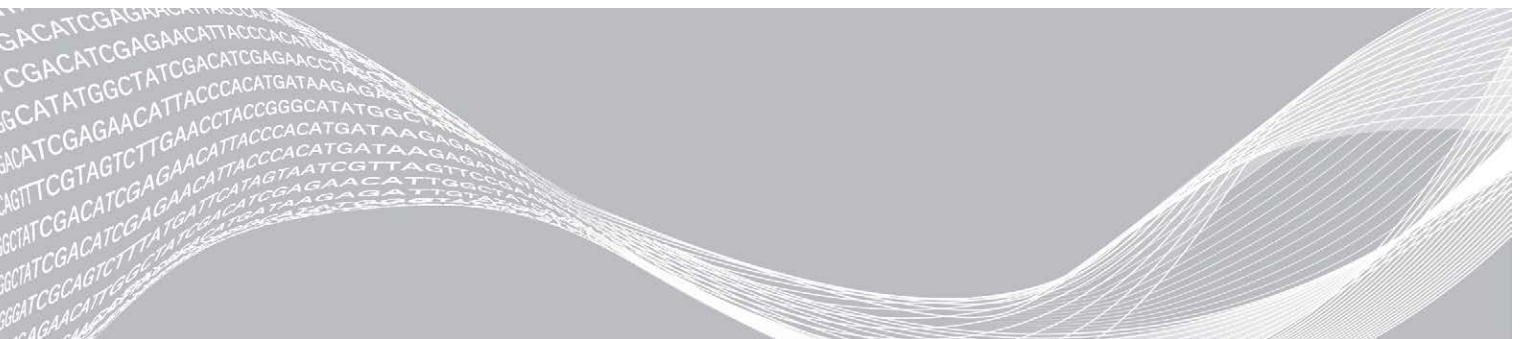


# Local Run Manager

## Software Reference Guide for MiSeqDx

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## Local Run Manager Overview

The Local Run Manager software is an on-instrument integrated solution for creating a run, monitoring status, analyzing sequencing data, and viewing results.

The Local Run Manager has the following features:

- ▶ Runs on the instrument computer and integrates with the instrument control software.
- ▶ Records samples to be sequenced.
- ▶ Provides a run setup interface specific to the analysis module.
- ▶ Performs on-instrument data analysis automatically upon completion of the sequencing run.
- ▶ Performs a series of analysis steps specific to the selected analysis module.
- ▶ Shows analysis metrics upon completion of analysis.

## Viewing Local Run Manager

The Local Run Manager interface is viewed through a web browser. The supported web browser is Chromium version 43.0.2357 on Windows 7 operating system. Connect using one of the following methods:

- ▶ Open a web browser on a computer with access to the same network as the instrument and connect using the instrument IP address or instrument name. For example, **http://myinstrument**.
- ▶ To view the Local Run Manager interface on the instrument monitor, open a web browser and enter **http://localhost** in the address bar.

## Sequencing During Analysis

The MiSeqDx computing resources are dedicated to either sequencing or analysis.

If a new sequencing run is started on the MiSeqDx before secondary analysis of an earlier run is complete, a confirmation dialog box appears. After confirming you want the new sequencing run to start, Local Run Manager stops secondary analysis of the earlier run until the new run completes sequencing.

After the new run completes sequencing, secondary analysis of the earlier run automatically starts again from the beginning.

## User Passwords

To access the Local Run Manager interface, you need a valid user name and password to log in to the system. Only an admin user can assign user credentials.

When your password is approaching an expiration date, a message appears at the top of the interface to remind you to reset your password.

## My Account

From My Account, you can view your user name, your assigned role, permissions, and change your password.

After you have logged in for the first time, you can change your existing password at any time from the My Account window.



Your current password appears encrypted. Therefore, you have to know your current password to change it to a new password. Forgotten passwords require assistance from a system administrator or admin user.

## Password States

The following are possible password states:

- ▶ **Temporary password**—When an admin user creates a user account, the admin user assigns a temporary password for the new user.
- ▶ **User password**—Upon first access, a new user is prompted to change the temporary password from the login screen to a user-assigned password.
- ▶ **Forgotten password**—If a user forgets a password, an admin user can reassign a temporary password that can be changed upon next access.
- ▶ **Used password**—Any user cannot reuse a password for up to 5 password cycles.
- ▶ **User lockout**—The number of attempts to log in using an invalid password is configured by an admin user. If a user exceeds the number of allowed attempts, the user account is locked. Only an admin user can unlock the account, or assign a temporary password.

## Change Your Password

- 1 From the navigation bar at the top of the interface, click the **User**  icon next to your name.
- 2 From the drop-down list, click **My Account**.
- 3 Click the **Edit**  icon in the Password section.
- 4 In the Old Password field, enter your old password.
- 5 In the New Password field, enter a new password.
- 6 In the Confirm New Password field, reenter your new password.
- 7 Click **Save**.

## Dashboard Overview

After you log in to the Local Run Manager software, the dashboard opens. From the dashboard, you can perform the following tasks:

- ▶ Track sequencing and analysis status
- ▶ Sort and filter runs
- ▶ Create and edit runs
- ▶ Stop or requeue analysis
- ▶ View analysis status
- ▶ Hide runs

The dashboard lists all runs performed on the instrument, 10 runs per page. Use the navigation arrows at the bottom of the list to scroll through pages.











Each run listed includes the run name, analysis module, run status, and the date that the run was last modified. To sort runs, click the column names.

- ▶ **Run Name / ID**—Lists the assigned run name and links to the run results pages.
- ▶ **Module**—Lists the analysis module assigned to the run.
- ▶ **Status**—Lists the status of the run and includes a progress status bar. For more information, see *Possible Run States* on page 15.

- ▶ **Last Modified**—Lists the date and time that a run or analysis session was last modified. By default, the Active Runs page is sorted by this column.

## Local Run Manager Icons

The following icons are used in Local Run Manager to perform various tasks.

Icon	Name	Description
	Copy to clipboard	Copies a field to the computer clipboard.
	Dashboard	Opens the Dashboard page.
	Edit	Enables editing of run parameters before sequencing.
	Export	Command to export items.
	Locked	Indicates that the run is being sequenced, or another user is editing a run in another browser session.
	More options	Opens available options for an entry on the dashboard.
	Requeue	Restarts analysis of the selected run.
	Search	Opens the search field to search run names and sample IDs.
	System	Opens the system menu. Available items depend on user permissions.
	User	Opens the user account menu.

## Active Runs Page




The dashboard opens to show the Active Runs page. Across the top of the Active Runs page, a summary of active runs provides a count of runs in each of the following run status categories. To filter active runs by status, click the number.

- ▶ **Ready**—Indicates that the run is ready for sequencing.
- ▶ **In Progress**—Indicates that the run is in the process of sequencing or data analysis.
- ▶ **Stopped or Unsuccessful**—Indicates that analysis was stopped manually or that analysis was unsuccessful.
- ▶ **Complete**—Indicates that analysis was successfully completed.
- ▶ **Total**—The total number of runs on the Active Runs page.


## Filter Runs

- 1 Click a run status category in the summary of active runs to filter the Active Runs page as follows.
  - Ready**—Filters the list to show only runs that are ready for sequencing.
  - In Progress**—Filters the list to show only runs that are in progress.
  - Stopped or Unsuccessful**—Filters the list to show only runs that were stopped or unsuccessful.
  - Complete**—Filters the list to show only runs that are complete.
  - Total**—Removes filters and shows all active runs.



## Hide and Restore Runs

- 1 From the Active Runs page, click the More Options  icon, and then click  **Hide**.
- 2 When prompted to confirm the move, click **Hide**.  
The run is moved to the Hidden Runs page.
- 3 To show the Hidden Runs page, click the Active Runs drop-down arrow and select **Hidden Runs**.
- 4 From the Hidden Runs page, click the Restore  icon.
- 5 When prompted to confirm the move, click **Restore**.  
The run is restored to the Active Runs page.
- 6 To show the Active Runs page, click the Hidden Runs drop-down arrow and select **Active Runs**.


## Search for Runs or Samples

- 1 From the dashboard navigation bar, click the Search  icon.
- 2 In the search field, enter a run name or sample ID.  
As you type, a list of possible matches appears to assist your search.
- 3 Select a match from the list or press **Enter**.
  - ▶ If you searched on a run name, the Run Overview tab opens.
  - ▶ If you searched on a sample ID, the Samples and Results tab opens.  
For more information, see [View Run and Sample Data on page 14](#).

## Edit a Run

- 1 From the Active Runs page, click the More Options  icon next to the run name that you want to edit.
- 2 Click  **Edit**.
- 3 When prompted to confirm the action, click **Continue**.
- 4 Edit run parameters as needed.
- 5 When finished, click **Save Run**.  
The Last Modified dates for the run is updated on the Active Runs page.

## Stop Analysis



- 1 From the Active Runs page, click the More Options  icon next to the run name that you want to stop.
- 2 Click **Stop**.  
The Stop command appears for runs that are either in the state of Analysis Queue or Analysis Running.
- 3 When prompted to confirm, click **Continue**.  
The run status changes to Stopping Analysis or Analysis Stopped depending on the state of the run. A stopped analysis run can be requeued for later analysis.

## Requeue Analysis


You might requeue analysis after analysis was stopped, if analysis was unsuccessful, or if you want to reanalyze a run with different settings. You can requeue analysis from the Local Run Manager dashboard or from the Sample and Results tab. If you receive a “Run Folder Not Found” message when you requeue, then

move or copy the run back to the D:\Illumina\MiSeqAnalysis folder.

## Requeue Analysis from Active Runs

- 1 From the Active Runs page, click the more options  icon next to the run name that you want to requeue.
- 2 Click  **Requeue**.
- 3 When prompted, select from the following options:
  - ▶ Click **Edit Setup** to change analysis parameters. From the Requeue Analysis page, change preferred settings, and then click **Requeue Analysis**.
  - ▶ Click **Requeue**. Analysis begins using current analysis parameters.

## Requeue Analysis from Results Page

- 1 Click the run name on the Active Runs page.
- 2 Click the Samples and Results tab.
- 3 Click  **Requeue Analysis**.
- 4 When prompted, select from the following options:
  - ▶ Click **Edit Setup** to change analysis parameters. From the Requeue Analysis page, change preferred settings, and then click **Requeue Analysis**.
  - ▶ Click **Requeue**. Analysis begins using current analysis parameters.

## Administrative Settings and Tasks

The following settings and tasks require administrative user permissions:

- ▶ **Manage user accounts**—Adds users, assigns permissions, and sets passwords.
- ▶ **Edit MOS system settings**—Allows edits to the MiSeq Operating System (MOS) through the Manage Instrument icon on the Home screen of the MiSeqDx instrument.
- ▶ **Manage Local Run Manager system settings**—Sets system security parameters, maintenance intervals, and service accounts.
- ▶ **View audit trails**—Monitors access frequency and user activity.

Permissions to perform the following task are configurable in user management:

- ▶ **Reboot into research use only mode**—Allows reboot to research mode command which changes the system software to research (RUO) mode.
- ▶ **Edit module settings**—Allows upload of manifest files for use with all runs using a specific analysis module.
- ▶ **Requeue analysis**—Allows editing of parameters and then rerunning analysis. See [Requeue Analysis on page 6](#).
- ▶ **Minimize MOS and access computer**—Allows minimize to windows command for access to the instrument operating system and any folder on the instrument computer when the instrument control software is running in kiosk mode.

## User Management

All user accounts are listed on the User Management page, which includes the first name, last name, and user name for each account. Within the details of each account, the role and associated permissions are managed. Two roles are possible, either Admin or User.


- ▶ **Admin role**—Admin roles have full permissions, by default.
- ▶ **User role**—User roles are configurable based on a subset of possible permissions. All users can create runs regardless of permission settings.

Only an admin user can view the User Management page.



## User Permissions

Permission	Description	Admin Role	User Role
Add Library Prep Kits	This feature is not enabled in the software.	Allowed	Allowed, if selected
Edit MOS System Settings	Edit MOS system settings on the MiSeqDx instrument	Allowed	Not allowed
Edit Local Run Manager System Settings	Set security, maintenance, and service accounts settings	Allowed	Not allowed
Edit Module Settings	Upload manifest files for analysis modules	Allowed	Allowed, if selected
Manage User Accounts	Create and edit user accounts	Allowed	Not allowed
Minimize MOS and Access Computer	Access instrument computer in kiosk mode	Allowed	Allowed, if selected
Requeue Analysis	Reanalyze runs; edit analysis parameters	Allowed	Allowed, if selected
Reboot to Research Use Only Mode	Change the instrument software to RUO mode	Allowed	Allowed, if selected
View Audit Trails	View, filter, and export audit trails	Allowed	Not allowed

## Create a New User

- 1 From the Local Run Manager dashboard navigation bar, click the System  icon, and then click **User Management**.
- 2 From the User Management page, click **Create User**.
- 3 In the Create New User dialog box, enter the first and last name of the new user.
- 4 In the User Name field, enter a user name.  
User names must be unique and cannot be reused or edited later.
- 5 In the New Password field, enter a temporary password.  
Temporary passwords are not stored in the password history and can be reused.
- 6 In the Confirm Password field, reenter the temporary password.
- 7 To select a role, click **Admin** or **User** to toggle between options.
- 8 Select user permissions based on the specified user role.
- 9 Click **Create User**.



## Reset User Password

- 1 From the dashboard navigation bar, click the System  icon, and then click **User Management**.
- 2 Locate the user name you want to edit, and click the **Edit**  icon.





- 3 In the New Password field, enter a temporary password.  
Temporary passwords are not stored in the password history and can be reused.
- 4 In the Confirm Password field, reenter the temporary password.
- 5 Click **Update User**.



## Unlock User Password

- 1 From the dashboard navigation bar, click the **Tools** menu, and then click **User Management**.
- 2 Locate the user name you want to edit, and click the **Edit**  icon.
- 3 From the Edit User dialog box, click  **Unlock User**.
- 4 In the New Password field, enter a temporary password.
- 5 In the Confirm Password field, reenter the temporary password.
- 6 Click **Update User**.

## Change User Permissions

- 1 From the dashboard navigation bar, click the System  icon, and then click **User Management**.
- 2 Locate the user name you want to edit, and click the **Edit**  icon.
- 3 To change a role, click **Admin** or **User** to toggle between options.
- 4 Select user permissions based on the specified user role.
- 5 Click **Update User**.

## Delete a User

- 1 From the dashboard navigation bar, click the System  icon, and then click **User Management**.
- 2 Locate the user name you want to edit, and click the **Edit**  icon.
- 3 In the Create New User dialog box, click **Delete User**.  
After you delete a user, you cannot create an account with that name again.
- 4 When prompted to delete the user, click **Delete**.


## System Settings

System settings are global parameters for user security and automated data maintenance.


- ▶ User security settings include duration for password expiration, maximum login attempts, and duration for idle timeout.
- ▶ Data maintenance settings include automatic clean up of inactive run folders and database backup frequency, and includes a command for immediate database backup.
- ▶ Set analysis service and job service accounts for Windows if your output run folder is on a network path.  
The default is a local system account.

Only an admin user can view the System Settings page.


## Specify System Security Settings

- 1 From the dashboard navigation bar, click the System  icon, and then click **System Settings**.
- 2 Click the Security tab.
- 3 Specify the number of days before a password expires and has to be reset.
- 4 Specify the number of days that a user is reminded to reset a password before it expires.
- 5 Specify the maximum number of attempts that the user can enter invalid login credentials before being locked out of the system.
- 6 Specify the number of minutes that the system can remain idle before the user is automatically logged out.
- 7 Click **Save**.

## Specify System Maintenance Settings

- 1 From the dashboard navigation bar, click the System  icon, and then click **System Settings**.
- 2 Click the Maintenance tab.
- 3 To enable automatic removal of inactive local run folders, select the **Enable Automatic Deletion** checkbox. When enabled, the system deletes inactive folders from the default analysis folder on the instrument after the specified time.
- 4 If the Enable Automatic Deletion checkbox is selected, specify a number of days of inactivity before the automatic deletion command is activated.
- 5 To specify a database backup location, enter a preferred path to a backup location.
- 6 In the Backup Period field, enter the duration in days between each backup.
- 7 To create an immediate backup, click **Backup Now**.
- 8 Click **Save**.

## Specify System Service Accounts Setting

- 1 From the dashboard navigation bar, click the System  icon, and then click **System Settings**.
- 2 Click the Service Accounts tab.
- 3 To enable Analysis Service and Job Service Windows accounts, select **Windows Account**.
- 4 In the User Name field, enter a user name.
- 5 In the Password field, enter a password.
- 6 Click **Save**.

## Module Settings

The Module Settings page provides a list of installed analysis modules in the left navigation panel. Each analysis module name opens a page that lists the module version and last modified date.


## Audit Trails

Audit trails records information about specific actions, such as user access, user profile changes, and changes to system, run, or analysis parameters. Each audit trail entry includes the following information:

- ▶ When, represented as date YYYY-MM-DD and time in 24-hour time format.
- ▶ Who, represented by the user name who initiated the action.
- ▶ What, represented by a short predefined description of the action taken.
- ▶ Affected Item, represented by 4 affected item categories of User, Run, Analysis, or System.
- ▶ To sort the audit trails list, click any column heading to sort in ascending or descending order.

Only an admin user can view the Audit Trails page.

## Filter Audit Trails



- 1 From the dashboard navigation bar, click the **Tools** menu, and then click **Audit Trails**.
- 2 From the Audit Trails page, click the Filter  icon.



### Note

You can apply filters to previously filtered results to further refine the list. To apply a filter to the entire audit trails database, clear previous filters before proceeding.

## Filter by Date

- 1 Click the Calendar  icon and select a **From** date.
- 2 Click the Calendar  icon and select a **To** date.
- 3 Click **Filter**.

## Filter by User Name

- 1 In the Who field, enter a user name.  
You can enter any portion of a user name. Asterisks (\*) are not required.
- 2 Click **Filter**.






## Filter by Action

- 1 In the What field, enter an action description.  
You can enter any portion of an action description. Asterisks (\*) are not required.
- 2 Click **Filter**.



## Filter by Affected Item Description

- 1 In the Affected Item text field, enter any portion of the affected item description.  
The description can be a run name, user name, analysis module name, or report name, for example. You can enter any portion of a description. Asterisks (\*) are not required.
- 2 Click **Filter**.

## Filter by Affected Item Category





- To filter by an affected item category, click the Category  icon in the Affected Item field and select from the following options:
  -  **User**—Filters the list to show user actions and user authentication actions.
  -  **Run**—Filters the list to show changes to run parameters or run status
  -  **Analysis**—Filters the list to show changes in analysis parameters or analysis status.
  -  **System**—Filters the list to show actions at the system level, such as file uploads, system maintenance, or security settings.
- Click **Filter**.

## Export Audit Trails

- From the dashboard navigation bar, click the **Tools** menu, and then click **Audit Trails**.
- From the Audit Trails page, click the Filter  icon.
- Apply preferred filters.
- Click the Export  icon.  
The software generates a report in PDF file format that includes the user name, date of export, and filter parameters.

## Audit Trails Icons

The following icons are used on the Audit Trails screen.

Icon	Name	Description
	Analysis	Indicates a change in analysis parameters or analysis status.
	Run	Indicates a change to run parameters or run status.
	System	Indicates a change to module settings or system settings.
	User	Indicates a user action or user authentication action.

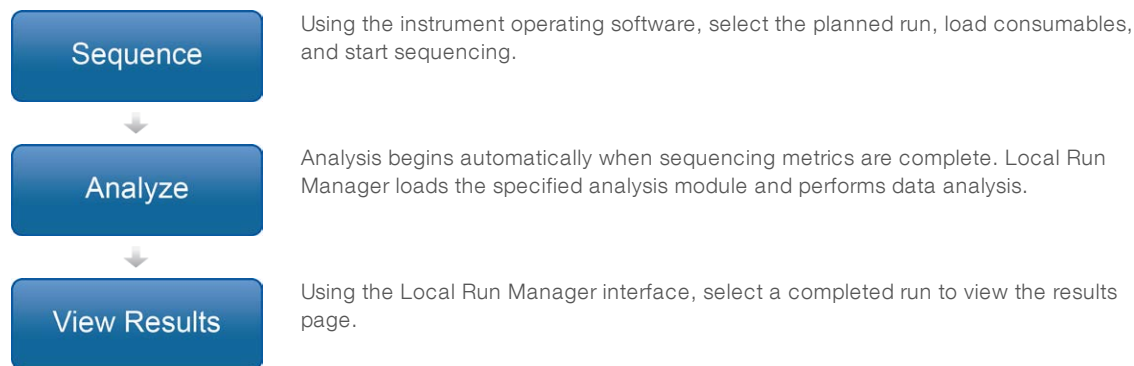
## Workflow Overview

This guide provides an overview of the workflow for creating a run and viewing analysis results in the Local Run Manager software. Because the specific steps vary for each analysis module, see the workflow guide for the analysis module you are using for step-by-step instructions.

## Local Run Manager Workflow



Using the Local Run Manager interface, create a run.



## Set Parameters Overview

To set up a run, use the Create Run command from the Local Run Manager dashboard and select an analysis module from the drop-down list. The Create Run page provides options for the selected analysis module.

The Create Run page consists of text fields, drop-down lists, and a samples table that is specific to each analysis module. Create Run pages include the following sections:

- ▶ Run Name
- ▶ Samples

### Run Name and Description

The run name is the name that identifies the run from sequencing through analysis. A run name can have up to 40 alphanumeric characters. Spaces, underscores, and dashes are allowed.

A run description is optional and can have up to 150 alphanumeric characters.

### Run Settings

Run settings identify the following parameters for the run:

- ▶ Read type, single read or paired end.
- ▶ Number of Index Reads, 0, 1, or 2.
- ▶ Number of cycles for each read.
- ▶ Reads that use custom primers when applicable.

For some analysis modules, only a default selection is allowed.

### Module-Specific Settings

The module-specific settings that appear in this section depend on analysis module selected for the run. Some analysis modules do not include any module-specific settings.

For more information, see the workflow guide for the analysis module.

### Samples Section

For each run, identify samples to be sequenced in the samples table. The samples table includes the sample ID, an optional description, and the indexes used with each sample.

The index columns provide a drop-down list of compatible index adapters.

You can import samples from a compatible text file.

## Import and Export Samples

The Samples section includes commands to import samples. To do so, create a samples table in an external comma-separated values (\*.csv) file. A template is available for download on the Import Samples tab.

## View Run and Sample Data


To view results for a run, click the run name from the Local Run Manager dashboard.

A summary of results is presented on the following 3 tabs:

- ▶ Run Overview
- ▶ Sequencing Information
- ▶ Samples and Results

### Run Overview Tab

The Run Overview tab lists information about the run, a summary of sequencing metrics, and the location of the run folder.

Section Title	Description
Run Name / Run ID	The run name assigned when the run was created.
Created By	The name of the user who created the run.
Description	The run description, if provided.
Output Run Folder	The path to sequencing run output folder. Click the Copy to Clipboard  icon for quick access to the output folder.
Total Clusters	The number of clusters in a run.
% Clusters PF	The percentage of clusters passing filter.
% ≥ Q30 (Read 1)	The percentage of reads in Read 1 with a quality score of 30 (Q30) or greater.
% ≥ Q30 (Read 2)	The percentage of reads in Read 2 with a quality score of 30 (Q30) or greater.
Last Scored Cycle	The last cycle in the run with a quality score. Unless the run ended early, this value represents the last cycle in the run.

### Sequencing Information Tab

The Sequencing Information tab provides a summary of sequencing run parameters. The following information is provided on the Sequencing Information tab.

Section Title	Description
Instrument Name	The name of the instrument on which the run was performed.
Sequenced By	The name of the user who started the run.
Sequencing Start	The date and time that the sequencing run began.
Read Lengths	The number of reads and cycles for each read performed during the run.
Flow Cell Information	The barcode, part number, lot number, and expiration date of the flow cell used for the run.
Reagent Cartridge Information	The barcode, part number, lot number, and expiration date of the reagent cartridge used for the run.
Chemistry Type	Library prep chemistry type.


Section Title	Description
Chemistry Version	Version of the MiSeqDx reagent kit chemistry.
RTA Version	RTA software version in use for the run.
Module Version	Local Run Manager module software version assigned to the run.
PR2 Information	The barcode, part number, lot number, and expiration date of the PR2 bottle used for the run.

## Samples and Results Tab

The Samples and Results tab provides a summary of analysis results for each sample listed in the samples table, the location of the analysis folder, and the option to requeue analysis. Information provided on the Samples and Results tab is specific to the analysis module used for the run.

Each report includes sample names, analysis or application software version, and the report date.

The tab contains the following information fields.

Section Title	Description
Select Analysis	A drop-down list of each analysis performed on the data generated from the sequencing run. For each time that analysis is run, a sequential number is assigned. Results are listed separately.
Analysis Folder	The path to analysis folder. Click the copy to clipboard  icon for quick access to the analysis folder.
Requeue Analysis	The command to reanalyze the sequencing run data. The command provides the option to edit analysis parameters or proceed without changes.

## Possible Run States

The Status column on the dashboard shows the status of each run listed. The following table describes the possible states of a run and the color of the status bar in the Status column.

Status	Status Bar Color	Status Description
Ready for Sequencing	None	Waiting for the sequencing run to begin.
Sequencing Running	Blue	Sequencing in progress.
Sequencing Unsuccessful	Red	Sequencing issue. No activity.
Sequencing Stopped	Red	Sequencing stopped. No activity.
Sequencing Complete	Blue	Sequencing completed. Status bar at 50%.
Primary Analysis Complete	Blue	Sequencing metrics complete. Status bar at 50%.
Primary Analysis Unsuccessful	Red	RTA analysis failed. Status bar at 25%.
Analysis Queued	Blue	Waiting for analysis to begin.
Analysis Running	Blue	Analysis in progress.
Analysis Unsuccessful	Red	Analysis issue. No activity.
Stopping Analysis	Red	Request to stop analysis received.

Status	Status Bar Color	Status Description
Analysis Stopped	Red	Analysis stopped. No activity.
Analysis Completed	Green	Activity completed. Status bar at 100%.



## Revision History

Document	Date	Description of Change
Document # 1000000011880 v01	April 2020	Updated EU Authorized Representative address. Updated Australian Sponsor address.
Document # 1000000011880 v00	August 2017	Initial release.

## Technical Assistance

For technical assistance, contact Illumina Technical Support.

Website: [www.illumina.com](http://www.illumina.com)  
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### Illumina Customer Support Telephone Numbers

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Italy	+39 800985513	+39 236003759
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New Zealand	0800.451.650	
Norway	+47 800 16836	+47 21939693
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Spain	+34 911899417	+34 800300143
Sweden	+46 850619671	+46 200883979
Switzerland	+41 565800000	+41 800200442
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Safety data sheets (SDSs)—Available on the Illumina website at [support.illumina.com/sds.html](http://support.illumina.com/sds.html).

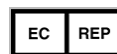
Product documentation—Available for download in PDF from the Illumina website. Go to [support.illumina.com](http://support.illumina.com), select a product, then select **Documentation & Literature**.



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