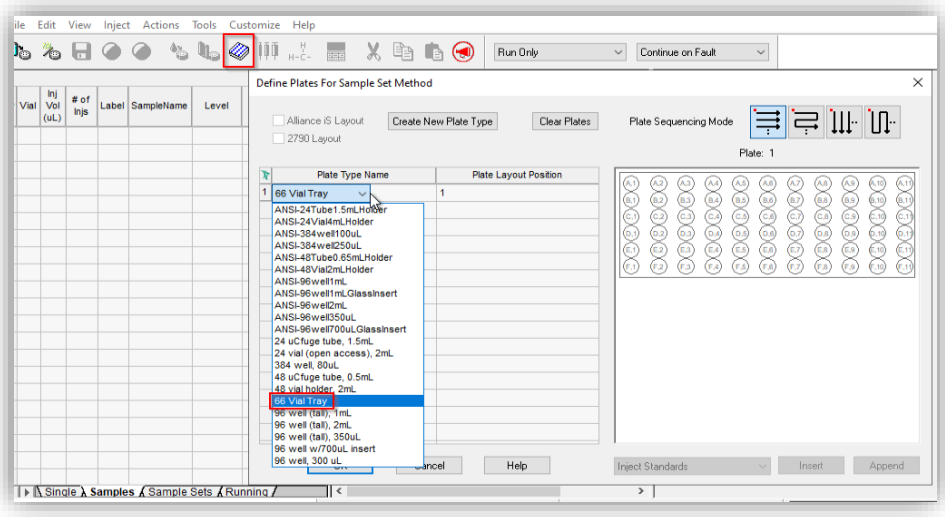
4 Provide a **New Plate Type Name** and confirm with **OK**.

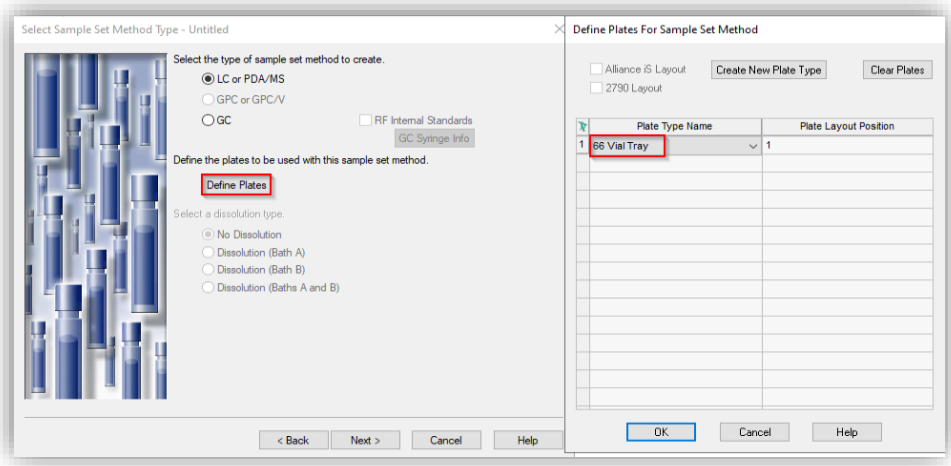


5 After the successful import procedure, the Plate Type Name will appear in the Table and can be checked/modified by **double-click** or **right-click > Properties**.

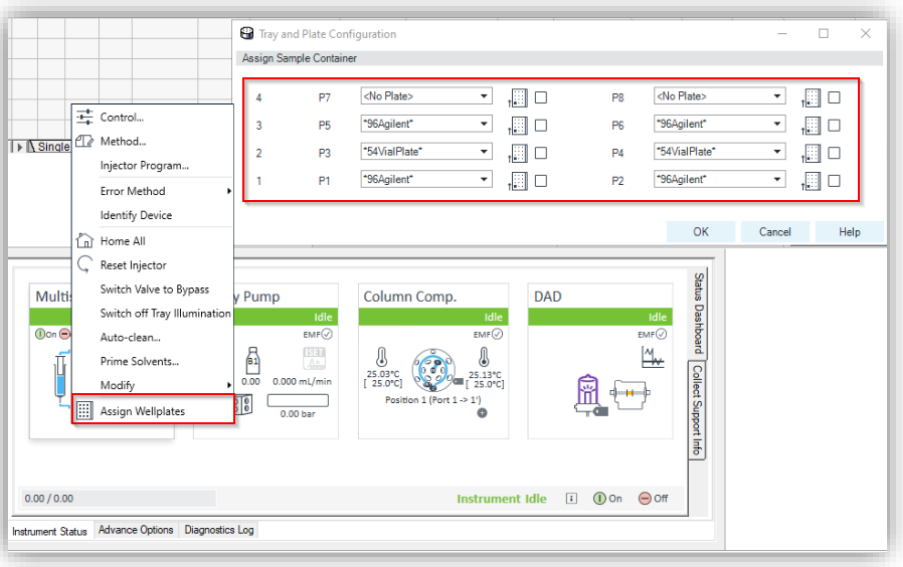


6 The tray/plate definition will be available in the Acquisition and vial numbers will be displayed in the format 1:A1.





7 Assign the same tray/wellplate to the instrument hardware via the instrument dashboard: **Right-click** on the sampler > **Assign wellplates.**
For Vialsamplers, no assignment is needed as the tray is automatically recognized.



NOTE

Once successfully imported, the tray/plate is available across the Empower Enterprise system and can also be used on other clients and instrument controllers.

For detailed instructions and how to create customized trays/plates, see:

Agilent Infinity Lab LC Series Vialsampler Vial Drawer Configuration in Empower Environment Technical Note

Controlling the Agilent 1260 Infinity/1290 Infinity II Multisampler (G7167A/B) in Waters Empower 3 Environment Technical Note

Table 5 Alphanumeric tray/plate definition files delivered with WICF

File Name (.txt)	Part No.	Rows	Columns	Plate height (mm)	Volume (µL)
15HRV5mlVialPlate		3	5	42	5000
15HRV6mlVialPlate	5022-6539	3	5	47	6000
15VialPlate		3	5	42	5000

Table 5 Alphanumeric tray/plate definition files delivered with WICF

66VialTray	G7129-60010	6	11	43.9	2000
96DeepAgilent3	5042-6454	8	12	31.5	1000
96DeepAgilent4	No Agilent PN	8	12	41	1000
96DeepRitter41	No Agilent PN	8	12	41.2	800
384Agilent	5042-1388	16	24	14.4	80
384Corning	No Agilent PN	16	24	14.4	
384Greiner	No Agilent PN	16	24	14.4	
384Nunc	No Agilent PN	16	24	14.4	
Agilent27Eppendorf500uL	5022-6538	3	9	40.5	500
Agilent27Eppendorf1500uL	5022-6538	3	9	40.5	1500
Agilent27Eppendorf2000uL	5022-6538	3	9	40.5	2000
ANSI96Well500uL	5042-1385 5042-1386	8	12	14	500
ANSIAgilent54Vial	G2255-68700	6	9	36	2000
Vialbar*	Part of G4226A tray (G2258-60011) Used for G7167A/B/C Reference Vials	10	1	43.9	2000

*dedicated 5-Vialbar available on request

Sampler Thermostat/Cooler Temperature Modes

The Sample Cooler/Sample Thermostat used in Multisampler and Vialsampler offers two control modes that must be defined in the configuration:

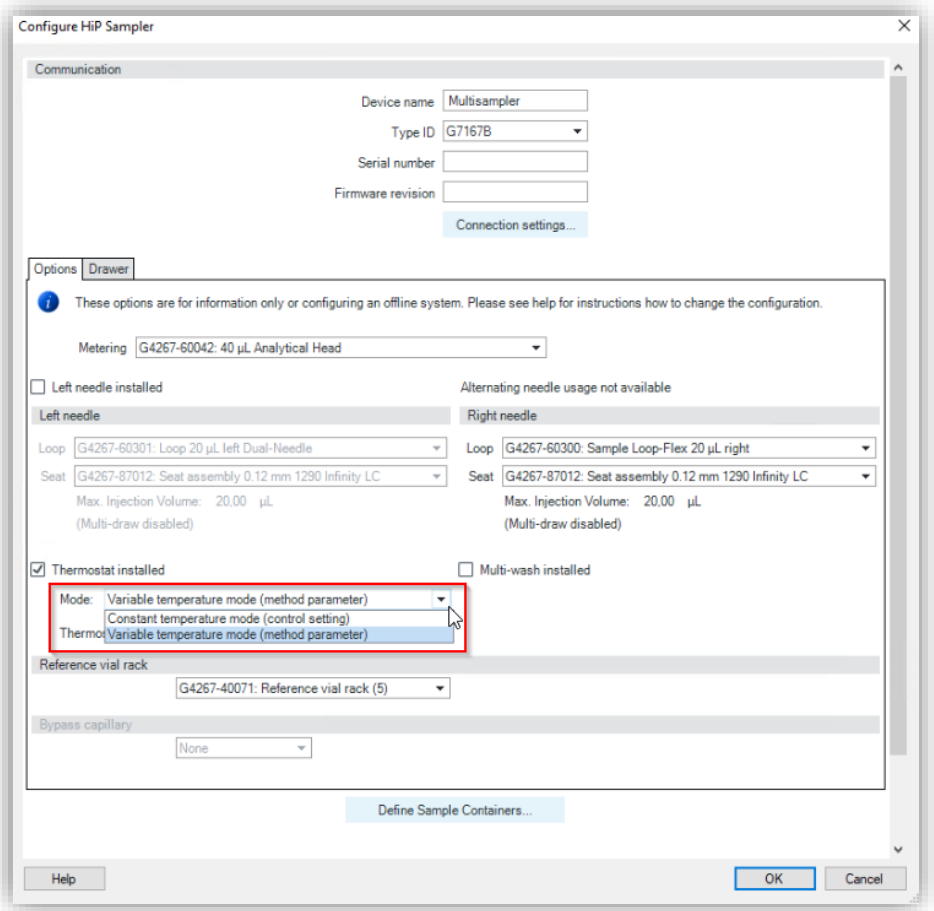
Constant Temperature Mode: The temperature control mode is defined as a system (control) setting, meaning that the temperature setting is independent of the method parameters. The temperature stays constant for all methods within a given sequence. This control mode is the default option and recommended for most applications.

Variable Temperature Mode: The temperature control mode is defined as a method parameter, meaning that the temperature setting is part of the method parameters. The temperature can change from method to method within a given sequence. This control mode is not recommended for most analytical workflows but might be used for some special applications, such as degradation studies.

To set the mode, the following steps must be performed:

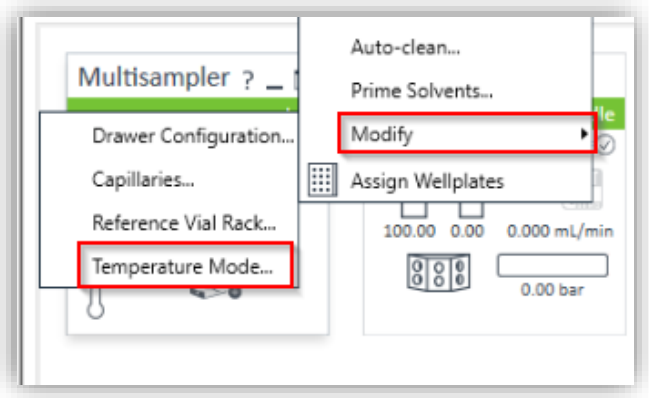
1 If the Sampler is already configured, start with Step 4 followed by a new auto-config (Step 2) and a restart of the instrument controller. If not, continue with Step 2.

2 After the auto-configuration in the PreConfiguration Utility, open the **sampler configuration** dialog by **double-clicking** on the sampler. Select the desired temperature mode in the **Mode dropdown.** Do not change any other setting. For example, the Thermostat/Cooler installed checkmark must be recognized by the auto-config.



3 Create a Chromatographic System in Empower as described in the sections before.

4 Open the Acquisition, navigate to the instrument dashboard, right-click on the sampler, select **Modify > Temperature** mode.



5 Select the same Mode as defined in the PreConfig in Step 1.

6 Restart the instrument controller.

The procedure on how to change the temperature mode is also described by Waters in TechNote TECN134945293.

NOTE Changing the temperature mode for an existing configuration requires a method resolution for existing methods based on the old configuration with another temperature mode setting.

NOTE The G1330A/B Thermostat used for older samplers (G1367X, G1329X) works similarly and can also be set to be controlled by method. Please refer to Waters TechNote TECN134909208.

Technical Notes

Several technical notes for LC/CE are available from Agilent and Waters describing special scenarios and applications. Here is a collection of selected technical notes:

Technical Notes published by Agilent

- Agilent InfinityLab LC Series Multicolumn Thermostats and Column Usage in Empower
- Performing Manual Injection (LC) in Empower Environment
- Agilent 1290 Infinity II Evaporating Light Scattering Detector (ELSD) in Empower
- Using the Fraction Collector in Empower 3 Environment
- Using ISET in Empower Environment
- Using High Dynamic Range (HDR) in Empower
- Agilent 7100 Capillary Electrophoresis System in Empower
- Controlling the Agilent 1260 Infinity/1290 Infinity II Multisampler (G7167A/B) in Waters Empower
- Agilent Infinity Lab LC Series Vialsampler Vial Drawer Configuration

Application Notes published by Agilent

- Agilent 1290 Infinity II LC with ISET – Emulation of the Agilent 1100 Series LC Through Waters Empower Software
- Agilent Instrument Control Framework and 1290 Infinity Quaternary LC with Waters Empower
- Using the Agilent Instrument Control Framework to control the Agilent 1290 Infinity LC through Waters Empower software
- Using the Agilent Instrument Control Framework to control the Agilent 1220 Infinity LC system through Waters Empower software

Technical Notes published by Waters

- Controlling the Agilent 1260/1290 Infinity II Sampler cooler via the Empower instrument method TECN134945293
- Using the Agilent G1330A/B Autosampler Thermostat with Empower TECN134909208

- Using the Agilent PreConfiguration Utility with Agilent Instrument Control Framework (ICF) Support Version 2.2 TECN134936402
- Slow Performance when launching Agilent ICF components in Empower TECN134962729
- Mapping ICS-Based GC Methods to Agilent ICF (715007259 Version 00)

Agilent GC/HS configuration in Waters Empower

To configure an Agilent GC/HS or GC/CTC PAL3 in Waters Empower, perform the following steps. For interoperability scenarios, instrument configuration is only supported directly on the LAC/E.

Prerequisites

1. Ensure that Empower and WICF are properly installed on the instrument controller and clients that are going to use the system.
2. Turn on the GC (and HS) and ensure that the hardware is properly installed.
3. Restart the LAC/E or Personal Workstation that is going to be connected to the instrument. Do not open the Acquisition before configuring the instrument.
4. Assign a static IP address to the instrument (for example, using the GC/HS front panel or Telnet, see instrument user manuals or Agilent community for help) in the subnet of the instrument controller. Verify the network communication has succeeded (for example, via ping).
5. Ensure the firmware of the GC/HS meets the minimum requirements for the given WICF version (see WICF Release Notes). Agilent recommends always using the latest firmware revision to provide the highest level of system capability.

NOTE

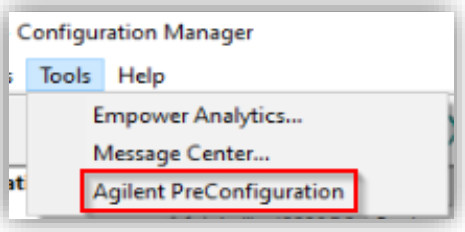
Serial/RS232 connection is not supported with WICF. Ethernet communication is required for all GC and HS modules controlled via WICF. For 6890A and 6890 Plus GCs this may require a hardware update with a LAN Accessory Kit from Agilent, part number G2335A.

PreConfiguration Utility

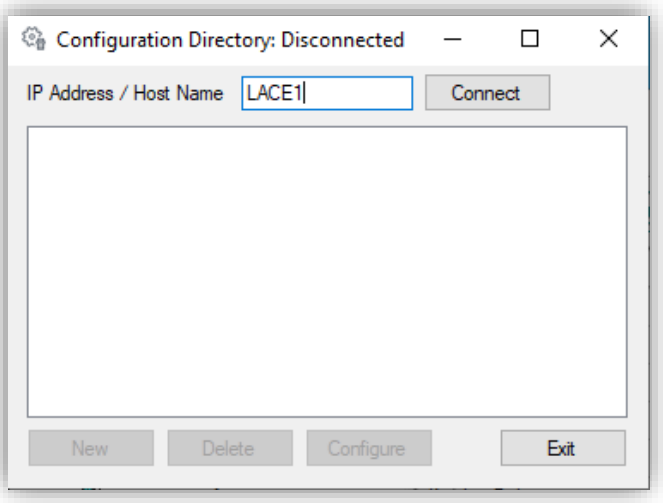
GC configuration

1 Log in to Empower from the LAC/E or workstation connected to the instrument (recommended) or from any client and open the Configuration Manager.

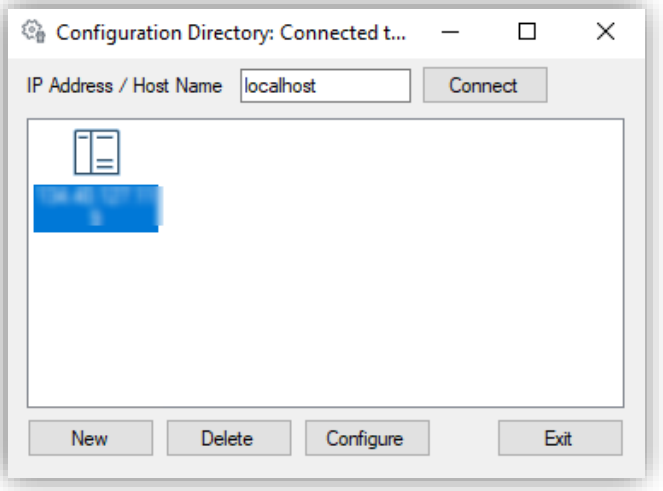
2 Select Tools > Agilent PreConfiguration.



3 Enter the IP address or hostname of the LAC/E or workstation connected to the instrument ("localhost" if you are logged in to the instrument controller directly) and press **Connect**.

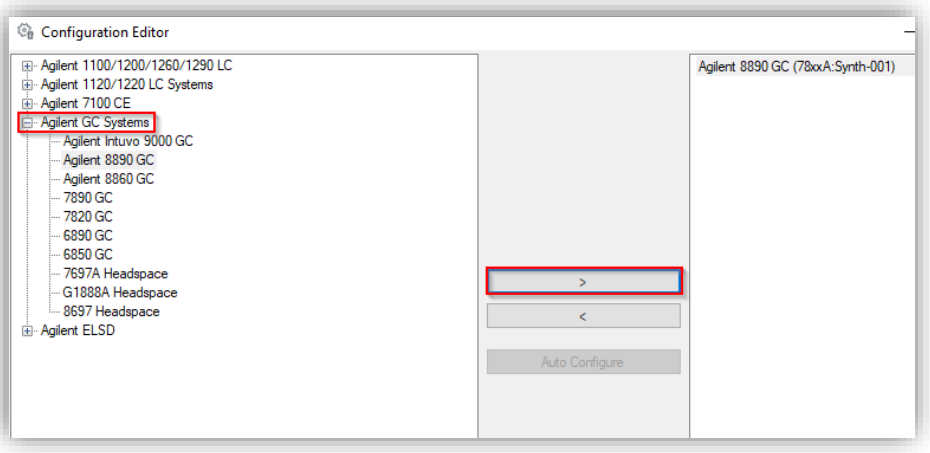


4 When successfully connected, already configured instruments are shown and **New** becomes available. From here, new configurations can be created, existing instruments can be re-configured, or the existing pre-configurations can be deleted.

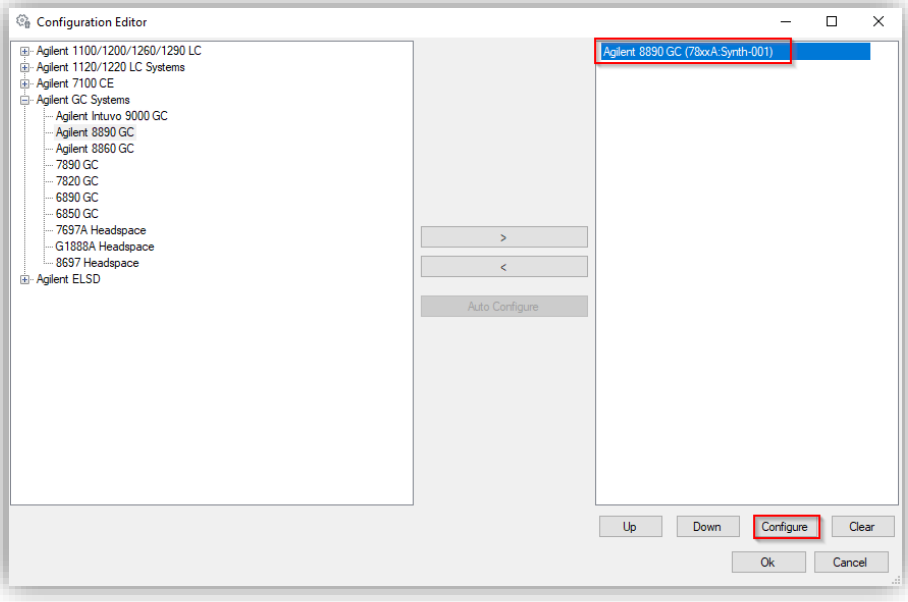


5 Selecting **New** opens the Agilent Configuration Editor. Expand **Agilent GC Systems**, select the correct **GC type** and click the **arrow to the right** to move

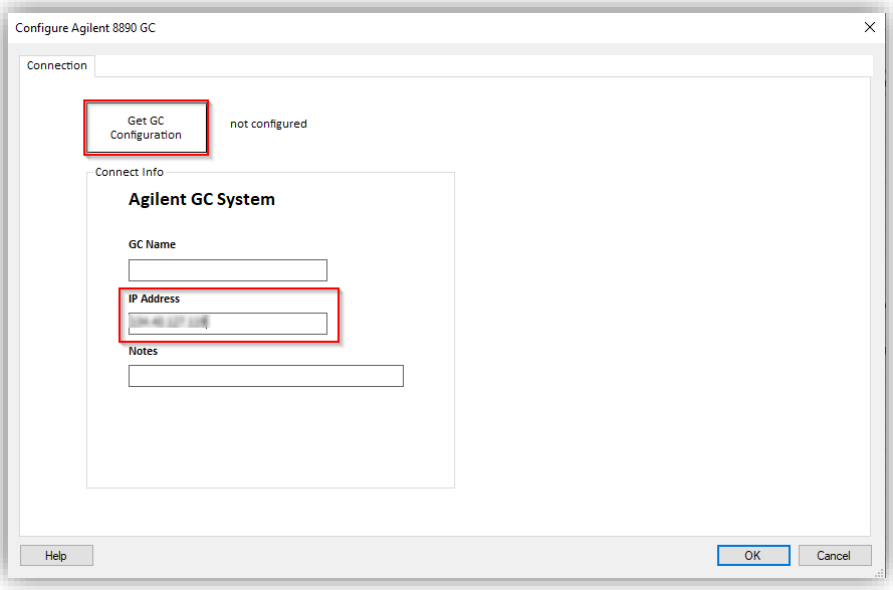
the selected GC model to the right window. Auto Configure is not supported for GC/HS and greyed out.



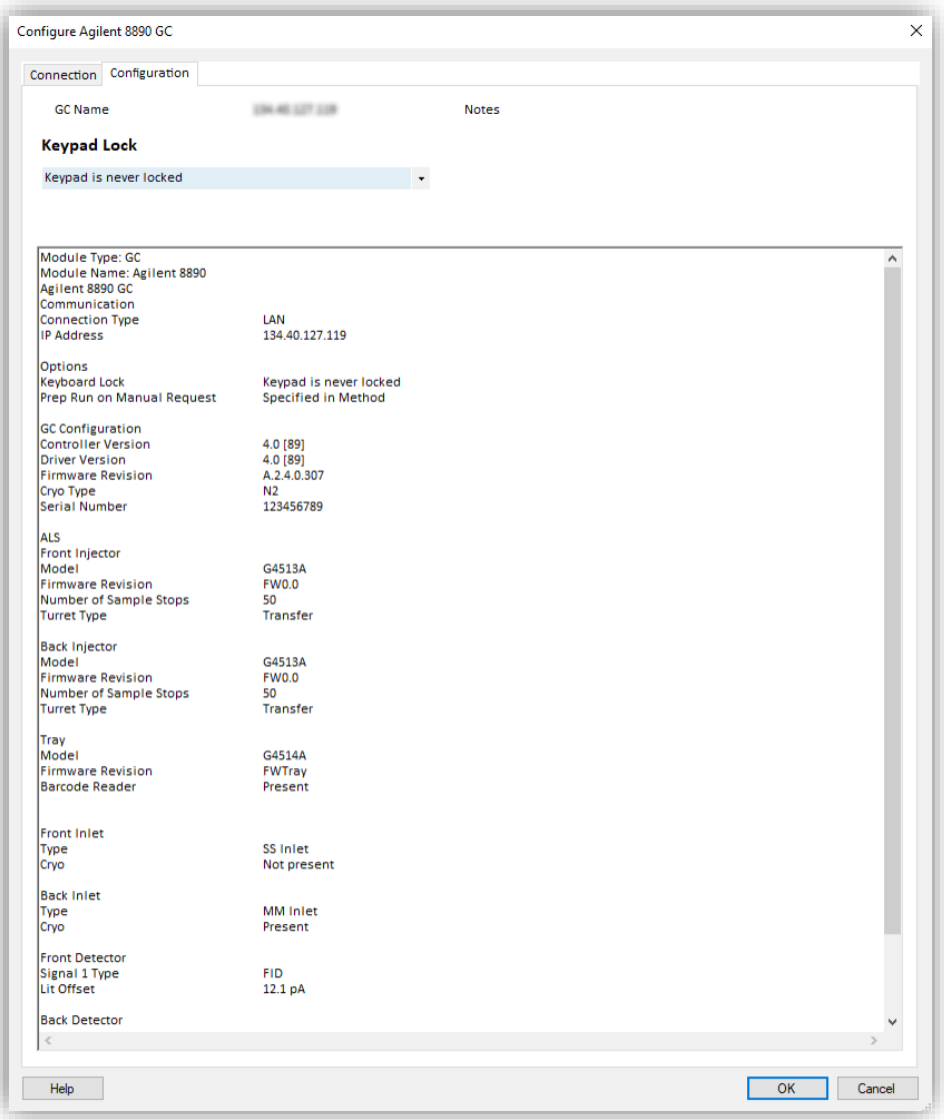
6 **Double-click** the GC on the right pane (or select it and press **Configure**) to open the GC configuration dialog of the selected GC type.



7 Enter the **IP address** of the GC and click **Get GC Configuration**. GC Name and Notes are optional fields.



8 The current GC hardware configuration is uploaded through the active connection and displayed in the Configuration tab when successfully finished.



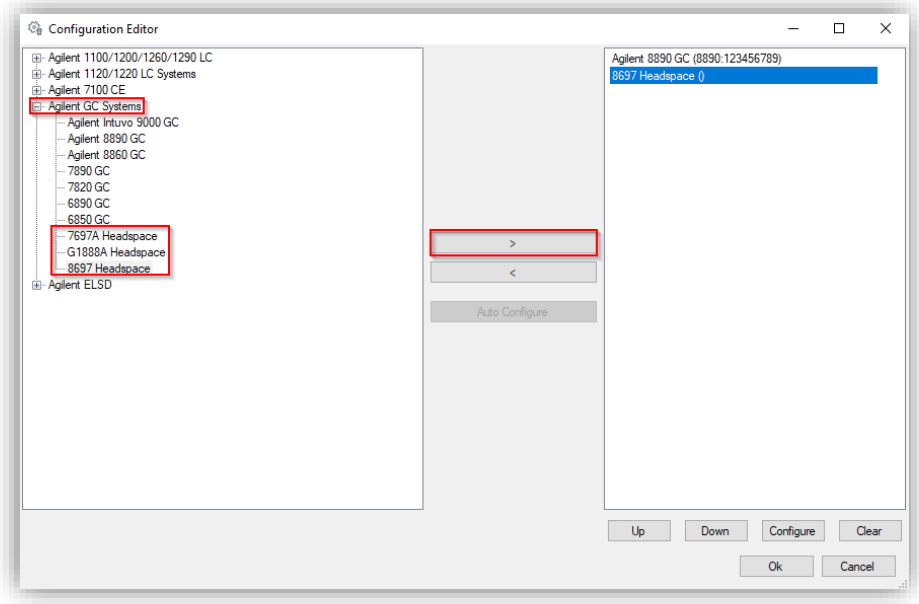
9 Review the configuration, specify the **Keypad Lock** as needed, and confirm with **OK**.

10 Verify that the correct IP address is shown in the PreConfiguration Utility and either select **Exit** if a GC only is used or proceed with the Headspace configuration.

Headspace configuration

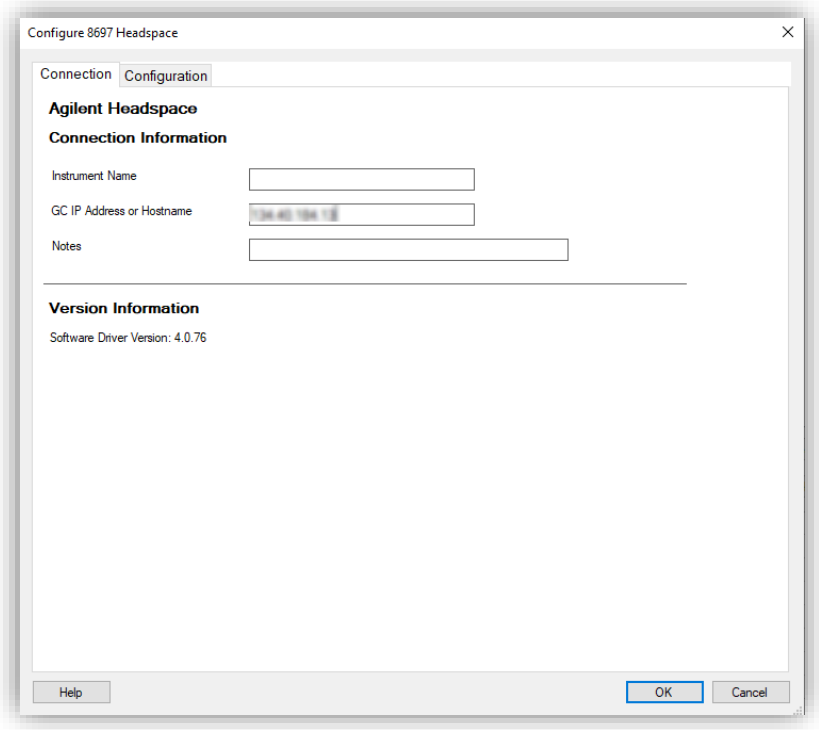
If a Headspace (HS) shall be configured in addition, continue with the following steps. If not, skip this section and proceed with the next section.

11 In the **Configuration Editor**, expand the **GC Systems**, select the desired Headspace sampler and click the **arrow to the right** to move it to the right pane.

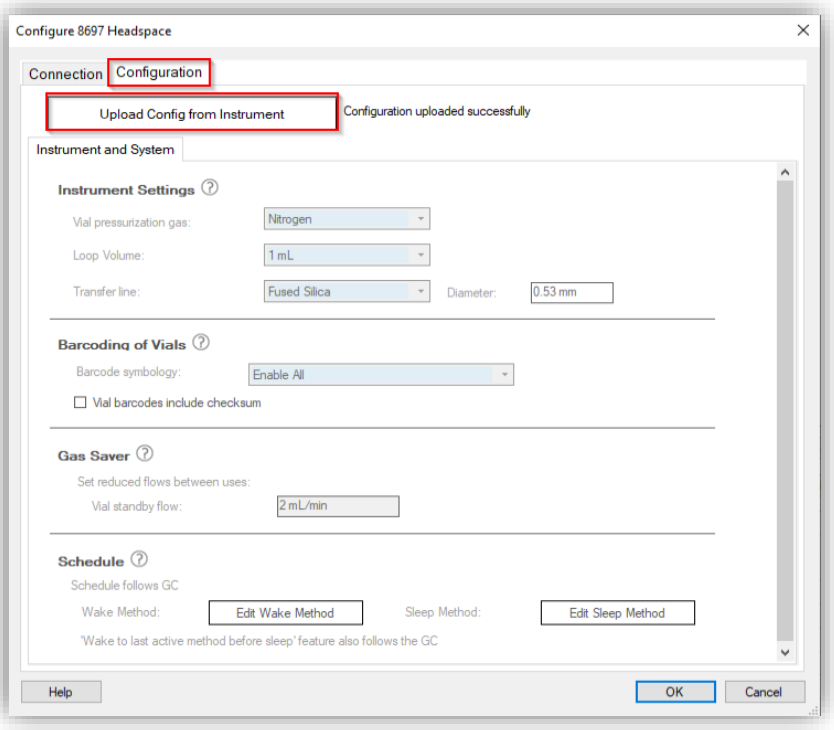


12 **Double-click** the HS on the right pane (or select it and press **Configure**) to open the HS configuration dialog of the selected HS type.

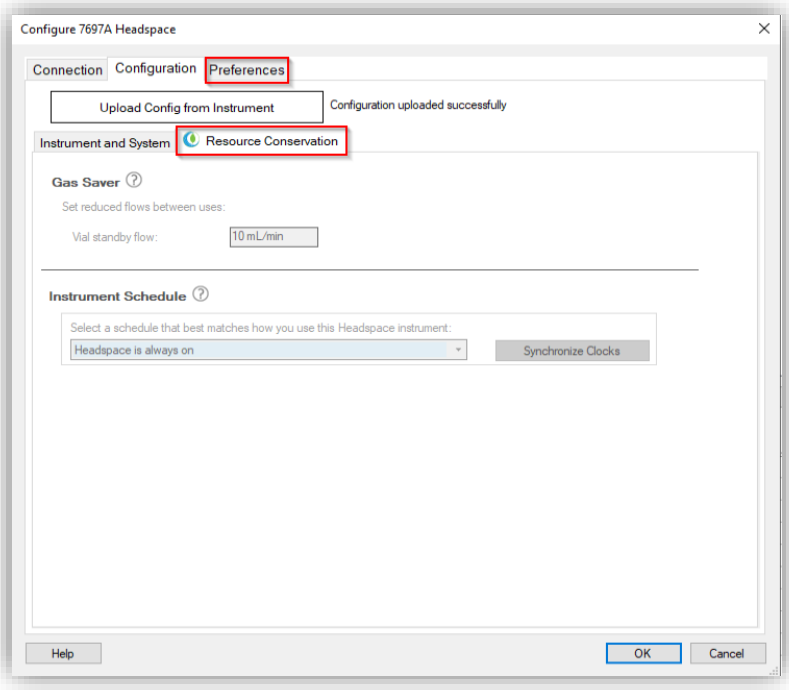
13 Enter the **IP address** of the HS. Instrument Name and Notes are optional fields. HS 8697 and 8697 XL Tray are connected to the GC via LAN and the GC IP address must be used for configuration.



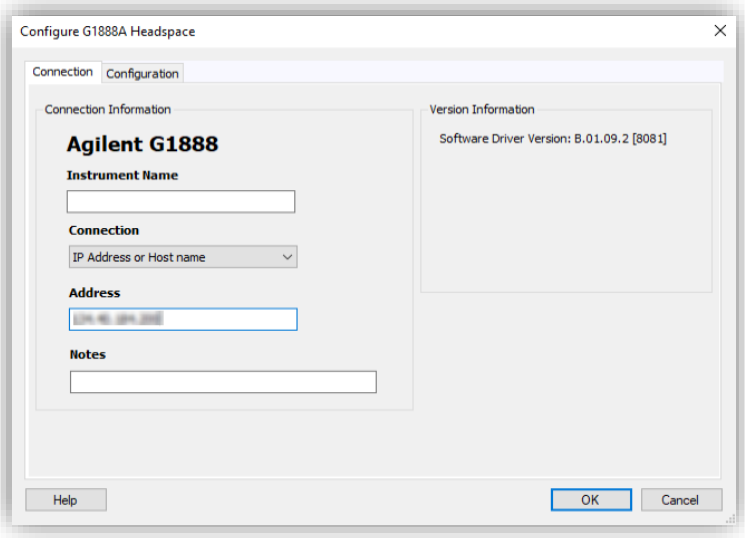
14 Switch to the Configuration tab and click **Upload Config from Instrument**.

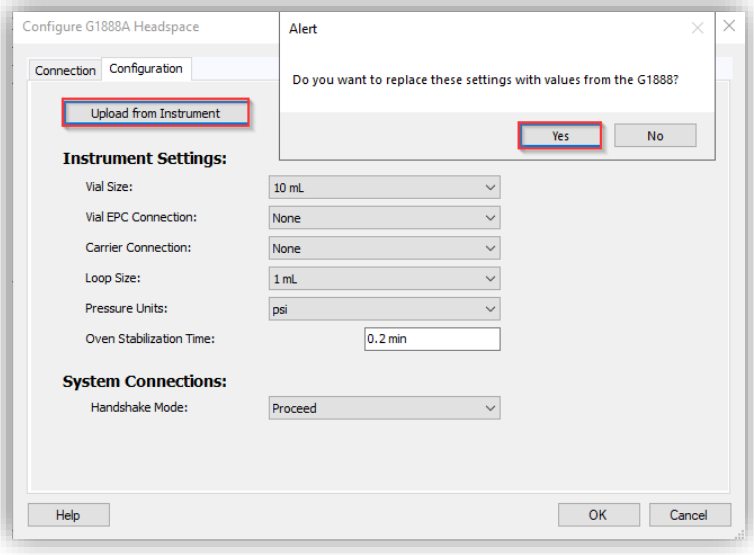


a For a **7697A** HS, optionally adjust the Resource Conservation and Preferences settings. For **8697** (XL Tray), these settings can be reached in the Acquisition interface via Advanced Options > Module Options.

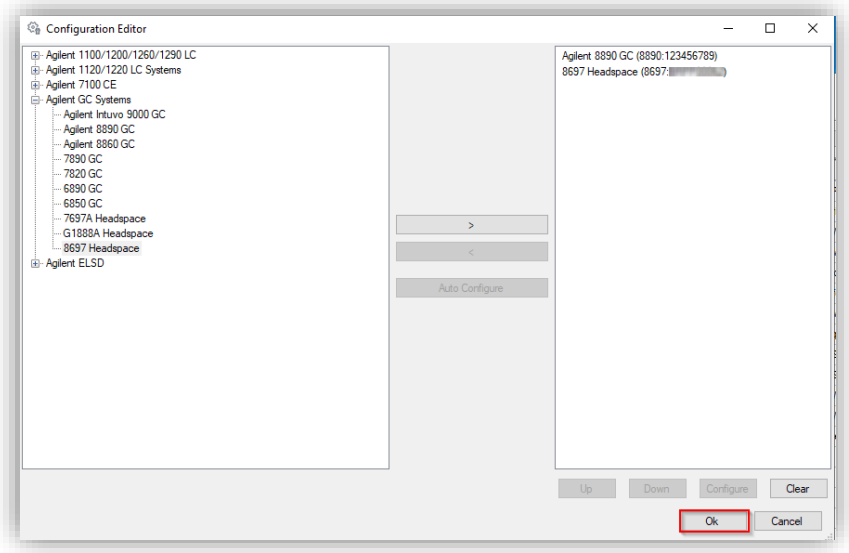


b For the **G1888** HS, an IP address must be entered (hostname is not supported). After clicking Upload from Instrument, chose Yes when prompted to replace the settings.
Adjust the Loop Size, Vial EPC, and Carrier Connection.
Do not change Vial Size, Pressure Units, Oven Stabilization Time, and Handshake Mode. These settings must be changed on the G1888 front panel and uploaded again.





15 Review the configuration and then press **OK.** Exit the Configuration Editor by selecting **OK**.



16 Verify that the correct IP address is shown in the PreConfiguration Utility (GC only is displayed) and select **Exit**. Proceed with the Empower DHCP Configuration (next section).

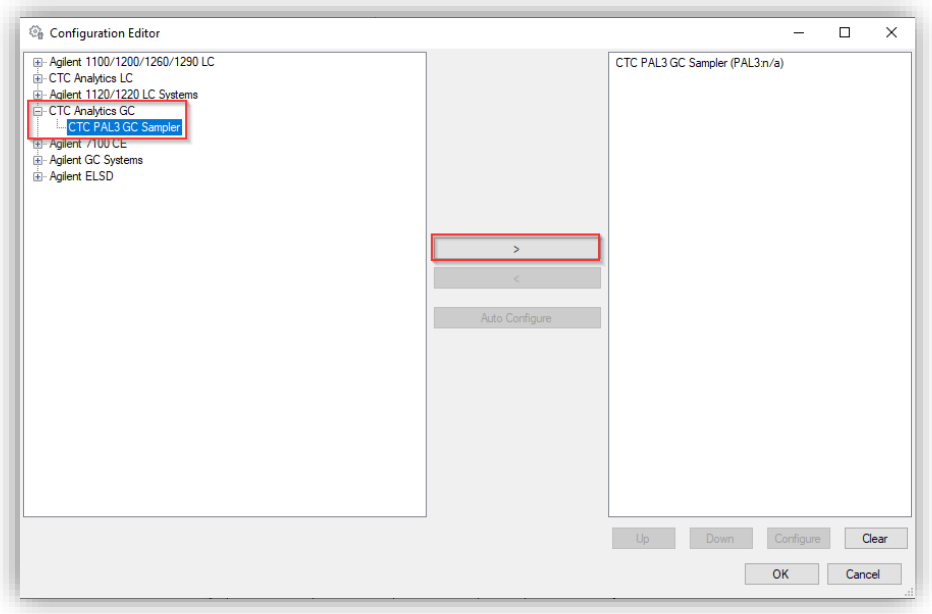
CTC PAL3 configuration

If a CTC PAL3 shall be configured, perform the following steps. If not, skip this section and proceed with the next section.

1 Ensure that the compatible CTC PAL3 driver was installed after the installation of WICF and that the LAN connection is established.

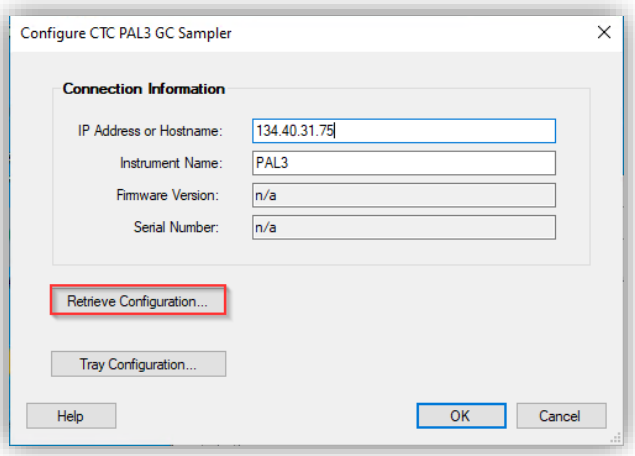
2 Open the PreConfiguration Utility as described in the section above.

3 In the **Configuration Editor**, expand the **CTC Analytics GC** tab, select the **CTC PAL3 GC Sampler** and click the **arrow to the right** to move it to the right pane.

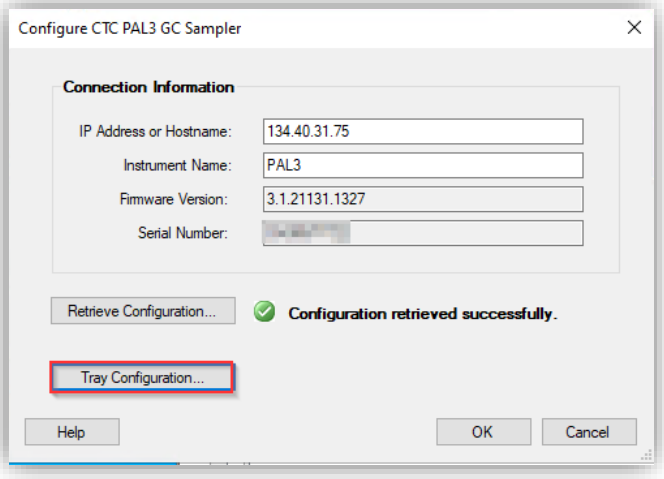


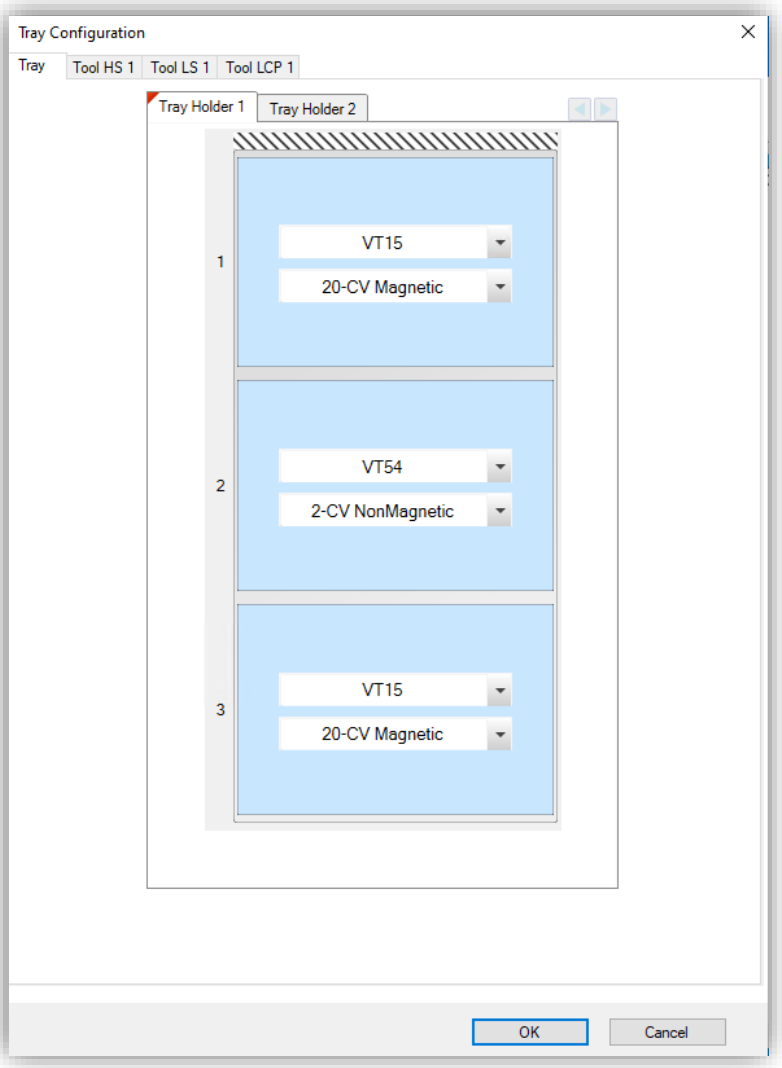
4 **Double-click** the CTC PAL3 GC Sampler on the right pane (or select it and press **Configure**) to open the CTC configuration dialog.

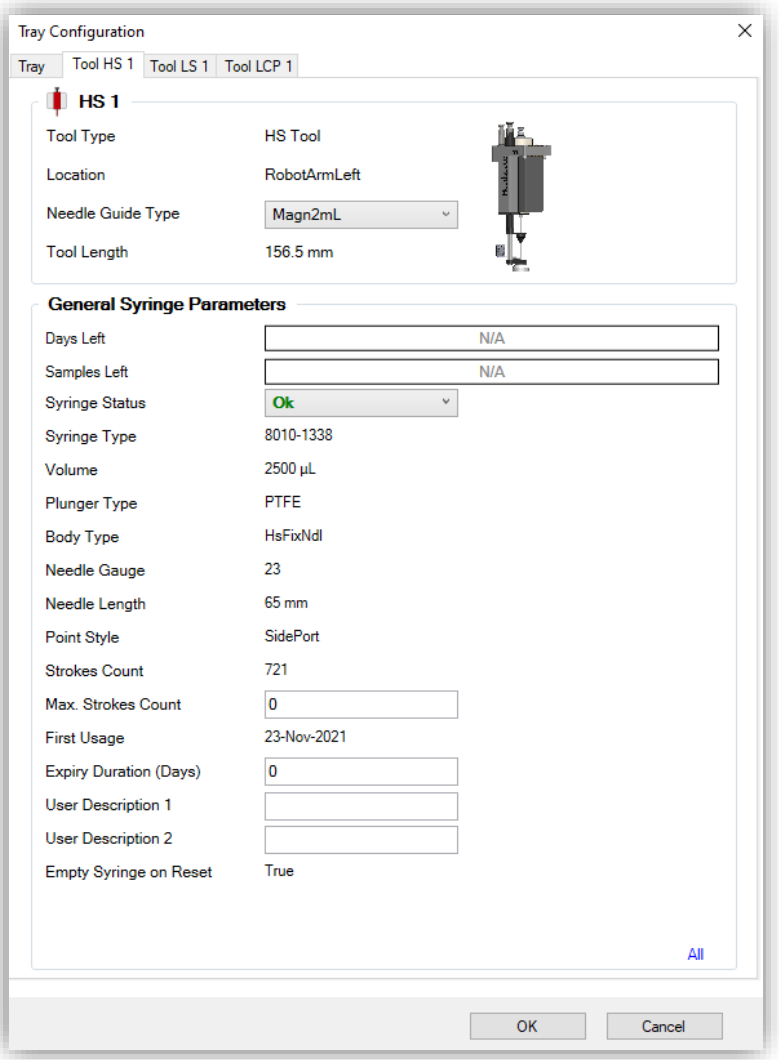
5 Enter the **IP address** of the CTC PAL3 and click **Retrieve Configuration**.



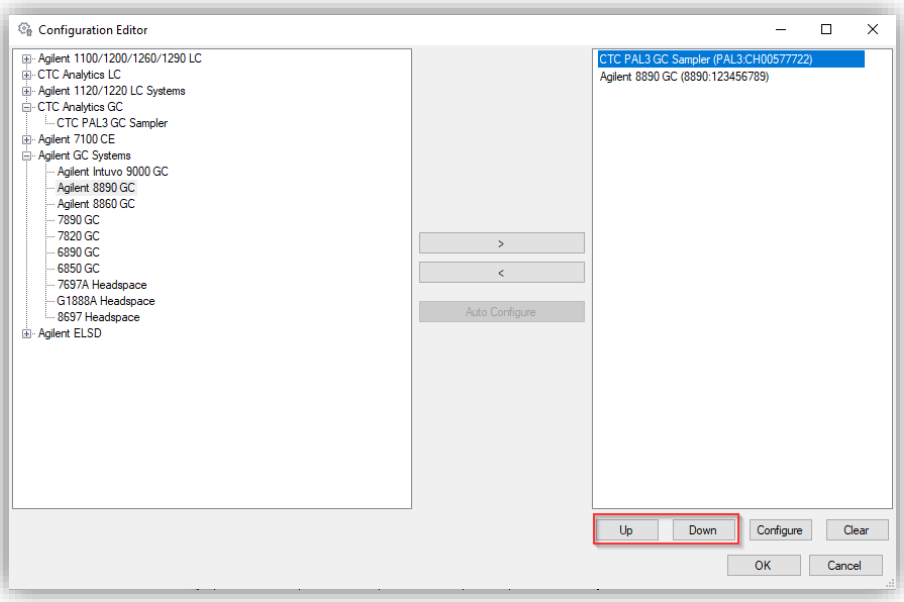
6 Press **Tray Configuration** and verify the attached tools and tray configurations. Click **OK** and wait until the configuration is retrieved again. Click **OK**.




Tray Configuration
Tray
Tool HS 1
Tool LS 1
Tool LCP 1
Tray Holder 1
Tray Holder 2
1
VT15
20-CV Magnetic
2
VT54
2-CV NonMagnetic
3
VT15
20-CV Magnetic
OK
Cancel

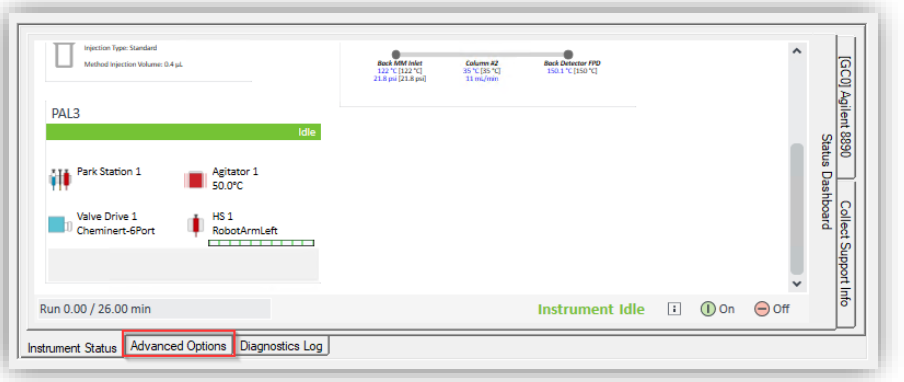


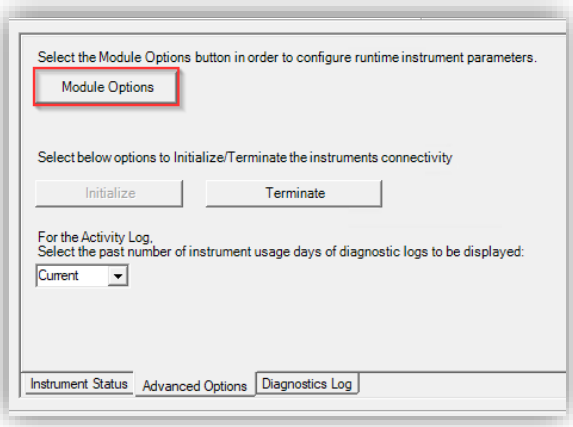
7 In the **Configuration Editor** select and configure the Agilent GC in use in addition to the CTC PAL3 as described in the GC configuration section. In case the GC was already configured, take care that the CTC PAL3 is listed first in the right pane by using the **Up** and **Down** buttons. Like this the PreConfiguration Utility will take the GC IP address for further usage. Press **OK**.

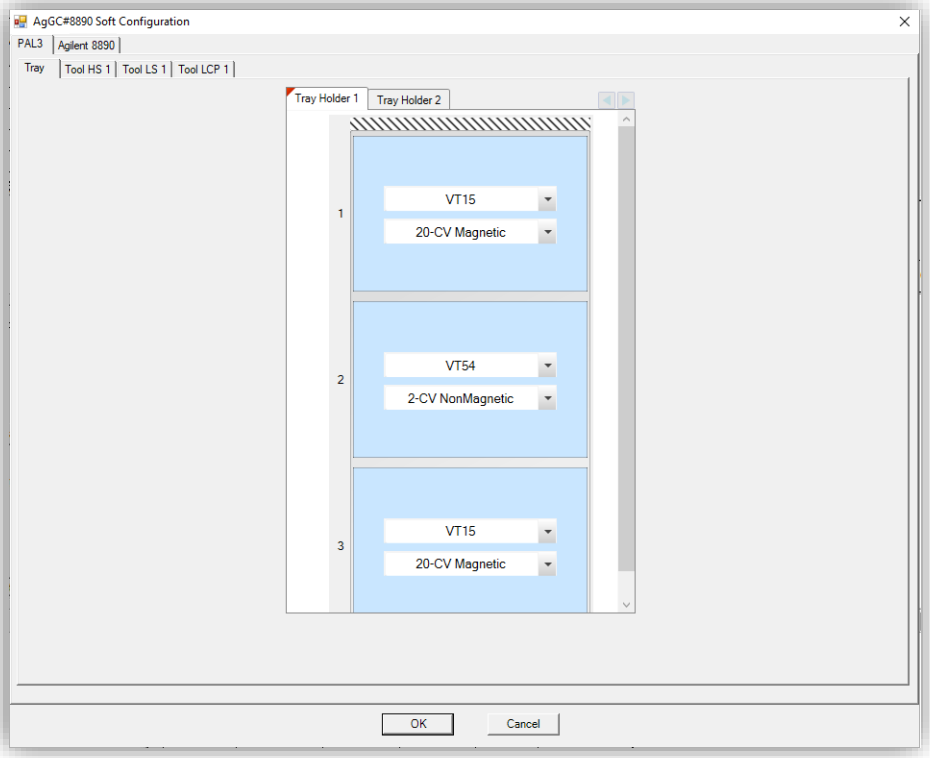


8 Verify that the correct IP address is shown in the PreConfiguration Utility (GC only is displayed) and select **Exit**. Proceed with the Empower DHCP Configuration (next section).

9 [Optional] Modifying the tray and tool configuration is also possible through the Soft Configuration via the Empower Run Samples window under **Advanced Options > Module Options**. It may be necessary to close and reopen the Run Samples window that the changes are reflected in the dashboard.




Select the Module Options button in order to configure runtime instrument parameters.
Module Options
Select below options to Initialize/Terminate the instruments connectivity
Initialize
Terminate
For the Activity Log,
Select the past number of instrument usage days of diagnostic logs to be displayed:
Current
Instrument Status
Advanced Options
Diagnostics Log

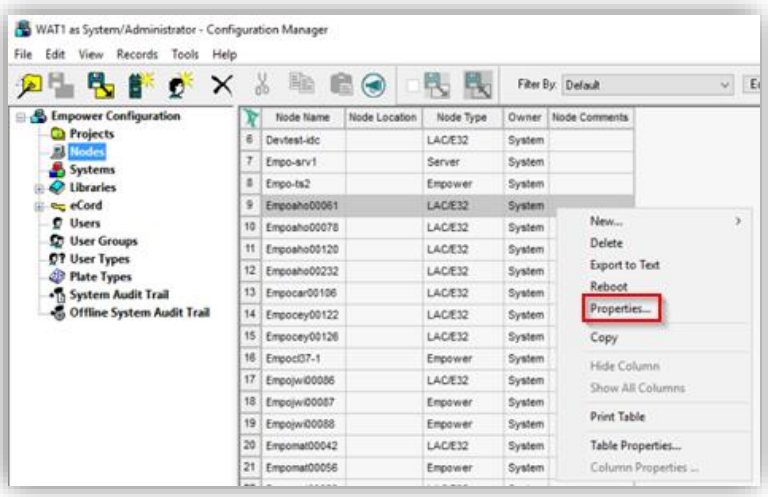

AgGC#8890 Soft Configuration
PAL3
Agilent 8890
Tray
Tool HS 1
Tool LS 1
Tool LCP 1
Tray Holder 1
Tray Holder 2
1
VT15
20-CV Magnetic
2
VT54
2-CV NonMagnetic
3
VT15
20-CV Magnetic
OK
Cancel

Empower DHCP Configuration

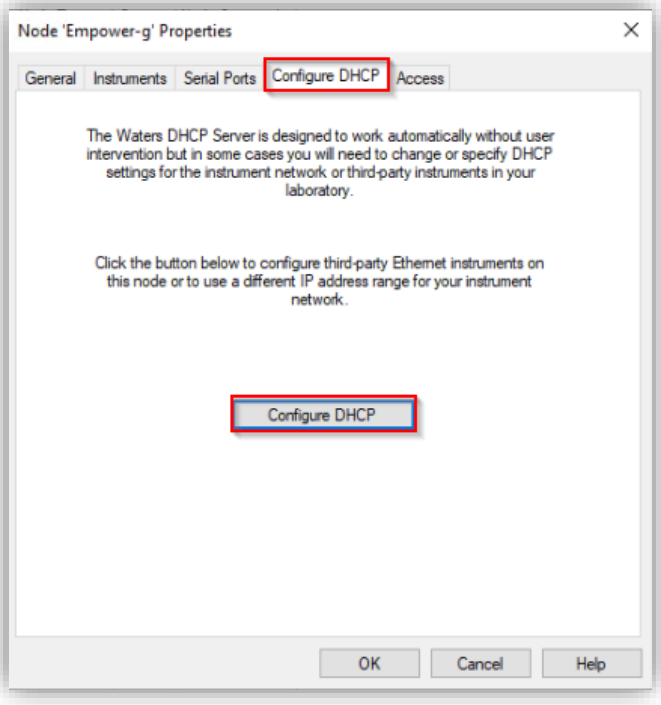
After the successful PreConfiguration, the Agilent instrument must be configured in the Empower software by performing the following steps:

1 Log in to Empower from the LAC/E or workstation connected to the instrument (recommended) or from any client and open the Configuration Manager.

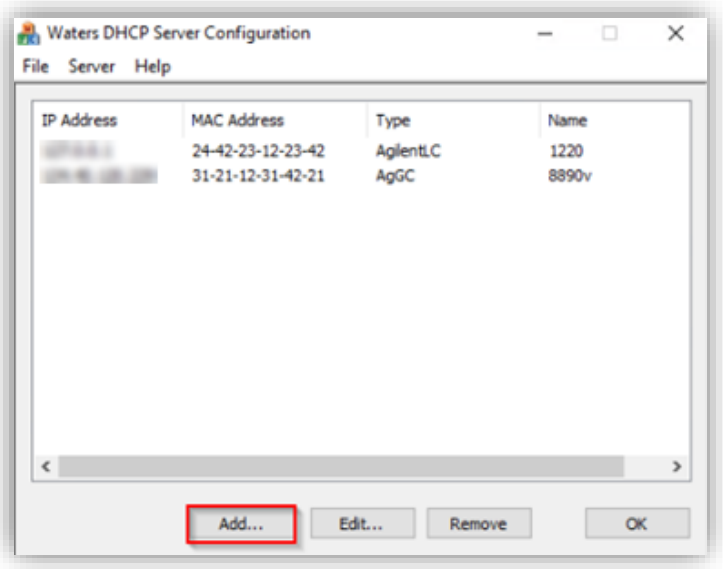
2 Select **Nodes** from the Empower configuration tree, **right-click** the desired node (LAC/E or workstation) and select **Properties**.



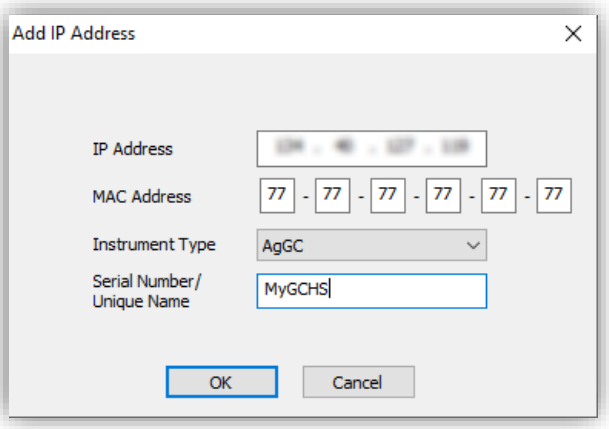
3 Switch to the tab **Configure DHCP** and click the **Configure DHCP** button.



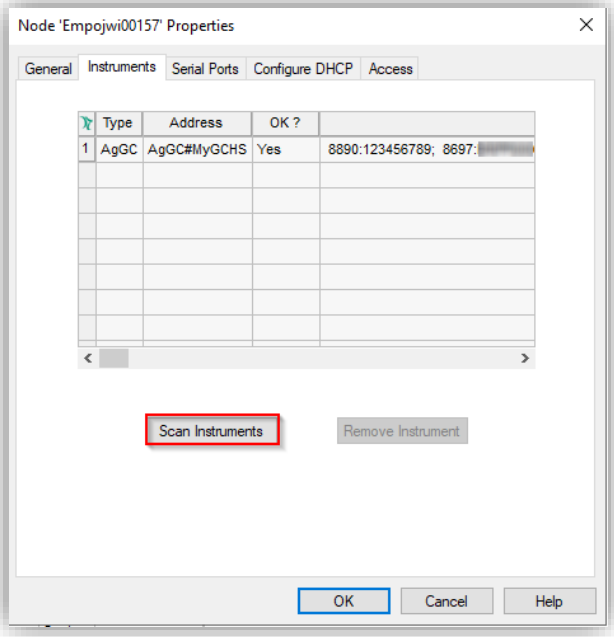
4 In the Waters DHCP Server Configuration window, click Add to manually add the static IP address of the Agilent GC (same instrument access point as used during the PreConfiguration).



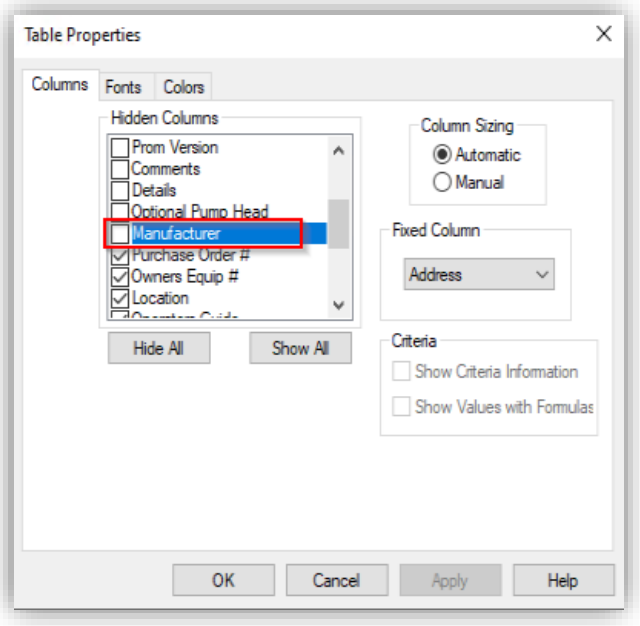
5 Enter the **IP Address, MAC Address** (can be arbitrary), and **Serial Number** or a **Unique Name**. Select the Instrument Type **AgilentGC** from the drop-down list. Confirm with **OK**. IP and MAC address are checked for duplicates on the same instrument controller. Once created, editing the existing DHCP configurations is not possible. The system must be removed and added again.

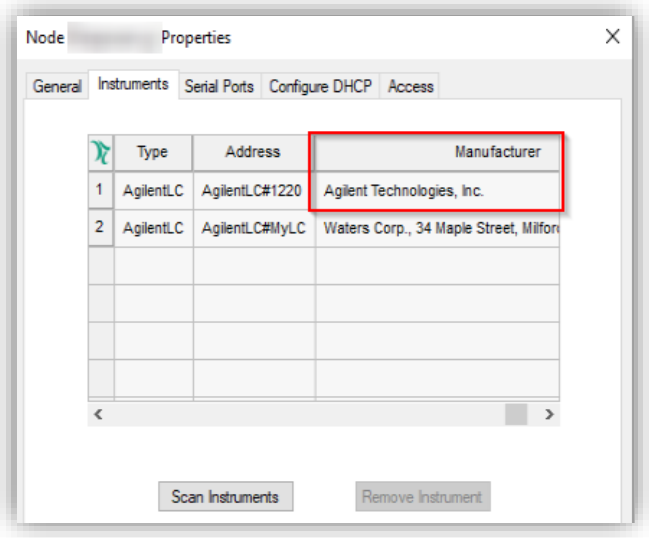


6 Press **OK** to close the Waters DHCP Server Configuration. Browse to the **Instruments** tab and **Scan Instruments** to check the successful configuration. **OK?** column must indicate **Yes**, check the **Details** column for the read instrument configuration.



7 **Right-Click > Table Properties** and unhide the Manufacturer column. Click **OK**, browse to the manufacturer column and change the name to “Agilent Technologies, Inc.”. Close and update the Node Properties by clicking **OK**.





8 You may proceed with the section Chromatographic System Creation.

GC dual-simultaneous injection (Dual tower)

Dual-simultaneous injection or dual tower describe the usage of the GC front and back injectors in parallel to inject samples simultaneously applying the same method to both samples and recording the signals of both flow paths from front and back detectors. This functionality saves time by doubling the sample throughput.

The scripts to enable the dual tower support are applied by default during WICF installation. The scripts to disable/enable dual tower support are located on the installation media (\Supplementary material\DualTower) and can be used on own risk. The scripts must be executed by "Run as administrator" and do modify registry entries to add/remove the instrument type A7890 to/from the Waters DHCP Server Configuration which enables/disables the use of dual tower.

NOTE

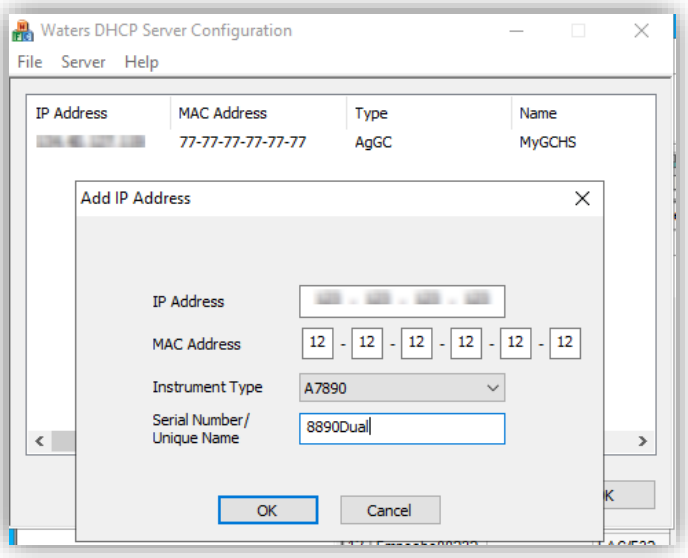
The GC Dual Tower functionality is not supported when legacy drivers are installed. To make use of dual tower mode, legacy drivers must be uninstalled. Vice versa, to use legacy drivers, dual tower must be disabled by using the Disable_Dual_Tower script.

To configure and use dual tower injections, perform the following steps:

1 Ensure that the GC hardware has a front and back injection tower correctly installed.

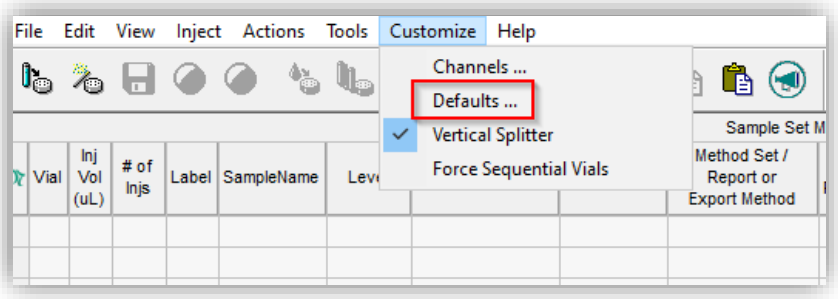
2 Configure the GC using the PreConfiguration Utility as described in the section above.

3 During Empower DHCP Configuration, select **Instrument Type A7890** independent of the GC model in use (for example, using dual tower with a GC 8890 needs A7890 selected as instrument type).

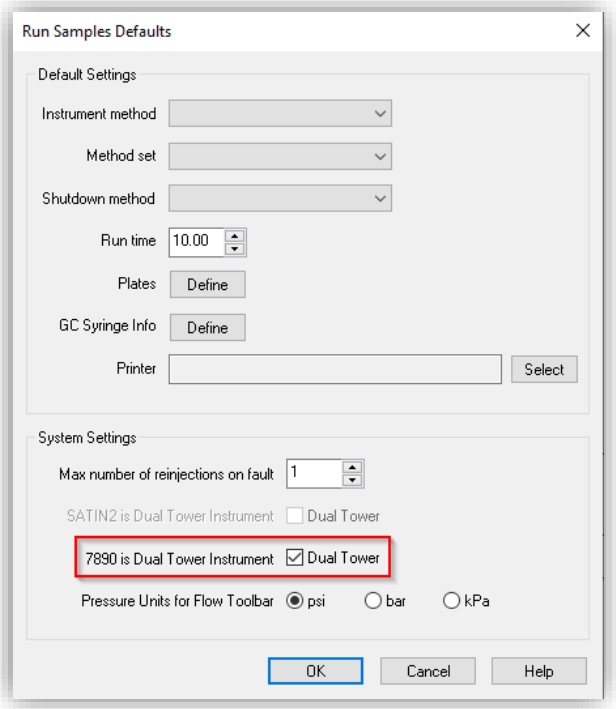


4 Create a Chromatographic System in Empower as described in the next section.

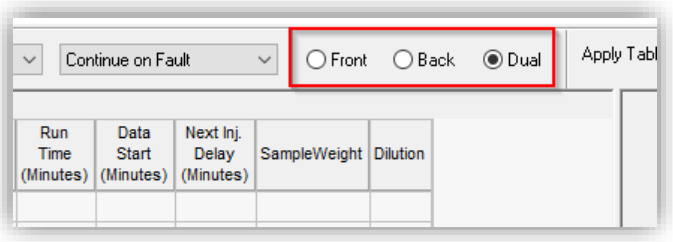
5 Open the Run Samples window and select **Customize > Defaults**.



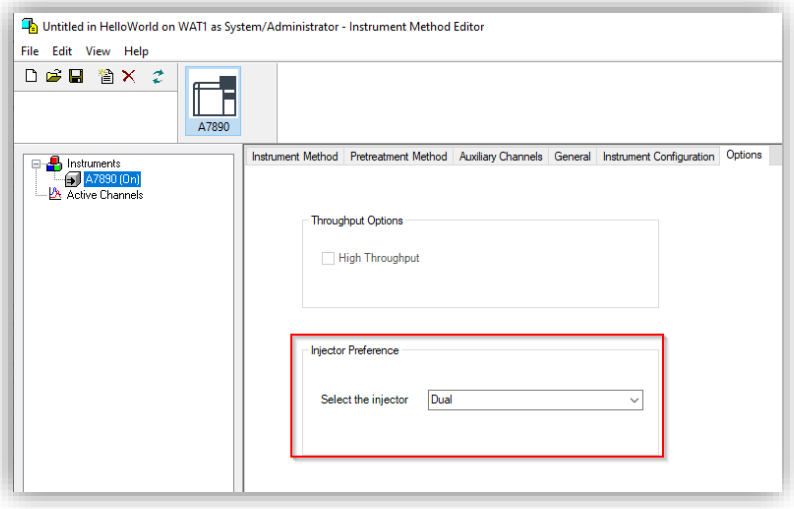
6 Set the checkmark for **7890 is Dual Tower Instrument** (does also apply to other GC models) and confirm with **OK**.



7 The Dual/Front/Back tower radio buttons are displayed in the Run Samples window. They allow to filter the Sample Set table to display front, back, or both injections.



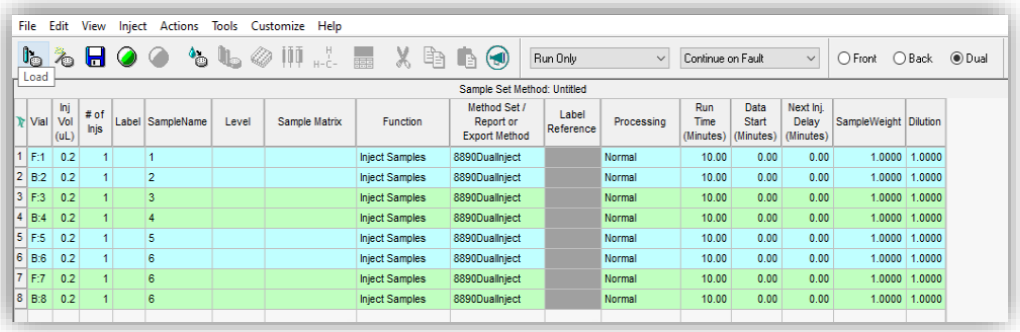
8 Create a new instrument method for dual injections. In the method editor, navigate to the Options tab and select the injector Dual as **Injector Preference**.



9 Create a Method Set and a Sample Set based on the instrument method and following the rules:

- **a** The front and back injections lines must specify the same instrument method, number of injections and runtime, to perform dual tower injections.
- **b** The vial numbers are alphanumeric (“F” indicates the front tower and “B” the back tower whereas the vial position is the numerical number):
  - **i** F:1-F:150 for front injector tower
  - **ii** B:1-B:150 for back injector tower
- **c** The vial numbers of front and back injectors must be different.

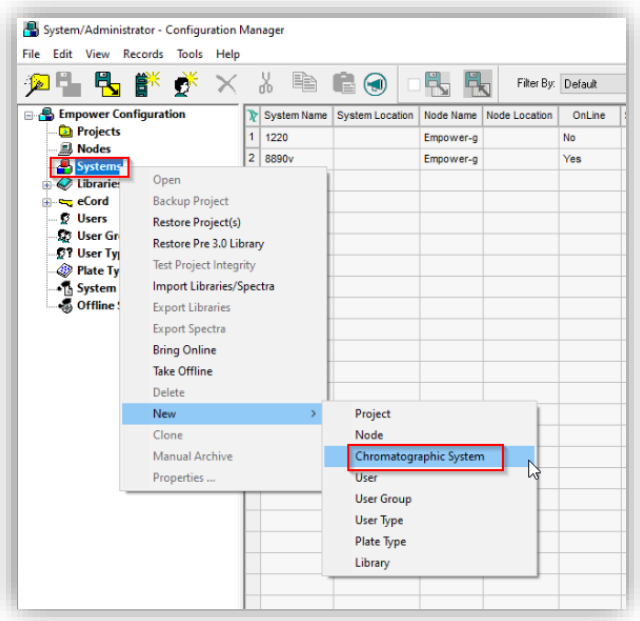
10 The simultaneous injections will be marked and the signals assigned according to the method.



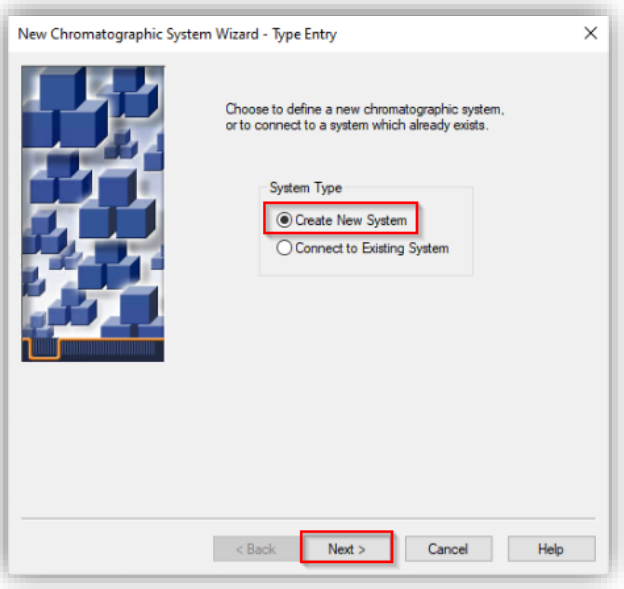
	Vial	Inj Vol (uL)	# of Injs	Label	SampleName	Level	Sample Matrix	Function	Method Set / Report or Export Method	Label Reference	Processing	Run Time (Minutes)	Data Start (Minutes)	Next Inj. Delay (Minutes)	SampleWeight	Dilution
1	F:1	0.2	1		1			Inject Samples	8890DualInject		Normal	10.00	0.00	0.00	1.0000	1.0000
2	B:2	0.2	1		2			Inject Samples	8890DualInject		Normal	10.00	0.00	0.00	1.0000	1.0000
3	F:3	0.2	1		3			Inject Samples	8890DualInject		Normal	10.00	0.00	0.00	1.0000	1.0000
4	B:4	0.2	1		4			Inject Samples	8890DualInject		Normal	10.00	0.00	0.00	1.0000	1.0000
5	F:5	0.2	1		5			Inject Samples	8890DualInject		Normal	10.00	0.00	0.00	1.0000	1.0000
6	B:6	0.2	1		6			Inject Samples	8890DualInject		Normal	10.00	0.00	0.00	1.0000	1.0000
7	F:7	0.2	1		6			Inject Samples	8890DualInject		Normal	10.00	0.00	0.00	1.0000	1.0000
8	B:8	0.2	1		6			Inject Samples	8890DualInject		Normal	10.00	0.00	0.00	1.0000	1.0000

Chromatographic System Creation

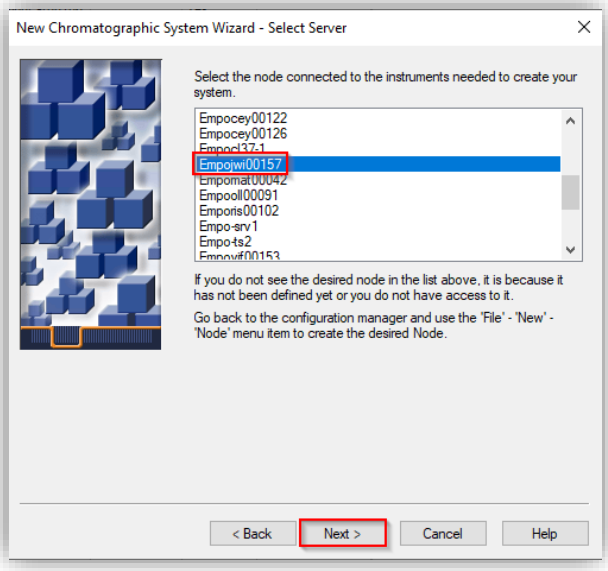
1 In the Empower Configuration Manager, **right-click** on **Systems** and select **New > Chromatographic System**. Alternatively, click File > New > Chromatographic System.



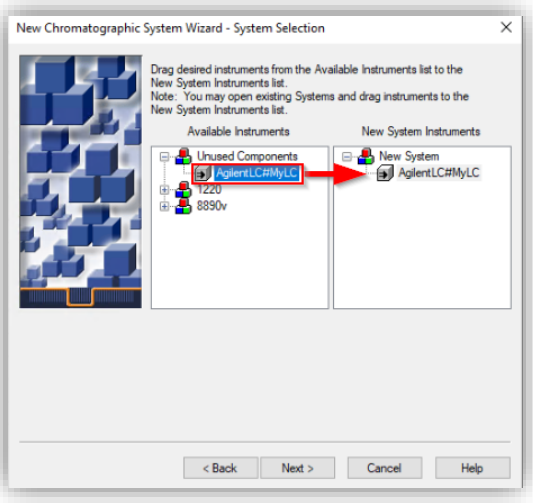
2 In the New Chromatographic System Wizard, select **Create New System** and click **Next**.

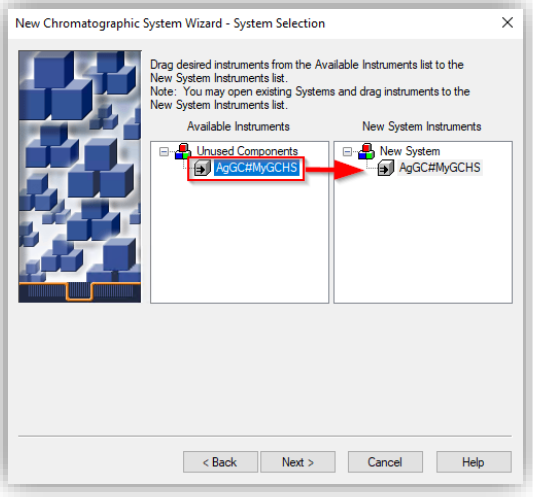


3 Select the appropriate LAC/E node and click **Next** (does not apply for workstation).

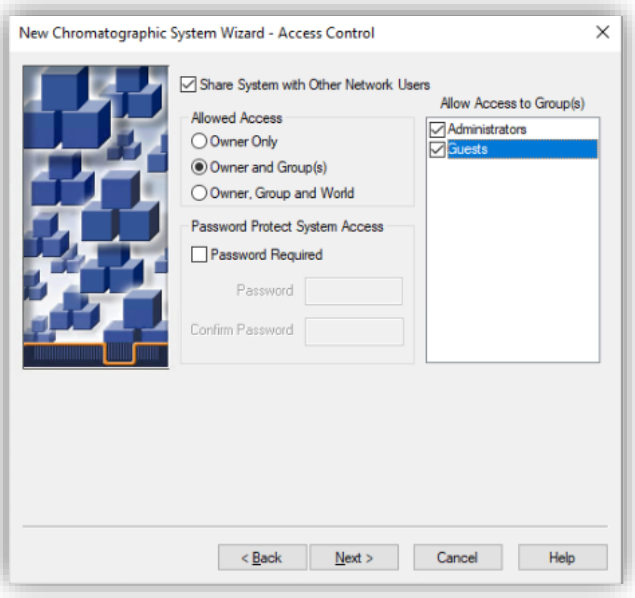


4 **Drag and drop** the desired instrument from the Available Instruments list to New System Instruments list and click **Next**.

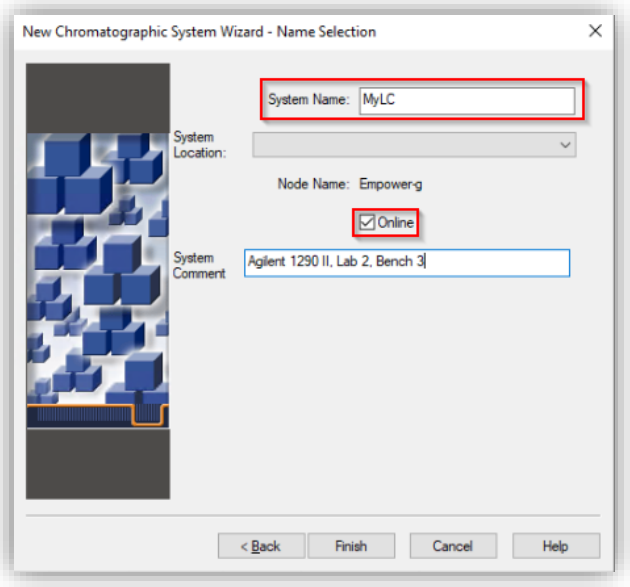


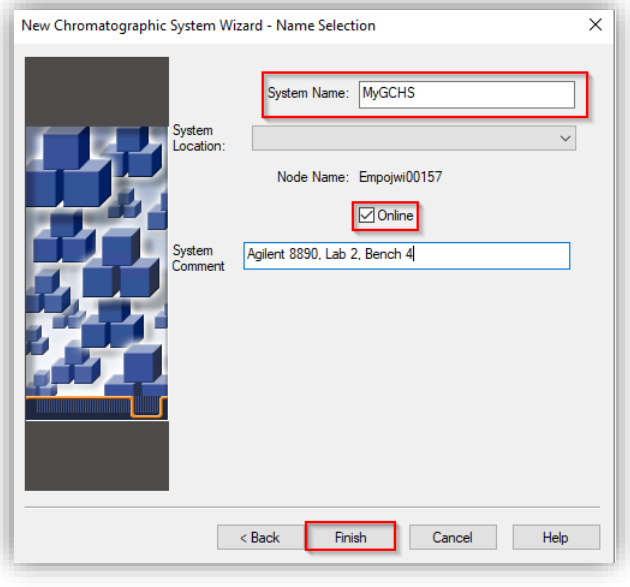


5 Select **Share System with Other Network Users** and set the appropriate access control privileges for the system.



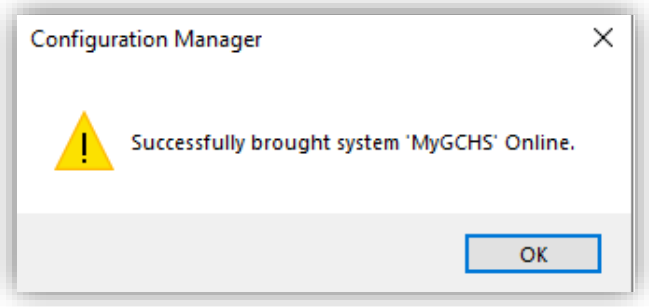
6 Enter a **System Name** and **System Comment**. Optionally, choose a System Location. Select the **Online** checkbox and click **Finish**.





7 A pop-up window shows that the system is successfully brought online (one system license and one instrument connection license are consumed). After

successful configuration procedure, the GC/HS system appears in the system table and OnLine indicates Yes.



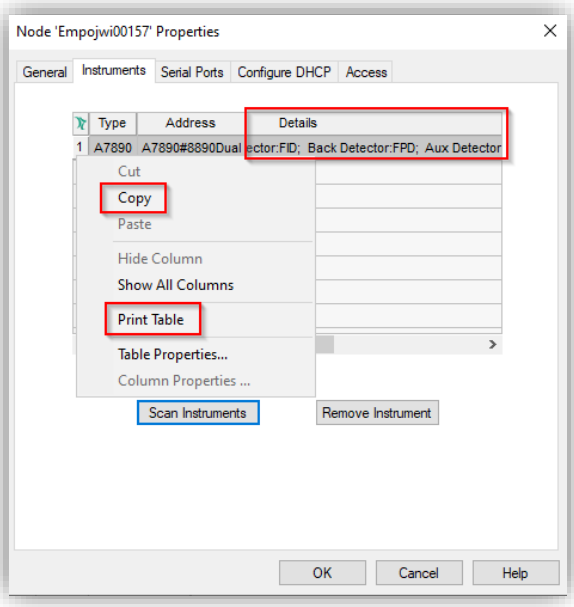
NOTE

If not enough licenses are available during configuration, the system could stay offline until further licenses are activated. Alternatively, unused AgilentLC or AgilentGC systems can be taken offline to release a license for the desired system.

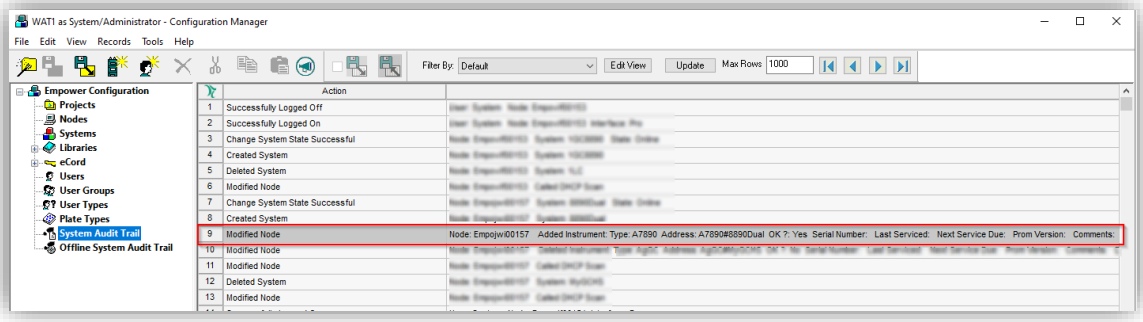
Configuration report

There are several ways to view or report the instrument configuration details:

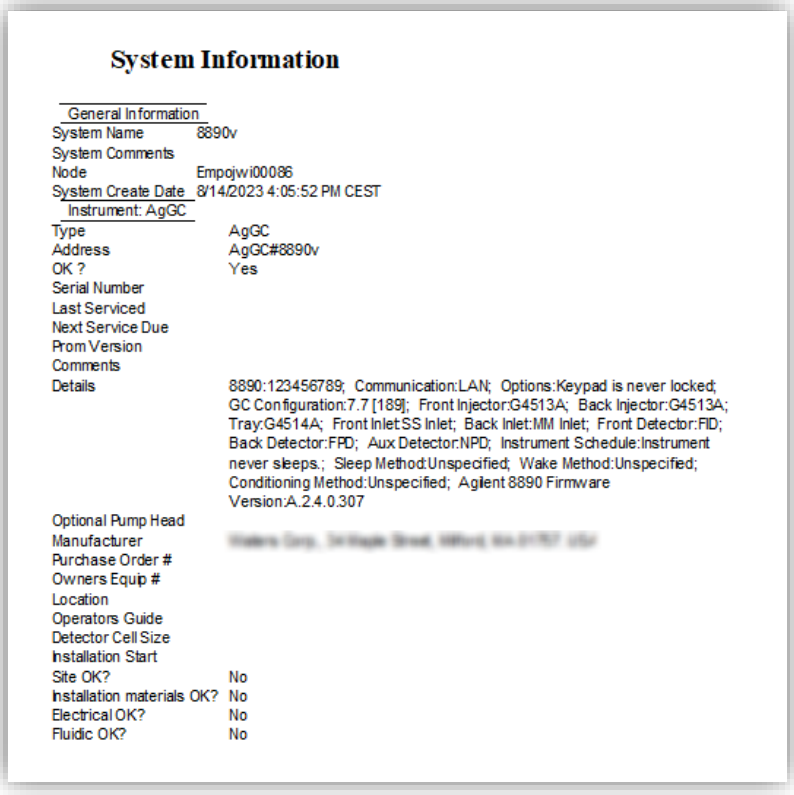
- After successful configuration, the configuration details are displayed in the Details column of the Instruments tab in the Node Properties and can either be copied or printed from there.



- The configuration details are listed in the System Audit Trail. Please consider KPR 783402.



- The configuration details can be reported with the System Information snippet of the Report Publisher when a Sample Set was recorded.



System Information

General Information

System Name	8890v
System Comments	
Node	Empojwi00086
System Create Date	8/14/2023 4:05:52 PM CEST

Instrument: AgGC

Type	AgGC
Address	AgGC#8890v
OK ?	Yes
Serial Number	
Last Serviced	
Next Service Due	
Prom Version	
Comments	
Details	8890:123456789; Communication:LAN; Options:Keypad is never locked; GC Configuration:7.7 [189]; Front Injector:G4513A; Back Injector:G4513A; Tray:G4514A; Front Inlet:SS Inlet; Back Inlet:MM Inlet; Front Detector:FID; Back Detector:FPD; Aux Detector:NPD; Instrument Schedule:Instrument never sleeps.; Sleep Method:Unspecified; Wake Method:Unspecified; Conditioning Method:Unspecified; Agilent 8890 Firmware Version:A.2.4.0.307
Optional Pump Head	
Manufacturer	[redacted]
Purchase Order #	
Owners Equip #	
Location	
Operators Guide	
Detector Cell Size	
Installation Start	
Site OK?	No
Installation materials OK?	No
Electrical OK?	No
Fluidic OK?	No

Modification or deletion of an existing configuration

Modifying an existing configuration

When hardware updates/modifications are to be performed such as

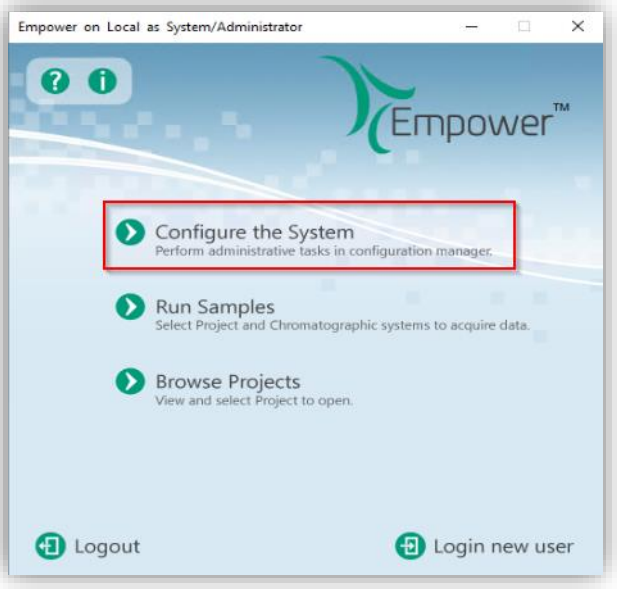
- Adding a module to an already configured LC stack
- Adding a component (for example, injector, detector, or inlet) to a GC
- changing the seat capillary, column assignment, loop volume of an LC
- changing the Sampler Thermostat/Cooler temperature mode
- changing the vial size of the G1888 HS

it is necessary to re-configure the existing system in the PreConfiguration Utility. The following steps must be performed:

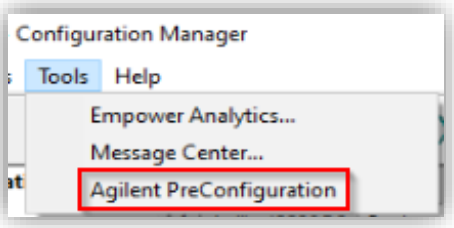
1 Perform the hardware modification or configuration change via the Lab Advisor/Instant Pilot/Instrument Dashboard for the LC and via the Front Panel for the GC.

2 Restart the instrument controller.

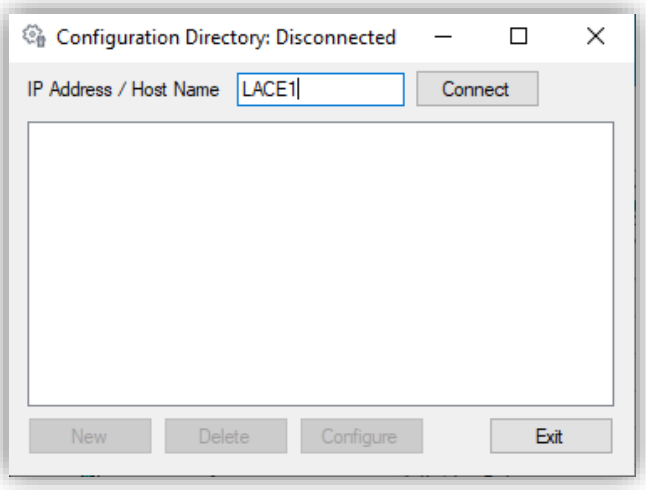
3 Log in to Empower from the LAC/E or workstation connected to the instrument (recommended) or from any client and open the Configuration Manager. Do not open Run Samples before updating the configuration.



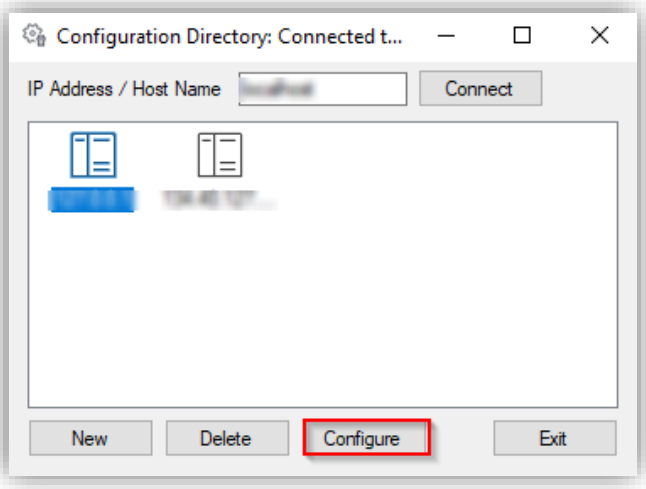
4 Select **Tools > Agilent PreConfiguration**.



5 Enter the IP address or hostname of the LAC/E or workstation connected to the instrument ("localhost" if you are logged in to the instrument controller directly) and press **Connect**.



6 When successfully connected, already configured instruments are shown. Select the instrument to be updated and click **Configure**.



7 Depending on the instrument type (LC or GC), do a new auto-configuration (press **Clear** before to remove the existing configuration) or select **Get GC**

Configuration (GC) or **Upload Config from Instrument** (HS) as described in the sections before.

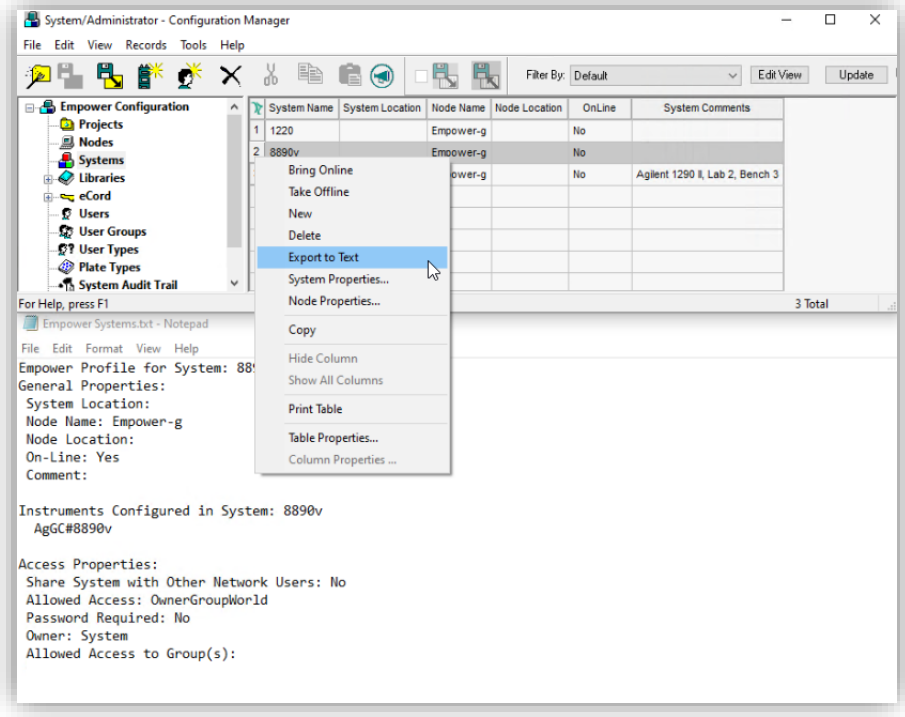
8 Open the **Run Samples** window and check for the configuration changes. Consider resolving instrument methods created with the old configuration or create new ones.

Deleting a configuration

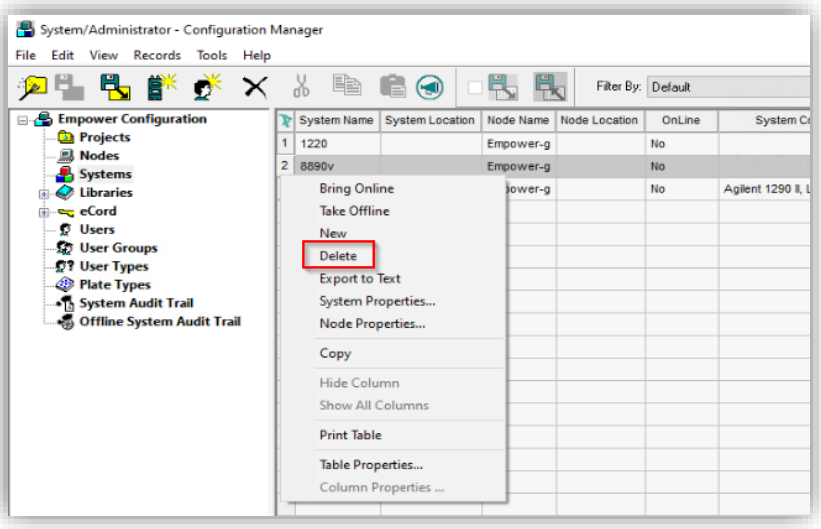
To do a clean deletion of an existing system in Empower and in the PreConfiguration Utility, perform the following steps:

1 Restart the instrument controller where the system is connected to.

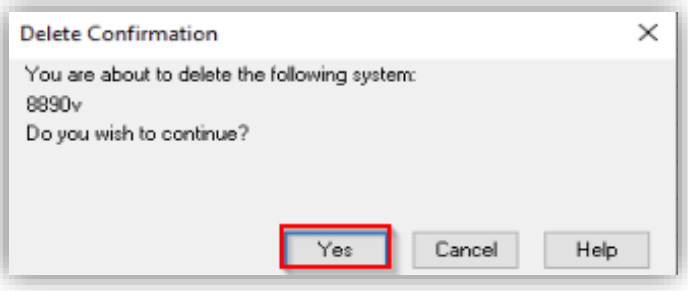
2 [Optional] Open the Configuration Manager, browse to systems, right-click on the system to be deleted and select Export to Text to document the system before deletion.

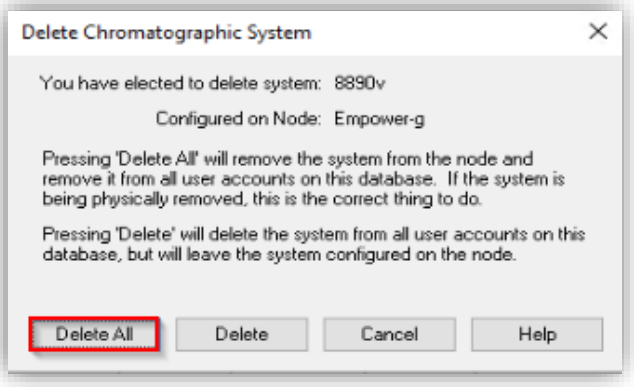


3 **Right-click** on the system and select **Delete**.

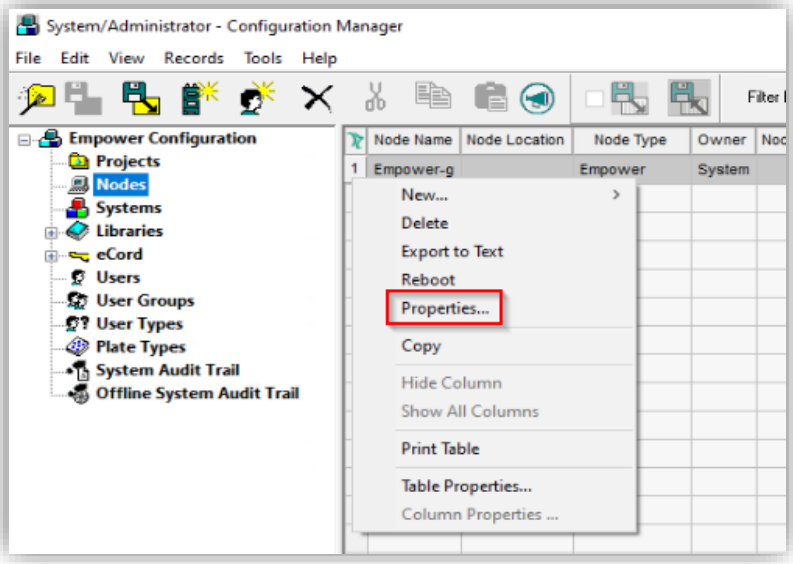


4 Confirm the deletion with **Yes** and select **Delete All** to remove the system from the node and remove it from all user accounts on this database.

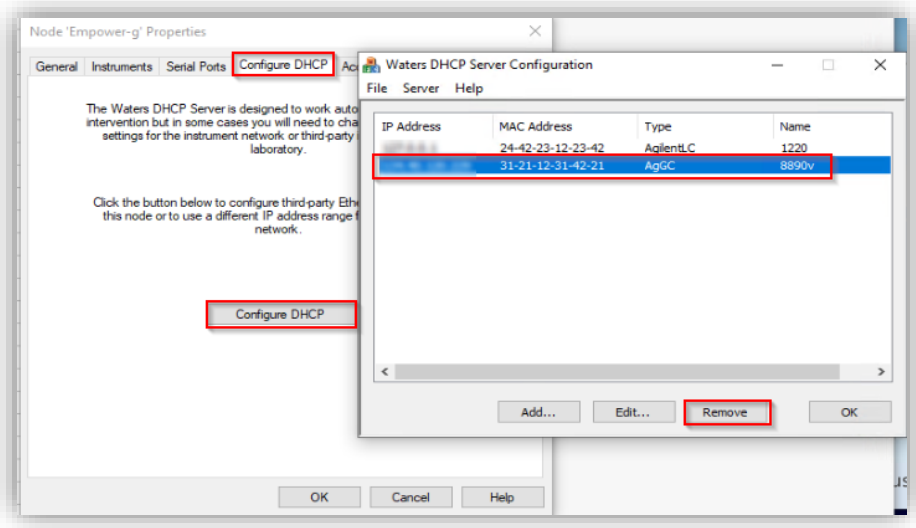




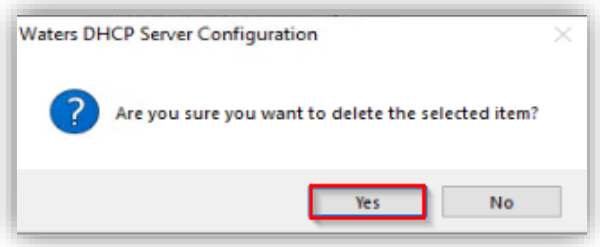
5 Open the **Properties** of the node/instrument controller where the system was connected.



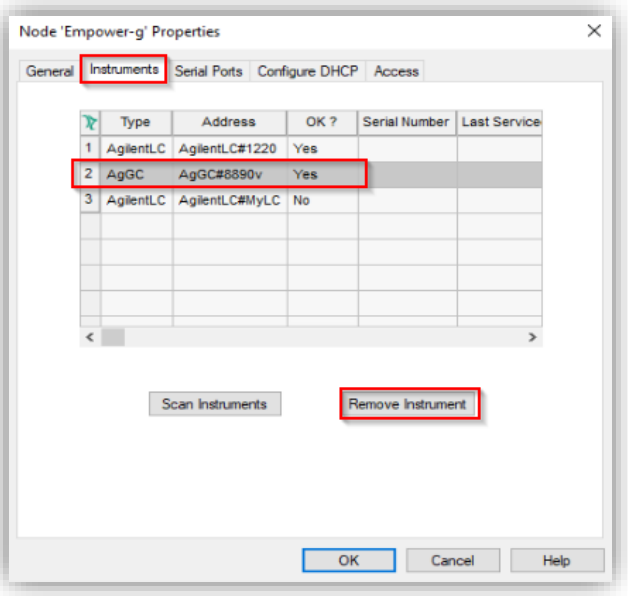
6 Browse to the **Configure DHCP tab**, select **Configure DHCP**, highlight the system to be deleted and select **Remove**.



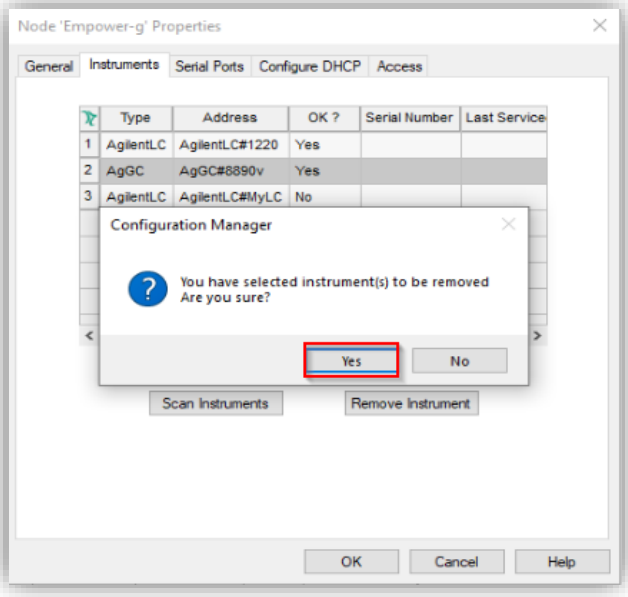
7 Confirm the dialog with **Yes** and Close the Waters DHCP Server Configuration with **OK**.



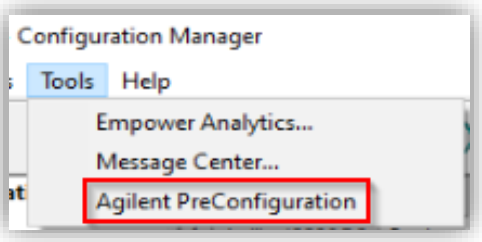
8 In the Node Properties, browse to the **Instruments tab**, highlight the Instrument to be deleted and select **Remove Instrument**.



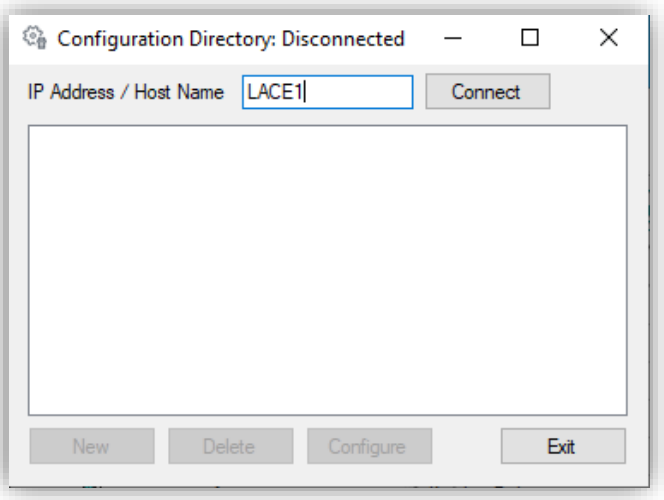
9 Confirm with **Yes**. Close the Properties with **OK**.



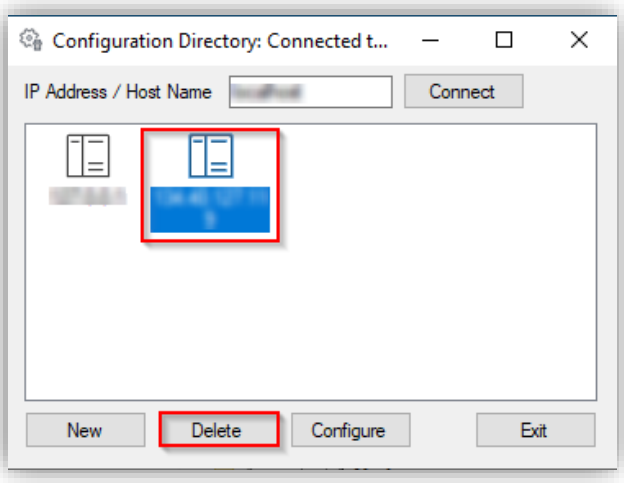
10 In the Configuration Manager, select **Tools > Agilent PreConfiguration**.



11 Enter the IP address or hostname of the LAC/E or workstation connected to the instrument ("localhost" if you are logged in to the instrument controller directly) and press **Connect**.

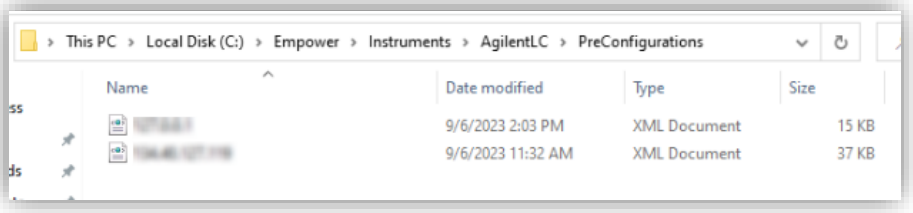


12 When successfully connected, all configured instruments are shown for this instrument controller. Select the instrument to be deleted and click **Delete**.



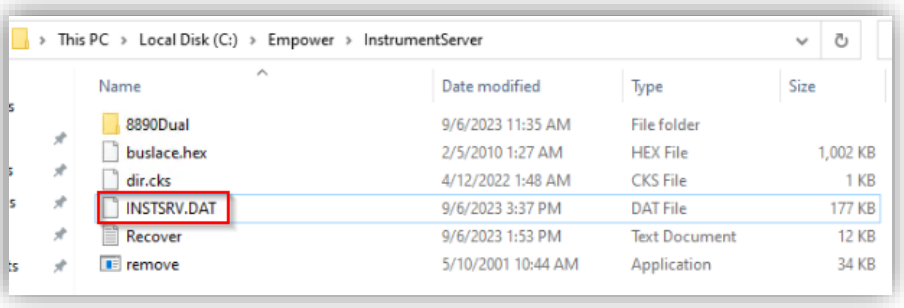
The following Optional points can be done in case of troubleshooting when deleting an instrument is not working properly.

13 [Optional] On the instrument controller, open the Windows File Explorer and navigate to C:\Empower\Instruments\AgilentLC\PreConfigurations. Check if the [IP].xml of the deleted instrument is gone. If still present, the xml can be deleted manually.



14 [Optional] On the instrument controller, open the Windows File Explorer and navigate to C:\Empower\InstrumentServer. Delete the INSTSRV.DAT file and restart the instrument controller. The file will be recreated.

Instrument Configuration



6 Licensing

Licensing Agilent Instruments in Waters Empower

To control an Agilent LC, CE, GC, GC-HS instrument with Waters' Empower CDS, the following Waters Empower licenses are required:

- Empower Licenses (Core, User License, System Control License per instrument), sold by Waters.
- A paper-based Instrument Control License (ICL), sold by Agilent since July 1, 2022

To purchase the ICL and/or the driver integration (WICF) Agilent provides the following products:

Table 6 Agilent Drivers for Empower product overview

Product Description	Part Number	Content
Agilent Drivers for Waters Empower – GC	M8407AA	One Waters GC ICL to add one GC system to Waters Empower CDS Authorization code for SubscribeNet with access to WICF
Agilent Drivers for Waters Empower – LC/CE	M8507AA (available in packs of 1, 5, or 20)	One Waters LC ICL to add one LC/CE system to Waters Empower CDS Authorization code for SubscribeNet with access to WICF
Agilent Drivers Upgrade for Waters CDS (LC/CE and GC)	M8509AA	Authorization code for SubscribeNet with access to WICF

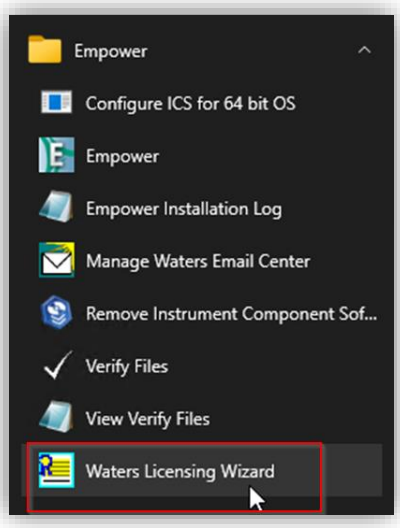
NOTE

In case of an upgrade, for example, from ICF SL to WICF, existing Agilent ICL licenses can be re-used. ICL´s are vendor specific.

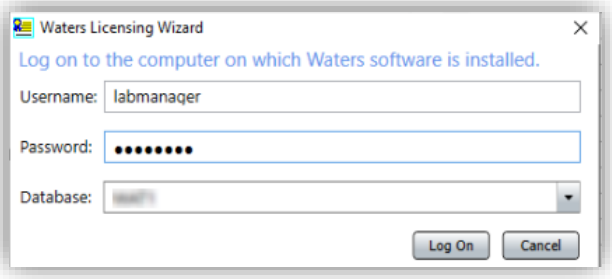
Activating the ICL for Waters Empower

1 Unbox the received package and search for the ICL with the license serial number inside in the Waters branded envelope.

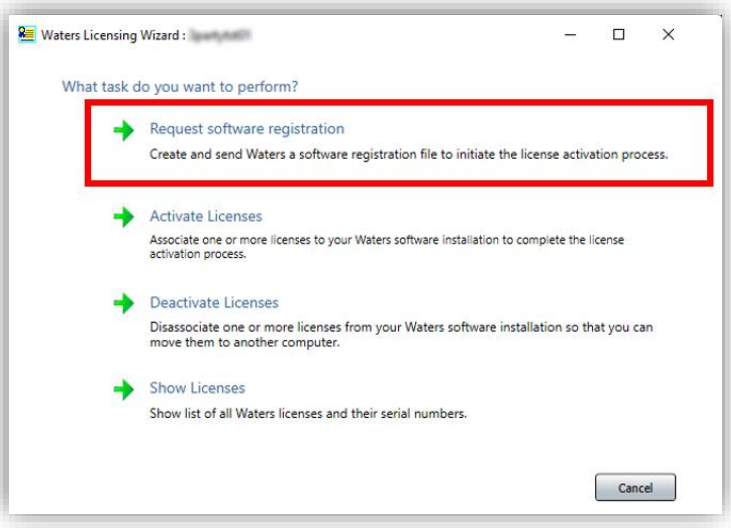
2 On any system (Client, LAC/E, Workstation, Server) with Empower installed, and connected to the Enterprise system, open the **Waters Licensing Wizard**.



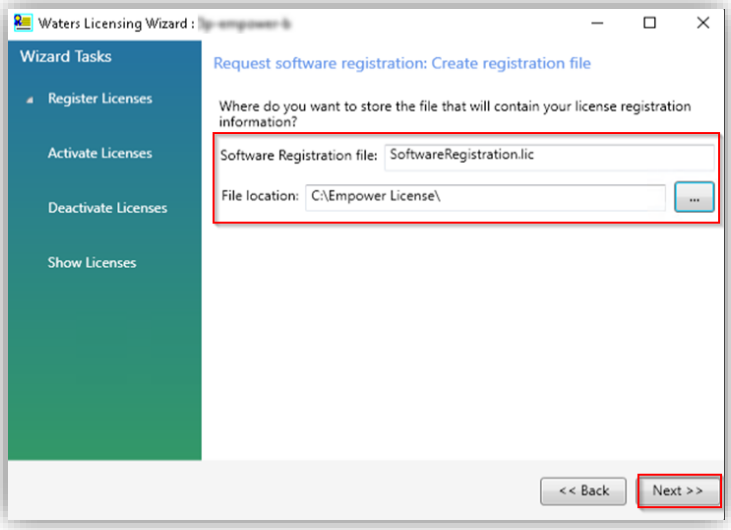
3 **Log On** with a user having the appropriate privileges.



4 Click on **Request software registration**.

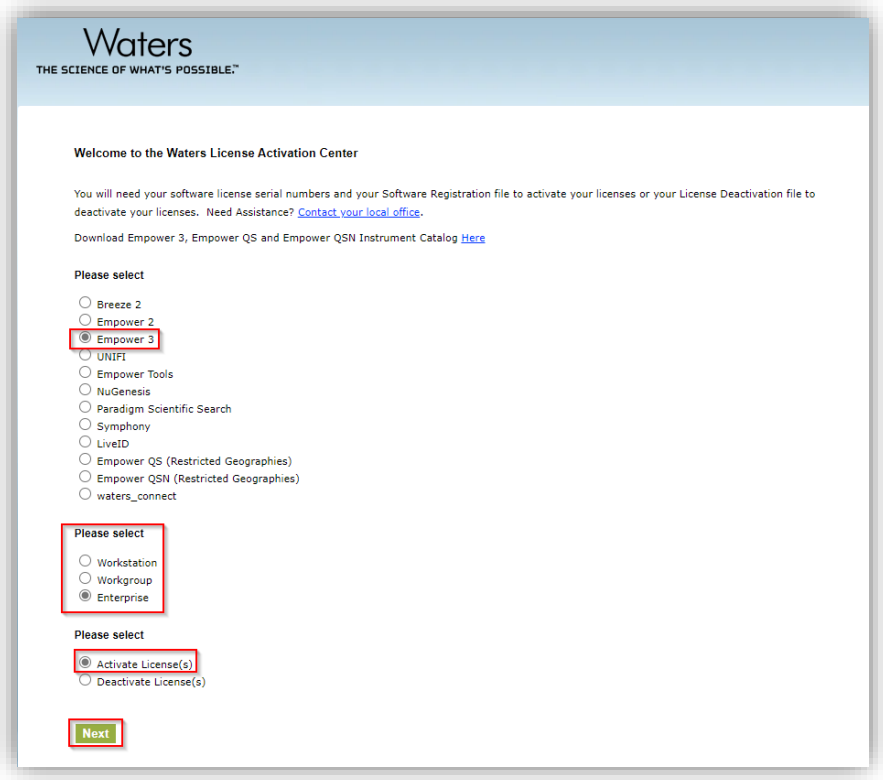


5 Create a registration file and select a **File location** and click **Next.**

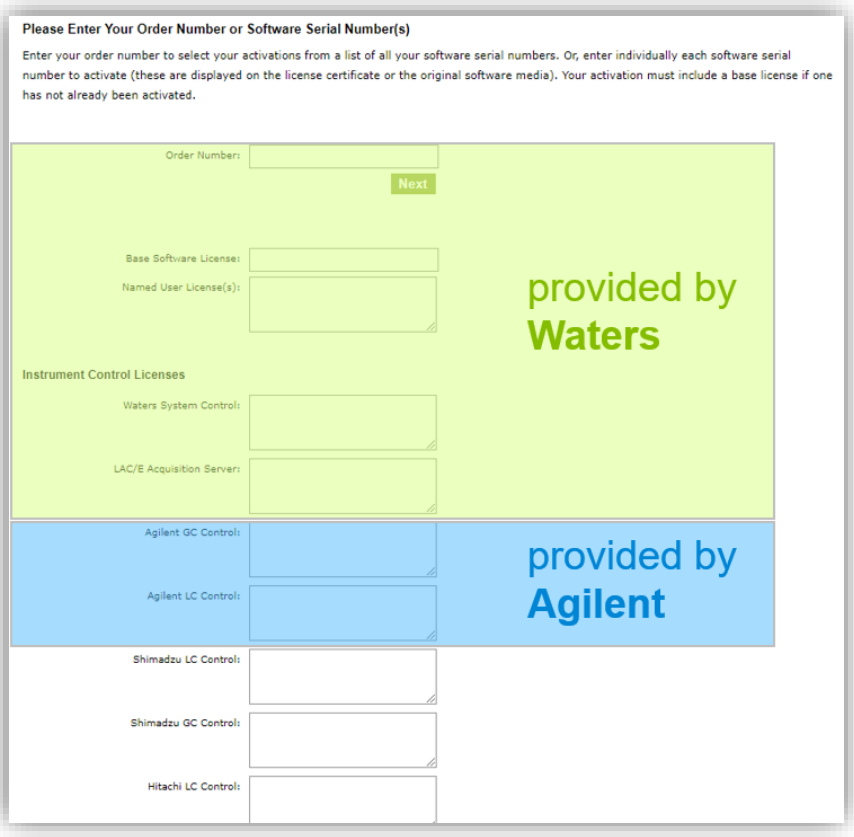


6 Visit https://www.waters.com/activate/licenseintro.htm and login to the Waters account.

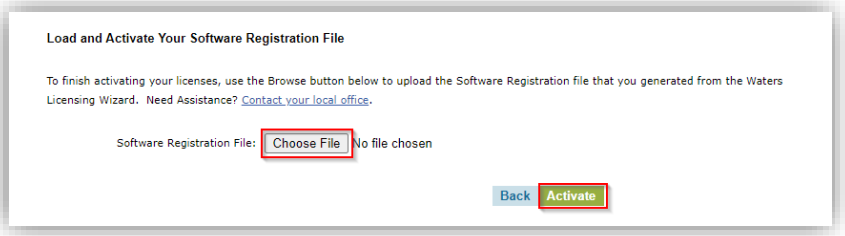
7 Select Empower 3, the appropriate topology (Workstation, Workgroup or Enterprise) and Activate License(s) and click **Next**.



8 Enter the **serial number** of the applicable license(s). Order Number or Base Software License are optional. Click **Next.**

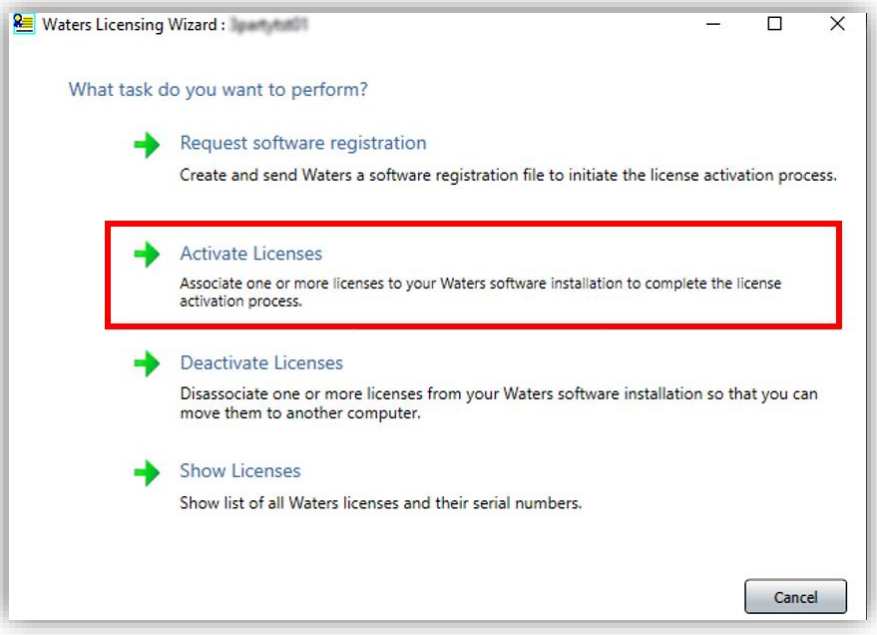


9 Load your **Software Registration File** (.lic) created in step 5 into the web interface and click **Activate**.

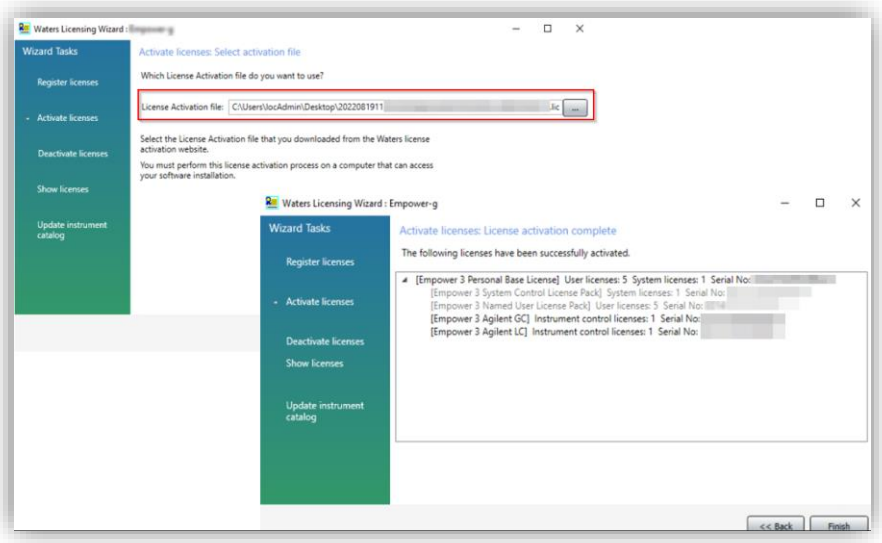


10 A **License Activation file** is generated based on the .lic file and the serial number. Save it to a location accessible by the Empower system.

11 On your system connected to Empower, go back to the Licensing Wizard and select **Activate Licenses**.



12 Browse to the just created **License Activation file** and click **Next**.



13 Control the activated licenses and click **Finish**.

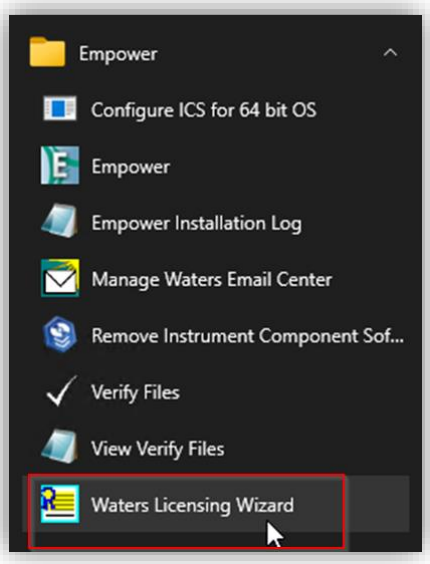
NOTE

If this is a new Empower installation with version 3.7 or higher, the instrument catalogue must be imported/updated. Otherwise, the instrument cannot be brought online.

De-Activating the ICL for Waters Empower

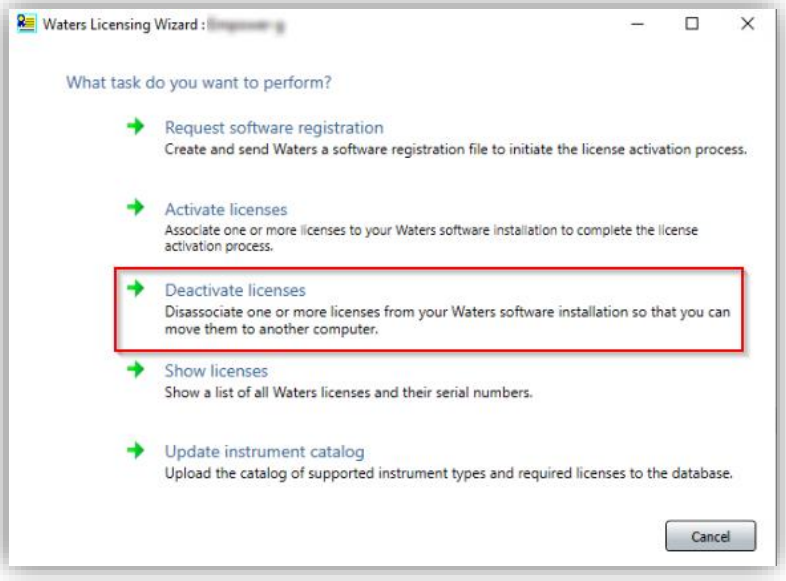
1 Unbox the received package and search for the ICL with the license serial number inside the Waters branded envelope.

2 On any system (Client, LAC/E, Workstation, Server) with Empower installed, and connected to the Enterprise system, open the **Waters Licensing Wizard.**

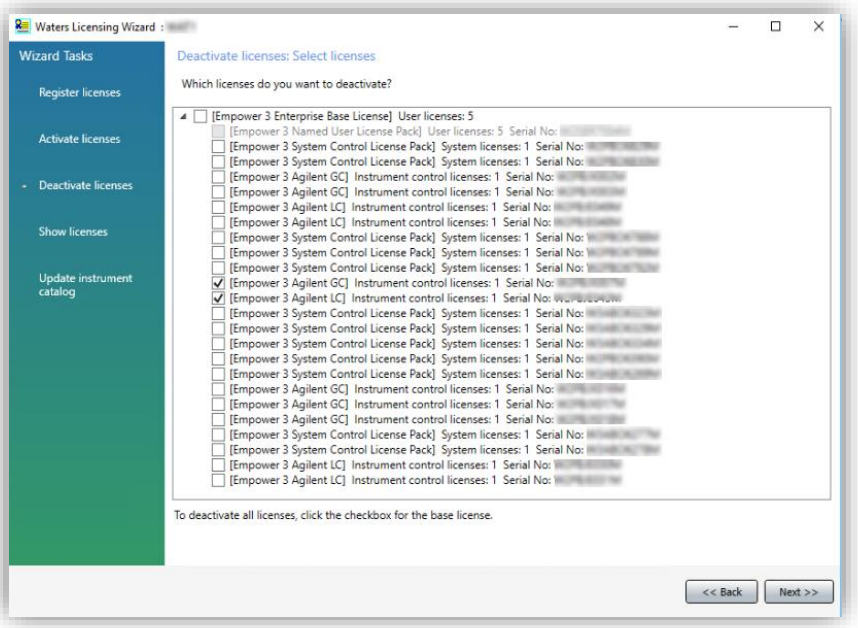


3 **Log On** with a user having the appropriate privileges.

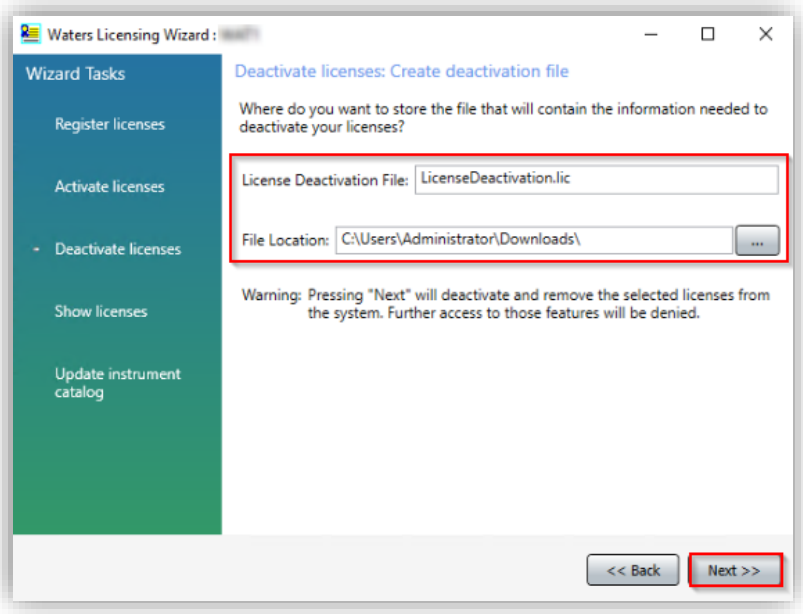
4 Select **Deactivate licenses**.

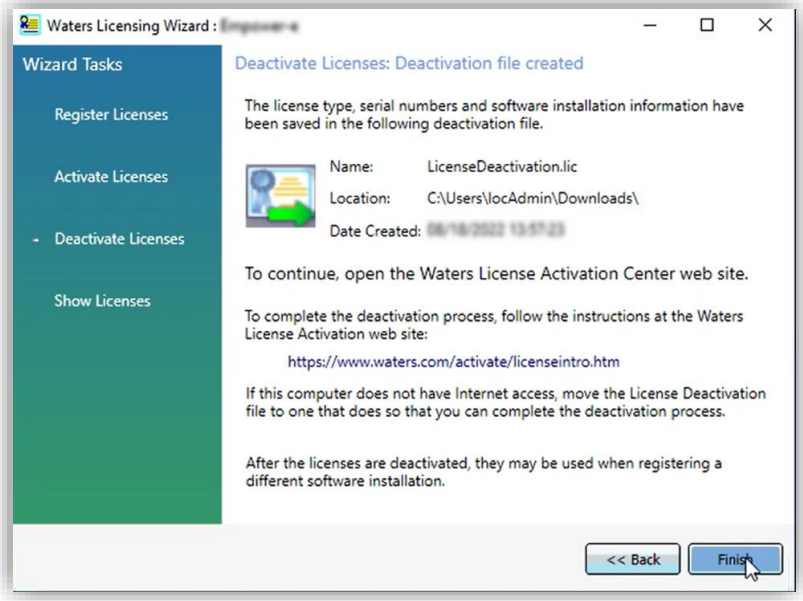


5 Select the licenses to be deactivated and press **Next**.



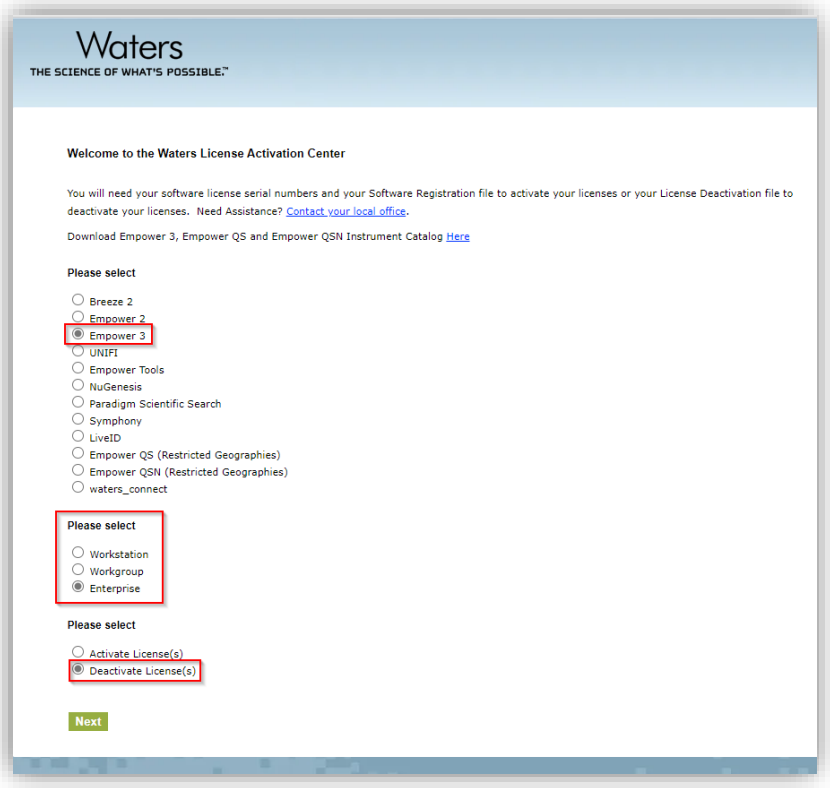
6 Select a location to save the **License Deactivation file** and press **Next**.


Waters Licensing Wizard :
Wizard Tasks
Register licenses
Activate licenses
Deactivate licenses
Show licenses
Update instrument catalog
Deactivate licenses: Create deactivation file
Where do you want to store the file that will contain the information needed to deactivate your licenses?
License Deactivation File: LicenseDeactivation.lic
File Location: C:\Users\Administrator\Downloads\
Warning: Pressing "Next" will deactivate and remove the selected licenses from the system. Further access to those features will be denied.
<< Back
Next >>

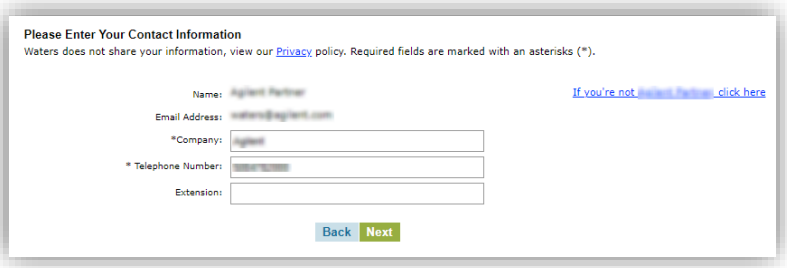

Waters Licensing Wizard :
Wizard Tasks
Register Licenses
Activate Licenses
Deactivate Licenses
Show Licenses
Deactivate Licenses: Deactivation file created
The license type, serial numbers and software installation information have been saved in the following deactivation file.
Name: LicenseDeactivation.lic
Location: C:\Users\locAdmin\Downloads\
Date Created:
To continue, open the Waters License Activation Center web site.
To complete the deactivation process, follow the instructions at the Waters License Activation web site:
https://www.waters.com/activate/licenseintro.htm
If this computer does not have Internet access, move the License Deactivation file to one that does so that you can complete the deactivation process.
After the licenses are deactivated, they may be used when registering a different software installation.
<< Back
Finish

7 Visit https://www.waters.com/activate/licenseintro.htm and login to your Waters account.

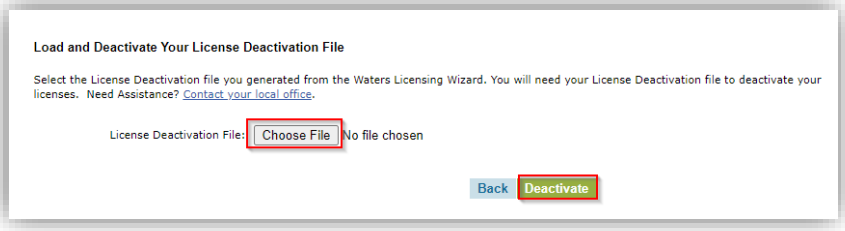
8 Select Empower 3, the appropriate topology (Workstation, Workgroup or Enterprise) and Deactivate License(s) and click **Next**.



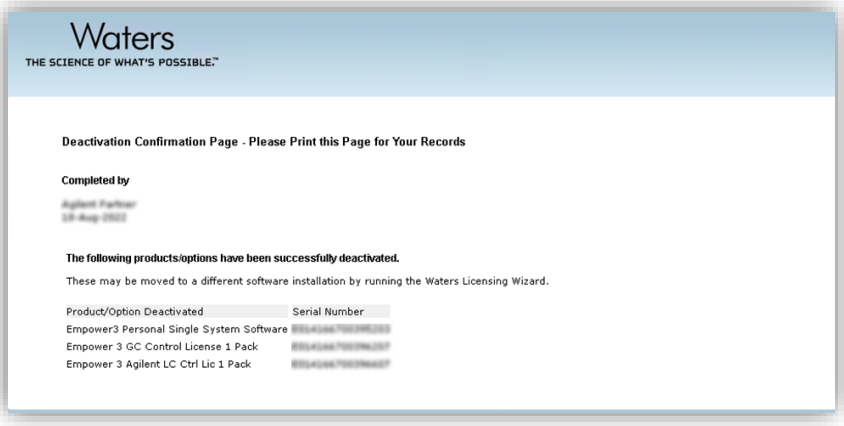
9 Enter your contact information and click **Next**.



10 Load your **License Deactivation file** (.lic) created in step 6 into the web interface and click **Deactivate.**



11 The License is now deactivated and can be re-used. Print the Deactivation Confirmation page for the records.



In This Book

The Installation Guide describes the following:

- Introduction
- Prerequisites
- Installation
- Installation Verification
- Instrument Configuration
- Licensing

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