Balance Data Bridge for LabX

User Guide

Notices

Manual Part Number

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Software Revision

This guide is valid for version 1.0 of Balance Data Bridge for LabX.

This version is compatible with Sample Scheduler for OpenLab versions 2.7 and higher.

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Contents

1 Compatibility

The Balance Data Bridge for LabX is supported with the following software revisions:

- Sample Scheduler for OpenLab 2.7 and higher
- LabX Version 11
- LabX Version 12
- LabX Version 13

No other product versions have been qualified by the software vendors.

2   Requirements

The Balance Data Bridge has the following hardware and software requirements:

- Needs to be installed on a Windows machine
- Requires and is shipped with .Net 6 included
- Operating system:
    - Windows 10 64 bit, Professional or Enterprise Version 20H2, 21H2 LTSC, 22H2
    - Windows 11 64 bit, Professional or Enterprise
    - Windows Server 2019
    - Windows Server 2022

- RAM: 500 MB for use of the Bridge
- The host needs to be able to reach both application servers:
    - LabX Integration Service (running by default on port 51155)
    - Sample Scheduler Webserver (running by default on port 443).

- The Balance Data Bridge can only be used in combination with LabX Balance and the LabX System Integration Option.
- Needs to be installed on the server after the Sample Scheduler.

After installation, the files can be verified using the Software Verification Tool.

3 Configuration

After installation, configure the service for the environment.

1 In the installation folder, right-click **LabXSampleSchedulerBridge.exe**.

2 Select **Run as administrator**.

A command line window opens.

3 Update the settings as required.

Once you finish the guided update process, the changes are saved automatically. The credentials are encrypted when saving.

NOTE   To configure the logging and poll interval for LabX setting, you need to directly edit the *appsettings.json* file in the application folder of the Balance Data Bridge.

Adapt the parameters from Table 1 to Table 3 to match your environment:

Table 1   Balance Data Bridge LabX integration settings

Description	JSONPath	Comment
LabX Service user username	LabX.ServiceConfig.ApiUser	Requires the following LabX privileges: Results.View
LabX Service user password	LabX.ServiceConfig.ApiUserSecret	By entering and saving a password in the command line window, the value is encrypted.
LabX Service Service URL	LabX.ServiceConfig.ServiceURL	For example: http://localhost:51155/LabX/BasicSystemIntegrationService

Table 2   Operation qualification (OQ) settings

Description	JSON path	Comment
Enable OQ mode	OQMode.Enabled	Enables the OQ mode. Creates and submits an OQ sample to the Sample Scheduler
Determines the user for the OQ sample	OQMode.User	Set the determined user as CDS user assigned to the OQ sample

OQ mode is used for OQ situations only. Set OQ mode to **false** before starting standard operation.

Table 3   Agilent Sample Scheduler for OpenLab integration settings

Description	JSONPath	Comment
OpenLab user name	SampleScheduler.ApiUser	Requires the following OpenLab Sample Scheduler privileges: • Edit analysis (Sample Scheduler), • Add analysis (Sample Scheduler)
OpenLab user password	SampleScheduler.ApiUserSecret	
OpenLab user domain	SampleScheduler.Domain	Is optional when OpenLab CDS is configured to use Domain credentials
Sample Scheduler Webserver host	SampleScheduler.ServerHost	

Logging Configuration

Leave this section as is. It configures the logging location and behavior and can be used to diagnose configuration failures. Two parameters can be adapted, if needed to diagnose issues.

Table 4   Logging configuration

Description	JSONPath	Comment
Logfile path	Serilog.WriteTo.Args.path	Path to the logfile
Loglevel	Serilog.MinimumLevel	Available levels: Debug, Warning

Optional OpenLab Configuration

To have LabX submit additional parameters to OpenLab CDS, set up the following Sample Custom Parameters in projects via the OpenLab Control Panel. These parameters are used for samples coming from the LabX software.

Table 5   OpenLab configuration

Sample Custom Parameter Name	Sample Custom Parameter Type	Description
BatchID	Text	Contains LabX BatchID
LabX meta data	Text	Contains: LabX User, LabX TaskID, and LabX Status, in a key value format: <key_name1>:<key_value1>|<key_name2>:<key_value2>
Sample ID	Text	Contains the specified LabX Sample ID

4 LabX Task Result Mapping

The connection tool monitors LabX for tasks that have been completed and transfers the relevant data of that task to Sample Scheduler according to the mapping definitions defined in the following tables.

The tool picks up only tasks that have completed normally. It ignores stopped tasks and does not transfer their data to Sample Scheduler.

NOTE   To pick up new tasks, set OQ mode to false.

Mapped method function names

The mapping between results in the LabX tasks and the parameters in Sample Scheduler is based on the method function names in the LabX method. The following tables show the correlations between LabX results and Sample Scheduler parameters.

Global Parameters (outside sample scope)

These parameters are expected once per task.

Table 6   Global parameters

Method Function Name	Transferred Data	Comments
BatchID	Text	See optional OpenLab configuration

LabX Task Result Mapping

LabX Sample Parameters (inside sample scope)

Table 7   LabX sample parameters

Method Function Name	Transferred Data	Sample Scheduler Parameter	Comments
SampleID	Text	Sample ID (Sample Custom parameter), Description	The mapping is case-insensitive.
Sample.ID2	Text	Barcode	The value is taken from SampleID2 instead of a Method Function
SampleType	Text	SampleType	Defaults to **Undefined**; accepted values are: Sample, Calibration Standard, Blank, Doubleblank, QC Check, Sys Suit, Spike. Spaces and case are ignored
SampleName	Text	Sample Name	
ConcentrationLevel	Number	Level	Defaults to 1
SolventName	Text	-	
LiquidVolume	Number & Unit	Description	
Density	Number & Unit	-	
CompoundName	Text	Compound Name	Mandatory* for sample type: **Cal. Std.**, **QC Check**
CompoundAmount	Number & Unit	Description	Mandatory* for sample type: **Cal. Std.**, **QC Check**
SampleAmount	Number	Sample amount, Description	Only available for sample type: **Sample**
FinalConcentration	Number & Unit	Description	Only available for sample type: **Cal. Std.**, **QC Check**

* Mandatory: If value is not present, LabX sample is ignored. If no valid sample detected, the whole task is ignored.

Weighing Results Transmitted to OpenLab Sample Scheduler

The Balance Data Bridge submits values to different parameters depending on the sample type submitted by LabX. In case of calibration samples, the concentration as calculated by LabX is mapped to the **CompoundAmount**.

LabX can submit concentrations for more than one compound to Sample Scheduler.

For samples of the type **Cal. Std**, or **QC Check**, in case the LabX request does not contain a **FinalConcentration**, the weighed-in amount is mapped to the **CompoundAmount**.

Adding weighing information to an existing analysis request from LIMS with the same barcode

When an analysis request is made in LabX, the bridge checks if there are existing analyses containing the same barcode.

1 If no such analysis exists, a new one is created.

2 If such analyses exist and are in an editable state (**Waiting**, **WaitingOnError**, or **Incomplete**), the following actions are taken:

 • The sample type from LabX is applied.

 • If compounds are transferred from LabX, these compounds overwrite existing compounds in the Sample Scheduler database.

 • All other parameters from LabX overwrite the parameters in the Sample Scheduler database.

 • A description from LabX is appended to the existing description: **Barcode was sent more than one time**.

3 If more than one analysis with the same barcode exist in the Sample Scheduler database, the LabX data is added to all of these analyses. The description is extended with a statement that the barcode is not unique and more than one analysis request exist with the same barcode.

4   If LabX sends a request with the same barcode multiple times, the following actions are taken:

- All values (dependent on sample type) are updated.

- The new description is compared to the previous one. If it is not the same, the new description is appended.

- A sentence is added to the description stating that the barcode was sent more than one time.

5   If an analysis is in non-editable state, a copy of the analysis is created and its description is modified to document that the original analysis (with identifier) couldn't be updated.

This behavior is configurable in the Balance Data Bridge configuration. By default it is turned on, but can be turned off. In this case, the failure is logged in the Balance Data Bridge log file.

In This Book

This guide describes the compatibility, requirements, configuration, and result mapping of Balance Data Bridge for LabX.

Agilent