Agilent

Advanced Sample Linking

Installation and Configuration Guide

Notices

Document Information

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Copyright

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This guide is valid for Sample Linking software v1.0.

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 helps to avoid error-prone manual steps.

The solution helps to

- avoid errors caused by incorrect vial placement in the rack,
- automate sample history (e.g. for audits),
- avoid manual, time-consuming 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,
- 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.

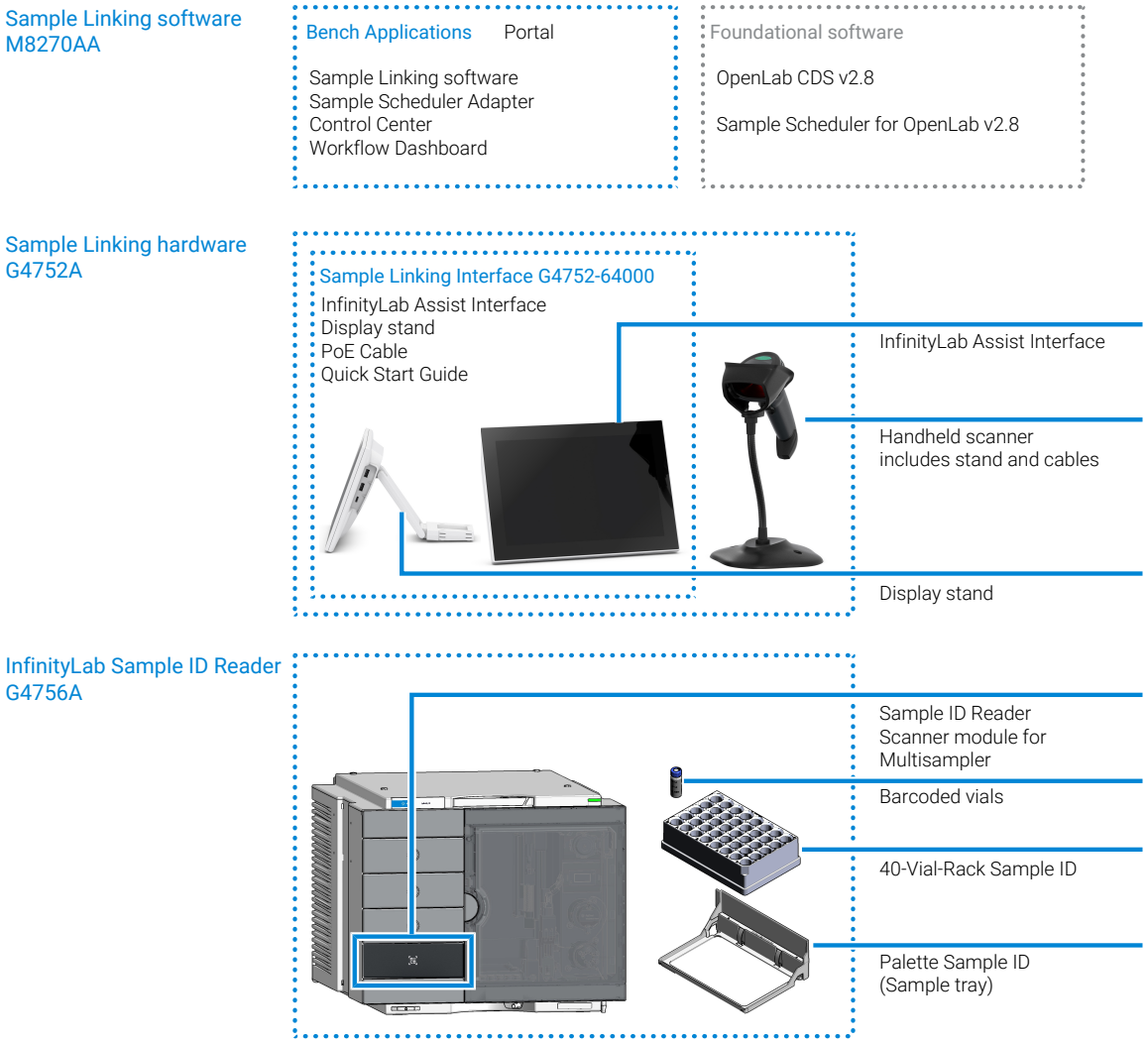


Figure 1: Advanced Sample Linking components

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, 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 for OpenLab. 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 34.

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

OpenLab Chromatography Data System solution 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 are logging workflow executions, that are important for compliance and troubleshooting purposes. 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 v1.0
OpenLab CDS, client/server topologies	v2.8 update 4 or higher
Sample Scheduler for OpenLab	v2.8 update 4 or higher

NOTE

Hardware configurations for a OpenLab system should be increased when adding ASL

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 will not work on iOS, since it is based on Safari.

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 (installed on the AICs and clients)

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)*.

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. Table 2 on page 13 gives an overview of the privileges specific to the Bench Applications. Additional privileges may be required for users working directly in Sample Scheduler for OpenLab or OpenLab CDS.

Table 2: Privileges required for Bench Applications

Name	Function	Admin	Analyst
Access Licenses	Grants access to **Licenses** page in **Settings**.	✓	✗
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.	✓	✗
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.	✓	✗
Change log level in Control Center	Enables the **Log Level** button in the Control Center.	✓	✗
View Sample Scheduler Adapter settings	Grants access to **Sample Scheduler Adapter** page in **Settings**.	✓	✗

Name	Function	Admin	Analyst
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	✔	✘

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 20).
- 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.

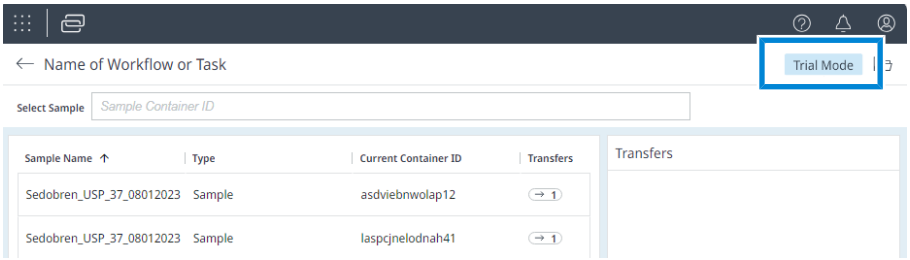
Licensing for Sample Linking Software

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 39). The trial period lasts for 60 days, after which the Sample Linking software switches into restricted 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.

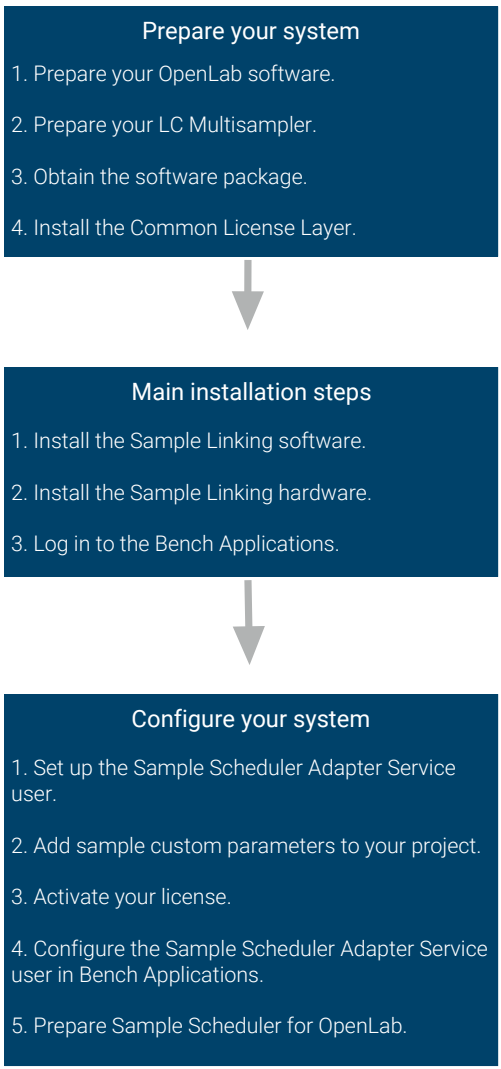


During the trial period, one concurrent user can access the Sample Linking software unrestricted. Any additional concurrent users are limited to restricted mode.

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 39.

3 Overview of the Solution Setup



For more information, see **Preparatory steps for software installation** on page 20 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, 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 23.

For more information, see **Sample Linking Hardware Installation** on page 28. 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 33.

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 for OpenLab
- 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 for OpenLab 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 Multisampler Sample ID Upgrade Kit Installation Note (G4764-Sample-ID-Reader-Upgrade-TecPu-en-D0032639, 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, skip to Download the software package on page 21.

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 15.

   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.

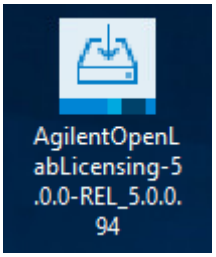
Install the Common License Layer

If the Common License Layer is already installed, skip this installation and continue with Set up the Sample Scheduler Adapter Service user on page 34.

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**.

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. Double-click **Agilent.Bench.Applications.Installer.exe**.
5. 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.

6 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.

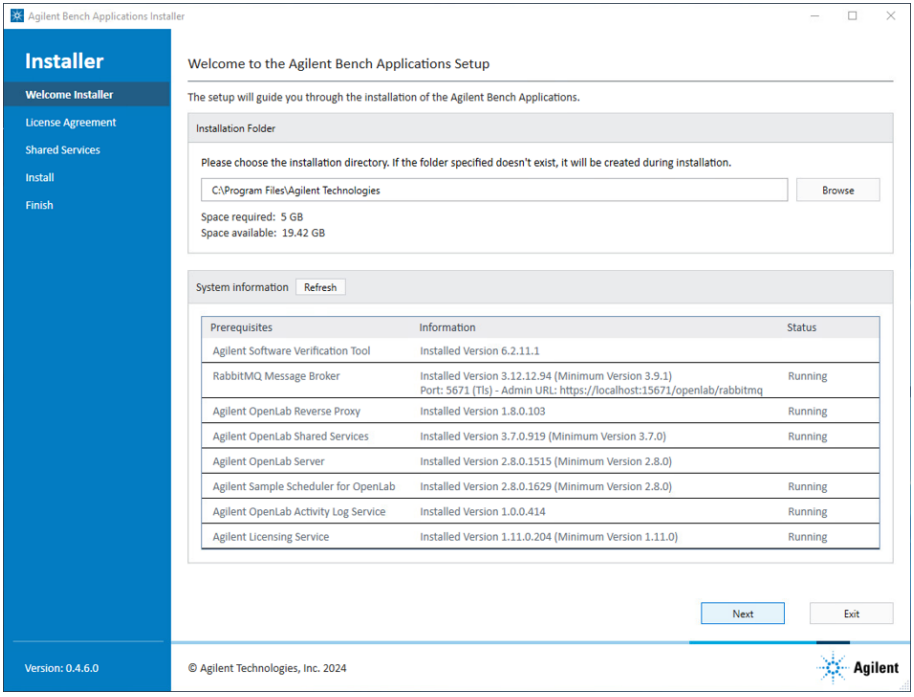


Figure 2: Welcome Installer

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.

7 Click **Next**.

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

9 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.

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

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

12 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.

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

14 Click **Finish**.

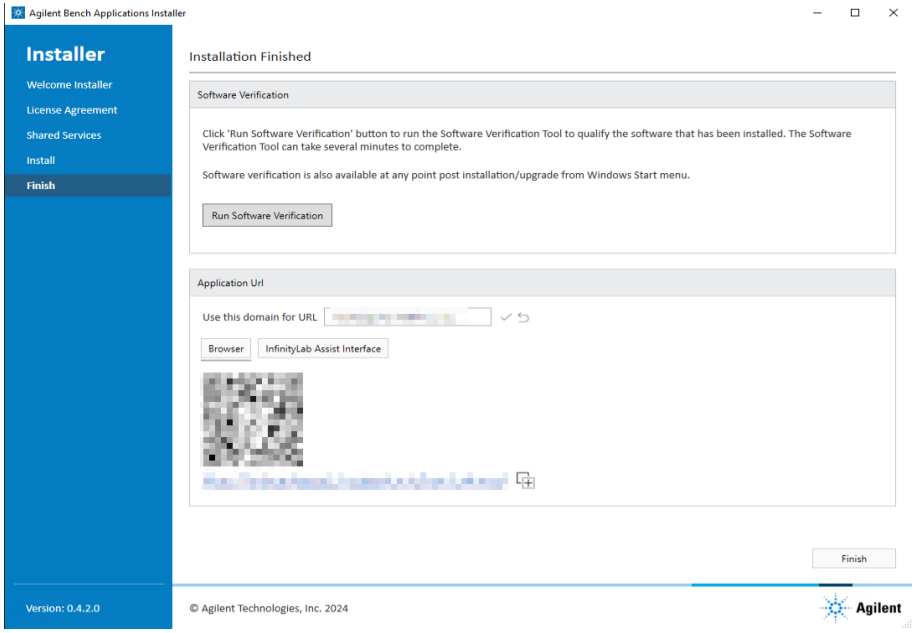
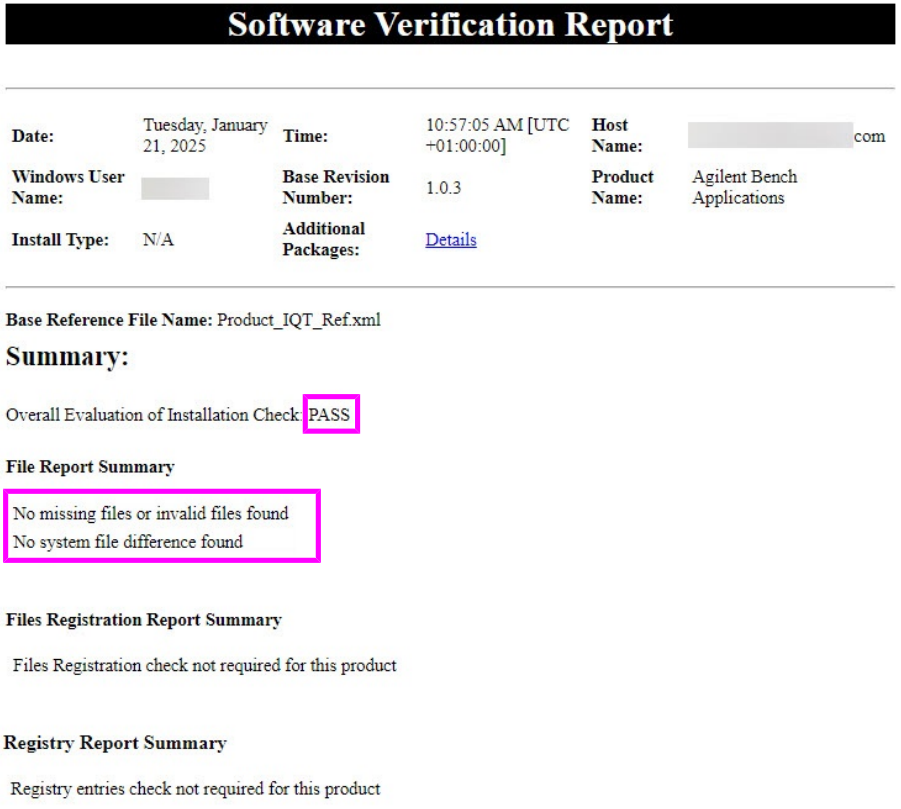


Figure 3: Installation Finished

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 QR code 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 QR code helps with easy configuration of your InfinityLabAssist Interface (see Configure and connect the display (InfinityLab Assist Interface) on page 29). Consider printing the QR code for easier availability.

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

Uninstall Bench Applications

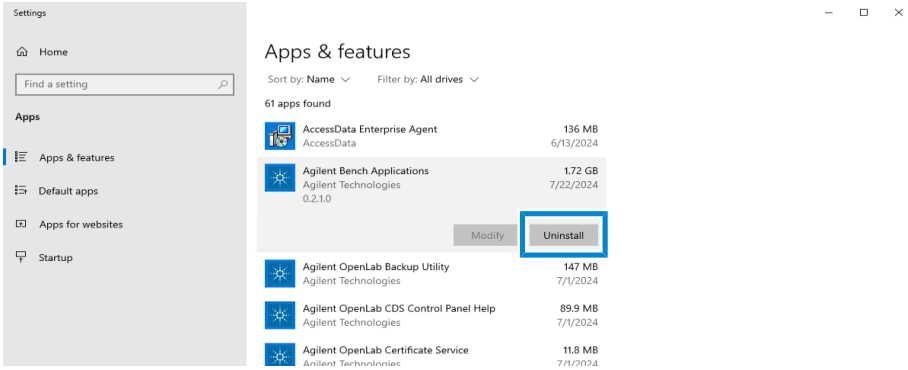
The uninstallation removes the **Agilent Bench Applications** with the Sample Linking software and the services installed with it.

Uninstallation Procedure

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 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.

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

5 Sample Linking Hardware Installation

Update the InfinityLab Assist Interface

The InfinityLab Assist Interface requires the image version 1.0.1 or higher 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.

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 29).

Configure and connect the display (InfinityLab Assist Interface)

Preparations

- Obtain the full qualified name of your OpenLab server.

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

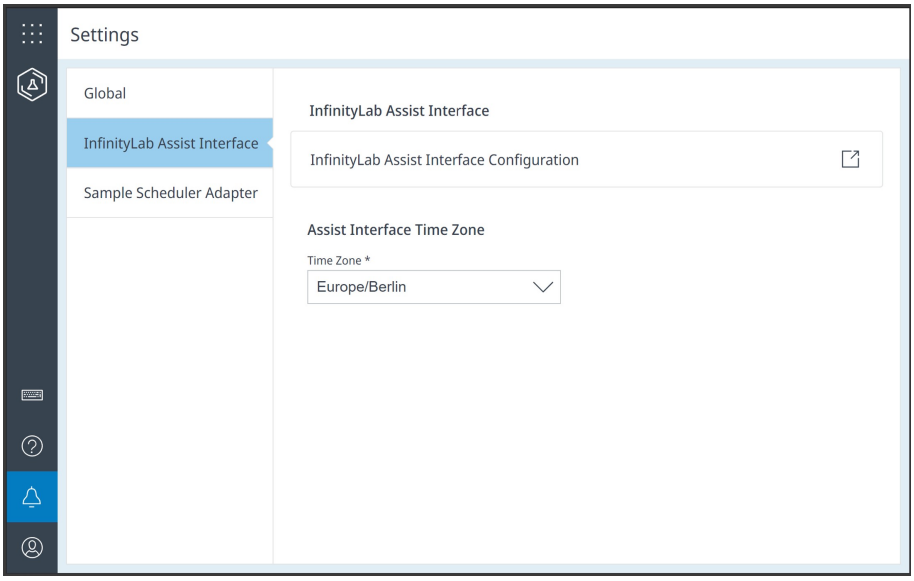
This starts your Assist Interface.

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 *[ServernameFQDN]*/bench/frame/applications/sample-linking-1 or scan the QR code from the Bench Applications installer with the pre-configured scanner (see Install Bench Applications on page 23) and confirm.

5 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.



6 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 31).

NOTE

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

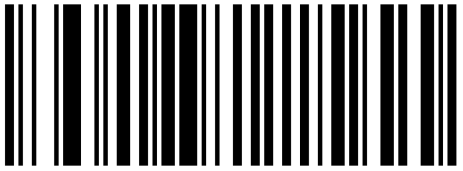
Barcodes for Configuration

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

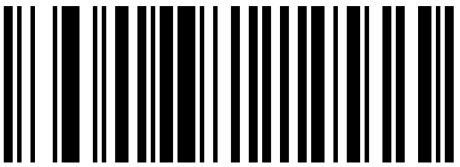
Table 3: Barcodes

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

Preparations

- 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 41.

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.

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 source container barcode columns. 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 for OpenLab, 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 transfer 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.

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 the InfinityLab Assist Interface.

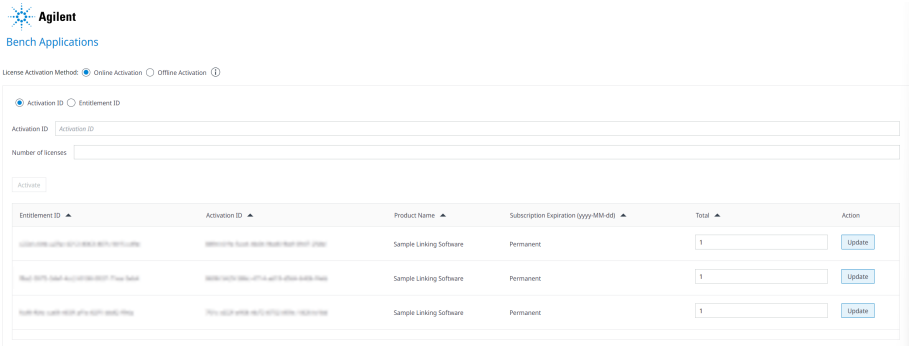
3 Click **Manage Licenses (External)**.

The license server 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 license server page.

2 Set the number in the **Total** column to 0 and click **Update**.

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

After the license is deactivated, the Sample Linking software switches to restricted mode. If you reactivate the license, the end date of the license will be unchanged.

Configure the Sample Scheduler Adapter Service user in Bench Applications

Preparations

You need to add a service user account to every project and instrument available for Sample Linking.
Required privileges for the service user:

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

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 Connection test failed. Check the logs for more details message informs you of the failure.

4 Click Save.

Prepare Sample Scheduler for OpenLab

Before you can start using the Sample Linking software, you need to adjust some settings in Sample Scheduler for OpenLab 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 for OpenLab, 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 37).

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 server manually.

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 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 scheduled 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 transferred

The transfer of sequences between Sample Linking software and Sample Scheduler for OpenLab 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.

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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