Waters™

ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1)

Installation and Configuration Guide

General information

Copyright notice

Trademarks

ACQUITY™ is a trademark of Waters Corporation.

e-SAT/IN™ is a trademark of Waters Corporation.

UNIFI™ is a trademark of Waters Corporation.

UPLC™ is a trademark of Waters Corporation.

Waters™ is a trademark of Waters Corporation.

waters_connect™ is a trademark of Waters Corporation.

Xevo™ is a trademark of Waters Corporation.

All other trademarks are property of their respective owners.

Customer comments

We seriously consider every customer comment we receive. Help us better understand what you expect from our documentation so that we can continuously improve its accuracy and usability. To report any errors that you encounter in this document or to suggest ideas for otherwise improving it, reach us at tech_comm@waters.com.

Contacting Waters

Contact Waters with technical questions regarding the use, transportation, removal, or disposal of any Waters product. You can reach us through the Internet, telephone, fax, or conventional mail.

Contact method	Information
www.waters.com	The Waters website includes contact information for Waters locations worldwide.
iRequest	iRequest is a secure Web service form that allows you to request support and service for Waters instruments and software or to schedule a planned service activity. These types of support and services may be included as part of your maintenance plan or support plan. You may be charged for the requested service if you do not have appropriate plan coverage for your product. **Note:** In areas managed by authorized distributors, iRequest may not be available. Contact your local distributor for more information.
Local office contact information	For worldwide locations, telephone, fax, and conventional mail information is available at the Local Offices website.
Corporate contact information	Waters Corporation Global Support Services 34 Maple Street Milford, MA 01757 USA From the USA or Canada, phone 800-252-4752 or fax 508-872-1990.

Contacting Waters Technical Service

If you are located in the USA or Canada, report malfunctions or other problems to Waters Technical Service (800-252-4752). From elsewhere, phone the Waters corporate headquarters in Milford, Massachusetts (USA) or contact your local Waters subsidiary. The Waters website includes phone numbers and email addresses for Waters locations worldwide. Visit www.waters.com. To request support and service for Waters instruments and software or to schedule a planned service activity, visit iRequest.

When you contact Waters, be prepared to provide the following information:

- Error message (if any)

- Nature of the symptom

- Serial number of the system module and its firmware version, if applicable

- Flow rate

- Operating pressure

- Solvent or solvents

- Detector settings (sensitivity and wavelength)

- Type and serial number of column or columns

- Sample type and diluent

- Data software version and Software Support ID

- System workstation model and operating system version

For an explanation about how to report shipping damages and submit claims, see the document *Waters Licenses, Warranties, and Support Services* on the Waters website (www.waters.com).

For additional site preparation information, visit support.waters.com.

Table of contents

1 System requirements

Use DP 2024 R1 to update instrument drivers for the latest feature enhancements.

Important: Consult the latest version of the release notes for the most up-to-date information on system requirements.

- For analytical systems:
    - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313)
- For microscale (also referred to as M-Class) systems:
    - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770)

1.1 Instrument drivers for waters_connect overview

Important: DP 2024 R1 supports waters_connect 3.3.0 Base Kit (minimum).

waters_connect provides a single platform for Waters LC and LC-MS applications. The interface accelerates end-to-end scientific workflows by integrating new standards of usability, scientific outcome, and compliance. The waters_connect Hub design provides a consistent user experience across all applications. Libraries of methods, toolkits, and other shared functions facilitate transfer and reusability.

For more details on waters_connect, visit www.waters.com.

1.2 Network hardware and software requirements

Ensure that the following requirements are met before installing the driver pack:

Note: The LND requires 16 GB or more RAM.

- This driver pack requires waters_connect 3.3.0 Base Kit (minimum). For more details, see the latest waters_connect information available on www.waters.com.
- Software is installed and licensed on the application server, LND, and clients.
- The instrument network card is configured according to the appropriate user documentation.

1.3 Workstation hardware and software requirements

Ensure that the following requirements are met before installing the driver pack on a workstation:

Note: The workstation requires 64 GB or more RAM.

- This driver pack requires waters_connect 3.3.0 Base Kit (minimum). For more details, see the latest waters_connect information available on www.waters.com.

- waters_connect software is installed and licensed on the workstation.

- All network cards are configured according to the w_c Basekit Installation Guide.

2 Installing the driver pack on a waters_connect workstation

2.1 Upgrading waters_connect instrument drivers on a workstation

If your workstation already has instrument drivers installed, and if instrument systems are already configured, follow these steps to upgrade the instrument drivers. If your workstation does not have drivers installed, go to Installing waters_connect instrument drivers on a workstation (Page 11). Contact Waters Technical Service to determine if this release supports upgrading instrument drivers on a waters_connect system. Note that completing the following procedure involves disabling the instrument's LAN.

Recommendations:

- Back up the waters_connect database using the Waters Database Manager (WDM) application.

- Ensure that Windows and antivirus software are up-to-date.

Requirements:

- You must have unrestricted local Windows administrator or equivalent privileges to install the software.

- This driver pack requires waters_connect 3.3.0 Base Kit (minimum). For more details, see the latest waters_connect information available on www.waters.com.

1. Take your workstation offline:

   a. Log on to Windows as a user with unrestricted local administrator privileges.

   b. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

   c. Launch the console, and then click **System Monitor**.

   d. Ensure that all instrument systems are in the idle state.

      Requirement: If any of the instrument systems are running, wait for them to become idle before you continue.

   e. From the waters_connect Hub, launch Device Management.

   f. On the Workstation tab, right-click the computer listed, and then select **Change Status** > **Offline**.

      Important: Verify that the workstation is offline.

   g. Exit all applications, and then close waters_connect Hub.

2. Disable the instrument LAN:

a. Click the **Start Windows** icon on the left-hand side of the taskbar, and then type `ncpa.cpl`.

b. Right-click the Instrument LAN, and then select **Disable**.

3. Run the driver pack installation wizard:

   a. Browse to the folder where the installation files were copied, right-click the **Setup.exe** file, and then select **Run as Administrator**.

   b. From the Waters waters_connect Installation wizard, click **Update Instrument Drivers**.

   Requirement: If you encounter a message indicating that some prerequisites are not met, exit the installer, address the items, and then restart the installer.

   c. Read the license agreement, select the **I Accept the terms in the license agreement** check box, and then click **Next**.

   Result: The list of instrument drivers to be updated appears.

   d. Click **Next**.

   e. Click **Install**.

   Result: When the installation is complete, a link to a log file is provided for additional details, and you can use it to verify successful installation of the instrument drivers.

   f. Click **Finish**.

   g. Click **OK** to restart the system.

   h. Log on to Windows as a user with unrestricted local administrator privileges.

4. Enable the Instrument LAN:

   a. Click **Start Windows** on the left-hand side of the taskbar, and then type `ncpa.cpl`.

   b. Right-click the Instrument LAN, and then select **Enable**.

5. Upgrade all instrument driver firmware, except for M-Class instrument firmware, using AutoLoader.exe (see step 6 for M-Class procedures).

   a. Ensure that the instruments are connected (instrument LAN-enabled and Ethernet cable connected).

   b. Using Windows Explorer, navigate to *C:\Program Files(x86)\Waters\UNIFI\Instruments\Firmware*, right-click the **AutoLoader.exe** file, and then select **Run as Administrator**.

   Result: AutoLoader opens and determines if an update to the instrument firmware is required. Required updates appear in red and are selected by default.

   c. If the Status column indicates Current for a firmware version, compare the firmware version in the Instrument Version column with the firmware version listed in the *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313). If the firmware version in the Instrument

Version column is higher than the version listed in the release notes, contact your Waters service representative for assistance.

Note: Do not downgrade the following firmware. Contact Waters Technical Service for more information.

- ACQUITY PDA firmware if running firmware version 1.69 or higher

- ACQUITY BSM firmware if running firmware version 1.73 or higher

- ACQUITY UPLC Sample Manager firmware if running firmware version 1.77 or higher

- ACQUITY TUV firmware version 1.80 or higher

    d. Click **Load Firmware** to install the required firmware, cycle power to the instrument when prompted by AutoLoader, and then click **OK** to close AutoLoader.

    Note: If the BSM was updated, you are prompted to power cycle it an additional time when you open the system in the console.

    Result: AutoLoader loads the firmware to the instrument.

6. For M-Class systems, upgrade the instrument driver firmware using the Loader.exe installer.

    a. Ensure that the instruments are connected (instrument LAN-enabled and Ethernet cable connected).

    b. Using Windows Explorer, navigate to *C:\Program Files(x86)\Waters\UNIFI\Instruments\Firmware*, right-click **Loader.exe**, and then select **Run as Administrator**.

    c. Click **Scan for instruments**, and then click **Next**.

    d. Compare the firmware version in the Instrument Version column with the firmware version listed in the *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770).

- If the firmware version in the Instrument Version column is higher than the version in the release notes, contact your Waters service representative for assistance.

- If the firmware version is correct, click **Cancel**. There is no further action required.

- If the firmware version is lower than what appears in the release notes, select that module and click **OK** to update the firmware. If the correct version of .sft is listed, click **Load**. If the firmware or instrument type for the .sft file is not correct, browse to the correct .sft file and click **Load**.

    Note: Do not downgrade the following firmware. Contact Waters Technical Service for more information.

- nanoACQUITY UPLC Auxiliary Solvent Manager (ASM) if running firmware version 1.73 or higher

- ACQUITY μBSM if running firmware version 1.73 or higher

- ACQUITY μSM if running firmware version 1.56 or higher

- ACQUITY Trap Valve Manager (TVM) if running firmware version 1.53 or higher

    e. Click **OK** to exit the Loader.exe installer.

    f. Repeat for each M-Class module.

    g. Cycle power to all modules.

    Note: When you access the system using the console (and μBSM fimware is updated), a prompt appears indicating to cycle power one more time.

    Result: Loader.exe loads the firmware.

7. Bring your workstation online if it did not happen automatically:

    a. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

    b. From the waters_connect Hub, launch Device Management.

    c. On the Workstation tab, right-click the computer listed, and then select **Change Status** > **Online**.

    Important: Verify that the workstation is online.

8. Run a Verify Files report for the workstation.

9. Copy the following two files to the Fast Recovery Area (FRA):

    C:\Windows\WatersInstallationSummary.txt
    [install drive]:\Program Files\Waters\UNIFI\IQ\Waters.InstallationInfo.xml
    You need these files in the event that your application/database becomes inoperable and you must perform a disaster recovery.

2.2 Installing waters_connect instrument drivers on a workstation

If your workstation does not already have waters_connect instrument drivers installed, and if instrument systems are not yet configured within waters_connect, follow these steps to install the instrument drivers.

Recommendations:

- Back up the waters_connect database using the Waters Database Manager (WDM) application.

- Ensure that Windows and antivirus software are up-to-date.

Requirements:

- You must have unrestricted local Windows administrator or equivalent privileges to install waters_connect instrument drivers.

Important: Ensure that you consult the latest version of the release notes for the most up-to-date information.

- For analytical systems:

  - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313)

- For microscale (also referred to as M-Class) systems:

  - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770)

1. Take your workstation offline:

   a. Log on to Windows as a user with unrestricted local administrator privileges.

   b. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

   c. From the waters_connect Hub, launch Device Management.

   d. On the Workstation tab, right-click the computer listed, and then click **Change Status** > **Offline**.

   e. Exit all applications, and then close the waters_connect Hub.

   Important: Verify that the workstation is now online.

2. Disable the instrument LAN:

   a. Click the Start Windows icon on the left-hand side of the taskbar, and then type `ncpa.cpl.`

   b. Right-click the Instrument LAN, and then select **Disable**.

3. Run the driver pack installation wizard:

   a. Browse to where the installation files are copied, right-click the **Setup.exe** file, and then select **Run as Administrator**.

   b. From the Waters waters_connect Installation wizard, click **Update Instrument Drivers**.

   Note: If you encounter a message indicating that some prerequisites are not met, exit the installer, address the items, and then restart the installer.

   c. Read the license agreement, select the **I Accept the terms in the license agreement** check box, and then click **Next**.

   Result: The list of instrument drivers appears.

   d. Click **Next**.

   e. Click **Install**.

Result: When the installation is complete, a link to a log file is provided for additional details, and you can use it to verify successful installation of the instrument drivers.

    f. Click **Finish**.

    g. Click **OK** to restart the system.

    h. Log on to Windows as a user with unrestricted local administrator privileges.

4. Add the required instrument drivers:

    a. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

    b. From the waters_connect Hub, launch Device Management.

    c. From the Workstation tab, click **Manage Drivers**.

    d. Click **Add**.

    e. In the Add Instrument Driver window, select an instrument, and then click **OK**.

    Result: The driver version defaults to the latest version of the driver.

    f. Add additional drivers to the list as required.

    g. After adding all the appropriate instrument drivers, click **Update drivers** to begin the installation.

    Result: The installation status appears in the Driver status column.

    h. Exit Device Management.

5. Enable the Instrument LAN:

    a. Click the **Start Windows** icon on the left-hand side of the taskbar, and then type `ncpa.cpl`.

    b. Right-click the Instrument LAN, and then select **Enable**.

6. Upgrade the instrument driver firmware using AutoLoader (go to step 7 for M-Class systems):

    a. Ensure that the instrument LAN is enabled and the Ethernet cable is connected.

    b. Using Windows Explorer, navigate to *<Application Install Drive>:\Program Files (x86)\Waters\UNIFI\Instruments\Firmware*, right-click the **AutoLoader.exe** file, and then select **Open**.

    Result: AutoLoader opens and determines if an update to the instrument firmware is required. Required updates are displayed in red and are selected by default.

    c. If the Status column indicates Current for a firmware version, compare the firmware version displayed in the Instrument Version column with the firmware version listed in the *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313). If the firmware version displayed in the Instrument Version column is higher than the version listed in the release notes, contact your Waters service representative for assistance in downgrading the firmware to the version deployed with this driver pack.

Note: Do not downgrade the following firmware. Contact Waters Technical Service for more information.

- ACQUITY PDA firmware if running firmware version 1.69 or higher

- ACQUITY BSM firmware if running firmware version 1.73 or higher

- ACQUITY UPLC Sample Manager firmware if running firmware version 1.77 or higher

- ACQUITY TUV firmware if running firmware version 1.80 or higher

   d. Click **Load Firmware** to install the required firmware, cycle power to the instrument when prompted by AutoLoader, and click **OK** to close AutoLoader.

   Note: If the BSM was updated, you are prompted to power cycle it an additional time when you open the system in the console.

   Result: AutoLoader loads the firmware to the instrument.

7. For M-Class systems, upgrade the instrument driver firmware using the Loader.exe installer.

   a. Ensure that the instruments are connected (instrument LAN-enabled and Ethernet cable connected).

   b. Using Windows Explorer, navigate to *C:\Program Files(x86)\Waters\UNIFI\Instruments\Firmware*, right-click **Loader.exe**, and then select **Run as Administrator**.

   c. Click **Scan for instruments**, and then click **Next**.

   d. Compare the firmware version in the Instrument Version column with the firmware version listed in the *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770).

   - If the firmware version in the Instrument Version column is higher than the version in the release notes, contact your Waters service representative for assistance.

   - If the firmware version is correct, click **Cancel**. There is no further action required.

   - If the firmware version is lower than what appears in the release notes, select that module and click **OK** to update the firmware. If the correct version of .sft is listed, click **Load**. If the firmware or instrument type for the .sft file is not correct, browse to the correct .sft file and click **Load**.

   Note: Do not downgrade the following firmware. Contact Waters Technical Service for more information.

   - nanoACQUITY UPLC Auxiliary Solvent Manager (ASM) if running firmware version 1.73 or higher

   - ACQUITY µBSM if running firmware version 1.73 or higher

- ACQUITY µSM if running firmware version 1.56 or higher

- ACQUITY Trap Valve Manager (TVM) if running firmware version 1.53 or higher

    e. Click **OK** to exit the Loader.exe installer.

    f. Repeat for each M-Class module.

    g. Cycle power to all modules.

        Note: When you access the system using the console (and µBSM fimware is updated), a prompt appears indicating to cycle power one more time.

        Result: Loader.exe loads the firmware.

8. Create an instrument system:

    a. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

    b. Access Device Management, and then click the **Instrument systems** tab.

    c. Click **Create**.

    d. In the Create Instrument System dialog box, type a descriptive name and a brief description for the instrument system, and then click **OK**.

    e. For each instrument that you want to add to the instrument system, in the left-hand table, select the instrument, and then click the right-arrow button to move it into the right-hand table.

    f. Click **Save**.

    g. Click **Yes** to bring the newly created system online.

        Note: For more information about creating and modifying an instrument system, refer to waters_connect Help.

9. Run a Verify Files report for the workstation.

10. Copy the following two files to the Fast Recovery Area (FRA):

C:\Windows\WatersInstallationSummary.txt
[install drive]:\Program Files\Waters\UNIFI\IQ\Waters.InstallationInfo.xml
You need these files in the event that your application/database becomes inoperable and you must perform a disaster recovery.

2.3 Removing waters_connect instrument drivers on a workstation

You can remove an instrument driver when it is no longer needed, such as when an instrument is removed from the workstation. If an instrument system contains qualification or maintenance records, you cannot delete it until the compliance records are exported and deleted from the Qualification Center page. For more information about exporting compliance records, refer to waters_connect Help.

Important: Ensure that you consult the latest version of the release notes for the most up-to-date information.

- For analytical systems:

    - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313)

- For microscale (also referred to as M-Class) systems:

    - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770)

To remove instrument drivers on a workstation:

1. Log on to Windows as a user with unrestricted local administrator privileges.
2. Launch waters_connect Hub as an Administrator or a Field Service Engineer.
3. From the waters_connect Hub, launch Device Management.

    Note: The following permissions are required: Import/Export Qualification Results, Remove Maintenance Records Links, Delete Qualification Records, Delete Maintenance Records, and Modify Instrument System.

4. Click the **Instrument Systems** tab.
5. Take all instrument systems that are no longer needed offline, decommission them, and delete them:

    a. Right-click the instrument system and select **Change status** > **Offline**.

    b. Right-click the instrument system and select **Change status** > **Decommission**.

    c. Right-click the instrument system and select **Delete instrument system**.

    d. Click **Yes** to delete the instrument system.

6. Physically disconnect the instruments that are no longer needed from the workstation, or power-off the instruments.
7. From the **Workstation** tab, click **Manage Instruments**, and then remove all the instruments that are no longer needed using the **Remove** button.
8. Click the **Manage Drivers** tab and remove all the instrument drivers that are no longer needed using the **Remove** button.
9. Click **Update Drivers** to uninstall all the instrument drivers selected for removal.

3 Installing the driver pack on a waters_connect network

3.1 Upgrading the instrument drivers on a waters_connect network

If your waters_connect network already has waters_connect instrument drivers installed and instrument systems are already configured, follow these steps to upgrade the instrument drivers.

Important: Contact Waters Technical Service to determine if this release supports upgrading instrument drivers on a waters_connect network.

Recommendations:

- Ensure that all modules you plan to install are powered-on and connected to the instrument LAN.
- Back up the waters_connect database using the Waters Database Manager (WDM) application.
- Ensure that Windows and antivirus software are up-to-date.

Requirements:

- You must have unrestricted local Windows administrator or equivalent privileges to install waters_connect software.
- You must have access to the waters_connect application server and all LNDs on the waters_connect network.

Important: Consult the latest version of the release notes for the most up-to-date information.

- For analytical systems:

  - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313)

- For microscale (also referred to as M-Class) systems:

  - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770)

To upgrade instrument drivers on a waters_connect network:

1. Take your LNDs offline:

    a. Log on to Windows from the application server or client.

    b. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

c. Launch the console, and then click **System Monitor**.

d. Ensure that all instrument systems are in the idle state.

   Requirement: If any of the instrument systems are running, wait for them to become idle before you continue.

e. From the waters_connect Hub, launch Device Management.

 f. On the Laboratory Network Devices tab, right-click the computer listed, and then select **Change Status** > **Offline**. Repeat this step for all LNDs.

g. Exit all applications, and then close the waters_connect Hub.

   Important: Verify that the LNDs are taken offline.

2. Disable the instrument LAN on each LND:

   a. Click **Start Windows** on the left-hand side of the taskbar, and then type `ncpa.cpl`.

   b. Right-click the Instrument LAN, and then select Disable.

3. Run the driver pack installation wizard on the application server:

   a. From the application server, log on to Windows as a user with unrestricted local administrator privileges.

   b. Browse to the folder where the installation files were copied, right-click the **Setup.exe** file, and then select **Run as Administrator**.

   c. From the waters_connect Installation wizard, click **Update Instrument Drivers**.

      Tip: If you encounter a message indicating that some prerequisites are not met, exit the installer, address the items, and then restart the installer.

   d. Read the license agreement, select the **I Accept the terms in the license agreement** check box, and click **Next**.

      Result: The list of instrument drivers appears.

   e. Click **Next**.

    f. Click **Install**.

      Result: When the installation is complete, a link to a log file is provided for additional details. Use it to verify successful installation of the instrument drivers.

   g. Click **Finish**.

   h. Click **OK** to restart the application server.

      Note: Do not launch waters_connect until you complete the remaining steps. Launching waters_connect brings the LNDs online, but they must be offline for the update.

4. Enable the Instrument LAN on each LND:

   a. Click the Start Windows icon on the left-hand side of the taskbar, and then type `ncpa.cpl`.

   b. Right-click the Instrument LAN, and then select **Enable**.

5. Upgrade the instrument driver firmware using AutoLoader (go to step 6 for M-Class systems).

   a. Using Windows Explorer, navigate to *<Application Install Drive>:\Program Files (x86)\Waters\UNIFI\Instruments\Firmware*, right-click **AutoLoader.exe**, and then select **Open**.

      Result: AutoLoader opens and determines if an update to the instrument firmware is required. Required updates appear in red and are selected by default.

   b. If the Status column indicates `Current` for a firmware version, compare the firmware version that appears in the Instrument Version column with the firmware version listed in the *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313). If the firmware version that appears in the Instrument Version column is higher than the version listed in the release notes, contact Waters Technical Service for assistance in downgrading the firmware to the version deployed with this driver pack.

      Note: Do not downgrade the following firmware. Contact Waters Technical Service for more information.

      - ACQUITY PDA firmware if running firmware version 1.69 or higher

      - ACQUITY BSM firmware if running firmware version 1.73 or higher

      - ACQUITY UPLC Sample Manager firmware if running firmware version 1.77 or higher

      - ACQUITY TUV firmware version 1.80 or higher

   c. Click **Load Firmware** to install the required firmware, cycle power to the instrument when prompted by AutoLoader, and then click **OK** to close AutoLoader.

      Note: If you updated the BSM, you are prompted to power cycle it an additional time when you open the system in the console.

      Result: AutoLoader loads the firmware to the instrument.

   d. Restart the LND if you updated the firmware.

   e. Repeat for each LND.

6. For M-Class systems, upgrade the instrument driver firmware using the Loader.exe installer.

   a. Ensure that the instruments are connected (instrument LAN-enabled and Ethernet cable connected).

   b. Using Windows Explorer, navigate to *C:\Program Files(x86)\Waters\UNIFI\Instruments\Firmware*, right-click **Loader.exe**, and then select **Run as Administrator**.

   c. Click **Scan for instruments**, and then click **Next**.

   d. Compare the firmware version in the Instrument Version column with the firmware version listed in the *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770).

- If the firmware version in the Instrument Version column is higher than the version in the release notes, contact your Waters service representative for assistance.

- If the firmware version is correct, click **Cancel**. There is no further action required.

- If the firmware version is lower than what appears in the release notes, select that module and click **OK** to update the firmware. If the correct version of .sft is listed, click **Load**. If the firmware or instrument type for the .sft file is not correct, browse to the correct .sft file and click **Load**.

Note: Do not downgrade the following firmware. Contact Waters Technical Service for more information.

- nanoACQUITY UPLC Auxiliary Solvent Manager (ASM) if running firmware version 1.73 or higher

- ACQUITY µBSM if running firmware version 1.73 or higher

- ACQUITY µSM if running firmware version 1.56 or higher

- ACQUITY Trap Valve Manager (TVM) if running firmware version 1.53 or higher

e. Click **OK** to exit the Loader.exe installer.

f. Repeat for each M-Class module.

g. Cycle power to all modules.

   Note: When you access the system using the console (and µBSM fimware is updated), a prompt appears indicating to cycle power one more time.

   Result: Loader.exe loads the firmware.

7. Bring your LNDs online if they did not automatically come online:

   a. From the application server or client, log on to Windows.

   b. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

   c. From the waters_connect Hub, launch Device Management, and then click **Laboratory Network Devices**.

   d. Right-click the computer listed in the Laboratory Network Devices section, and then select **Change Status** > **Online**. Repeat this step for all LNDs.

   e. Exit all applications, and then close the waters_connect Hub.

   Important: Verify that the LNDs come online.

8. Bring your instrument systems online:

   a. From **Device Management**, click the **Instrument Systems** tab.

   b. Right-click a system listed in the Instrument Systems section and select **Change Status** > **Online**. Repeat this step for all other applicable systems.

   Result: The system status is online and the systems are ready for use.

9. Run a Verify Files report for the application server and each LND.

10. Copy the following two files to the Fast Recovery Area (FRA):

    C:\Windows\WatersInstallationSummary.txt
    [install drive]:\Program Files\Waters\UNIFI\IQ\Waters.InstallationInfo.xml
    You need these files if your application/database becomes inoperable and you must perform a disaster recovery.

3.2 Installing the instrument drivers on a waters_connect network

If your waters_connect network does not already have waters_connect instrument drivers installed, and if instrument systems are not yet configured within waters_connect, follow these steps to install the instrument drivers.

Recommendations:

- Ensure that the LND is connected to the network and is online.

- Ensure that all modules you plan to install are powered-on and connected to the instrument LAN through the LND.

- Back up the waters_connect database using the Waters Database Manager (WDM) application.

- Ensure that Windows and antivirus software are up-to-date.

Requirements:

- You must have unrestricted local Windows administrator or equivalent privileges to install waters_connect software.

Important: Consult the latest version of the release notes for the most up-to-date information.

- For analytical systems:

  - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313)

- For microscale (also referred to as M-Class) systems:

  - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770)

To install instrument drivers on a waters_connect network:

1. Take your LNDs offline:

    a. Log on to Windows from the application server or client.

    b. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

    c. From the waters_connect Hub, launch Device Management.

d. On the Laboratory Network Devices tab, right-click the computer listed, and then select **Change Status** > **Offline**. Repeat this step for all LNDs.

   Important: Verify that each LND is offline.

e. Exit all applications, and then close the waters_connect Hub.

f. Restart the server.

2. Disable the instrument LAN on each LND:

   a. Click the Start Windows icon on the left-hand side of the taskbar, and then type `ncpa.cpl.`

   b. Right-click the Instrument LAN listed, and then select **Disable**.

3. Run the driver pack installation wizard:

   a. On the application server, log on to Windows as a user with unrestricted local administrator privileges.

   b. Browse to the DVD drive or to the folder where the installation files were copied, right-click the **Setup.exe** file, and then select **Run as Administrator**.

   c. From the Waters waters_connect Installation wizard, click **Update Instrument Drivers**.

   Requirement: If you encounter a message indicating that some prerequisites are not met, exit the installer, address the items, and then restart the installer.

   d. Read the license agreement, select the **I Accept the terms in the license agreement** check box, and click **Next**.

   Result: The list of instrument drivers appears.

   e. Click **Next**.

   f. Click **Install**.

   Result: When the installation is complete, you will receive a link to a log file with additional details. Use it to verify successful installation of the instrument drivers.

   g. Click **Finish**.

   h. Click **OK** to restart the server.

   i. Restart each LND to bring them online.

   Important: Verify that the LNDs come online.

4. Add the required instrument drivers for the system you want to configure on each LND:

   Note: Do not configure or bring the instrument system online until after the instrument firmware is upgraded as needed.

   a. Log on to Windows from the application server or client.

   b. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

   c. From the waters_connect Hub, launch Device Management.

d. Click the **Laboratory Network Devices** tab, and then select the LND in which you will deploy the drivers.

   Requirement: Ensure that the LND is in an online state before you continue.

e. Click **Manage Drivers**.

f. Click **Add**.

g. As required, add additional drivers to the list.

h. After you add all appropriate instrument drivers, click **Update drivers** to begin the installation.

   Result: The instrument drivers installation begins and the Driver status column displays the installation status.

i. When all instrument drivers are installed, close Device Management.

5. Enable the Instrument LAN on each LND:

   a. Click the **Start Windows** icon on the left-hand side of the taskbar, and then type `ncpa.cpl.`

   b. Right-click the Instrument LAN, and then select **Enable**.

6. Upgrade the waters_connect instrument driver firmware using AutoLoader (go to step 7 for M-Class systems).

   a. On the LND, log on to Windows as a user with unrestricted local administrator privileges.

   b. Using Windows Explorer, navigate to *<Application Install Drive>:\Program Files (x86)\Waters\UNIFI\Instruments\Firmware*, right-click the **AutoLoader.exe** file, and then select **Run as Administrator**.

   Result: AutoLoader opens and determines if an update to the instrument firmware is required. Required updates appear in red and are selected by default.

   c. If the Status column indicates `Current` for a firmware version, compare the firmware version shown in the Instrument Version column with the firmware version listed in the *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313). If the firmware version displayed in the Instrument Version column is higher than the version listed in the release notes, contact your Waters service representative for assistance in downgrading the firmware to the version deployed with this driver pack.

   Note: Do not downgrade the following firmware. Contact Waters Technical Service for more information.

   • ACQUITY PDA firmware if running firmware version 1.69 or higher

   • ACQUITY BSM firmware if running firmware version 1.73 or higher

   • ACQUITY UPLC Sample Manager firmware if running firmware version 1.77 or higher

   • ACQUITY TUV firmware version 1.80 or higher

d. Click **Load Firmware** to install the required firmware, cycle power to the instrument when prompted by AutoLoader, and click **OK** to close AutoLoader.

   Note: If the BSM was updated, you are prompted to power cycle it an additional time when you open the system in the console.

   Result: AutoLoader loads the firmware to the instrument.

e. Restart the LND if you updated the firmware.

f. Repeat for each LND.

7. For M-Class systems, upgrade the instrument driver firmware using the Loader.exe installer.

   a. Ensure that the instruments are connected (instrument LAN-enabled and Ethernet cable connected).

   b. Using Windows Explorer, navigate to *C:\Program Files(x86)\Waters\UNIFI\Instruments\Firmware*, right-click **Loader.exe**, and then select **Run as Administrator**.

   c. Click **Scan for instruments**, and then click **Next**.

   d. Compare the firmware version in the Instrument Version column with the firmware version listed in the *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770).

      • If the firmware version in the Instrument Version column is higher than the version in the release notes, contact your Waters service representative for assistance.

      • If the firmware version is correct, click **Cancel**. There is no further action required.

      • If the firmware version is lower than what appears in the release notes, select that module and click **OK** to update the firmware. If the correct version of .sft is listed, click **Load**. If the firmware or instrument type for the .sft file is not correct, browse to the correct .sft file and click **Load**.

   Note: Do not downgrade the following firmware. Contact Waters Technical Service for more information.

      • nanoACQUITY UPLC Auxiliary Solvent Manager (ASM) if running firmware version 1.73 or higher

      • ACQUITY µBSM if running firmware version 1.73 or higher

      • ACQUITY µSM if running firmware version 1.56 or higher

      • ACQUITY Trap Valve Manager (TVM) if running firmware version 1.53 or higher

      • ACQUITY TUV firmware version 1.80 or higher

   e. Click **OK** to exit the Loader.exe installer.

      f. Repeat for each M-Class module.

      g. Cycle power to all modules.

          Note: When you access the system using the console (and µBSM fimware is updated), a prompt appears indicating to cycle power one more time.

          Result: Loader.exe loads the firmware.

8. Create an instrument system:

      a. Log on to Windows from the application server or client.

      b. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

      c. From the waters_connect Hub, launch Device Management.

      d. Click the **Instrument Systems** tab.

      e. Click **Create**.

      f. In the Create Instrument System dialog box, type a descriptive name and a brief description for the instrument system, select the name of the LND the system is connected to, and then click **OK**.

      g. For each instrument you want to add to the instrument system, in the left-hand table, select the instrument, and then click the arrow to move it into the right-hand table.

      h. Click **Save**.

      i. Click **Yes** to bring the newly created system online.

9. Run a Verify Files report for the application server and each LND.

10. Copy these two files to the Fast Recovery Area (FRA):

C:\Windows\WatersInstallationSummary.txt
[install drive]:\Program Files\Waters\UNIFI\IQ\Waters.InstallationInfo.xml
You need these files if your application/database becomes inoperable and you must perform a disaster recovery.

3.3 Removing the instrument drivers on a UNIFI network

You can remove an instrument driver when you no longer need it, such as when an instrument is removed from the network. If an instrument system contains qualification or maintenance records, you cannot delete it until the compliance records are exported and deleted from the Qualification Center page. For more information about exporting compliance records, refer to waters_connect Help.

Important: Ensure that you consult the latest version of the release notes for the most up-to-date information.

- For analytical systems:

  - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2024 R1, analytical systems) Release Notes* (715009313)

- For microscale (also referred to as M-Class) systems:

  - *ACQUITY UPLC Instrument Drivers for waters_connect (DP 2023 R2, microscale systems) Release Notes* (715008770)

To remove instrument drivers on the network:

1. On the application server or client, log on to Windows as a user with unrestricted local administrator privileges.

2. Launch waters_connect Hub as an Administrator or a Field Service Engineer.

   Requirement: The following permissions are required: Import/Export Qualification Results, Remove Maintenance Records Links, Delete Qualification Records, Delete Maintenance Records, and Modify Instrument System.

3. From the waters_connect Hub, launch Device Management, and then click the **Instrument Systems** tab.

4. Take all instrument systems that are no longer needed offline, decommission them, and delete them:

   a. Right-click the instrument system and select **Change status** > **Offline**.

   b. Right-click the instrument system and select **Change status** > **Decommission**.

   c. Right-click the instrument system and select **Delete instrument system**.

   d. Click **Yes** to delete the instrument system.

5. Physically disconnect from the LND the instruments you no longer need, or power-off the instruments.

6. From the **Laboratory Network Devices** tab, select one of the LNDs, click **Manage Instruments**, and then remove all the instruments that you no longer need using the **Remove** button.

7. Click the **Manage Drivers** tab and remove all of the instrument drivers that you no longer need using the **Remove** button.

8. Click **Update Drivers** to uninstall all the instrument drivers selected for removal.

9. Repeat for additional LNDs connected to the network as needed.

A Compliance recommendations

Any time you install, change, or uninstall software or system modules in a regulated environment, Waters recommends that you follow your organization's approved change control procedure.

You should assess the impact of the changes described in the release notes on the qualification status and validation for the intended use of your system, including any impact on personnel, methods, laboratory workflows, or connected equipment, and scale your activities accordingly.

A.1 Software requalification options

Consider using the requalification options outlined below to verify software installation and correct operation:

- To confirm that the new files loaded properly, consider performing a software installation qualification.

- To confirm the operation of the newly loaded software, consider performing an operational qualification (user or vendor) for the updated software installation.

- To determine if additional testing is required, consider evaluating the changes in the software release, to assess the risk associated with the installation. Depending on the risk, it may be appropriate to perform existing, updated, or new software tests. These tests may be known as performance qualification tests, user acceptance tests, verification tests, or validation tests.

To assist you, if required, Waters provides various levels of Qualification (or Compliance) Services and validation consultancy through our Professional Services organization.

When multiple, identical systems are involved, consider a risk-based approach to qualification activities.

A.2 Instrument requalification options after software or firmware change

Consider using the requalification options outlined below to verify hardware installation and correct instrument operation:

- To confirm that the firmware files on the system modules were installed correctly, compare the checksum values in the product release notes to the checksum values displayed in the console.

- To confirm instrument system operation with any newly loaded software, driver, or firmware, consider performing an operational qualification for the updated instrument system.

- To confirm performance, control, and communications of the instrument system, consider conducting a performance qualification or system suitability test.

A.3 Requalification with Waters' Total Assurance Plans

The Waters' Total Assurance Plan (TAP) with System Qualification Option covers upgrades and requalification of the instrument driver, software, firmware, or hardware in these cases:

- During yearly requalification, as provided in the plan.

- If installing this release is required for operation of a new module or system, where qualification of the new module or system is covered by the plan.

Requalification of the CDS software and computers after a driver upgrade may or may not be included in your TAP.

Review your TAP to determine which services are covered and which are not covered. For situations not covered by the plan, Waters can perform the qualification, but additional charges will apply.