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BaseSpace® Clarity LIMS Integrations

Learn about automated, semi-automated, and standard integrations.

Introduction

To help support error-free sample tracking and automation, BaseSpace Clarity LIMS (Laboratory Information Management System) provides out-of-the-box integrations with a number of commonly found genomics instruments and third-party lab software applications. The functionality of any specific LIMS integration is often dependent on the ability of the instrument or third-party software to communicate with outside applications and the needs of LIMS users for that specific application.

In general, 3 categories of integrations are provided by BaseSpace Clarity LIMS: Automated Integrations, Semi-Automated Integrations, and Standard Integrations.

Automated Integrations

Automated Integrations transfer data from the LIMS directly to an instrument via the LIMS Application Programming Interface (API) and from the instrument to the LIMS via the instrument or third-party software provided API (Figure 1). These integrations include (Table 1):

- Preconfigured protocols with or without step automation
- Sample information pushed/pulled from BaseSpace Clarity LIMS into third-party software without the need of a file
- Sample information automatically pushed and/or pulled from lab instruments or third-party software without the need of a file

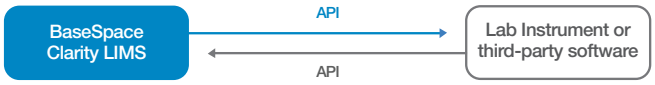

Figure 1: Automated Integrations

Table 1: Automated Integrations

Product	Software Requirements
Life Technologies Ion Proton Sequencer Integration	• Torrent Suite 4.0.x • Torrent Suite 4.2.x • Torrent Suite 4.4
Life Technologies Ion PGM Sequencer Integration	• Torrent Suite 4.0.x • Torrent Suite 4.2.x • Torrent Suite 4.4
Roche 454 Integration	• GS FLX Controller Software v2.9 or earlier

Semi-Automated Integrations

Semi-Automated Integrations transfer data from the LIMS via file creation and manual file upload and from the instrument to the LIMS via file retrieval (Figure 2).

These integrations include (Table 2):

- Preconfigured protocols with or without step automation
- Sample Information File generation for use with lab instrument or third-party software
- Sample information automatically pushed and/or pulled from lab instruments or third-party software

Figure 2: Semi-Automated Integrations

Table 2: Semi-Automated Integrations

Product	Software Requirements
Affymetrix GeneChip Integration	• GeneChip Command Console (AGCC) v4.1.2
Life Technologies 5500 SOLiD	• Instrument Control Software (ICS) v4 or higher • NOTE: Wildfire and 5500xl SOLiD are not supported with this integration.
Illumina MiSeq® Integration	• MiSeq Control Software 1.1+ 2.3.0.3 (MCS)
Illumina NextSeq® 500 Integration	• NextSeq Control Software 1.2.17+ (NCS) • Illumina Sequence Analyzers 1.8.37 and Software Suite 1.2.2
Illumina Genome Analyzer$_{IIx}$ Integration	• GAII, GA$_{IIx}$ running SCS 2.9 (RTA 1.9) • SCS 2.10 (RTA 1.13) • CASAVA v1.8.0, 1.8.1, or 1.8.2 bcl2fastq v2.15
Illumina HiSeq® 1000/2000/2500 Integration	• HiSeq 2000/1000 running HCS 1.4 (RTA 1.12), HCS 1.5 (RTA 1.13) • HiSeq 2500/1500 running HCS 2.2.7 (RTA 1.18.64) - this is the latest • CASAVA 1.8.0, 1.8.1, or 1.8.2 bcl2fastq v2.15
Illumina HiSeq 3000/4000 Integration	• HiSeq Control Software (HCS) v3.3.64 • Real Time Analysis (RTA) Software v2.5.2 bcl2fastq v2.15 • CASAVA
Illumina HiSeq X™ Integration	• HiSeq X Control Software (HCS) v3.3.39 • Real-Time Analysis (RTA) Software v2.7.1

Standard Integrations

Standard Integrations transfer data from the LIMS via file creation and manual file upload and from the instrument to the LIMS via manual file upload (Figure 3). These integrations include (Table 3):

- Preconfigured protocols with or without automation
- Sample Information File generation for use with lab instrument or third-party software
- Requires user to upload file into lab instrument or third-party software

Figure 3: Standard Integrations

Table 3: Standard Integrations

Product	Software Requirements
Agilent 2100 Bioanalyzer Integration	2100 Expert vXX
Agilent 2200 TapeStation Integration	—
Life Technologies 7900HT Fast Real-time PCR System Integration	SDS v2.4
Life Technologies 3730xl DNA Analyzer Integration	DNA Sequencing Software
Life Technologies QuantStudio 6 Flex Integration	QuantStudio Real-Time PCR Software v1.1
Life Technologies QuantStudio 7 Flex Integration	QuantStudio Real-Time PCR Software v1.1
Life Technologies QuantStudio 12K Flex Integration	QuantStudio Real-Time PCR Software v1.1
Life Technologies QuantStudio 12K Flex Integration	• QuantStudio Real-Time PCR Software v1.1 • QuantStudio 12K Flex Softwarev1.2.2 • OpenArray • SampleTracker Software v1.2
PerkinElmer LabChip GX Integration	LabChip GX v3.1
Illumina HiScan® Integration	GenomeStudio® Software
Illumina iScan Integration	GenomeStudio Software
Thermo Scientific NanoDrop Integration	—

Summary

BaseSpace Clarity LIMS is developed to support 3 types of Integrations: Automated, Semi-Automated, and Standard.These integrations were designed to support error-free sample tracking and automation.

Learn More

To learn more about integrations, contact informatics@illumina.com.

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