Agilent

Advanced Sample Linking

for Client/Server topologies with Sample Scheduler for OpenLab

Installation and Configuration Guide

Notices

Document Information

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This guide is valid for Sample Linking software v1.1.

Warranty

Technology Licenses

Restricted Rights Legend

Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Contents

1 Introduction to Advanced Sample Linking

Advanced Sample Linking is an Agilent solution that simplifies basic workflows and avoids error-prone manual steps. The barcodes of sample containers and target vials can be scanned, linked and submitted to build sequences that are scheduled for analysis via OpenLab CDS.

The solution helps to

- avoid errors caused by incorrect vial placement in the rack,
- automate sample history (e.g. for audits),
- avoid manual labeling of LC vials
- replace paper-based documentation in the lab

Core components of the Advanced Sample Linking solution are:

- Sample Linking software

  The core of the solution. It is accessed and used via the Bench Applications framework. The Sample Linking software links the barcodes of sample containers and target vials, and communicates with Sample Scheduler for OpenLab to submit sequences. Some other applications located in Bench Applications support the administration and the workflow.
- Sample Linking hardware:

  A handheld scanner connected to a tablet (InfinityLab Assist Interface) that serve as interface and entry devices.

The solution requires the following foundational Agilent software and hardware:

- OpenLab CDS in client/server topology
- Sample Scheduler for OpenLab (referred to as Sample Scheduler throughout this guide)
- an Agilent LC instrument with an Infinity II or Infinity III Multisampler
- the InfinityLab Sample ID reader upgrade kit (G4756)
- Pre-labeled vials, with barcodes at the side and the bottom

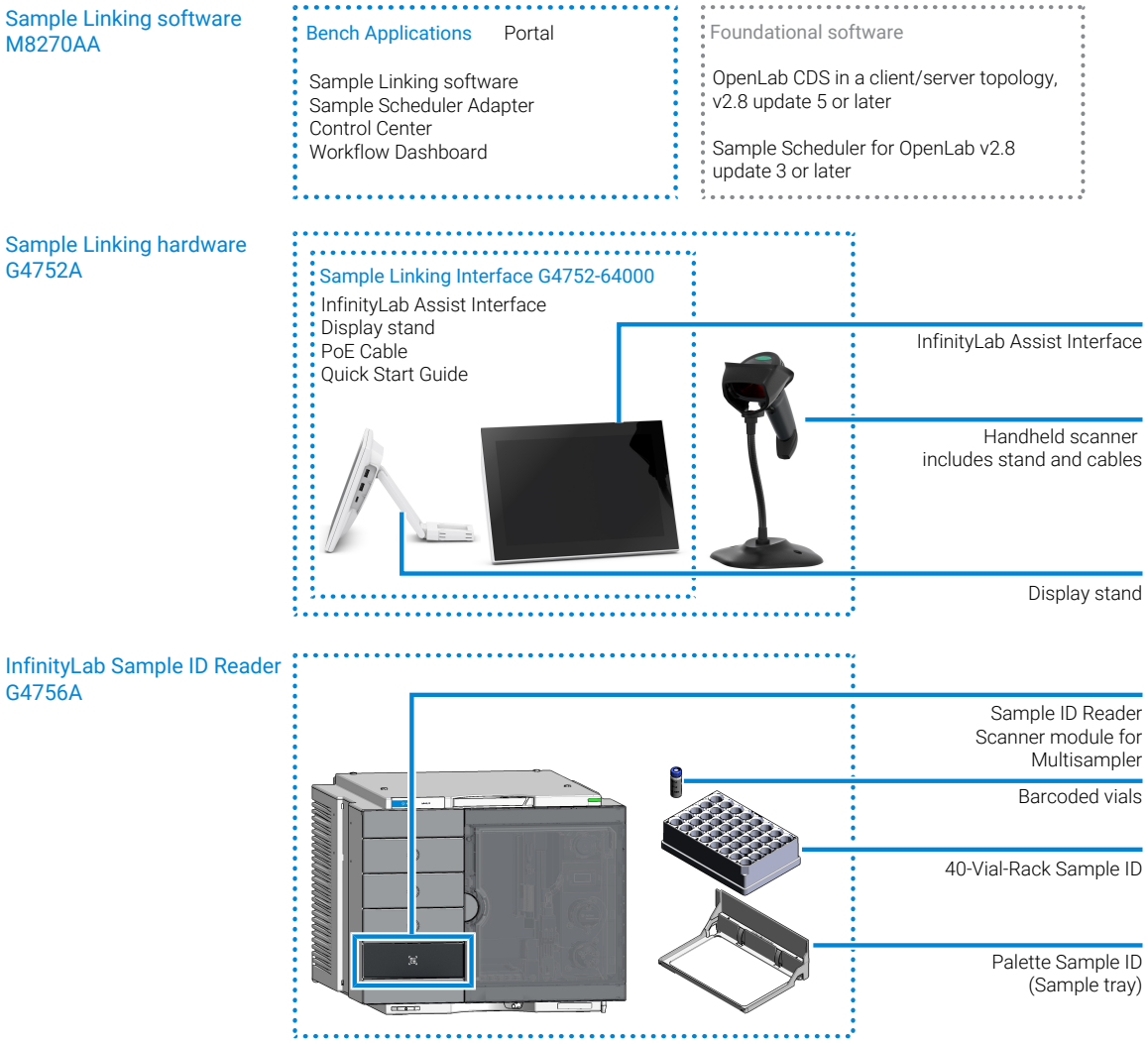


Figure 1: Advanced Sample Linking components

Hardware components

Sample Linking hardware

The Sample Linking hardware consists of:

- InfinityLab Assist Interface: G7179-64000

  The interface can be used at the bench. It displays the Bench Applications. It can be used with a holder.

- Handheld barcode scanner

  The scanner can be connected to the interface and used to scan barcoded containers and vials when transferring samples to the tray. It includes a stand and cables.

For more information, see the G4752-90000 (QuickStart Guide) and other Sample Linking hardware documentation provided with the kit.

InfinityLab Sample ID Reader

A drawer with included camera allows to scan barcodes directly in the Multisampler. You can use the InfinityLab Sample ID Reader with any Agilent LC Multisampler. It adds the ability to track vial positions. The upgrade kit includes pre-labeled vials and compatible vial racks and sample trays.

For more information, see *Agilent InfinityLab LC Series Sample ID Reader Upgrade Kit Installation Note (G4764-Sample-ID-Reader-Upgrade-TecPu-en-D0032639.pdf, D0032639)*.

Consumables

- G7167-60205 (Palette Sample ID)
- 5431-0068 (40-Vial-rack Sample ID)

  Special vial racks (holes in the bottom) required to be able to read the vials' 2D data matrix
- Vials with 2D data matrix codes at the bottom

Table 1: Agilent pre-labled vials

Pack of 100 of vials	Agilent Order Number
Clear, crimp cap	5182-0543-ID
Amber, crimp cap	5181-3376-ID
Clear, screw cap	5182-0715-ID
Amber, screw cap	5182-0716-ID

Software components

Bench Applications

The Bench applications framework hosts a toolset for lab technicians and lab managers consisting of various apps and services. You can access the Bench Applications directly on the bench via the InfinityLab Assist Interface, or on any device with a web browser (for example, a PC or tablet) that is connected to the server network. For more information, see the Bench Applications online help.

Sample Linking software

The Sample Linking software is a web-based app that allows lab analysts to track sample transfers via barcodes and submit the generated sequence information to Sample Scheduler. You access and use the software from within the Bench Applications portal. For more information, see the Bench Applications / Sample Linking software online help.

Sample Scheduler Adapter

The Sample Scheduler Adapter is a service that is installed and accessed via the Bench Applications. It establishes communication between Sample Scheduler and the other components for seamless data exchange. By automating the transfer process, it eliminates the need for manual data entry and reduces the potential for errors.

NOTE

To work correctly, the Sample Scheduler Adapter needs a dedicated user to facilitate communication between the components. For information on how to set up the dedicated user, see Set up the Sample Scheduler Adapter Service user on page 39.

Other software components

Sample Scheduler for OpenLab

Interface to manage sample analysis and sequences. Sample Scheduler is the source of new sequences used for Advanced Sample Linking. The target container information is tracked here. For more information, see *Sample Scheduler for OpenLab Installation & Configuration Guide (Sample_Scheduler_for_OpenLab_Installation_Configuration_Guide_en, D0029938)*.

OpenLab CDS

Agilent Chromatography Data System that performs and processes the analysis, and provides the results. For more information, see the online or local OpenLab Help & Learning.

OpenLab Control Panel

The OpenLab Control Panel is installed by the OpenLab installer. It provides the interface to set up and manage authentication options, instruments, projects, and users. Go there to check your activity logs and audit trail. For more information on the activity log, see System Activity Log in OpenLab Help & Learning.

Activity logs document activities in the systems that are important for compliance.

Activity logs are created for the following actions:

- Workflow actions in the central Sample Linking software, including failed workflow executions
- Administrative actions that change the state of the system (for example, restarting services in the Control Center or stopping workflows in the Workflow Dashboard)
- Critical technical issues that prevent the normal continuation of the workflow and may require additional actions to resolve

Separate activity logs are written for the core Sample Linking software and for Sample Scheduler adapter. They are active by default.

LIMS

Any LIMS can be used to send analysis orders to Sample Scheduler and manage your samples and barcodes. Using a Laboratory Information Management System is optional. For more information, see *Sample Scheduler for OpenLab Installation & Configuration Guide (Sample_Scheduler_for_OpenLab_Installation_Configuration_Guide_en, D0029938)*.

2 Requirements

Software requirements

Language compatibility

Sample Linking Software is available in the following language versions if installed in the respective OS-environment.

- English
- Simplified Chinese

Foundational OpenLab Software

Foundational Software	versions required for Sample Linking v1.1
OpenLab CDS, client/server topologies	v2.8 update 5 or later
Sample Scheduler for OpenLab	v2.8 update 3 or later

NOTE For software and hardware requirements of the foundational software and the below components, refer to their respective documentation.

Supported browsers

The Bench Applications are supported on Chromium-based browsers.

NOTE If you want to use Bench Applications on iOS devices, be sure to use a Chromium-based browser. Google Chrome on iOS is a Safari-based browser and will not work..

LC instrument drivers and firmware

The Sample Linking solution requires the following drivers and firmware versions for your LC instrument:

- Firmware version 7.41 (available from https://www.agilent.com/en-us/firmwareDownload?whid=69761)
- LC & CE Drivers version 3.8 or later (installed on the AICs and clients)

Other software requirements

- .NETCore 9.0
- .AspNetCore 9.0

Hardware requirements

For the hardware requirements of the individual solution components, please check the respective site preparation documentation and the installation documentation referenced in Hardware components on page 6 and in *OpenLab Server and OpenLab ECM XT Hardware and Software Requirements (openlab-server-ecmxt-v2.8-requirements-en.pdf, D0035352)*.

For Sample Linking software, we recommend adding an additional 2 GB RAM.

Display Specifications

- Default window size: 1100x800 pixels
- Minimum window size: 800x600 pixels.

User privileges

In order to use the full functionality of Advanced Sample Linking and manage user access, you need to assign privileges in the OpenLab Control Panel to the users. You can assign privileges individually or assign them using roles. You can create and assign your own roles, or use standard roles provided in the software.

Roles are included with your system depending on the programs that you have installed. By default, the Bench Applications offer following roles:

- Bench Applications Administrator
- Bench Applications Analyst
- Bench Applications Lab Manager

Assigning these roles to users is sufficient to cover the required privileges.

The following tables give an overview of the privileges specific to the Bench Applications.

Table 2: Privileges required for Bench Applications

Name	Function	Bench Applications Administrator	Bench Applications Analyst	Bench Applications Lab Manager
View Sample Linking software	Grants access to **Sample Linking software**.	✓	✓	✓
Link / Submit samples in Sample Linking software	Enables the following options in the Sample Linking software: • **Transfer** window • **Submit** button • **Delete** button	✗	✓	✗
View Workflow Dashboard	Grants access to **Workflow Dashboard**.	✗	✓	✓
Stop workflows in Workflow Dashboard	Enables the **Stop** button in the Workflow Dashboard.	✗	✗	✓
Access Licenses	Grants access to **Licenses** page in **Settings**.	✓	✗	✓
View Sample Linking software settings	Grants access to **Sample Linking software settings page**.	✓	✗	✓

Name	Function	Bench Applications Administrator	Bench Applications Analyst	Bench Applications Lab Manager
Edit Sample Linking software submission configuration	Grants access to **configure the partial submission** in the settings page of the Sample Linking software.	✓	✗	✓
View Control Center	Grants access to **Control Center**.	✓	✗	✗
Download logs in Control Center	Enables the **Download logs** button in the Control Center.	✓	✗	✗
Restart / Start services in Control Center	Enables the **Start**/**Restart** button in the Control Center. As restarting a service can impact functionality in ways that are not always immediately obvious, be cautious about assigning this privilege to non-technical personnel.	✓	✗	✗
Change log level in Control Center	Enables the **Log Level** button in the Control Center.	✓	✗	✗

Privileges specific to client/server topologies

Table 3: Sample Scheduler privileges required for Bench Applications

Name	Function	Bench Applications Administrator	Bench Applications Analyst	Bench Applications Lab Manager
View Sample Scheduler Adapter settings	Grants access to **Sample Scheduler Adapter** page in **Settings**.	✓	✗	✓
Edit Sample Scheduler Adapter connection configuration	Grants access to **Sample Scheduler Credentials (Adapter)** section in **Settings**.	✓	✗	✓
Edit Sample Scheduler Adapter sample container configuration	Grants access to the following configuration settings in **Settings** > **Sample Scheduler Adapter**: • Sample Container Barcode Source • Combine Samples with Identical properties • Save the full sample linking transfer history	✓	✗	✓

Additional privileges may be required for users working directly in Sample Scheduler. For an overview of these privileges, see OpenLab Help & Learning.

Agilent Licensing

Before you begin

FlexNet Operations is managed via a personal account on the Agilent website.

- If you do not have an Agilent.com account, an email invitation to set a password is sent to the individual indicated as the point of contact after purchase. The sender is *no-reply@mailing.agilent.com* with subject Agilent Software and Licensing Portal: Account and Password Verification.
- If you do have an account, an email with the Entitlement Certificate is automatically sent to the individual indicated as the point of contact. The sender is *donotreply_agilent@flexnetoperations.com* with subject Your Agilent Entitlement Information.

If you have not received the expected email for your product, contact your vendor or Agilent support.

About FlexNet Operations licensing

Flexnet Operations (FNO) licensing provides online license activation and management. It is build on a Common Licensing Layer (CLL).

Prepare

To receive a license, you must:

- Be named as the contact person during purchase. If the person named becomes unavailable, contact your Agilent sales representative for help.
- Have an Agilent.com account (see Set up an Agilent account on page 21).
- Obtain the entitlement certificate ID for this software from the *License and Delivery* portal.

Firewall Settings and exclusions

In addition to the port settings listed in Firewall Settings in the OpenLab CDS requirement guide, FNO requires the following ports to be open.

- 7070
- 7071
- 52088

Uninstall any non-Agilent applications that are using these ports before activating your Bench Applications software package.

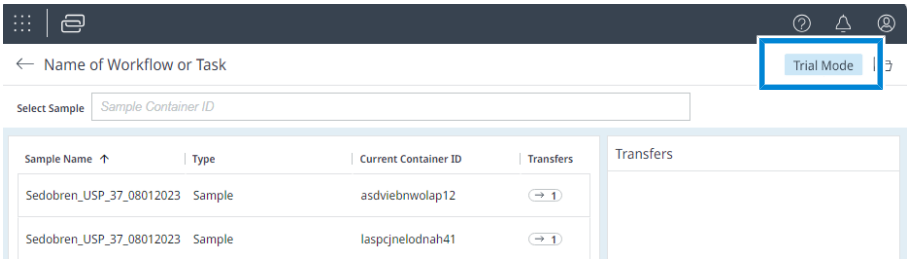
Licensing for Sample Linking Software

The Sample Linking software uses concurrent session licensing. A session starts when the user logs in. If the same user logs in on multiple devices, this is counted as multiple sessions and consumes multiple licenses. The session ends when the browser or tab is closed, or when the user logs out. The license then becomes available for other users.

The base product is sold with one concurrent license, enabling the full functionality of the software. Each follow-up license order contains five concurrent users.

Trial licenses

To explore the features of the Sample Linking software without purchasing a perpetual license, you have to activate the trial license (see Activate a license in Bench Applications on page 45). The trial period lasts for 60 days, after which the Sample Linking software switches into limited mode. For the duration of the trial period, the Sample Linking software shows you a message every time you open the application, keeping you updated on the remaining trial period. If you activate a license while there is still time left in the trial period, this time remains available if you deactivate the license.

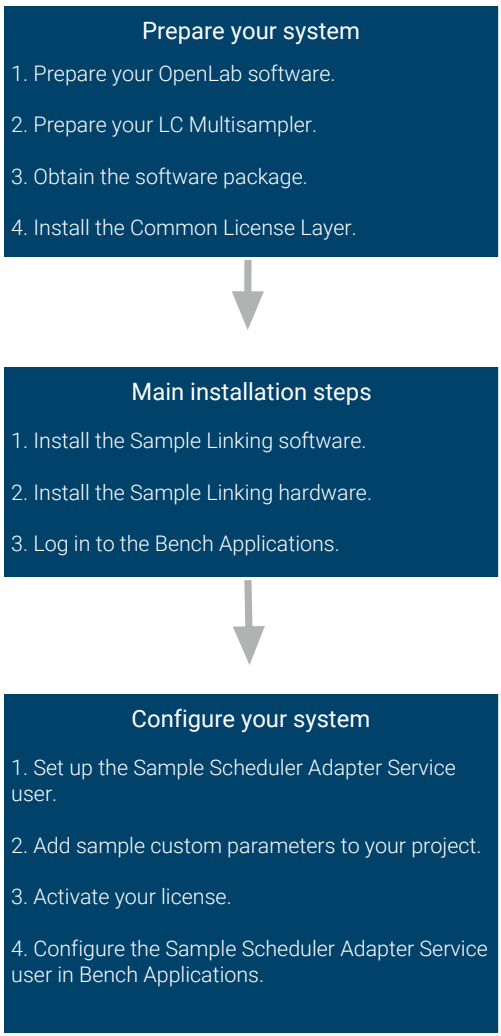


During the trial period, one concurrent user can access the Sample Linking software unrestricted. Any additional concurrent users are restricted to limited mode.

License Activation

Use the Activation ID sent to you via e-mail to activate your license. License Activation is done in the **Settings** of the Bench Applications. For details, see Activate a license in Bench Applications on page 45.

3 Overview of the Solution Setup



For more information, see Preparatory steps for software installation on page 21 and Hardware components on page 6 respectively.

See the *Agilent InfinityLab LC Series Sample ID Reader Upgrade Kit Installation Note (G4764-Sample-ID-Reader-Upgrade-TecPu-en-D0032639.pdf, D0032639)* on the installation and preparation of the InfinityLab Sample ID Reader G4756A.

For instructions on how to install the Sample Linking software, see Install Bench Applications on page 25.

For more information, see Sample Linking Hardware Installation on page 33. For instructions on how to install the Sample Linking hardware, see the respective installation documentation.

Step 2 is optional

For instructions on how to configure your system, see Software Configuration on page 38.

4 Sample Linking Software Installation

The Sample Linking software is hosted in a framework called **Bench Applications**. Both will be installed using the **Agilent Bench Applications Installer**. The installation will adapt the required services (e.g. Rabbit MQ) as needed.

The Sample Linking software will be installed on OpenLab Server. In case of topologies with multiple servers, install to the application server where the following components run:

- Sample Scheduler
- Reverse Proxy
- RabbitMQ
- OpenLab Authentication / Shared Services
- Common License Layer (CLL)
- .NET 8

Preparatory steps for software installation

Prepare your system

1 Prepare your OpenLab Software.

Ensure that the foundational software applications OpenLab CDS and Sample Scheduler have been updated to the current version. For instructions, refer to the respective installation guides.

2 Prepare your LC Instrument.

Ensure the Sample ID Reader is available and installed to your Agilent Multisampler. For instructions, see the installation video provided on the USB media provided with the upgrade kit G4756. For more information, see the *Agilent InfinityLab LC Series Sample ID Reader Upgrade Kit Installation Note (G4764-Sample-ID-Reader-Upgrade-TecPu-en-D0032639.pdf, D0032639)*.

Obtain the Sample Linking software package

After ordering, you receive an email containing the Activation ID and Entitlement ID. These IDs are needed to download the software package from My Agilent. To download the software package, you need an Agilent account.

Set up an Agilent account

An Internet connection is needed to access Agilent.com.

NOTE

If you are an existing customer with an Agilent.com account, use that account to download the software package, see Download the software package on page 22.

1 After purchase, if you are a new customer, an email is sent with instructions to verify and set a password for an Agilent.com account from no-reply@mailing.agilent.com. Click the link to verify the email account and set a password. For more information, see Agilent Licensing on page 16.

   The **Create a Password** page loads in a browser window.

2 Enter a password and confirm.

3 Click **Create Account**.

   Once the password is set, an email is sent with a one-time verification code to verify the account.

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

   An email is sent with the Entitlement Certificate to the verified email address from **donotreply_agilent@flexnetoperations.com** with the subject line *Your Agilent Entitlement Information*.

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

Download the software package

An Internet connection is needed to access the License and Delivery Portal.

1 Open the Entitlement email, and click **License and Delivery Portal**.

   The Agilent.com website opens.

2 On the **Sign In** screen, enter your login credentials and click **Sign In**.

   The License and Delivery portal opens.

3 Once in the portal, go to **Downloads** > **List Downloads**.

4 Locate and select **Sample Linking software**.

   The **Download Packages** screen loads.

5 Accept the **Software Terms and Conditions** by clicking **I Agree**.

6 Click the provided link and download the file.

7 After the download is complete, unzip the software package to a new folder on the OpenLab server.

The download package also includes *Advanced Sample Linking Getting Started (advanced-sample-linking-v1.1-c-s-solution-en, D0119282)* and *Advanced Sample Linking for a Client/Server topology with Sample Scheduler for OpenLab Installation and Configuration Guide (advanced-sample-linking-v1.1-c-s-installation-en.pdf, D0119283)*.

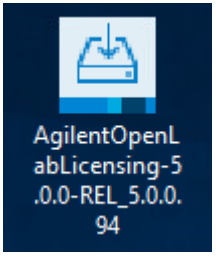
Install the Common License Layer

If the Common License Layer is already installed, skip this installation and continue with Set up the Sample Scheduler Adapter Service user on page 39.

1 Navigate to the folder where you unzipped the software package.

2 Open the **Agilent Licensing** folder.

3 Double-click the installation file.



4 Read the License Agreement and select the **I agree to the license terms and conditions** check box.

5 Click **Install**.

6 Once the installation completes, click **Close**.

NOTE

After installation, it may take the Common License Layer service up to five minutes to start. To ensure that the service is running, check the response from https://localhost:7071/ping and https://localhost:52088/licensing/info before proceeding to the next step.

Install Bench Applications

The **Agilent Bench Applications Installer** installs the Bench Applications portal, the Sample Linking software and all necessary services. Run it from your OpenLab Server or, in a multi-server environment, from the application server.

NOTE

During installation, new Bench Applications-specific privileges and default roles are installed.

Installing Bench Applications requires a user with the privilege to change user roles and privileges in the OpenLab Control Panel.

1. Log in to the server as an administrator.
2. Navigate to the folder where you unzipped the software package.
3. Open the **Bench Applications** folder.
4. For installation in a client/server environment, select **OpenLab Server**.
5. Double-click **Agilent.Bench.Applications.Installer.exe**.
6. Click **Browse** and select the installation directory or manually type in the installation path. The installation directory is automatically set to a recommended default folder. You can proceed with the installation without manually selecting a directory if no changes are needed.

   The **Installation Folder** area lists the required and available space.

NOTE

The installation folder has to be a local folder.

7 The installer runs a check to verify that all prerequisites are installed. The results are listed in the **System information** area. If any prerequisites are not met, the installer cannot proceed. Depending on the displayed issue, install the missing software or start the stopped service, then refresh or restart the installer.

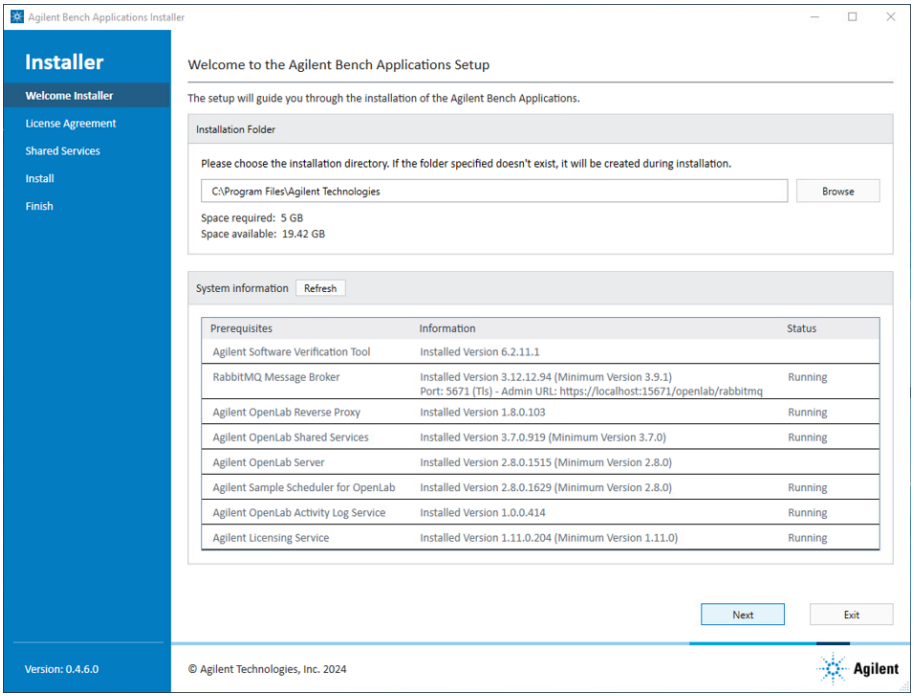


Figure 2: Welcome Installer

Check that the following services are present and the status is **Running**

- Agilent OpenLab Reverse Proxy
- Agilent OpenLab Shared Services

Depending on the displayed status, install the missing software or start the service, then refresh or restart the installer.

8 Click **Next**.

9 Read the License Agreement and select the **I agree with the terms and conditions** check box, and click **Next**.

10 On the tab **Shared Services**, **Authentication** provide your credentials.

The user needs to have the right to add new permissions and create roles in the OpenLab Control Panel, typically an administrator.

NOTE The system supports domain authentication.

11 Click the **Check Connection** button when it becomes active to confirm the connection to the OpenLab Shared Services.

12 If the connection is successful, click **Next** to continue to the **Install** page.

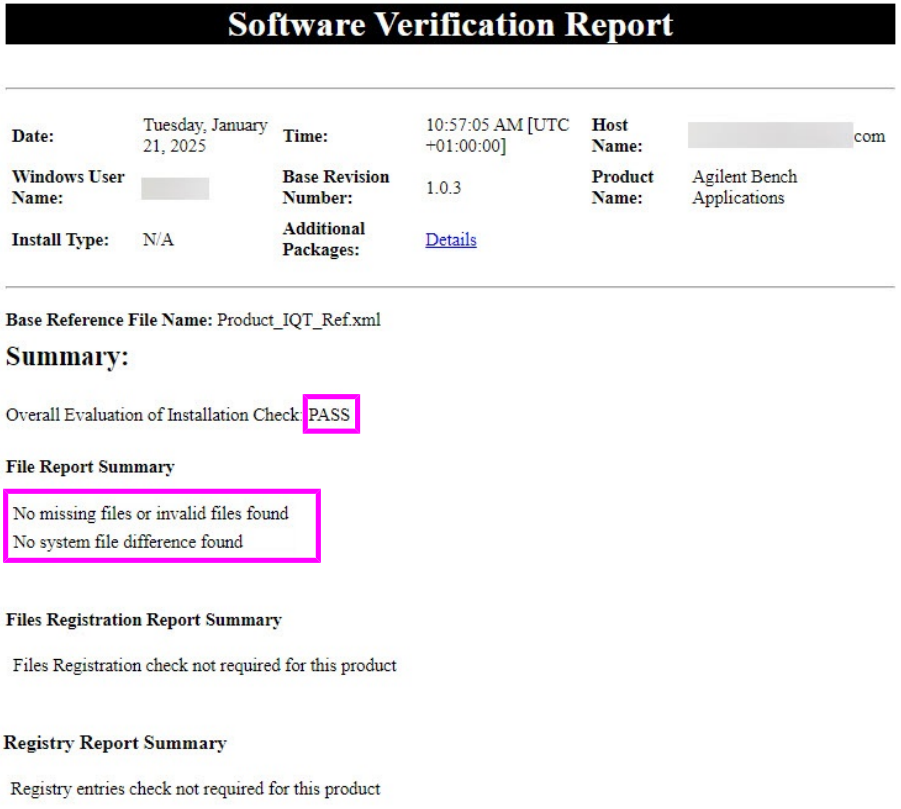
13 Click **Install**.

The installation starts. The progress bar will display the progress of the installation. The Exit button becomes unavailabe, it is not possible to cancel the installation. During the installation RabbitMQ and Shared Services are modified.

14 Once the installation finishes, the Next button becomes active. Click **Next**.

15 On the tab **Installation Finished**, click **Run Software Verification** to initiate the IQ report.

The software verification report shows if the installation was successful.



Software Verification Report

Date:	Tuesday, January 21, 2025	**Time:**	10:57:05 AM [UTC +01:00:00]	**Host Name:**	com
Windows User Name:		**Base Revision Number:**	1.0.3	**Product Name:**	Agilent Bench Applications
Install Type:	N/A	**Additional Packages:**	Details		

Base Reference File Name: Product_IQT_Ref.xml

Summary:

Overall Evaluation of Installation Check: PASS

File Report Summary

No missing files or invalid files found
No system file difference found

Files Registration Report Summary

Files Registration check not required for this product

Registry Report Summary

Registry entries check not required for this product

16 Once the installation is complete, click InfinityLab Assist Interface in the Application Url section, to show a barcode with a generated link.

The URL includes the hostname, domain name, and application address of your OpenLab Server. If necessary you may modify the link manually. Scanning the barcode helps with easy configuration of your InfinityLabAssist Interface (see Configure and connect the display (InfinityLab Assist Interface) on page 34). Consider printing the barcode for easier availability.

17 Click **Finish**.

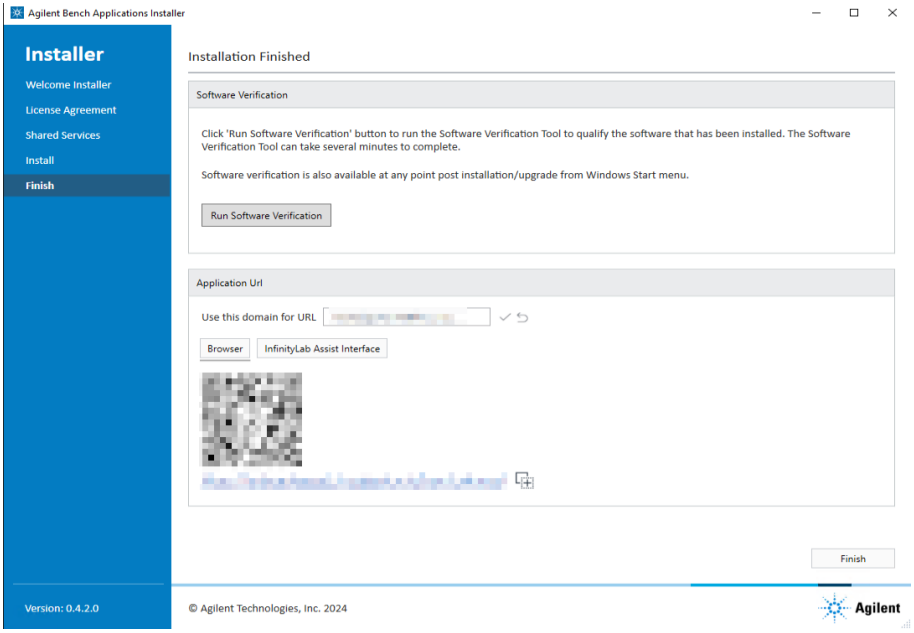


Figure 3: Installation Finished

NOTE If the installation fails, contact your Agilent support representative.

Upgrade Bench Applications

NOTE The upgrade will not remove any previously created rules or permissions, including the Sample Scheduler Adapter Service user. The upgrade adds new roles to OpenLab CDS Control Panel (see User privileges on page 14). You may have to update previous role or permission assignments if needed.

1 Download the latest version of the installer.

   For more information, see Download the software package on page 22.

2 Run the installer.

   ✓ The installer will automatically run the uninstallation of the previous version of Bench Applications.

3 Once the installer restarts, follow the instructions.

   For more information, see Install Bench Applications on page 25.

4 Once the installation finishes, open the Bench Applications and reconfigure the Sample Scheduler Adapter Service user (see Configure the Sample Scheduler Adapter Service user in Bench Applications on page 47).

Uninstall Bench Applications

The uninstallation removes the **Agilent Bench Applications** with the Sample Linking software and the services installed with it.

Uninstallation using the installer executable

1 Close the Bench Applications.

2 Run the installer executable with command line parameter "--uninstall".

3 To run the uninstallation silently, use the parameter "'--hidden=true".

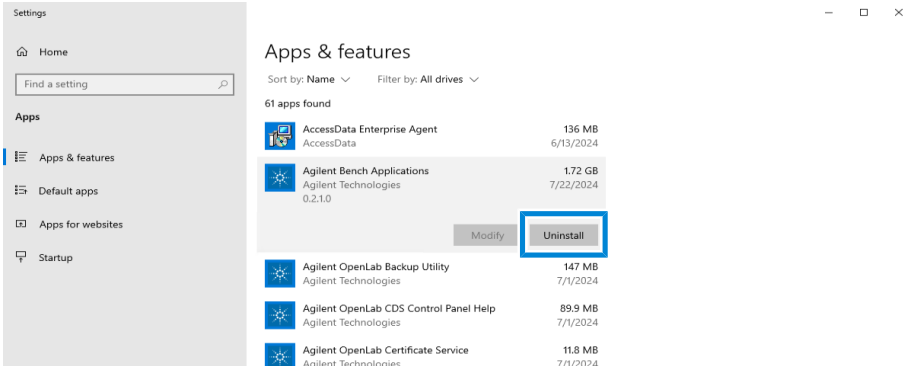
4 To keep the run-time-data, use the parameter "--keepdata=true". By default this parameter is set to false.

Manual uninstallation

1 Close the Bench Applications.

2 Navigate to Windows Programs Manager.

3 In the **Apps & features** section select **Agilent Bench Applications** and click **Uninstall**.



4 Confirm that you want to uninstall the application.

The Installer wizard opens.

5 If you want to keep the run-time-data, select the **Keep data** check box.

6 Click **Uninstall**.

The uninstallation starts. Running services are stopped and removed with the service data. The RabbitMQ modifications are cleaned up, and the virtual host is deleted. The registry entry for the application is removed.

7 Once the uninstallation finishes, click **Finish** and confirm that you want to exit.

NOTE

Roles and privileges always remain after uninstallation.

If you want to update the software, you do not need to uninstall the current version. The installer of the next version automatically uninstalls the old version. However, if the version update adds new privileges, you need to manually assign them to any existing roles as required.

5 Sample Linking Hardware Installation

Update the InfinityLab Assist Interface

The InfinityLab Assist Interface requires the image version 1.0.1 or later to use it for Advanced Sample Linking. If this is not yet installed to your interface you need to update the image before configuring the Assist Interface.

NOTE Ensure that the InfinityLab Assist Interface is not connected to the Assist Hub.

1. Download the latest Assist Interface image from Agilent InfinityLab Assist Updates.
2. Copy the update file to an unencrypted USB medium.
3. Connect the InfinityLab Assist Interface using the PoE cable delivered with the interface.

   This starts your Assist Interface.
4. The Assist Interface will first automatically attempt to connect to the Assist Hub. Wait for the connection to fail and the configuration page to open.
5. Plug the USB medium into the Assist Interface.

NOTE There are no visual indicators that the update is ongoing. Do not cut power during the update.

The Assist Interface automatically restarts when the update is complete.

6. Wait until the update completes and the Assist Interface restarts.
7. Continue with the configuration (see Configure and connect the display (InfinityLab Assist Interface) on page 34).

Configure and connect the display (InfinityLab Assist Interface)

Prerequisites

- Obtain the full qualified name of your OpenLab server.

NOTE Ensure that the InfinityLab Assist Interface is not connected to the Assist Hub.

1 Connect the InfinityLab Assist Interface using the PoE cable delivered with the interface.

This starts your Assist Interface.

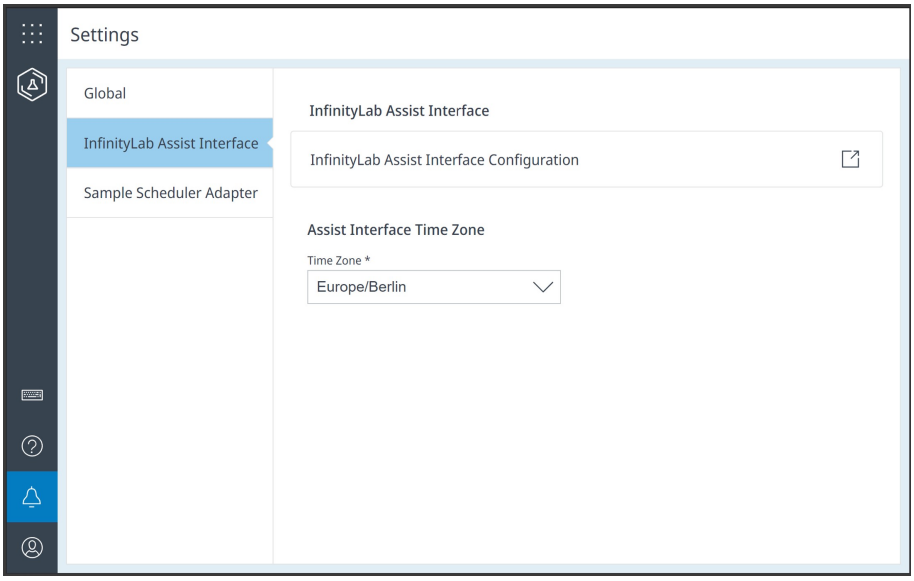
2 The Assist Interface will first automatically attempt to connect to the Assist Hub. Wait for the connection to fail and the configuration page to open, so you can connect to the OpenLab server instead.

3 Connect the handheld scanner.

4 Tap the entry field to open the virtual keyboard to either manually type in *[hostname]*/bench/frame/applications/sample-linking-1 or scan the barcode from the Bench Applications installer with the pre-configured scanner (see Install Bench Applications on page 25) and confirm.

5 By default, the Bench Applications open with the language selection set to English on the Assist Interface after the initial setup. To change the language setting, go to Settings > Global in the Bench Applications and select the language.

6 By default, the Assist Interface displays all times in UTC time. To configure the correct time zone, open the **Settings** in the Bench Applications and select your time zone.



7 To apply the change to the time zone, log out and log back in.

NOTE The Assist Interface is configured independently from the server. You need to configure each Assist Interface individually.

Configure the handheld scanner

1 If not yet done, connect the scanner to the Assist Interface.

2 Scan the barcode for "Add an Enter key after scanned data" (see Barcodes for Configuration on page 36).

NOTE Make sure to select the correct keyboard language, based on the documentation delivered with the scanner.

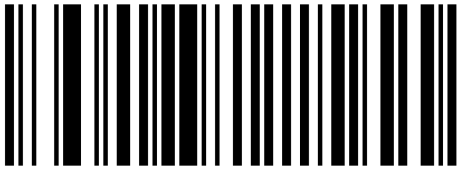
Barcodes for Configuration

Barcodes for configuration of the 5018-0003 (Hand-held scanner (High density 2D Scanner DS4608)) :

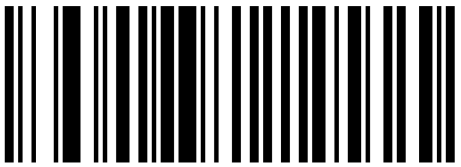
Table 4: Barcodes

Set Factory defaults.	
Add an Enter key after scanned data.	

Disable beep after good decode.



Enable beep after good decode.



For use of the Sample ID Reader within the *Advanced Sample Linking*, please see the application note 5994-7570EN.

6 Software Configuration

Domain identification

For information on how to set up domain identification, see the OpenLab CDS documentation.

User management

Authentication and Authorization is managed by the OpenLab Shared Services. Use the OpenLab Control Panel to manage user roles and privileges. After changing roles and privileges, a new login may be required to apply your changes.

Set up the Sample Scheduler Adapter Service user

To properly interact with the Sample Scheduler, the Sample Scheduler Adapter requires a Sample Scheduler Adapter Service user.

Set up the necessary roles

You need to set up three roles, one of each **Role type**.

1. Log in to the Control Panel as a user with administrative privileges.
2. In the OpenLab Control Panel, go to **Administration** > **Roles**.
3. Click **Create Role**.
4. Select **Project** as **Role type** and specify the following information:
   - **Name**: *Sample Scheduler Adapter (Project)*
   - **Description**: *Communicates between Sample Scheduler and Sample Scheduler adapter*
   - Privileges:

     Project Management > **View project or project group**
5. Click **OK**.
6. Click **Create Role**.
7. Select **Instrument** as **Role type** and specify the following information:
   - **Name**: *Sample Scheduler Adapter (Instrument)*
   - **Description**: *Communicates between Sample Scheduler and Sample Scheduler adapter*
   - Privileges:

     Instrument Management > **View instrument or location**
8. Click **OK**.

9 Click Create Role.

10 Select Administrative as Role type and specify the following information:

- Name: *Sample Scheduler Adapter (Administrative)*
- Description: *Communicates between Sample Scheduler and Sample Scheduler adapter*
- Privileges:

  Sample Scheduler > Edit analysis (Sample Scheduler)

  Sample Scheduler > View and edit other users' analyses (Sample Scheduler)

11 Click OK.

Create the Sample Scheduler Adapter Service user

Prerequisites

- If you use domain authentication, create a *Sample Scheduler Adapter Service* user in the domain.

1 Go to Administration > Users.

2 For domain authentication:

  a Click Import User.

  b Search for the *Sample Scheduler Adapter Service* user in the domain and click Add.

  c Select the user and click Edit User.

3 For internal authentication:

  a Click Create User.

  b Enter *Sample Scheduler Adapter Service* as a login name and *Account used for Sample Scheduler Adapter* as a description.

4 In the Role Membership tab, select the three roles you created.

5 Click OK.

6 Go to the Projects tab.

7 Assign the **Sample Scheduler Adapter Service** user to each project that will be used with Advanced Sample Linking.

   a Select the project.

   b Click **Edit Privileges**.

   c Click **Add User or Group**.

   d Select the **Sample Scheduler Adapter Service** user.

   e Click **OK**.

NOTE To easily assign the user to several projects or instruments, assign the user to the whole project group or instrument group, and select **Inherit privileges from parent** in the settings of the individual projects or instruments.

8 Go to the **Instruments** tab.

9 Assign the **Sample Scheduler Adapter Service** user to each instrument that will be used with Advanced Sample Linking.

   a Select the instrument.

   b Click **Edit Privileges**.

   c Click **Add User or Group**.

   d Select the **Sample Scheduler Adapter Service** user.

   e Click **OK**.

For the adapter to work correctly, you need to configure the user in the Sample Scheduler Adapter, see Configure the Sample Scheduler Adapter Service user in Bench Applications on page 47.

Add sample custom parameters to your project

You can adjust Advanced Sample Linking to your needs by setting up some sample custom parameters in the **Projects** tab of the OpenLab Control Panel. After setup, open the Bench Applications, go to the Sample Scheduler Adapter settings, and click **Reconnect**.

NOTE Sample custom parameters are case-sensitive and need to be spelled in English. During setup, spell them exactly as provided in this guide.

Add Source barcode parameter to your project

Sample Scheduler offers the default parameters **LIMSID1**, **LIMSID2**, **LIMSID3**, and **Sample Name** as selectable Sample Container Barcode Source. If you want to use a custom parameter instead, you can set up the **Source barcode** parameter.

1. On AIC or Client, launch the OpenLab Control Panel and navigate to the project or project group you want to use with Advanced Sample Linking.
2. Click **Edit Project**.
3. Under **CDS Settings** > **Sample Custom Parameters**, add a new parameter:
   - Name: Source barcode
   - Type: Text
4. Click **OK**.
5. In Sample Scheduler, add the **Source barcode** parameter to your Sequence view. For details on how to use the column chooser in the Sequence view to display parameters, see OpenLab Help & Learning.
6. In the Bench Applications, go to the **Settings** > **Sample Scheduler Adapter** tab and select the **Source barcode** parameter as **Sample Container Barcode Source**.

Add Sample Linking Transfer History parameter to your project

If you want to transmit the linking history to the Sample Scheduler sequence table, you need to set up a **Sample linking transfer history** custom parameter for Sample Scheduler. When you submit the transfer information to Sample Scheduler in the Sample Linking software, this parameter updates for all samples.

1. On AIC or Client, launch the OpenLab Control Panel and navigate to the project or project group you want to use with Advanced Sample Linking.
2. Click **Edit Project**.
3. Under **CDS Settings** > **Sample Custom Parameters**, add a new parameter:
   - Name: Sample linking transfer history
   - Type: Text

NOTE Selecting **mandatory** does not affect the workflow.

4. Click **OK**.
5. In the Bench Applications, go to the **Settings** > **Sample Scheduler Adapter** tab and select the **Save the full sample linking transfer history** check box.

The parameter will be updated with and keep track of any sample transfer.

NOTE

If the **Sample linking transfer history** sample custom parameter is missing in the project when you submit the task in Sample linking software, the corresponding transfer history is not visible in Acquisition.

To retroactively add the parameter, follow these steps:

- Add the **Sample linking transfer history** sample custom parameter to the project.
- Close Acquisition.
- Reopen Acquisition.
- Open the sequence.
- Save the sequence.
- Wait for one to two minutes.
- Reopen the sequence.

Activate a license in Bench Applications

1 Log in as an OpenLab administrator or as a user with the **Access licensing** privilege.

2 In the Bench Applications, go to **Settings** > **Licenses**.

NOTE

The **Licenses** tab is only available in desktop browsers, not on the InfinityLab Assist Interface.

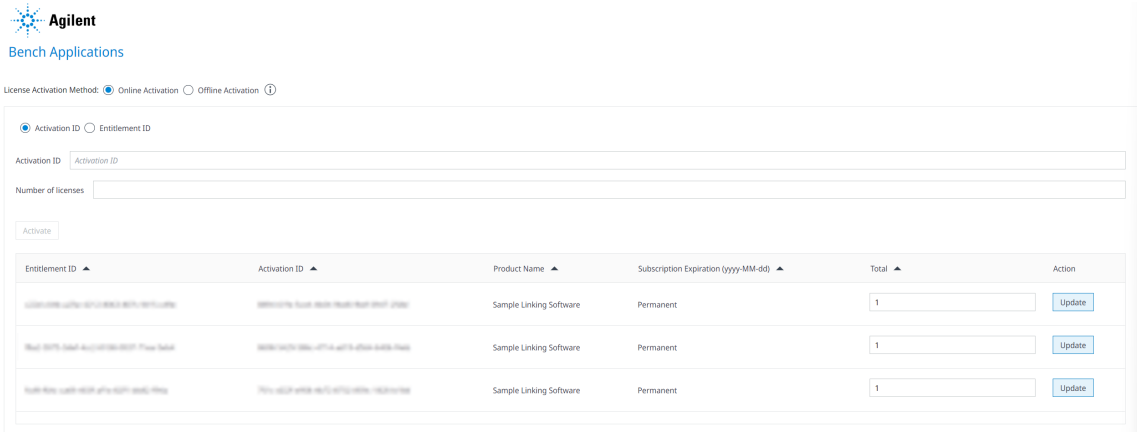
3 Click **Manage Licenses (External)**.

The page for managing licenses opens in a new browser tab.

4 To activate a trial license, click **Start Trial**.

5 To activate a full license or review previously activated licenses, click **Activate**.

The page for managing and activating licenses for Bench Applications opens.



6 For **Online Activation**, enter your **Activation ID** or **Entitlement ID** and click **Activate**.

The activation screen gives an overview of all license details, such as Entitlement ID, expiration date, and quantity.

OR: For **Offline Activation**, select the offline option and follow the instructions on the screen.

Return a license

1 Open the page for managing licenses.

2 Select **Entitlement ID** and enter your Entitlement ID.

3 Set the number in the **Total** column to the number of licenses you want to retain and click **Update**.

OR: To return all licenses at once, click **Return All**.

After the license is deactivated, the Sample Linking software switches to Limited Mode. After license deactivation the usage of Trail Mode is still possible if available.

If you reactivate the license, the end date of the license will be unchanged.

Configure the Sample Scheduler Adapter Service user in Bench Applications

Prerequisites

Required privileges:

- View Sample Scheduler Adapter settings
- Edit Sample Scheduler Adapter connection configuration

To properly interact with Sample Scheduler, the Sample Scheduler Adapter requires a Sample Scheduler Adapter Service user. Ensure that the following privileges have been assigned to the Sample Scheduler Adapter Service user during setup:

- Sample Scheduler > Edit analysis (Sample Scheduler)
- Instrument Management > View instruments or location
- Project Management > View project or project group

Ensure that the Sample Scheduler Adapter Service user has been added to every project and instrument available for Sample Linking.

1 In the Bench Applications app, go to Settings > Sample Scheduler Adapter.

2 Under Sample Scheduler Connection (Adapter), enter the user's credentials.

3 Optional: Click Test Connection.

✓ The Sample Scheduler Adapter will attempt to connect to Sample Scheduler. If the adapter cannot connect to Sample Scheduler, a message informs you of the failure.

4 Click Save.

NOTE

Due to manual password changes or forced password changes due to domain/server security policies, the Sample Scheduler Adapter Service user password might change, thus invalidating the credentials. If this happens, follow these instructions and save the new credentials in Bench Applications to fix the resulting Sample Scheduler Adapter connection issues.

Prepare Sample Scheduler for OpenLab

Before you can start using the Sample Linking software, you need to adjust some settings in Sample Scheduler and - if used - in your LIMS.

Adjust Vial command

1 On any client, open the **Agilent Sample Scheduler for OpenLab Configuration**.

2 Select the **Commands** tab.

3 Make sure that **Vial** is not set as **Mandatory**.

4 Save your changes.

Enable the barcode reader in Sample Scheduler for OpenLab

1 After setting up your sequence in Sample Scheduler, open the Sequence view.

For details on how to work with the sequence view, see "Using the Sequence view" in OpenLab Help & Learning.

2 Select **Edit Sequence**.

3 Select the **Use Barcode Reader** field.

4 Select the **Confirm Barcode before Injection** check box.

5 Select **Inject anyway**.

6 Click **OK** and save the changes to your sequence.

Adjust your LIMS

1 Adjust your LIMS xml-export to include the source barcode field as configured (see Add Source barcode parameter to your project on page 42).

2 Remove the vial position.

7 Troubleshooting

NOTE The Control Center in the Bench Applications can provide helpful troubleshooting information. This is also where you can export all logs as a zip-file.

Installation is incomplete or fails

During installation, errors occur or the installation fails to complete properly.

Probable cause	Solution
One or more of the OpenLab services is not running.	Check if the following services are running properly and restart them if necessary: • Agilent OpenLab Reverse Proxy • Agilent OpenLab Shared Services

Assist Interface does not turn on

Probable cause	Solution
Wrong networking cable.	Make sure you use the PoE cable delivered with the interface.
Cable improperly connected.	Make sure to connect the cable properly.

Assist Interface fails to configure

The Assist Interface is unable to configure correctly after scanning the QR code in the Bench Applications installer.

Probable cause	Solution
Error or typo in the QR code generated during installation of the Bench Applications.	Reset the Assist Interface by removing and reconnecting the PoE cable. Enter the address of the OpenLab CDS installation.

Expected barcode column missing

The column **Expected barcode** is missing from the sequence table.

Probable cause	Solution
The connected autosampler does not support barcode reading.	Connect an instrument that supports barcode reading.
Instrument is not configured for barcode reading.	1. Open the Instrument configuration. 2. Select the **Sample ID Reader installed** check box. 3. If the **Sample ID Reader installed** check box is missing, update your LC drivers.

Tasks not shown in Sample Linking software

No tasks are displayed in the task selection screen of the Sample Linking software, or tasks are missing.

Probable cause	Solution
Missing project permissions	• Assign missing project permissions in OpenLab Control Panel.

Barcode information not entered automatically

After scanning the barcode, the Sample Linking software does not automatically enter the information.

Probable cause	Solution
The handheld scanner is not configured correctly.	Reconfigure the handheld scanner.

Validation errors

Validation issues (sample container) or wrong barcode values (target container) in the Sample Linking software, because the scanned barcodes do not match the expected value.

Probable cause	Solution
The handheld scanner is not configured correctly.	Reconfigure the handheld scanner.

Sample ID reader does not work correctly

Despite being correctly installed, the Sample ID reader does not work.

Probable cause	Solution
The Multisampler is not configured correctly.	Ensure that the Multisampler is configured correctly and the **Barcode reader installed** check box is selected.

Custom parameters do not work correctly

After setting up the custom parameters, they are not filled correctly in Sample Scheduler. If they are set to mandatory, the sequence cannot be started correctly.

Probable cause	Solution
The sample custom parameter is not activated in the Bench Applications.	• For the **Source barcode** parameter: In the **Settings** > **Sample Scheduler Adapter** tab, select it as the **Sample Container Barcode Source**. • For the Sample Linking Transfer History parameter: In the Bench Applications, go to the **Settings** > **Sample Scheduler Adapter** tab and select the **Save the full sample linking transfer history** check box.
The sample custom parameter has not been set up correctly.	Sample custom parameters have to be named exactly as instructed. They are case-sensitive and have to be spelled in English. • Verify that the spelling is exactly as instructed.

Bookmarks

Bookmarks do not work correctly. When selecting a bookmark, user is redirected to the Start page.

Probable cause	Solution
User does not have the required privileges to see the bookmarked page.	• Log in as a user with the required privileges. • Have the required privileges assigned to your user.
Issue with the browser.	• Clear browser cache and cookies, then log back in.

Sequences are not transmitted

The transmitting of sequences between Sample Linking software and Sample Scheduler or OpenLab CDS Workstation Plus fails.

Probable cause	Solution
One or more of the Bench Application services is not running.	• Check if all Bench Application services are running properly and restart them if necessary.

Authentication Error

You receive a message Authentication error. Please contact your administrator.

Probable cause	Solution
No connection to the OpenLab Server or services	Contact your administrator.

In This Book

This manual contains technical reference information about Advanced Sample Linking.

The manual describes the following:

- Introduction to Advanced Sample Linking
- Requirements
- Overview of the solution setup
- Sample Linking software installation
- Sample Linking hardware installation
- Configuration
- Troubleshooting

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