illumına®

LIMS Project Manager Guide

Revision History

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Overview

Introduction

The Illumina® Laboratory Information Management System (Illumina LIMS) Project Manager is a scalable system that enables scientists or project managers to:

- ▸ Set up institutes, projects, and investigators
- ▸ Accession samples
- ▸ Add global control sample plates
- ▸ Accession products
- ▸ Add cluster files

The Illumina LIMS Project Manager allows you to easily accession experimental and control samples into the system using familiar sample sheet definitions. When you assign samples to an Infinium project, Illumina LIMS Project Manager automatically queues them for processing in batches that match Illumina's reagent and BeadChip packages. You can also create customized Infinium® batches manually. When you assign samples to a GoldenGate® project, you must create batches manually.

Illumina LIMS Project ManagerWorkflow

The following diagram shows the overall workflow in Illumina LIMS Project Manager. For more detail on any of the steps, see the corresponding chapter or section.
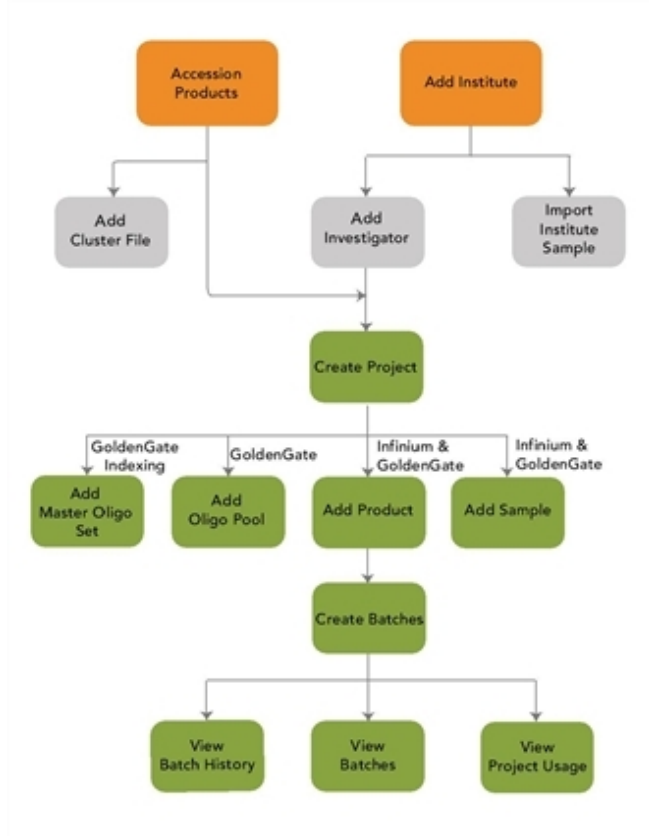
Installing the Illumina LIMS Project Manager Client

Illumina LIMS Project Manager is the fat client for Illumina LIMS, which is a server application that runs as a service on the Illumina LIMS application server. In addition to the Illumina LIMS Project Manager fat client, Illumina LIMS has a web client documented in the Illumina LIMS User Guide.

1   Open your web browser.

2   Type the address provided to you by the Illumina LIMS system administrator in the URL field.

3   Click **Enter**. The Illumina LIMS window opens.

Figure 2   Install the Illumina LIMS Project Manager Client
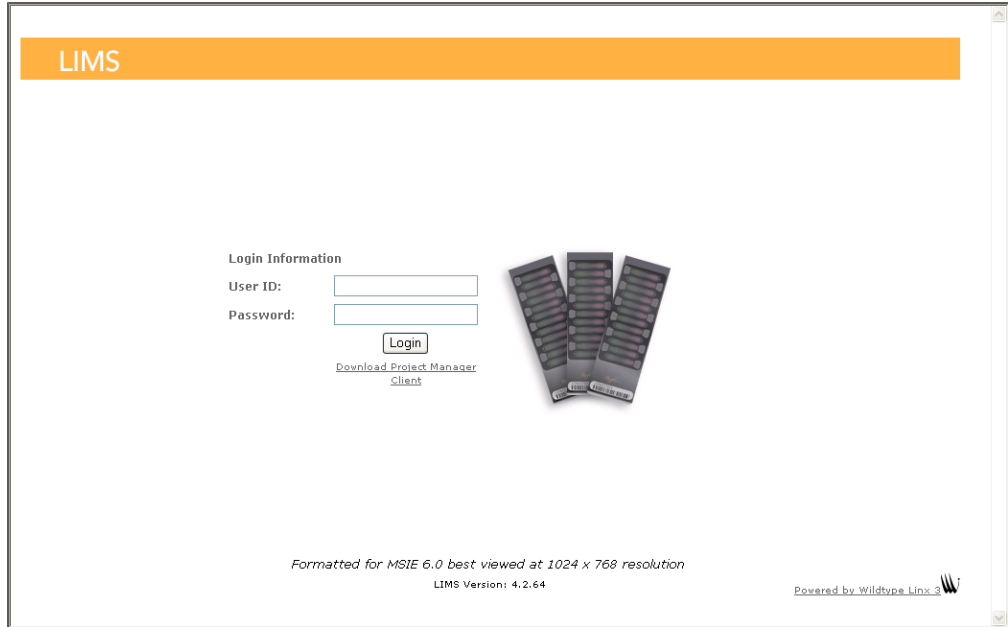
4   Click **Download Project Manager Client**.

5   The Project Manager Client is installed, the Log into LIMS Project Manager window opens, and an Illumina lims-manager icon is added to your desktop.

Getting Access to Features

Typically, you will log on to the Illumina LIMS web client and the Illumina LIMS Project Manager fat client using your Windows user name and password. You may also log on using database authentication. Confirm your log on method with your system administrator.

To use the Illumina LIMS Project Manager, you must have Management Client access. For more information on permissions, see the Illumina LIMS User Guide. Consult your system administrator if you have any questions.

Your lab manager or system administrator has set up your user account and determined what areas of the application are available to you. You will not be able to log in to either the web or the local client until your account exists and you will not see any areas in the web client to which you do not have permissions. To request changes to your account, contact your system administrator.

Getting Started

1 Double-click the Illumina lims-manager icon. The Log into LIMS Project Manager window opens.

Figure 3 Log into LIMS Project Manager Window
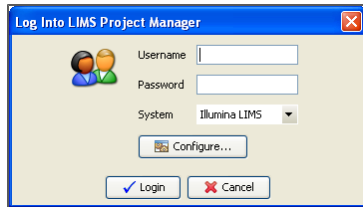
2 The first time you use the Illumina LIMS Project Manager you must configure the client server.

a Click **Configure**. The Configure Servers window opens.

b Enter or edit the Display Name, Host, Port, and Context, then click **OK**.

— To add additional servers, click **New Server** then enter the Display Name, Host, Port, and Context.

— To delete a server, select the server from the list and click **Delete**.

If you do not know your configuration parameters, consult your Illumina LIMS system administrator.

3 Do one of the following:

• If you are using Windows authentication, enter your Windows user name and password in the Log into LIMS Project Manager window.

• If you are using database authentication, enter the user name and password that were established for your Illumina LIMS user account.

If you do not know what form of authentication Illumina LIMS is using, consult your system administrator.

4 Click **Login**. The Illumina LIMS Project Manager window opens.

NOTE
The first time you log in to the Illumina LIMS Project Manager, the Illumina LIMS Project Manager End-User Software License Agreement opens. Read the agreement, then select **Agree** to continue to log in.

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Figure 4   Illumina LIMS Project Manager Window
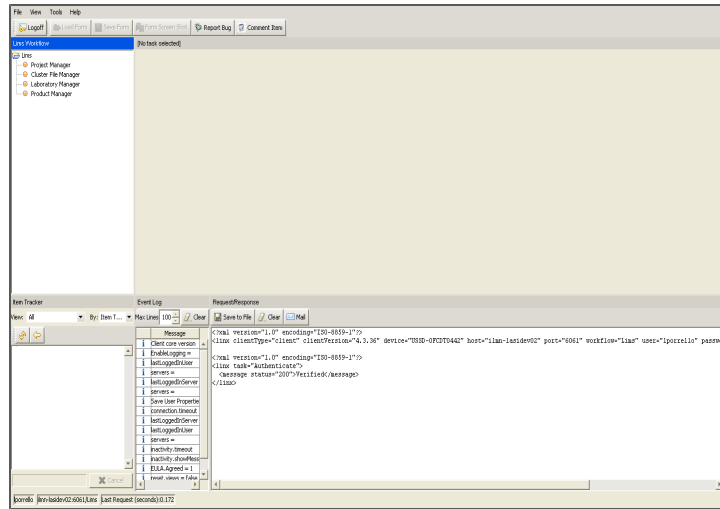
All instructions in this book assume that you have already logged in to Illumina LIMS Project Manager.

Configuration Tools

The configuration of e-mail, communications, date and time formats and log settings can be modified. To access these configuration options in the Illumina LIMS Project Manager window select **Tools | Options**.

E-Mail Server

1   Select the **E-mail** tab.

Figure 5   E-mail Tab
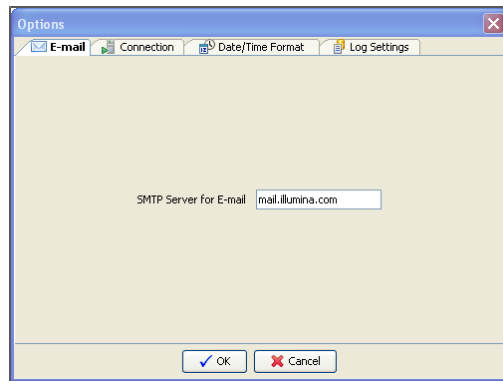
2   Enter the SMTP e-mail server address, and then click **OK**.

Connection Parameters

1   Select the **Connection** tab.

Figure 6   Connection Tab
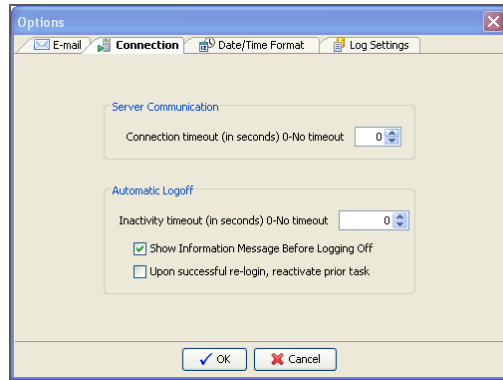
2   Configure the following options:
- **Server Communication**
  — Select the number of seconds of lost connection time before server communications will time out. A 0 setting indicates that communications will never time out.
- **Automatic Logoff**
  — Select the number of seconds of inactivity before the user is automatically logged off. A 0 setting indicates that the user will never be logged off automatically.
  — Select whether or not to show an information message before automatically logging off.
  — Select whether or not to reactivate the prior task after a successful re-login.

3   Click **OK**.

Date Format

1   Select the **Date/Time Format** tab.

Figure 7   Date/Time Format Tab
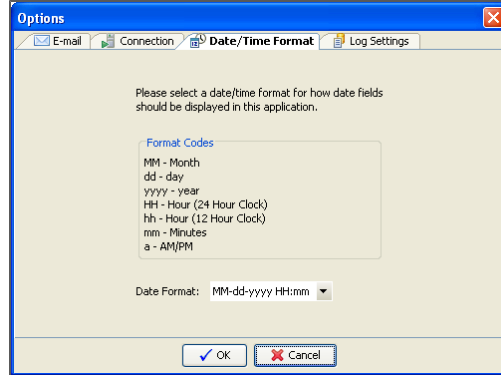
2   Select a date format from the drop-down list and click **OK**.
All dates in the Illumina LIMS Project Manager will now use the format you selected.

Log Settings

1   Select the **Log Settings** tab.

Figure 8   Log Settings Tab
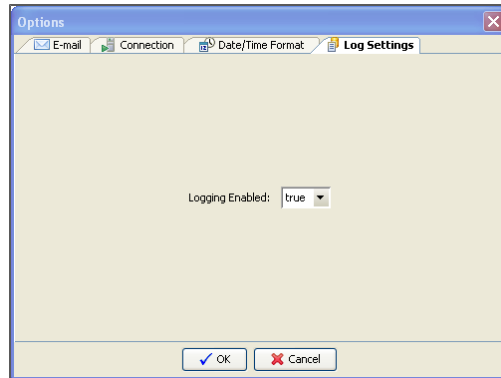
2   Select whether logging is enabled (true) or disabled (false) from the drop-down list and click **OK**.

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Viewing Events and Communications

Illumina LIMS Project Manager logs all events that occur during a session. If you call technical support, a technical support scientist may request that you open the event log.

1   The first time you log in, the Event Log is automatically displayed. The Event Log lists the events that have occurred so far in this session.

2   To remove the Event Log pane, from the Illumina LIMS Project Manager menu bar select **View | Event Log** so that the check mark disappears beside the menu option and the pane is no longer displayed.

3   To redisplay the Event Log, from the Illumina LIMS Project Manager menu bar select **View | Event Log**. The Event Log pane appears in the Illumina LIMS Project Manager window.

4   Select to increase or decrease the **Max Lines** (maximum number of lines) in the Event Log pane as needed.

5   Click **Clear** in the Event Log pane to delete the contents of the list as needed.

Viewing Requests/Responses

You can view all the requests and responses between the server and the local client. If you call technical support, a technical support scientist may request that you turn this on.

To view the request/response exchange

1   The first time you log in, the Request/Response pane is automatically displayed. The Request/Response pane shows the code that is being executed.

2   To remove the Request/Response pane, from the Illumina LIMS Project Manager menu bar select **View | Request/Response** so that the check mark disappears beside the menu option and the pane is no longer displayed.

3   To redisplay the Request/Response pane, from the Illumina LIMS Project Manager menu bar select
View | Request/Response. The Request/Response pane appears in the Illumina LIMS Project Manager window.

To email the request/response log to Illumina Technical Support

1 Click **Save to File** in the Request/Response pane. Name the file and give it a .txt (text file) extension.

2 Click **Mail** in the Request/Response pane. An email dialog box opens, pre filled with the email address for technical support.

3 Enter your own email address in the **From** box, if it is not already populated.

4 If you wish, enter a subject line or comments. Comments appear in the body of the message.

5 Click **Add**. Navigate to the location of the text file you created and select it.

6 Click **Send**.

7 Click **Clear** in the Request/Response pane to delete the contents of the list as needed.

Manage Display

The Illumina LIMS Project Manager enables you modify several viewing options.

Reset All Windows

You can reset the Illumina LIMS Project Manager window to display the viewing panes in the default configuration.

▸ From the Illumina LIMS Project Manager menu bar select **View | Reset All Windows** so that all the viewing panes will be displayed and in their default location. The next time the Illumina LIMS Project Manager window is opened following login the default configuration will display.

Manage Table Contents

The contents of most tables can be copied for pasting into a spreadsheet or text file and the order in which the rows of data are displayed can be sorted by a specified column.

To copy the contents of a table

1 Place the cursor within any table display in Illumina LIMS.

2 Press the right mouse button and Copy appears to the right of the cursor.

3 Open a file in the application (for example, an Excel spreadsheet) where you want to paste the table contents. Use the application's Paste function to paste the entire contents of the copied table into the file.

To sort the contents of a table

1 Click the column header. The entire table is sorted in ascending, descending, or original order based on the contents of the column selected.

2 Each time the column header is selected, the sort switches between the ascending, descending, or original order.

Manage Forms

Forms can be saved, loaded and saved as an image. This can be used to save the input data and later load that data without having to manually reenter it.

To save the displayed form

1   Click **Save Form** from the Illumina LIMS Project Manager window.

2   Name and save the currently displayed workflow form. The form is saved in .xml format.

To load a form

1   Select an option from the Illumina LIMS workflow.

2   Click **Load Form** from the Illumina LIMS Project Manager window.

3   Locate and select the form to be displayed. The selected form is displayed in the Illumina LIMS Project Manager window.

To capture an image of the workflow pane

1   Click **Form Screen Shot** from the Illumina LIMS Project Manager window.

2   Name and save the image of the workflow pane. An image of the workflow pane is saved in .png format.

Report Bug

1   Click **Report Bug** from the Illumina LIMS Project Manager window. The E-mail window opens. Your e-mail address and Subject are automatically entered and can be edited.

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Figure 9   Report Bug E-mail Window
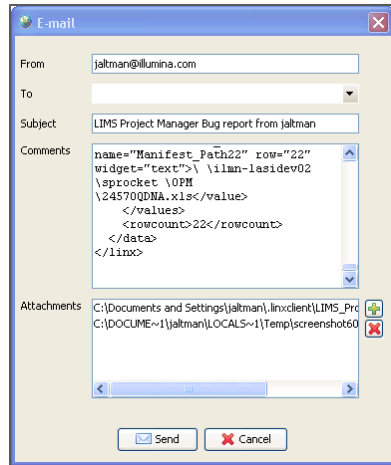
2   Enter the e-mail address of your LIMS system administrator in the To field.

3   The last event you performed is automatically entered in the Comments section. Enter additional comments if necessary.

4   A screen shot of your last event is automatically saved and listed in the Attachments. Add or remove attachments if necessary.

   • To add a file to the attachment list, click the add icon [+] to the right of the list. The Choose File to Attach window opens. Select the file to add and click **Open**. The selected file is added to the list of Attachments.

   • To remove a file from the attachments list, select the file from the list, then the click the delete icon [x] to the right of the list. The file is deleted from the list.

5   Click **Send** to send the bug report.

Administrator Tools

An Illumina LIMS administrator can control user access and application values.

▷ From the Illumina LIMS Project Manager menu bar select **Tools** | **Administrator**. The Administration window opens.

Figure 10   Administration Window
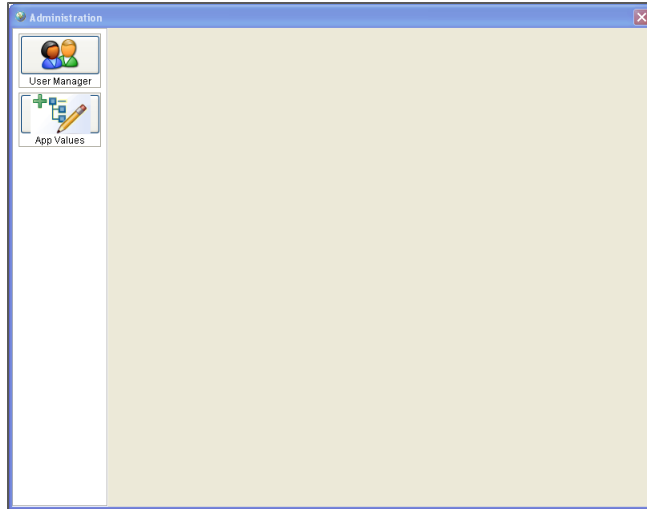
User Manager

Illumina LIMS users can be added and their permissions can be controlled through the User Manager tool.

▷ Click **User Manager** from the Administration window. A list of Illumina LIMS users is displayed or if no users have been set up, the list is blank.

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User Manager Pane
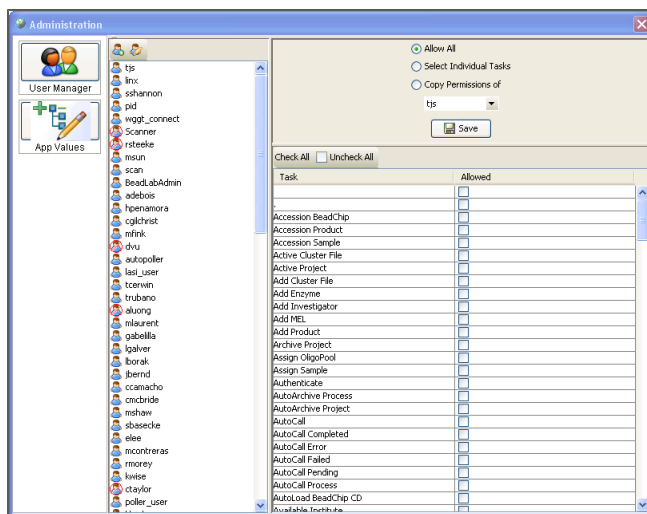
Add User

1   Click the Add User icon from the Administration window. The Add User window opens.

Figure 12   Add User
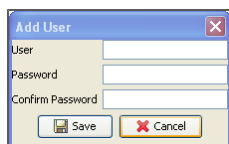
2   Enter a User name, Password, enter the same password to confirm the password, then click **Save**. The new user is added to the user list. The User name and Password are required by the user in order to log in to Illumina LIMS. See *User Manager* on page 16 to set up the new user's permissions.

Edit Password

1   Select a user from the list.

2   Click the Edit User icon . The Edit User window opens.

Figure 13   Edit User

3   Enter a new password, enter the same password to confirm the new password, then click **Save**. The new password is required by the user in order to log in to Illumina LIMS.

Edit Permissions

1   Select a user from the list. The user's permissions are displayed for each Illumina LIMS task. A check in the Allowed column indicates that the use has permission to perform that task.

Figure 14   Select User
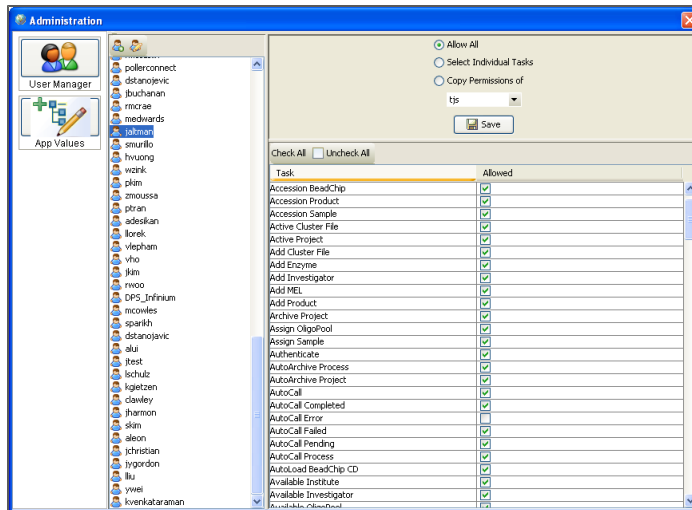
2   To modify the user's permissions do one of the following:
    • Click **Allow All** to allow the user to perform all Illumina LIMS tasks.

- Click **Select Individual Tasks** to allow the user to perform only selected Illumina LIMS tasks and do one of the following:
  — Check the box in the Allowed column next to each individual task that you want the user to have permission to perform.
  — Click **Check All** to allow the user to perform all Illumina LIMS tasks.
  — Click **Uncheck All** to disallow the user to perform any Illumina LIMS tasks.
- Click **Copy Permissions of** to copy the permissions of another user. Select a user whose permissions are to be copied from the drop-down menu.

3 Click **Save**.

App Values

Application values can be created and edited and new categories can be created.
▶ Click **App Values** from the Administration window. The list of application values are displayed in alphabetical order.

Figure 15   App Values Pane
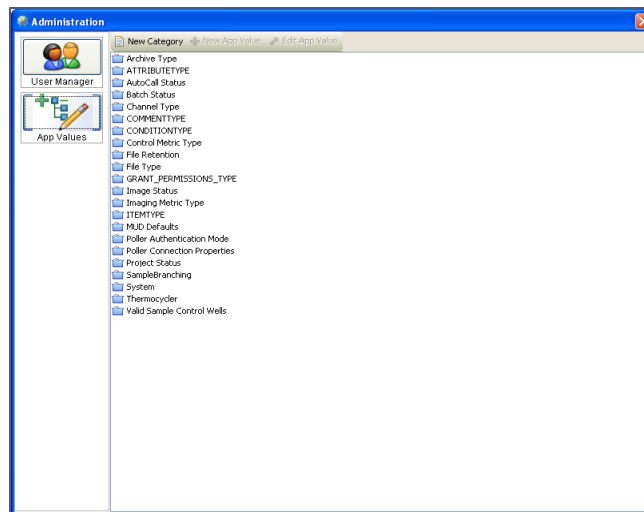
Edit Application Values

1   Double-click on the parent type folder that contains the application (app) value type you want to edit.
Click the + sign beside any folder to view more information. Continue to drill down until you see the app value that you want to edit.

2   Select the value that you want to edit.

Figure 16   App Value Elements
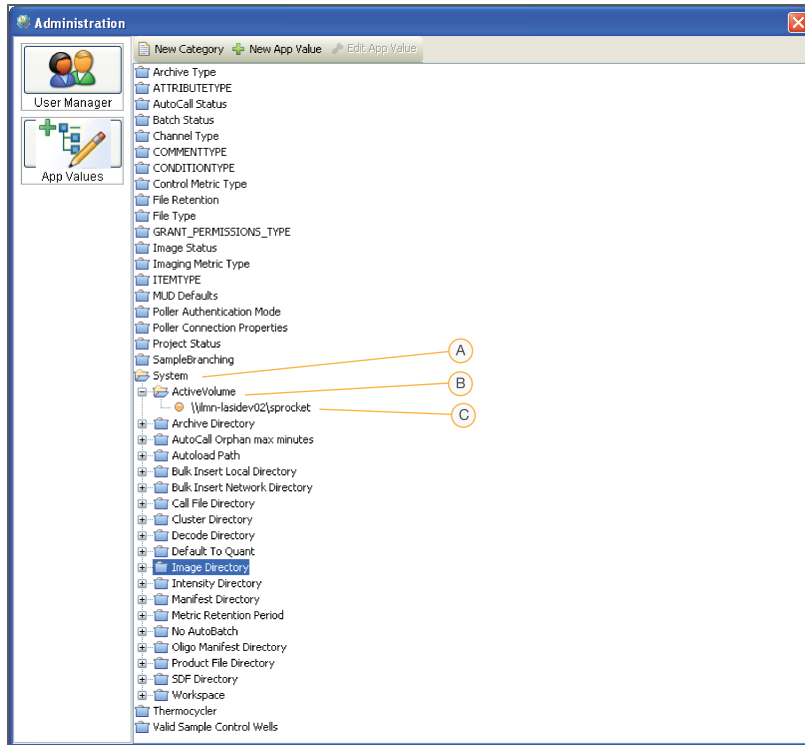
A   Parent Type
B   App Value Type
C   App Value

3   Click **Edit App Value**. The Edit App Value window opens.

Figure 17   Edit App Value
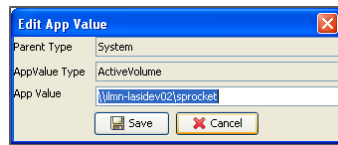
4   Enter the new App Value and click **Save**. The information is updated on the app value type list.

Add Category

1   Click **New Category**. The Add Category window opens.

Figure 18   Add Category
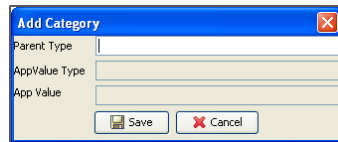
2   Enter the new Parent Type category and click **Save**. The category is added to the app value type.

Add Application Value

1   Double-click on the folder that contains the parent type you want to update.
    Click the + sign beside any folder to view more information. Continue to drill down until you see the folder where you want to add the app value.

2   Select the folder that will contain the new app value.

3   Click **New App Value**. The Add App Value window opens.

Figure 19   Add App Value
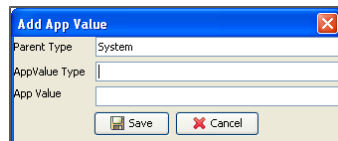
4   Enter the new label or name in the App Value Type field.

5   Enter specific information about the App Value Type in the App Value field, such as the directory path, value, or setting. Active and inactive settings are defined as follows:

   • **Active**: Anyone can do work associated with the application.
   • **Inactive**: No one can do any work associated with the project.

6   Click **Save**. The new app value and its type are added to the parent category folder.

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Exit Project Manager

To exit the Illumina LIMS Project Manager do one of the following from the Illumina LIMS Project Manager window:

▸ Click **Logoff**

▸ Select **File** | **Exit**

▸ Click in the upper right corner

Project Manager

Introduction

The Project Manager area provides tools for creating and managing individual projects for each institute. Every project, investigator, sample, and batch is associated with a single institute. Products are available to all institutes.

1   In the Illumina LIMS Project Manager left sidebar, click **Project Manager**. The LIMS Project Manager window opens.

2   Do one of the following:
   • To add a new institute, go to *Adding and Managing Institutes* on page 28.
   • To view data for an existing institute, go to *Searching for an Institute* on page 29.

Project Manager Workflow

The following diagram shows the normal workflow for the Project Manager area. The next several sections explain how to perform all of the associated procedures.

> **NOTE**
> You must have accessioned at least one product before you can add a project.

Figure 20 Project Manager Workflow
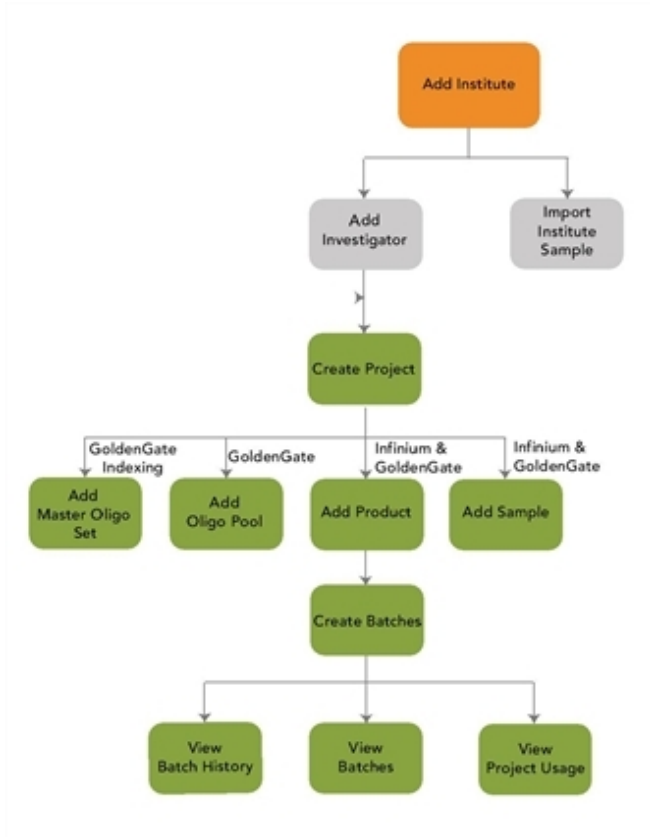
Adding and Managing Institutes

An institute is a group, institution, department, or other entity that has projects in LIMS. Every project must be associated with an institute.

Adding an Institute

1   In the Illumina LIMS Project Manager left sidebar, click **Project Manager**. The Institute Search pane opens.

2   Click **New Institute**. The Add New Institute pane opens.

3   Enter the institute name and any ancillary contact information that you wish to include. The only required information is the institute name.
    If the institute has a system ID that allows the LIMS data to hook into its own backend database, enter the ID here. This ID will appear on all institute-based reports as I-SSID (institute secondary system ID).

4   Click **Save**.

Modifying an Institute

1   In the Illumina LIMS Project Manager left sidebar, click **Project Manager**. The Institute Search pane opens.

2   Find the appropriate institute. For more information, see *Searching for an Institute* on page 29.

3   Highlight the institute and click **Institute Detail** or double-click the institute. The Institute Detail pane opens.

4   Click on the institute name in the **Institute Detail** pane. The institute details are displayed.

5   Make any changes to the institute's contact information, and then click **Save**.

    NOTE
    You cannot change the name of the institute.

Searching for an Institute

1   In the Illumina LIMS Project Manager left sidebar, click **Project Manager**. The Institute Search pane opens.

2   In the **Search By** drop-down list, select the type of information you want to search by:
    • Institute Name
    • Project Name
    • Investigator Name
    • Sample Container Barcode (i.e., DNA plate barcode)

3   Enter the text to search on (such as RMS Lab or WG0001234-DNA) in the **Search Criteria** box. The box is not case-sensitive, so an "a" is the same as an "A."
    If you do not know the full name, enter a wild card (*) to represent the missing text. For example (assuming that you are searching by institute):
    • e* searches for all institutes whose names begin with "e"
    • *e* searches for all institutes whose names contain "e"
    • *e searches for all institutes whose names end in "e"
    To list all institutes, leave the box empty.

4   Click **Search**. The results of the search appear at the bottom of the pane.

Sample Manifest

The sample manifest defines the DNA or BCD samples that will be run through the lab. It can contain data for any number of plates, each of which can contain from 1 to 96 samples. To accession the sample manifest data, see *Accessioning Institute Samples* on page 33.

> TIP
> Sample manifest files can be downloaded from
> http://www.illumina.com/documents.

The data in a sample manifest are specific to a single institute. If you import the sample manifest into an institute other than the one named in the file, Illumina LIMS Project Manager will prompt you for confirmation.

DNA Sample Manifest

The sample manifest must contain the columns listed in the table below. The columns may be in any order.

Table 1   DNA Sample Manifest Columns

Column	Description
Comments*	Any supplementary data about the sample.
Conc (ng/µl)	The concentration of DNA in the sample, in nanograms per microliter.
Extraction Method	The method by which the DNA was extracted from the tissue.
Institute Plate Label	The WG#-DNA barcode for the sample plate.
Institute Sample Label	The name assigned by the institute to identify this sample.
Is Control	0: This is an experimental sample. 1: This is a control sample.
Mass of DNA used in WGA	The mass of DNA used for this sample in WGA, if WGA was the extraction method.
Parent 1*	The sample name or plate well of the parent, if known.
Parent 2*	The sample name or plate well of the other parent, if known.
Replicate(s)*	The name or barcode of any duplicate sample in the same plate.
Row	(Optional) The row number of the sample in the sample manifest. Integers only. These numbers enable you to ensure that you have entered all the data for each plate: e.g., 96 samples for the first plate and 72 samples for the second.
Sex	The sex of the individual from whom the sample was drawn. M: Male

Column	Description
	F: Female U: Unknown
Species	The species from which the DNA sample was drawn.
Tissue Source	The type of tissue from which the DNA was drawn.
Volume (µl)	The amount of sample, in microliters.
Well	The coordinates of the well in the sample plate (e.g., A01 or H10).
WGA Method (if Applicable*	The type of whole-genome amplification that was used to extract the DNA, if WGA was the extraction method.

*This column must be present in the file but does not need to contain any information.

BCD Sample Manifest

The sample manifest must contain the columns listed in the table below. The columns may be in any order.

Table 2   BCD Sample Manifest Columns

Column	Description
Comments*	Any supplementary data about the sample.
Conc (ng/µl)	The concentration of DNA in the sample, in nanograms per microliter.
Extraction Method	The method by which the DNA was extracted from the tissue.
Institute Plate Label	The WG#-DNA barcode for the sample plate.
Institute Sample Label	The name assigned by the institute to identify this sample.
Is Control	0: This is an experimental sample. 1: This is a control sample.

Column	Description
Mass of DNA used in WGA	The mass of DNA used for this sample in WGA, if WGA was the extraction method.
Parent 1*	The sample name or plate well of the parent, if known.
Parent 2*	The sample name or plate well of the other parent, if known.
Replicate(s)*	The name or barcode of any duplicate sample in the same plate.
Row	(Optional) The row number of the sample in the sample manifest. Integers only. These numbers enable you to ensure that you have entered all the data for each plate: e.g., 96 samples for the first plate and 72 samples for the second.
Sex	The sex of the individual from whom the sample was drawn. M: Male F: Female U: Unknown
Species	The species from which the DNA sample was drawn.
Tissue Source	The type of tissue from which the DNA was drawn.
Volume (µl)	The amount of sample, in microliters.
Well	The coordinates of the well in the sample plate (e.g., A01 or H10).
WGA Method (if Applicable*	The type of whole-genome amplification that was used to extract the DNA, if WGA was the extraction method.

*This column must be present in the file but does not need to contain any information.

Accessioning Institute Samples

To make samples available to projects within an institute, accession the sample manifest data into the institute. To begin, save the sample manifest as a comma-separated value (*.csv) file. A manifest may contain any number of sample plates. For more information on the construction of the sample manifest, see *Sample Manifest* on page 29.

> **CAUTION**
>
> If you are generating the *.csv file from an Excel spreadsheet, then before saving as a *.csv file, review the Excel file and make sure that the final column has data in every row. If the last column is empty, then Excel discards all commas after the last complete column in the row. This will offset the values for the rest of the file and cause errors upon import.

Projects only have access to samples that have been accessioned into the institute.

Samples cannot be accessioned into more than one institute. This helps protect proprietary data.

To accession samples to an institute

1   In the LIMS Project Manager left sidebar, click **Project Manager**. The Institute Search pane opens.

2   Find the appropriate institute. For more information, see *Searching for an Institute* on page 29.

3   Highlight the institute and click **Institute Detail**. The Institute Detail pane opens.

4   In the left sidebar, click **Institute Samples**. The Institute Samples pane opens.

5   Click **Import Institute Samples**. The Import Sample Manifest dialog box opens.

6   Select a sample manifest file (*.csv) and click **Open**.

> **NOTE**
>
> If you import a sample manifest into an institute that is different from the institute name in the sample manifest, LIMS Project Manager" /> will prompt you to confirm that this is what you meant to do.

The Import Manifest Detail pane opens and shows a row for each sample plate.

For a detailed list of the columns in the sample manifest, see the Import Manifest Detail Fields table below.

> **NOTE**
>
> By default, the **Quant Samples** check box is selected for every sample plate. When you save, the sample plates will be queued for the Make Quant task. You will not be able to assign sample plates to projects until they have completed the Read Quant task and are placed in the Available Sample Plates queue.

7   If you do not want to quantify a sample plate, clear the check box by that plate. When you save, any sample plate that is not selected for Quant will be immediately available to assign to a project.

8   Click any sample plate in the Import Manifest Detail pane to view information about each well in the plate. For information about the manifest details, see the following table.

Table 3   Import Manifest Detail Fields

Column	Description
IsControl	0: The well in this row contains an experimental sample. 1: The well in this row contains a control sample.
Parent 1	The sample name or plate well of the parent, if known.
Parent 2	The sample name or plate well of the other parent, if known.
Quant Samples	Indicates whether or not to quantify the samples in the sample plate. If the check box is selected, LIMS Project Manager automatically queues the samples for Make Quant. You cannot add these samples to a project until Read Quant is complete. If the check box is not selected, LIMS Project Manager automatically makes the samples available to assign to a project.
Replicates	The name or barcode of any duplicate sample in the same plate.
Sample	The sample name.
Sample Plate	The sample DNA plate barcode.
Sex	The sex of the individual from which the sample was derived.

Column	Description
	M: Male F: Female U: Unknown
Species	The species from which the DNA sample was drawn.
Well	The coordinates of the well in the sample plate (e.g., A01 or H10).

9   Click **Save** to finish importing the samples into the institute.
The imported samples appear at the bottom of the Institute Samples list. For information about the sample plate fields, see the following table.

Table 4   Sample Plate Fields

Column	Description
IsControl	0: This plate is not a control plate. 1: This plate is a control plate. Control plates are visible to all institutes in Illumina LIMS Project Manager.
Number of Samples	The number of samples on the plate.
Project Count	The number of projects to which this plate has been assigned.
Sample Container Id	This is a system-generated database key. You do not need to use it for anything.
Sample Plate	The sample plate name or barcode.

Validating Samples

Illumina LIMS Project Managerautomatically validates all the fields in the manifest when you save. If all sample plate data are valid, that row appears in green. If there is an error in the sample plate data (e.g., the IsControl column has a value other than 0 or 1), the sample plate appears in red.

If a plate name turns red when you save, it means that Illumina LIMS Project Manager was not able to validate all the fields in the sample manifest. Possible causes for the error include:

‣ A plate has the same ID as a sample plate that is already in the system
‣ There is a missing value in one of the fields (e.g., a blank volume)
‣ There is a character value in a numeric field

If an error occurs, fix the problems in the sample manifest *.csv file and reimport the samples.

Viewing Institute Samples

The Institute Samples pane lists sample plates that are available for all projects in the institute.

Click a sample plate to show detailed information from the sample manifest in the Plate Detail pane. For information about the columns in this table, see the table below.

Table 5   Sample Plate Detail Fields

Column	Description
Comment	Any comments from the sample manifest.
Conc (ng/μl)	The concentration of DNA in the sample, in nanograms per microliter.
IsControl	No: The well in this row contains an experimental sample. Yes: The well in this row contains a control sample.
Parent 1	The sample name or plate well of the parent, if known.
Parent 2	The sample name or plate well of the other parent, if known.
Replicate	The name or barcode of any duplicate sample in the same plate.
Sample	The sample name.
Sex	The sex of the individual from which the sample was derived. M: Male F: Female U: Unknown

Column	Description
Species	The species from which the DNA sample was drawn.
Tissue Type	The type of tissue from which the DNA sample was drawn.
Volume (µl)	The amount of sample, in microliters.
Well	The coordinates of the well in the sample plate (e.g., A01 or H10).

Adding and Managing Investigators

Investigators are the scientists associated with an institute. An investigator can only be associated with one institute. Every project must have a principal investigator.

Adding an Investigator

1   In the Illumina LIMS Project Manager left sidebar, click **Project Manager**. The Institute Search pane opens.

2   Find the appropriate institute. For more information, see *Searching for an Institute* on page 29.

3   Highlight the institute and click **Institute Detail**. The Institute Detail pane opens.

4   In the left sidebar, click **Investigators**. The Investigators pane opens.

5   Click **New Investigator**. The input fields become available.

6   Enter the investigator's personal information. The first and last name, email address, and phone number are required fields.

7   Click **Save**. The investigator appears in the Investigators list at the top of the pane.

You can modify investigator information at any time. The only information you cannot change is the name.

Updating an Investigator

1   In the Institute Detail left sidebar, click **Investigators**.

2   In the Investigators pane, highlight the name of the investigator. The investigator's personal information appears at the bottom of the pane.

3   Make any changes to the contact information, and then click **Save**.

> NOTE
> You cannot change the investigator's name.

Adding and Managing Projects

Most of the work done in Illumina LIMS is associated with a project, which in turn is associated with an institute. Among other things, the project defines the available products, the sample plates, and the batches.

Before adding a project, you must have already done the following:

- ▸ Added investigators (see *Adding and Managing Investigators* on page 38)
- ▸ Accessioned products (see *Product Accessioning* on page 78)

Adding a Project

1   In the Illumina LIMS Project Manager left sidebar, click **Project Manager**. The Institute Search pane opens.

2   Find the appropriate institute. For more information, see *Searching for an Institute* on page 29.

3   Highlight the institute and click **Institute Detail**. The Institute Detail pane opens.

4   In the left sidebar, click **Projects**. The Projects pane opens.

5   Click **New Project**. The New Project window opens.

6   Select the assay type for the new project (**WGGT** for Infinium, **MSI** for GoldenGate Indexing, or **GGGT** for GoldenGate) and then click **OK**. The Add a New Project pane opens.

7   Enter the project name.

8   If the project has a system ID that allows the LIMS data to hook into its own backend database, enter the ID here. This ID will appear on all the project-based LIMS reports as P-SSID (project secondary system ID).

9   Select the principal investigator. If the investigator does not appear in the list, go to the Investigators pane and add a record for the investigator. For more information, see *Adding and Managing Investigators* on page 38.

> NOTE
> Sometimes an investigator does not appear in the list immediately after adding them. Click **Refresh Project** to refresh the screen.

10 Enter a starting date (mm/dd/yyyy) and a due date (mm/dd/yyyy) or click the button beside each field and select a date from the pop-up calendar.

> NOTE
> The starting date and due date are for tracking purposes only, and have no effect on how the project is run.

11 Select the product or products that you will use in this project. Press **Control** to highlight more than one, except for MSI products where only one product can be selected.

> NOTE
> If a desired product does not appear in the list, go to the Product Manager and then Product Accession pane and accession the product into the system. For more information, see *Product Accessioning* on page 78.

For Infinium projects only, when you assign sample plates to the project, Illumina LIMS Project Manager will create a separate batch for each product.

12 For GoldenGate Indexing projects only, select the master oligo pool to use.

13 Click **Save**. The project appears in the Projects list at the top of the page.

Adding Products to a Project

You can add new products to a Infinium or GoldenGate project at any time. The product must be accessioned into the system before you can add it to a project. For more information, see *Accessioning Products* on page 78.

> NOTE
> Adding new products is not available for GoldenGate Indexing projects.

1 In the Illumina LIMS Project Manager left sidebar, click **Project Manager**. The Institute Search pane opens.

2 Find the appropriate institute. For more information, see *Searching for an Institute* on page 29.

3 Highlight the institute and click **Institute Detail**. The Institute Detail pane opens.

4 In the left sidebar, click **Projects**. The Projects pane opens.

5   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

6   Click **Add Product**. The Assign Products to Project dialog box opens.

7   Select one or more products from the **Available** list and click **>** to move them to **Assign to Project**.
    Click **<** to move items from the **Assign to Project** list back to the **Available** list.

8   Click **Save**. The products are added to the Project Detail window.

9   For Infinium projects only, when prompted, indicate whether you want to create new amplification batches for all samples.
    If you click **No**, you can still batch old samples for the new product by using the Import Manual Batch function. For more information, see *Importing Manual Batches on page 41*.
    When Illumina LIMS Project Manager finishes adding the products, they appear on the list of products for the project.

10 Click **Save** in the Project Detail window.
    For Infinium projects, if you chose to batch existing samples for the new product, click the **Batches** tab. The new batches appear on the list along with the product and batch creation date.
    For GoldenGate projects, to create batches click the **Batches** tab and proceed to *Importing Manual Batches* on page 41 or *Prepare GGGT Batches* on page 44.

Importing Manual Batches

This feature lets you create a customized batch of samples from a single project for Infinium and GoldenGate projects. By exporting sample data as a *.csv file and then sorting and filtering the data, you can quickly assemble the batch regardless of how many samples the project contains.

> NOTE
> For GoldenGate Indexing, *Assigning Sample Plates* on page 49.

These are the basic steps:

1   Run the Project Detail report from the Illumina LIMS web client, and export it to a *.csv file.

2   Edit the *.csv file to create a batch import file.

3   Import the file into the project.

Read the following sections for more detailed instructions.

> **NOTE**
> For Infinium projects only, Illumina LIMS can automatically batch your samples as well. For more information, see *Assigning Sample Plates* on page 49.

Defining the Batch

This section explains how to create the batch import file from an Illumina LIMS report for Infinium and GoldenGate projects. To create manual batches, you must have already accessioned the samples, quantified them if required, and assigned them to a project. For more information, see *Accessioning Institute Samples* on page 33. The samples should be in one or more DNA plates.

1   Log into the Illumina LIMS web client.

2   Click the **Reports** tab and then click **Lab Management | Project Detail Report** in the left sidebar.

3   Select a project from the list.

4   Select **Export to CSV** and click **Run Report**. Select to **Save** or **Open** the .csv file. The .csv file contains information about every sample in the project.

5   Edit the information in the .csv file to narrow down the list to only the samples you want to batch.

6   Save the edited Project Detailed Report .csv file to a new batch import .csv file with the following structure:

> **NOTE**
> The heading field names must exactly match the names given below.

- For Infinium batches:
  — Column header '**Product Part Number**' in cell A1.
  — The actual product number in cell B1. The product part number can be found using the Product Inventory Report function in the Illumina LIMS web client.
  — A **Sample Plate** column starting in cell A3, that lists the sample plate barcode(s). You can batch samples from more than one plate.

— A **Sample Wells** column starting in cell B3, that lists the well for each sample you want to batch. The maximum number of samples you can batch is 96.

Figure 21 Sample Batch Import File (Infinium)

- For GoldenGate batches:
  - **Product Part Number** in cell A1.
  - The actual product number in cell B1.
  - **Path** in cell A2.
  - Path type (**MUD** or **SUD**) in cell B2.
  - A **Source** column starting in cell A4, that lists the source barcode(s). For the SUD path, you can batch samples from more than one sample plate, up to 96 plates. For the MUD path, you must batch all samples from a single sample plate. For example, if the sample plate has 16 samples, the MUD batch must have 16 samples.
  - A **Source Well** column starting in cell B4, that lists the well for each source you want to batch.
  - A **Oligo Pool** column starting in cell C4 that lists the oligo pool ID.

Sample Batch Import File (GoldenGate)

Importing the Batch

1   In the left sidebar of the Institute Detail pane, click **Projects**.

2   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

3   Click the **Batches** tab. It lists any batches that are currently associated with the project.

4   Click **Import Manual Batch**.

5   Browse to the sample batch import file (*.csv) and click **Open**. Illumina LIMS Project Manager imports the batch data and queues the batch for amplification. The new batches appear in the list with the date and time of import. For GoldenGate projects, two batches are created per import file: Make SUD and Make SUD ASE Batch or Make MUD and Make MUN ASE Batch.

Prepare GGGT Batches

Sample batches can be prepared for the GGGT flow.

1   In the left sidebar of the Institute Detail pane, click **Projects**.

2   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

3   Click the **Batches** tab. It lists any batches that are currently associated with the project.

> **NOTE**
> Plates associated with the project can be viewed in the Sample Plates tab (see *Assigning Sample Plates* on page 49).

4   Click **Prepare GGGT Batches**.
     The Prepare GGGT Batch window opens.

5   Select a Universal Array Product.

6   Select one or more sample plates.

7   Select the SUD, MUD or MUD-Multi DNA path.
     For SUD and MUD, only DNA plates with 96 samples can be used. For all other plates a manual batch should be created.
     The MUD-Multi option is only available for sample plates with 16, 24, 32, 48 or 96 samples.

8   Select one or more Oligo Pools.
     Multiple oligo pools may be selected for the MUD and SUD DNA path and a batch for each oligo pool will be created.
     The MUD-Multi path requires the selection of multiple oligo pools. For example: for 32 samples, you must select 3 oligo pools. When MUD-Multi path is active, Oligo Pools list displays a Quantity column. You can select the same oligo pool for different sets within the plate.

9   Click **Add**.
     If the selected DNA plate has available MUN plates, a window opens displaying the MUN usage for the DNA plate.

10   Select one of the existing MUN plates or create a new MUN plate. Do one of the following:
     •   Select an existing MUN plate and click **OK**. The sample batch will be queued to the ASE batch task.
     •   Click **Create new MUN**. The sample batch will be queued to Make MUD.

11   Multiple batches can be added by repeating steps 5 through 10 above.
     The Batches to Create are displayed in the Prepare GGGT Batches window.
     You can delete a single batch by selecting it from the list and clicking **Delete**. You can delete the entire list of batches by clicking **Clear All**.

NOTE
The batches have not been saved yet.

12 Click **Create Batches** to create the batches in the database.

Modifying Project Status

Projects may have one of four status codes. When you add a project, the status is Active. To put a project on hold, select Inactive.

If you want to archive a project, set the status to Inactive, then click the **Archive** button. The status changes to Awaiting Archive. When the system finishes archiving the project data, the status changes to Archived.

Status Codes

▶ **Active**: You may modify the project, and anyone can do work associated with the project.

▶ **Inactive**: The only modification you can make to the project is to change its status back to Active, or to Awaiting Archive (by clicking **Archive**). No one can do any work associated with the project.

▶ **Awaiting Archive**: No one can do any work associated with the project, nor can you change the status of the project. A poller will run at set intervals and archive the data in LIMS to an archive folder on the file server. LIMS will then set the status to Archived.

▶ **Archived**: The system automatically changes the project status to Archived. Once the status is set to Archived, the IT department will have to back up the files to tape.

Oligo Pools

For GoldenGate genotyping projects the Oligo Pools can be added and details reviewed.

Assign Oligo Pools to a Project

You can assign new oligo pools to a project at any time.

1 In the Illumina LIMS Project Manager left sidebar, click **Project Manager**. The Institute Search pane opens.

2 Find the appropriate institute. For more information, see *Searching for an Institute* on page 29.

3 Highlight the institute and click **Institute Detail**. The Institute Detail pane opens.

4 In the left sidebar, click **Projects**. The Projects pane opens.

5 Highlight a GoldenGate project in the Projects pane. The project data appears at the bottom of the pane.

6 Click the **Oligo Pools** tab.

7 Click **Assign Oligo Pools**. The Assign Oligo Pools to Project dialog box opens.

8 Select one or more oligo pools from the **Available** list and click **>** to move them to **Assign to Project**. Click **Save**.

9 When the Illumina LIMS Project Manager finishes assigning the oligo pools, they appear on the list of oligo pools for the project.

Viewing Sample Plates

The Sample Plates tab lists any sample plates that are assigned to your project, by name or barcode. It indicates whether the plate is a control plate, and identifies the number of wells.

To view sample plates associated with the project

1 In the left sidebar of the Institute Detail pane, click **Projects**.

2 Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

3 Click the **Sample Plates** tab. It lists any plates that are currently associated with the project. For more information about the columns in this tab, see the table below.

Table 6   Project Sample Plate Fields

Column	Description
Barcode	The barcode of the sample plate.
IsControl	0: This plate is not a control plate.

Column	Description
	1: This plate is a control plate. Control plates are visible to all institutes in Illumina LIMS Project Manager.
Number of wells	The number of sample wells in the plate.

To view sample plates details for a project

1   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

2   Click the **Sample Plates** tab. It lists any plates that are currently associated with the project. For more information about the columns in this tab, see the table below.

3   In the left sidebar of the Institute Detail pane, click **Projects**. Double click a plate name in the Sample Plates tab. The Displaying Plate Detail pane opens. It displays information about every sample well on the plate. For information about the columns in this table, see the table below.

Table 7   Plate Detail Fields

Column	Description
Comment	Any comments regarding the samples.
IsControl	No: The well in this row contains an experimental sample. Yes: The well in this row contains a control sample.
Conc (ng/μl)	The concentration of DNA in the sample, in nanograms per microliter.
Parent 1	The sample name or plate well of the parent, if known.
Parent 2	The sample name or plate well of the other parent, if known.
Replicate	The name or barcode of any duplicate sample in the same plate.
Sample	The sample name or barcode.
Sex	The sex of the individual from which the sample was derived.

Column	Description
	M: Male F: Female U: Unknown
Species	The species from which the DNA sample was drawn.
Tissue Type	The type of tissue from which the DNA sample was drawn.
Volume (µl)	The amount of sample, in microliters.
Well	The coordinates of the well in the sample plate (e.g., A01 or H10).

Assigning Sample Plates

For Infinium projects only, after you have accessioned sample plates into the institute, you can assign them to projects. When you assign a sample plate to a project, the Illumina LIMS Project Manager automatically batches the samples and starts the laboratory workflow.

> **NOTE**
> You can also add batches manually. For more information, see *Importing Manual Batches* on page 41.

Automatically generated batches consist of samples on a single plate. For multi-use products, Illumina LIMS assigns as many 24-sample batches as possible from each plate, with the remaining samples filling out the last batch. For multi-sample products, the batches may contain 48 or 96 samples. For optimal processing, ensure that the sample plates contain multiples of the number of samples per batch, which will result in full batches for every run.

Assigning sample plates to an Infinium or GoldenGate project

1   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

2   Click the **Sample Plates** tab. It lists any plates that are currently associated with the project. For more information about the columns in this tab, see the table below.

3   Click **Assign Sample Plates**. The Assign Samples to Project dialog box opens. It lists all the available sample plates in the institute. To add another plate to this list, see *Accessioning Institute Samples* on page 33.

4   Select one or more samples from the Available list and click **>** to assign them to the project.

5   Click **Save**. The sample plates appear in the Sample Plates and tab.

Assigning sample plates to a GoldenGate Indexing project

1   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

2   Click the **Batches** tab. It lists batches that are currently associated with the project.

3   Click **Prepare MSI Batches**. The Assign Sample Plates and Create Batches dialog box opens.

4   Select two or more samples from the Available for Batching or Available for Rebatching lists, and then click the add icon ⬜ to assign them to the batch.

5   Click **Assign and Create Batches**. The plates appear in the Sample Plates and Batches tabs.

Assigning sample plates by file to a GoldenGate Indexing project

1   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

2   Click the **Batches** tab. It lists batches that are currently associated with the project.

3   Click **Prepare MSI Batches by File**. The Prepare MSI Batches by File dialog box opens, which enables you to select the batch files you want to include.

4   Navigate to a folder that contains the sample plate file (*.csv), select it, and then click **Open**. The plate appears in the Sample Plates and Batches tabs.

Viewing Project Samples

To view sample plate details for a project, double click a plate name in the Sample Plates tab. The Displaying Plate Detail pane opens. It displays information about every

sample well on the plate. For information about the columns in this table, see the following table.

Table 8   Plate Detail Fields

Column	Description
Comment	Any comments regarding the samples.
Conc (ng/μl)	The concentration of DNA in the sample, in nanograms per microliter.
IsControl	No: The well in this row contains an experimental sample. Yes: The well in this row contains a control sample.
Parent 1	The sample name or plate well of the parent, if known.
Parent 2	The sample name or plate well of the other parent, if known.
Replicate	The name or barcode of any duplicate sample in the same plate.
Sample	The sample name or barcode.
Sex	The sex of the individual from which the sample was derived. M: Male F: Female U: Unknown
Species	The species from which the DNA sample was drawn.
Tissue Type	The type of tissue from which the DNA sample was drawn.
Volume (μl)	The amount of sample, in microliters.
Well	The coordinates of the well in the sample plate (e.g., A01 or H10).

Batch Detail

The Batch Detail tab provides detailed information about the project batches.

1   In the left sidebar of the Institute Detail pane, click **Projects**.

2   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

3 Click the **Batch Detail** tab. For information about the columns in this table, see the appropriate table below.

Batch Detail Fields

Column	Description
Amplification Plate	The amplification plate ID.
ASE Batch ID	The ASE batch number.
ASE Plate	The ASE plate ID.
ASE Pool Plate	The ASE pool plate ID.
Batch	The batch number.
Batched?	Yes or no to indicate whether samples in the plate are batched.
Oligo Pool	The oligo pool ID.
Product Name	The name of the product (e.g., HumanHap300-Duo). For multi-use products, this is the first beadchip that will be hybridized in the series. Ensure that the Product Name column is associated with the proper batch number for the product. Note: Multi-use products will list multiple batch numbers for the same plate. It is important to note the batch number of the first BeadChip that will be processed in the series.
Status	Active: The batch is queued for amplification. Completed: The samples in the batch have been amplified. Deleted: The batch was deleted.
Source Plate	The source plate ID.
Subpool Index	The subpool index number.
SUD Batch ID	The SUD batch number.
SUD Plate	The SUD plate ID.

Column	Description
Task	The current queue of the batch.
XUD	The XUD plate ID for SUD or MUD.

4   Click **Refresh Batch Detail** to display the list in default order, if you have resorted the table contents.

Monitoring Project Usage

The Project Usage tab provides information about the samples that have been hybridized to a BeadChip.

If you adjust your cluster files during the course of a project, you may wish to reanalyze all the project samples. The Project Usage tab has a **Requeue Products for AutoCall** function that enables you to requeue the samples per product to AutoCall to regenerate genotyping call files.

1   In the left sidebar of the Institute Detail pane, click **Projects**.

2   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

3   Click the Project Usage tab. For information about the columns in this table, see the table below.

4   If you want to requeue all the samples for a product in this project to AutoCall, click **Requeue Products for AutoCall**. A list of all products in this project appears.

5   Select the product or products that you want to reanalyze, and then click **Requeue**.

> NOTE
> If you are reanalyzing due to adjustments in a cluster file, remember that each cluster file is specific to a product. Therefore, you may not need to reanalyze the samples for every product.

Table 10 Project Usage Fields

Column	Description
Barcode	The barcode of the individual BeadChip.
Date Completed	The date and time when the batch amplification was completed.
Date Created	The date and time when the batch was added to the project.
Product Name	The name of the product (e.g., HumanHap300-Duo).
Sample Name	The sample name.
Sample Section	The section of the BeadChip where the sample was hybridized.
Status	Active: The batch is queued for amplification. Completed: The samples in the batch have been amplified. Deleted: The batch was deleted.

Viewing Project Batches

There are three ways to add leftover samples to a batch:

▸ Create and import a manual batch (see *Importing Manual Batches* on page 41).

▸ Run the Make Requeue Batch task in Illumina LIMS to view samples previously hybridized in the project. For Infinium projects only, next run the Make Sample Batch task to manually assign previously hybridized samples to a batch. (See the Illumina LIMS User Guide.)

▸ Run Prepare Sample Batch, which enables you to create batches from multiple projects/institutes.

1   In the left sidebar of the Institute Detail pane, click **Projects**.

2   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

3   Click the Batches tab. For information about the columns in this table, see the appropriate table below.

Table 11 Batches Fields

Column	Description
Completed Date	The date and time when the samples were amplified.
Created Date	The date and time when the batch was created.
Format	The format of the product: e.g., 1x10, 1x12, 96x1, etc.
LIMS Task	The task that is being performed for this batch: • Multi-use BeadChip options: Make AMP2 • Single-use BeadChip options: Make MSA# (where "#" is the MSA version), Make AMP# (where "#" is the AMP version) • GoldenGate project options: Make MUD, Make MUN ASE Batch, Make MUN ASE, Make SUD, Make SUD ASE, Make SUD Batch, Make SUD ASE Batch, Make Multi OPA MUN ASE Batch
Number of Transfers	The number of wells from the sample plate that have been assigned to this batch.
Product Name	The name of the product (e.g., HumanHap300-Duo).
Sample Batch ID	Illumina LIMS Project Manager automatically assigns a number to each batch. Double-click on the batch number to open the Batch Detail window.
Status	Active: The batch is queued for amplification. Completed: The samples in the batch have been amplified. Deleted: The batch was deleted.
XT Batch ID	The XT batch number.

4   To view detailed information about a batch, double-click the batch number. The Displaying Batch Detail window opens and shows information about every sample well in the batch. For information about the columns in this window, see the table below.

Table 12   Batch Detail Fields

Column	Description
BeadChip	Barcode number for BeadChip.
BeadChip Queue	BeadChip status.
Id	The sample plate identification number.
Institute	The name of the institute.
Oligo Pool (GoldenGate only)	The oligo Pool number.
Project	The name of the selected project.
Sample	The name of the sample.
Sample Plate	The name or barcode of the original sample plate.
Sample Well	The physical coordinates of the well in the sample plate (e.g., A01 or H10).
Status	Active: The batch is queued for amplification. Completed: The samples in the batch have been amplified. Deleted: The batch was deleted.

Deleting Project Batches

1   In the left sidebar of the Institute Detail pane, click **Projects**.

2   Highlight a project in the Projects pane. The project data appears at the bottom of the pane.

3   Do one of the following:
   • For Infinium or GoldenGate projects click the Batches tab.
   • For GoldenGate Indexing projects click the Batch Detail tab.

4   Highlight one or more batches in the list. (For GoldenGate projects only one batch may be selected at a time.) The **Delete** button is activated.

5   Click **Delete**. The highlighted batches are removed from the list.

Viewing Batch History

The Batch History pane shows historical batch data for all projects in the institute. To view batch data for a single project, see *Viewing Project Batches* on page 54.

1   In the Illumina LIMS Project Manager left sidebar, click **Project Manager**. The Institute Search pane opens.

2   Find the appropriate institute. For more information, see *Searching for an Institute* on page 29.

3   Highlight the institute and click **Institute Detail**. The Institute Detail pane opens.

4   In the left sidebar, click **Batch History**. For information about the columns in this table, see the following table.

Table 13   Batch History Fields

Column	Description
Assay Type	The assay type: WGGT or GGGT.
Batch ID	Illumina LIMS Project Manager automatically assigns a number to each batch. Double-click on the batch number to open the Batch Detail window.
Number of Transfers	The number of wells from the sample plate that were assigned to this batch.
Plate	Barcode number for amplification plate.
Queue	The current task the amplification plate is queued for.
Status	Active: The batch is queued for amplification. Completed: The samples in the batch have been amplified. Deleted: The batch was deleted.

5   Click any batch to open a Batch Detail window. The window shows information about every sample in the batch. For information about the columns in this window, see the table below.

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Table 14 Batch History Detail Fields

Column	Description
Item	The name or barcode of the original sample plate.
Alpha Coordinate	The physical coordinates of the well in the sample plate (e.g., A01 or H10).
appvaluetype	Active: The batch is queued for amplification. Completed: The samples in the batch have been amplified. Deleted: The batch was deleted.
Item	The name or barcode of the sample inside the well.
Item	Barcode number for BeadChip.
Sample Container Id	Illumina LIMS Project Manager automatically assigns a number to each batch.
Task	BeadChip status.

Requeue for Autocall

Requeue for Autocall allows samples for an institute to be requeued via project, batch, or BeadChip. Select the attribute that you wish to requeue by and the detail pane will populate with items available for requeue.

1   In the left sidebar of the Institute Detail pane, click **Requeue for Autocall**. The Requeue for Autocall pane opens.

2   Select an attribute (Project, Batch or BeadChip) from the **Requeue for Autocall by** drop down menu. The details display in the lower portion of the pane and vary depending upon the selected attribute.

3   Select the check box in the row of each project, batch, or beadchip to requeue and click **Save**.

4   Click **Refresh** to display the list with the requeued items removed.

Cluster File Manager

Introduction

Cluster files (*.egt) provide cluster definitions. In order for the AutoCall program to generate genotype calls, you must link a cluster file to each product. Each product may have one or more associated cluster files, but only one cluster file may be active at any given time.

For standard products, import the cluster file using the Cluster File Manager. Custom BeadChips do not come with a cluster file. To create the cluster file, run the BeadChip against your samples, analyze the data in GenomeStudio and export a cluster file. Import the file into the Illumina LIMS Project Manager using the Cluster File Manager.

Adding another cluster file is also useful if you wish to change the cluster definitions as you gather more data. To do this, customize the cluster file in GenomeStudio and export it. You can import multiple cluster files into Illumina LIMS, which enables you to continue refining the file as you gather more data.

After each modification, it is recommended that you requeue the samples using the latest cluster file.

NOTE
AutoCall does not work with Methylation products.

Viewing Cluster Files

1 In the Illumina LIMS Project Manager left sidebar, click **Cluster File Manager**. The Cluster File Manager window opens.

2 Select the **Assay Type** (WGGT, MSI, or GGGT).

3 Click **Next**.

4 Do one of the following:
   - For Infinium assays (WGGT), select the product from the drop-down list.
   - For GoldenGate Indexing assays (MSI), select the **Master Oligo Set** or search for the pool by typing all or a portion of the set name.
   - For GoldenGate assays (GGGT), select the **Oligo Pool** or search for the pool by typing all or a portion of the pool name.

5 Click **Next**. The active and inactive cluster files are displayed. The active cluster file appears in yellow.

Adding a Cluster File

> **NOTE**
> For Infinium and GoldenGate products only (excluding Infinium Methylation). Refer to the *GenomeStudio User Guide* to add cluster files to GoldenGate Indexing products.

1   View the cluster files for the product (See "Viewing Cluster Files" on page 93.)

2   Click **Add Cluster File** to add a file to the list.

3   Navigate to the cluster file (*.egt) and click **Open**.

When the cluster file finishes importing, it is added to the list in the Manage Cluster Files window. It starts out with a status of Inactive.

> **NOTE**
> You may add more than one cluster file. However, only one at a time can be active for a product.

Activating a Cluster File

1 View the cluster files for the product (See "Viewing Cluster Files" on page 93.)

2 Select the cluster file that you want to use for this product.

3 Click **Activate Cluster File**. The file you select will apply to all revisions of the product.
   The active cluster file appears in yellow.

   NOTE
   If you activate another cluster file for this product, the originally active cluster file automatically becomes inactive.

Inactivating Cluster Files

1   View the cluster files for the product (See "Viewing Cluster Files" on page 93.)

2   Click **Inactivate All Cluster Files.** The status of all listed files is set to inactive.

Completing Cluster File Management

1   Click **Finish** to complete cluster file management of the selected product. The Select Assay Type pane displays.

2   If necessary, repeat the add, activate, or inactivate processes to manage the cluster files for another product.

Laboratory Manager

Introduction

The Laboratory Manager tool is a high level view of what projects are queued and their status and a set of high level options to manage projects. Only administrators or project managers should have access to the administrative Tasks.

▸ In the Illumina LIMS Project Manager left sidebar, click **Laboratory Manager**. The Laboratory Manager window opens.

Laboratory Manager Status Reports

The Laboratory Manager Status Reports tool provides a view of project batch status reports.

1   In the Illumina LIMS Project Manager left sidebar, click **Laboratory Manager | Status Reports | Project Batches**. The Laboratory Manager Project Batches pane opens. For information about the columns in this pane, see the following table.

Table 15   Project Batches Fields

Field	Description
Active Batches	The number of current batches waiting to run.
Completed Batches	The number of completed batches.
Project ID	ID number associated with project
Project Name	The name of the project (e.g., HumanHap300-Duo).

2   Double click a project to view the details. For information about the columns in this pane, see the following table.

Table 16   Selected Project Fields

Field	Description
Number of Items on Queue	The number of a specific task that is in the queue for the selected project.
Queue	A list of the current tasks that are queued for the selected project.

3   Double click a queue item to display the queue detail.

Laboratory Manager Tasks

The Laboratory Manager Tasks tools are a set of high level options to manage projects. Only administrators or project managers should have access to these Tasks.

1 In the Illumina LIMS Project Manager left sidebar, click **Laboratory Manager | Tasks**. The Laboratory Manager window opens.

2 There are three admin tasks to choose from:
   - Unarchive Project
   - Make Requeue Batch
   - Prepare Sample Batch

Unarchive Project

The Unarchive Project tool allows you to restore an archived file back to it's originally stored location.

1 In the Illumina LIMS Project Manager left sidebar, click **Laboratory Manager | Tasks | Unarchive Project.** The Unarchive Project pane opens showing only archived projects. For information about the columns in this pane, see the following table.

Table 17 Unarchive Project Fields

Field	Description
Project Name	Name of selected project.
Status	Shows if the project is archived or unarchived.
Number of Files	The number of files archived for the project.
Archive Date	Date the project was originally archived.

2 Double click a project in the project list. All archived files related to the selected project appear. For information about the columns in this pane, see the following table.

Table 18   Selected Unarchive Project Fields

Field	Description
File Type	The file type of the archived project.
Archive File Share	Location of where file is archived.
Original File Share	Original location of archived file.

3   Select one or more files from the list and click **Unarchive**.

4   A dialog box displays asking if you have moved all of the files back to the archived location. All associated files must restored to archived file share so that Illumina LIMS can move the files back to their original location. If necessary, consult your system administrator for assistance.

Make Requeue Batch

The Make Requeue Batch tool allows you to make requeue batches for GoldenGate products only.

1   In the Illumina LIMS Project Manager left sidebar, click **Laboratory Manager | Tasks | Make Requeue Batch**. The Make Requeue Batch pane opens.

2   Select one or more products.

3   Click **Next** to view available hybridized samples.
Samples that have been requeued through the Requeue for Make Sample Batch task in Illumina LIMS are listed. For information about the columns in this pane, see the following table.

Table 19   Make Requeue Select Samples Fields

Field	Description
Oligo Pool	The oligo pool ID.
Project	Name of selected project.

Field	Description
RemainingUses	Remaining uses for the XUD plate.
Sample	The sample name.
SamplePlate	The sample plate name or barcode.
Type	The type of batch.
Well	The coordinates of the well in the sample plate (e.g., A01 or H10).
XUD	The SUD/MUD/MUN plate barcode.
XUDWell	The coordinates of the XUD well in the sample plate (e.g., A01 or H10).

4 Select one or more samples to requeue for batching.

5 Click **Add Selected Samples to Batch**.

6 To remove samples do one of the following:
   - Select one or more samples to remove from the batch, then click **Remove Selected Samples**.
   - Click **Remove All Samples** to remove all samples from the batch.

7 Click **Next**.

8 Repeat 2 through 5 to requeue additional samples if necessary.

Prepare Sample Batch

The Make Requeue Batch tool allows you to make requeue batches for GoldenGate products only.

1 In the Illumina LIMS Project Manager left sidebar, click **Laboratory Manager | Tasks | Prepare Sample Batch** The Prepare Sample Batch pane opens.

2 Click **Browse**. The Select a Batch File dialog opens.

3 Navigate to a folder that contains the batch file (*.csv), select it, and then click **Open**. The batch appears in Batch Information pane. If there is a problem with the

formatting of the batch file and LIMS is unable to read it, LIMS will display an error message.

4   Click **Save** to create a new batch file from the .csv file. If there are any errors, the rows will be highlighted in red and the error info will be displayed.

Table 20   Samples Fields

Field	Description
Oligo Pool	The oligo pool ID.
Product Part Number	The product part number.
Project	The project name.
Source	The source barcode.
SourceWell	The well for each source you want to batch.

Product Manager

Available Products

The Available Products tool provides one-click access to information about every product that has been accessioned into the system.

1   The Available Products pane opens with the list of BeadChip products displayed. For information about the columns in this pane, see the following table.

Table 21   Available BeadChip Products Fields

Field	Description
Accessioned By	The user that added the product to the system.
Accessioned On	The date and time that the product was added.
BPM Path	The network path for the BPM (Bead Pool Manifest).
Is Latest Revision	Gives a true or false statement to indicate if this is the most recent revision of the product.
Num. of Samples	The number of samples that can be hybridized onto the BeadChip.
Part Number	The part number that identifies this product. Each individual BeadChip has its own barcode, but multiple BeadChips can have the same part number.
Product Line	The platform associated with this product.
Product Name	The name of the product (e.g., HumanHap300-Duo).
Rev	The revision of the product.

2   Click the **GoldenGate Oligo Pools** tab to view a list of the available GoldenGate oligo pools products. For information about the columns in this tab, see the following table.

Table 22 Available GoldenGate Oligo Pool Products Fields

Field	Description
Accessioned By	The user that added the product to the system.
Accessioned On	The date and time that the product was added.
Loci Count	The loci count.
Manifest Path	Network path for the manifest.
Oligo Pool	The oligo pool number.
Part Number	The part number that identifies this product.

3   Click the **Master Oligo Sets** tab to view a list of the available master oligo sets products. For information about the columns in this tab, see the following table.

Table 23 Available Master Oligo Sets Fields

Field	Description
Accessioned By	The user that added the product to the system.
Accessioned On	The date and time that the product was added.
Loci Count	The loci count.
Manifest Path	Network path for the manifest.
Master Oligo Set	The master oligo set number.
Master Part Number	The part number that identifies this product.
Subset Index	The subset index number.
Subset Oligo Pool	The subset oligo pool number.
Subset Part Number	The subset part number that identifies this product.

Product Accessioning

Accessioning is the process of adding new products to the database. After you accession a product, it is available to projects in any institute. The product definition is in an *.xml source file that contains these fields:

- ▸ Product Line
- ▸ Product Name
- ▸ Part Number
- ▸ Revision
- ▸ Type
- ▸ Format (the number of stripes on the chip)

In addition to importing the product definition, you must import the bead pool manifest (*.bpm) or oligo pool manifest (*.opa), which provide information about every locus on the product. After adding a product, you should add a cluster file using the Cluster File Manager. For more information, see . For Golden Gate projects, cluster files can be added only through Genome Studio. See the Genome Studio guide for details.

> **NOTE**
> Multi-use products (e.g., HumanOmni1-quad Multi-Use) must be accessioned even if the single-use version of the same product is already in the database (e.g., HumanOmni1-quad).

Accessioning Products

1 In the Illumina LIMS Project Manager left sidebar, click **Product Manager**, and in the Product Manager frame, select **Product Accession**. The Product Accession window opens.

2 Click **Browse** to select the definition file.

3 Navigate to a folder that contains the definition file (*.xml, *.xtm, or *.opa.), select it, and click **Open**.
The product information automatically fills in.

4 Click **Browse** beside the **Bead Pool Manifest** or **Oligo Pool Manifest** text box to select a supplemental file. The type of manifest is dependent upon the type of product selected for accession.

5 Navigate to the folder that contains the bead pool manifest file (*.bpm) or oligo pool manifest (*.opa), select it, and click **Open**.

6 The selected manifest path and filename are displayed.

7 Click **Save**. It may take a few moments for the product accession to be saved.

> NOTE
> You should add a cluster file. For more information, see .

When Illumina LIMS Project Manager finishes importing the product, click **Available Products** in the left sidebar immediately above Product Accession. The accessioned product appears in the list, along with the date and time of import.

Accessioning Individual BeadChips

In addition to accessioning product definitions into the system, you must accession each individually barcoded item. The information that needs to be accessioned can be downloaded via iCom (see the Technical Assistance section in this guide).

> NOTE
> Before you can accession an individual BeadChip, you must have already accessioned its associated part number.

1 Access the BeadChip map data using the **Decode File Client**.

2 Navigate to the data destination folder and save files, and open a window that displays the contents of the data destination folder.

3 Navigate to the AutoLoad folder defined for your system. For more information about configuring system folders, see the *Illumina LIMS User Guide*.

4 Drag the entire BeadChip barcode folder into the AutoLoad folder.

The next time that the Illumina Project Manager polls the AutoLoad folder, it accessions whatever items it finds there. If the accession is successful, the chip is queued for the appropriate task.

> NOTE
> The product must be accessioned before the individual item can be a accessioned.

If the accession fails, the dmap files will be moved automatically to the autoload_failure folder on the LIMS server, and an error will appear in the AutoAccession Failure report. For more information about reports, see the *Illumina LIMS User Guide*.

Update BeadChip/Product

The Update BeadChip Product tool allows you to link a product with a new BPM. Any controls associated with the BPM are also updated. An updated BPM will not affect already hybridized items.

1   In the Illumina LIMS Project Manager left sidebar, click **Product Manager | Tasks | Update BeadChip Product**. The Update BeadChip Product pane opens.

2   Select a product.

3   Click **Browse** to select a Bead Pool Manifest File.

4   Click **Save**.

Resources

Introduction

Illumina LIMS Project Manager has three tools to help you quickly find information. The Item Tracker lets you drill down for information on any item or queue in the system. The Available Products option provides instant information about every product in the system. The Laboratory Manager option provides a high level view of projects that are queued and their status.

In addition to the tools available in Illumina LIMS Project Manager, the Illumina LIMS web client provides a wide variety of reports. For more information, see the Illumina LIMS User Guide.

Item Tracker

Illumina LIMS Project Managerhas introduced a system-wide tracking tool. The Item Tracker displays information about any item (reagent, institute, cluster file, etc.) or queue in the system.

1 The first time you log in, the Item Tracker pane is automatically displayed.

2 In the Item Tracker pane, do one of the following:
   - Select **Item Type** to see a list of physical or logical objects such as reagents, institutes, cluster files, and so on.
   - Select **Item Queue** to see every queue in the system, from Active Cluster File to XStain BC2.

3 Click the + sign beside any item to view more information. Continue to drill down until you see the information you need.

> NOTE
> Some items may take longer to appear than other items. For example, Samples often takes some time, since there may be hundreds of samples in the system.

4 To remove the Item Tracker pane, from the Illumina LIMS Project Manager menu bar select **View | Item Tracker** so that the check mark disappears beside the menu option and the pane is no longer displayed.

5 To redisplay the Item Tracker, from the Illumina LIMS Project Manager menu bar select **View | Item Tracker**. The Item Tracker pane appears in the Illumina LIMS Project Manager window.

Types of Information

The lowest drill down level contains four types of information

Some types of information are irrelevant to a particular item and will be blank.

Attributes

Table 24   Attribute Fields

Field	Description
Name	The item name.
Value	The item value.

Contents

Table 25   Contents Fields

Field	Description
Coord	The exact location of the item. For example, A01 denotes the location of a sample in a plate.
Item	The individual item barcode.
Type	The item type: e.g., sample.

Queues

Table 26   Queues Fields

Field	Description
Task	The current queue that the item is on.

Queue History

Table 27 Queue History Fields

Field	Description
By	Logged in user when task was run.
Date	The date and time when the item changed from one queue to another.
From	The original queue.
To	The new queue.
Tran Id	The transfer identification number.

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Technical Assistance

For technical assistance, contact Illumina Customer Support.

Table 28 Illumina General Contact Information

Illumina Website	http://www.illumina.com
Email	techsupport@illumina.com

Table 29 Illumina Customer Support Telephone Numbers

Region	Contact Number	Region	Contact Number
North America	1.800.809.4566	Italy	800.874909
Austria	0800.296575	Netherlands	0800.0223859
Belgium	0800.81102	Norway	800.16836
Denmark	80882346	Spain	900.812168
Finland	0800.918363	Sweden	020790181
France	0800.911850	Switzerland	0800.563118
Germany	0800.180.8994	United Kingdom	0800.917.0041
Ireland	1.800.812949	Other countries	+44.1799.534000

MSDSs

Material safety data sheets (MSDSs) are available on the Illumina website at http://www.illumina.com/msds.

Product Documentation

If you require additional product documentation, you can obtain PDFs from the Illumina website if PDFs are available. Go to http://www.illumina.com/support/documentation.ilmn. When you click on a link, you will be asked to log in to iCom. After you log in, you can view or save the PDF. To register for an iCom account, please visit https://icom.illumina.com/Account/Register.