Manual Lab Service Manager

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LSM add-on

v4.0866 - Apr 2024

Note

Thank you for using our manual as a resource for information. Please note that we are continuously working on updating the content to ensure that it remains current and relevant. Therefore, we encourage you to check back regularly for the most recent updates and information.

For more comprehensive details, please visit our knowledge base, which is regularly updated with the latest information and solutions to help you make the most of LSM.

Thank you for your continued support and understanding.

Download the manual

Download the manual (PDF)

LSM add-on version from v4.0782

LSM Manual v2_Apr 2024

1. Introduction

Thank you for choosing one of AgileBio's solutions for the management of your lab. **The Lab Service Manager** also called **LSM add-on** is a web-based application designed for laboratories, core facilities, and biotechs providing services to clients or partners by keeping track of all samples arriving for processing.

In the LSM add-on, you can create an unlimited number of jobs and projects. You can also define services featuring useful tools to produce added value:

- Lab staff and client interfaces.
- Configurable assays/tests and workflow environment.
- Result and invoice template editor, to personalize your documents.
- Invoice management interface.
- Service cost definition.
- Audit trail log.
- Worklist and scheduler.
- Result report integration.
- Dashboard
- And much more...

The LSM add-on provided by AgileBio in combination with **LSMRemote** is suitable for technical platform service activities, Contract Research, and Service Organizations (CROs and CSOs). The **LSM add-on** is fully integrated with **LabCollector**, the LIMS we developed for life science research labs, Pharma and Biotech industries. Indeed, several **LabCollector** tools, data, and features work together with the **LSM** to enhance service quality and organization e.g. an alert system for equipment maintenance, consumable stocks, and validity.

The LSM is the main portion of the software where lab level configurations are made and it is also the interface lab staff use to perform jobs. The LSMRemote is an interface for customers/partners to request jobs and to retrieve results.

Note that Chapters 1-3 are mainly concerned with setup and configuration. Chapters 4-6 are mainly concerned with regular use after the LSM is setup.

LabCollector is a proprietary product from AgileBio.

2. Getting Started

You can get **LSM add-on** simply by downloading from www.labcollector.com. LabCollector has to be installed first as it contains the framework. LabCollector support documents for installation are available on our website. **LSM add-on** can be installed on any operating system (Windows, macOS X, Linux).
It is a best practice to make a backup of LabCollector before any installation, update, or upgrade.

- **Manual mode:**

Unzip and paste the **LSM add-on** folder in the extra_modules folder of your LabCollector installation.
As an example, for Windows, it would look like:

C:\Programs\AgileBio\LabCollector\www\lab\extra_modules\lsm

- **Automatic mode from LabCollector interface:**

You can also use the LabCollector Menu
Admin → Setup → Upload/Add add-ons → Upload add-on zip → Add add-on

Return to LabCollector - the **LSM add-on** module is now activated. Click on the module to finish the installation.

- **Cloud hosted:**

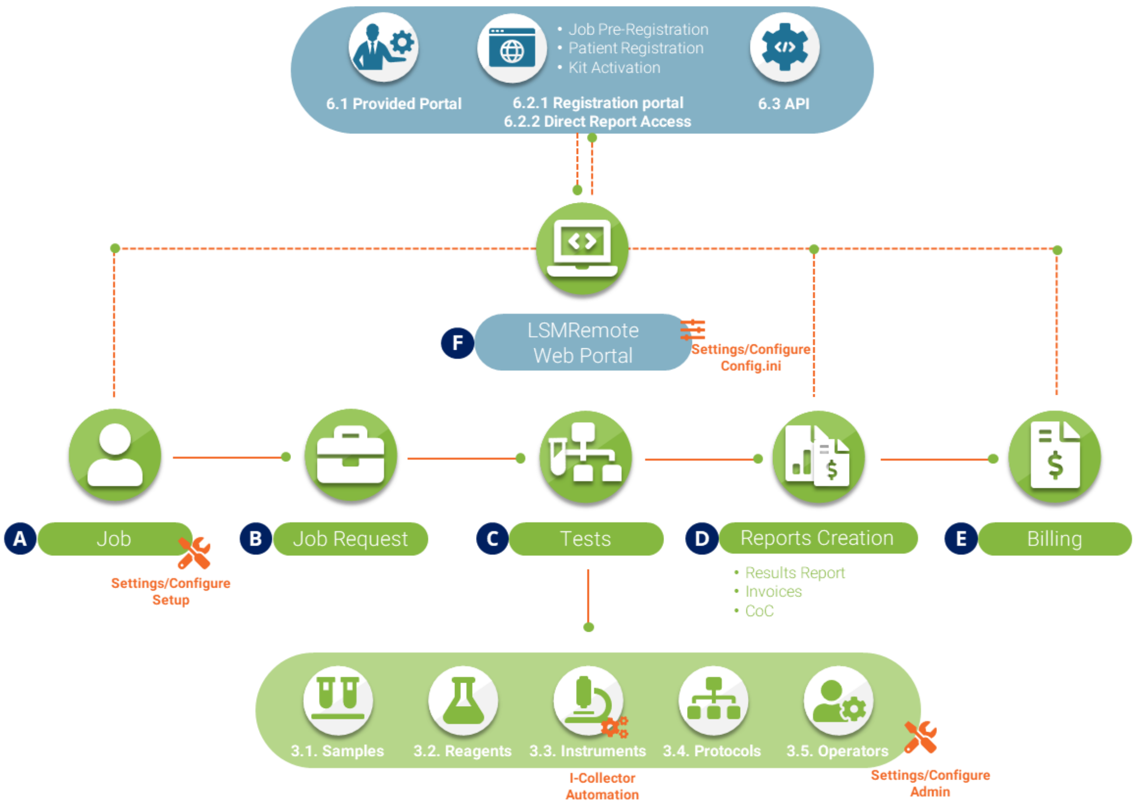
If your instance of LabCollector is cloud-hosted with AgileBio, AgileBio staff may perform the installation and license update for you. Contact your sales representative with any questions about the process.

The add-on will remain in a 30-day free trial mode until you save the final license **Admin → Setup → License**. To obtain a valid license, you have to copy and send the activation key to AgileBio.

3. Overview & Logic of LSM

Explained in the diagram below is a general logic where you can see the different aspects/features of LSM add-on and how it can be used in accordance with your lab workflow.

- **A & B)** Refer to Chapter 5
    - *For set/Configuration of Jobs refer to* Chapter 6
- **C, D & E)** Refer to Chapter 6
    - *For instrument automation refer to* Chapter 8
- **F) Refer to** Chapter 7
    - *For LSMRemote configuration refer to* Section 7.1

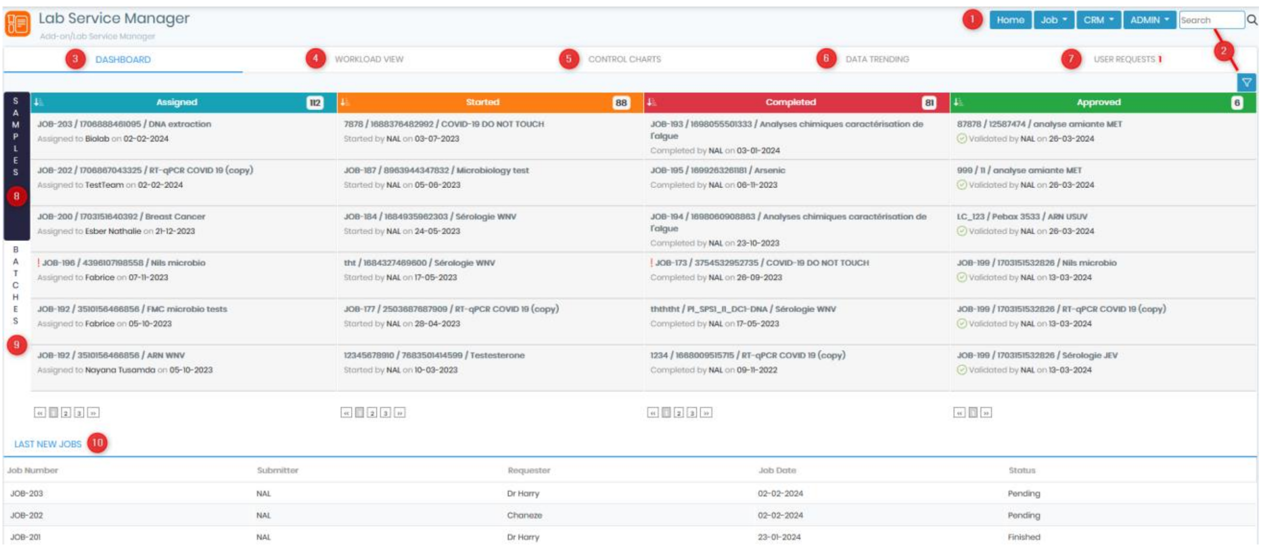


4. Homepage menu

The home page allows users to quickly get information about the lab activity. Some tools have restricted access according to the users' status (admin, staff, guest…). For customers, partners or requesters who only need to submit jobs and retrieve results the home page will be the LSMRemote.

The **LSM**'s main interface is composed of several parts (see below image):

1. A menu bar (Home/Job/Admin).
2. A search engine by keywords. Please read the KnowledgeBase KB: how to search in LSM
3. Dashboard
4. A workload view
5. Control Charts
6. Data trending charts
7. User Requests
8. Samples View
9. Batches View
10. Last New Jobs submitted

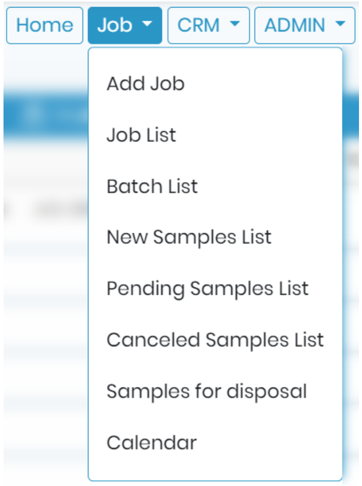


4.1 Menu bar

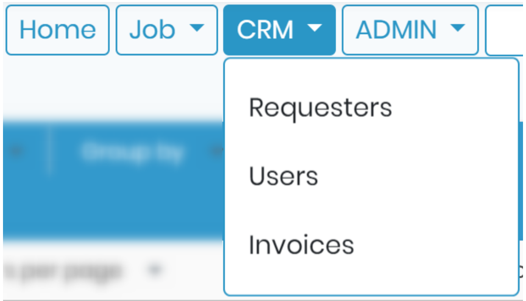
You will have 3 options:

1. Home will bring you to the homepage with all options.

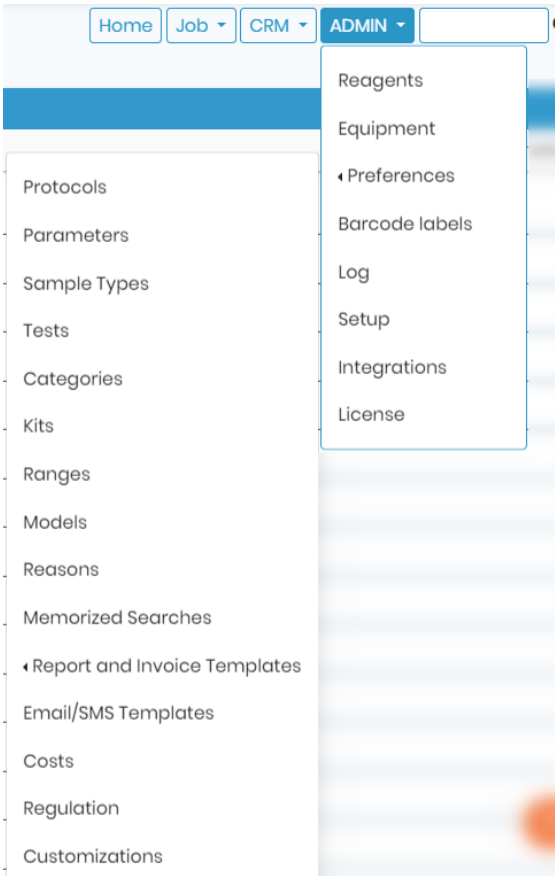
2. Job will allow you to have more options to handle jobs. Refer to Chapter 5



3. CRM menu: new customers/requesters and users can be edited in this section.

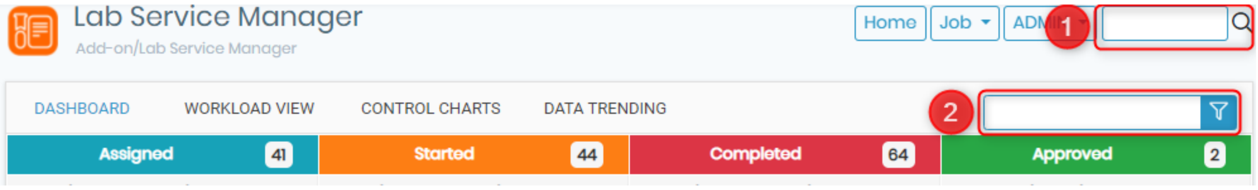


4. Admin provides various options to configure and setup LSM. Refer to chapter 7)



4.2 Search options

LSM allows you to search your jobs and samples. through various ways. You can search either by going to **LSM → Home**

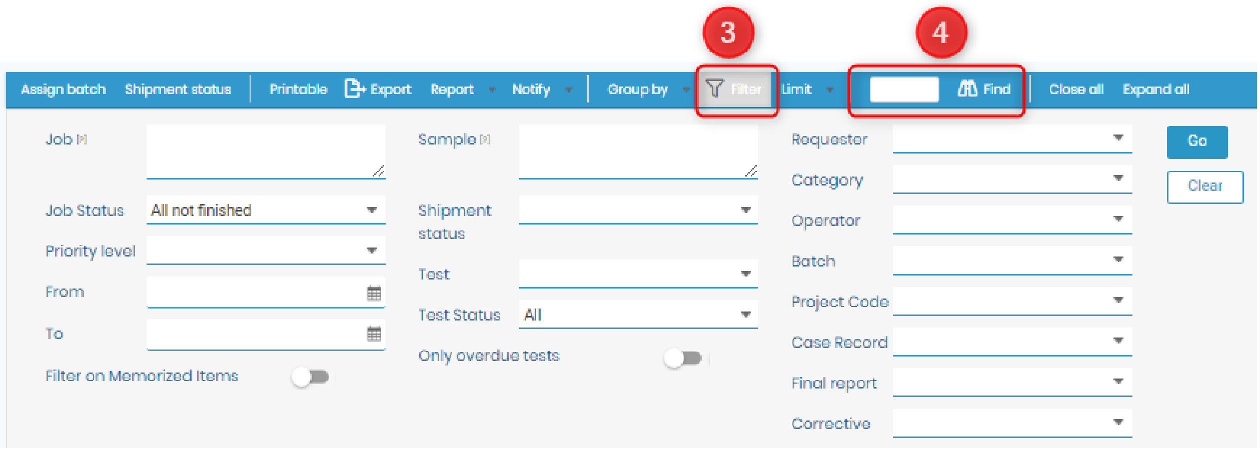


OR by going to **Job → Job list**

The **LSM** search engine allows information filtering in the job list. It searches by keyword in fields. The search engine field list depends on the page in which you are looking for information (jobs, worklists, results, suppliers, customers…).

Different filters can be used for advanced searches or to simplify views according to staff needs.

1. Assign batch
2. Printable – outputs the job list in HTML format ready for printing.
3. Export – generates a CSV file of the job list
4. Filter - opens the Filter bar explained from point 8 onwards
5. Limit – limits the number of jobs shown per page
6. Find text/numbers in job list.
7. The **Close all** button will close all jobs on the screen so that only the job levelinformation is visible. Selecting **Expand all** will expand all jobs to show the assay and sample information within each.
8. and 9. The Job and Sample search boxes allow you to search for multiple jobs/samples at once.
9. Status – filter by “All”, “All not finished”, “Finished”, “Completed”, “In Progress”, or “Pending”.
10. Date filters
11. Priority – Normal, Rush or Slow
12. Requester
13. Operator
14. Batch – filter by Batch number



To learn more about all the 4 options above and more, please read the KnowledgeBase KB: [how to search in LSM.]()

4.3 Dashboard

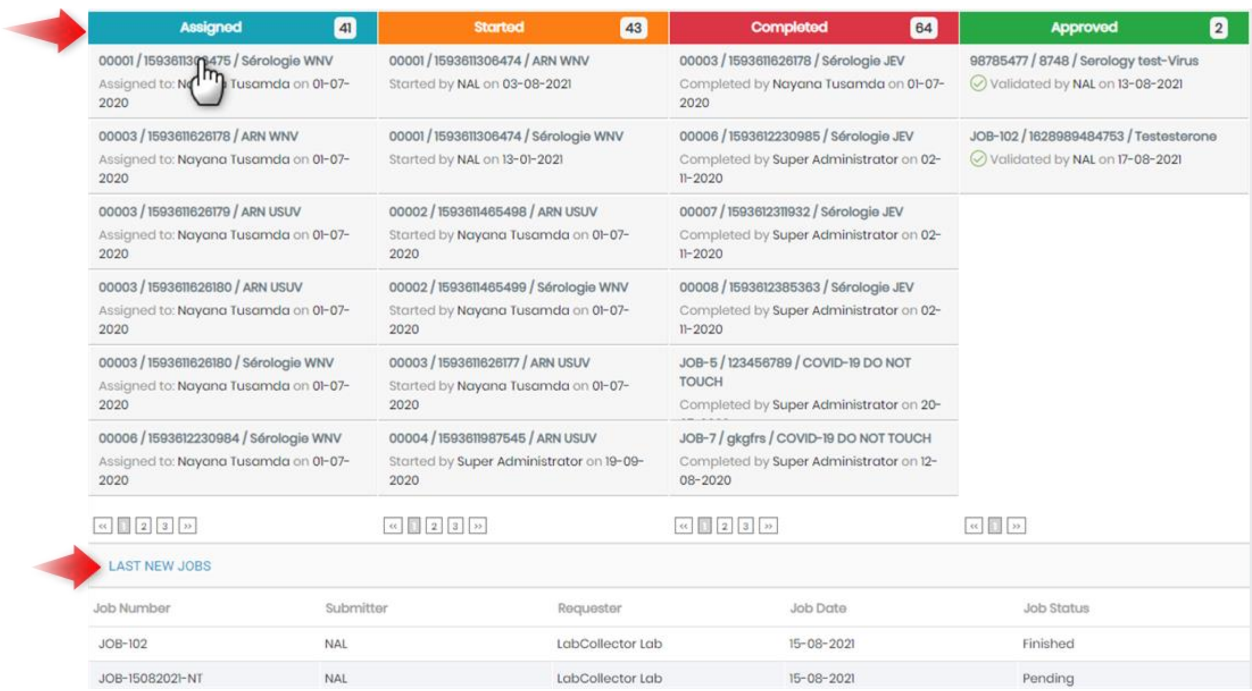
The **Board View** gives a summary of users ongoing tasks which are:

1. Assigned
2. Started
3. Completed
4. Approved

Please read the KnowledgeBase KB: [how to create & execute a job in LSM.]()

You can click on the job number to open the job directly from the dashboard.

You will also see the list of last news jobs.

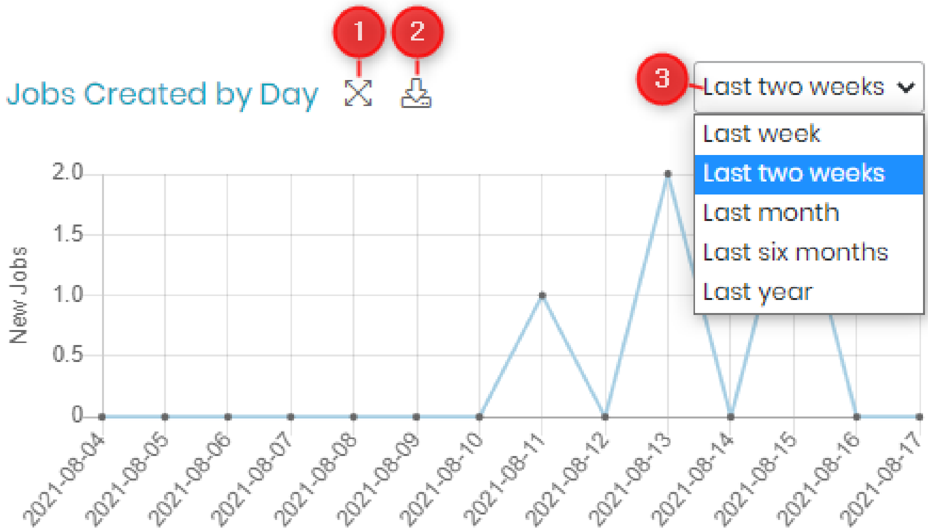


4.4 Workload view

The **Workload View** gives some statistics on service work load:

- Jobs created by day
- Sample by type
- Jobs by status
- Samples tests status by operator
- Samples created by job.

1. You can expand the graphs.
2. Download the image of the graph.
3. You can also choose the number of days you want to see the graphs for.

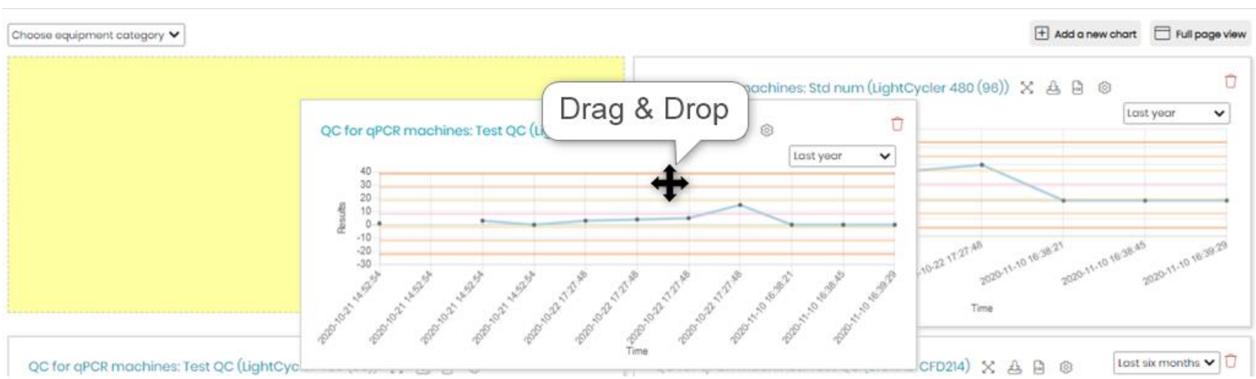


4.5 Control Chart

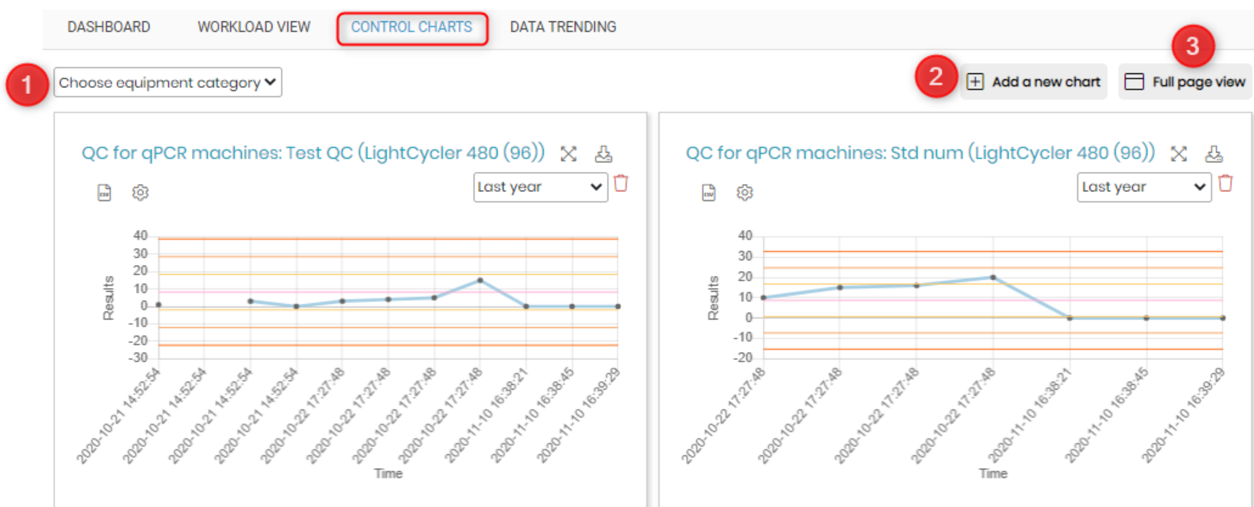
Control chart allows you to do quality check/calibration tests on the equipment and then plot a graph based on their performance.

Please read the knowledge base KB: how to create control charts.

You can just drag and drop charts and arrange them as you prefer.

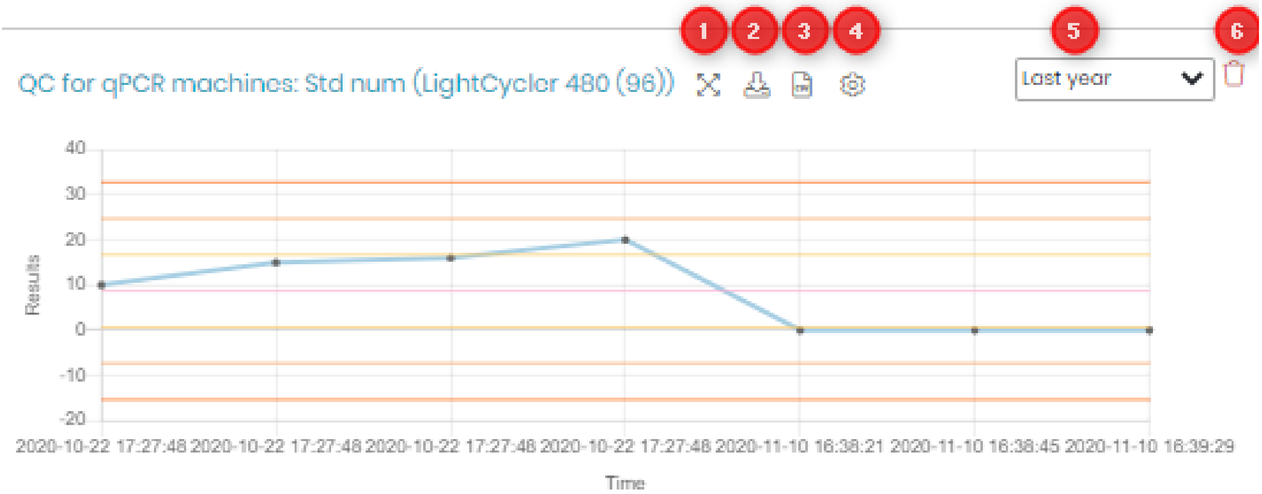


Interface:

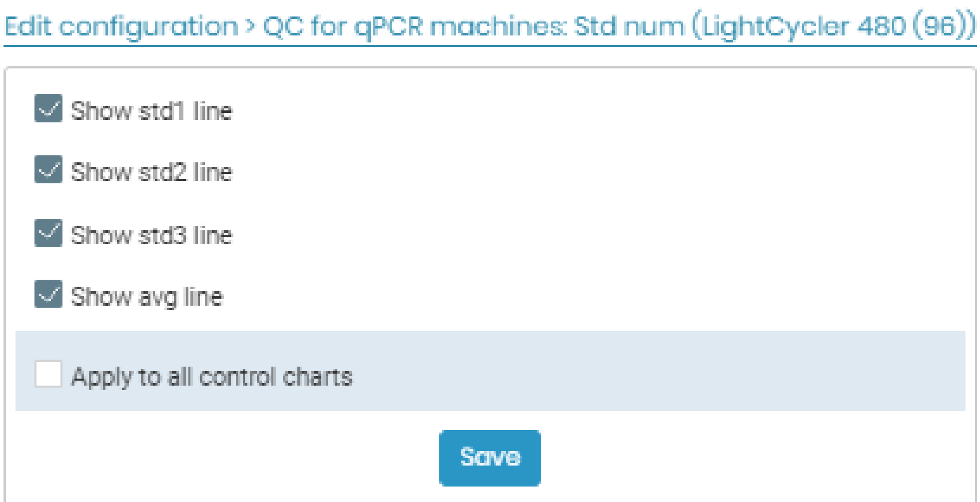


1. You can even create graphs pages dedicated to the equipment category. You can create equipment category in the Equipment module. Please read the knowledgebase KB: how to use equipment module
2. To add a new chart you can click on this option.
3. You can see the chart page in a full page view.

For each graph you will see various options.



1. You can expand the graph size by clicking this option.
2. A png image file can be downloaded using this option.
3. A CSV file containing the standard deviation values (automatically calculated based on values of results from tests), min and max values and the values according to tests done on various dates.
4. This option allow you to choose the standard deviation lines, average line to be visible or not in the graph. You can also apply these settings to all the charts.



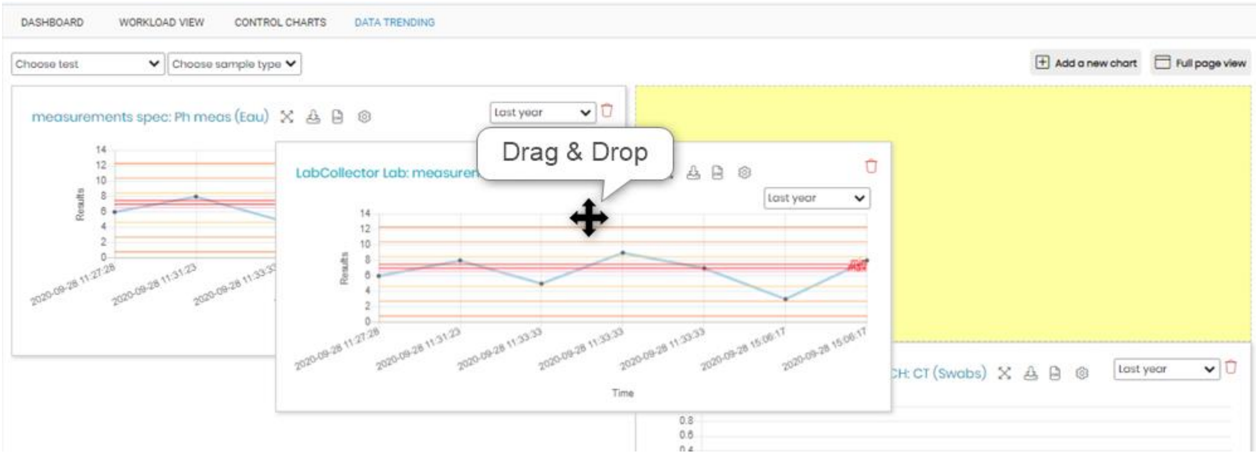
5. You can select the timeline that you want the graph to show.
6. You can delete the graph if you want.

4.6 Data Trending Chart

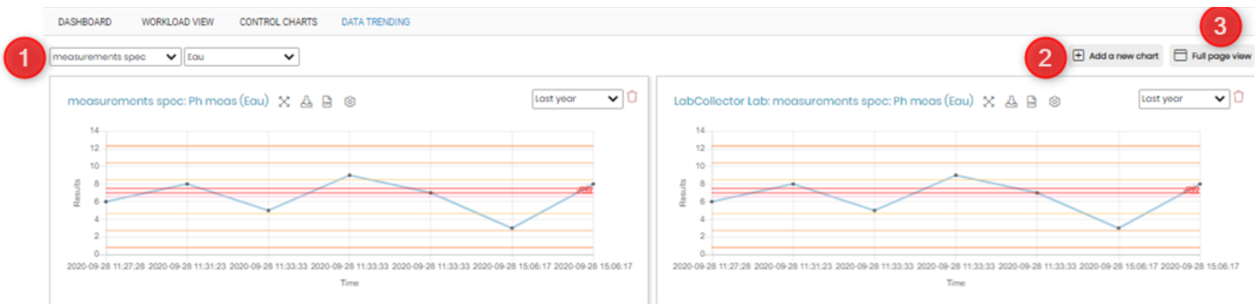
The Data trending chart will show all the calibrations done using a standard sample.

Please read the knowledgebase KB: [how to create data trending charts.]()

You can just drag and drop charts and arrange them as you prefer.

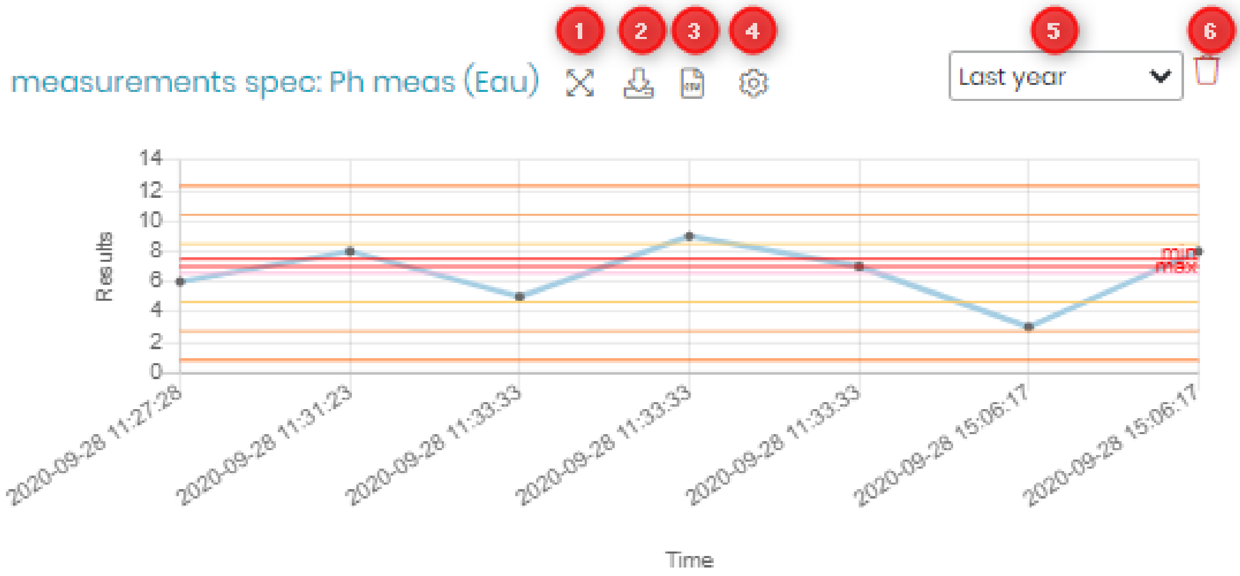


Interface:



1. You can even create graphs pages based on test and sample type. You can create equipment category in the Equipment module.
2. To add a new chart you can click on this option.
3. You can see the chart page in a full page view.

For each graph you will see various options.



1. You can expand the graph size by clicking this option.
2. A png image file can be downloaded using this option.
3. A CSV file containing the standard deviation values (automatically calculated based on values of results from tests), min and max values and the values according to tests done on various dates.
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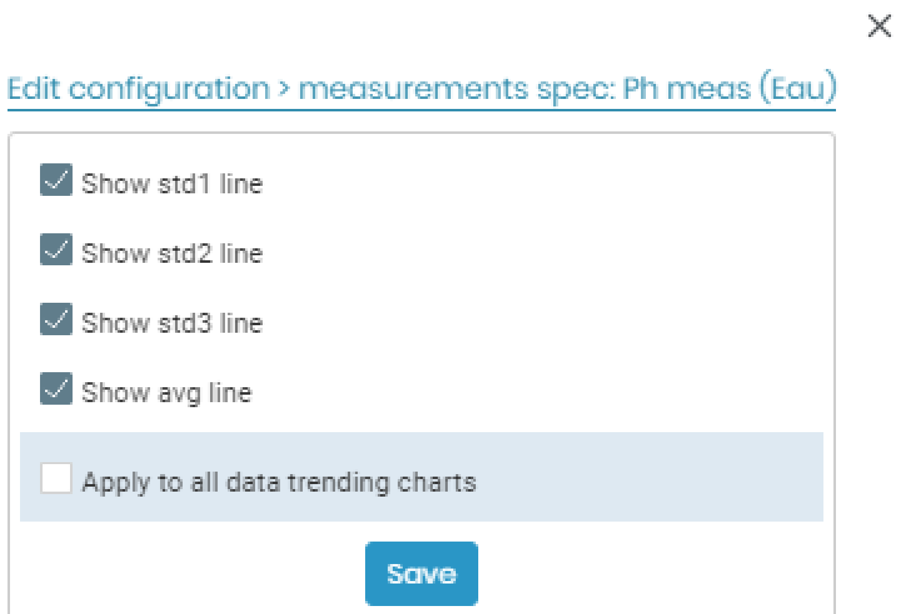
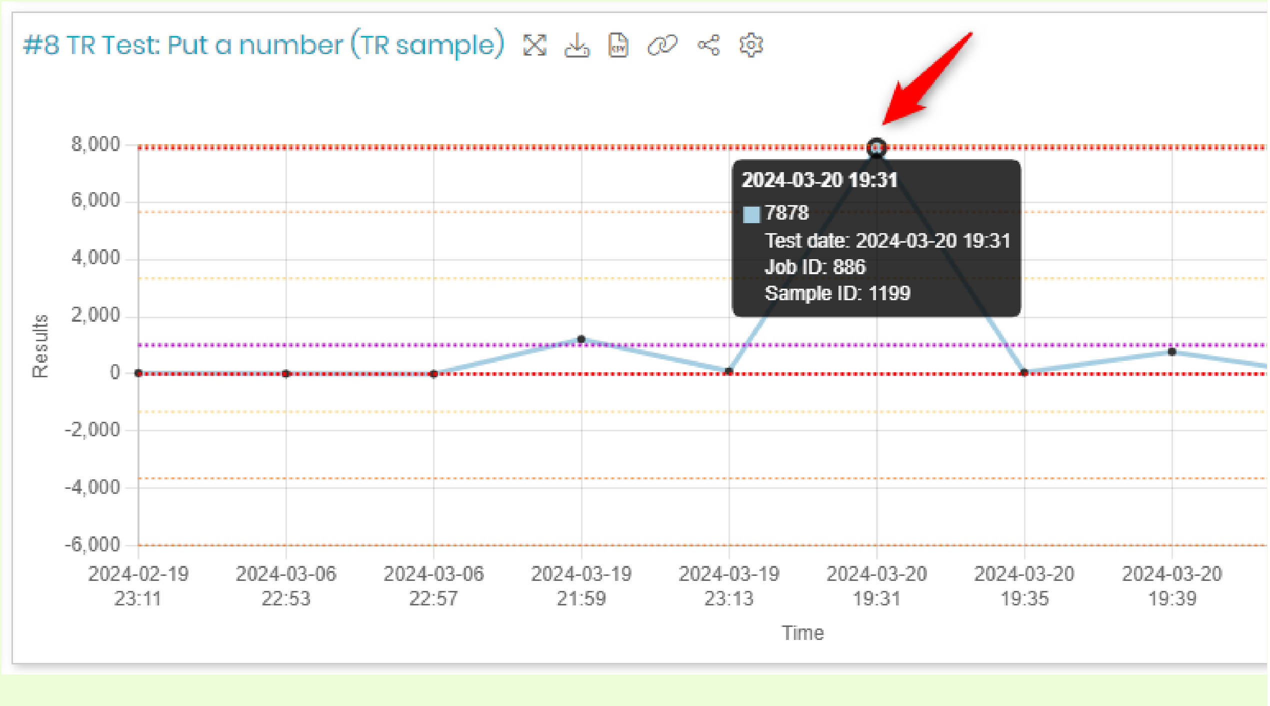


5. You can select the timeline you want the graph to show.
6. You can delete the graph if you want.

NEW

Now you are able to click on the data point to open the exact sample in job list.



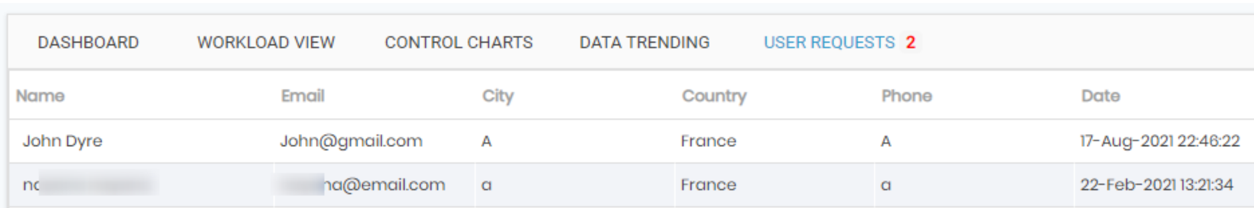
4.7 User Requests

You will only see this option when a requester/provider/client registers themselves from the LSMRemote.

You need to validate these user requests in order to create a requester.

Please read the knowledgebase KB: [how to register using LSM remote and validate the requester in LSM.]()

Please refer to [section 6.1.1.1]()

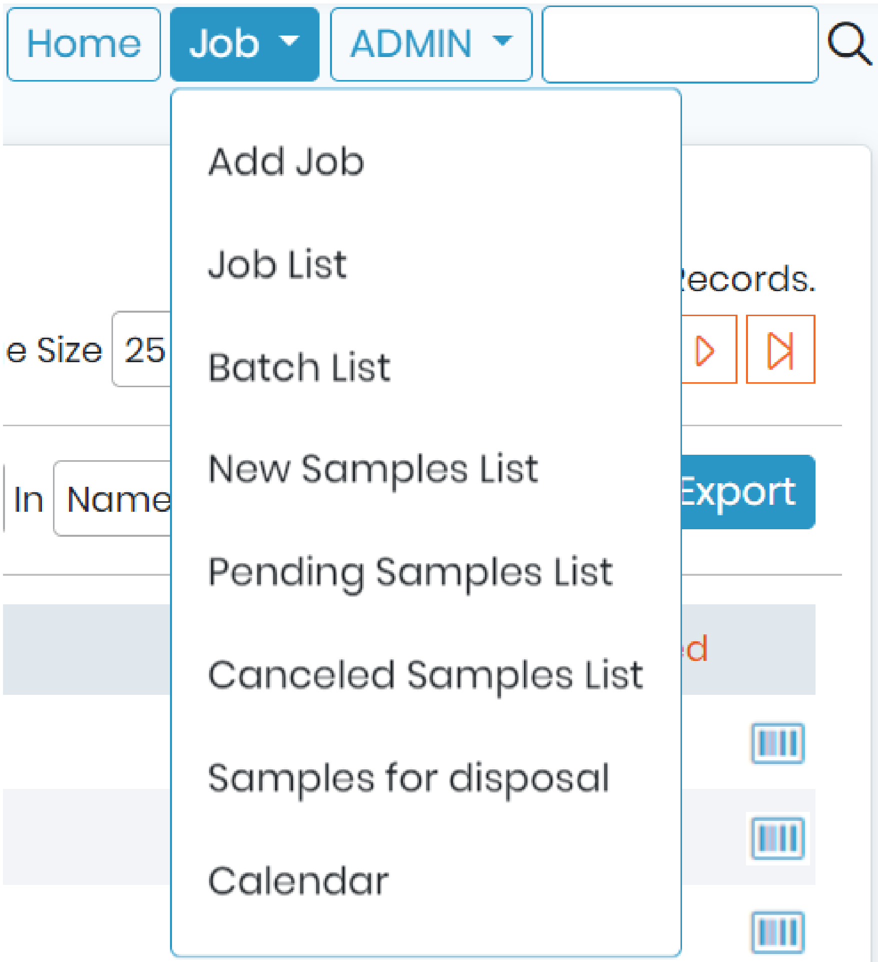


DASHBOARD | WORKLOAD VIEW | CONTROL CHARTS | DATA TRENDING | USER REQUESTS 2

Name	Email	City	Country	Phone	Date
John Dyre	John@gmail.com	A	France	A	17-Aug-2021 22:46:22
nc[illegible]	[illegible]na@email.com	a	France	a	22-Feb-2021 13:21:34

5. Job menu

The job menu has several sections allowing job management and activity follow-up. A tree view, search engine and page navigator are integrated into the LSM to make it quick to navigate to any part of the LSM at any time. The tree view for jobs is available at any time via navigation in the menu at the top of all LSM pages.



5.1 Add jobs

The jobs can be created by 3 ways inside LSM add-on:

1. Using the LSM add-on interface and going to **LSM → Job → Add-job**
2. Using LSMRemote portal (Under submit job button)
3. Using another system or website, information can be then transmitted to LSM via API.

Warning

Be very careful while adding jobs as there is little possibility to change or alter fields/parameter values once the job is created.

For creating jobs via LSM and LSMRemote please refer to our KB: how to create and execute a job.

For creating job using API please refer to our KB: how to create job using API.

You can add custom fields to different levels at job, sample or test level. Refer to section 3.4.2.1

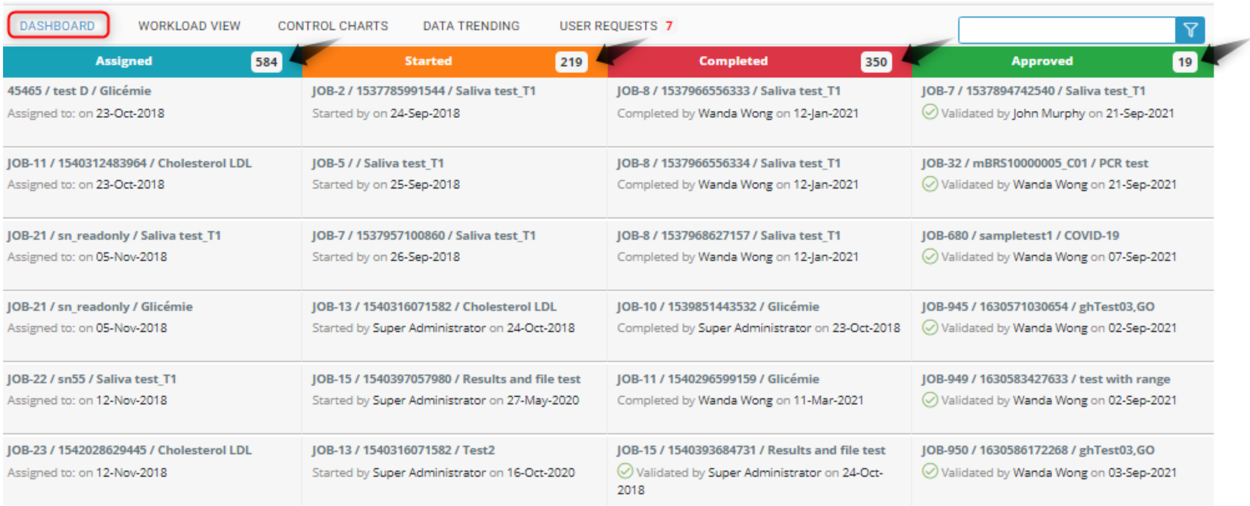
Each job will proceed to different status as you progress with it. Please refer to our KB: how to create and execute a job.

- Depending on your settings the job will initially be either in "Quoted" or "Requested" status.
- When you choose Quoted option, you create an invoice entry that is managed in the invoices list. Refer to section 6.5 (**Admin → Invoices**).
- For job acceptance setting in LSM add-on refer to section 6.7.2.

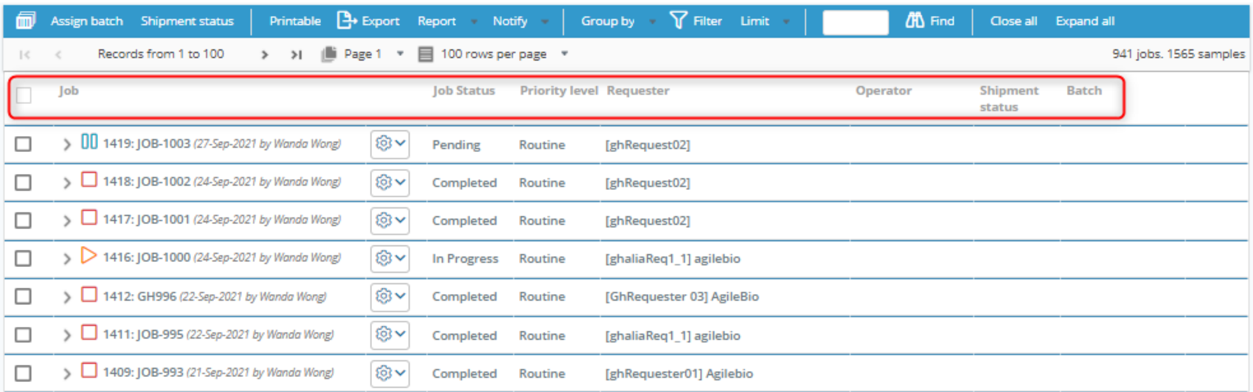
For job acceptance in LSMRemote portal refer to KB: how to configure jobs in LSMRemote (Point 7).

Once the job is accepted, then it moves along the 4 status, which are Assigned, Started, Completed or Approved.

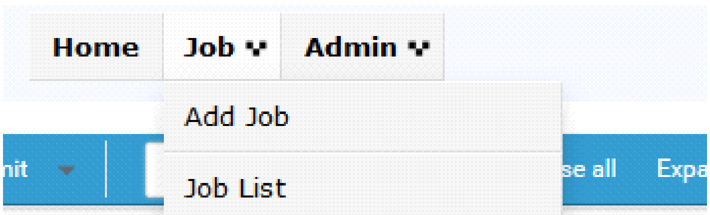
When first accessing the LSM the homepage provides some information about the latest jobs added, as well as dashboards to show information about the complete load of jobs.

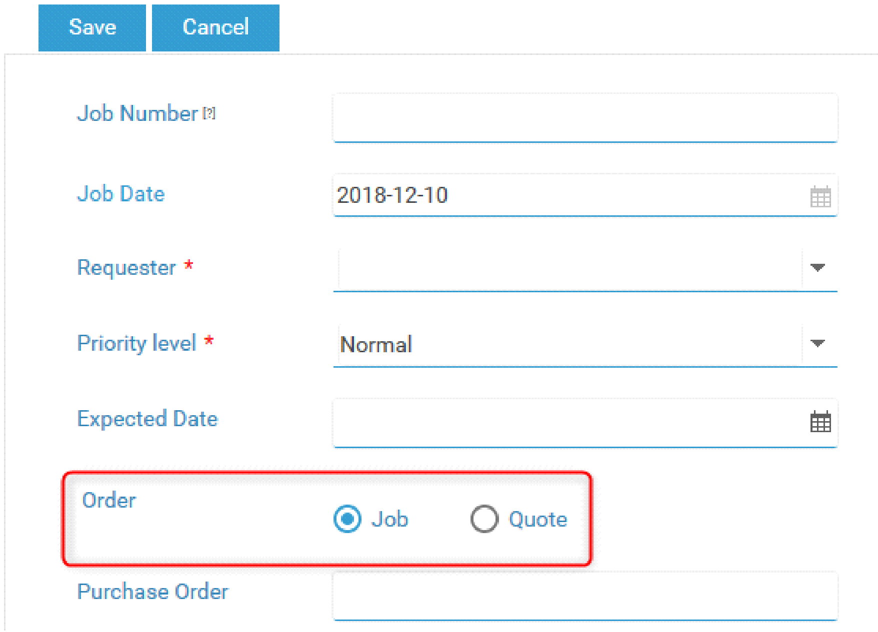


In **LSM → Job → Job List** you will see all jobs in the lab. By default, the application shows all jobs that are not finished. Using the filter tab you can filter in Job Status by all jobs. The job status is visible for each job, in the main tab and in the tree view. Jobs are identified by an ID for lab data traceability and barcoding. The job list displays job status, priority, requester, operator, sample shipment status and batch, allowing users to prioritize their tasks.

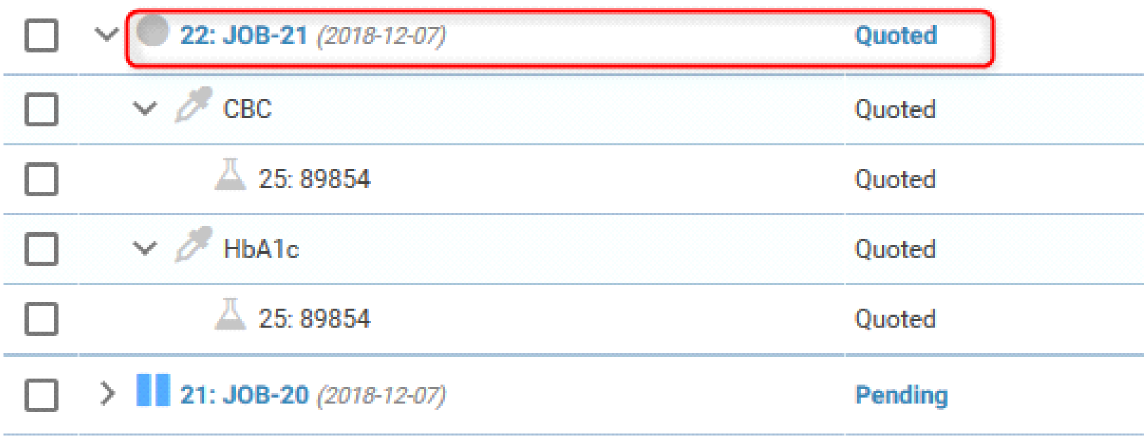


To create a new job, click on the **Add Job** button from the Job menu.





First, in the **Order** field, you can choose between creating a new **JOB** or a **QUOTE**.
A quoted job is represented by a icon in the job list.



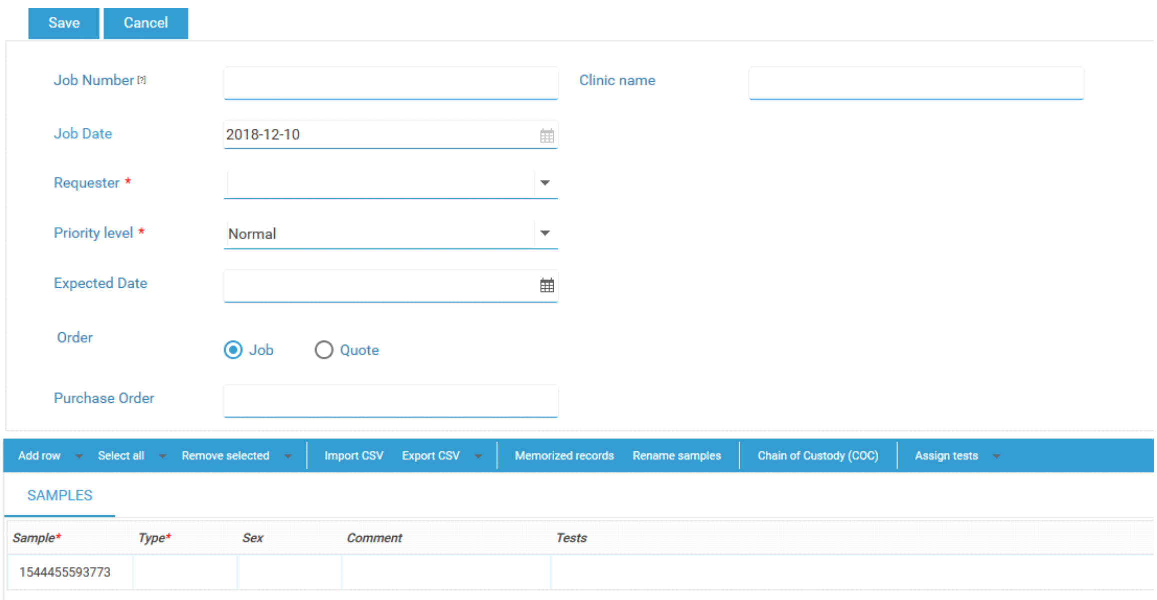
If you select Job, the job will be created immediately.

Below the entries for Job identification (default fields plus any parameter with the job level selected), there is a **Samples** tab to add all samples for the job. Multiple samples can be added for the same assay or for different ones. You can also assign the same sample to multiple assays/tests.

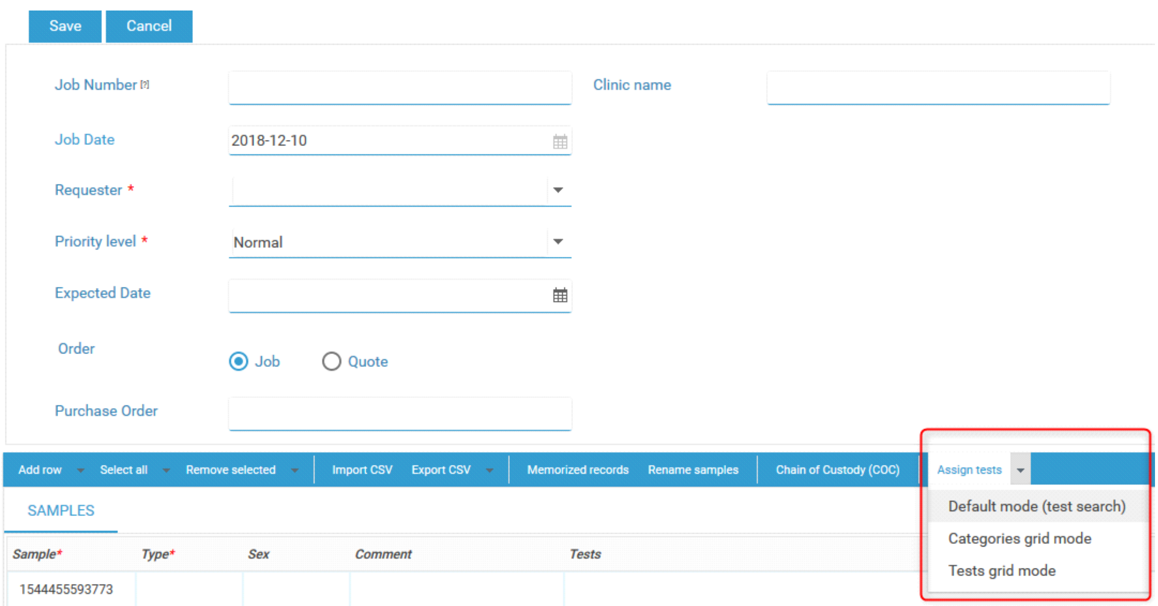
If samples already exist in LabCollector, they can be memorized and then added to a job using the **Memorized records** button. This will allow a selection from the memorized list to be used for the new job.

Sample addition can also be done by batch importing of a CSV list. Each row will be a sample for a single job. Each sample can be assigned to one or several assays.

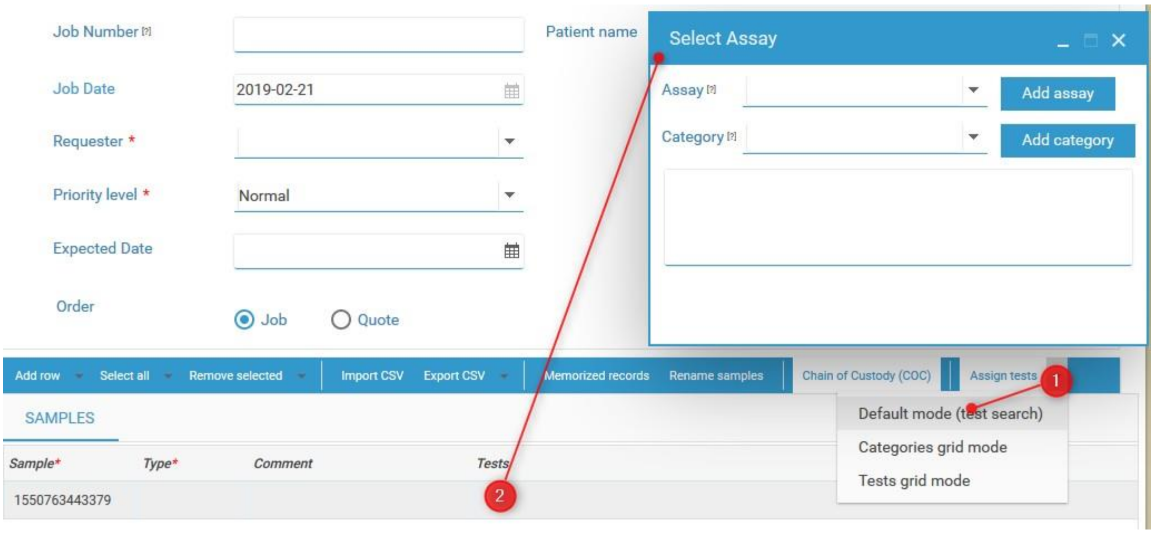
Note: The CSV format can be checked by using the **Export CSV** button. The format will vary depending on the way you setup parameters in the LSM. This gives you an empty Excel file that you can then fill and reload or provide for clients and partners. Not all the fields are mandatory.



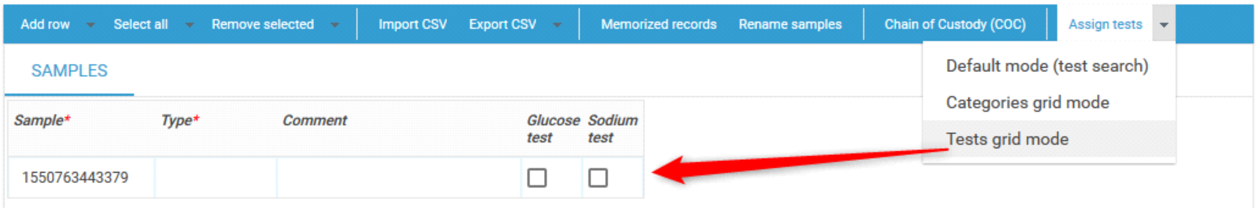
Assays/tests can be selected on a sample-by-sample basis. The method of selecting assays can be chosen by clicking on *Assign tests* and making a selection:



The Default mode (test search) will have the selection of tests via a pop-up menu when clicking the assay/test cell for the sample:



Grid mode can be by assay/test or category and uses check boxes to select which assays/tests are to be done for each sample:



The **Chain of Custody/Shipping list** is generated as a PDF with the list of samples and check boxes of assays/tests. You can choose the template for this list - please read chapter 3-4-4.

Print this shipping list and include it with the samples

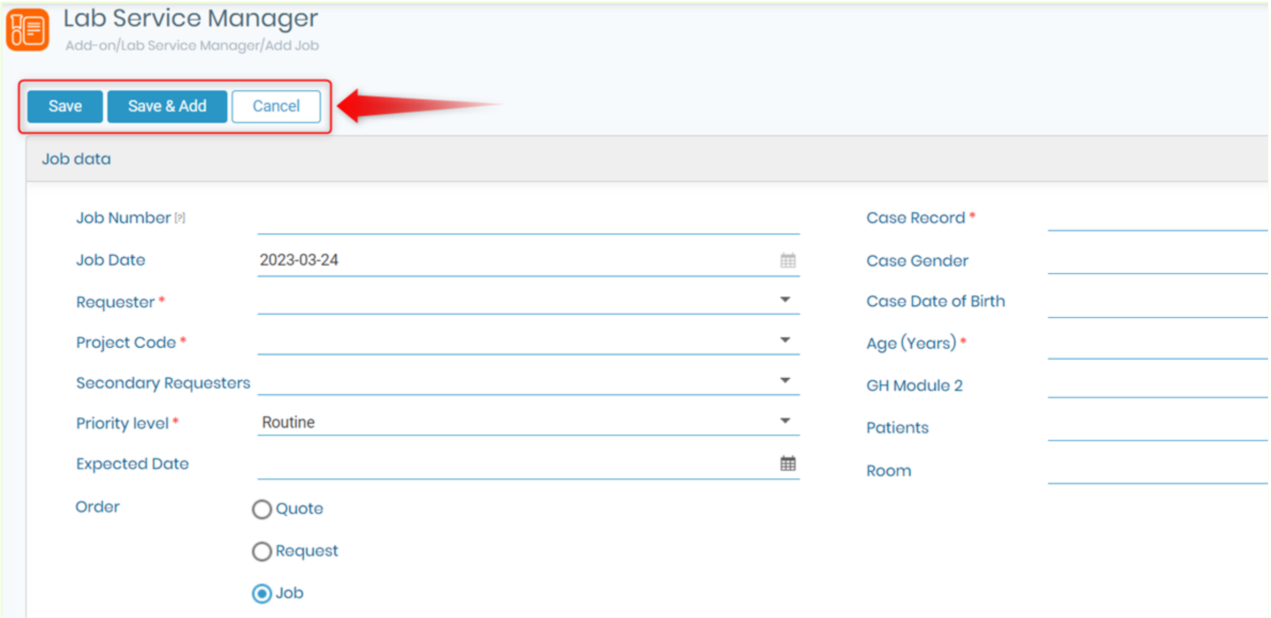
#	Sample	Type	Sample Condition	Sample Description	Sample Layer	longtext sample	Date Collected	Sample prep date	Comment	Tests	Received
793	1524591067842	Type1	4	3	2	1324355iutrhfgnvgfcvb terfhgng	2018-04-11 10:31:00			Report all parameters	
794	1524591067845	Type1	4	3	2	1324355iutrhfgnvgfcvb terfhgng	2018-04-11 10:31:00			Report all parameters	
795	1524591067846	Type1	4	3	2	1324355iutrhfgnvgfcvb terfhgng	2018-04-11 10:31:00			Report all parameters	
796	1524591067847	Type1	4	3	2	1324355iutrhfgnvgfcvb terfhgng	2018-04-11 10:31:00			Report all parameters	

Generated on 2018-04-27 11:33:12

Once the job is created, it is displayed in the job list and the initial status is **pending**.

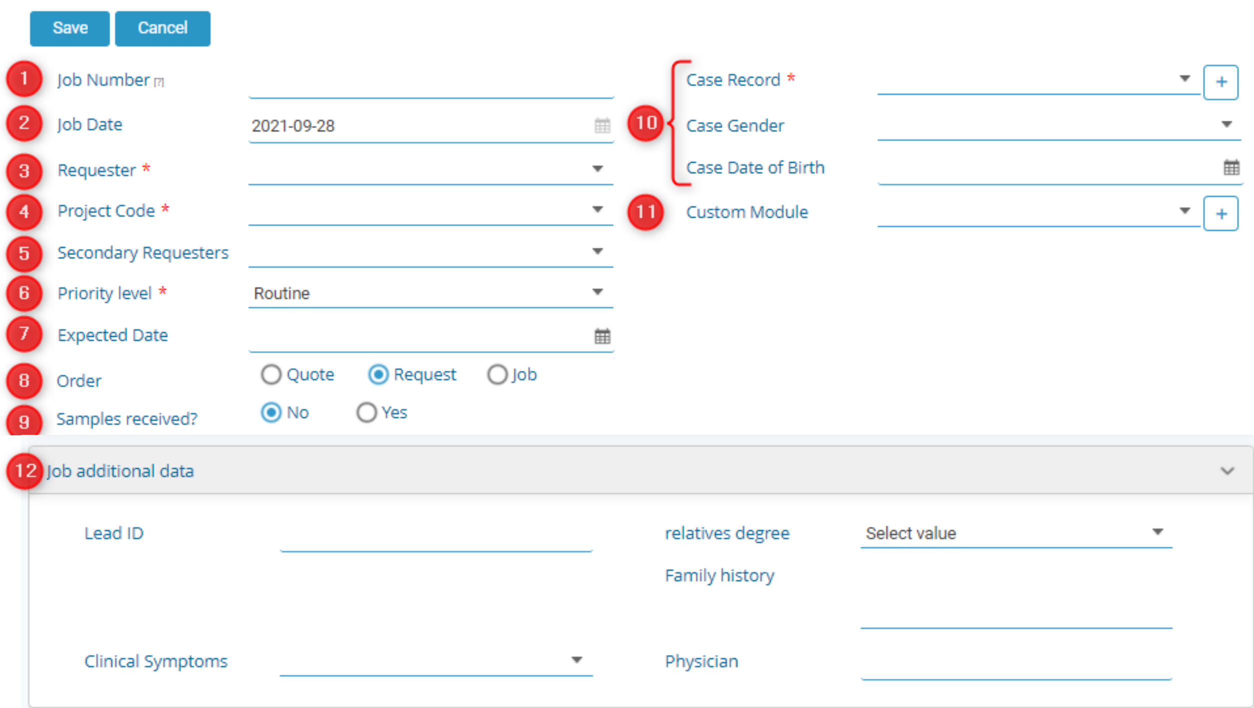
Tips / Hints

You also have the option to save your current job form and add another one, by simply clicking on "**Save & Add**" within the "Add Job" tab



5.1.1 Job level Parameters

You will be able to see some by default fields and some custom fields. **The job status is visible for each job, in the main tab and in the tree view. You LSM might look different depending on your settings.*



1. Job Number is the number given to each job. The setting for this can be found in **LSM → Admin → Setup → Job Requests.** Please refer to section 6.7.2
2. Job date is selected automatically when the job is created.

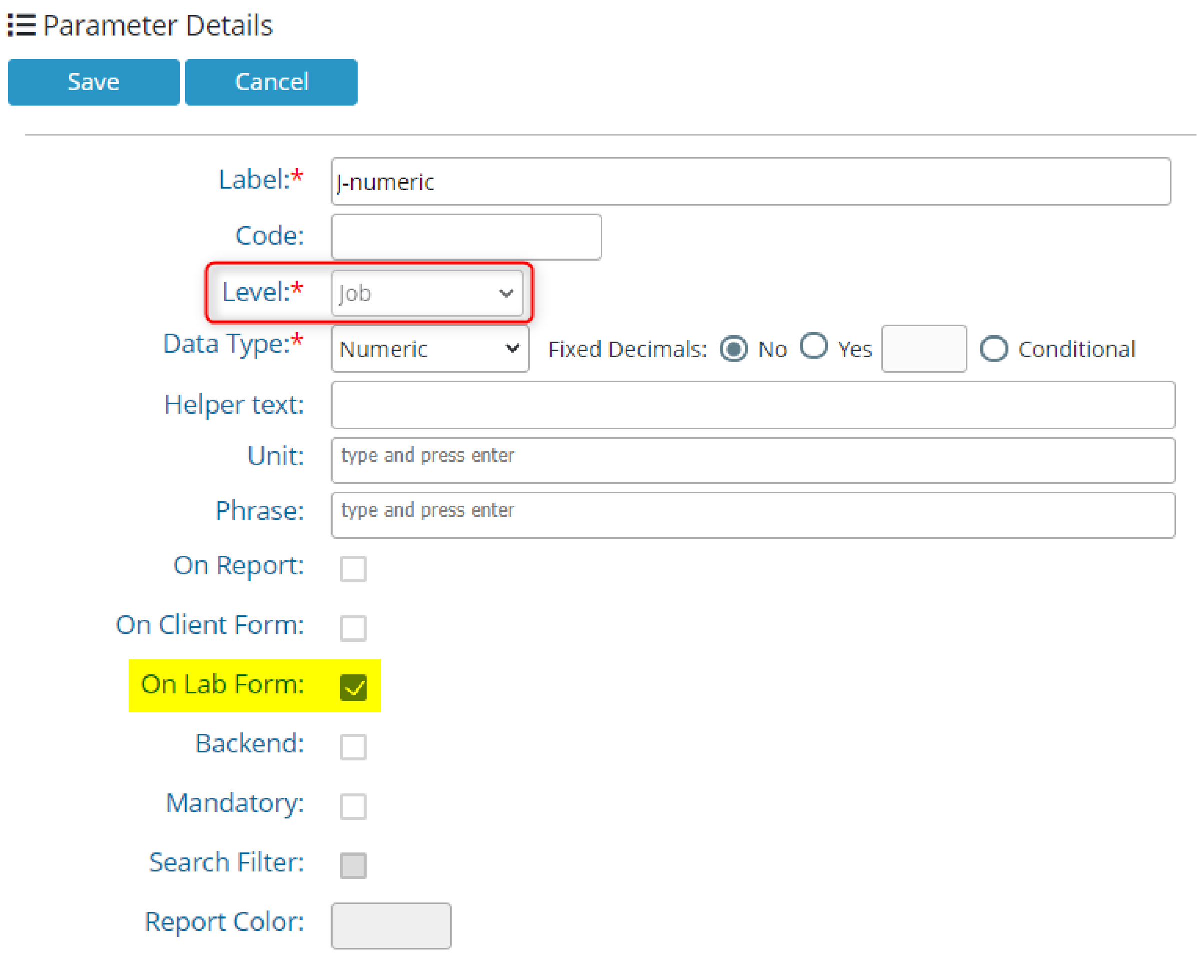
3. Requester is the provider/client/customer who has collected the sample or the name of the sample collection center.
   The setting for this can be found in **LSM → Admin → Contacts → Requesters.**
   Please refer to section 6.1.1
4. Project code can be only seen if it activated as an option in **LSM → Admin → Setup → Project & Modules.**
   Please refer to section 6.7.6
5. Secondary requesters can be used when you need to make the patient result report available to certain medical practitioners or partner companies/labs etc. For example when you go to a doctor (Primary requester) and they refer you to a specialist/ Surgeon or a another clinic (Secondary Requester). Sometimes companies (Primary requester) need to do medical examination for the employees where the companies have a doctor (Secondary requester) who collects samples and sends to a clinic/lab for testing.
   The setting for this can be found in **LSM → Admin → Setup → Job Requests.**
   Please refer to section 6.7.2
6. Priority level is to give certain jobs a status if they are to be performed urgently, on the same day or normally. The wording for the 3 status/labels can be managed in **LSM → Admin → Setup → Priority levels.**
   Please refer to section 6.7.5
7. Expected Date is to mention when the results of the tests are expected.
8. Order allows you to choose if the job you are created should be a quote, Request or a job.
   - Quote: It needs to be ordered and by this you will also create a invoice in **LSM Admin Invoices.**
   - Request: It needs to be accepted or rejected.
   - Job: If a job you can edit and start a job directly.

For creating jobs via LSM and LSMRemote please refer to our KB: how to create and execute a job.

9. You can choose if you have received the samples or no.
   This setting can be also changed using sample receiving add-on. Please refer to our KB: how to accept a sample using sample receiving add-on.
10. Case record refers to a custom module which you can connect to the LSM. It can be a module for example for patients, animals, plants, etc on whom you are going to perform tests on. If you create a custom module and want to connect to LSM then you can set it in **LSM → Admin → Setup → Case record.** Please refer to section 6.7.7
    You can click on the + sign and create a case record in the connected custom module directly

from the popup.

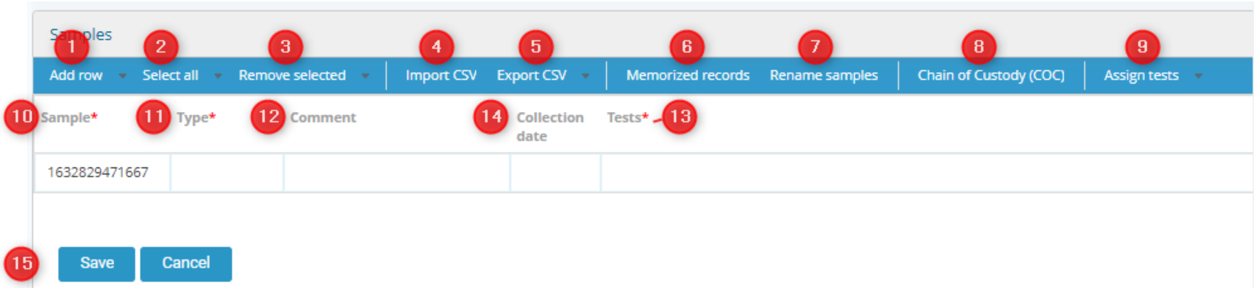
11. LSM allows you add other custom modules too, if you require them to be attached to the tests. The settings for this can be found in **LSM → Admin → Setup → Attached Modules.** Please refer to section 6.7.8
12. Job additional data allows you to see the custom fields/parameters You can create and add custom fields at job level by going to **LSM → Admin → Preferences → Parameters.** You need to have them at the job level and the box "On Lab Form" checked to be visible here. See the image below. Create custom fields/parameters please refer to section 6.4.2



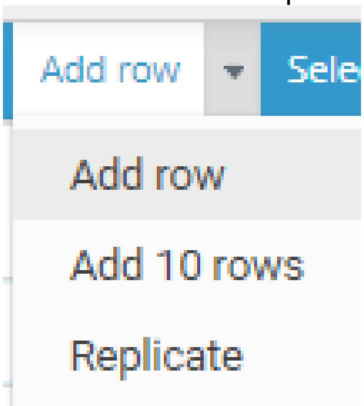
5.1.2 Sample level Parameters

You can create and add custom fields at sample level by going to **LSM → Admin → Preferences → Parameters.**

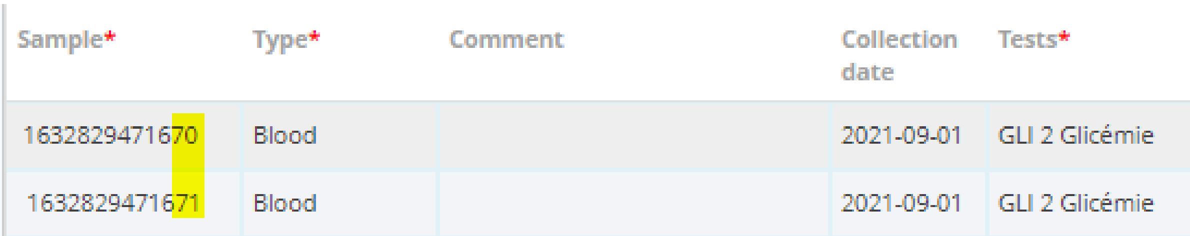
Create custom fields/parameters please refer to section 6.4.2



1. Add row will allow you to add rows below to add sample or samples below.

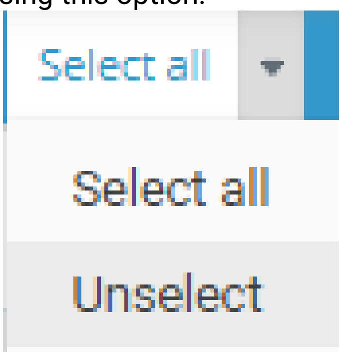


- To add a row you can either click on the "Add row in blue bar or click in the small arrow and click on "Add row" in the drop down.
- You can add 10 rows at once for adding 10 samples and the information about their tests.
- You can replicate the sample details.
  *Everything except the sample number will be replicated.

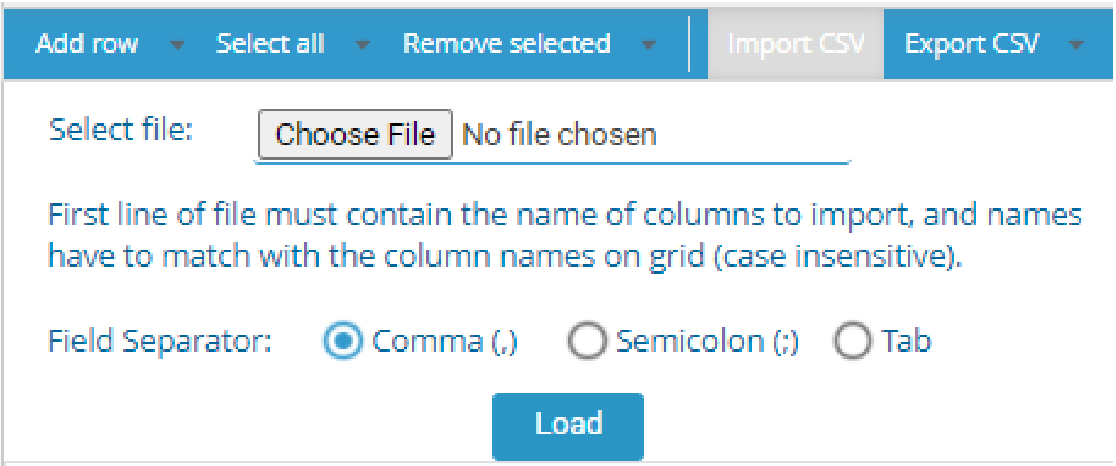


Sample*	Type*	Comment	Collection date	Tests*
1632829471670	Blood		2021-09-01	GLI 2 Glicémie
1632829471671	Blood		2021-09-01	GLI 2 Glicémie

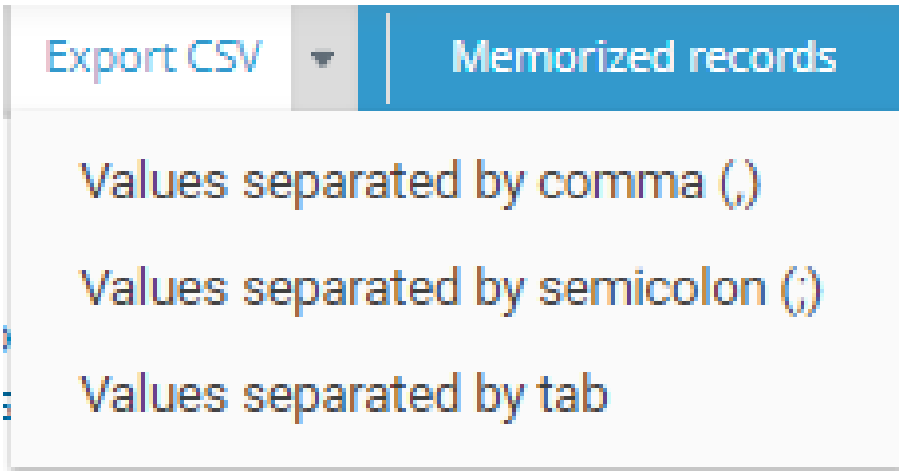
2. You can select or unselect rows using this option.



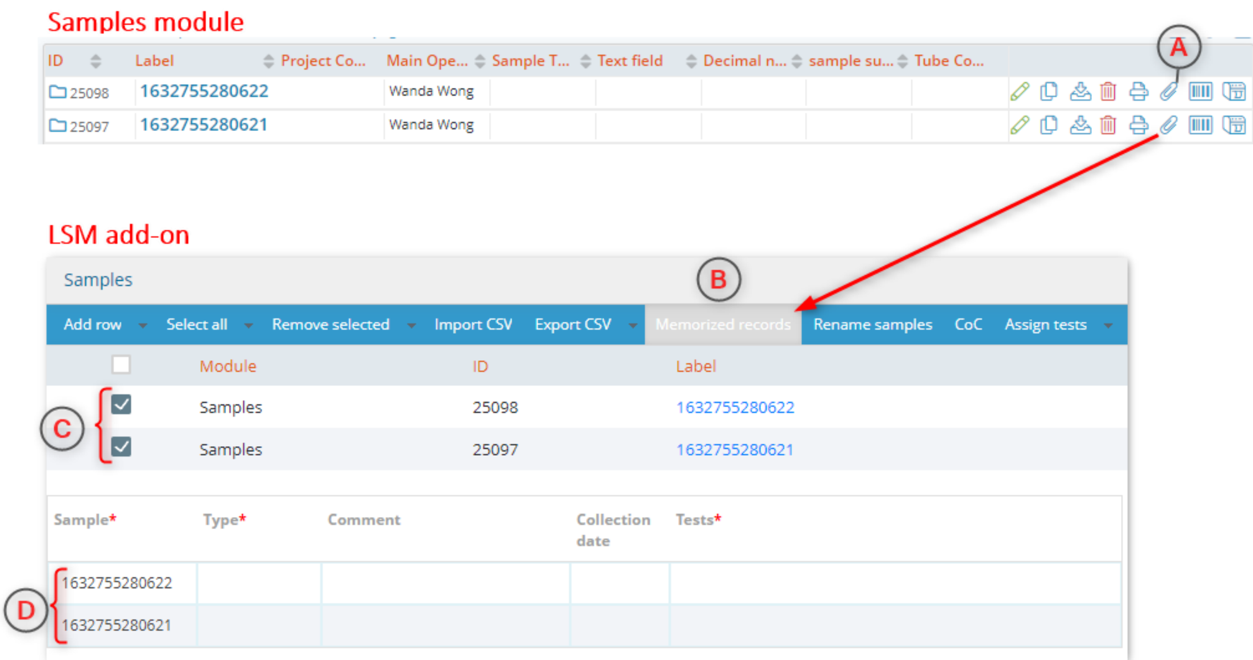
3. You can remove the rows that are selected.
4. You can import information about the CSV if you have multiple samples and you don't want to enter their information manually.



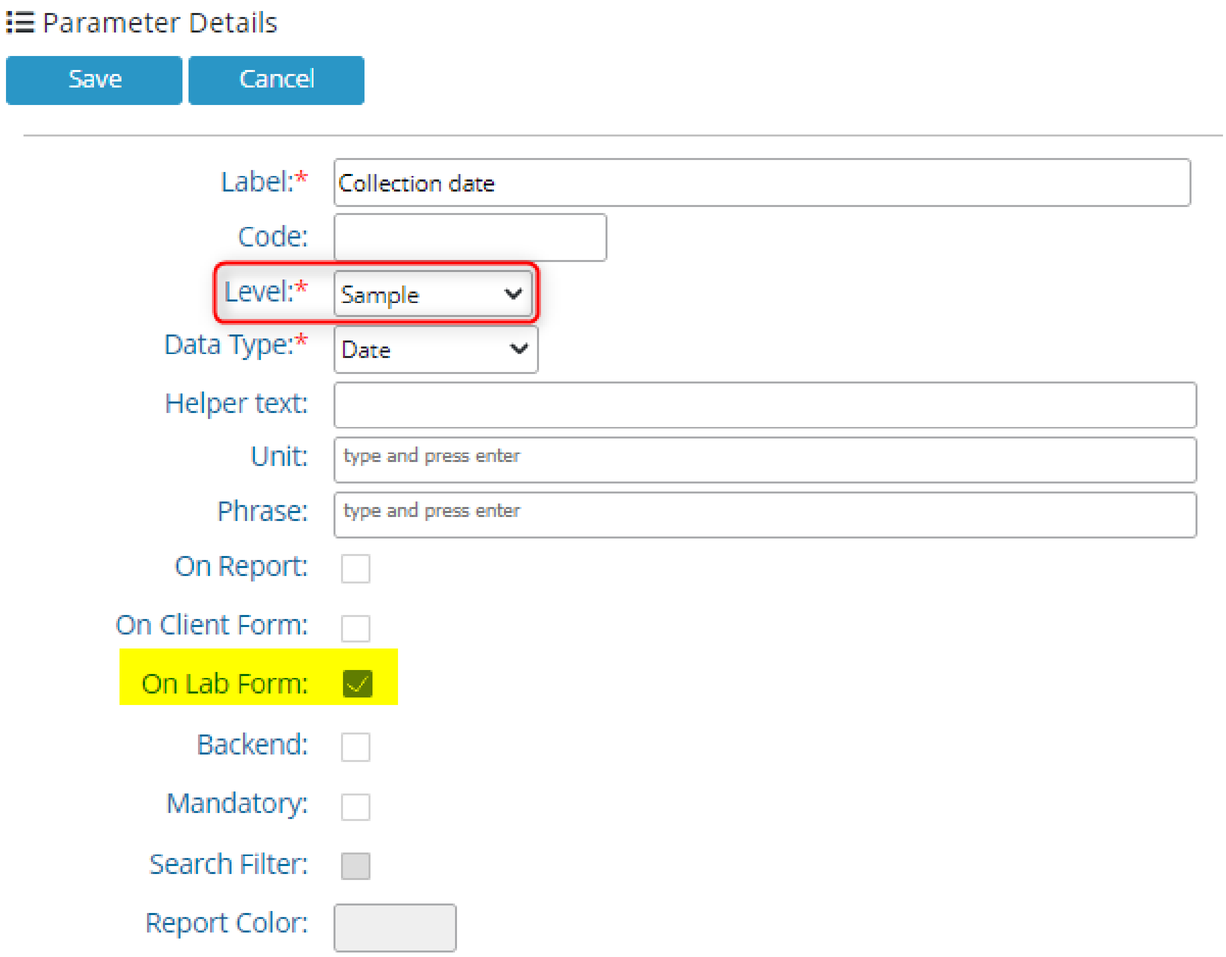
5. Export CSV allows you to download all information about the samples and the related parameters/fields and information for them. You can choose the type of separator that you would like.



6. With the help of memorized records you can add/import samples from the sample module in LabCollector.



7. You can rename samples by uploading sample names via a CSV. This comes in handy if you have samples to name, and you can do that by just uploading the CSV.
8. Chain of Custody (CoC) is a document that help to track information about the sample. You can set the template for the same in **LSM → Admin → Preferences → Reports & Invoice templates.**
   Once you have created a template you need to choose it by going to **LSM → Admin → Preferences → Reports & Invoice templates → Options.**
9. Assign tests allows you to assigns tests for the job.
   The setting for this can be done in **LSM → Admin → Setup → Job requests.**
   Please refer to section 6.7.2
10. Here you can type the sample name or number. You can use this as the barcode of the sample instead of the ID.
    ID is a number given to each sample by LabCOllector system itself.
    Sample name, you can define if should be custom or semi automatic or completely automatic.
    The settings for this can be found in **LSM → Admin → Setup → Job & samples naming.**
    Please refer to section 6.7.3
11. Here you need to add sample type. It is a default field. Depending on the sample type chosen, the corresponding tests will show up. To associate sample types with specific tests you need to configure the test at **LSM → Admin → Preferences → Test.**
    Settings for this can be done in **LSM → Admin → Preferences → Sample type.**
    Please refer to section 6.4.3
12. Comment is a default field. You can add comments for the test or sample.
13. Tests let you add the tests according to sample type.
14. This is an example of an custom parameter. You can add custom parameter from **LSM → Admin → Preferences → Parameters.**



15. You can save the job, once you have set the parameters according to your requirement.

5.1.3 Test level Parameters

You can create 3 types of test parameters namely Input, Processing and result parameters.

You can create and add custom fields/parameters at Test level by going to **LSM → Admin → Preferences → Parameters.**

For creating custom fields/parameters please refer to section 6.4.2

For creating test please refer to section 6.4.4.

5.2 Job List

When the job is created (as explained in section 5.1), you will see it in the job list options by going to **LSM → Job → Job list.**

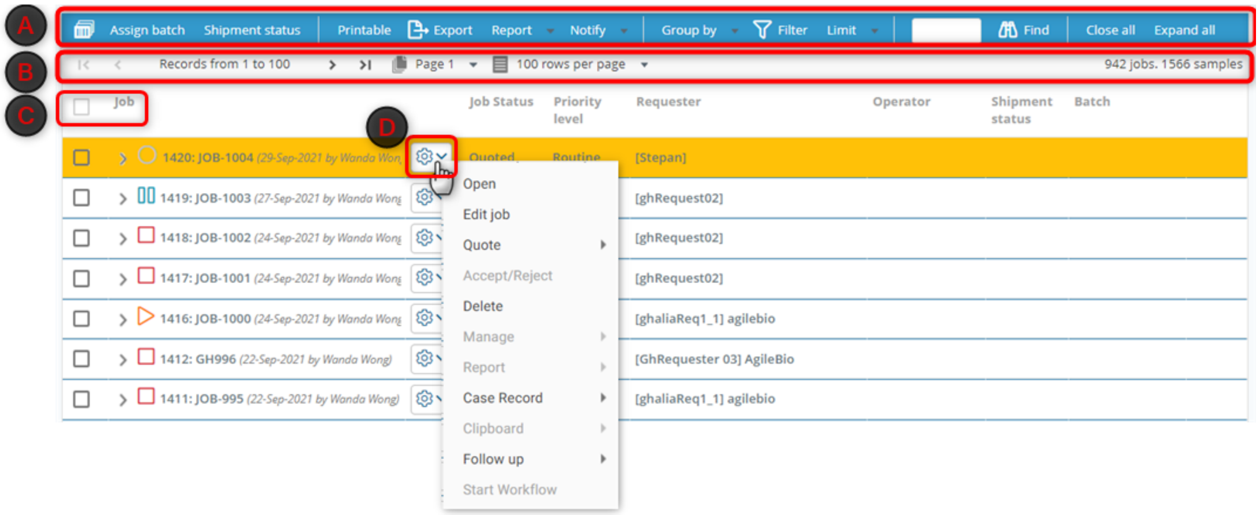
The job list page has several features that allow you to manage your job.

A. Some features are present in the blue **Job bar** on the job list page. Please see section 5.2.1

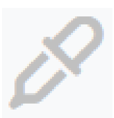
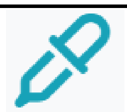
B. Some options allow you to navigate to different pages containing jobs. See section 5.2.1.10

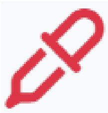
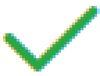
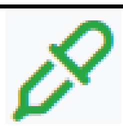
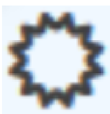
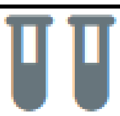
C. This box will allow to select multiple/all jobs at once.

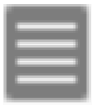
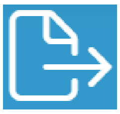
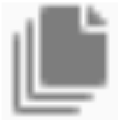
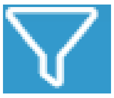
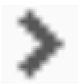
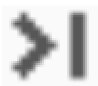
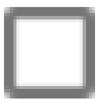
D. Some of the features that are related to individual job are present in front of the job. Please see section 5.3



Below we break down the meaning behind each icon found within the job list page, providing a simple and practical explanation for users of all levels:

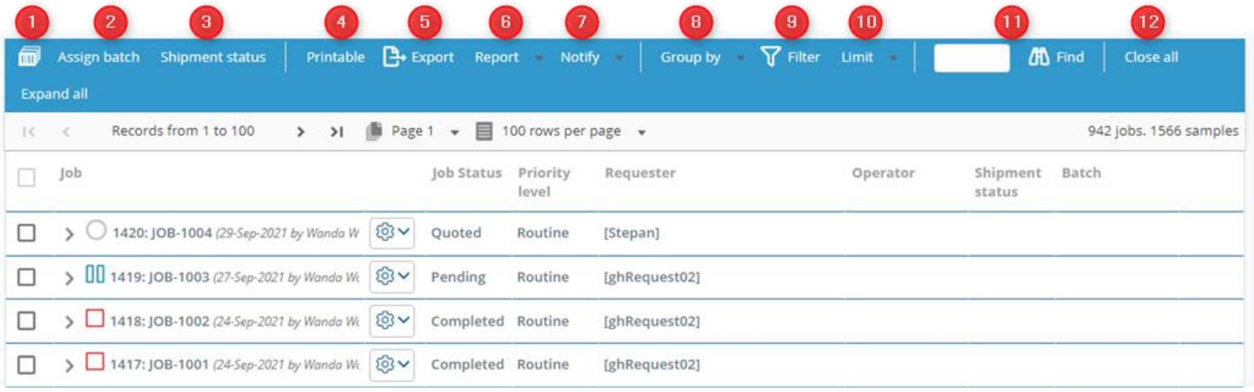
Icon	Meaning
	**Requested Job**: This icon signifies a job that has been requested but has not yet started.
	**Requested Test**: This icon indicates that a test has been requested but has not yet begun. It helps highlight pending test requests, allowing users to identify and prioritize the ones awaiting initiation.
	**Requested Sample**: This icon signifies a sample that has been requested for testing but has not yet been processed.
	**Pending Job:** This icon marks a job that is pending and awaiting further action.
	**Assigned Test:** This icon represents a test that has been assigned and is currently pending.
	**Assigned Sample:** This icon represents a sample that has been assigned for testing.
	**Job in progress (Started)**: This indicates that a job is currently being worked on.

	**Test in progress**: It represents a test that has already started.
	**Sample in progress:** It represents a sample that is currently being processed.
	**Completed Job**: The completion icon signifies that a job has been successfully executed, but still awaiting validation. Users can easily identify tasks that have reached the endpoint of their workflow.
	**Completed Test**: This icon signifies that a test has been successfully completed, but still awaiting validation.
	**Completed Sample**: This icon indicates that a sample has undergone the necessary testing procedures and is now marked as completed, but still awaiting validation.
	**Finished Job**: This icon indicates that a job has been successfully completed and validated.
	**Approved Test**: It represents a test that has been completed and approved.
	**Approved Sample**: It represents a sample that has been completed and approved.
	This icon indicates that the job has been restarted because it was rejected by the validator.
	This indicates that the test has been validated at least once.
	This icon designates a sample that has undergone Quality Assurance/Quality Control (QA/QC) marking, meaning that is a sample/value used as blank/control for a specific test/equipment.
	It indicates that a sample is currently in a temporary state of suspension (on hold), often due to specific conditions or pending further evaluation.
	This icon represents a sample that is marked as “Free” and is excluded from the invoicing process. It indicates that the associated sample will not incur charges.
	This icon appears when you group your results by Batch-Test-Sample.

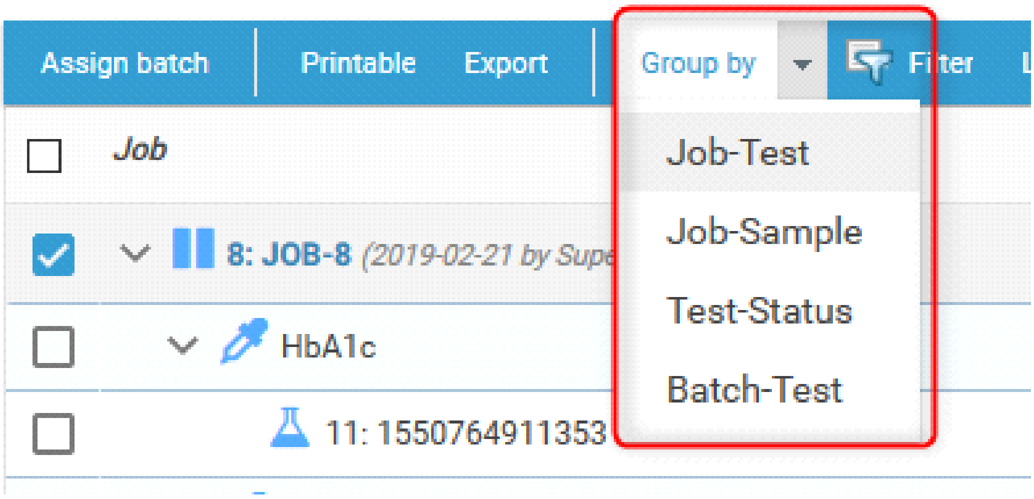
	This icon indicates that additional features or settings related to an individual job are available. Clicking on this icon reveals a menu with options to customize or manage specific aspects of the job.
	This feature allows users to set the limit for the number of rows displayed on a single page.
	Users can create barcodes for multiple samples simultaneously.
	The export option enables users to generate a CSV file containing selected job lists or all jobs. The exported data is in standard format, requiring users to delimit values into separate columns as needed.
	This option allows users to navigate to a specific page within the job list, facilitating quick access.
	The filter icon provides users with the ability to filter jobs, samples, batches, and more using various filters or custom search combinations.
	This option facilitates searching for specific job numbers, IDs, names, tests, or samples within the job list. Users can quickly locate and access relevant information.
	Go back to the first page.
	Go back to the previous page.
	Go to the next page.
	Go to the last page.
	Users can select jobs using check-boxes to perform specific actions such as export on multiple jobs simultaneously.

5.2.1 Job Bar

The job bar contains several options to manage jobs.



The job bar displays the options to navigate through jobs. All of them are explain below, one by one.



Users can see and process samples for a particular assay or a particular batch using the item **Group by** in the toolbar.

From the Job List (**Job > Job List**) **Group by** offers severaloptions. This makes itpossible to find, filter and sort any group of samples, jobs or tests to work on.

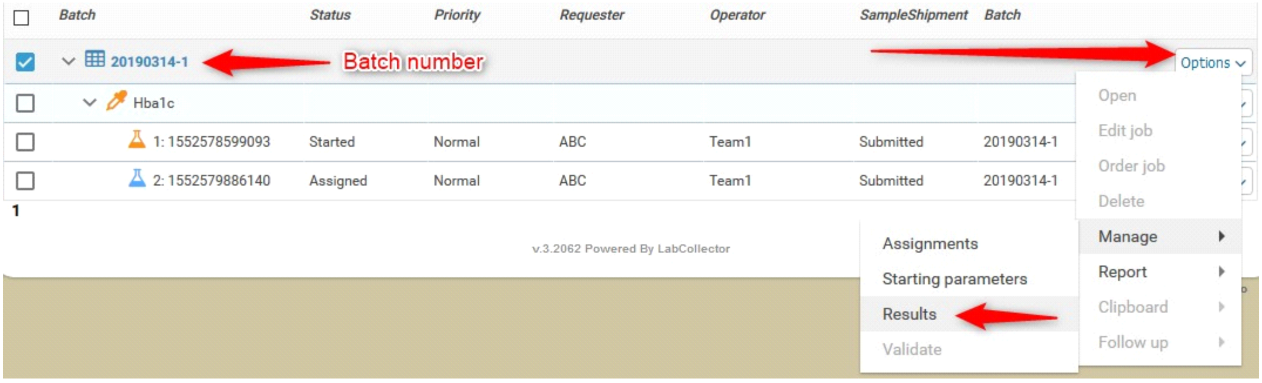
Job-Test: this is the default choice. This provides a tree view with the job at the top level, test as a middle level and sample as the next level.

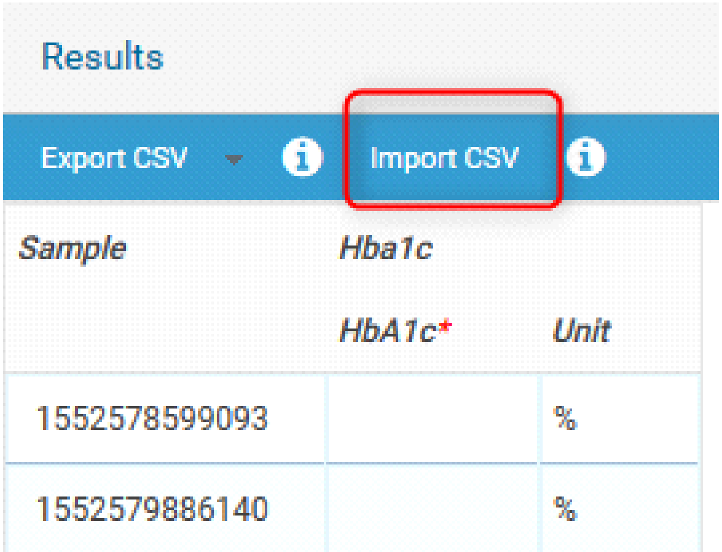
Job-Sample: This provides a tree view with the job at the top level, sample as a middlelevel and assay as the next level.

Test-Status: Test is the top level, each test has the next level in the tree organized by status, with sample as the next level of the tree.

Batch-Test: Batch is the top level of the tree, Test is the next level, followed by sample. Jobs and samples that have not been assigned a batch are grouped together in a blankbatch.

Using this last filter, you can then import results in batch using CSV file.





You can export a CSV file choosing the field separator, update it, and then import results in batch.

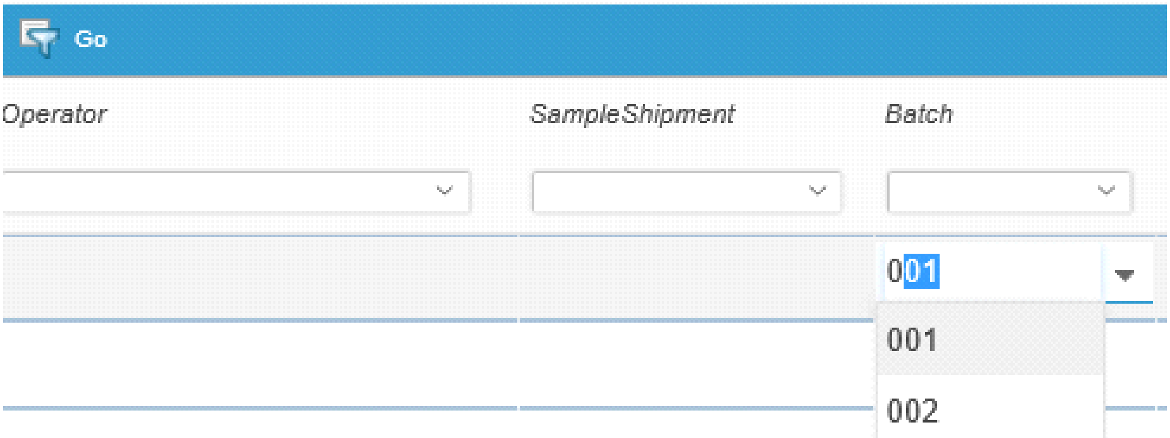
To import results, the first line of the file must contain the name of the columns to import, and the names have to match with the column names (case insensitive). If thecolumn does not match the header, it will be ignored. It's not necessary that the file contains all the columns of the grid.

If you use the phrase option, if the phrase is blank, it will be updated based on the result value from the imported file.

If a job does not have an operator, shipment information or batch assigned, these may also be added for sorting/filtering/grouping by double clicking on the job list.

Sample shipment is a drop down menu with predefined options.

The field **Batch** is visible in the tree. To add jobs, tests or samples to a batch tick the relevant check-boxes to the left of the entries on the job list and select Assign Batch from the Menu. Grouping by batch-assay, users can perform actions on all samples with the same batch code.



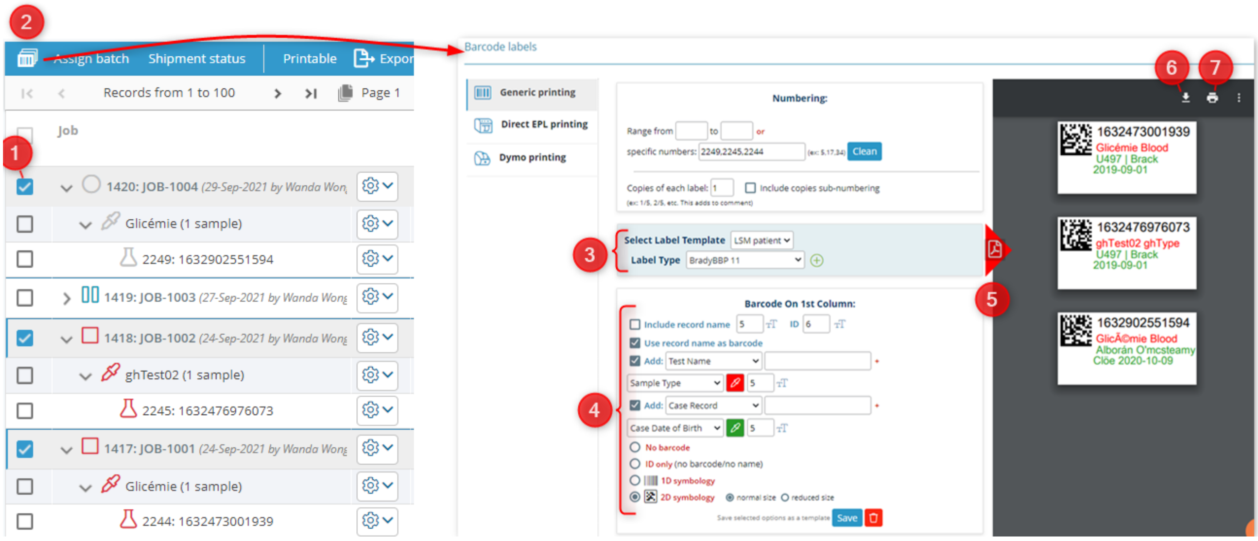
5.2.1.1 Bulk Print

You can create barcodes of multiple **samples** at once. You can even select all jobs to create a bulk barcode, however, you need to be careful. If you have a lot of jobs the then the barcode printing may take a while or the page might hang up. You need to follow the below steps in order to do a bulk printing of barcode.

1. Select the jobs that you want to print the barcode for.
2. Click on the barcode printing option. A new tab in your browser will show up with different printing possibilities. If you select the generic printing then you will see the selected job samples already in the barcode label numbers.
3. You can select a template containing information that you want to create the barcode and the label type for your printer. Please read the Knowledge Base KB: [how to configure printer.]
4. The template settings will be visible here and if not then you can adjust the settings to as you like.

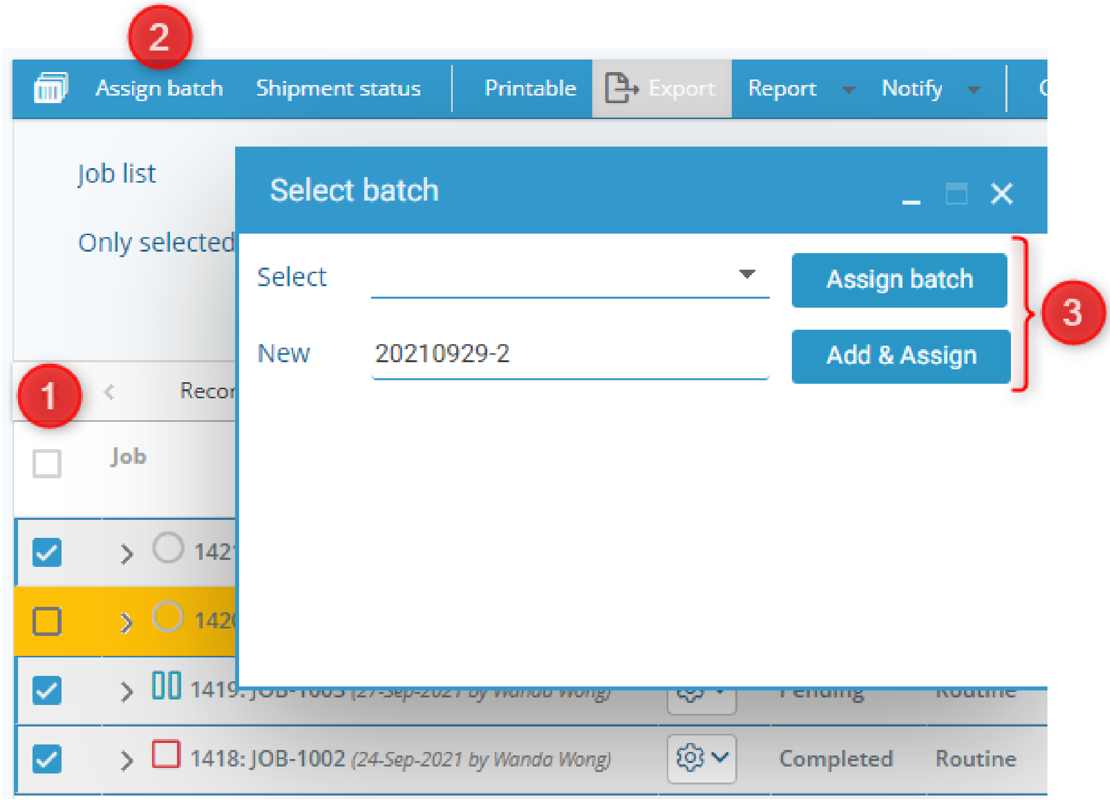
Refer to our online [Manual page on printers.]

5. To visualize how you barcode will look like, you need to click on the triangle PDF button.
6. You can download the PDF of your barcode to print later if you wish.
7. You can print directly all your barcodes together.



5.2.1.2 Assign Batch

Assign batch allows you to add jobs to an existing or a new batch. You can view these batches under **LSM → Job → Batch List.**



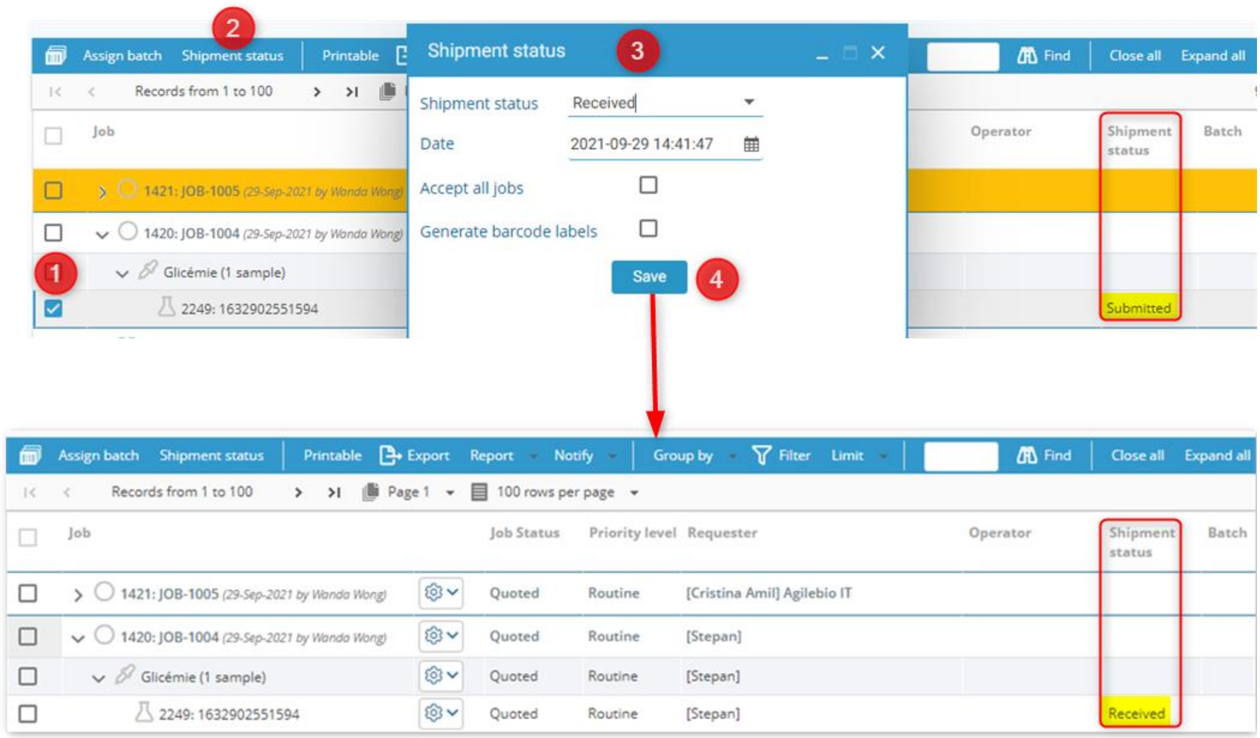
1. You need to tick the check-boxes to select the jobs that you want to add in the batch.
2. Click on assign batch option, where a pop-up will appear to select a batch.
3. You can assign an already existing batch. The list of the batchs will appear in front of the option Select in the dropdown. If you want to create a new batch, you need to write the name of the batch in front of "New" and then click on ADD & Assign.

5.2.1.3 Shipment status

Shipment status allows you to change the "received date" for multiple samples at once.

Tips / Hints

This shipment status can also be activated using sample receiving add-on. Please read the Knowledge Base KB: [how to connect LSM to Sample receiving for accepting samples.]()



1. Check the box for the sample you want to change shipment status for.
2. Select the "Shipment status" button.
3. You will see a pop-up where you can change from the dropdown in front of shipment status the sample "Submitted, In transit, Returned or Received".
   - You can select the date and time by clicking on the small calendar icon.
   - You can choose to accept all jobs in LSM instead of the selected ones.
   - You can also generate barcode labels for the jobs you are selecting the shipment status for. When you click in this box and save the settings, a new tab with barcode

printing options will open. See section 5.2.1.1

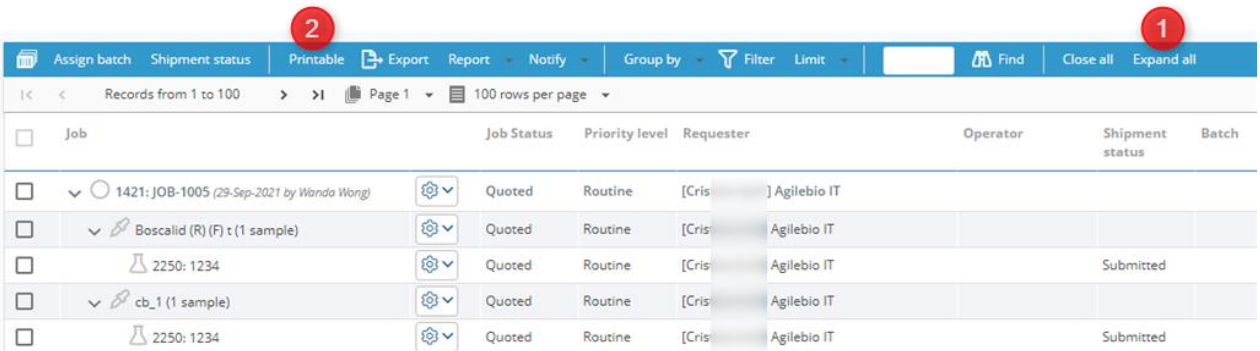
- Once you are done you can save the settings.

5.2.1.4 Printable

You can print all the jobs and their data or save it as PDF. When you click the "printable" button with **expand all** option, you will see a new tab with your jobs like below.

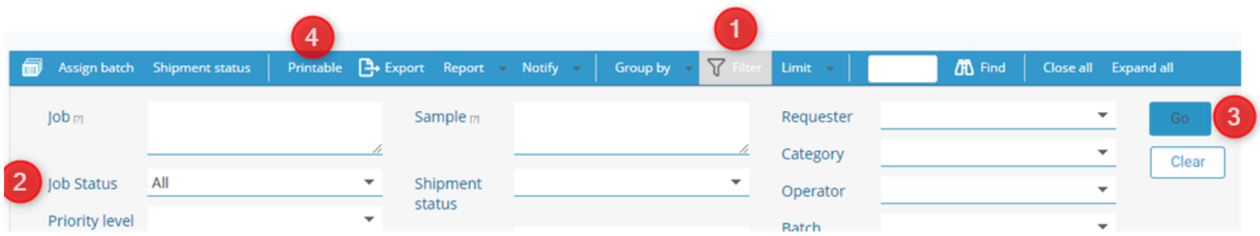
	Job		Job Status	Priority level	Requester	Operator	Shipment status	Batch
0	1421: JOB-1005 *(29-Sep-2021 by Wanda Wong)*		Quoted	Routine	[Crist] Agile			
0	Boscalid (R) (F) t (1 sample)		Quoted	Routine	[Crist] Agile			
0	2250: 1234		Quoted	Routine	[Crist] Agile		Submitted	
0	cb_1 (1 sample)		Quoted	Routine	[Crist] Agile			
0	2250: 1234		Quoted	Routine	[Crist] Agile		Submitted	
0	Cholesterol LDL (1 sample)		Quoted	Routine	[Crist] Agile			
0	2250: 1234		Quoted	Routine	[Crist] Agile		Submitted	
0	COVID-19 (1 sample)		Quoted	Routine	[Crist] Agile			
0	2250: 1234		Quoted	Routine	[Crist] Agile		Submitted	

If you want to see all the information about each job then you need to choose "expand all" option and then click on the printable option.



You cannot select jobs and just print them. All the jobs will be printed by default, except the jobs in Finished status.

If you need to find Finished jobs you need to do "filter" options and select the status *All* to see the finished jobs.



The job status will be either Quoted, Received, Assigned, Started, Pending, In Progress, Completed, Finished.

The test and samples will not have any value for priority levels and will show:

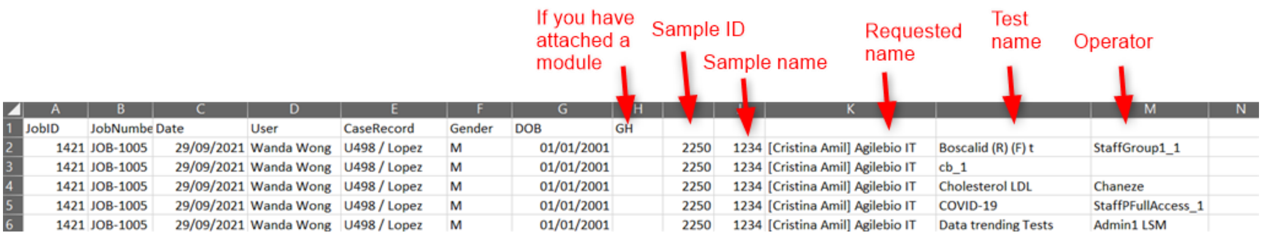
- "Wait" for completed job status
- "Process" for In progress jobs

- "Open" for pending/Assigned jobs

5.2.1.5 Export

Export option allows you export a CSV of selected job list or all jobs. You will see CSV in standard format, to separate the values into each column you need to delimit data. Please read the Knowledge Base KB: [how to delimit data.]

Once you download the CSV (without any options active) you will see the CSV like below example. (After delimiting you will see CSV like below example image)



	A	B	C	D	E	F	G	H			K		M	N
1	JobID	JobNumbe	Date	User	CaseRecord	Gender	DOB	GH						
2	1421	JOB-1005	29/09/2021	Wanda Wong	U498 / Lopez	M	01/01/2001		2250	1234	[Cristina Amil] Agilebio IT	Boscalid (R) (F) t	StaffGroup1_1	
3	1421	JOB-1005	29/09/2021	Wanda Wong	U498 / Lopez	M	01/01/2001		2250	1234	[Cristina Amil] Agilebio IT	cb_1		
4	1421	JOB-1005	29/09/2021	Wanda Wong	U498 / Lopez	M	01/01/2001		2250	1234	[Cristina Amil] Agilebio IT	Cholesterol LDL	Chaneze	
5	1421	JOB-1005	29/09/2021	Wanda Wong	U498 / Lopez	M	01/01/2001		2250	1234	[Cristina Amil] Agilebio IT	COVID-19	StaffPFullAccess_1	
6	1421	JOB-1005	29/09/2021	Wanda Wong	U498 / Lopez	M	01/01/2001		2250	1234	[Cristina Amil] Agilebio IT	Data trending Tests	Admin1 LSM	

This option gives you possibility to also export 3 things:

- **Include job additional data:** You will see all fields under the job additional data when you create the job.
  To add job refer to [section 5.1.1]

- **Include sample additional data:** You will see all fields under sample level when you create a job.
  To add job refer to [section 5.1.2]

- **Include case record additional data:** Here you will see case record information. It is the custom module for which you activate options by going to [section 6.7.7] . You will have information about all custom fields in the custom module that you have attached as well as sample ID, name, requester, test name, operator and the batch name.

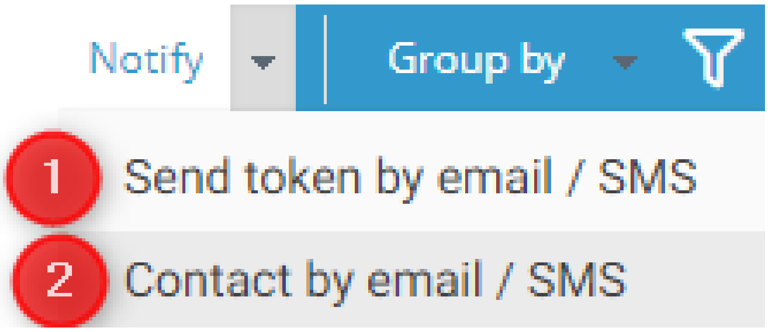
5.2.1.6 Report

This option can be useful when you want to print a report.

You can select jobs by checking the box in front of each job. You can create a combined report PDF or a zip file.

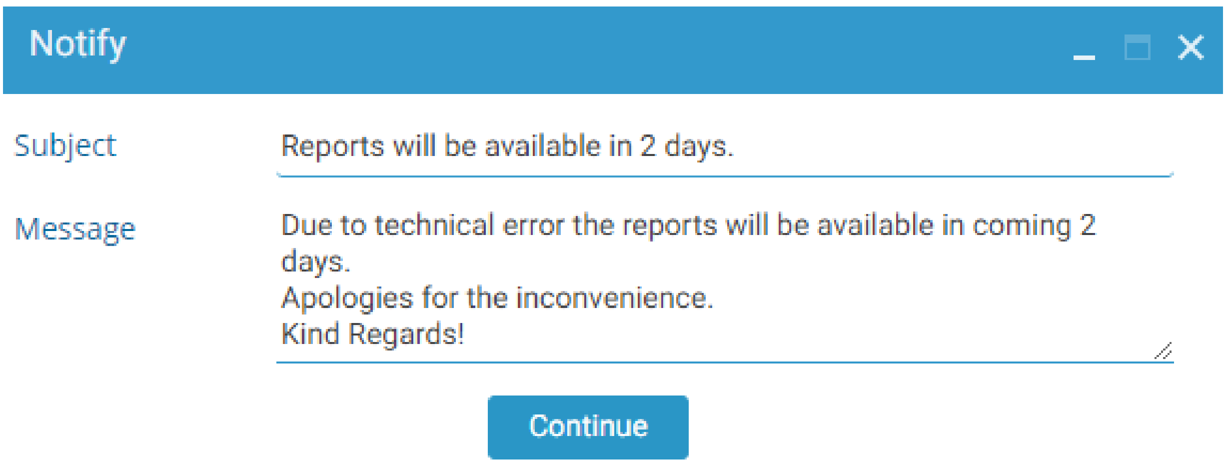
5.2.1.7 Notify

Notify will allow you to send token by email or SMS to the case records for example like patients.



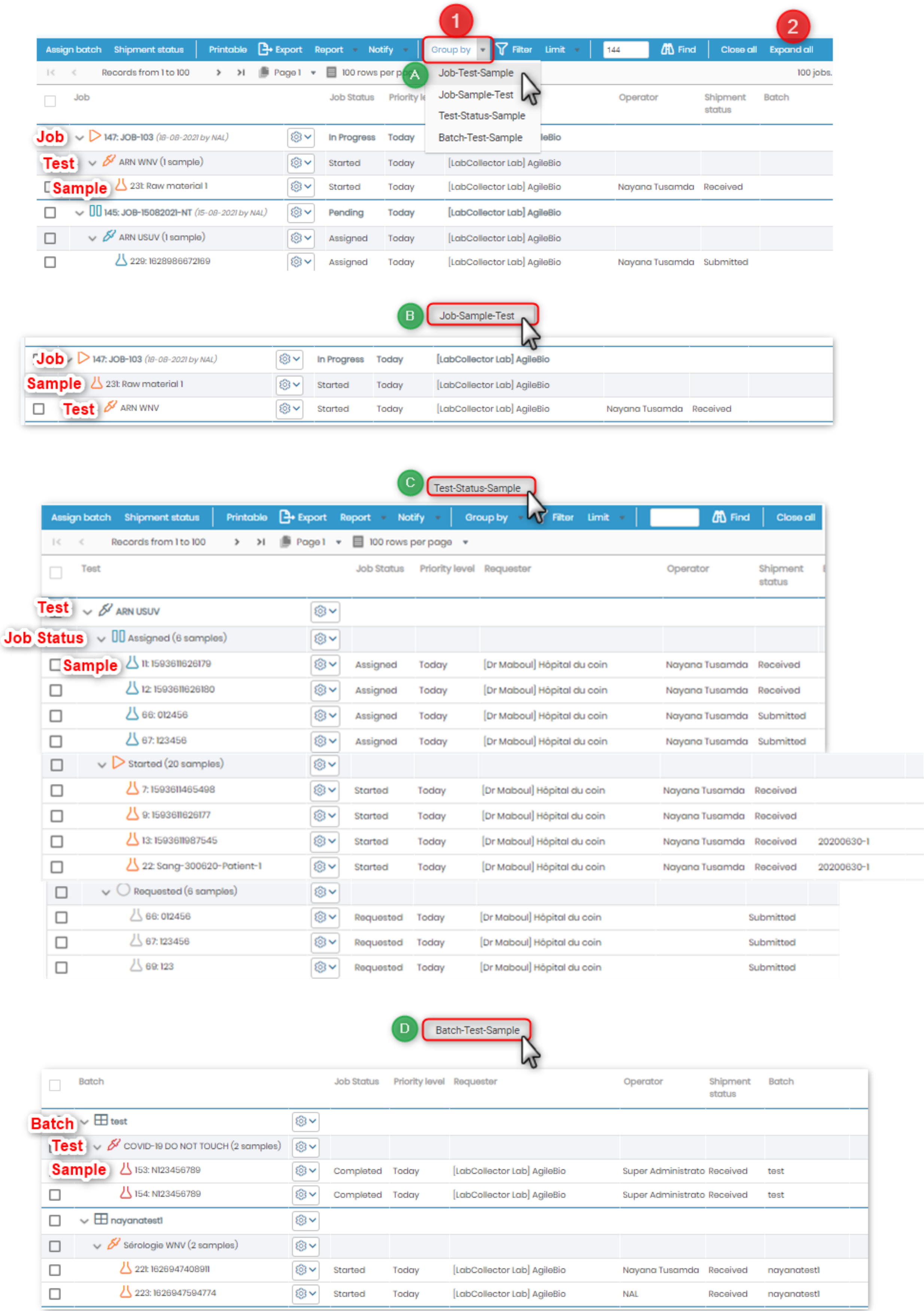
You can select multiple jobs at once and send them token by email.

1. If you want to send via SMS, make sure you have integrated SMS platform, for example like twilio in order for SMS notification. Please read the Knowledge Base KB: how to send token using SMS notification.
2. You can also send case records a custom message by email or SMS. For example like below.



5.2.1.8 Group by

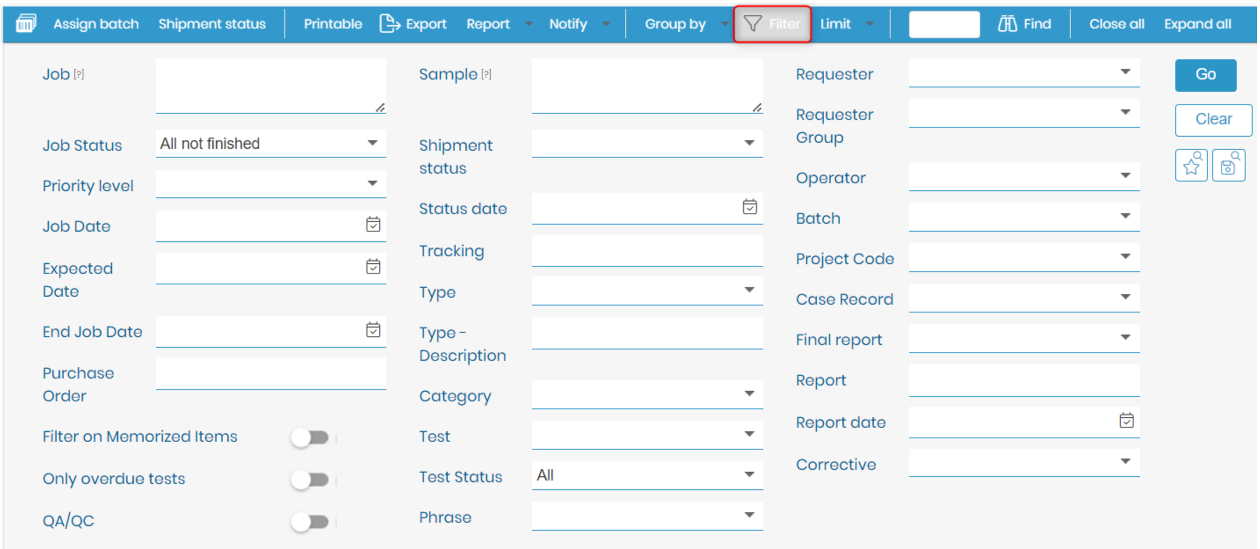
You can arrange/group your jobs by different levels, like show below. To see the detailed organization you need to click on "expand all" option.



5.2.1.9 Filter

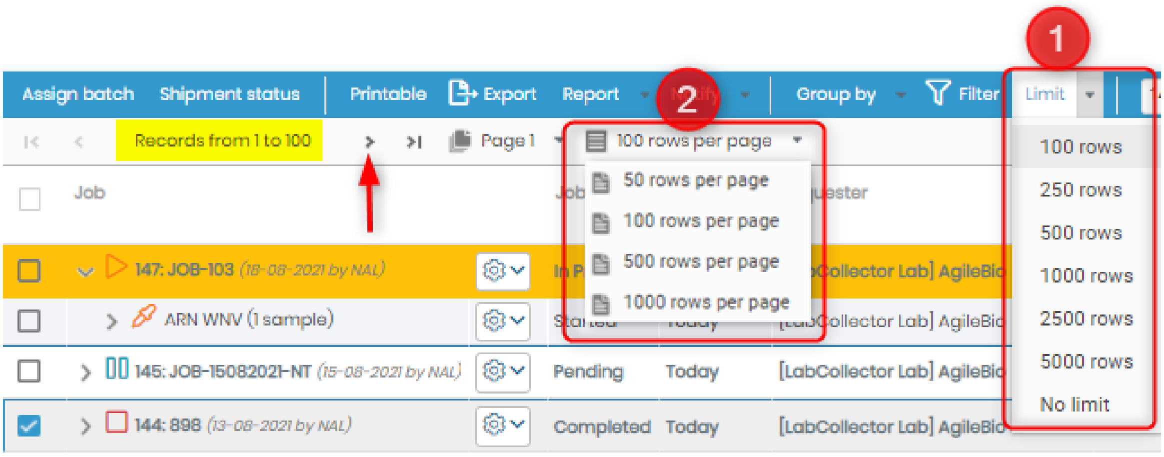
The filter option provides you to filter jobs, samples, batches and much more using various filters or their combinations. You can even create custom search filters.

To know about all filter options, please read the knowledgebase KB: [how to search in LSM.]

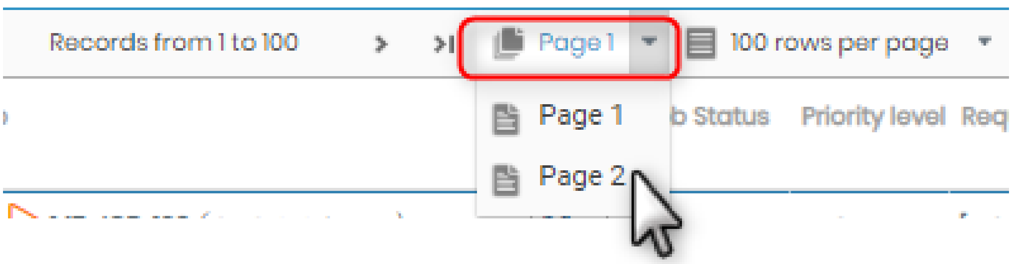


5.2.1.10 Limit

The option "Limit" allow you to set the limit of how many rows you see in one page. You can increase the limit by 2 ways shown in below image. To scroll through the different pages you can click on the small sign ">" or ">|" or "<" or "|<".

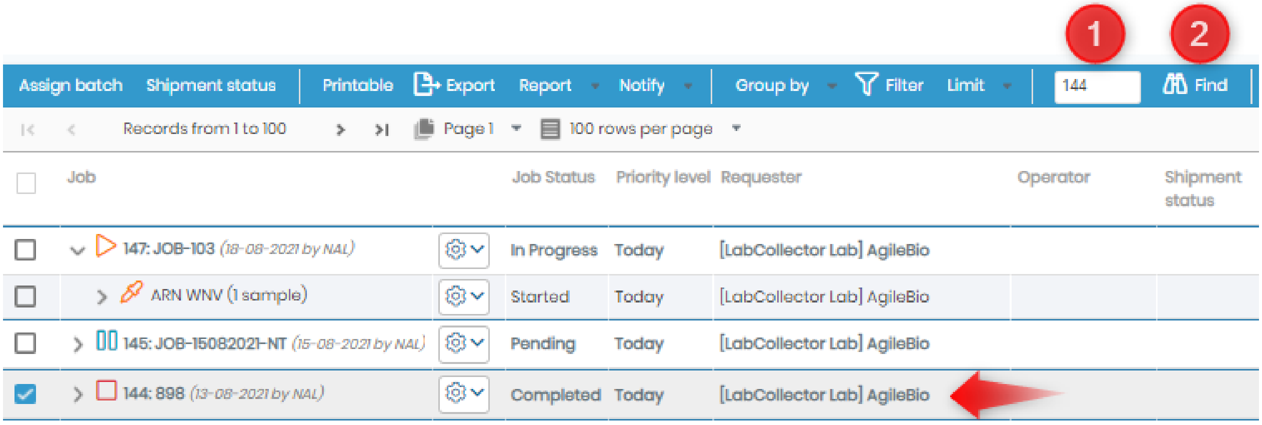


Or click on "Page" option to select the page you want to go to.



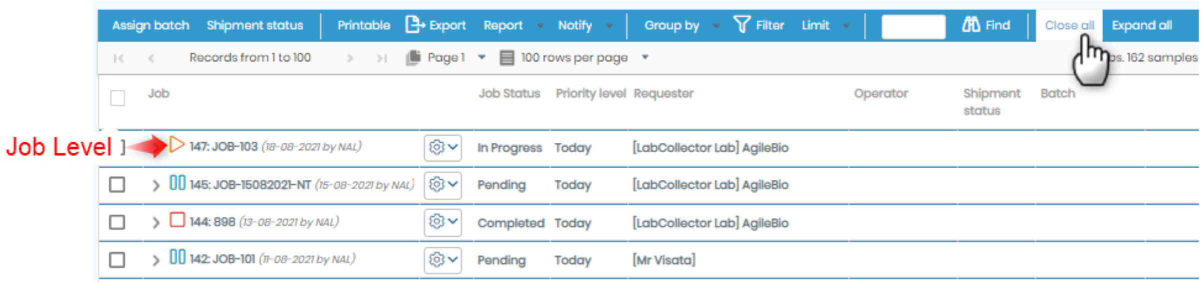
5.2.1.11 Find

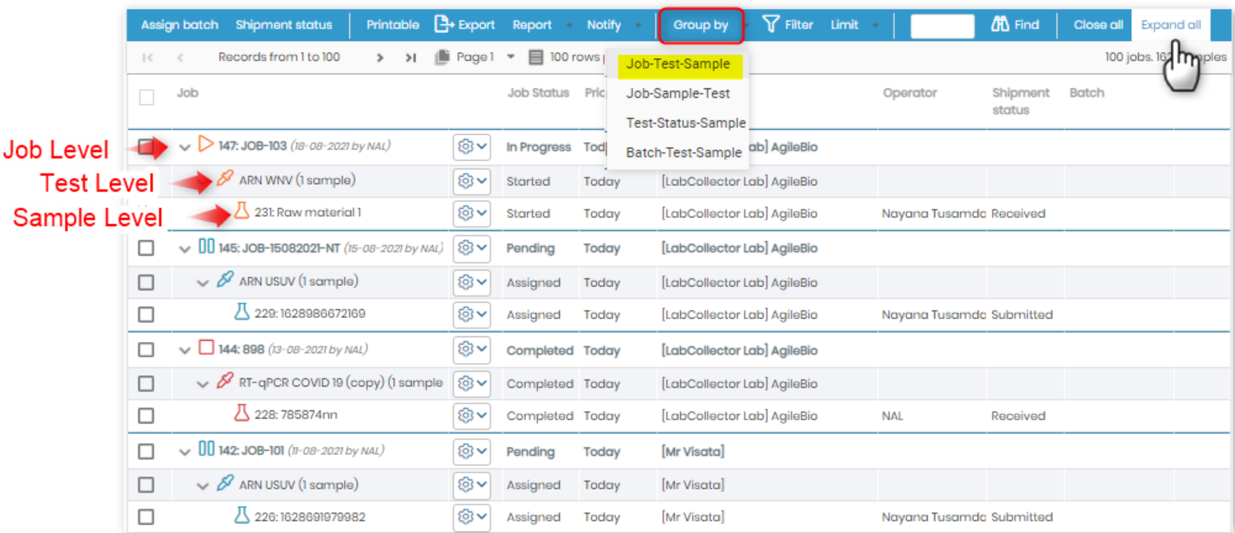
The option "Find" allows you to find the number, ID, name of a job, test or sample that you want to find. For example we have typed the number a sample ID, and when the job is find, it will check the box in front of that job to highlight light it.



5.2.1.12 Close/Expand all

This option allows you to see the jobs as a single line or segregated into the job, test, sample or batch llines depending upon what you choose to group your jobs.





5.2.2 Job List Menu

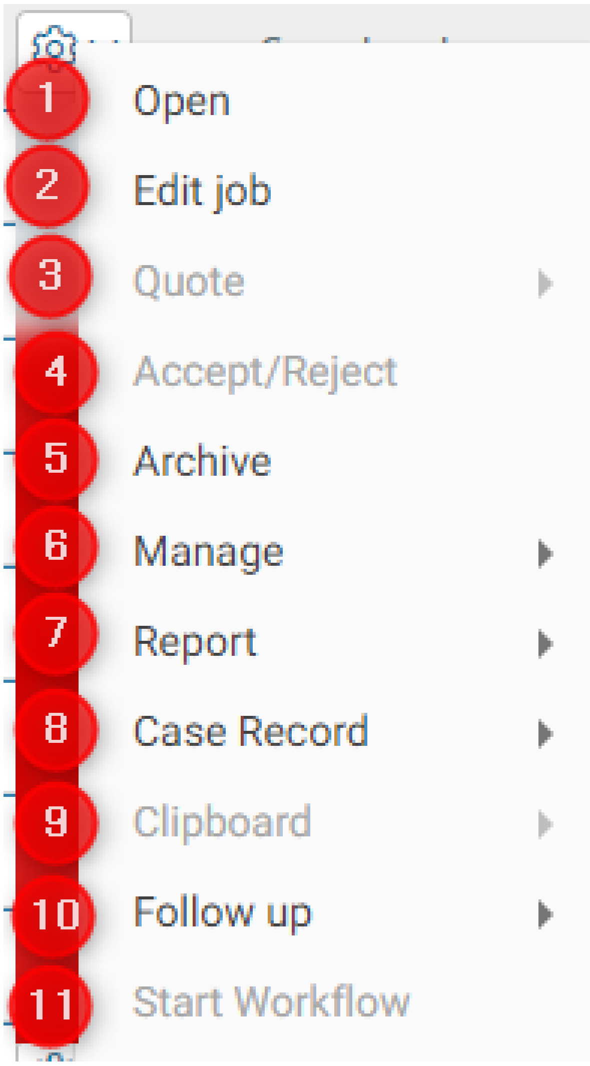
Once the job is created you can manage various ways. The final destination of a job that is correctly done, is to reach Finished status.

You can also Delete or Archive a job if you wish you.

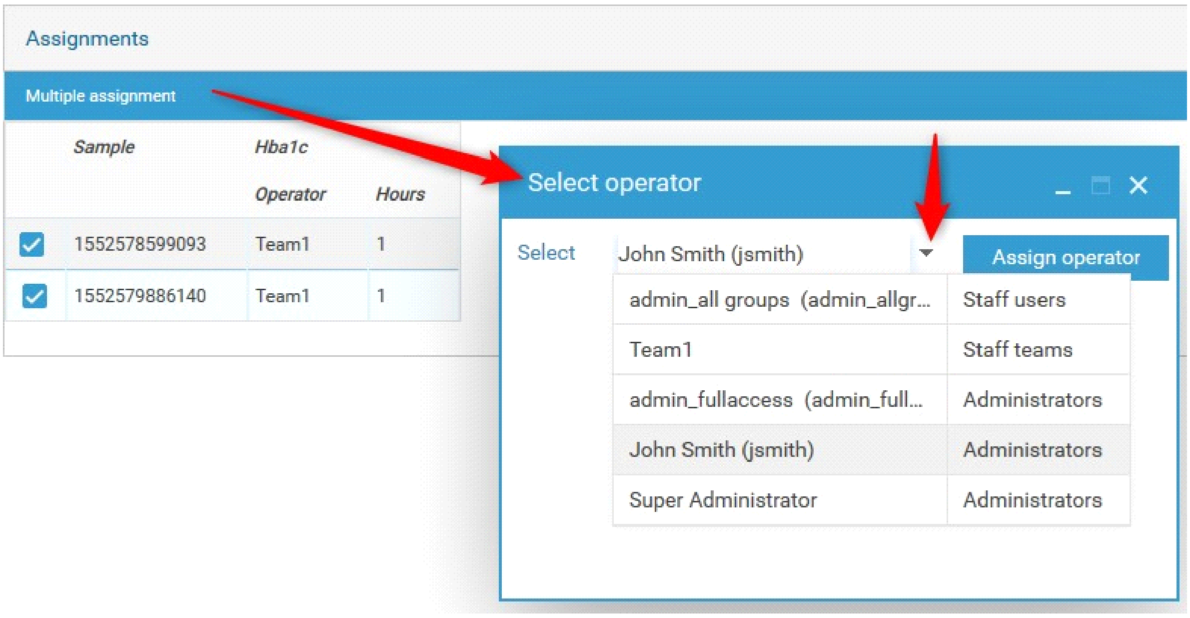
Below are various job options are explained.

Warning

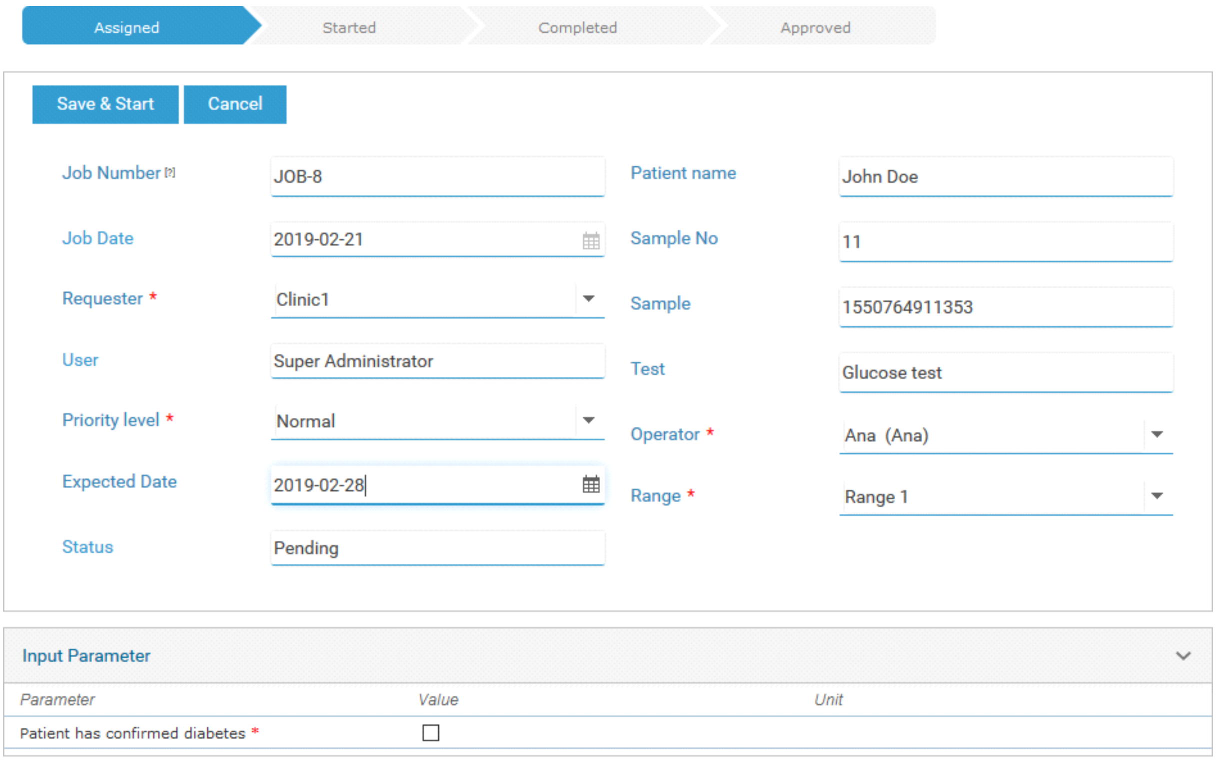
Not all options will be visible at all times. Some options will be visible only when the jobs reach a certain status.



By default, the job is assigned to the operator that you selected in the test configuration. Before entering results, you can assign the job/samples to another operator. You can do it sample-by-sample or in batch with multiple assignment. Click on the **Options** button of your job/test, go to **Manage > Assignments**. Select the samples of interest, click on Multiple assignment and choose the new operator in the popup.



To start a job, expand it in the Job List and select your *sample* of interest by going to **Options > Open**. Details are displayed in a new pop-up; select an operator and complete any other required/optional job fields, then click on the **Save & Start** button to begin work on the sample.



In the lower portion of the popup there are several items that might be required to complete when starting some jobs:

- **Input parameters**: Lab designated parameters as input for a job. *These can only be input at* *the time of starting a job.*

- **Reagents & Supplies**: Lab designated reagents and supplies associated to the job/test/assay. *These can only be input at the time of starting a job.*

- **Protocol**: list of protocols and equipment categories for the job. The equipment may be selected and the protocol can be downloaded and/or viewed. *These can only be input at the time of starting a job*

Mandatory fields are marked with an asterisk.

5.2.2.1 Job Status

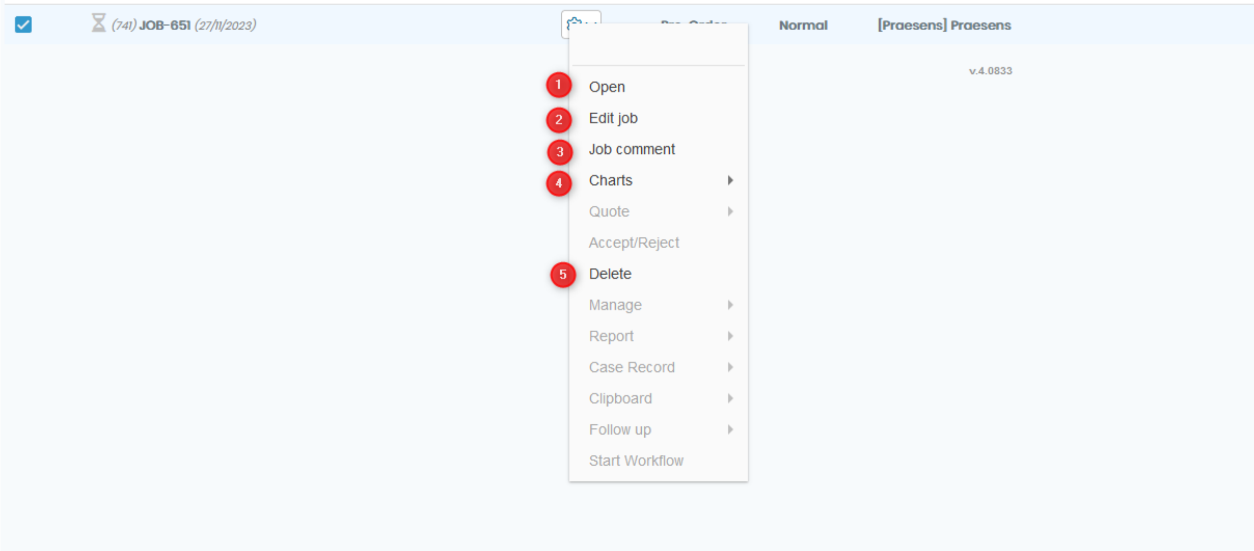
You can open a created job and execute it depending on your job status. All the status and their options are explained in following sections.

5.2.2.1.1 Pre-ordered job

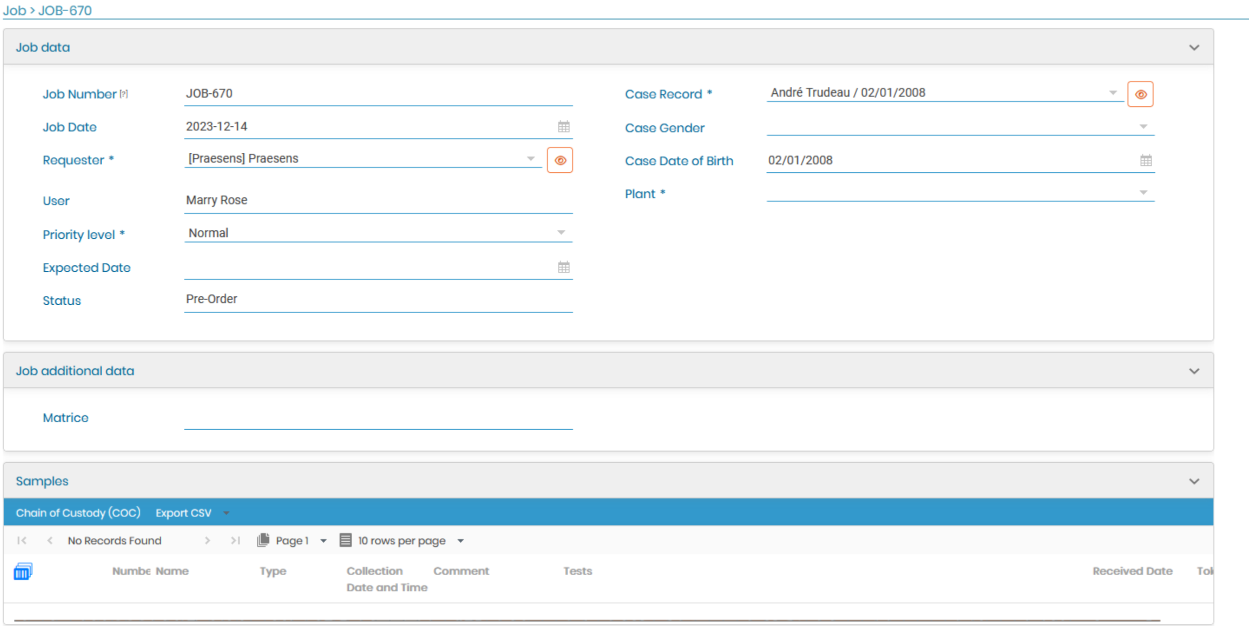
Pre-order: Is a job that was ordered but do not have samples. For example if the samples are waiting to be collected, etc

For creating jobs via LSM and LSMRemote please refer to our KB: [how to create and execute a job.](#)

In the Job Menu you will find the follow options



1. You can open the pre-order job. When you open the job you will see a screen like the below example image; a job without samples:



2. You are able to edit the job, like changing the job information and/or adding samples;
3. You can add a comment;
4. Is possible to see the job chart/trending chart
5. You can delete the pre-order job.

5.2.2.1.2 Quoted job

Quoted:

You need to accept the quote in order to open the job.

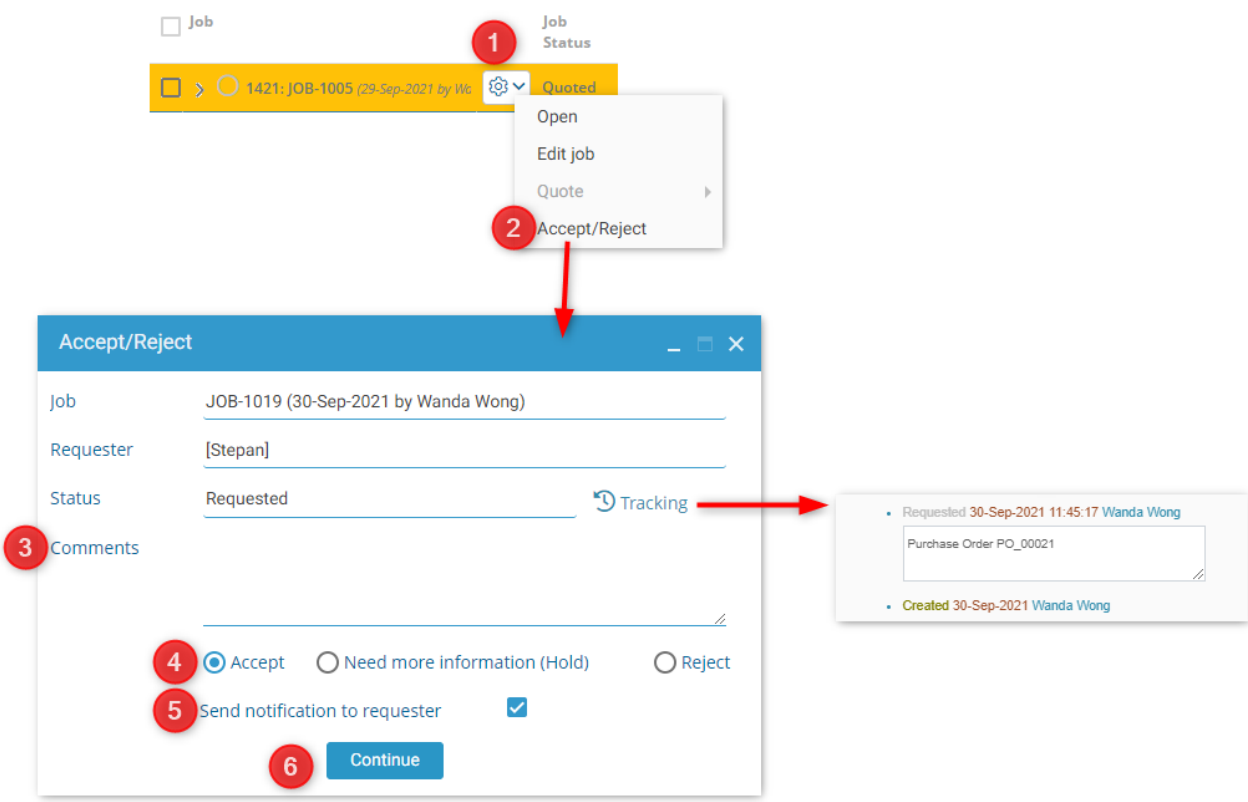
If the job is in quoted status then you need to follow the steps in section 5.2.3

For creating jobs via LSM and LSMRemote please refer to our KB: how to create and execute a job.

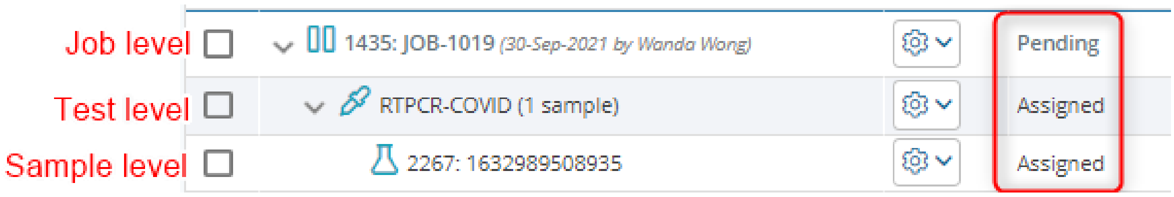
5.2.2.1.3 Requested job

Requested: You need to accept the job in order to open and execute it.

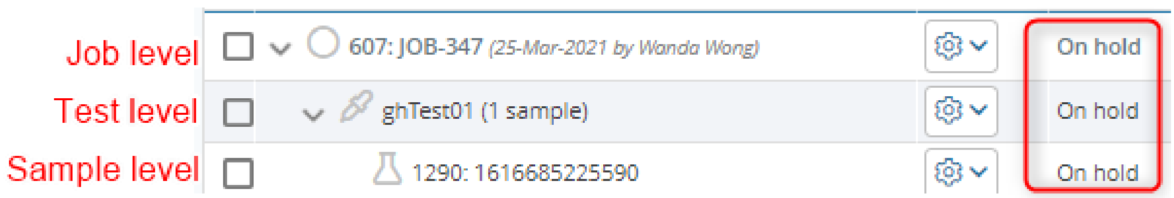
For creating jobs via LSM and LSMRemote please refer to our KB: how to create and execute a job.



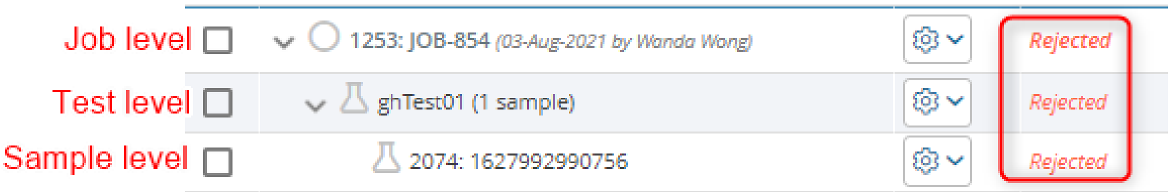
1. If the job is in requested status then you need to accept it by clicking on job status.
2. You need to select Accept/Reject option
3. You can add comment on the job is you require. You can also track status of the sample by clicking on the tracking icon.
4. You can
   - Accept the job. The job status will be changed to "Pending" and the Sample & Test level will be on Assigned status.



   - You can choose to keep the sample on the hold to have more information about it. You job will be in Hold status.
     You can search for all "On hold" jobs by going to **LSM → Job →Job list → Filter → Job status**



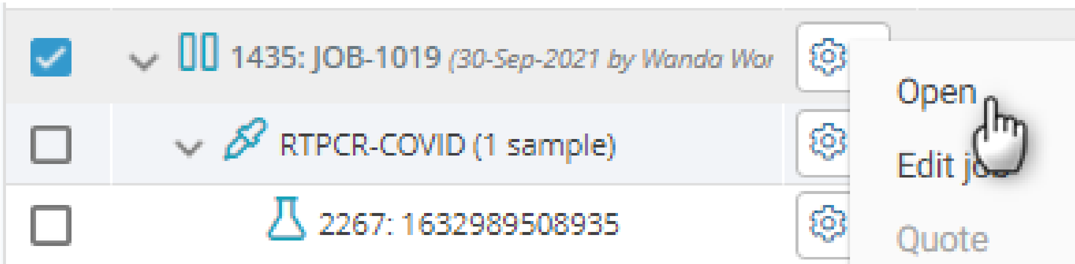
- You can also Reject the sample (for example in case the sample is not viable or the information about it is incorrect). The status of the job will be rejected. You can search for all "On hold" jobs by going to **LSM → Job →Job list → Filter → Job status**



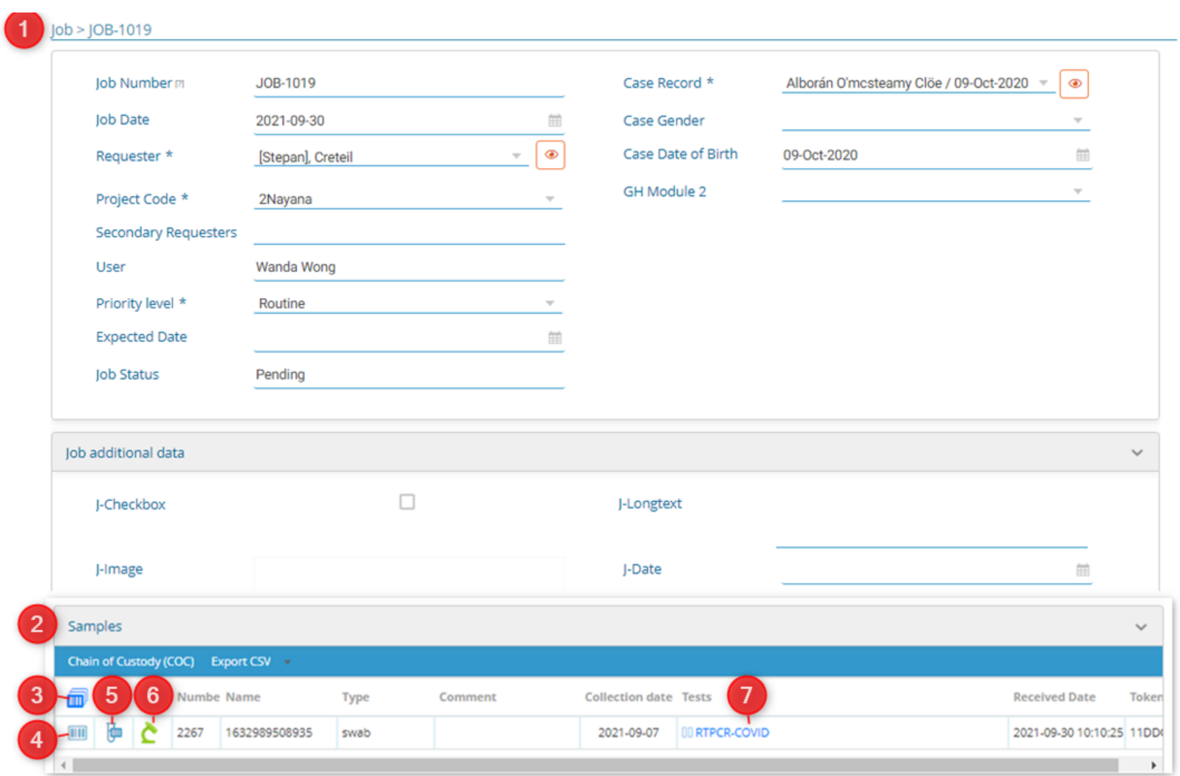
5. You can choose to send notification to requester by tick marking the checkbox.
6. Once you are done you can click on continue.

5.2.2.1.4 Pending job

You can open a pending job in order to execute it:



When you open the job you will see a screen like below example image.



1. You will see all the fields related to job and custom fields you created at the job level.

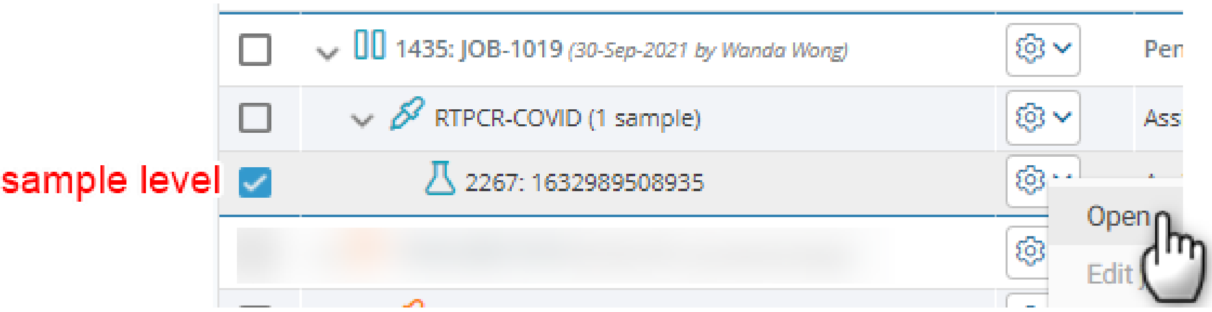
   The eye icon shows you all the information about the attached record in the custom module.

   The eye icon shows you all the information about the requester (provider/client/sample collection center or person).

   Please refer to section 5.1.1

   For creating jobs via LSM and LSMRemote please refer to our KB: how to create and execute a job.
2. You will see all the fields at the sample level.

   Please refer to section 5.1.2. You can also directly execute by going to sample level

3. This option will take you directly to print barcode options in **LSM → Admin →Barcode labels.** You will see a lot of options to configure your barcode settings.

   Refer to our online Manual page on printers.

   Please refer to section 5.2.1.1 & section 6.6
4. This option will allow you to print the sample's barcode. This will not allow you to configure a lot of options for the barcode settings.

   Please refer to our KB: how to print barcodes.
5. This option takes you to barcode printing where you have more options (point 3).
6. This green LabCollector icon helps you to create the sample inside LSM as an record inside LabCollector. When you click on this option, sample module will open and you will be save this sample as a record. When it is linked to a sample in module it will be green.

   You can also create samples automatically for projects inside LabCollector by going to **LSM → Admin →Setup → Project & Modules.** Also see section 6.7.6

   Please refer to our KB: what is a record.

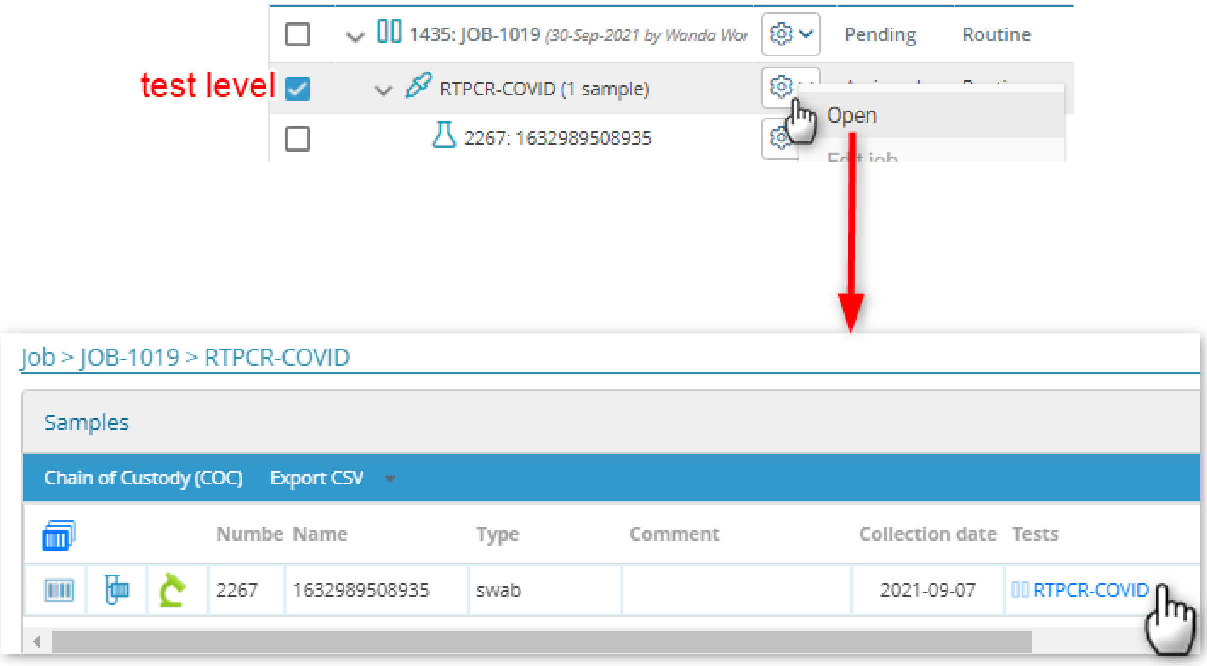
   Please refer to our KB: what is sample module.

Note

If the sample is not connected to the sample in module then this icon will be in black/white color.

7. Here you will see a link to open test and execute it. You will see all the parameters you have

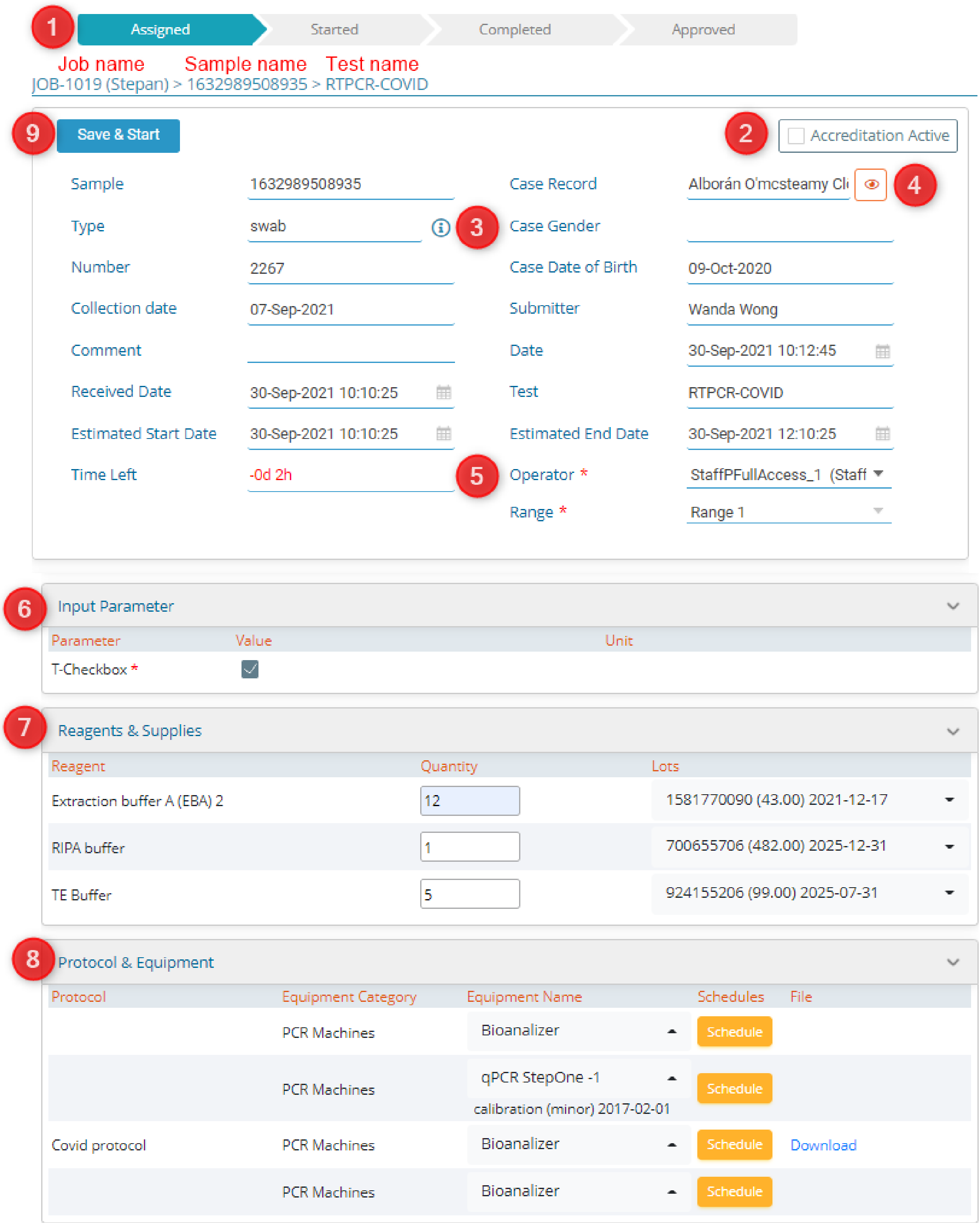
created in test level. Please see section 5.1.3.
You can also open test by directly going at the test level.



5.2.2.1.4.1 Test execution (Assigned)

When you open the test it you will see a screen like below example image where you can see the status of your test.

**The below image is an example, you might see little different fields which are configured depending in the requirements.*

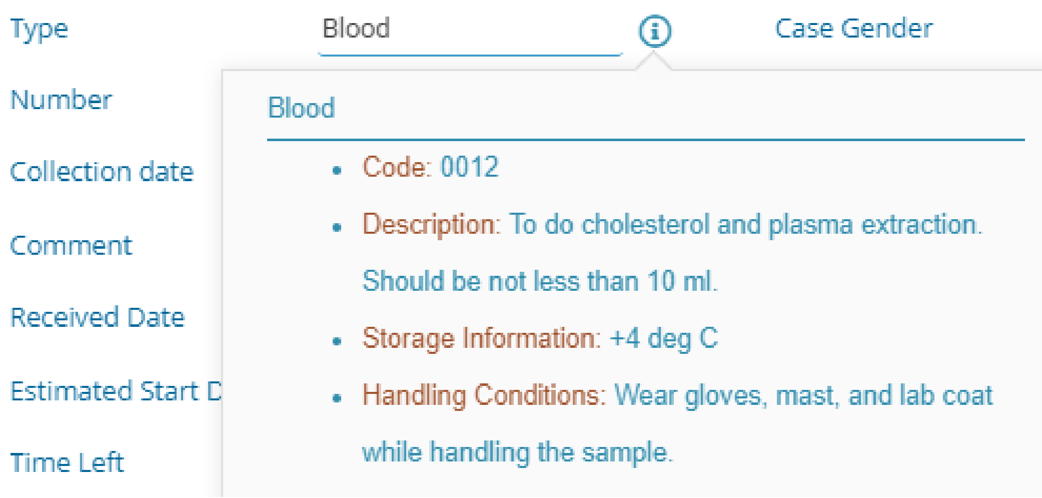


1. Here you see the job status as you move along the job. The one you are currently will be highlight in their specific color. Once you finished assigned state it will move to started state in orange color.
2. If you need to activate accreditation for a job you can check the box and activate it here. Refer to our KB: [how to add accreditation.]()

Warning

If you try to remove the accreditation then you will have to add a reason which will be added in audit log in **LSM → Admin →Logs.**

3. If you click on the the information icon you will be able to see the information (example image below) about the sample that is mentioned in **LSM → Admin →Preferences → Sample types.**



4. The eye icon will show you the information about the case record. You will see all the field in the attached module and the information related to it in the case record.
5. This is the person who will be handling the job or performing the test. You can change this information when a job is pending. It can be a single individual or a team containing several group members. You can create these operators in **LSM → Admin →Contacts →Users.** Please refer to section 6.1.2
6. Here you will see all the parameters that you created at test level as Input parameters which you need to fill in order to go forward in the test. Please refer to section 6.4.2.1

Warning

Be very careful while adding jobs as there is little possibility to change or alter fields/parameter values once the job is created.

7. If you have fill "Reagents 1 Supplies" that you filled during creating a test. **LSM → Admin →Preferences →Test.** Refer to section 6.4.4

   You will see the reagents from Reagents&Supplies module and even the lots related to each reagent. You can choose from the drop-down the lot you need and enter manually the quantity that will be used during the test execution. This quantity will be subtracted from the original lot in the Reagents & Supplies module.

Note

FIFO (First In First Out) is NOT active in LSM, so be careful while choosing your lot. Please see our online Manual page on FIFO.

8. Here you can add the protocol & equipment that you add during creating test.
   - The equipment here are connected to the Equipment module.
   - You can also schedule the equipment in the Scheduler add-on. This is an add-on to

reserve the lab equipment for a specific day and time to performing the experiments. Double click on the time of the day to schedule your reservation. You can also edit the name of your reservation or delete it, if you create it by error. *See the below image.*

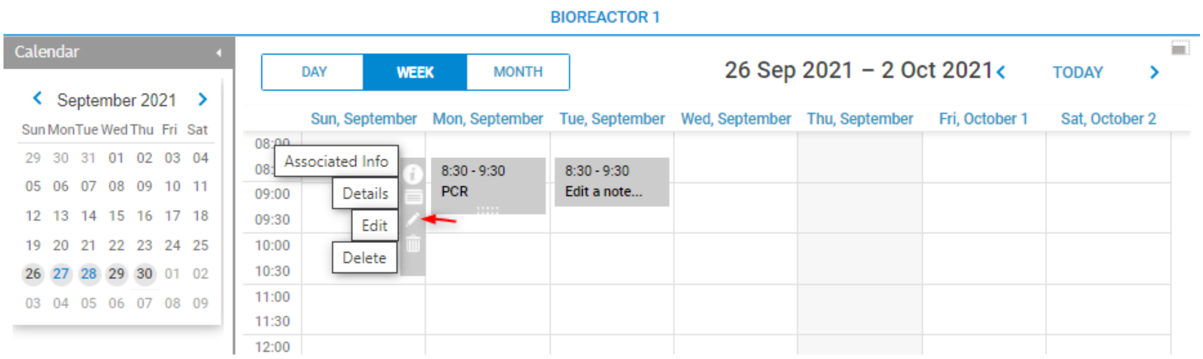
Note

For this you need to have the scheduler icon purchased. If you don't have scheduler you will not be able to see this scheduling part.

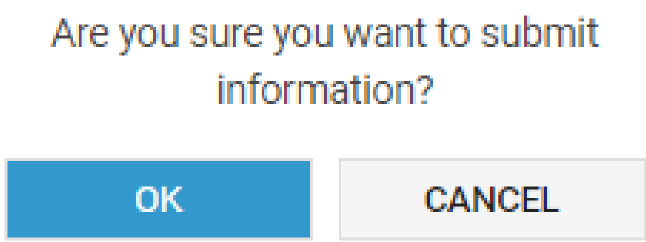
- You can also download the protocol that you created or attached while creating the test.
  See **LSM → Admin →Preferences →Test.** Refer to section 6.4.4

Warning

Equipment that are in maintenance CANNOT be selected in the LSM job.

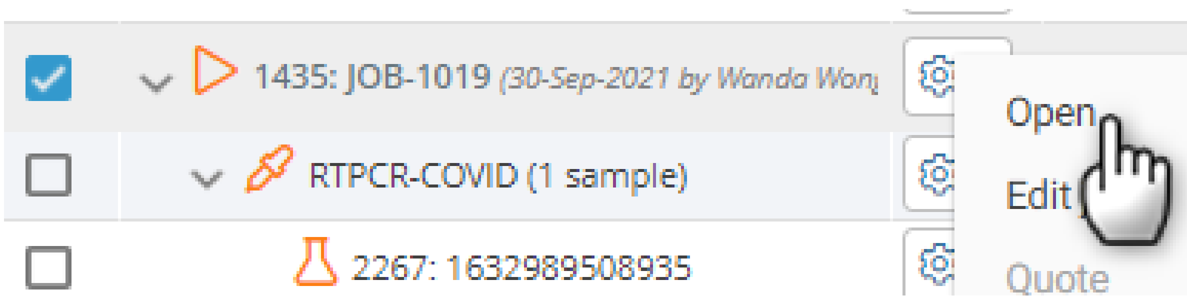


9. Once you are done, please click on save & start button. You will see a pop up asking if you are sure if you want to submit the job. If you click on OK you test will move to started status. If you click o the cancel then the job will stay on the same page.

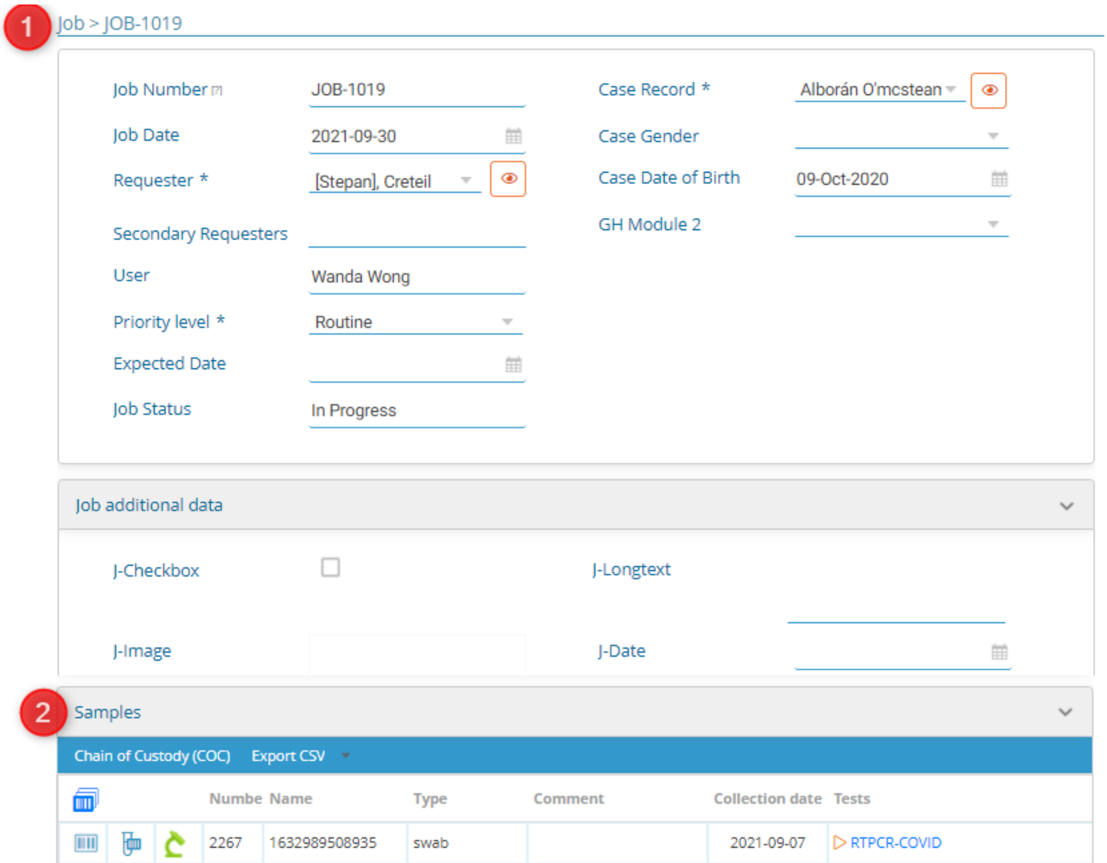


5.2.2.1.5 Started job (In Progress)

As you move to started status (See section 5.2.1.3.1) you will see the result parameters. You can open a started job in order to execute it:



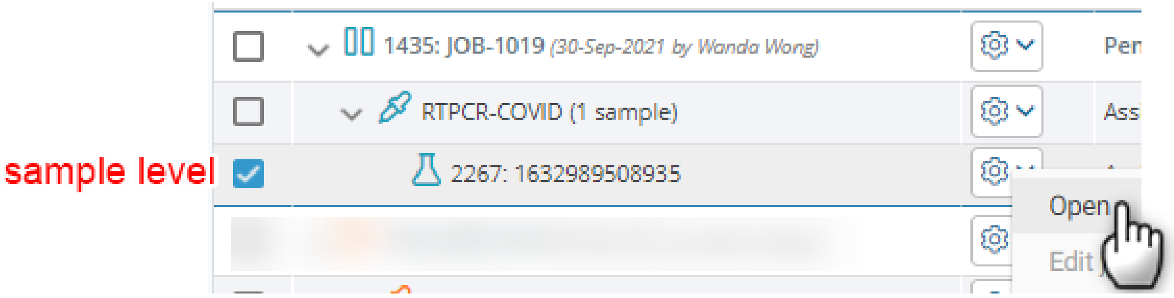
When you open the job you will see a screen like below example image.



1. You will see all the fields related to job and custom fields you created at the job level.

   The eye icon shows you all the information about the attached record in the custom module.

   The eye icon shows you all the information about the requester(provider/client/sample collection center or person).
   Please refer to section 5.1.1
   For creating jobs via LSM and LSMRemote please refer to our KB: how to create and execute a job.
2. You will see all the fields at the sample level.
   Please refer to section 5.1.2. You can also directly execute by going to sample level.



- This option will take you directly to print barcode options in **LSM → Admin →Barcode labels.** You will see a lot of options to configure your barcode settings.

  Refer to our online Manual page on printers.

  Please refer to section 5.2.1.1 & section 6.6
- This option will take you to print the barcode of the sample. This will not allow you to configure alot of options for the barcode settings.

  Please refer to our KB: how to print barcodes.
- This option takes you to barcode printing where you have more options (point 3).
- This green LabCollector icon helps you to create the sample inside LSM as an record inside LabCollector. When you click on this option, sample module will open and you will be save this sample as a record. When it is linked to a sample in module it will be green.

  You can also create samples automatically for projects inside LabCollector by going to **LSM → Admin →Setup → Project & Modules.** Also see section 6.7.6

  Please refer to our KB: what is a record.

  Please refer to our KB: what is sample module.

Note

If the sample is not connected to the sample in module then this icon will be in black/white color.

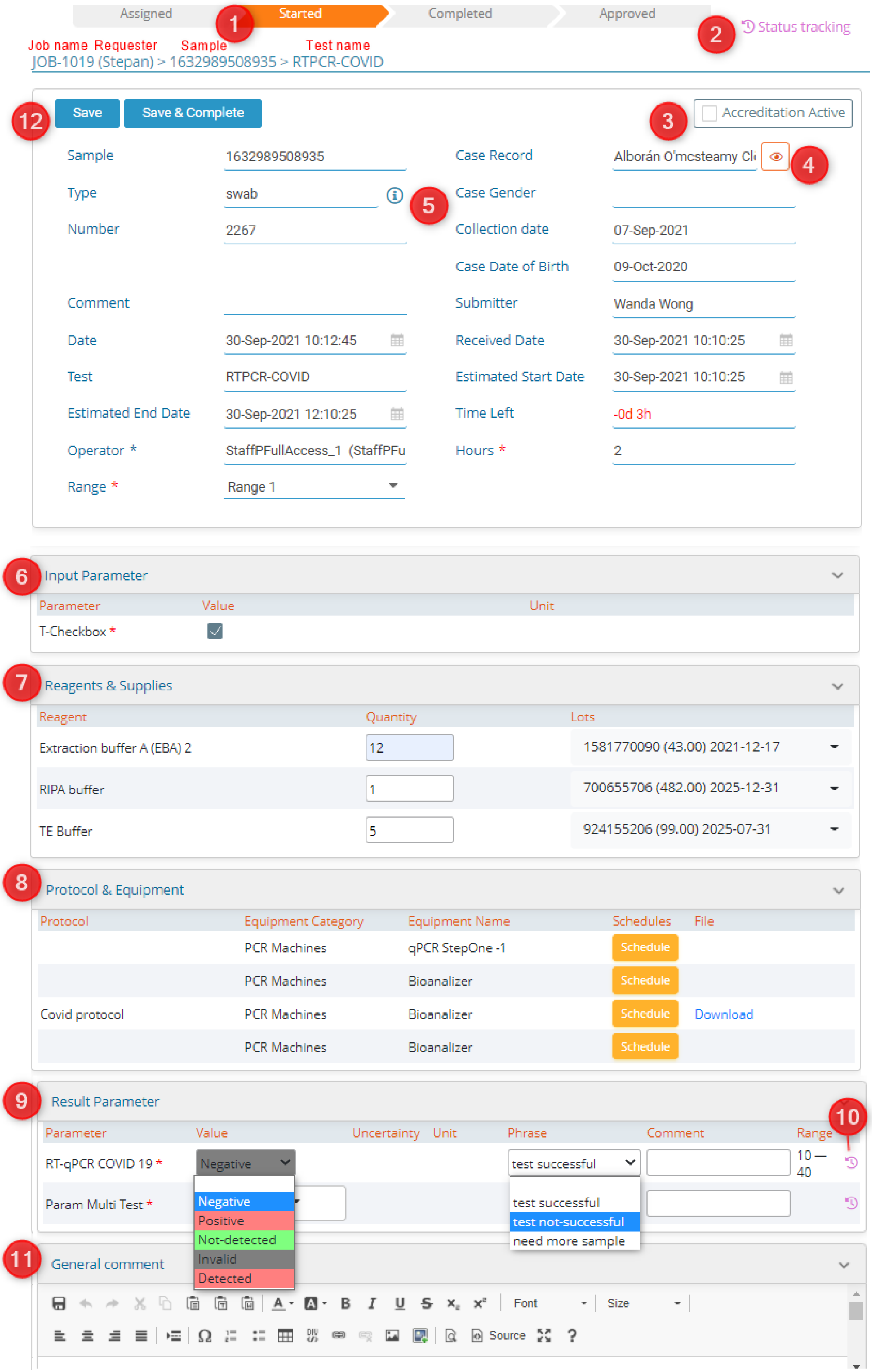
3. Here you will see a link to open test and execute it. You will see all the parameters you have created in test level. Please see section 5.1.3.

   You can also open test by directly going at the test level.

   See section 5.2.1.3.1 on how to complete test.

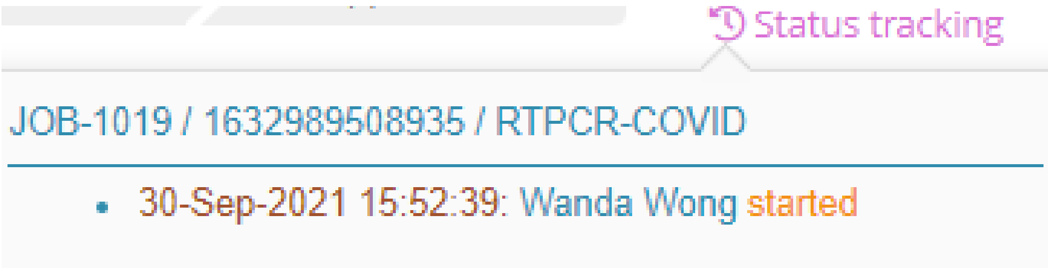
5.2.2.1.5.1 Test execution (Started)

**Below is an example image, you might see a little different fields which are configured as per requirements.*



1. Here you will see the status that you are currently on.

2. This is the tracking icon that will be only available when you have purchased the compliance icon is ON in **LSM → Admin →Preferences→Regulation.** It will information about who started the job and completed each status with date and timestamp.

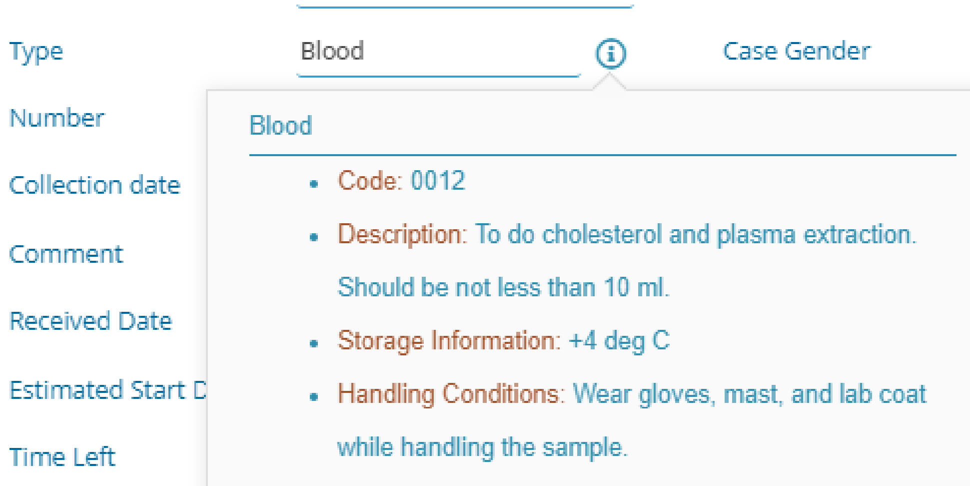


3. If you need to activate accreditation for a job you can check the box and activate it here. Refer to our KB: how to add accreditation.

Warning

If you try to remove the accreditation then you will have to add a reason which will be added in audit log in **LSM → Admin →Logs.**

4. The eye icon will show you the information about the case record. You will see all the field in the attached module and the information related to it in the case record.
5. If you click on the the information icon you will be able to see the information (example image below) about the sample that is mentioned in **LSM → Admin →Preferences → Sample types.**

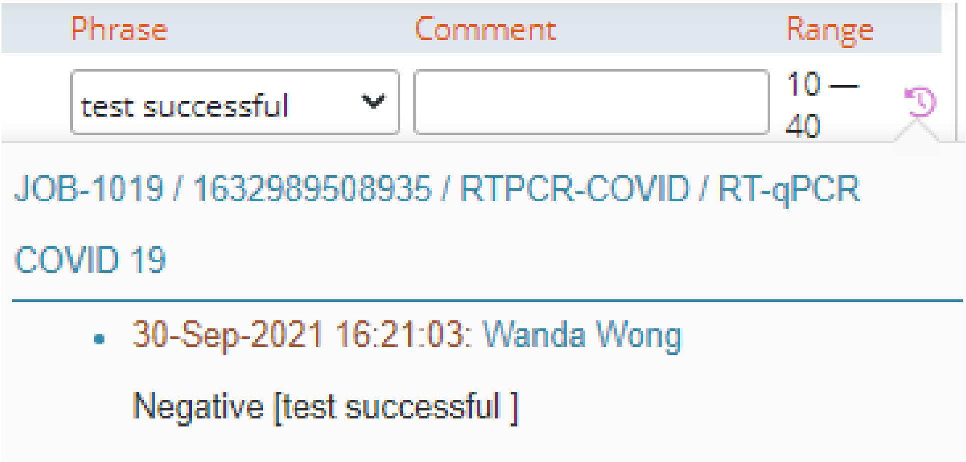


6. Please refer to section 5.2.1.3.1
7. Result tab will show you all the parameters that you created at the test level. See **LSM → Admin →Preferences →Test.** Refer to section 6.4.4
   - You will need to input the values for your result parameters. If you give colors to each valuelist then you will also see it here. Refer to section 6.4.2.2

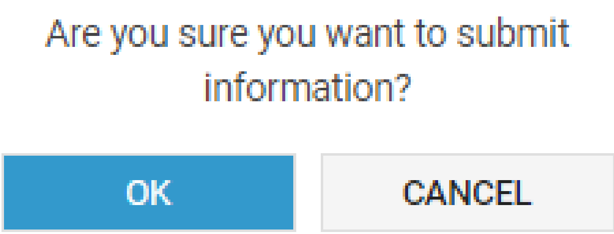
- You will also see phrases that you enter while creating the test.
- You can add a comment if you require.
- The range (If you add during creating test) will be visible here.

  See **LSM → Admin →Preferences →Test.** Refer to section 6.4.4

8. This is the tracking icon that will be only available when you have purchased the compliance icon is ON in **LSM → Admin →Preferences→Regulation.** It will information about updated of the result fields. This will be shown only if the job was *Save* and not *Save & Complete,* because it will move to another status level. The tracking will be with date & time stamped.



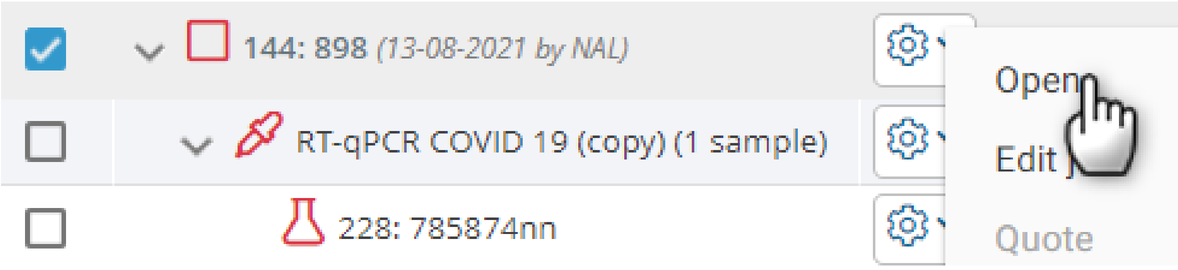
9. General comment allows you to type a comment or description of a specific information that you need to associate with the test. if you don't have anything to add you can leave it empty.
10. Once you complete adding all the information, you can do 2 things:
    - Just *Save* the job, this will save all the information you added without moving ahead.
    - *Save & Complete* job will save all the information you added with moving ahead status wise.
    - You will be asked if you are sure to save the information. If you click on OK you test will move to started status. The status will move to red Completed status. If you click o the cancel then the job will stay on the same page.



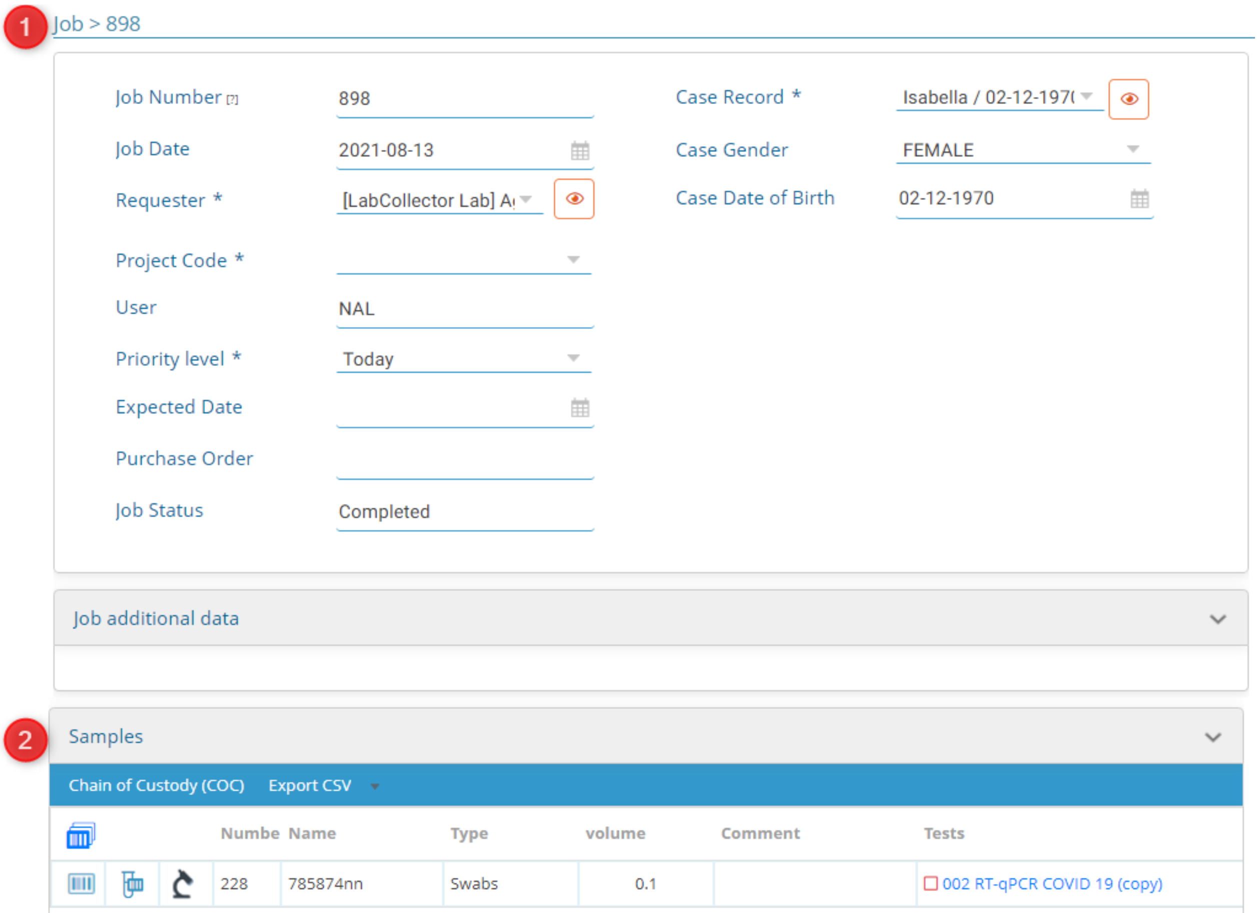
5.2.2.1.6 Completed job

As you move to started status (See section 5.2.1.3.1) you will see the result parameters.

You can open a concluded job:



When you open the job you will see a screen like below example image.



1. You will see all the fields related to job and custom fields you created at the job level.

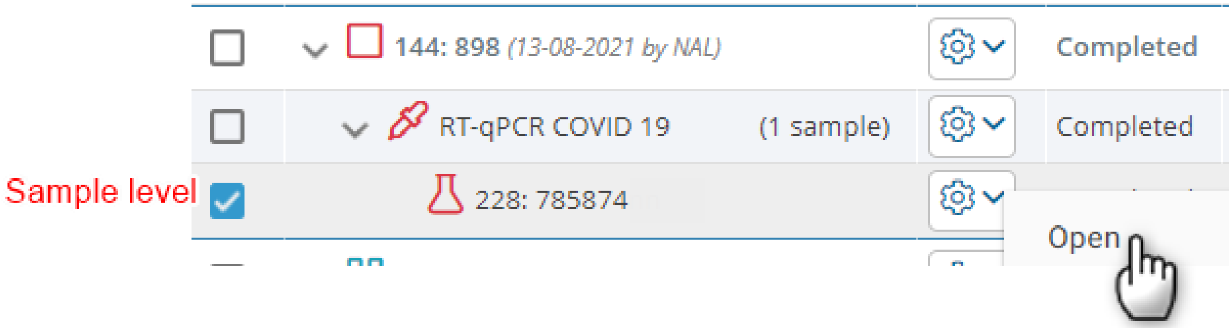
   The eye icon shows you all the information about the attached record in the custom module.

   The eye icon shows you all the information about the requester (provider/client/sample collection center or person).

   Please refer to section 5.1.1

   For creating jobs via LSM and LSMRemote please refer to our KB: how to create and execute a job.
2. You will see all the fields at the sample level.

Please refer to section 5.1.2. You can also directly execute by going to sample level.



- This option will take you directly to print barcode options in **LSM → Admin → Barcode labels.** You will see a lot of options to configure your barcode settings.
  Refer to our online Manual page on printers.
  Please refer to section 5.2.1.1 & section 6.6
- This option will take you to print the barcode of the sample. This will not allow you to configure a lot of options for the barcode settings.
  Please refer to our KB: how to print barcodes.
- This option takes you to barcode printing where you have more options (point 3).
- This green LabCollector icon helps you to create the sample inside LSM as an record inside LabCollector. When you click on this option, sample module will open and you will be save this sample as a record. When it is linked to a sample in module it will be green.
  You can also create samples automatically for projects inside LabCollector by going to **LSM → Admin → Setup → Project & Modules.** Also see section 6.7.6
  Please refer to our KB: what is a record.
  Please refer to our KB: what is sample module.

Note

If the sample is not connected to the sample in module then this icon will be in black/white color.

3. Here you will see a link to open test and execute it. You will see all the parameters you have a created in test level. Please see section 5.1.3.
   You can also open test by directly going at the test level.
   See section 5.2.1.3.1 on how to complete test.

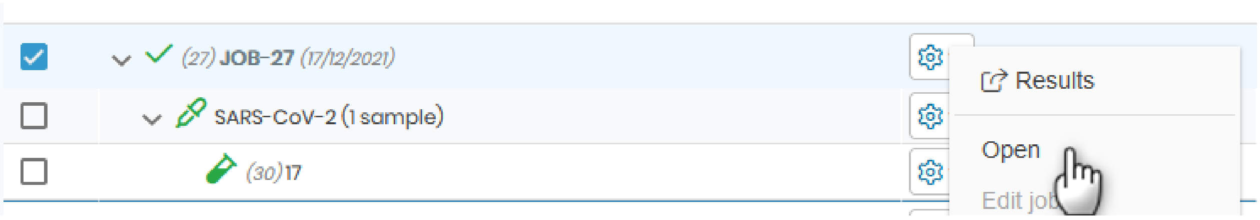
5.2.2.1.6.1 Test execution (completed)

coming soon...

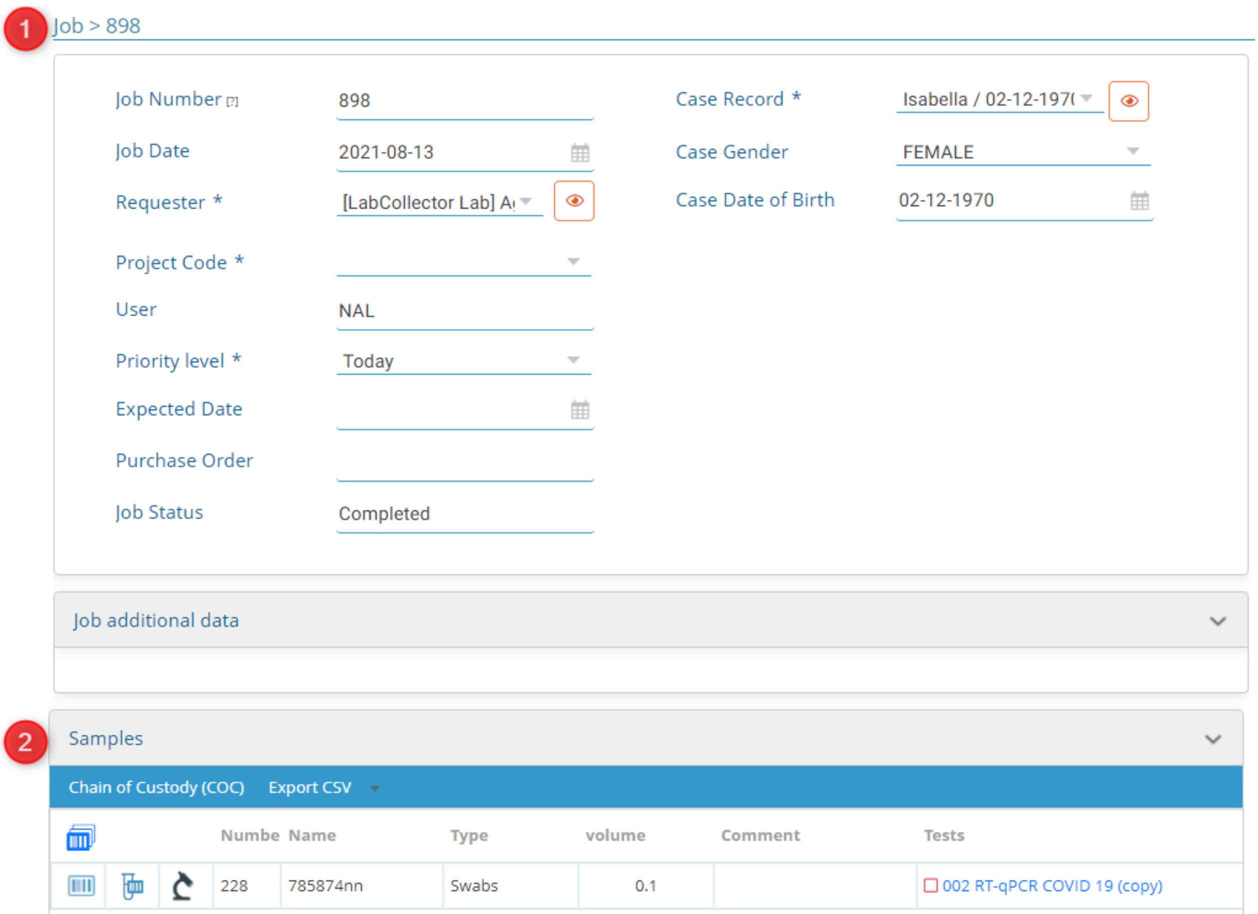
5.2.2.1.7 Finished job

As you approved the jobs they will be moved from concluded to finished.

You can open a finished job:



When you open the job you will see a screen like below example image.



1. You will see all the fields related to job and custom fields you created at the job level.

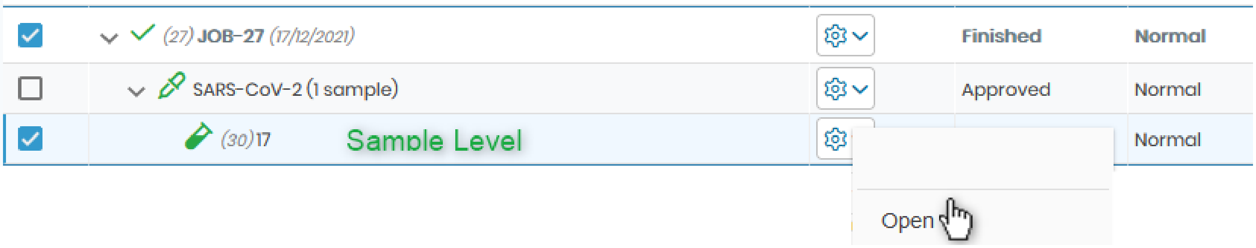
   The eye icon shows you all the information about the attached record in the custom module.

   The eye icon shows you all the information about the requester (provider/client/sample collection center or person).

   Please refer to section 5.1.1

   For creating jobs via LSM and LSMRemote please refer to our KB: how to create and execute a job.

2. You will see all the fields at the sample level.
   Please refer to section 5.1.2. You can also directly execute by going to sample level.



- This option will take you directly to print barcode options in **LSM → Admin →Barcode labels.** You will see a lot of options to configure your barcode settings.
  Refer to our online Manual page on printers.
  Please refer to section 5.2.1.1 & section 6.6
- This option will take you to print the barcode of the sample. This will not allow you to configure a lot of options for the barcode settings.
  Please refer to our KB: how to print barcodes.
- This option takes you to barcode printing where you have more options (point 3).
- This green LabCollector icon helps you to create the sample inside LSM as an record inside LabCollector. When you click on this option, sample module will open and you will be save this sample as a record. When it is linked to a sample in module it will be green.
  You can also create samples automatically for projects inside LabCollector by going to **LSM → Admin →Setup → Project & Modules.** Also see section 6.7.6
  Please refer to our KB: what is a record.
  Please refer to our KB: what is sample module.

Note

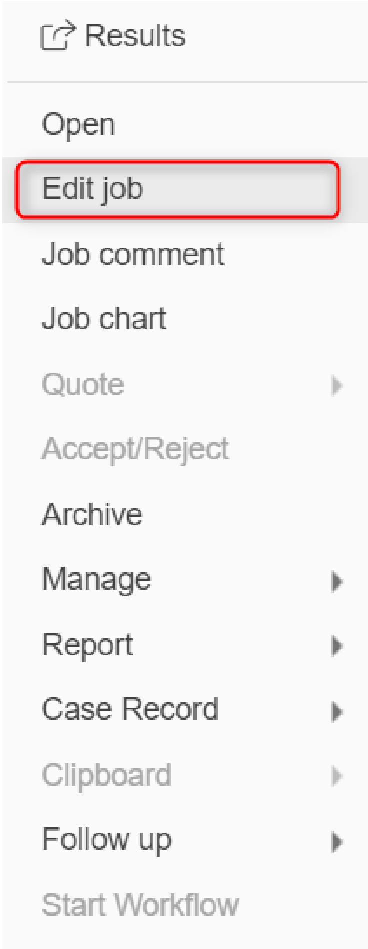
If the sample is not connected to the sample in module then this icon will be in black/white color.

3. Here you will see a link to open test and see the result. You will see all the parameters you have a created in test level. Please see section 5.1.3.
   You can also open test by directly going at the test level.
   See section 5.2.1.3.1 on how to complete test.

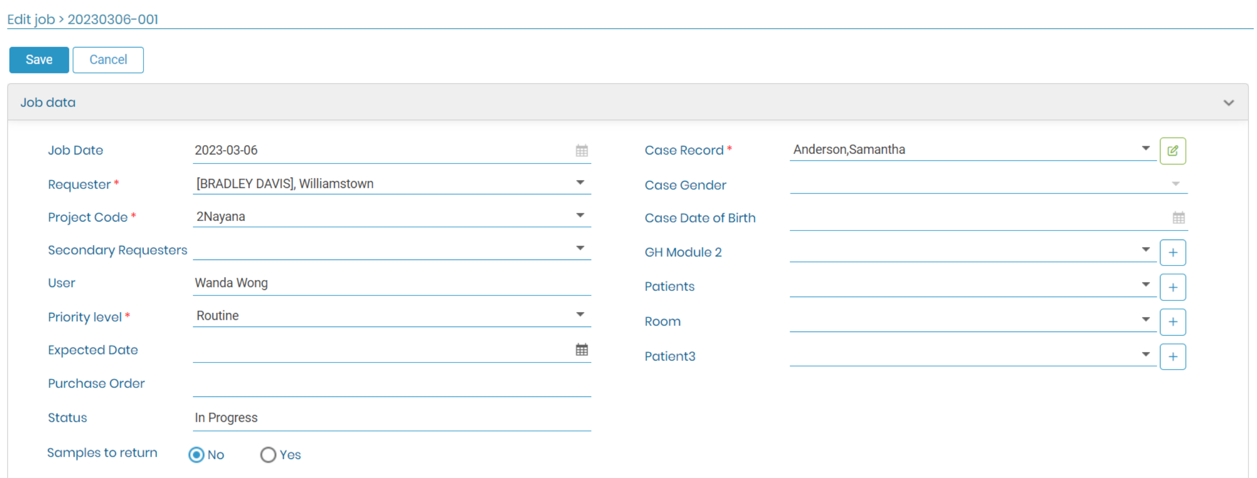
5.2.2.2 Edit job

When using our Lab Service Manager, modifying the information related to a particular job is made easy. By clicking on the gear icon within your job list, you will then need to click on "**Edit Job**".

This will open up the corresponding job form where you can modify all the relevant information about your job, including the requester, project code, case record, and even upload more documents.



The job form is designed to be user-friendly and intuitive, making it easy to make changes to the job information. You can edit existing fields, add new fields, or delete fields that are no longer needed, which gives you complete control over the job information, allowing you to modify it to best suit your needs.



Once you have finished making your changes, simply click the "**Save**" button 

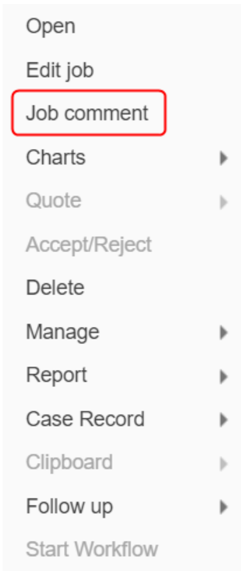
to update the job information.

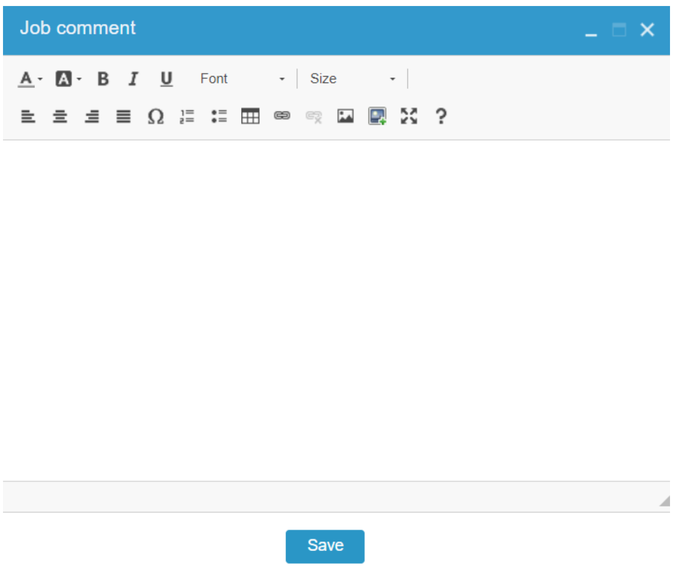
5.2.2.3 Job Comment

You can add a comment to your job, which can include additional information or details about the job itself, the tests or samples within the job.

This helps to provide additional clarity or instructions to collaborators.

Once you click on "Job comment", a pop-up page will appear allowing you to input if required text, images, special characters, links, etc.





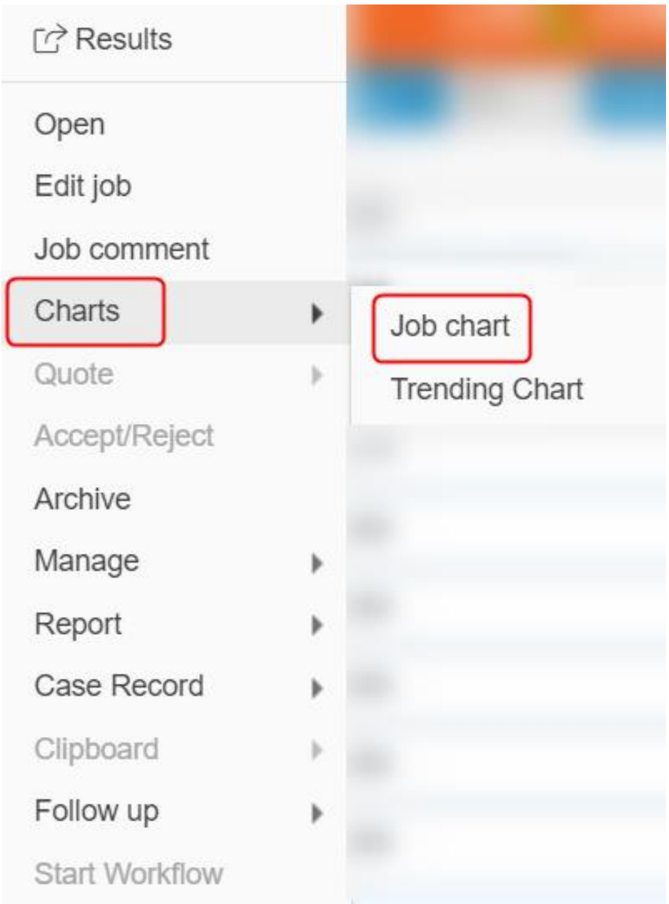
5.2.2.4 Charts

When users click on "Job Charts", they get access to an array of visualization options that helps cover diverse data representation needs.

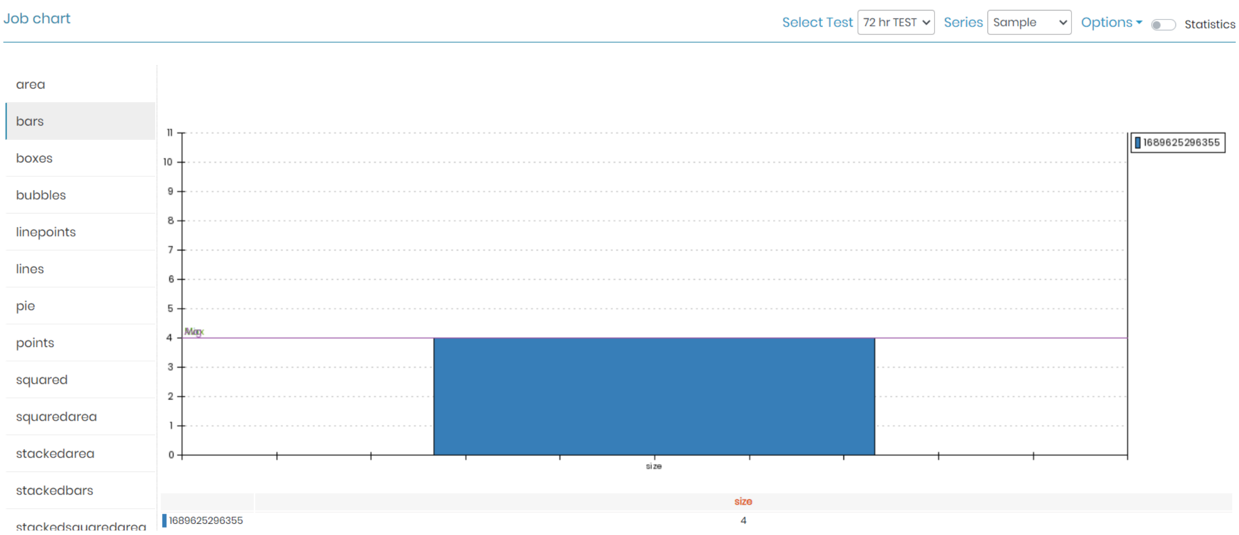
To activate the charts option you need to go to ADMIN => Preferences => Parameters and enable

Job Chart and/or *Trending Chart* options for the desired parameters.

Afterwards you can visualize the charts for the desired job. For that go to Job List and on job level click on gear icon => Charts => Trending chart (like the image bellow).

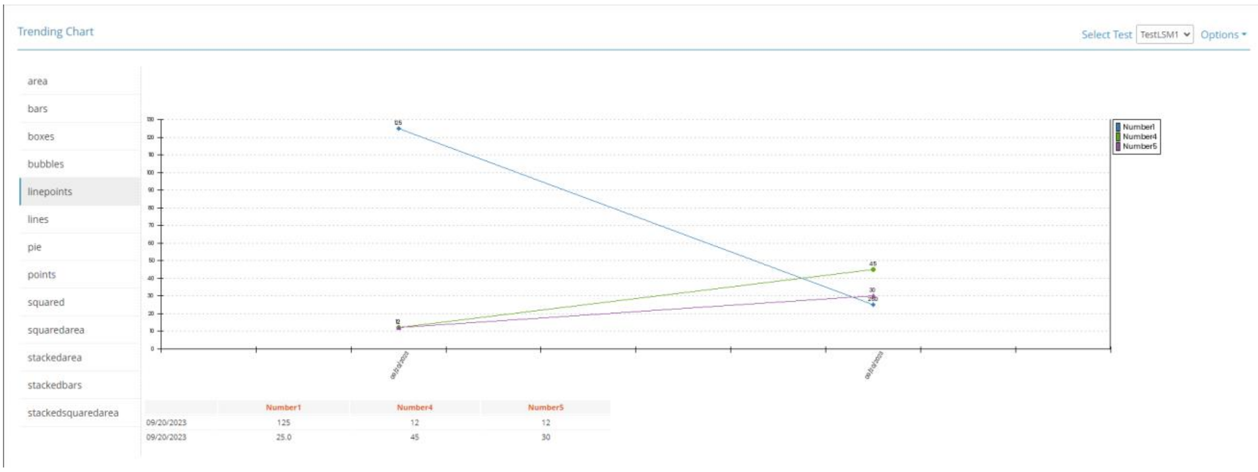


1. Job Chart



These options include various types of charts, each uniquely suited for specific data sets and analytical purposes. The available charts include: area, bars, boxes, bubbles, points, lines, pie chart, etc.

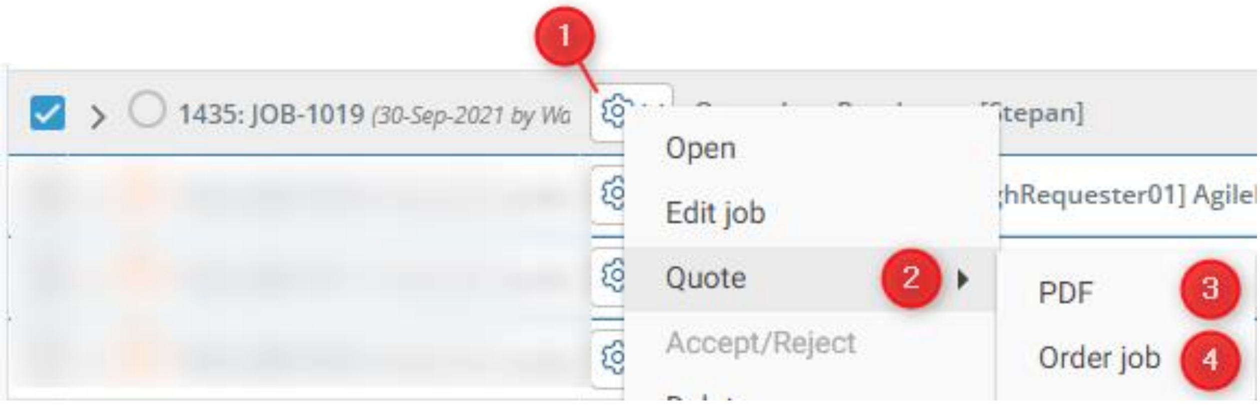
2. Trending Chart



Data for all jobs for a patient are display in trending chart. It will give a graph with the collection dates on x axe and the parameter values on y axe.

5.2.2.5 Quote

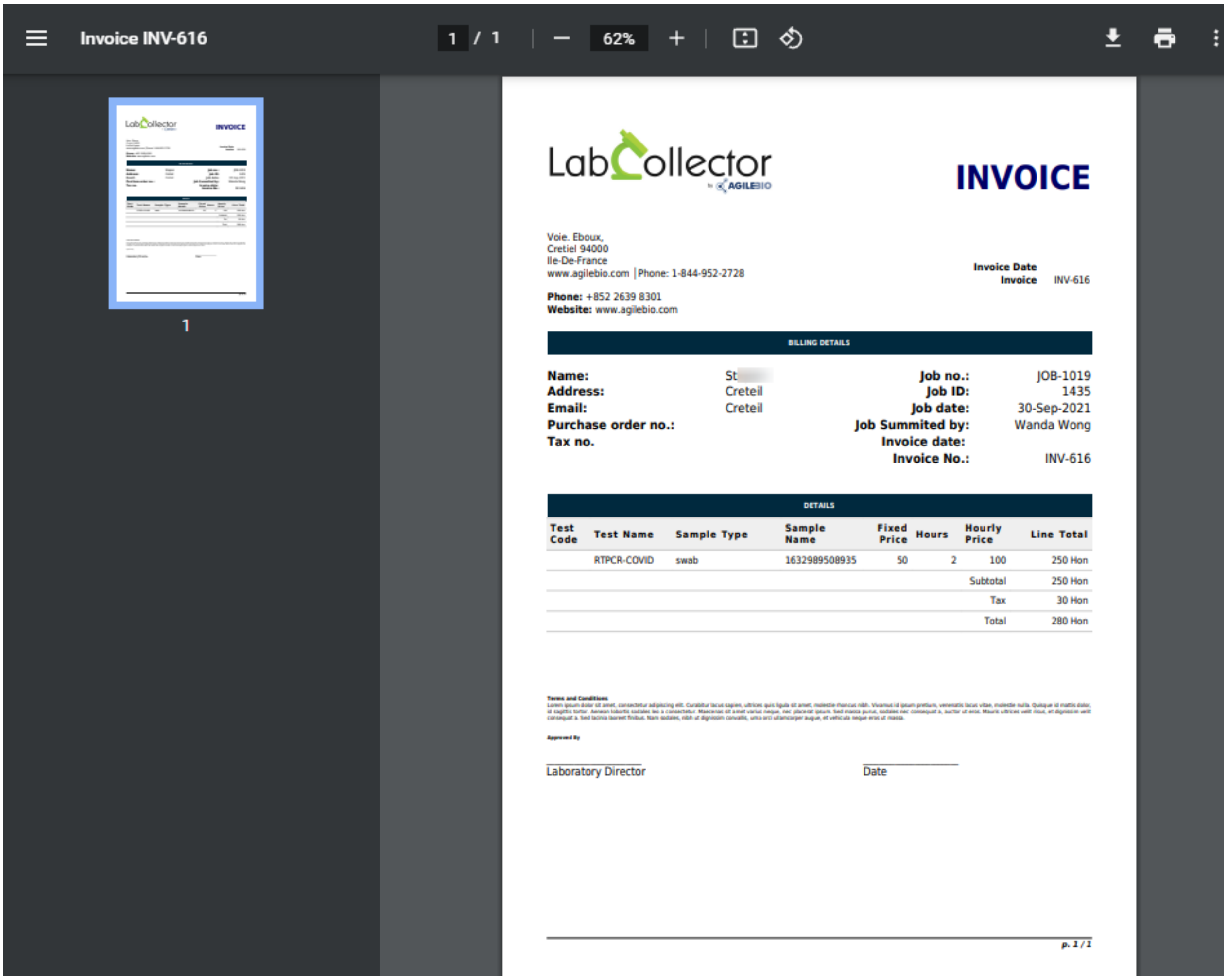
Quoted: You need to accept the purchase order. The Invoice for the same will be added in the **LSM → Admin →Invoice.**



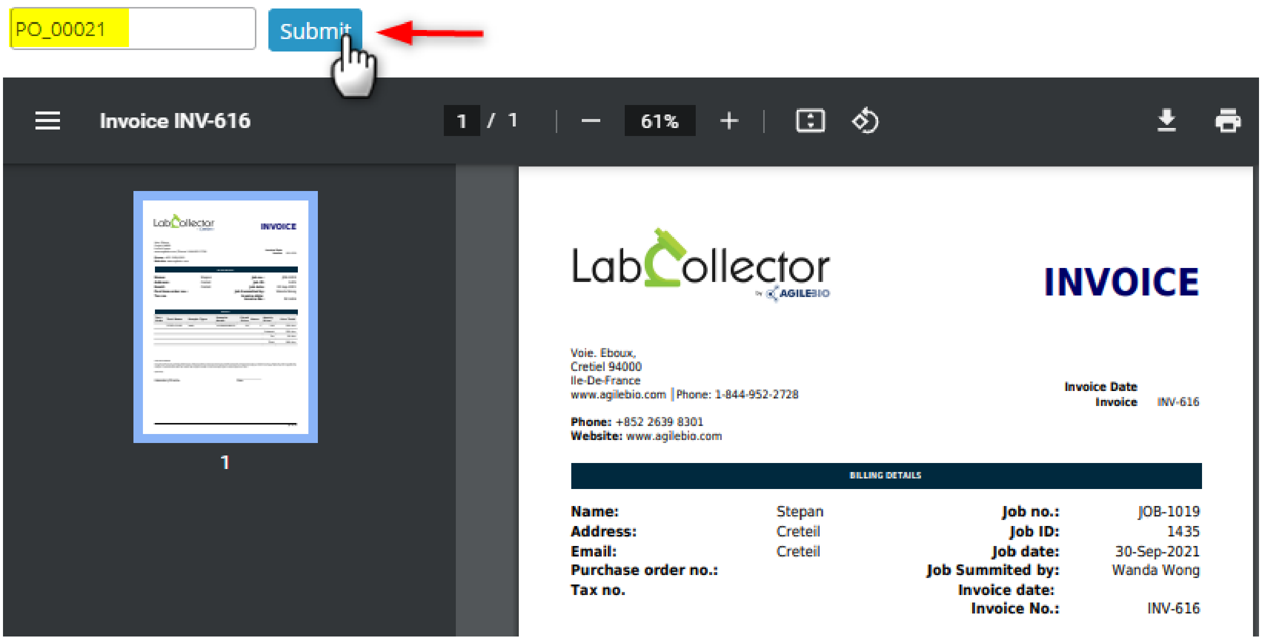
1. You need to click that provides job options.
2. To accept a quote you need to choose quote option.
3. When you click the pdf option you will see the invoice;

   You need to set the template for invoices in **LSM → Admin →Preferences → Reports & Invoice template.** You can download or print the invoice.

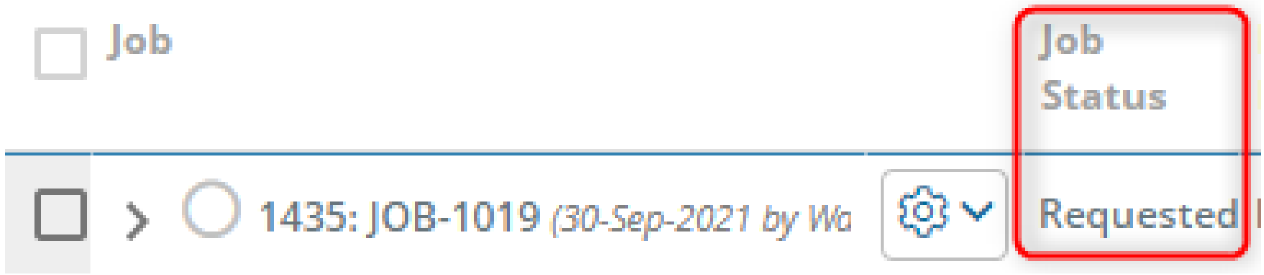
   Please refer to section 6.4.9.2



4. The order job button will allow you to accept the quote and change the status of the job. You need to click on "*Submit order*" button. You can even add a PO number of your choice.

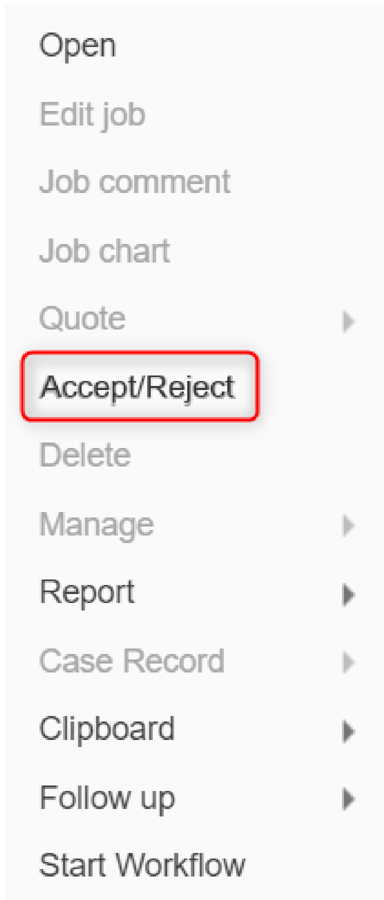


Once you Submit the job status will change from quoted to requested.



5.2.2.6 Accept/Reject

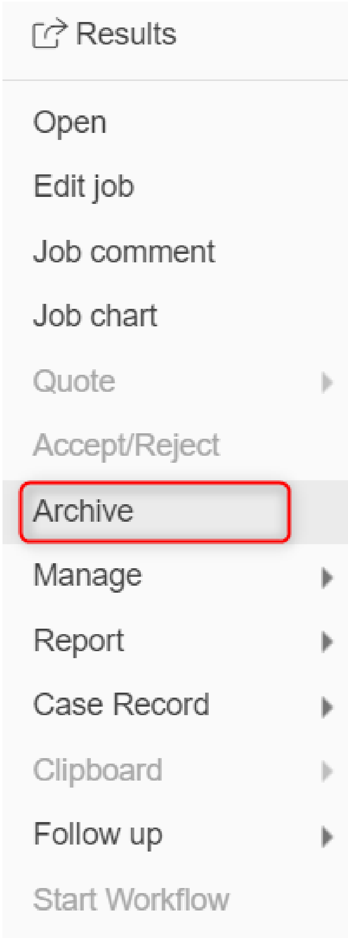
To ensure effective management of jobs, you have the option to either accept or reject them. Once a job is requested, you can simply click on the "**accept/reject**" button to indicate your decision.

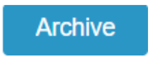


5.2.2.7 Archive

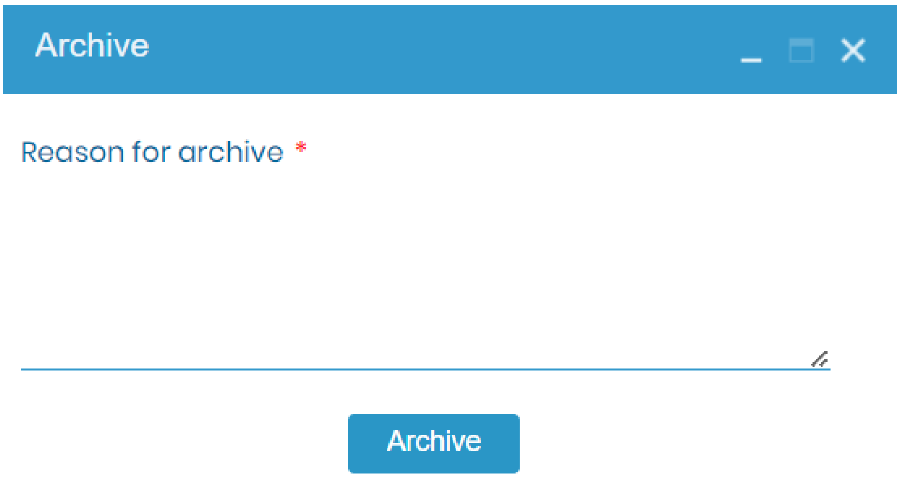
In our Lab Service Manager, we understand that sometimes you may need to archive jobs for various reasons, such as completing a project, freeing up storage space, or maintaining organization within your job list. Archiving jobs in LSM is a simple process that can be done in just a few clicks.

To archive a job in LSM, you first need to navigate to the job list and click on the gear icon  next to the job you want to archive. From the drop-down menu, click on the "**Archive**" option.



When you archive a job, you will be prompted to provide a reason for doing so. This is an important step as it helps to keep track of why the job was archived, making it easier to locate the job if needed in the future. You can enter a brief description of the reason for archiving the job in the provided text box before clicking on the "Archive" button 

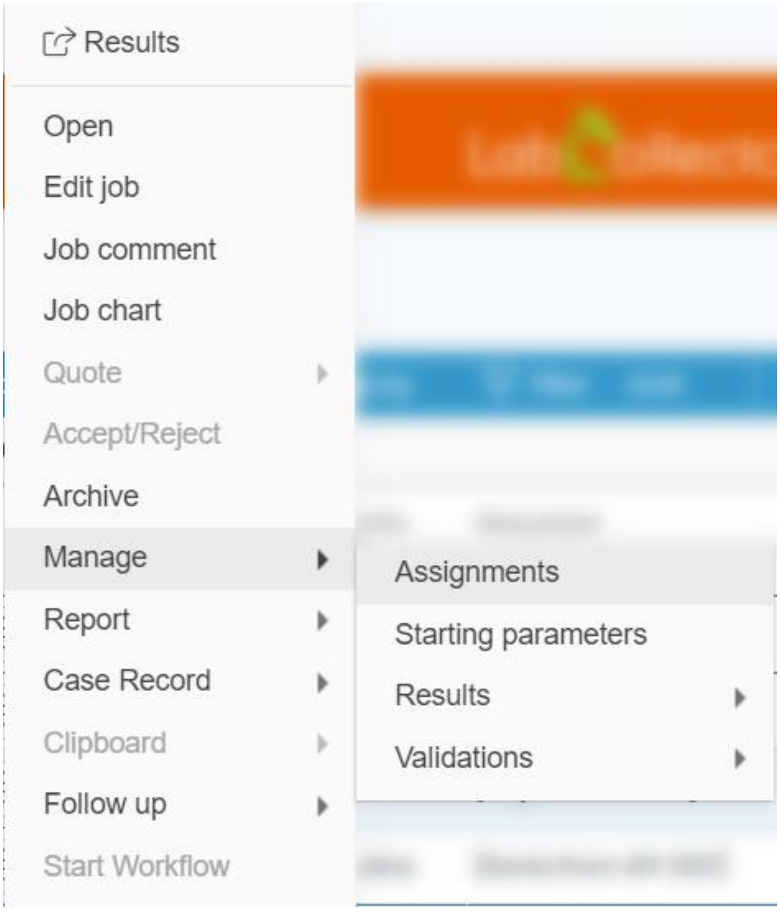
to confirm your decision.



5.2.2.8 Manage

For each job, you have the ability to manage various aspects of it such as **assignments**, **starting parameters**, **results**, and **validations**. This allows you to have greater control over your lab testing and sample tracking processes.

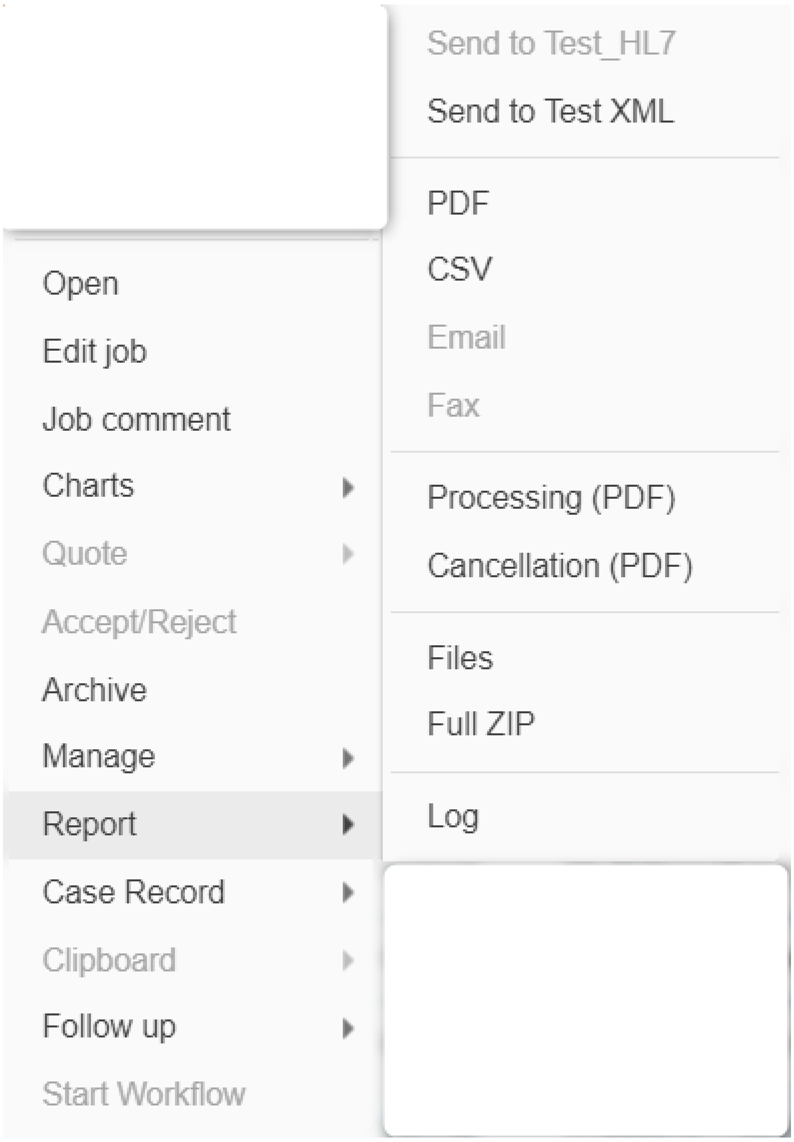
To manage these aspects, simply click on the corresponding option within the drop down menu (as shown in the screenshot below). For example, if you want to manage assignments for a specific job, click on the "Assignments" option. This will open up a form that displays a list of all available assignments for that particular job.



5.2.2.9 Report

Generating reports is an essential feature that enables you to access and share information on your lab tests and projects quickly and easily. With LSM's comprehensive reporting tools, you can generate custom reports that provide insights into various aspects of your lab's workflow.

To generate a report in LSM, first, navigate to the job list and locate the job for which you want to generate the report. Click on the gear icon next to the job , and from the drop-down menu, select the "**Report**" option. A new tab will open up, displaying various options for generating the report.

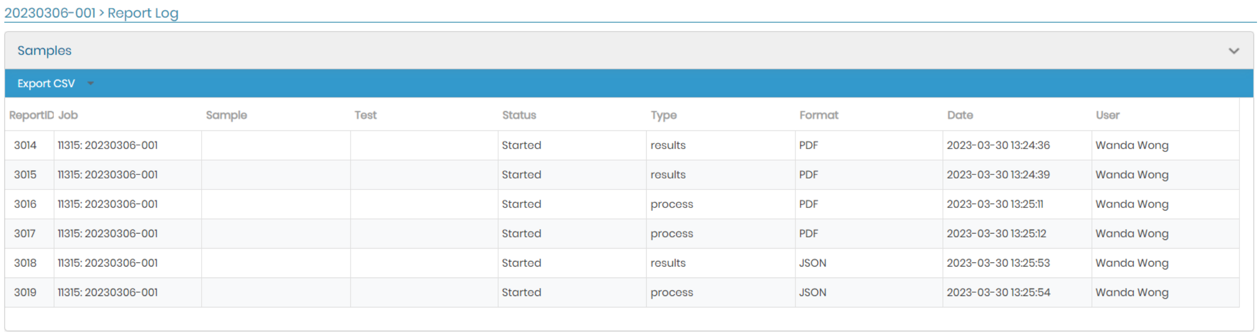


One of the options available is generating a **PDF** file, which provides a printable report that can be shared with colleagues or clients. LSM also offers the option to generate a **CSV** file, which allows you to download the report data in a spreadsheet format. You can also send the report directly via **email**, which sends the report to the requester of the job automatically.

Is possible to generate a **Processing** or a **Cancellation** report in PDF format. Processing parameters can be displayed in processing report, not present in final result report. To know how to configure the process template go to section 7.3.11.1. The cancellation report displays the patient's information and cancel comments. To set a template for a the cancellation report go to section 7.3.11.4.

Another option available is generating a **ZIP** format, which compresses the report files into a single downloadable file. This is a useful feature for generating reports for multiple jobs at once.

Additionally, LSM provides a report log where you can view all the generated reports for your jobs. The report log displays the status of the generated reports, the date in which they were generated, and the user who generated them, which helps to keep track of your lab's report history, ensuring that you can access previous reports quickly and efficiently.

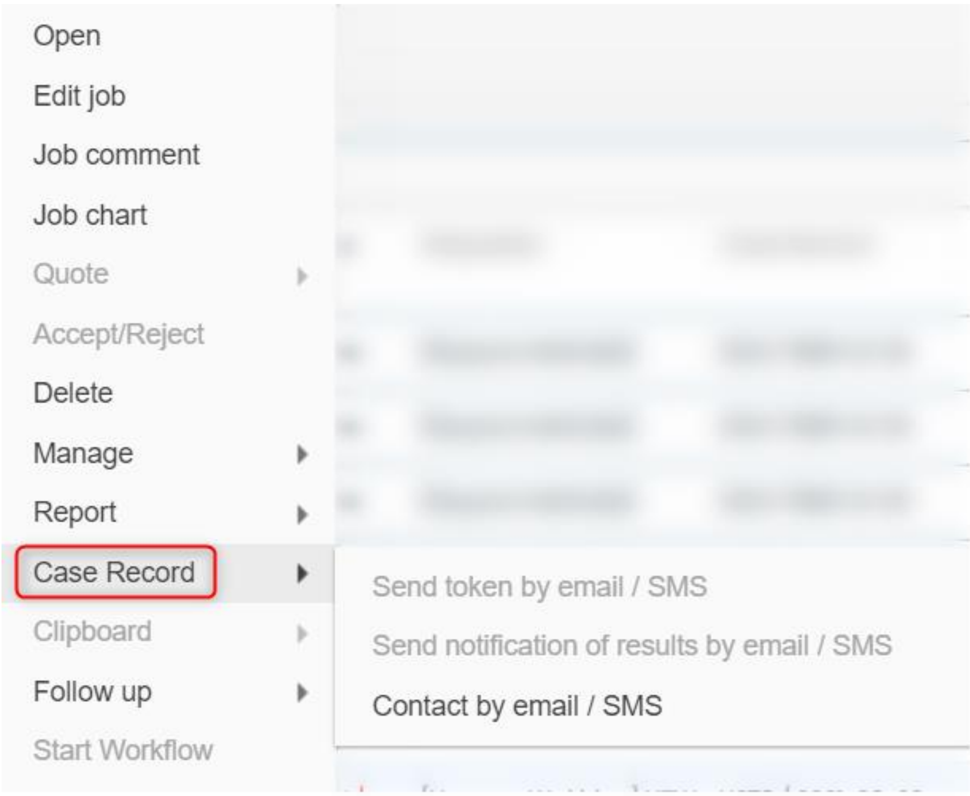


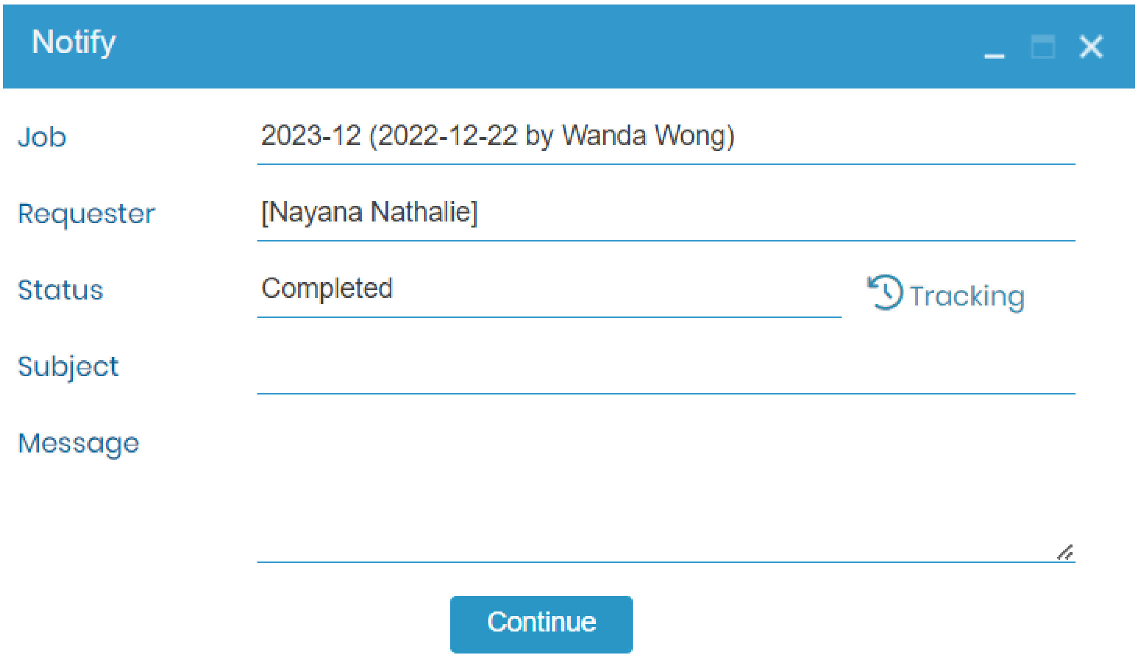
ReportID	Job	Sample	Test	Status	Type	Format	Date	User
3014	11315: 20230306-001			Started	results	PDF	2023-03-30 13:24:36	Wanda Wong
3015	11315: 20230306-001			Started	results	PDF	2023-03-30 13:24:39	Wanda Wong
3016	11315: 20230306-001			Started	process	PDF	2023-03-30 13:25:11	Wanda Wong
3017	11315: 20230306-001			Started	process	PDF	2023-03-30 13:25:12	Wanda Wong
3018	11315: 20230306-001			Started	results	JSON	2023-03-30 13:25:53	Wanda Wong
3019	11315: 20230306-001			Started	process	JSON	2023-03-30 13:25:54	Wanda Wong

5.2.2.10 Case Record

You can also manage the case record for each one of your jobs, you can then send the token directly by email/SMS, send notifications of results by email/SMS, or contact by email/SMS.

If you click on "**Contact by email / SMS**" a new tab will appear in which you can input the subject and your personalized message.





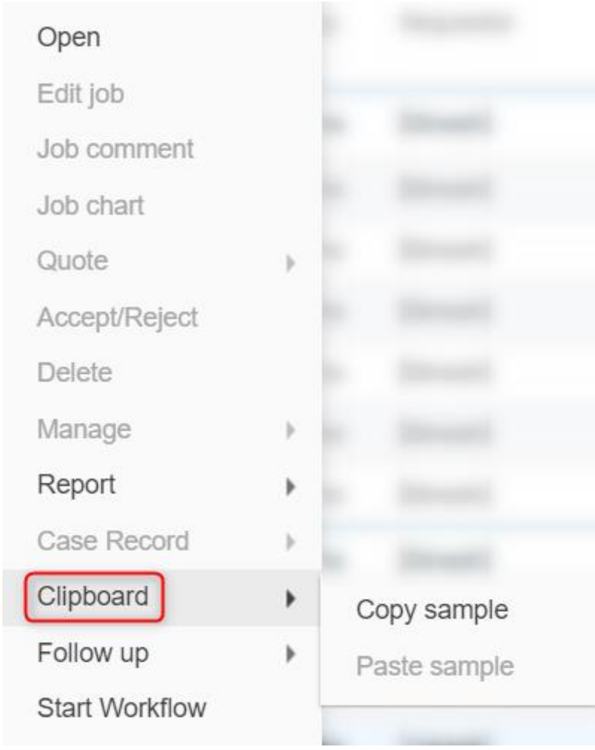
5.2.2.11 Clipboard

Note

This option is only available on the **test** and **sample** level, you will have to go to a sample of your choice in order to copy it then go to a test (not necessarily the same one) for you to be able to paste it.

To save time and improve productivity, you can copy and paste sample lines within your job list. Simply navigate to the Clipboard section and select the sample line(s) you want to copy. Once the sample line(s) are copied to your clipboard, you can navigate to the test level of any job and paste it. This will copy all the corresponding data of that sample, including any attached documents or custom fields, eliminating the need for manual entry and reducing the risk of errors.

For example, if you have a batch of samples that require the same testing parameters, instead of manually entering each sample line, you can copy and paste one sample line and all corresponding data to quickly generate the additional sample lines. This feature is particularly helpful when dealing with large batches of samples or when repeating testing parameters for multiple samples.

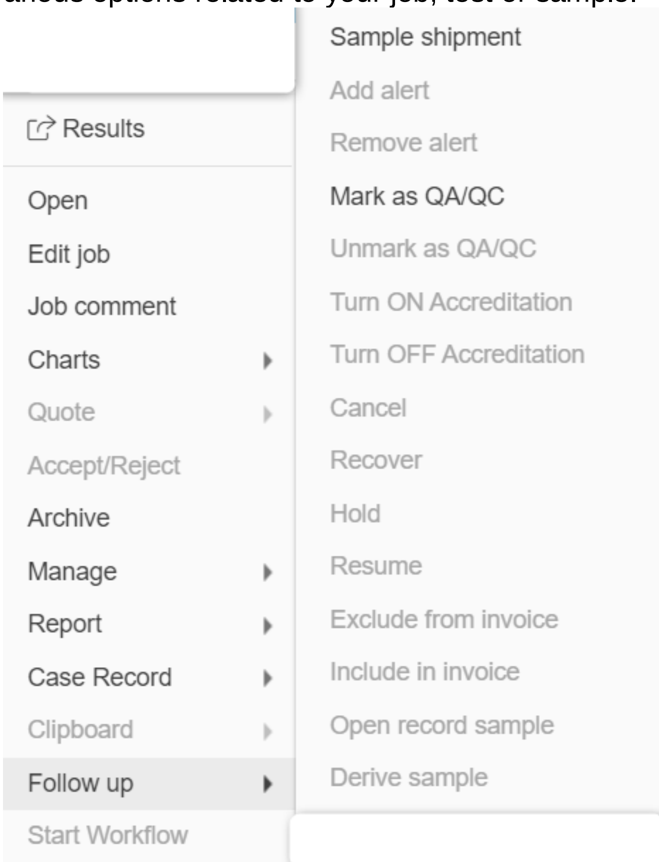


5.2.2.12 Follow up

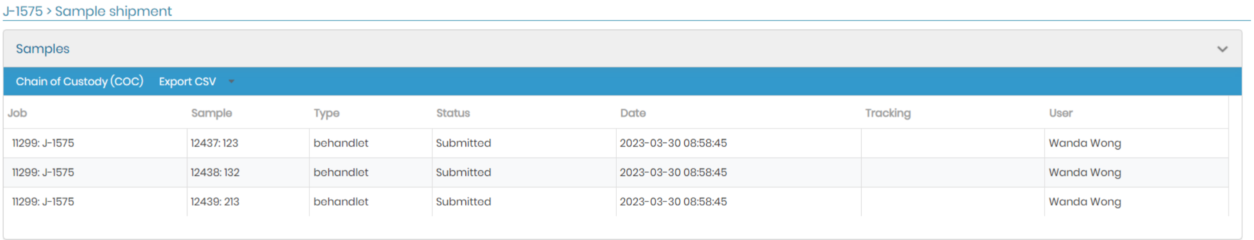
Note

Please note that the availability of the options within the follow-up section vary depending on the level you are in (Job, test or sample).

When you click on the gear icon within your job list, you can access the **Follow-up** section which allows you to manage various options related to your job, test or sample.



One of the options available is **Sample Shipment**, which provides all the necessary details regarding the shipping of your samples. Here, you can find information about the status of the shipment (either it's submitted, in transit, received, returned, disposed or sent to partner), the date it was submitted, the tracking number, and the user who submitted it.


J-1575 > Sample shipment

Samples

Chain of Custody (COC) Export CSV

Job	Sample	Type	Status	Date	Tracking	User
11299: J-1575	12437: 123	behandlet	Submitted	2023-03-30 08:58:45		Wanda Wong
11299: J-1575	12438: 132	behandlet	Submitted	2023-03-30 08:58:45		Wanda Wong
11299: J-1575	12439: 213	behandlet	Submitted	2023-03-30 08:58:45		Wanda Wong

Another option available in the Follow-up section is to add **alerts**. This allows you to set up notifications for certain samples related to the selected job, such as when a sample is received, processed, or whenever a change occurs within its status.

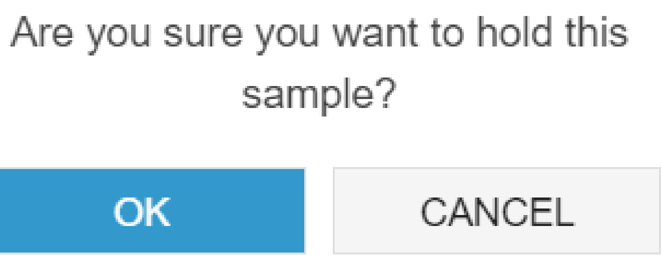
You can also mark your samples as **QA/QC** in this section.This option allow you to identify and keep tracking of the samples and corresponding values used as blanks/controls for the equipment/test. This option can be marked in the frequency that you need: monthly, weekly, daily or punctually. The following icon will appear right next to the sample selected as QA/QC. 

Another option is to turn **ON/OFF accreditation**. This is useful when you want to indicate whether a particular job is accredited or not. This feature allows you to manage your accreditation status for individual samples, and to ensure that your results are in compliance with the relevant regulatory standards.

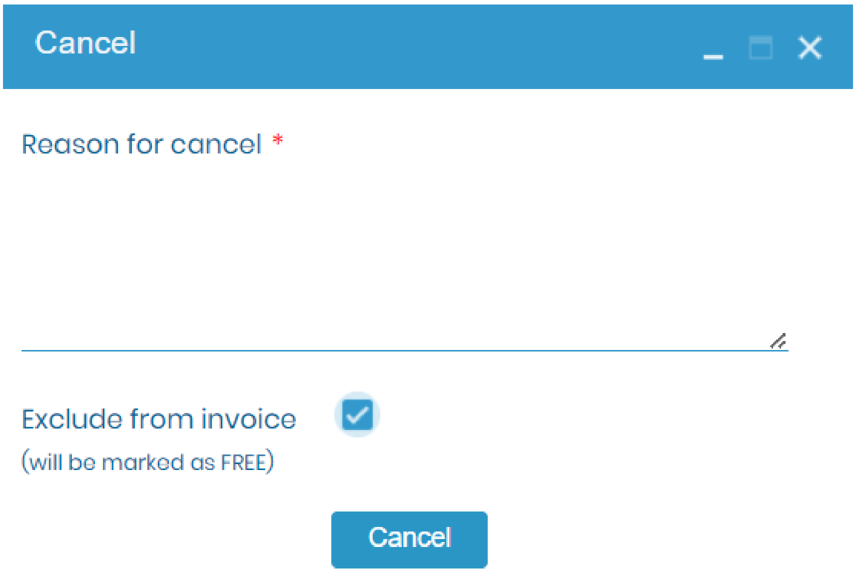
You can **include or exclude a sample from your invoice**. This allows you to manage the billing process for your jobs and to ensure that you are invoicing your clients accurately. If you decide to exclude the sample from the invoice, it will be marked as Free. This is important to note because it may affect your billing and accounting records. For example, if you canceled a sample because the client changed their mind about the test, you may want to exclude it from the invoice. On the other hand, if the sample was canceled due to a quality control issue, you may still want to include it in the invoice to reflect the work and resources that went into testing the sample.

You can **open record sample** in the LabCollector module or add-on that you previously selected to create the records. Moreover is also possible to **derive samples** per tests for each job (aliquoting). This will split the original sample creating sub-records linked among them in the LabCollector module.

You can also choose whether you want to **hold** or **resume** a sample, when a sample is on hold, the following icon will appear next to it 



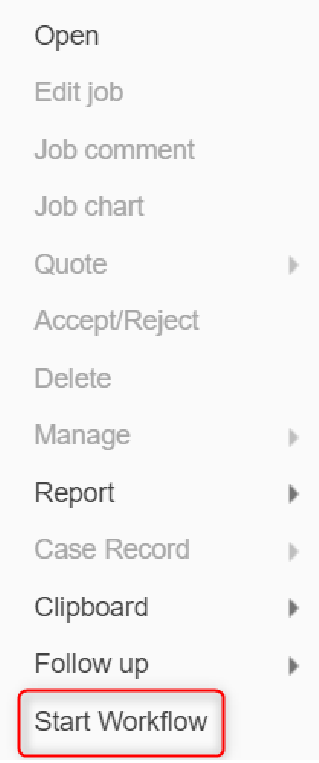
You also have the option to **cancel** or **recover** a sample. Once you cancel a sample, you have the option to recover it at any time, but you must provide a reason for the cancellation.



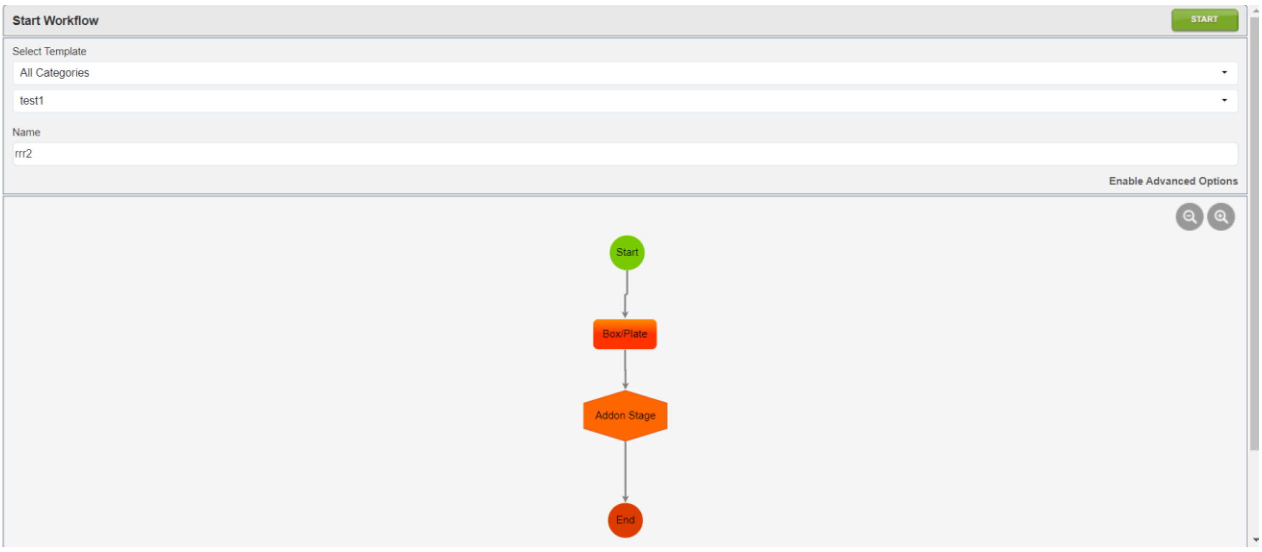
For example, suppose you are a laboratory manager and you have a job for analyzing water samples. By accessing the Follow-up section, you can track the shipment status of the samples, set up alerts to notify you when the results are ready, mark the job as QA/QC, and view the deviation record if any occur. You can also choose to include or exclude the job from the invoice and turn ON/OFF accreditation for this job, depending on your accreditation status.

5.2.2.13 Start Workflow

To streamline your sample processing even further, if you have already purchased the Workflow add-on, you have the option to link each of your samples to a workflow. This can be done by clicking on "**Start Workflow**" within the job list, and a new tab will appear. In this tab, you can select a pre-designed workflow template that suits your needs and input for it, before clicking on the start button to launch the workflow.

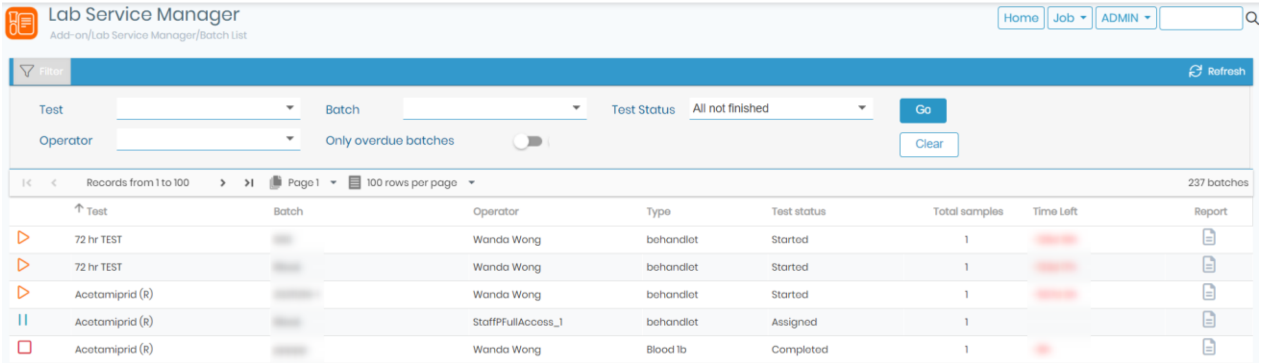


Once you have started it, it will automatically appear in your Workflow add-on list. This feature allows you to automate your sample processing workflow and track progress through each step in the process. You can customize the workflow to include specific actions and assign tasks to different team members, ensuring a smooth and efficient workflow. For example, you can create a workflow that includes specific steps for sample preparation, analysis, and reporting. This can help to standardize processes, reduce errors, and increase productivity.

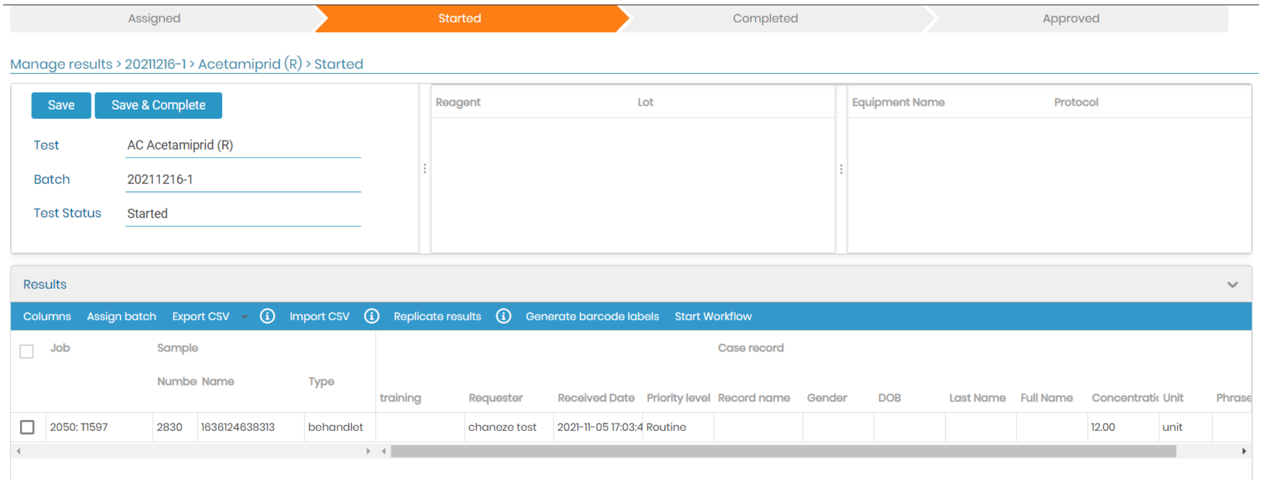


5.3 Batch List

The **Batch List** found from **Job > Batch List** provides a list of assays/batches/samples that have been assigned to a batch. This view provides a list that can be filtered and sorted by assay, batch, number of pending samples and total samples. You may filter and sort based on multiple columns.

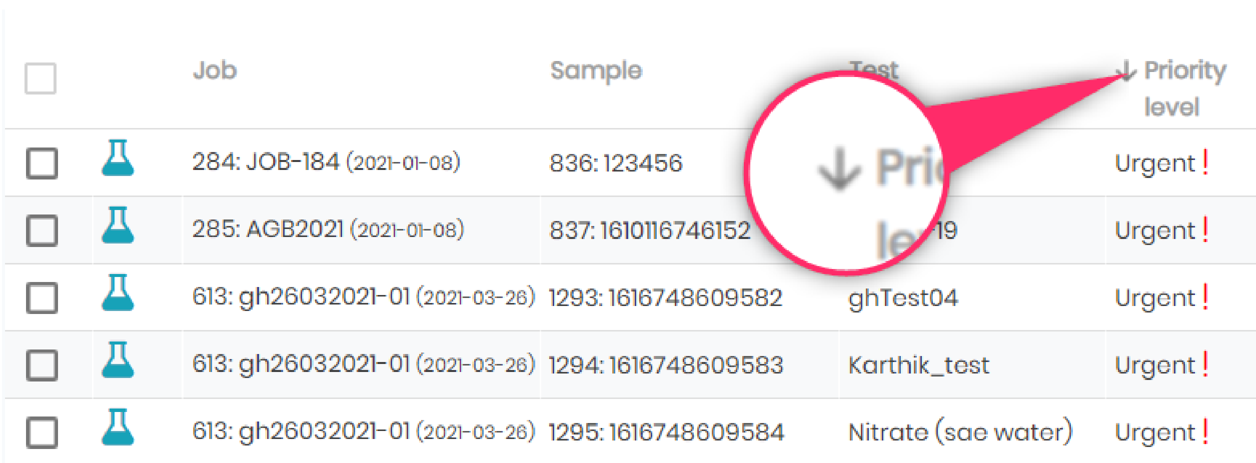


Clicking on a row brings up a popup that allows you to edit the corresponding data for the selected batch.



5.4 New Samples List

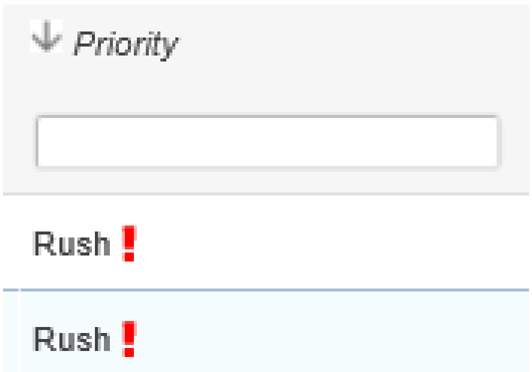
The **Samples Lists** found from **Job menu** **(New, Pending or Canceled)** provide a list that includes columns that may be searched, filtered, or sorted for Job, Sample, Test, Priority, Expected (date), Customer, Operator, Batch, and flagged samples. Sorting by ascending or descending order is done by clicking on the column header, after which an arrow will indicate the sorting preference:



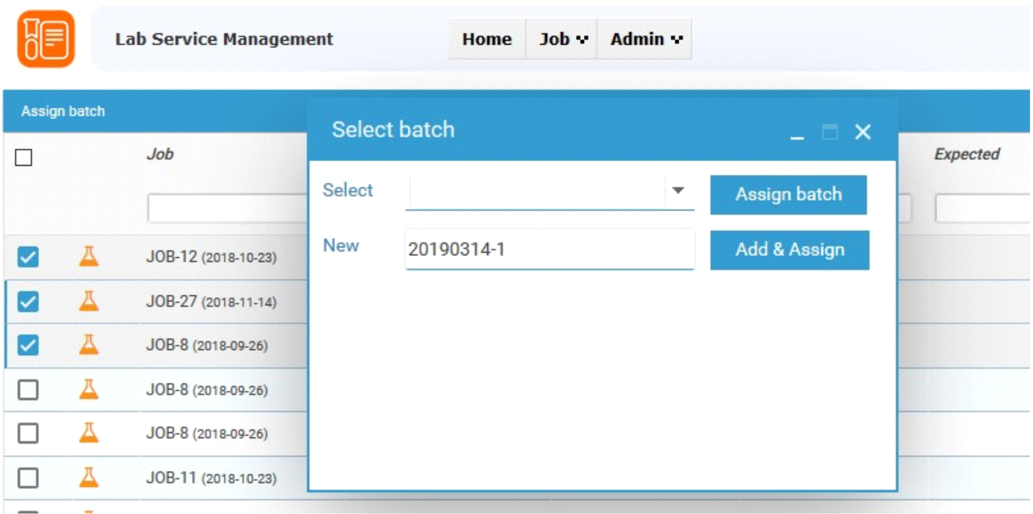
The new samples list allows having all the new samples independently of the job or the test. You can start the process one by one by clicking the sample or assign a batch, modify the status and do multiple assignments on multiple samples.
The pending samples list allows you to have in one list all the samples from which the test is started and in progress.
The canceled samples list allows you to export the entire list of canceled samples.

5.5 Pending Samples List

The **Pending Samples List** found from **Job > Pending Samples List** provides a list that includes columns that may be searched, filtered, or sorted for Job, Sample, Test, Priority, Expected (date), Customer, Operator, Batch and flagged samples. Sorting by ascending or descending order is done by clicking on the column header, after which an arrow will indicate the sorting preference:



Pending samples can be assigned to batches one-by-one or by multiple selection (check the box at the left of the job name). From the pop-up the samples can be assigned to an existing batch or a new batch can be created. A newlyentered value for the batch will replace an existing value.

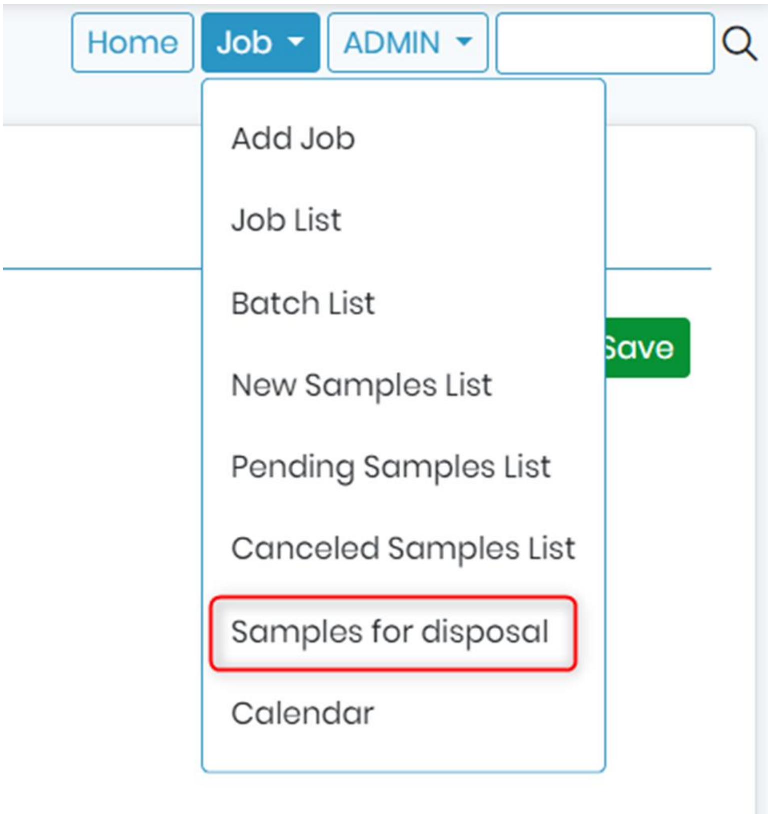


5.6 Canceled Samples List

The canceled samples list allows you to export the entire list of canceled samples.

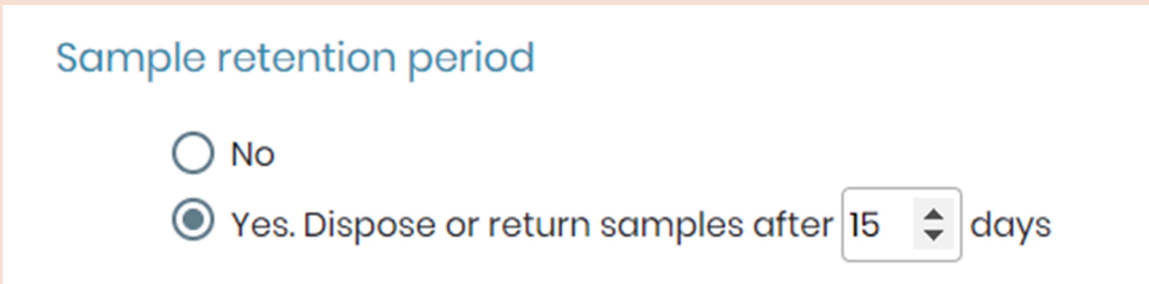
5.7 Samples for disposal

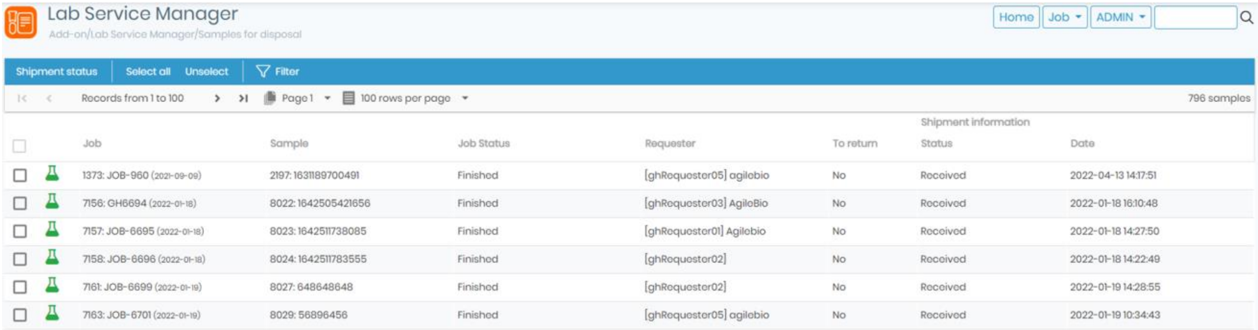
There is a tab under the Job menu, named "**Samples for disposal**" in which you can find all samples that are due for disposal, simply put, the samples that are found within this list follow this condition "today date - received date > retention period".



Note

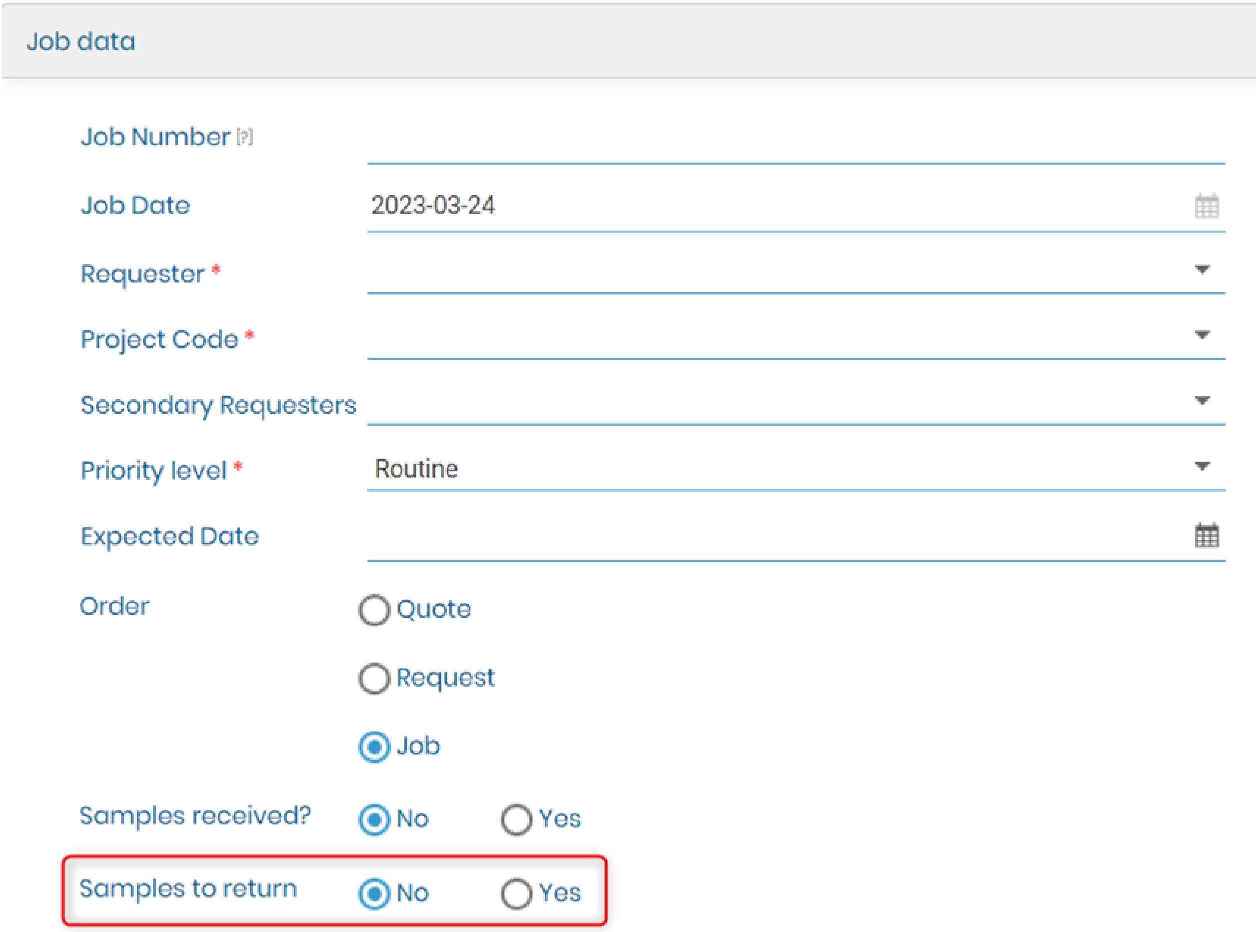
This option will only be available if you activate the sample retention period, simply go to **Admin -> Setup -> Job Requests -> Sample retention period**, then click on "Yes" and select the number of days after which the samples will either be returned or disposed of.





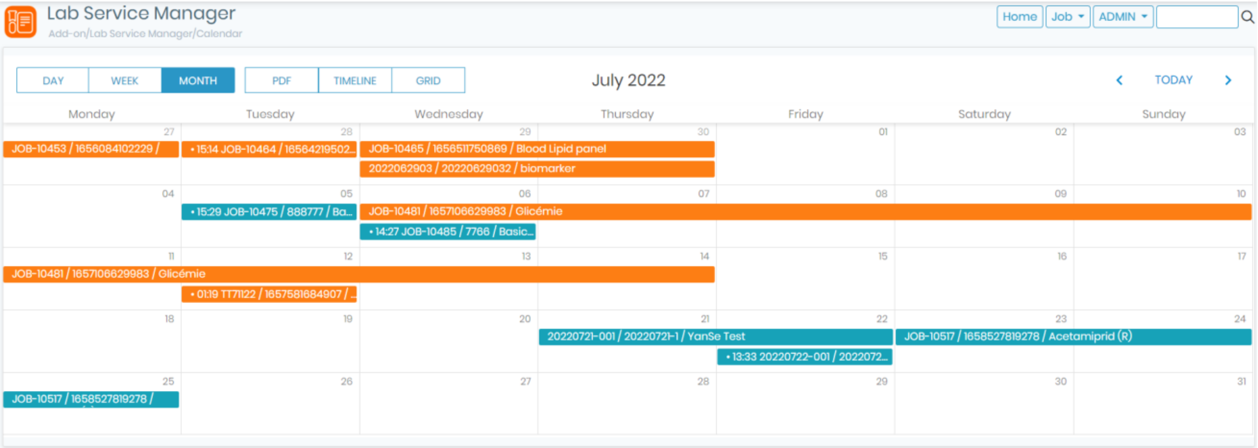
Job	Sample	Job Status	Requester	To return	Shipment information Status	Date
1373: JOB-960 (2021-09-09)	2197: 1631189700491	Finished	[ghRequester05] agilobio	No	Received	2022-04-13 14:17:51
7156: GH6694 (2022-01-18)	8022: 1642505421656	Finished	[ghRequester03] AgiloBio	No	Received	2022-01-18 16:10:48
7157: JOB-6695 (2022-01-18)	8023: 1642511738085	Finished	[ghRequester01] Agilobio	No	Received	2022-01-18 14:27:50
7158: JOB-6696 (2022-01-18)	8024: 1642511783555	Finished	[ghRequester02]	No	Received	2022-01-18 14:22:49
7161: JOB-6699 (2022-01-19)	8027: 648648648	Finished	[ghRequester02]	No	Received	2022-01-19 14:28:55
7163: JOB-6701 (2022-01-19)	8029: 56896456	Finished	[ghRequester05] agilobio	No	Received	2022-01-19 10:34:43

Also, within the job creation form, you can choose whether you want the samples to be returned or not (see screenshot below).

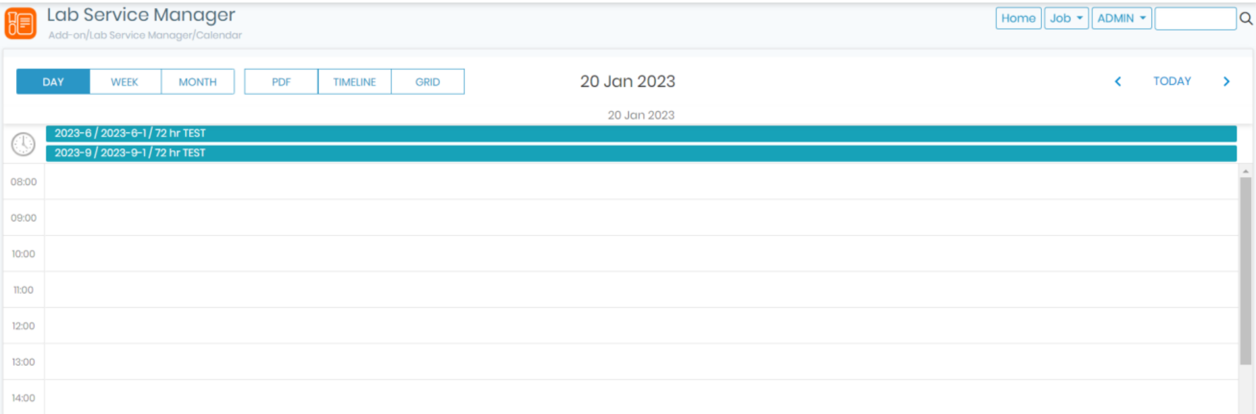


5.8 Calendar

This menu displays a timeline calendar with all jobs requested by day, week or month.



A PDF can be generated by clicking on the button *PDF* on the calendar page in month,week or day view. When using this button in day view, a work list is generated.



6. CRM menu

In this menu, new customers/requesters and users can be edited.

6.1. Contacts – Define users and customers/requesters

LSM can be used by test laboratories that receive samples either from other remote sites or internally from the organization. In both cases (remote or internally) there can be several sites or departments that are responsible for collecting the samples and passing it on for testing. These several sites or departments can be considered as requester/customer. LSM can be used by several users and these users can be further connected as requesters.

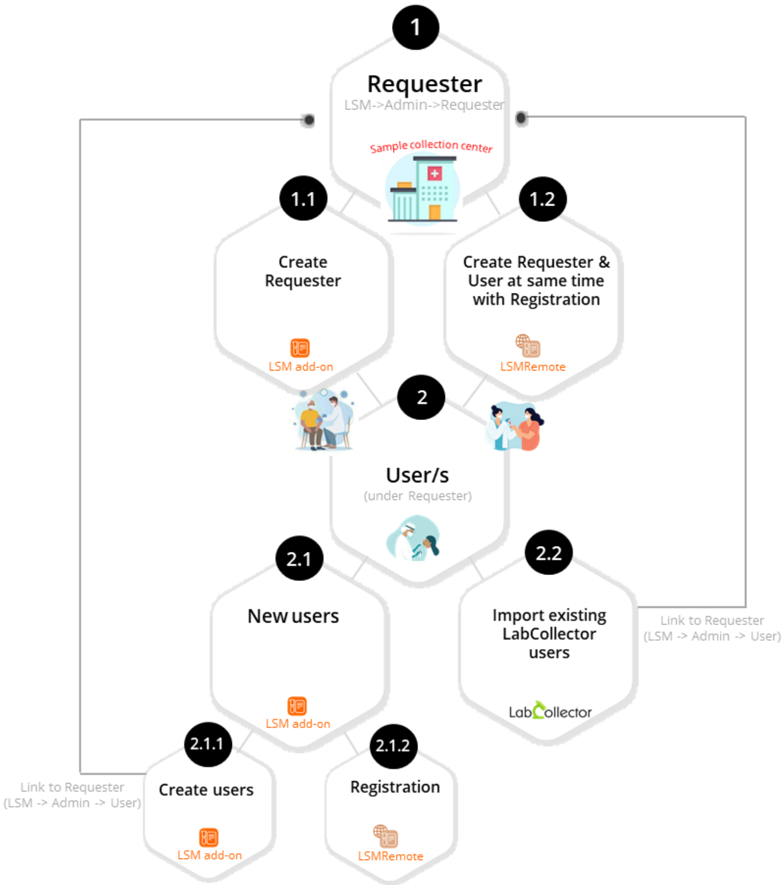
Thus, in LSM new customers/requesters and users can be edited in this section. Navigate to **CRM** menu.

Warning

Only the administrator has full access to the Admin Menu. The other users (with lower permissions levels) have limited access to admin tools: they cannot edit user accounts.

6.1.1. Create customer/partner/requester list

The Requester and users can be created by various ways as shown below in the diagram.



1. Requester: It is the client or customer or provider at the sample collection center or who collects the sample.

1.1: You can create the requester using LSM add-on and by going to **LSM →CRM → Requester**. For more information on how to create requester using LSM refer to section 6.1.1

1.2: By going to LSMRemote you can click on registration option on the login page and create a requester and a user at the same time. To have more information on registration please read the knowledgebase KB: LSMRemote Registeration.

Warning
The requesters generated from LSMRemote need to be validated in LSM. Please see the link to the above knowledgebase to see the process.

2. Users for Requester means a person/s who can login into LSMRemote with a login ID and password.

2.1: You can create new users using the LSM add-on.

2.1.1: You can create a new user from LSM add-on and and by going to **LSM →CRM → User.**

2.1.2: In a scenario where the lab member itself is a requester & user, then you can also do registration from LSMRemote. When you create a user here, you will need to valid them in LSM add-on. Once you have validated, the requester will be the first and the last name in **LSM →CRM → Requester** and they will be also seen as a user in **LSM →CRM → User.**

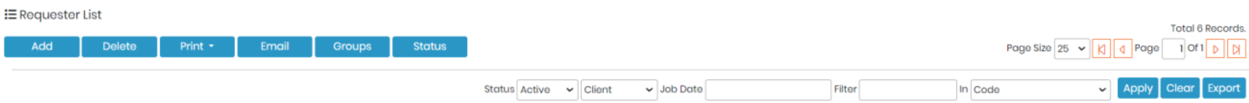
2.2: In scenarios where your requester is one of the users (lab members) are from LabCollector, then you can import these users from LabCollector into LSM add-on by going to **LSM →CRM → User → Import**. You need to also assign them a user level permission for LSM. To have more information on import of LabCollector members in LSM please read the knowledge-base KB: [LSM import of LabCollector users.]

All functions related to customers and requesters are identical. Customer/partner/requester access is also available via the LSM remote.

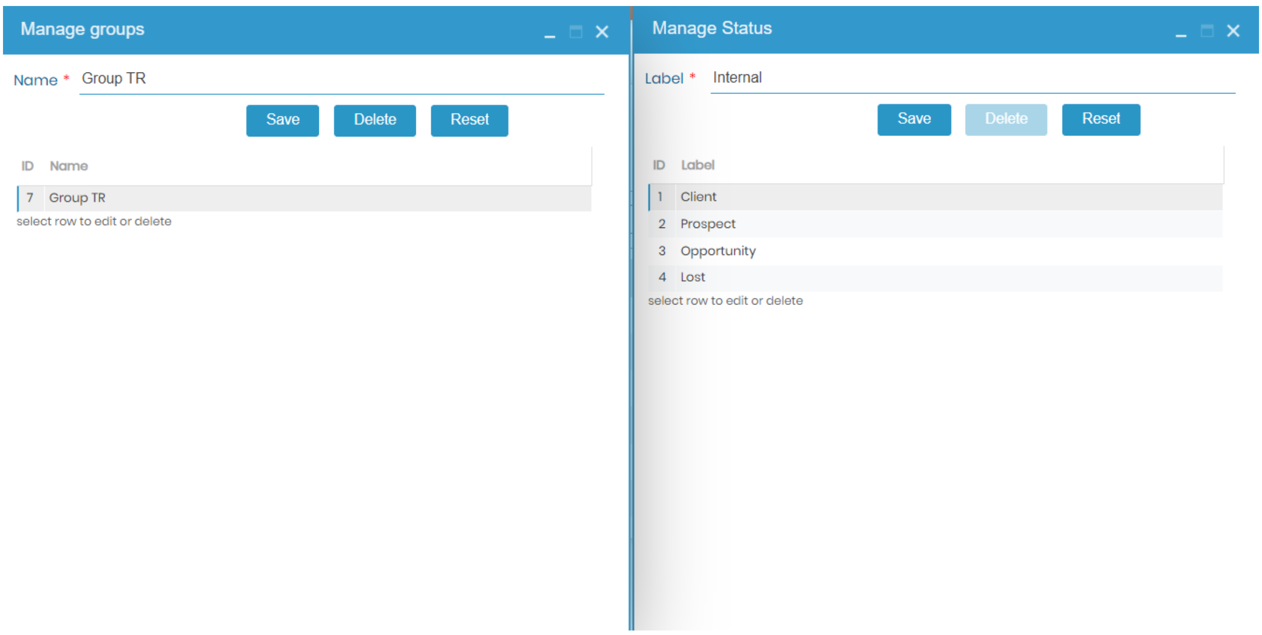
Note

Customers may be labeled as Requester for some implementations of the LSM.

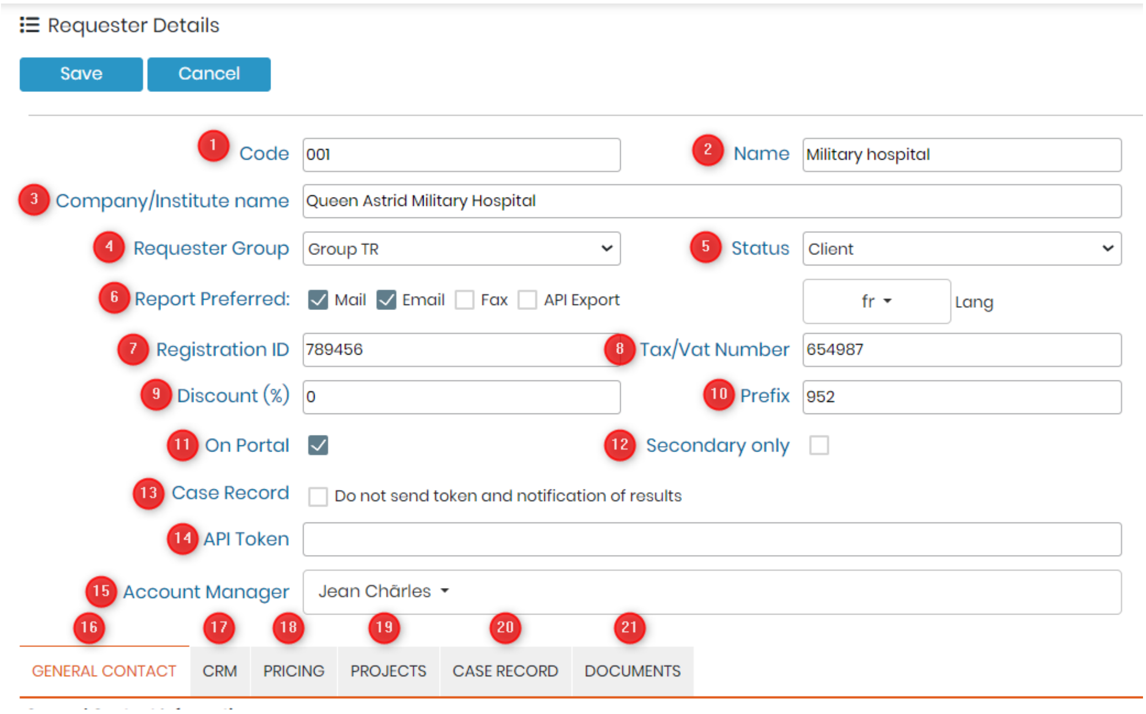
To create a **Requester** using LSM add-on go to the **CRM → Requester** menu.



You can Print or create a PDF with the all list of the requester by clicking in **Print.** You can send an **Email** to all requester simultaneously. Is also possible to set the name for the different **Groups** of requester and define the different **Status** of the requesters.



To add a new customer/requester, click on the **Add** button. General information is followed by tabs used for billing and shipping purposes. Complete the fields and click on the **Save** button to save the customer profile. After the customer profile is active new tabs for the users, jobs and invoices will appear in the screen.

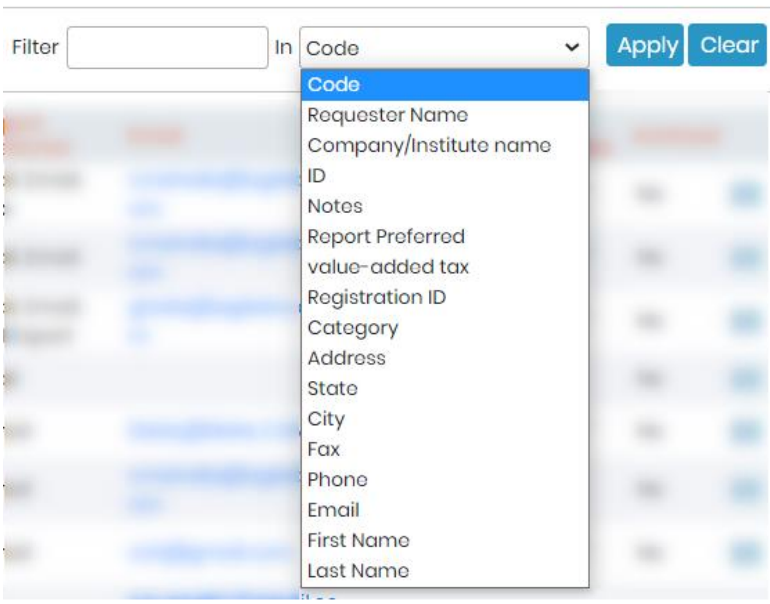


All the above points are explained in our Knowledge Base KB:[Labcollector interface]

Note

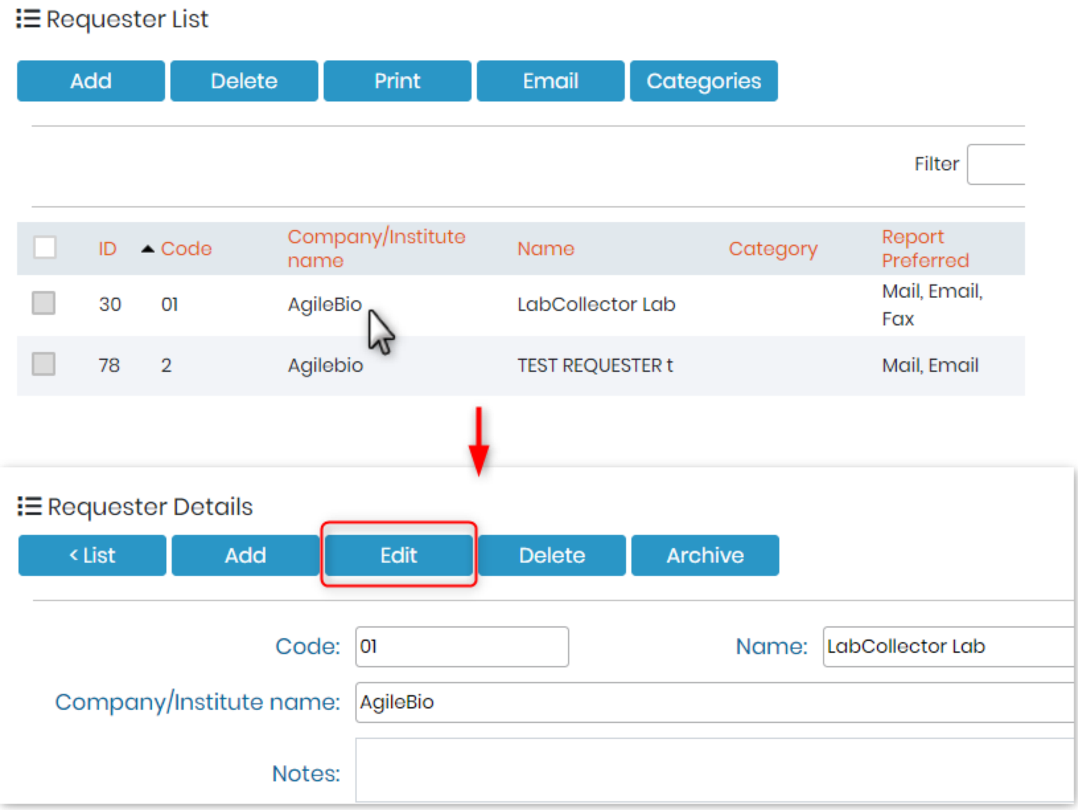
Note that options 18, 19 and 20 will only be activated after the requester/Customer is saved.

All lab service customers and/or partners can be seen in the **Requester List**. Results can be filtered. Type in the filter box and select the type of filter then click *apply*.



Results can be sorted by clicking the column title (alphabetic order). Each Requester is identified with a barcode ID for data traceability.

To see details and modify profiles, double-click on the record of interest, and click on the **Edit** button. Edits to a Requester are only confirmed by clicking on **Save** after making the changes.



Once validated, the new profile is added to the customer list and additional tabs become available. The new tabs are USERS, JOBS, and INVOICES (as seen in above image):

- The USERS tab displays information regarding user accounts. These are created in the next step (login and password).
- The JOBS tab displays information on services ordered by this customer.
- The INVOICES tab displays invoices created from this customer's orders.

6.1.1.1 Registration from the LSMRemote

From the LSM remote interface, your customers can also ask for an account to register in LSM.
To activate this option, in the file config.ini of the LSMremote directory, *allow_register* parameter has to be activate.

Once the new user click on register, a form opens. All the fields are mandatory.
Then, an admin has to approve the request in the LSM. On the home page, a new tab is visible showing the numbers of user requests.
Double click on one user request to be able to validate or discard the request. Once validated, the user will receive an email.

Please see more details in our Knowledge Base KB:[How to register using LSMRemote and accept users in LSM.]

Note

Email settings need to be done in LabCollector.

Please see more details in our Knowledge Base KB:General setup in LabCollector.

6.1.2. Create new users

A user account (login and password) is required to have access to the **LSM** platform. Access to the LSM and the LSMremote can be distinct from LabCollector access. In addition, LabCollector user logins may be directly linked to a LSM user login.

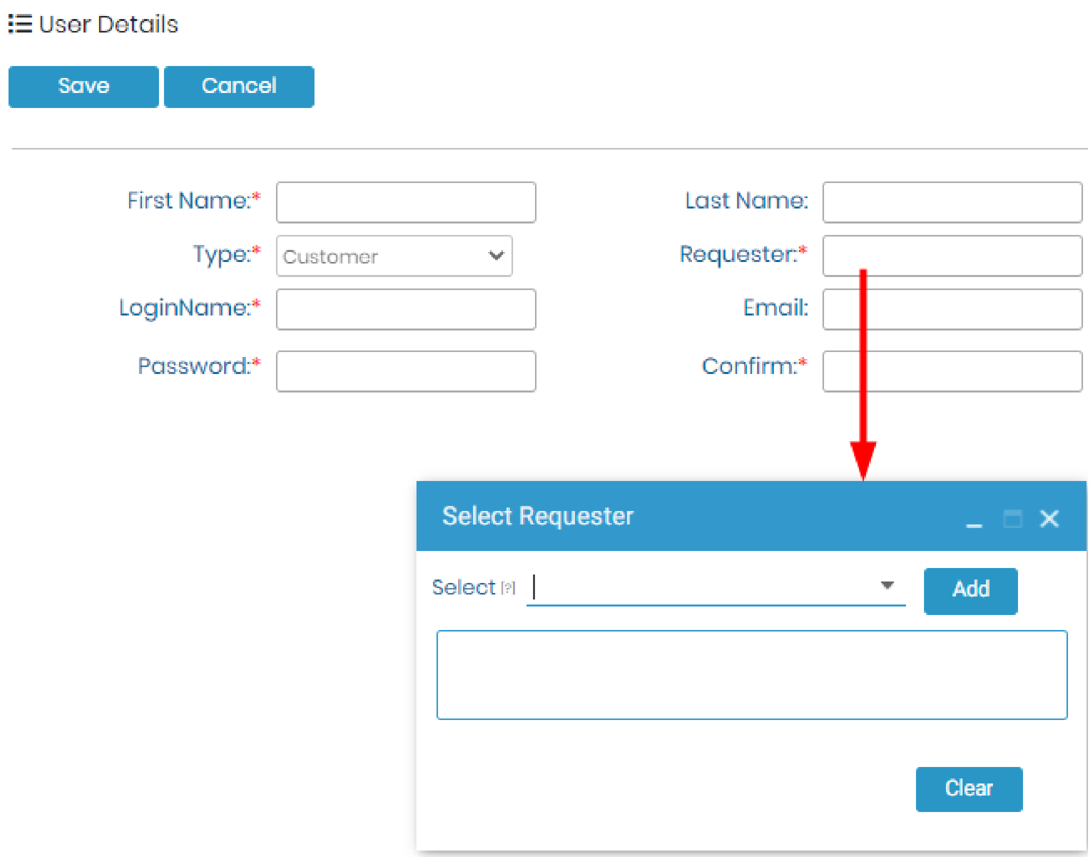
A LabCollector user can be added with the same account information as a LSM user. So in short, you can create users:

A) New Users:

Select the **Users** tab in the **CRM → Users** menu.

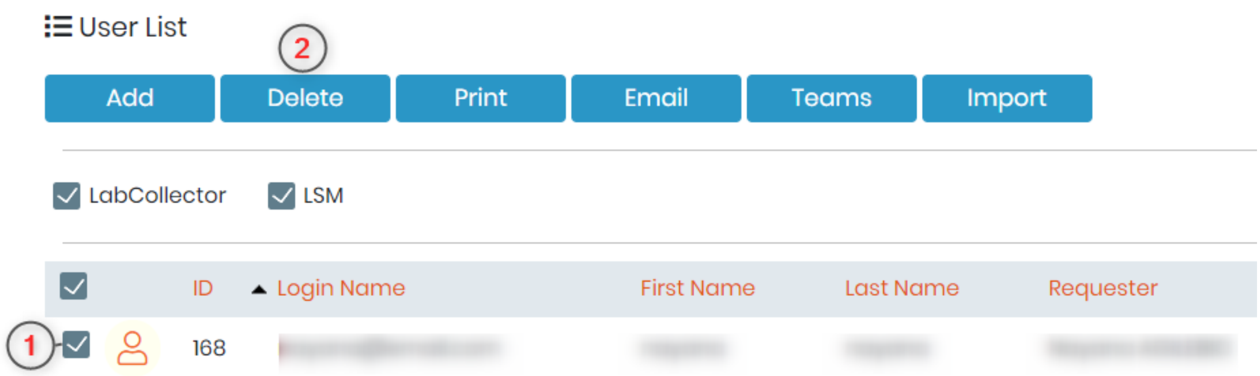
To create a new user account, click on the **Add** button. This is best for users that do not have an account in LabCollector to connect with their LSM access.

This will bring up the form to create a new user.



B) Delete:

This is to delete a user.

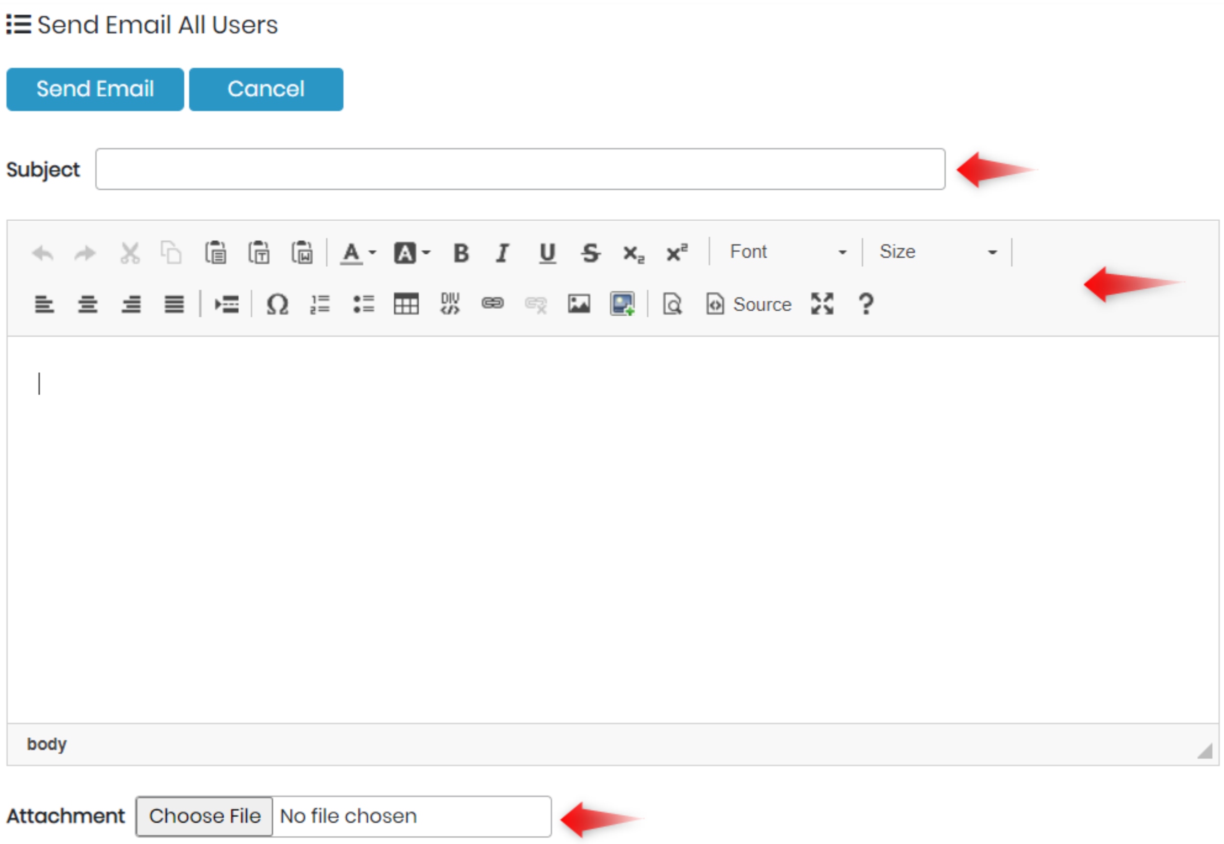


C) Print:

This option helps to print the list of users.

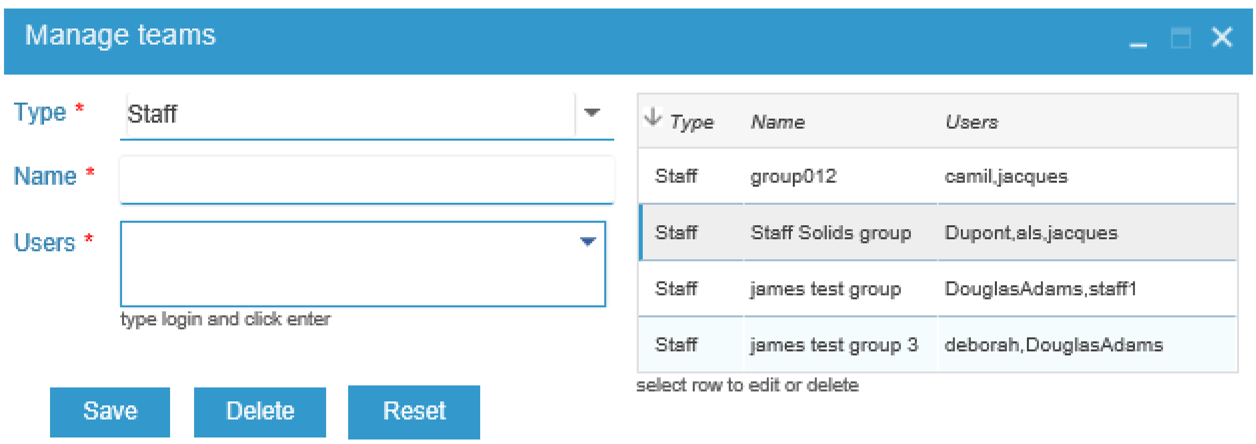
D) Email:

This allows to to send an email to all users.



E) Teams:

A team of users may be created. This allows the assignment of jobs to an individual or to any individual on a particular team. Navigate to **Admin → Contacts → Users** and select **Teams**. The following menu to manage teams will appear:



Select the type of team, the options are staff, admin, finance and customer. Type a name for the team. Select users for the team. Save to confirm changes to the team. In a similar manner, an existing team may be selected from the list and may be altered. The buttons on the menu have these functions:

Save to save any changes to a team.

Delete will delete a team – there is a warning asking if you are sure you want to delete the team.

Reset will clear the team name and list of users on the team. The effect is not confirmed until clicking the save button.

F) Import Users from LabCollector:

You can also import existing users from LabCollector.

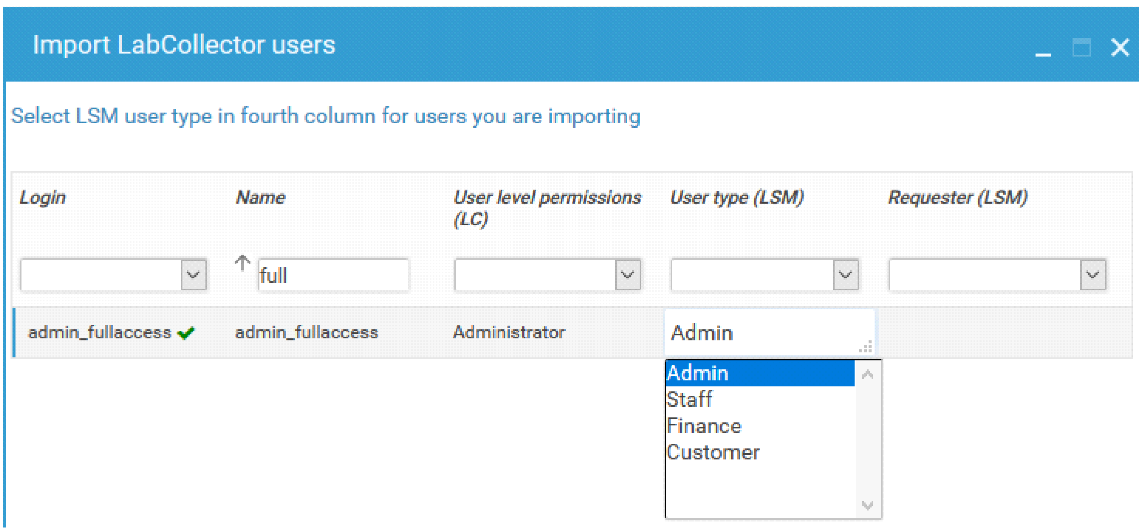
Please see more details in our Knowledge Base KB:[LabCollector user creation.]()

To import users from LabCollector inside LSM, go to **Admin → Contacts → Users → Import**

Please see details in our Knowledge Base KB:[Import Users in LSM from LabCollector.]()

You will see several columns when you click on import: The columns consist of:

- **Login**: LabCollector username.
- **Name**: Real name
- **User level permissions (LabCollector)**: User level in LabCollector
- **User type (LSM)**: User type in the LSM. A blank entry indicates the LabCollector user does not have a connected account for the LSM.
- **Requester (LSM)**: Only necessary for Customer user type. A blank entry indicates the LabCollector user does not have a connected requester for the LSM.



A permission level (**Type**) must be assigned to all users:

- **Admin**: Full access to all LSM applications and features.
- **Staff**: Access to everything *except* the user account editor.
- **Finance**: Access to the invoice interface, cost management and customer list. Can also view the job management list.
- **Customer**: Access limited to viewing and requested their own jobs and results. Can only place jobs requests. Job requests may be done via the LSMRemote or the LSM. Access is limited to their own jobs and results.

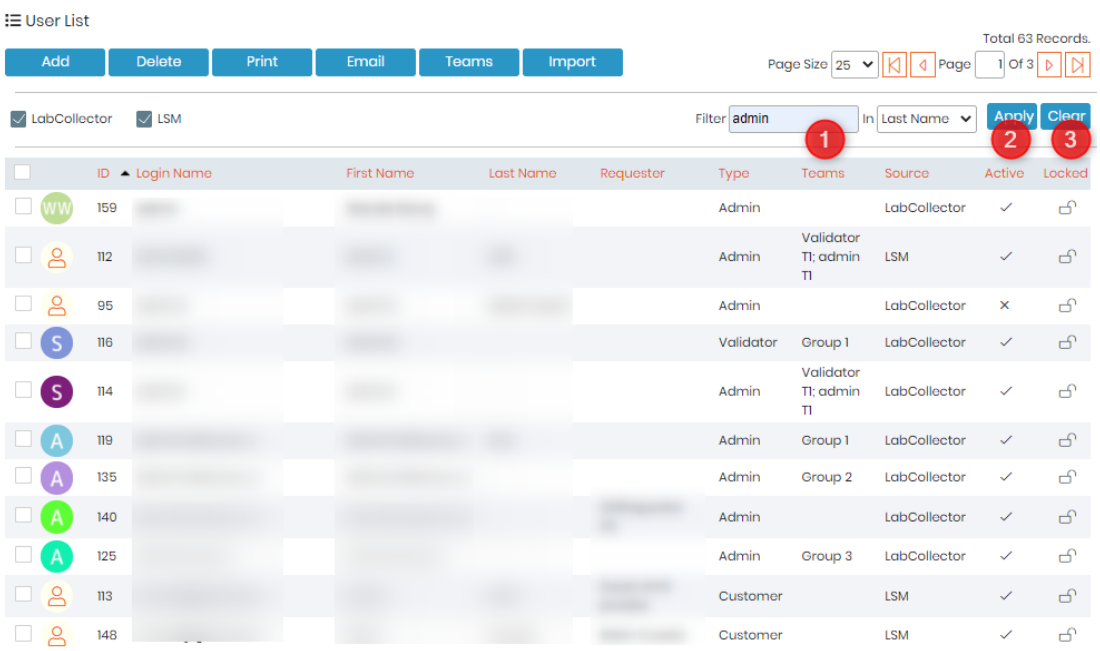
Note

Customers are created by the super-admin/admin in LSM and using the LSMRemote, the customer can request an account.

- **Validator:** Access to ONLY validate completed jobs & see finished jobs (the ones that are validated).

The upper row may be clicked to toggle between unsorted, and sorting in ascending or descending order (indicated by the absence or presence of an arrow). Login, User level permissions (LC), and User type (LSM) have drop down menus that allow filtering. The name column offers a text entry filter. These filters can be combined.

After selecting a LabCollector user to import, click in the column corresponding to the User Type (LSM) to select from a drop down menu. The change takes effect immediately upon selecting. This choice can be changed by an admin.



- The user list shows all lab users administrators, staff, customers and financial representatives.
- Specific lists of users can be sorted by clicking the column title (alphabetic order).
- To see details and modify profiles, double-click the record of interest, and click on the **Edit** button.
    - 1. List also shows which teams the user belongs to.
    - 2. It also shows which customer are active (meaning are accessible on LSMRemote)
    - 3. Once you have created a customer, you will see 2 new options:
        - Locked/unlocked account

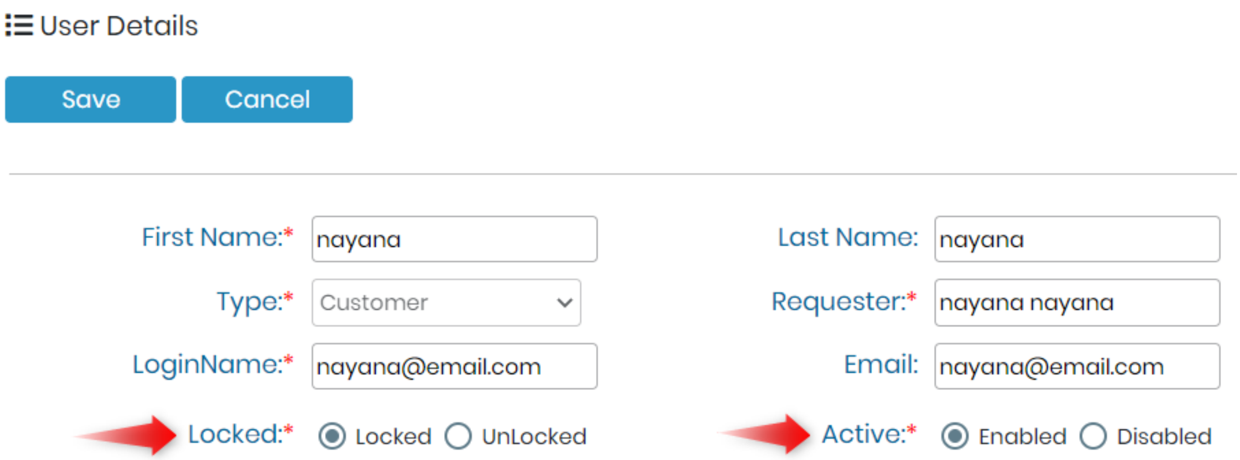
This option is useful to manage customers' access. Instead of editing a new account each time the same customer submits a job, the administrator can use this option. You can even lock the customer from logging in LSMRemote.

- Active/inactive profile

The administrators can also decide to identify a profile as inactive if the user is not (or will not be) in the lab for some time. This option is useful to manage laboratory staff members.

Note

Only active & unlocked users may login to the LSM..

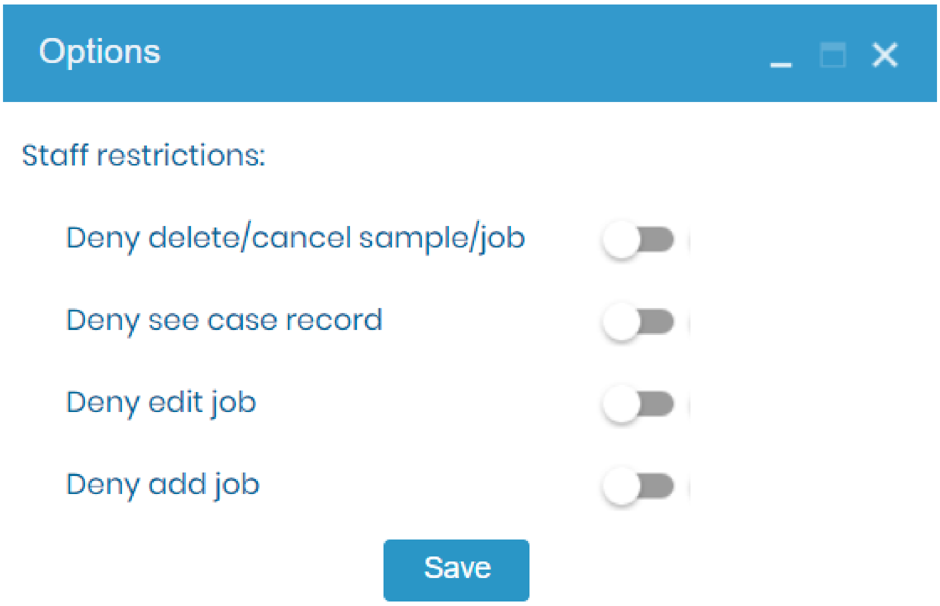


Warning

Once a user has been created within the LSM the user cannot be removed. The account may be deactivated to block access.

G) Options:

Here, you can define staff restrictions. For example: you can choose to deny the ability of staff to edit jobs, add new ones, view case records, or even delete/cancel samples.



6.2. Invoice Management (quotes and invoices)

Invoice management is only for the administrators and finance staff.

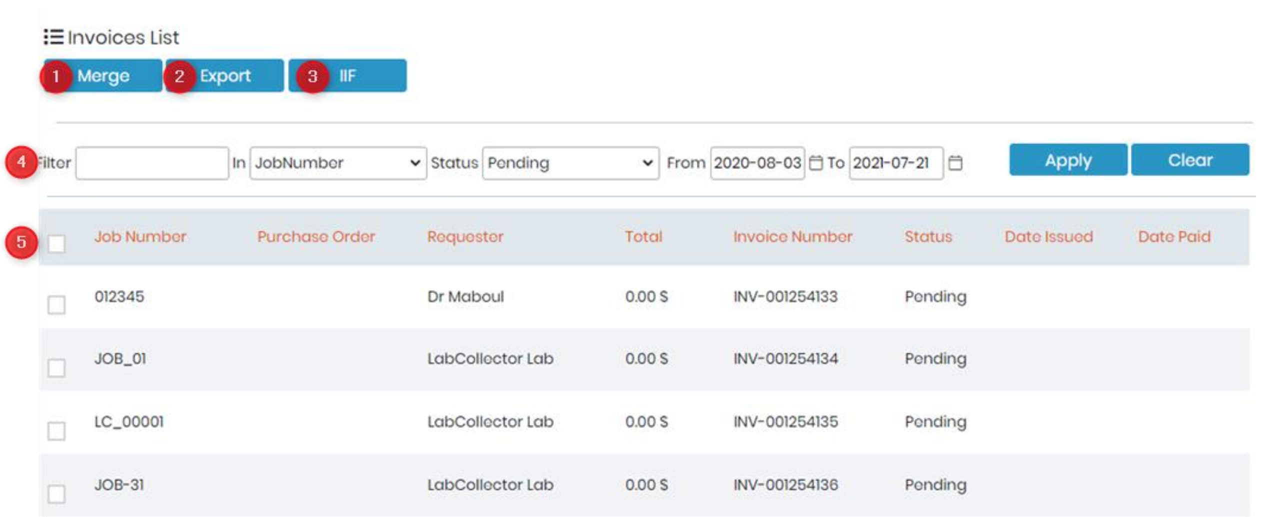
To access this option go to the **CRM → Invoices.**

In this section, you can find quotes, pending invoices, issued invoices and paid invoices. There are options to search and filter the quotes and invoices.

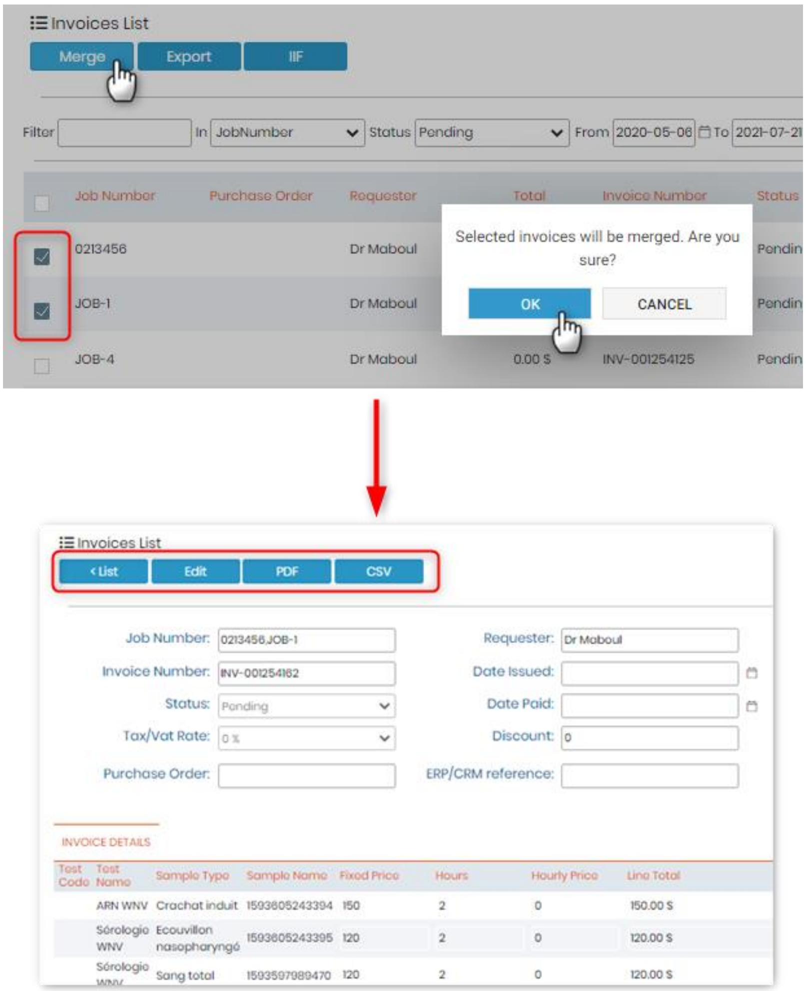
When a job is finished and approved, an invoice is automatically created regarding costs parameters (previously defined via costs and assay details). The financial administrator can retrieve this menu of all invoices created.

⚠ Note

Quote status is listed by default & you might see empty page. To view invoices please, select in filter tab, **Pending** status.



1. You can merge invoices if you want. You just need to check the box in front of job number and click on merge to merge the invoices. You will receive a pop-up asking if you want to merge. You just click on OK and you will be redirected to a page, where you can download the merged invoice PDF, edit the merged invoice or export it as CSV.



2. You can export the list of invoices in a CSV format. You can also perform a search and export the list of invoices according to your search.

3. Invoices can be exported as .iif (quick-books) file types.

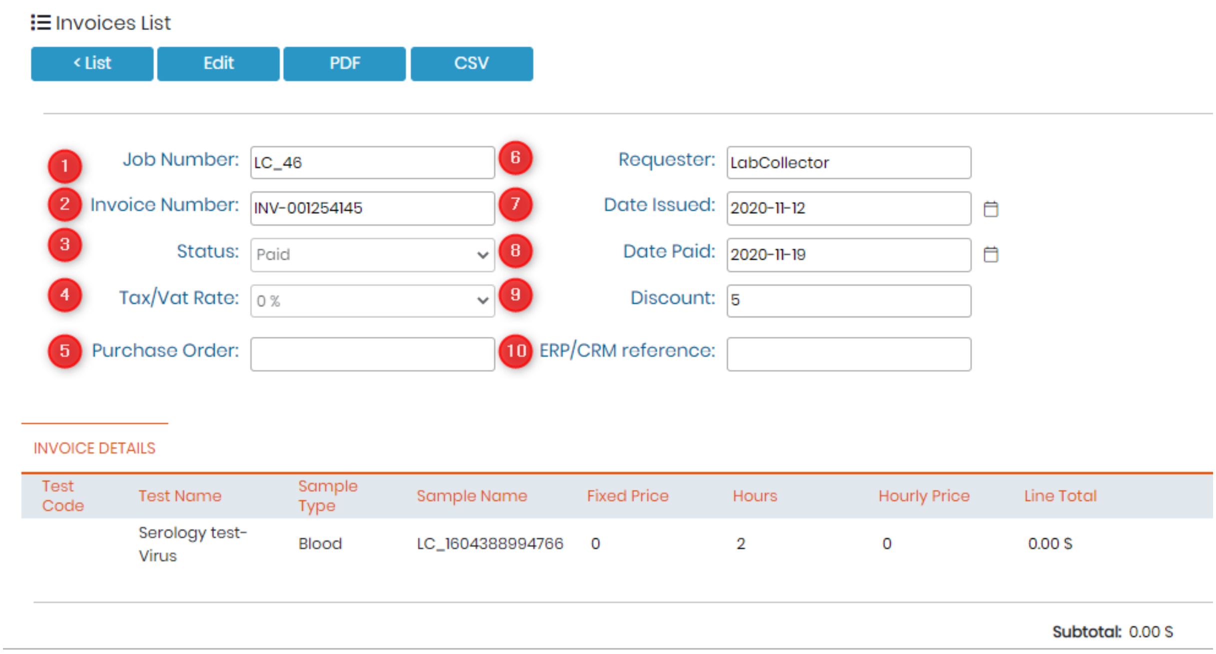
4. This tab allows you to filter your invoices according to date, job number, status, etc. You can apply and clear the searches using the buttons.

5. You will see the list invoices with of check-boxes to select the invoices for further actions like merge, etc.

Double clicking on a line will provide more detailed information on a particular job invoice. The sample list and costs per sample/test will be available in the lower portion of the screen. The upper portion allows finance staff (or admins) to edit the status of the order (quote/pending/issued/paid), provide details on when invoices were issued and paid. Additionally, the tax rate and discount can be edited.

This information is also possible to edit using the API.

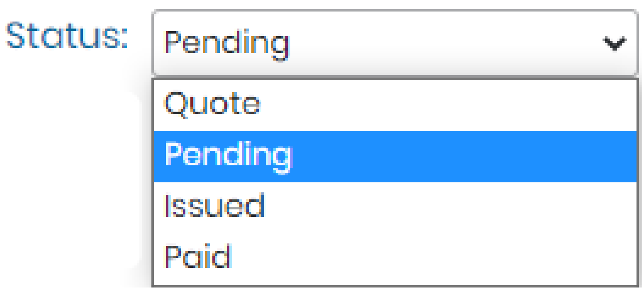
The invoice can then be generated as either a PDF or CSV file.



1) Job Number: This will contain the job number. The settings for this can be set in **Admin → Setup → Job & sample naming.**

2) Invoice Number: This will be the prefix before your each invoice number.The settings for this can be set in **Admin → Preferences →Costs.**

3) Status: Here you can see different status of the invoices.



4) Tax/Vat Rate: This is the rate you can set this by adding or editing the requester detail to **CRM →Requesters**

5) Purchase Order: Here you can add the purchase order number.

6) Requester: Here you will see the name of the requester linked to the job of the invoice. You can set this by going to **CRM →Requesters**

7) Date Issued: Here you can set the date of the invoice to when it was issued.

8) Date Paid: Here you can set the date of the invoice to when it was paid.

9) Discount: Here you will see the discount that is set when the requester is created by going to **CRM →Requesters**

10) ERP/CRM: Here you can add the number if you have the invoice number on a ERP/CRM software on your side.

6.2.1. Pricing

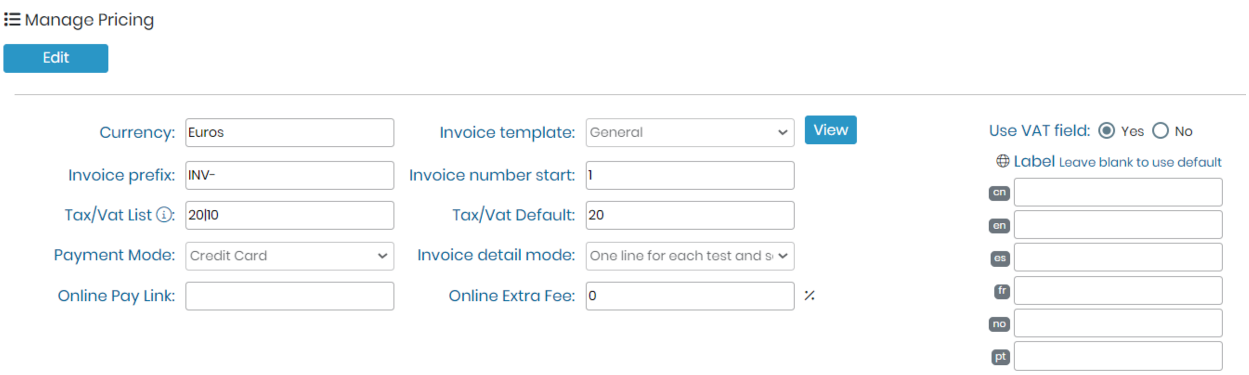
Pricing management is only for the administrators and finance staff.

To access this option go to the **CRM → Pricing.**

In this section, you can find manage the pricing table for tests, categories and much more. This section is important to create an accurate invoice.

Is possible to define the general parameters by clicking in **Edit**. You can edit:

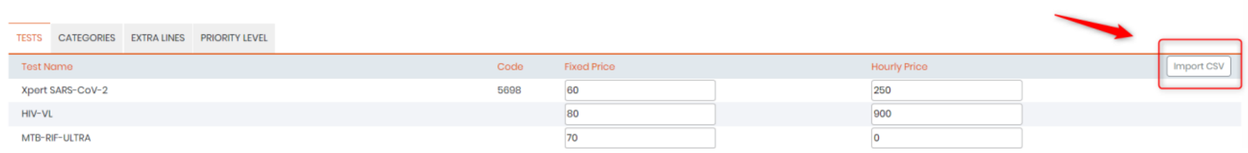
- Currency;
- Invoice prefix, template and number start;
- Tax/Vat List and Default;
- Payment method;
- Online Pay Link and extra fee
- Give a label for each language related to the VAT field.



There are four tabs to define the pricing by tests, categories, extra lines and priority level; giving a more detail price list. To appear the different tests and categories first needs to be seted in ADMIN-> Preferences -> Tests and ADMIN-> Preferences -> Categories.

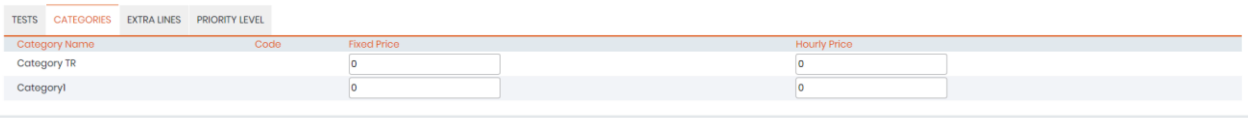
1. Tests

Is possible to define a fixed price and hourly price per tests. To automatize this process you can import a CSV with all the information.



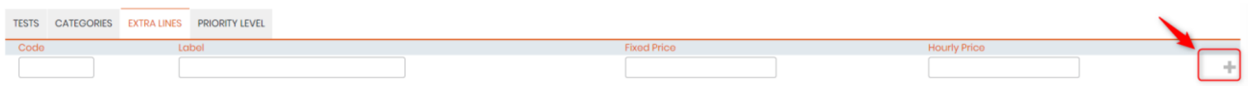
2. Categories

Is possible to define a fixed price and hourly price per categories.



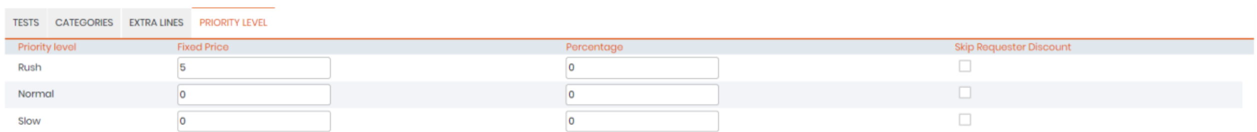
3. Extra lines

Is possible to define a fixed price and hourly price for extra services provided, not included in the tests. You can directly type here the name of the service and define the price. To add more lines you click in the sign plus (+) on the right.



4. Priority Level

Is possible to define a fixed price and hourly price per priority level. You can also select the option to not apply the requester discount for specific priority levels.



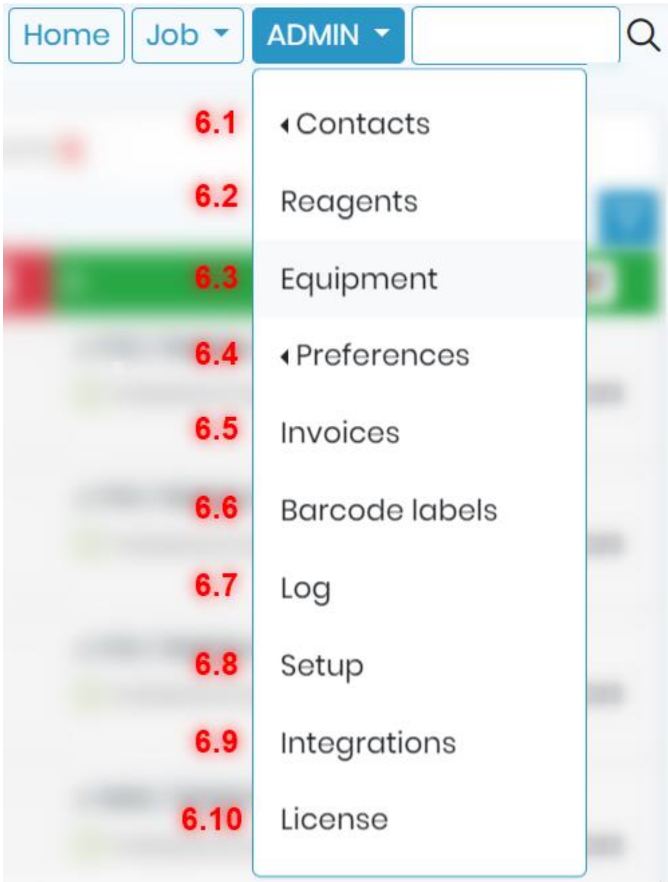
Once you finish to edit remember to click in **Save.**

7. Admin menu - Configuration

When starting **LSM** usage, it is essential to start with the customization steps. You need to create your assays catalog, customers, result parameters and more. These items interact with each other in multiple ways; therefore the steps order for the initial setup is important. Some portions of the LSM cannot be customized without first setting up others. Helper text appears frequently throughout the LSM. Additionally the LSM requires records to exist within the Equipment and Reagent & Supplies modules of LabCollector.

Additionally, the LabCollector *knowledge base* provides additional information on specific usage and setup scenarios for the LSM.

The general order for a first time setup is the creation/modification of:

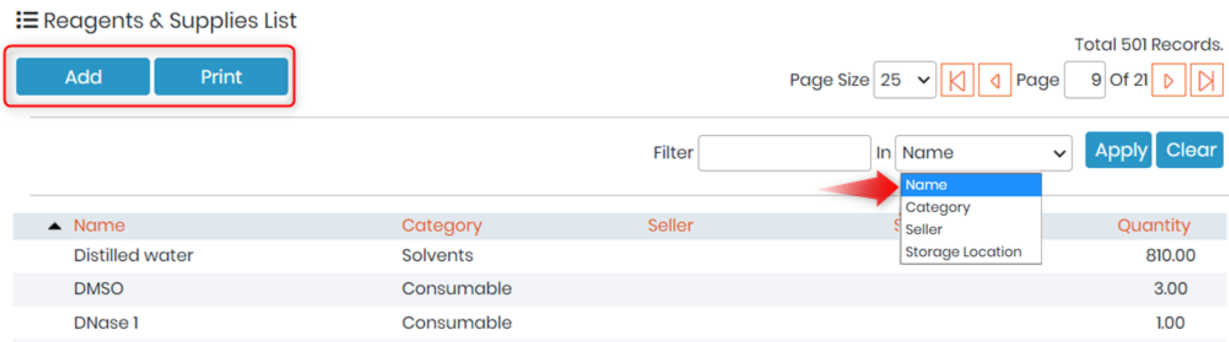


- Users/requesters
- Reagents and equipment
- Protocols and sample types
- Test parameters
- Result and invoice templates
- Test/Assay

7.1. Manage Reagents and Supplies

Navigate to this feature by selecting the **Reagents** tab in the **Admin** menu. This feature uses information from your configuration of **LabCollector** module Reagents & Supplies.

Unlike other parameters, when you click on the **Add** button, it opens **LabCollector LIMS**. Each new reagent must be created in the **LabCollector** Reagents & Supplies module before it can be accessed by the LSM. Once the new entry is saved in the **LabCollector** database, return to the **LSM** page and refresh your web browser (if the newly added entry does not appear). The new reagent will be displayed in the list. Double-clicking on a reagent record in the list opens the detailed LabCollector information page.
For reagent and supplies that are used in the LSM it is recommended that the fields displayed are set to be mandatory within LabCollector (in LabCollector) **Admin → Reagents & Supplies.**



Note

To add new reagents, you need a LabCollector user account (login and password). Refer to your LabCollector administrator if needed. The quantity listed only takes items with an amount defined in the lots/batches.

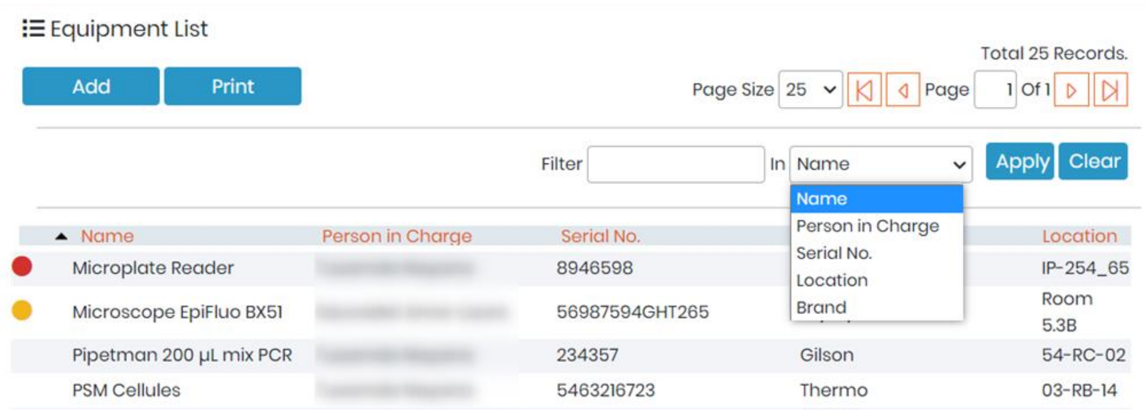
Please see more details in our Knowledge Base KB:Creating reagents in LSM

7.2. Manage equipment

This section allows appropriate equipment selection to perform assays. Similar to the LSM management of Reagents & Supplies, equipment management is linked to **LabCollector** LIMS. This feature uses information from your configuration of the **LabCollector** modules. It is recommended that the fields preset in the list for the LSM are set to mandatory (in LabCollector **Admin → Default Fields → Reagents & Supplies.**).

The equipment list has a sorting and filtering function to help locating equipment records. Type in the filter and select the field to filter, then click apply. To sort a list, simply click the column header and an arrow will appear to indicate sorting in ascending or descending order. Sorting and filtering may be combined.

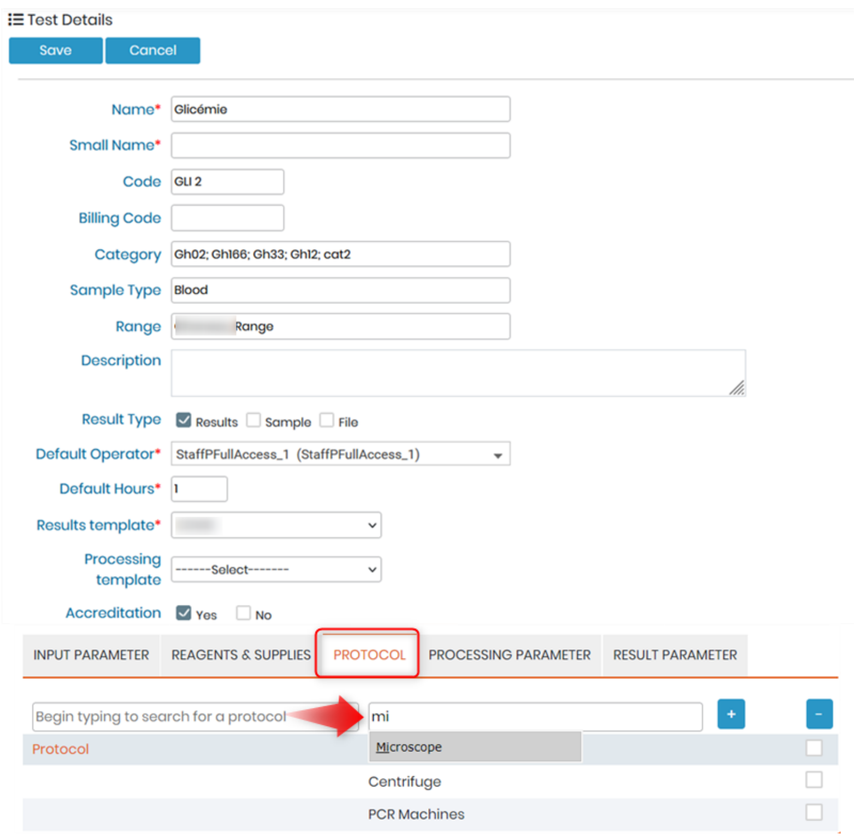
Select the **Equipment** tab in the **Admin** menu, click on the **Add** button and edit the new entry in the Equipment Module. The new equipment will be displayed in the list.
Double-clicking on an equipment record in the list opens the detailed LabCollector record.



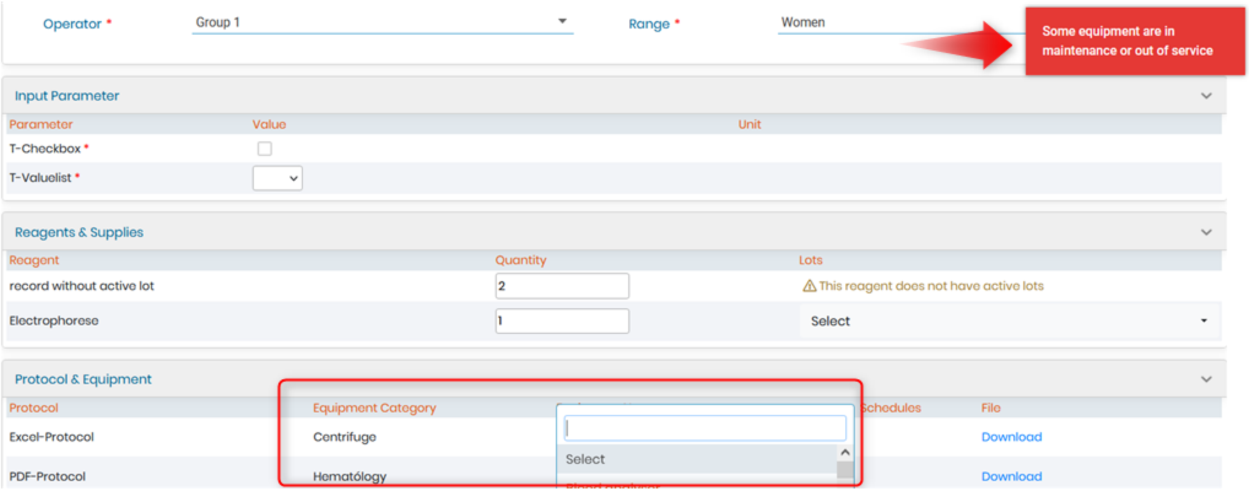
When you create a test you can add equipment categories.
Please see more details in our Knowledge Base KB:[Creating equipment in LSM]

Note

Equipment categories can be added ONLY in reagents and supplies module. These categories are then visible in the test when you add them.



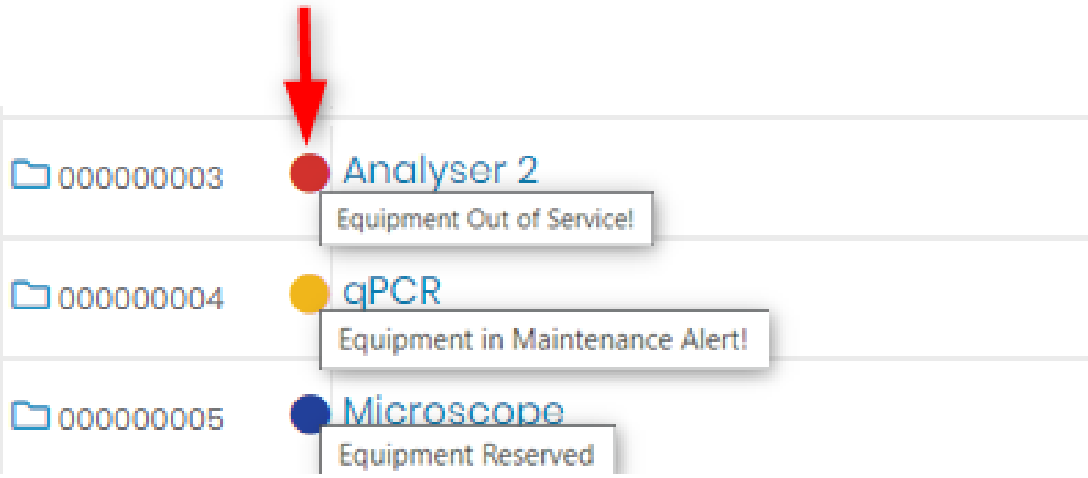
When you execute the test, you will see a red pop-up if some equipment are in maintenance and you can add an equipment under the equipment category.



⚠ Note

To add new equipment, you need a LabCollector user account with an appropriate permission level (login and password). Refer to your LabCollector administrator.

Color indicators give information on equipment status:



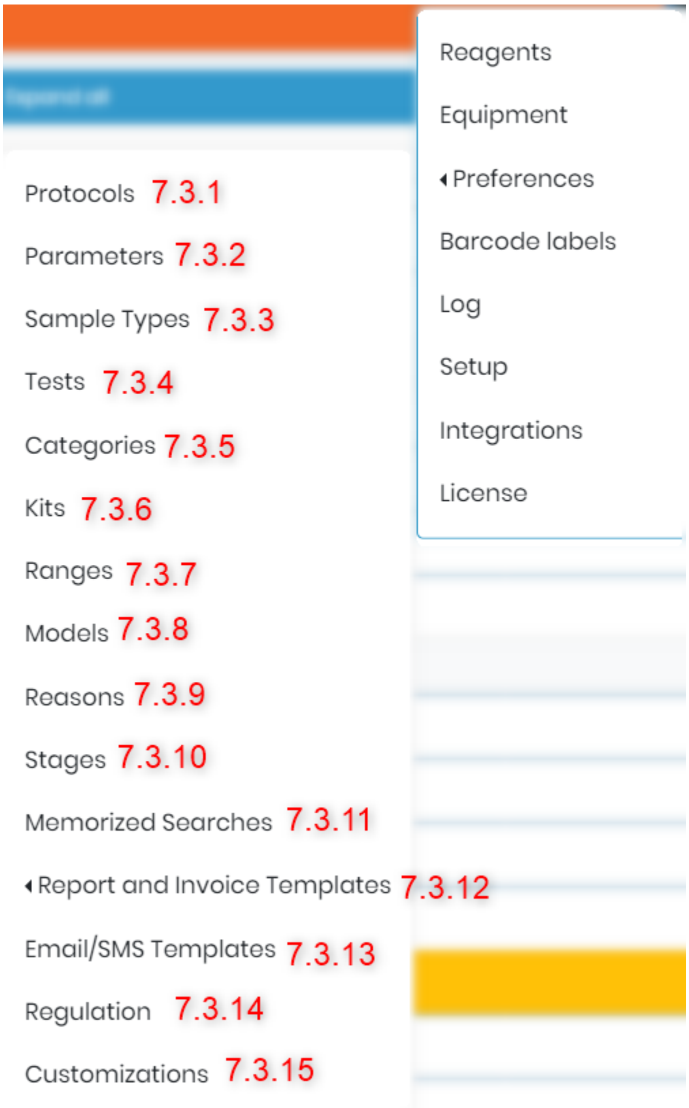
⚠ Note

The equipment status is based on the status from the **LabCollector** Equipment module. **Only equipment with no color indicators can be selected when running a job.**

7.3. Preferences and Customizations

To customize the **LSM** according to your lab activities, go to the **Admin** Menu and choose the **Preferences** tab. This section is used to configure the laboratory service activities. On the initial setup the order of selecting these is important as each part of preferences relate to others.

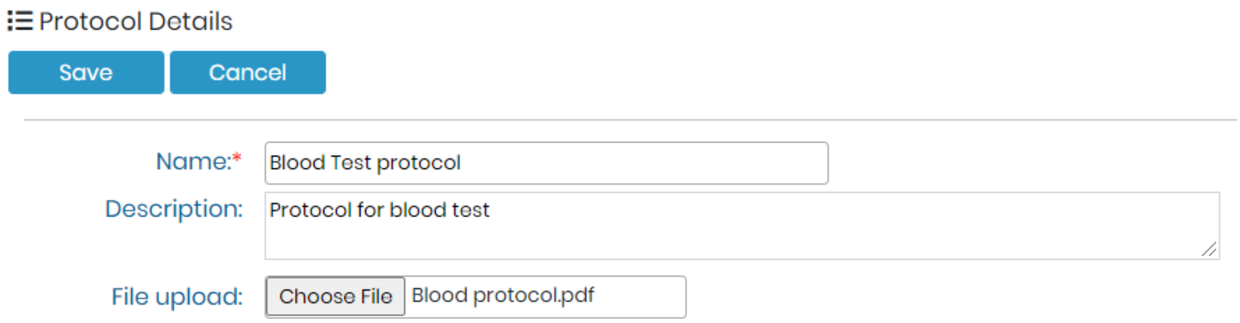
Please see more details in our Knowledge Base KB:[How to start with LSM]



7.3.1 Create protocols list

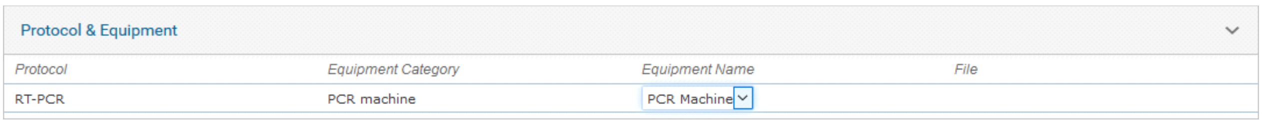
To perform analyses, you need to pool all protocols needed. Within the LSM navigate to **Admin → Preferences → Protocols**. This section allows uploading protocols that willbe used for tests/assays. Click on the **Add** button to add new protocols. Each protocol is associated to a unique ID allowing barcode label identification and data traceability. The protocols will be available to the person performing jobs connected to the protocol. A name for the protocol is required. A description is optional. The protocol can then be added by browsing for a file to upload.

Files may be downloaded from the protocol list or when doing a job.



View of protocol list.

Protocol name and description can also be added to the final report. For more details, go to Section 3.4.8



7.3.2. Create parameters

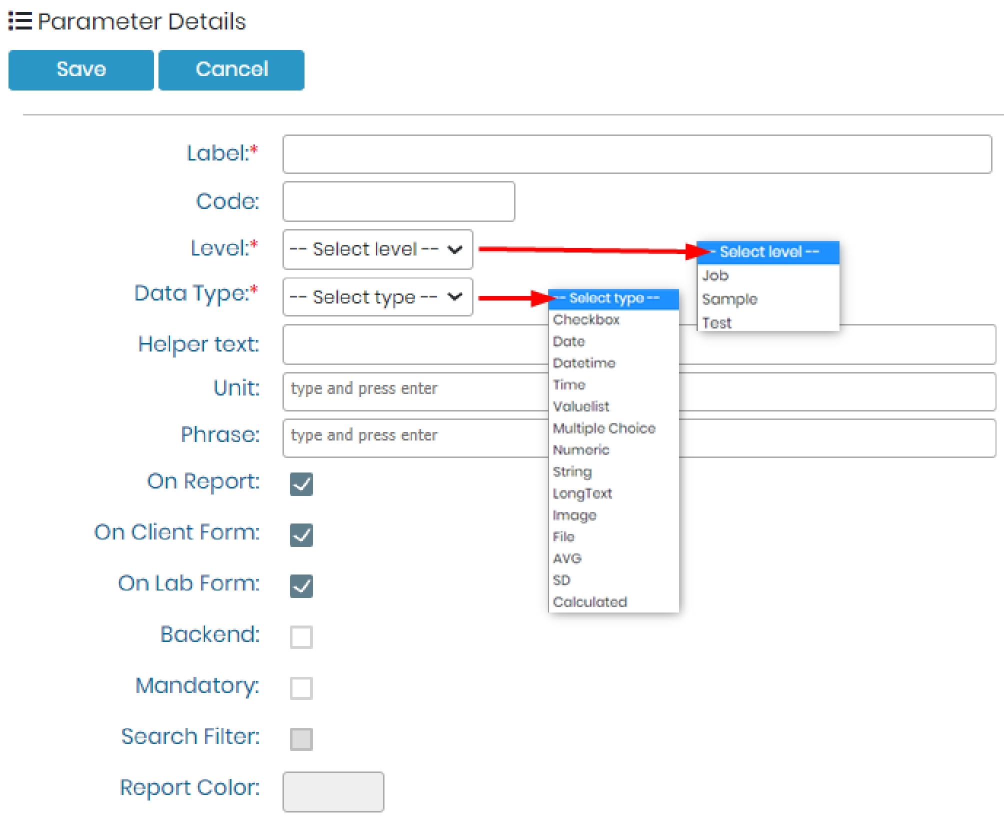
The parameter list pools all parameters that can be used during lab service activities. Within the LSM navigate to **Admin → Preferences → Parameters**. Click on the **Add** button to create all needed variables (temperatures, volumes, concentrations, measurements…) that are relevant to perform assays/tests in the lab and define results.

Parameters can be INPUT or OUTPUT/RESULT values depending on whether they are needed when starting a job or to record results of an assay or test.

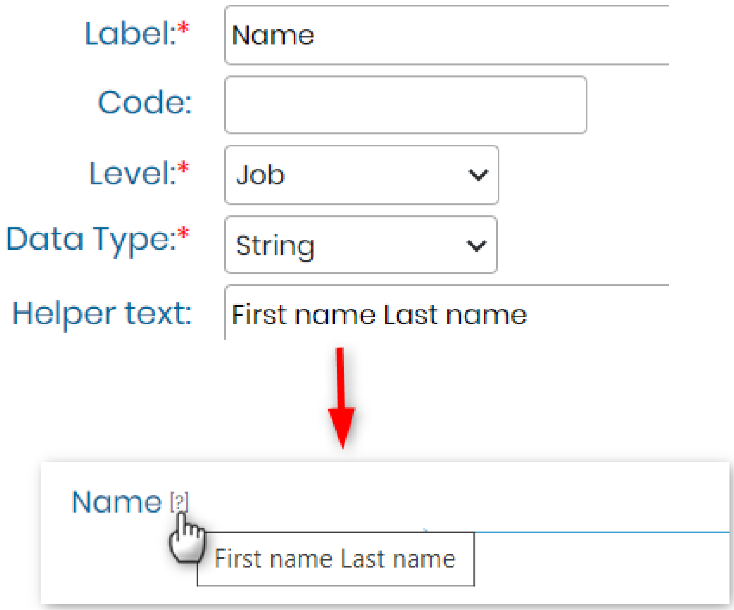
Note

As of version 3.2063 it is possible to add test parameters while editing a test.

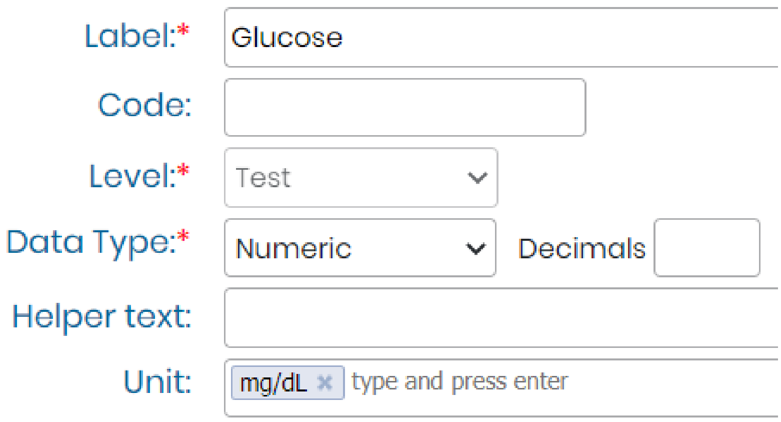
You can create parameters at Job, Sample or Test level. LSM gives possibilities to create different types of parameters.



- **Label:** This the name of the parameter.
- **Code:** You can give a code to the parameter. Sometimes, there are certain codes that are defined for certain test and parameters related to them by the governing bodies; you can add such codes here. For example, the LOINC codes.
- **Level:** You can define the level where you want to create the parameter for. Refer to section 3.4.2.1
- **Data Type:** You can define what type of parameter you would like to create. Refer to section 3.4.2.2
- **Helper Text:** This allows you to give a little more information about the parameter.



- **Unit:** You can define Unit for your parameter.

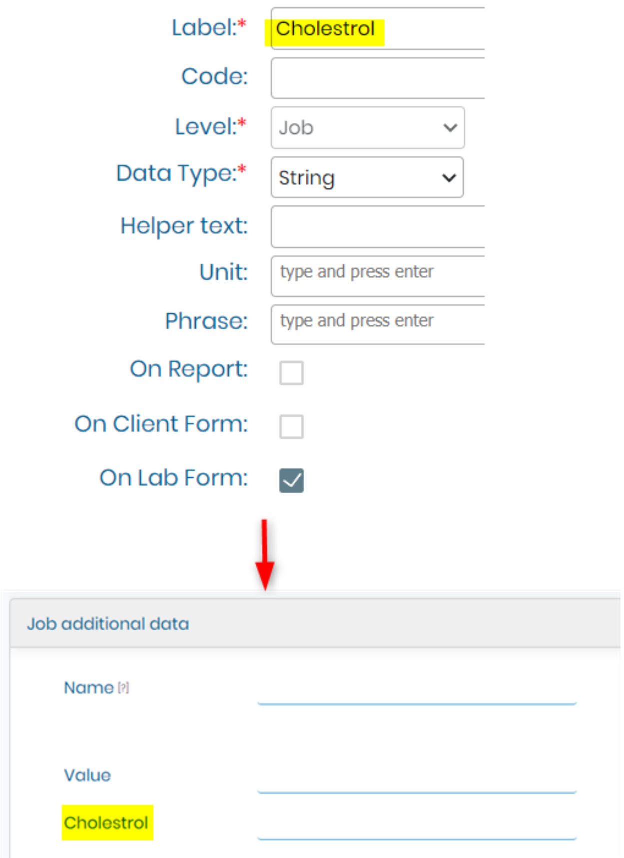


⚠ Note

Don't forget to press ENTER key, after you type the values for Unit, Phrase and options in Value list or multiple checkbox.

- **Phrase:** For each parameter, you can define an associated phrase (or phrases) that will be used in result reports. Phrases are added in the same manner as values for a value list. Type in the box and click enter. This confirms the phrase indicated by a bubble around the text. Clicking the 'x' in the bubble will remove the phrase. A phrase has the option to be linked to a min-max range *if* the parameter has the data type numeric *and* is an assay level output. Note that multiple ranges are possible. For more information on ranges refer to the chapters describing tests/assays.

- **On Report:** If you don't want to have this parameter of the final test report, unchecked the box "On Report".
- **On Client Form:** If you want to add this parameter to the remote portal of LSM, then you need to check this box. Please read the knowledge-base KB: New fields in LSMRemote.
- **On Lab Form:** If you don't want to add this parameter under the job level, and keep it hidden, you can unchecked the checkbox. If you want it to be visible under Job, then you can check the box.



- **Back-end:** If you check this box, this means that the parameter will be not be visible in LSM but ONMY visible/editable by API for example for I-Collector integration , etc.
- **Mandatory:** If you want your option to be filled for the job, sample, test to be created, then you can make the parameter mandatory. Without filling the value for this parameter, the user cannot move forward or save the job.
- **Search filter:** Currently, in LSM you can use parameters as search filters to filters jobs. If you want to add your parameter as a search filter you can check this box.

Note

For now only parameter of type "Value list", "Multiple Choice" or "String" can be checked as Search Filter.

- **Report Color:** You can only add color for the values, to test level parameters.

⚠ Note

For :

Valuelist: you can choose a color per value (for example color id the result is detected, or not detected, etc)

Numeric: you can choose 2 colors, one for values in range and other for out of range

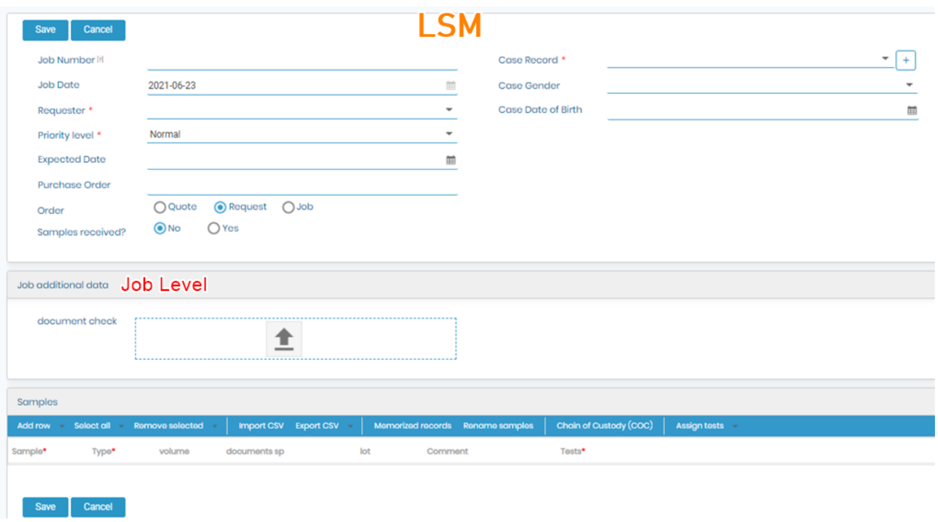
7.3.2.1. Levels of parameters

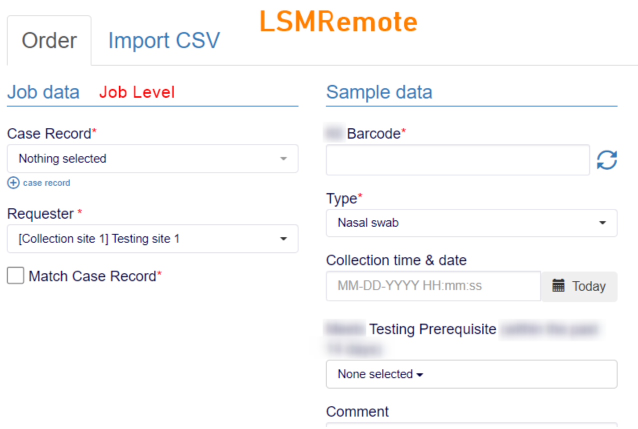
You can define where the parameters will be used (Level/Step):

1. JOB Level

Will be a custom field on the Job definition form. These parameters apply to all samples and assays/tests for a job. Defined when submitting jobs via eitherthe LSM or the LSMRemote.
An example job submission form within the LSM showing the location of Job Level and Sample Level parameters:

***Note**: *The LSMremote is configured in the below image to have one sample per job. However, you can also configure it to have multiple samples per job.*



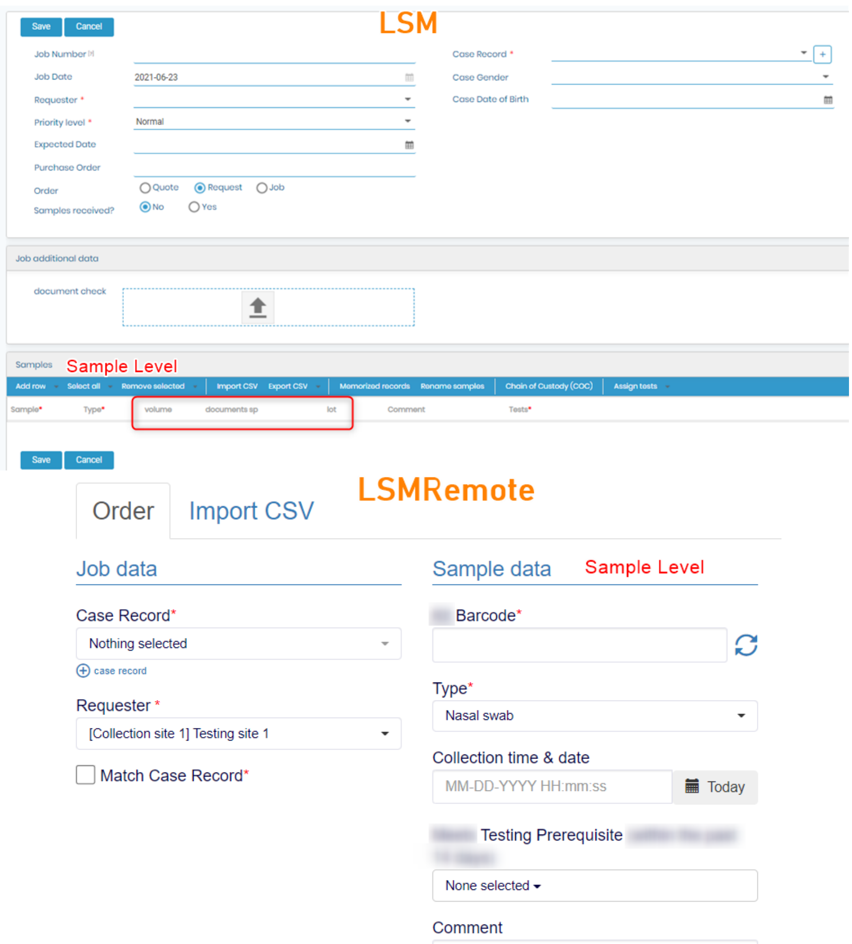


2. SAMPLE Level

Will be a custom field for the sample form. These parameters apply to particular samples within each job. Defined when submitting jobs via either the LSM or the LSMRemote.

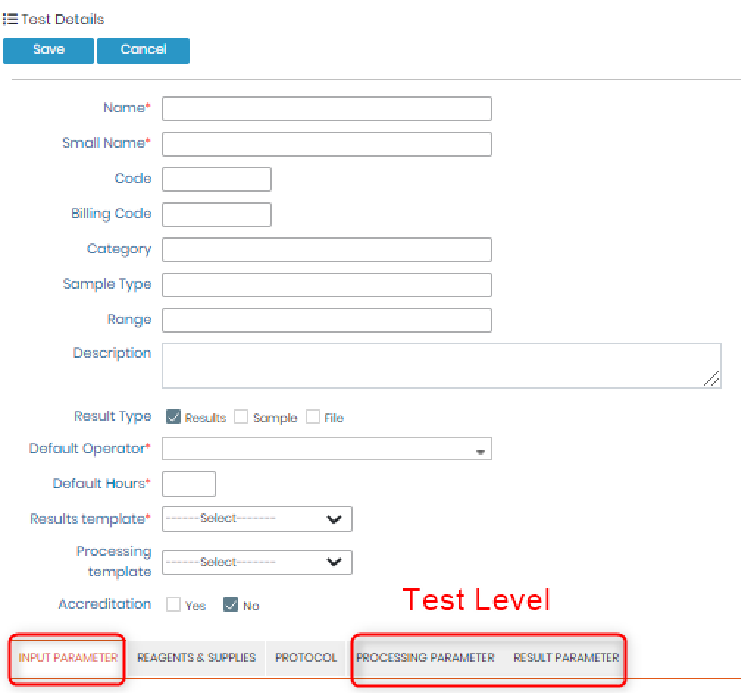
An example job submission form within the LSMremote showing the location of Job Level and Sample Level parameters:

***Note**: *The LSMremote is configured in the below image to have one sample per job. However, you can also configure it to have multiple samples per job.*



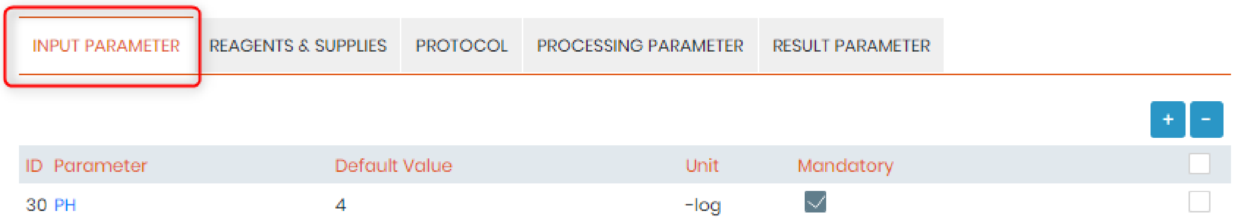
3. TEST Level

Will be used as an INPUT or RESULT value field. These parameters are filled in only via the LSM by staff and/or admin level LSM users. Further control is done by assay in Assay Details by going to **Admin → Preferences → Tests**. The Assay/Test takes the parameters that are already defined (details to create parameters are described above).

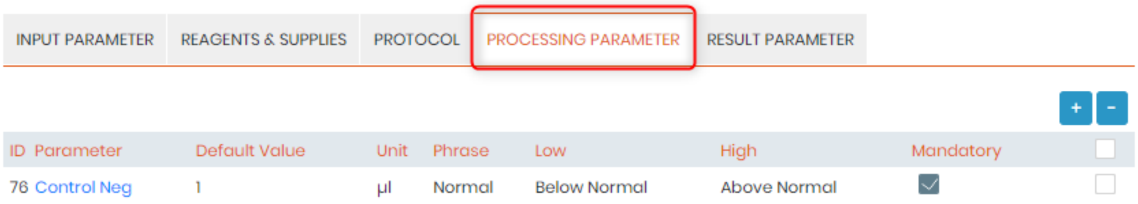


The parameters can be set as an input, processing or a result.

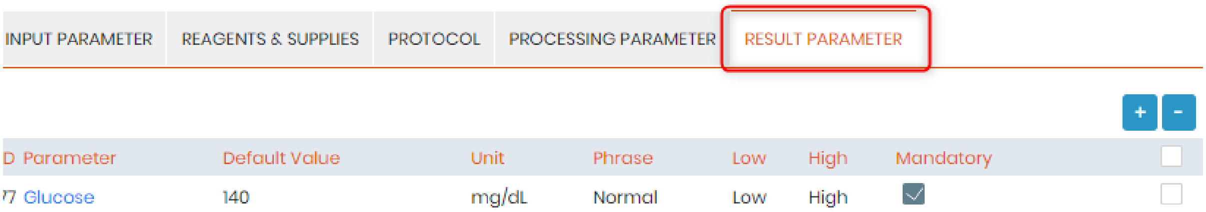
- Input parameters are the ones that can be added before starting the test. For example, DNA purity check before a PCR, etc. LSM has an option to set a unit, default value (leave blank to have the value empty initially) or to make the parameter filling during test mandatory (denoted by a small red asterisk when you open the job and execute the test). All variables required to design the test and to prepare samples for analysis can be added from this tab. Parameters must be defined with the assignment as Test/Assaylevel to be available for selection.



- Processing parameters are the ones that are done during the test execution. it can be for internal purposes of lab, to check if the test values were correct during the test execution. These parameters can have a default value, unit, phrase, low, high values and option to make the parameter mandatory.

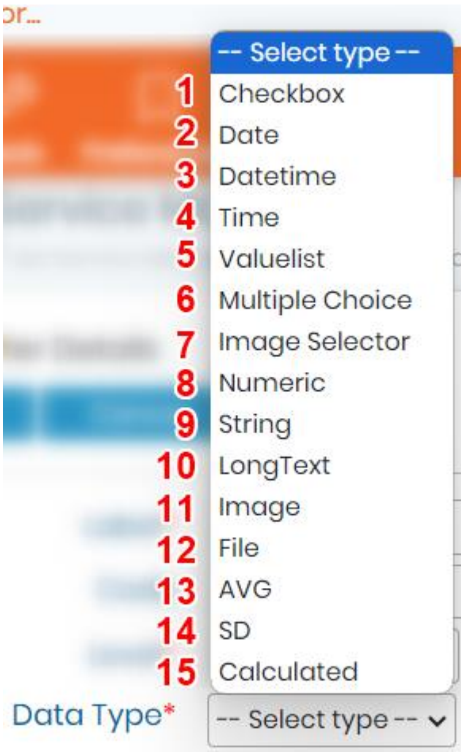


- Result parameters can have a default value, unit, Phrase (defined by the parameter definition), and phrase selection for values inside, above or below a range of results (the phrases available are set by the parameter definition).

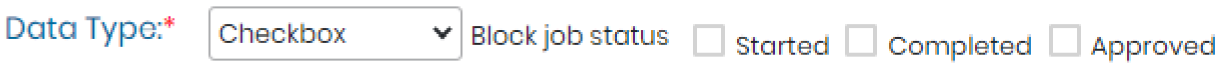


7.3.2.2. Data field types

The lab can choose between several types of variables (Data Types) to create parameters:



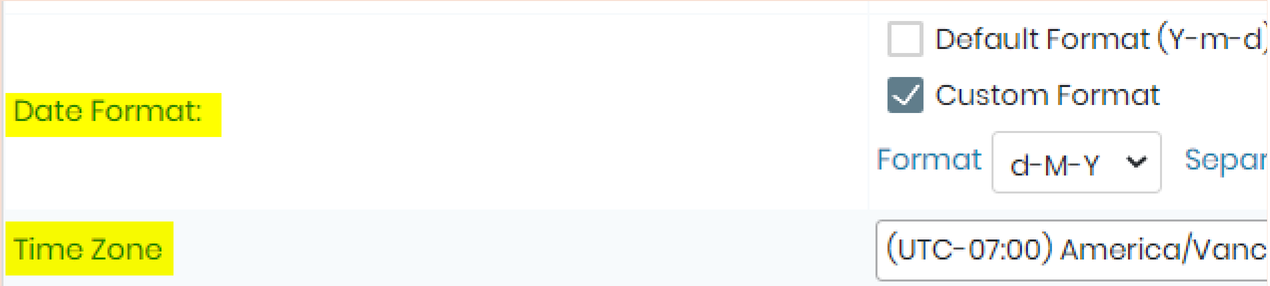
1. **Checkbox**: Binary answers Yes/No, True/False as a checkbox. **NEW!** Now you can choose if the checkbox option needs to halt a job at a specific stage like job started, completed & approved.
   If the box is not checked the job will not be able to proceed to the next status.



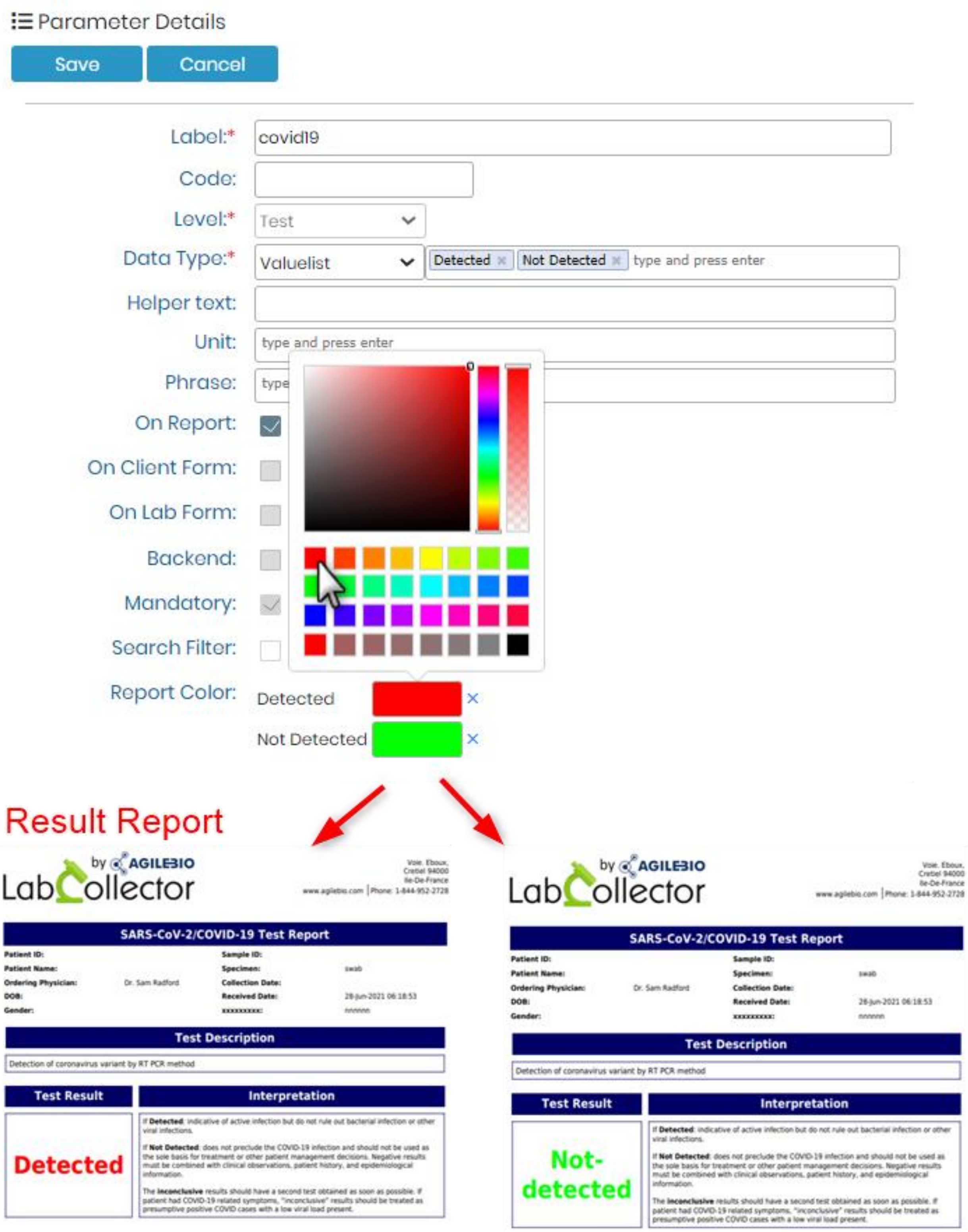
2. **Date**: Reported as yyyy-mm-dd, entered using a calendar.

⚠ Note

The date format when you edit the job will be set by the LSM system to look like yyyy-mm-dd , however, if you want the date to appear in specific format or time zone on your test result report (For more details, go to 📖 Section 3.4.8)), then you need to define the custom format for your LabCollector system by going to **LabCollector Admin → Setup → General settings, logo, modules names, etc. → Date Format & Time Zone**

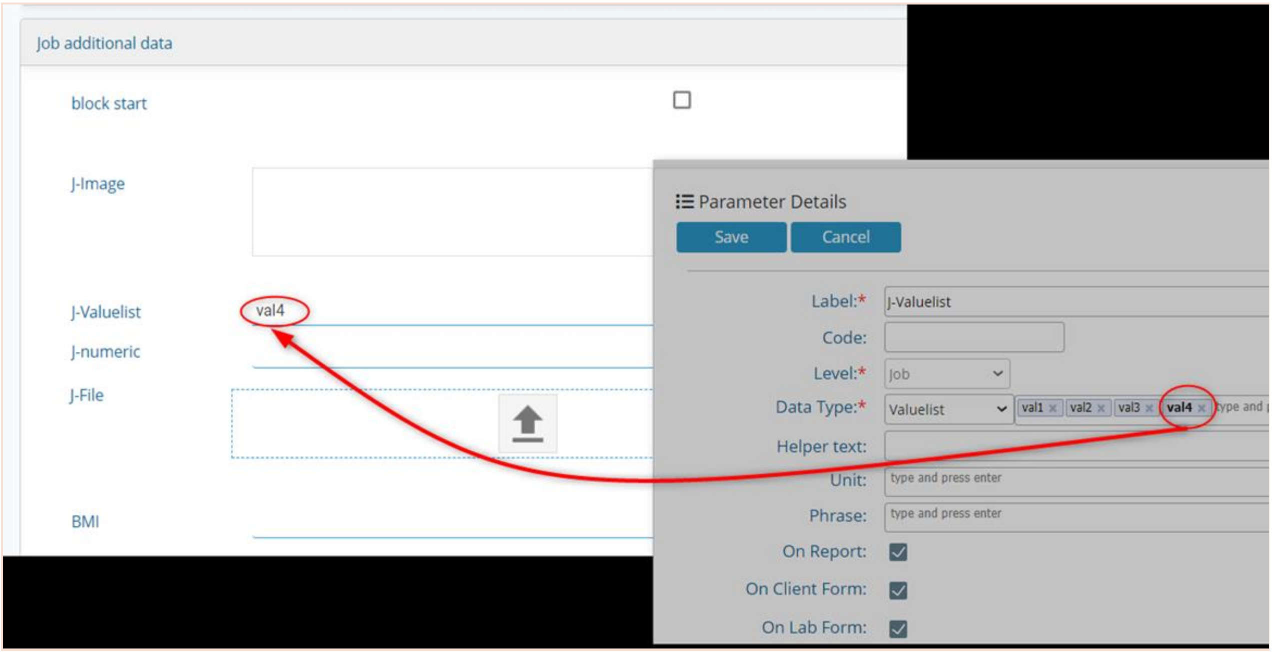


3. **Date-time**: Reported as yyyy-mm-dd hh:mm:ss, entered using a calendar
4. **Time**: Reported as hh:mm:ss
5. **Value list**: Provide values for a drop down menu for a single choice. For the value list at test level, you can add the colors for each value. For example, if the result is detected you can add a red color to the "detected" text that will appear on your result report. See an example image below.

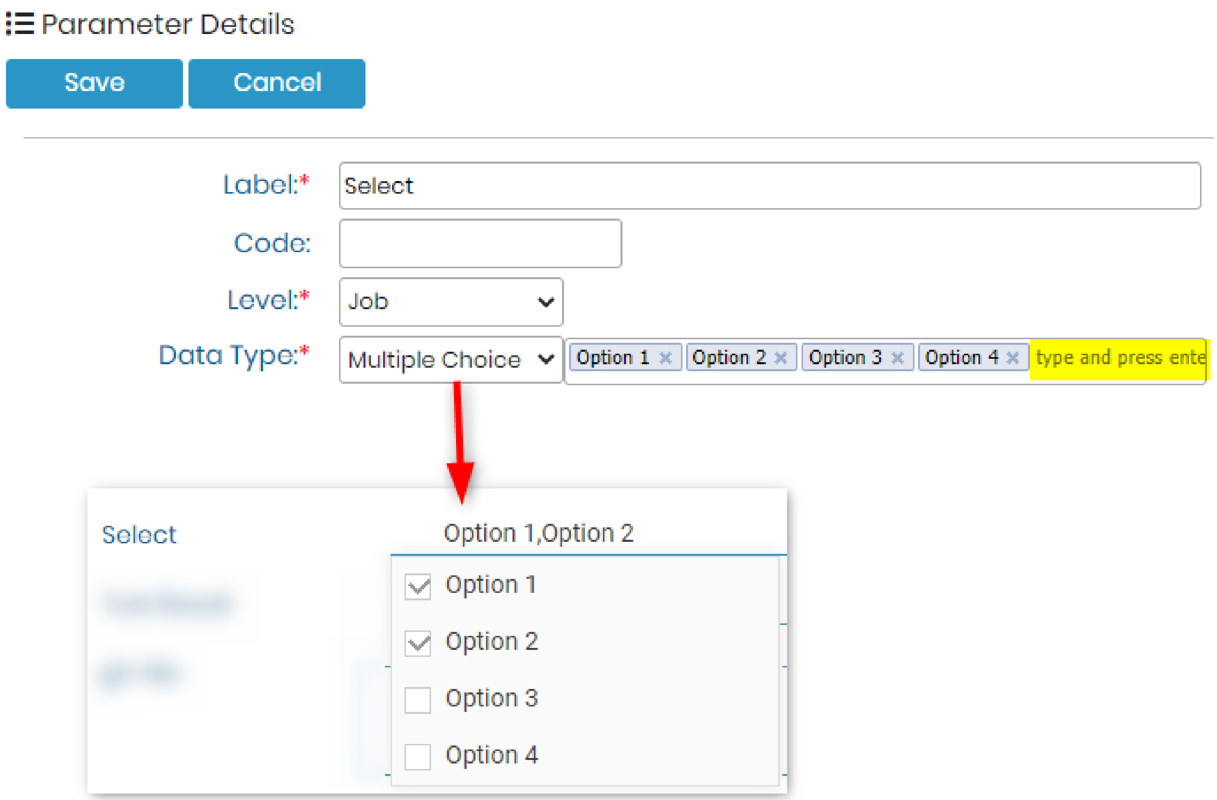


⚠ Note

You can also set a default value, which will automatically get displayed in your job form.



6. **Multiple choice**: You can several values that can be selected together in parameter.



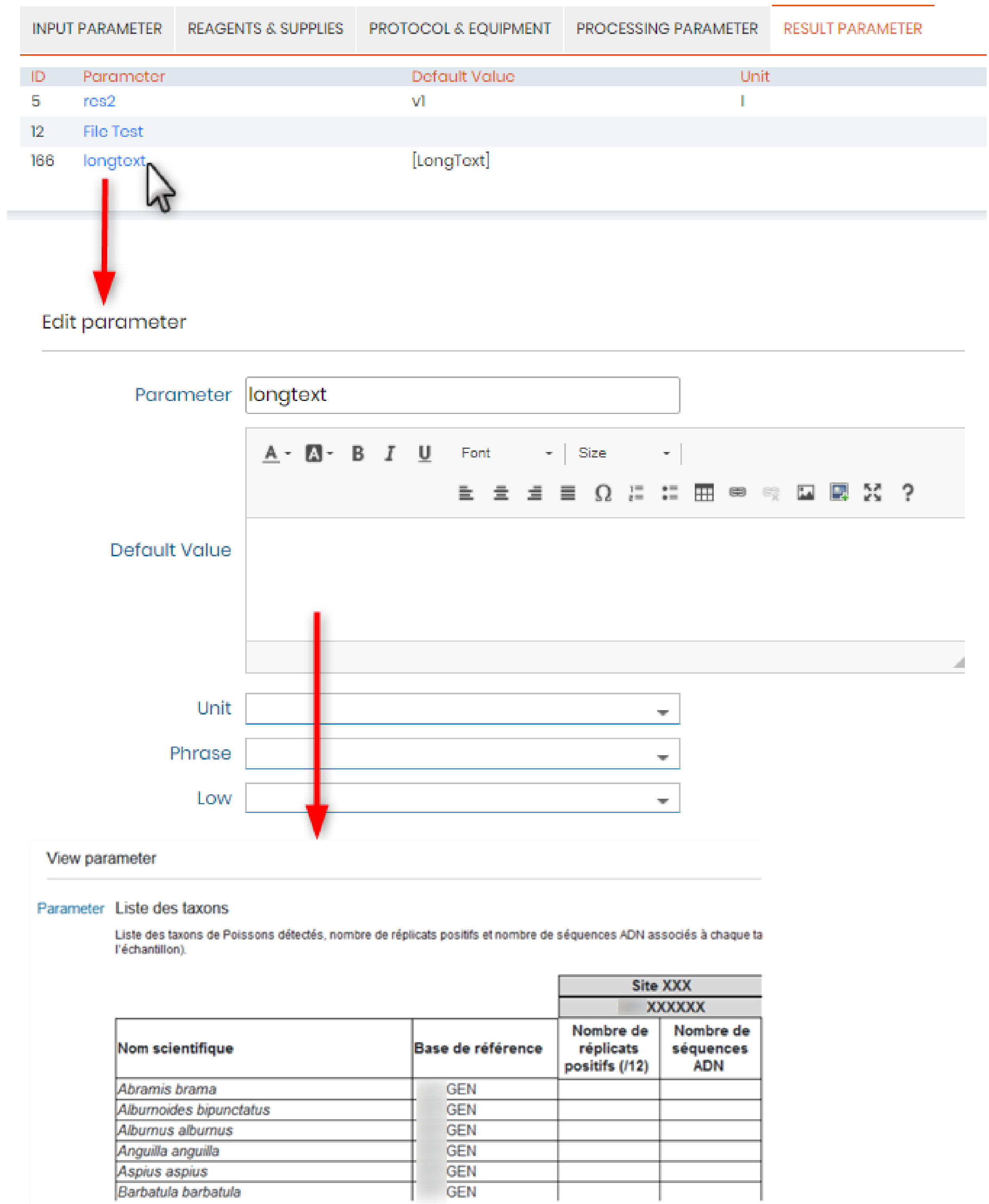
7. **Image Selector**: It allows you to add a range of images, that you can then select from.
8. **Numeric**: Numeric user typed input. A range may be assigned to Numeric parameters when defining assay details. You can even define the decimals values.
9. **String**: Alphanumeric ONLY user typed input, no special characters are allowed.
10. **Long text**: Field text (size = 1000 characters). At job and sample level, this data type can allow

up to 1000 alphanumeric characters. However, at the test type, you can have possibility to edit it with html editor and even add templates for your parameters, for example like below.

Please see more details in our Knowledge Base KB: [How to use html editor.]()

Tips / Hints

You can copy paste the table or templates from word file as well.



11. **Image**: Field to upload images.

12. **File**: Field to upload files.
13. **AVG**: This field allows you to get the average/mean value from a list of parameters. There is also the option to show the standard deviation (Include SD).
14. **SD**: Allows you to have standard Deviation of the values you use in result parameters.
15. **Calculated:** This field allows you to add formulas that can be calculated. The parameters that you create at the test level ONLY will be used to calculate the formula.

Note

In the calculated formula you can only use +, -, *, /, ^ functions only.

$$\frac{1}{BW} \times R(mg/Kg) \times UW \times 0.001 \times VF + R(mg/Kg) \times (LP-UW) \times 0.001)$$

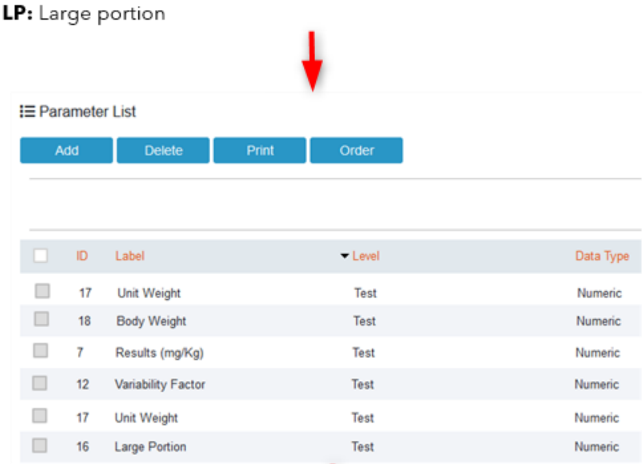
BW: Body Weight

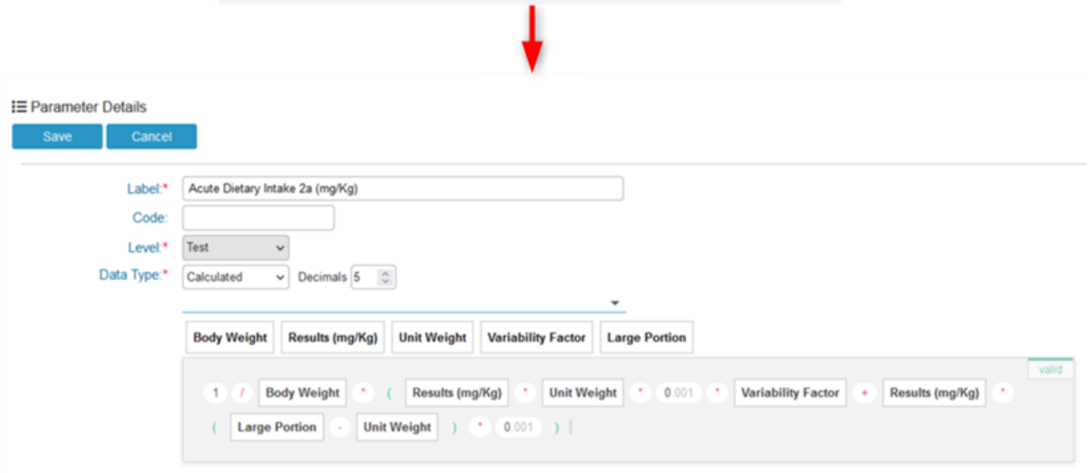
R: Results from the test (mg & kg)

UW: Unit Weight

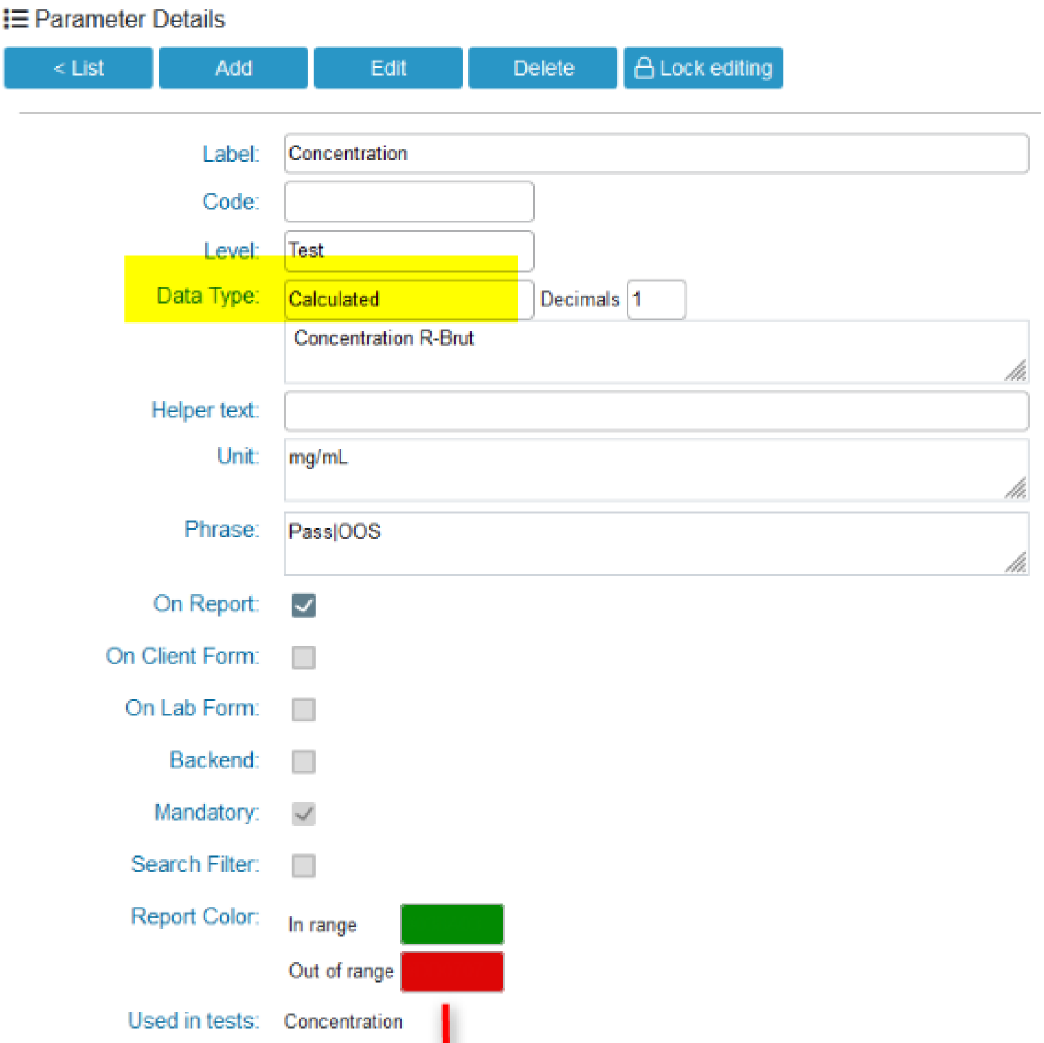
VF: Variability Factor

LP: Large portion

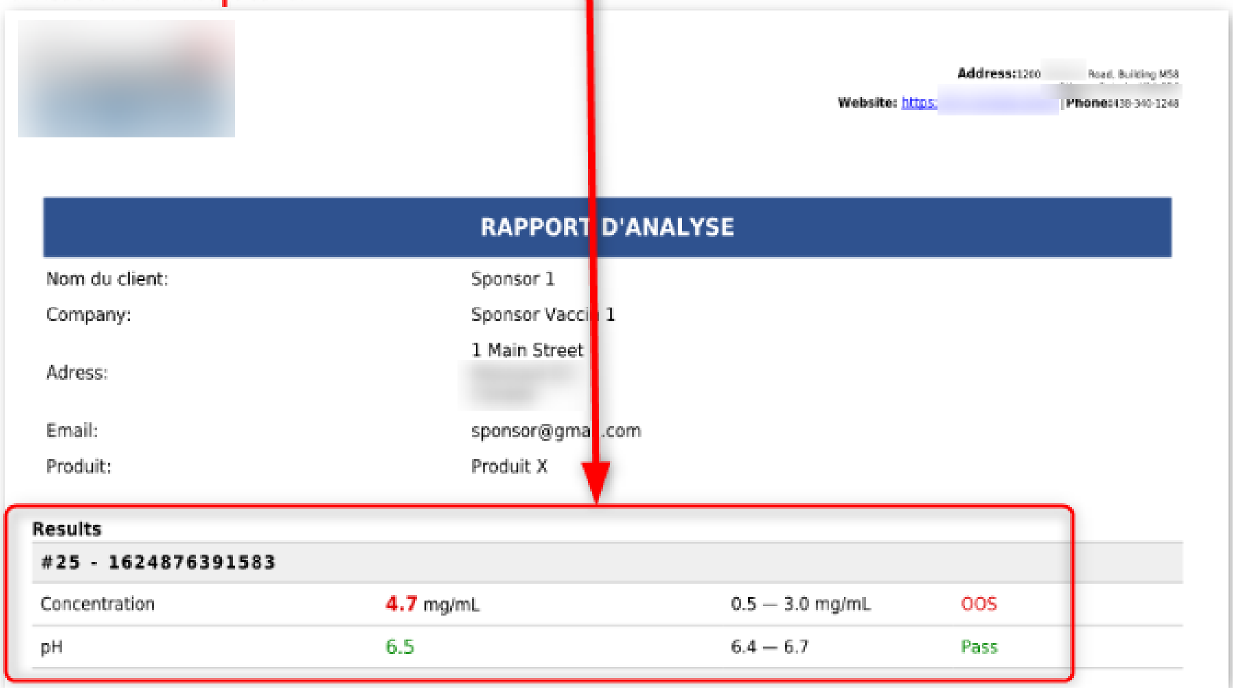




NEW! Now you can add color to the calculated values above and below of a specific range at the test level. When you define the colors, they will be visible in the result report. See Chapter (refer to section 3.4.9)

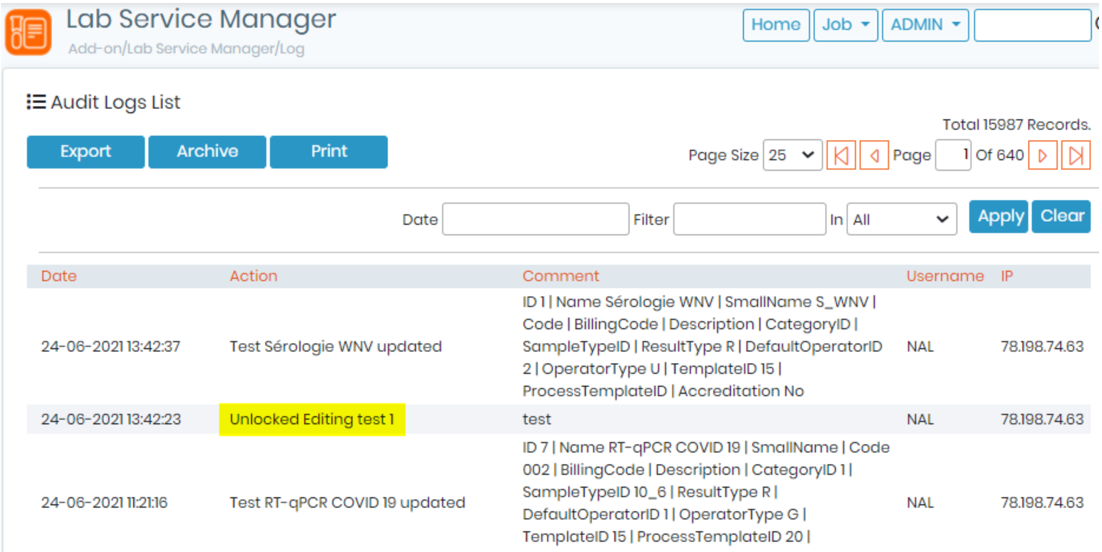


Result Report

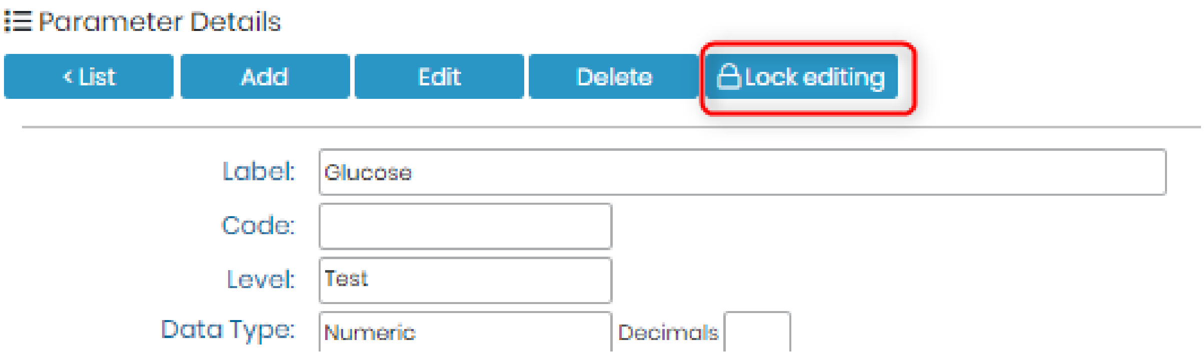


7.3.2.3. Locking/Unlocking Parameters

LSM now allows you to Lock or Unlock the parameters editing. This allows the labs to be more stringent with editing, parameters in LSM so as to not hamper any results. You have unlock the editing, and provide the reason for doing so. This reason will be included in the Audit trail log of LSM along with the user details who changed the parameters. Go to **LSM → Admin → Log.**

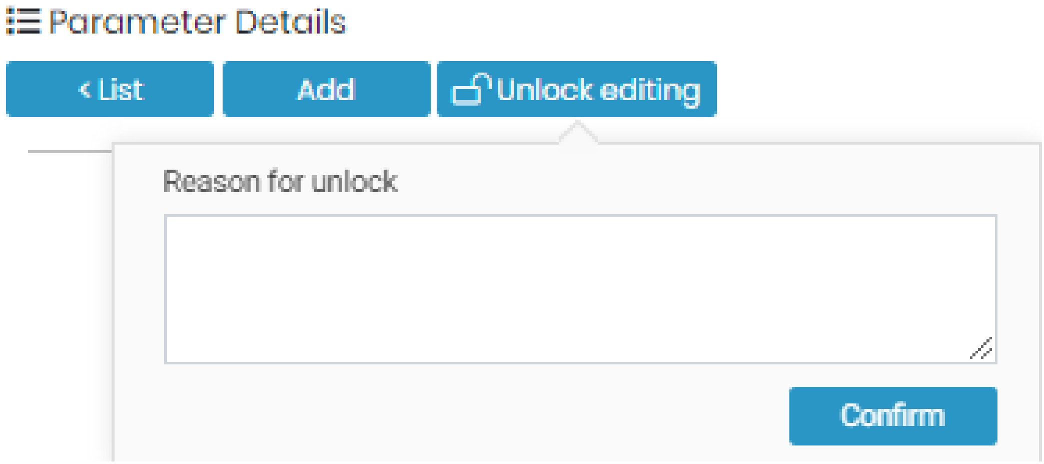


Locking/unlocking editing of parameters:



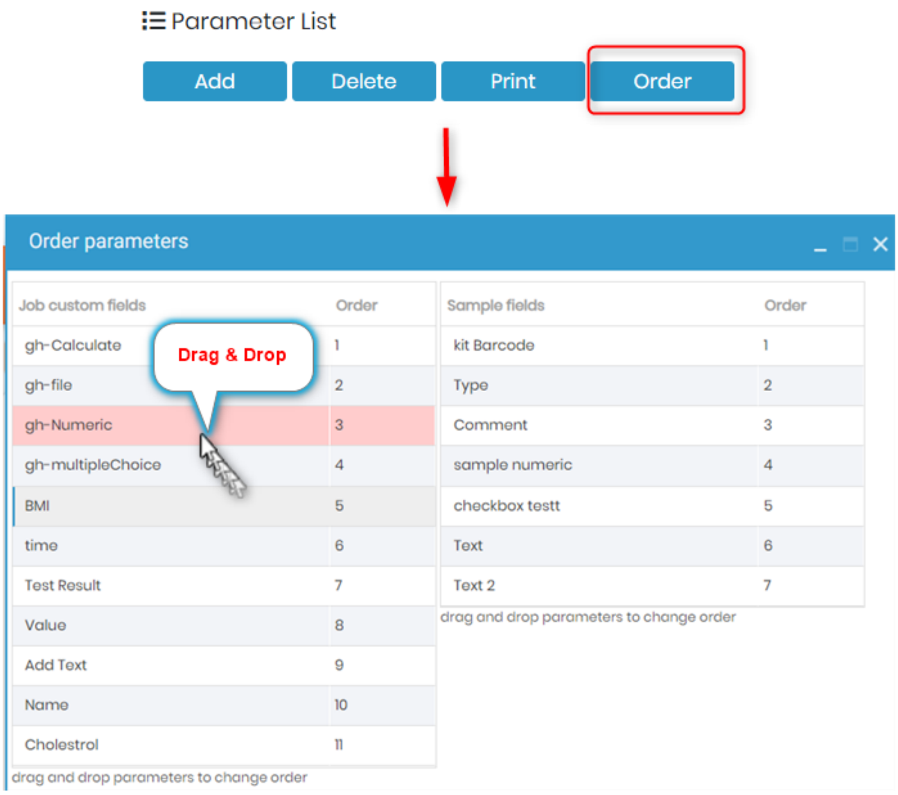
Once you're happy with the configuration of your parameter there is the option to lock it and prevent further editing by clicking on the **Lock editing** button.

To edit a parameter you need to click on **Unlock editing** and provide a reason for changing the parameter.



7.3.2.4. Ordering/rearranging Parameters

For job and sample levels, you can order the parameters by simply dragging and dropping them **from the top to the bottom** of the list. Go to **LSM → Admin → Parameters → Order** Just click on **Order** button on parameter list. No need to save.



7.3.3. Manage sample types

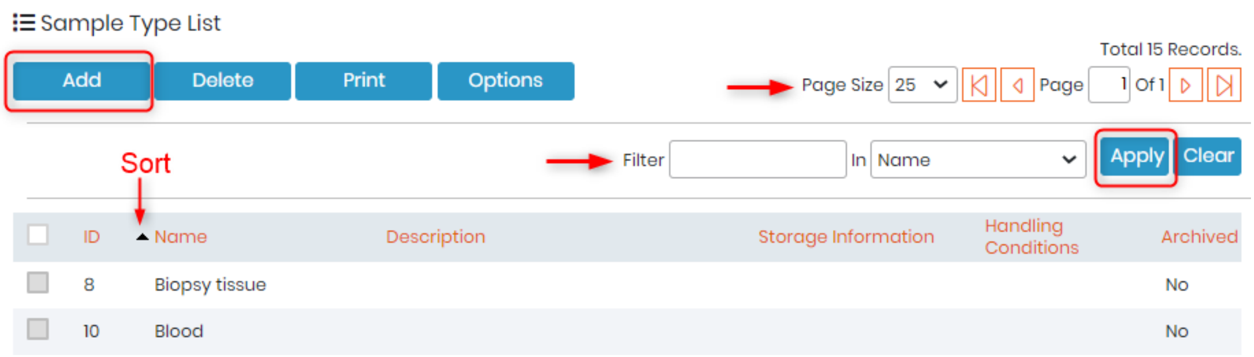
The lab has to manage sample types according to the lab. Within the LSM, navigate to **Admin → Preferences → Sample types**. Sample type is required to be included for all samples in all jobs. At least, one definition of sample type must be created.

To add a new sample type click **Add** and complete the form. This section allows sample types definition (blood, DNA, protein extraction, tissue…). The name is mandatory and a description is optional.

To delete a sample type, click the check box next to the sample type name and then click delete.

Note that deleting a sample type that is currently being used is prohibited. The sample type list may be printed.

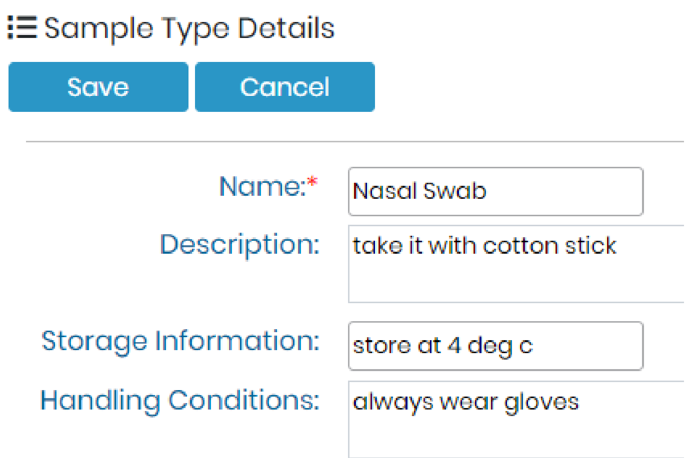
There are sorting and filtering options to help with managing long lists of sample types. Click a column header to sort in ascending or descending order (indicated by an arrow). There is also a filter that may be applied to either the name or description,click apply for the filter to take effect. The number of records per page may also be adjusted.



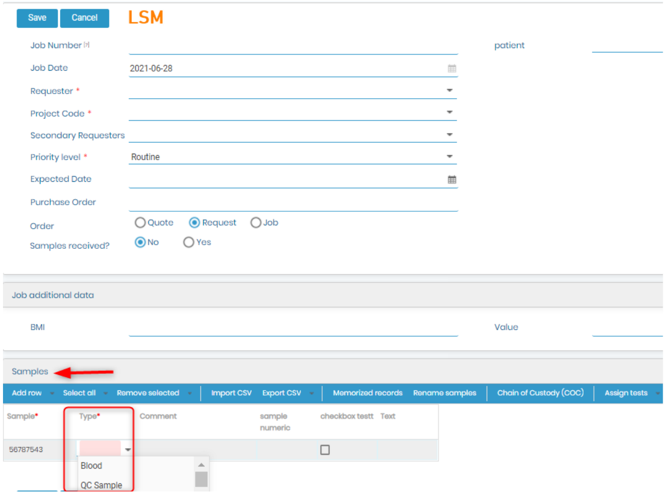
Note

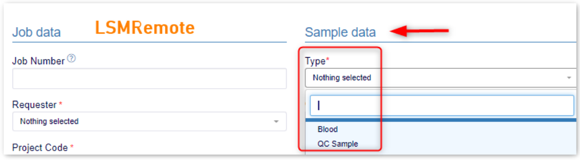
Entering a sample type is required when submitting a job that includes samples. You may not submit a job with sample(s) unless at least one sample type has been created. These sample types are distinct from the sample types created in LabCollector

From the sample type list, a sample name or description may be edited by clicking on the desired sample type in the list and then clicking on edit. After making changes, click save to confirm changes or click cancel to avoid making changes.



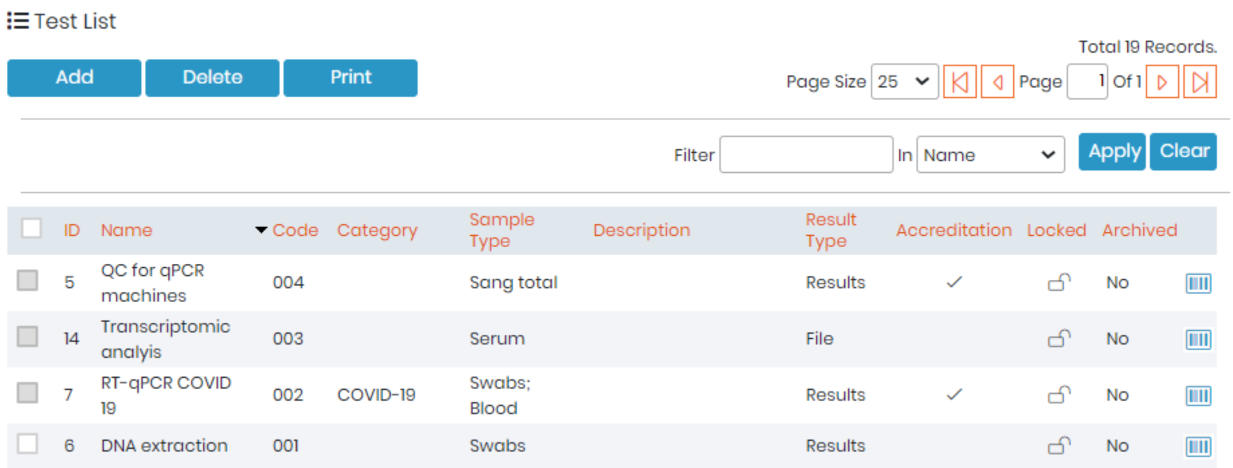
The sample type is selected when submitting a job via a drop down menu from the LSM or the LSMremote.





7.3.4 Create test

Labs can offer a panel of services/jobs which can be defined by one or more assays. From the LSM, navigate to **Admin → Preferences → Tests** (in some versions this is **Admin → Preferences → Assays**).

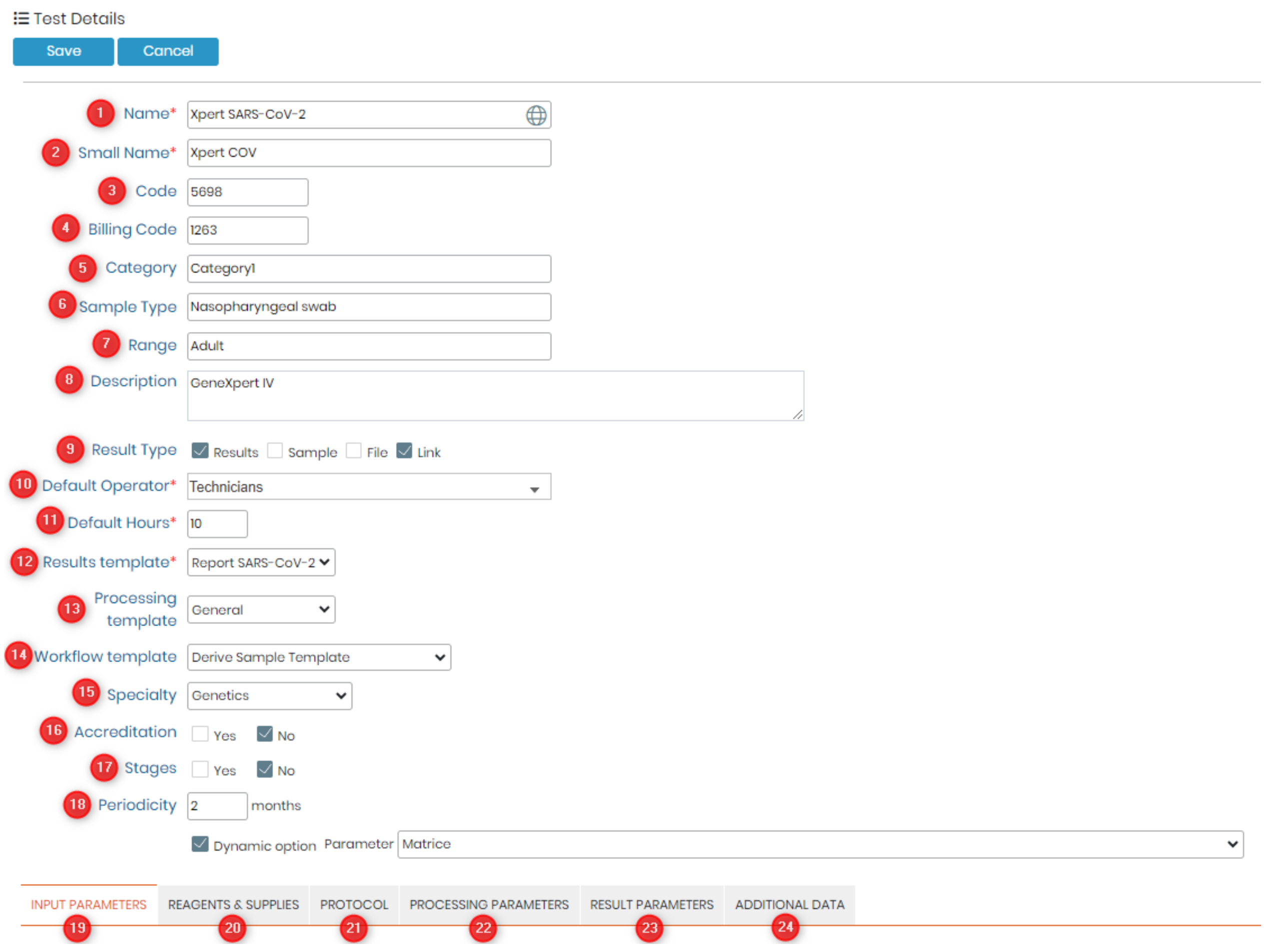


	ID	Name	Code	Category	Sample Type	Description	Result Type	Accreditation	Locked	Archived
	5	QC for qPCR machines	004		Sang total		Results	✓		No
	14	Transcriptomic analyis	003		Serum		File			No
	7	RT-qPCR COVID 19	002	COVID-19	Swabs; Blood		Results	✓		No
	6	DNA extraction	001		Swabs		Results			No

Each assay/test is identified by its own ID allowing lab information traceability.

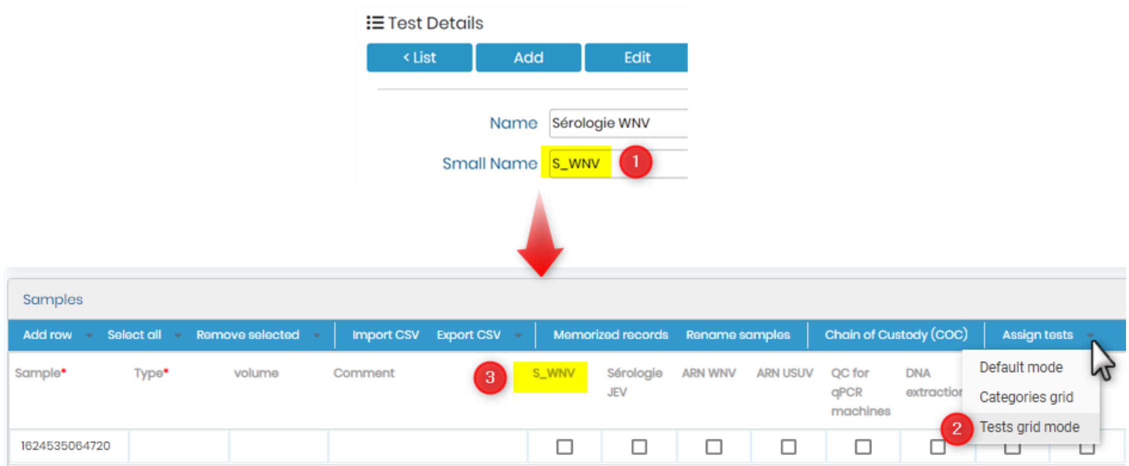
Assays/tests are the last item within the LSM that should be defined as it requires several options to be configured before starting.

The LSM admins can define tests. To add a new assay/test, click on the **Add** button.



An assay/test is defined by:

1. **Name**: The name of the test/assay.
2. **Small Name:** Its the name you give to your test, if the actual test name is too long. This helps when you have to choose multiple tests for a sample and you choose category grid view.



3. **Code**: Code for the test/assay. In Clinical labs sometimes the government defines the codes for each test that can be added here.

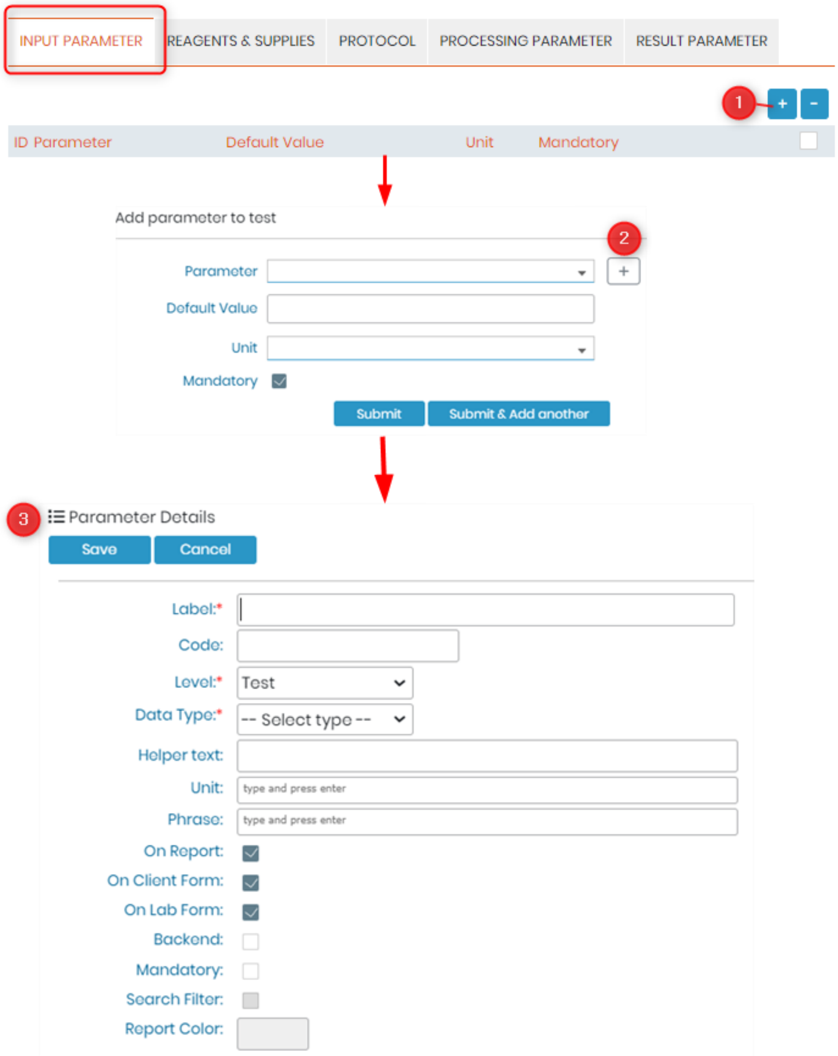
4. **Billing code**: Code for the billing corresponded to each test.
5. **Category**: The test/assay may be assigned to a category – useful if panels are regularly performed together. This will appear as an option in both the LSM and LSMremote. For more details, go to 🕮 Section 3.4.3
6. **Sample Type:** Here you can add the sample types, that are associated with the respective tests. this helps to select from tests (if you have many) when adding a job.
7. **Range:** Here you can add range that you would require in the test. See point 18/19 below. For more details, go to 🕮 Section 3.4.7
8. **Description**: Here you can write a brief description of test, for example, what is the test for, what it detects, etc.
9. **Result Type:** Choose from Results, Sample, File and Link. Three types of results are available:
    - **Results**: Insert selected result fields defined in the dictionary (see below). The results from parameters selected as assay level will appear as results in the test result report. For more details, go to 🕮 Section 3.4.8
    - **Sample**: The result when doing the job is the creation of a new sample for another analysis. This can interactively create samples for the same assay from which the sample was created.
    - **File**: Import a result file made as a result of doing the job multiple files may be combined in a zipped file. The file will be available for download via the LSM and the LSMremote when the job is completed.
    - **Link**: Import a result by introducing a Link.
10. **Default operator**: Preferred person to conduct the assay. Can be a single person or a team. This operator or team will see their jobs in the job board, dashboard and calendar if another selection is not made. For more details, about team, go to 🕮 Section 3.1.2
11. **Default Hours**: Default time expected to conduct the test/assay. Connects to dashboards or reporting.
12. **Results template**: Template for reporting as result. Select the name from a drop-down. For more details, go to 🕮 Section 3.4.8
13. **Processing template**: Template for reporting the processing parameters. Select the name from a drop-down. For more details, go to 🕮 Section 3.4.8
14. **Workflow template**: The workflow template that you desired to start with when you send samples to the workflow add-on. For more details, go to 🕮 Section 5.2.2.13
15. **Specialty**: Select the specialty for each test. Like this is possible to group the test among the different specialties. For more details, go to 🕮 Section 7.3.4.2
16. **Accreditation:** In some labs the tests are accredited by regulatory bodies. If your test i

accredited, then you can check the box here and for which you will be able to add accreditation logo of the accrediting body, on your test reports. Please read the knowledge base KB: [accreditation of tests.]()

17. **Stages**: With the option stages you can have a mini workflow with a stage select. Like this you can track samples in specific moments of the work.You can activate this option for the desired tests by selecting this option. For more details on how to configure stages go to Section 7.3.10
18. **Periodicity**: If you do regular tests for clients/requester you can define a periodicity. Like this a ntification will be send to the requester/client reminder that the due date, considering the periodicity that you chose. You can define a template for the message, to know more about this go to Section 7.3.13. If you select the option periodicity you have the possibility to define a *Dynamic option*. If this option is checked, a select list appears with the list a parameter (job level). The selected parameter will be the one used to apply the periodicity

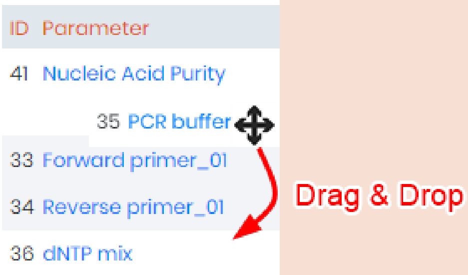
Below the assay information, five tabs are displayed to set up the test/assay. The tabs include protocols, reagents, input parameters, processing parameters and result parameters:

19. **Input parameters:** For Input, Processing and Result parameters it's possible to create a new parameter directly in the test by clicking on the (1) plus symbol and then again selecting the (2) plus symbol again and (3) adding the parameter. (See image below). After that your newly made parameter will appear in the drop down.



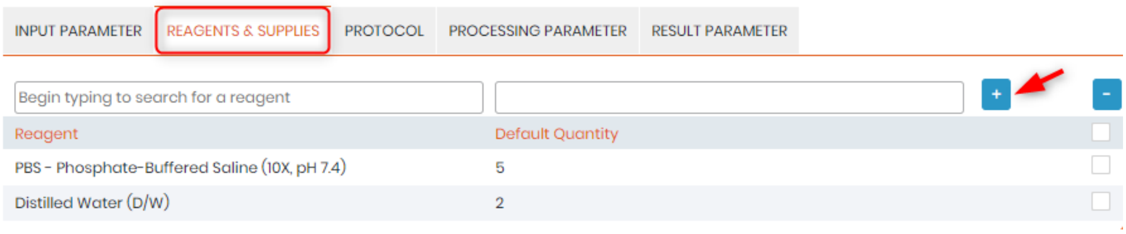
Note

If you want to reorder parameters just drag and drop them into the required position.

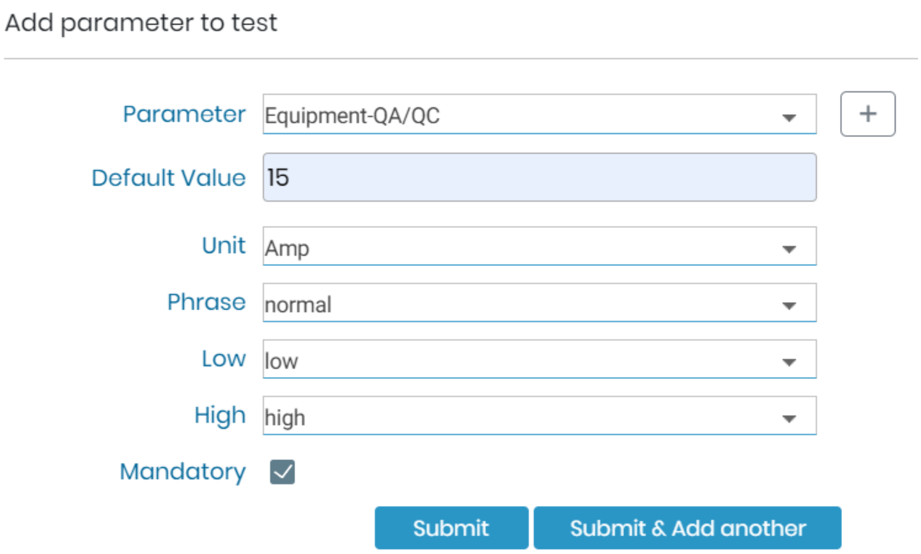


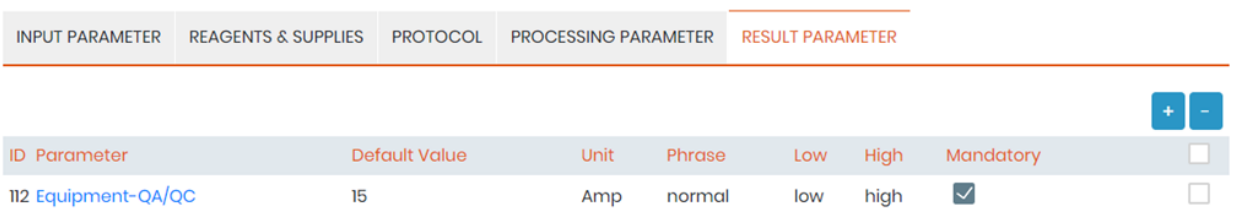
20. **Reagents & supplies:** This tab allows the lab to associate reagents (and their quantity) that will be used to perform the test/assay. The operator will be able to adjust the default amount to reflect actual usage when doing a job. Reagents and Supplies are connected to the LabCollector module Reagents & Supplies to provide details on available lots including

information about amounts and dates of validity.

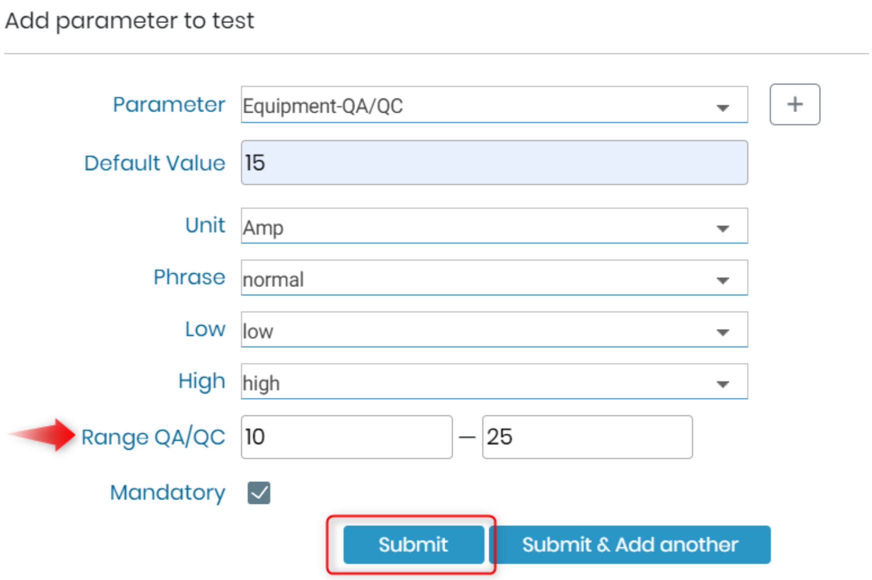


21. **Protocols:** Several protocols can be added for the sametest if required. You can create and add protocols here just by typing the names. Please see the (refer to section)
22. 23. **Processing and Results parameters:** Processing parameters are ideally for all of those intermediate results whereas Result parameters are the final results that you wish to display in the report for the client. If **Results** was selected as **Result Type**, you must choose the ones that are relevant for this assay from the list of parameters. There are additional aspects of the results parameter to define including: the default value, unit, the range, default phrase, default phrase if the result is lower than the range, default phrase if the result is higher than the range and whether or not to make the parameter mandatory. You can click on the small + blue button to add the parameter and then select the details about the parameters.





When you add ranges to the test (See point 7 above) Then you will see the range as well while adding the parameter. Here you will have to add the highest and the lowest values for your range.

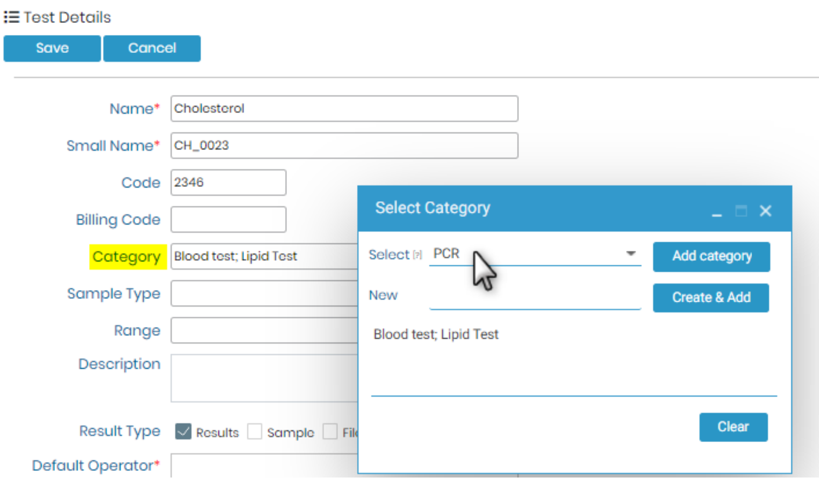


24. **Additional Data**: option to include case record additional data. Identically to the previous points you should select the desired parameters for the additional data. There are additional aspects of the additional data parameter to define including: the default value, unit, the range, default phrase, default phrase if the result is lower than the range, default phrase if the result is higher than the range and whether or not to make the parameter mandatory.

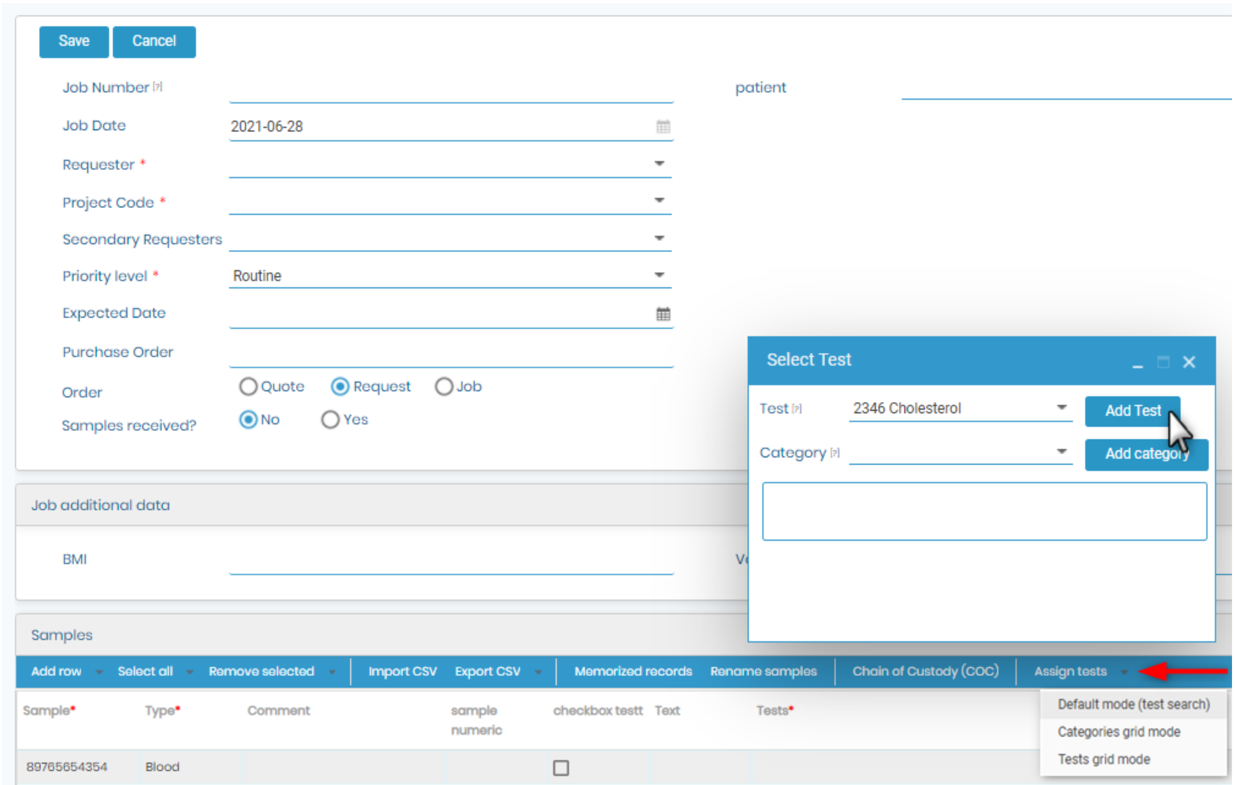
7.3.4.1 Adding Categories/Panels

Tests may be assigned to a category or categories/Panel. This menu allows the assignment of assays to a category (also known as Panels). When submitting a job either individual tests may be selected or categories of tests may be selected.

You can now add or upload the categories easily into the LSM by going to **Admin → Preferences → Categories.** Please refer to section 3.4.5

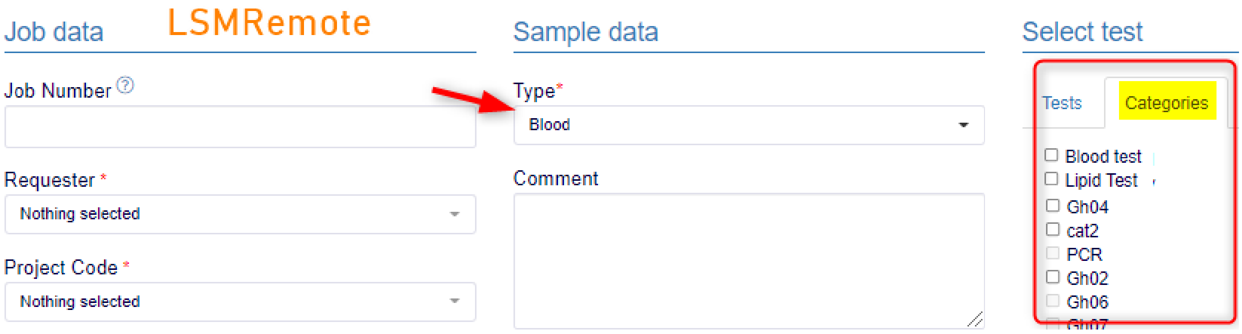


The selection appears by sample when submitting a job from the LSM.

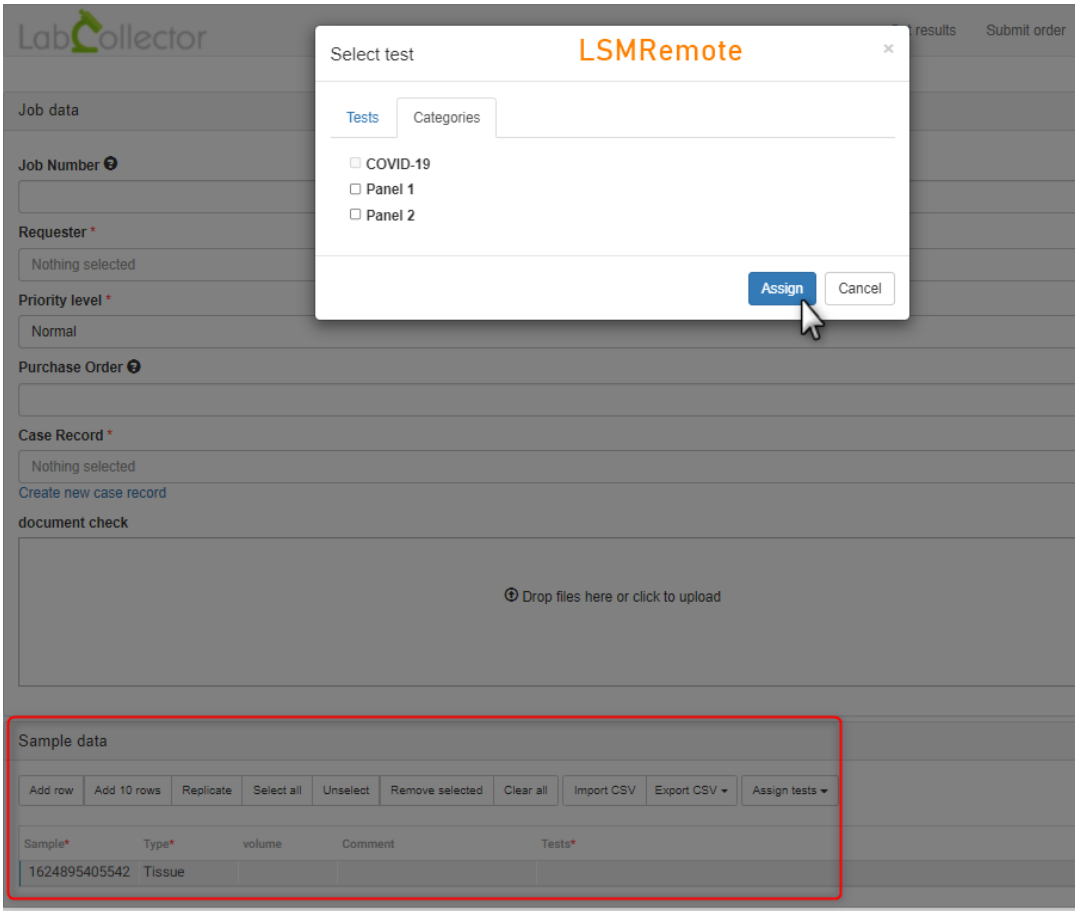


When submitting from LSMRemote there are two choices.

1. One is a tick-box on the right hand side.



2. The other is a spreadsheet style with an option to upload a csv file.



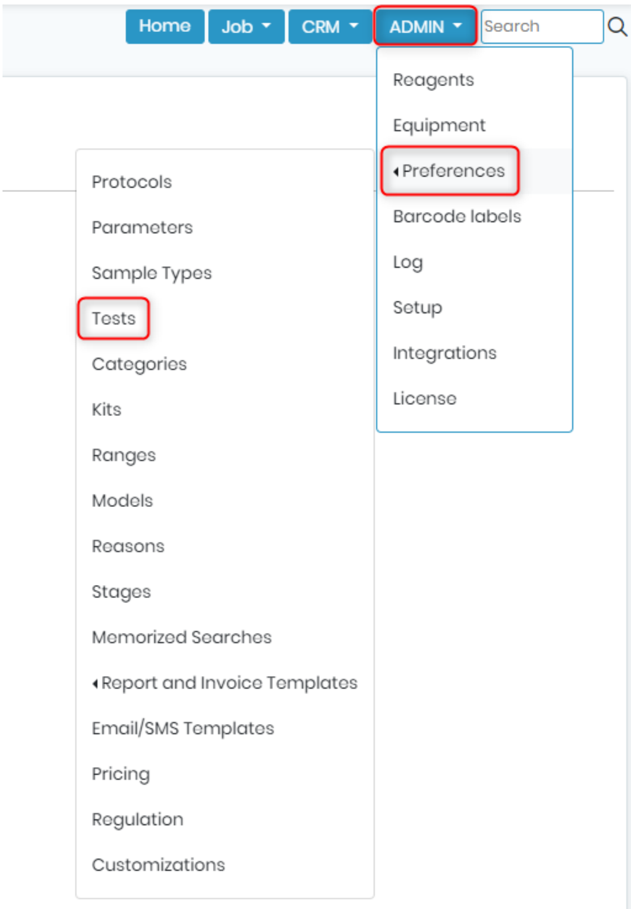
7.3.4.2 Group Test Results by Specialty

Specialties in LSM refer to predefined categories or groupings assigned to different tests. Each test can be associated with a specific specialty, allowing for better organization and reporting of test results. Specialties help in grouping related tests together, especially when generating reports or analyzing data.

Setting Up Specialties:
To set up specialties in LSM, follow these steps:

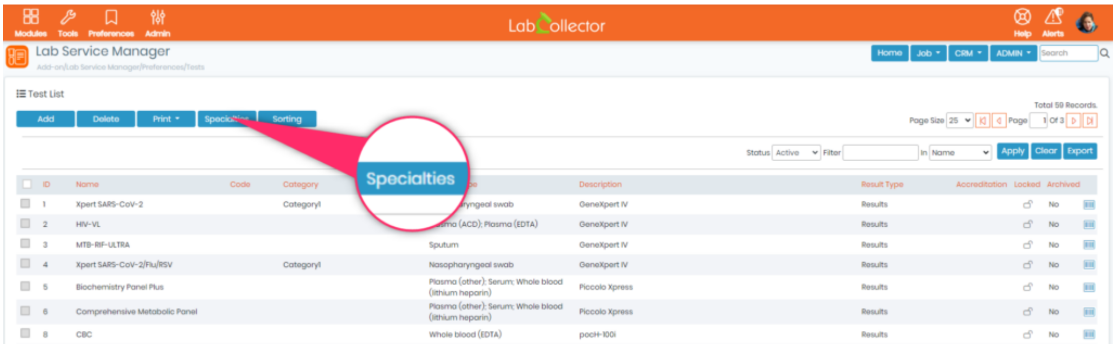
1. Accessing Preferences:

- Log in to LSM with administrator credentials.
- Navigate to the Admin section and select Preferences.
- In the Preferences menu, locate and click on the "Tests" option.



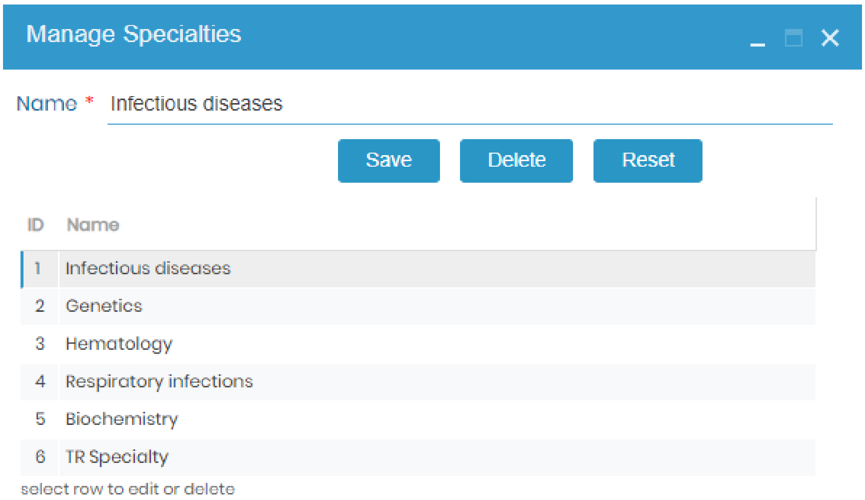
2. Managing Specialties:

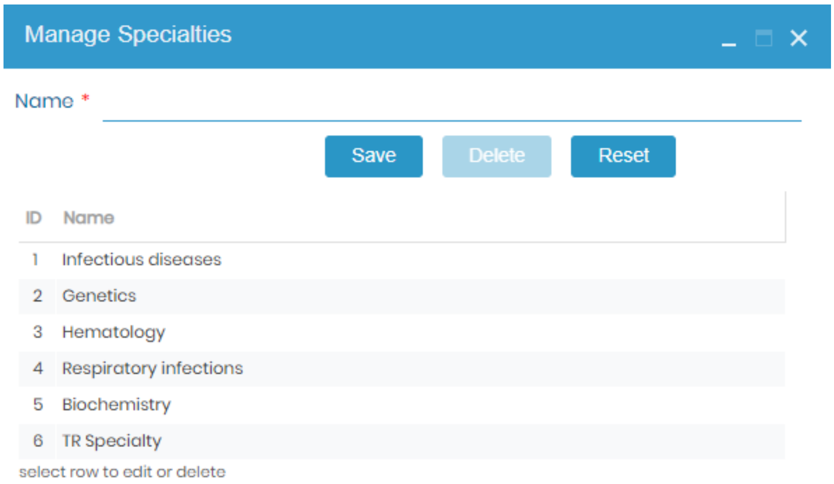
- Once you get to your test list, locate and click on the "Specialties" option.
- This will open a window where you can add, edit or delete specialties.



3. Adding Specialties:

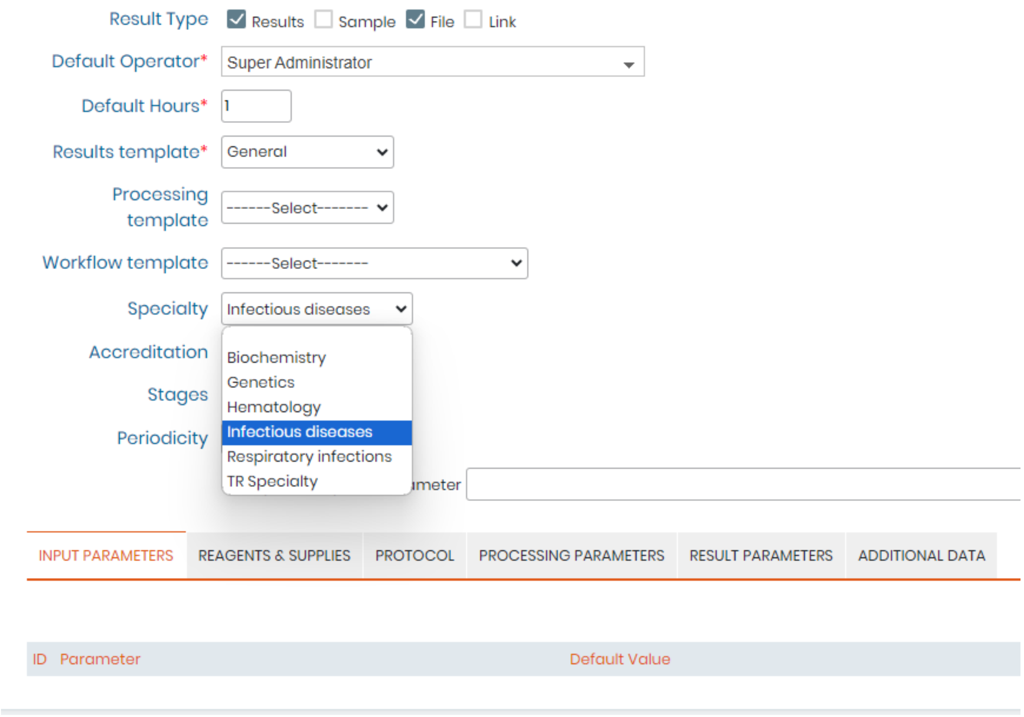
- To add a new specialty, enter its name in the designated field.
- Save the changes to create the new specialty.





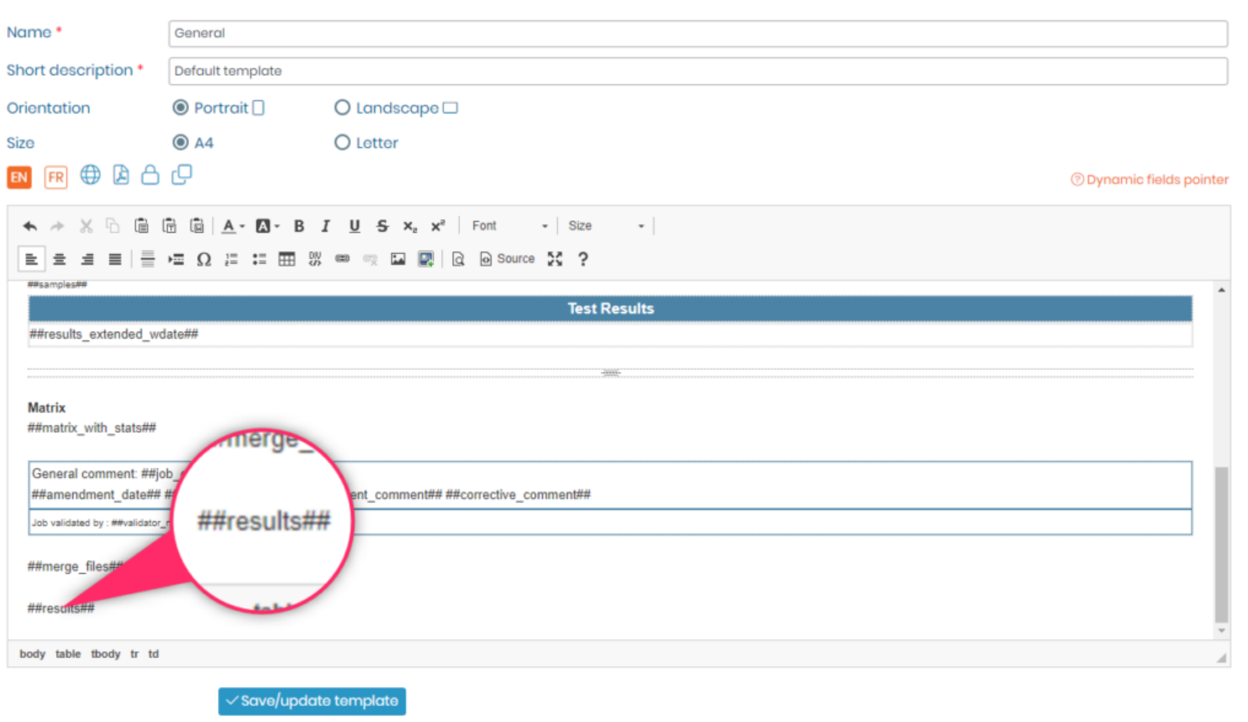
4. Assigning Specialties to Tests:

- After creating specialties, associate each test with the appropriate specialty.
- Navigate to the test configuration section where you can edit test details.
- Within the test configuration, find the option to select the specialty and choose the appropriate one from the dropdown menu.
- Save the changes to link the test with the selected specialty.



Utilizing Specialties:
Once specialties are set up and assigned to tests, they can be utilized in various aspects of LSM, including report generation and job organization:

- Navigate to Admin -> Preferences -> Report and invoice template.
- When generating reports, use the tag ##results## to organize test results based on specialties.
- This tag ensures that test results are presented according to their respective specialties in PDF reports.
- If a test is not associated with any specialty, its name will not be displayed in the report under any specialty section.

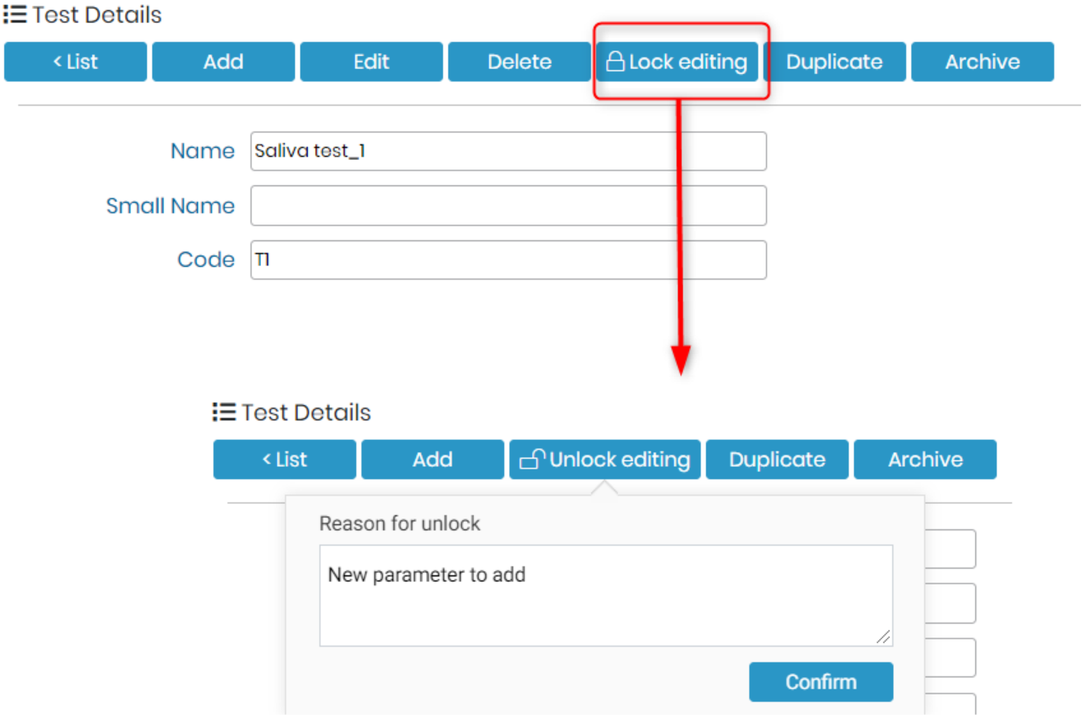


Complete blood count			
#3 - 1710770338530			
	HEMATOLOGY		
White blood cell count*	6	4.5 — 13.5	
Segmented neutrophils, Absolute	**10** 1000cells/uL	1.8 — 8.0 1000cells/uL	H
Lymphocytes, Absolute*	5 1000cells/uL	1.5 — 6.5 1000cells/uL	
Monocytes, Absolute*	0.5 1000cells/uL	0.2 — 1.2 1000cells/uL	
Eosinophils, Absolute*	**1.5** 1000cells/uL	0.1 — 1.0 1000cells/uL	H
Basophils, Absolute*	0.1 1000cells/uL	≤ 0.2 1000cells/uL	
% Segmented neutrophils	45 %	40 — 59 %	
% Lymphocytes*	**25** %	33 — 48 %	L
% Monocytes*	6 %	4.4 — 8.8 %	
% Eosinophils*	5 %	4 — 7 %	
% Basophils*	1 %	0 — 2 %	
Red cell count*	**3.2** million cells/uL	4.5 — 5.3 million cells/uL	L
Hemoglobin*	15 g/dL	13 — 15.5 g/dL	
Red cell distribution width	12 %	11 — 13.8 %	
% Hematocrit*	40 %	37 — 49 %	
Mean cell volume*	80 fL	78 — 98 fL	
Mean cell hemoglobin*	30 pg	25 — 33 pg	
MCHC*	33 g/dL	31 — 37 g/dL	
Platelet count*	250 1000cells/uL	150 — 410 1000cells/uL	
Mean platelet volume*	250 fL		

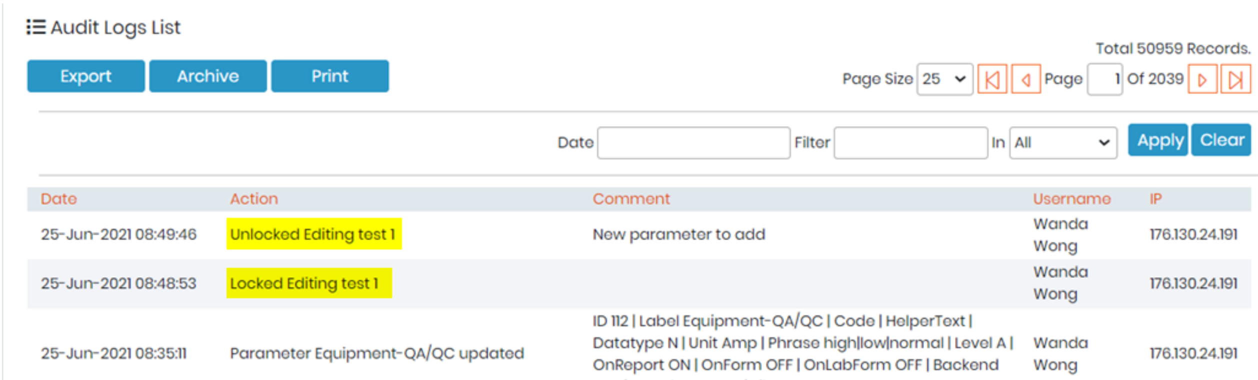
Free Tri-Iodothyronine (FT3)		
#3 - 1710770338530		
	ENDOCRINOLOGY	
Method		
Free Tri-Iodothyronine (FT3)*	3	2.5 — 3.9

7.3.4.3 Locking Tests

Once the configuration of a test is complete the test can be locked to prevent further editing. To unlock editing you must provide a reason.



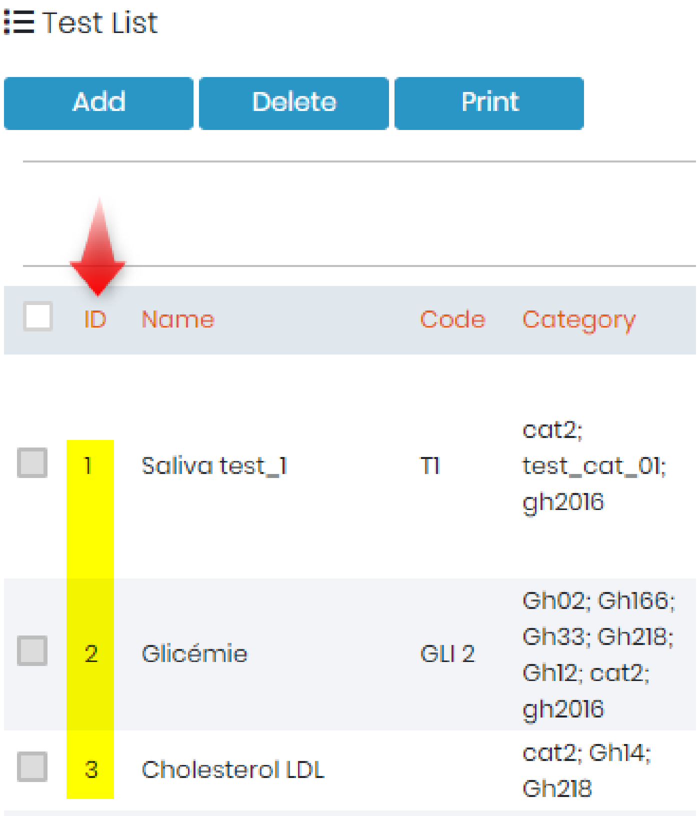
These reasons can be tracked in audit log of LSM for compliance purposes.



7.3.4.4 Linking Test to Workflow add-on

In Workflow Manager add-on version 4.38+ a link to the LSM can be designed in order to send samples to a test lab for example.

The workflow template needs to have a link node containing a link URL such as: https:/[YOUR_URL]/extra_modules/lsmremote/addfromlc.php?testIDs=X, where X corresponds to the test ID in the LSM



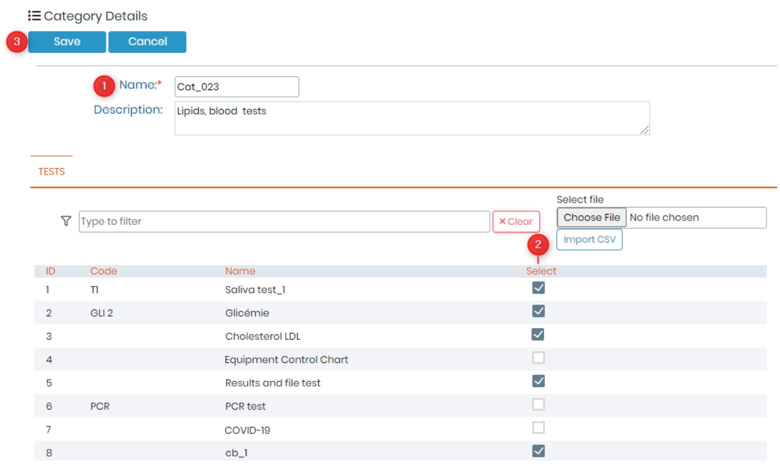
7.3.5 Categories

NEW! Now you can add the test categories/Panels, with the help of this new option. You can also import the CSV of the test panels. Go to **Admin → Preferences → Categories.**

There are 2 ways you can add categories in the LSM:

A) Add test in categories by ticking checkbox

1. Click on "Add" button and write the name of your category and the description about it.
2. Tick the check boxes in front of test that you would like to import in this category. You can also filter by test names? ID or codes and tick the checkbox in front of the tests to add them in category.
3. Once done, click on save to create category with selected test in them.

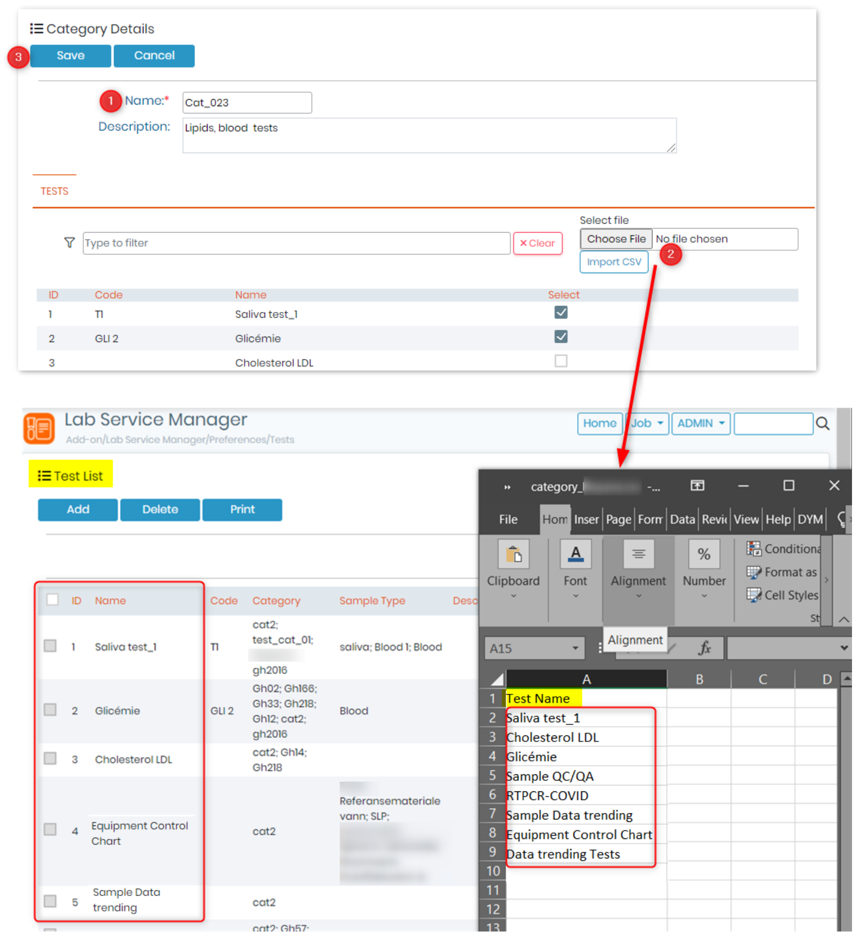


B) Import test in categories

1. Click on "Add" button and write the name of your category and the description about it.
2. Import the CSV file with all the test names that you would like to add in the category.

   ***These tests names SHOULD be present in the LSM, Admin → Preferences → Tests.**

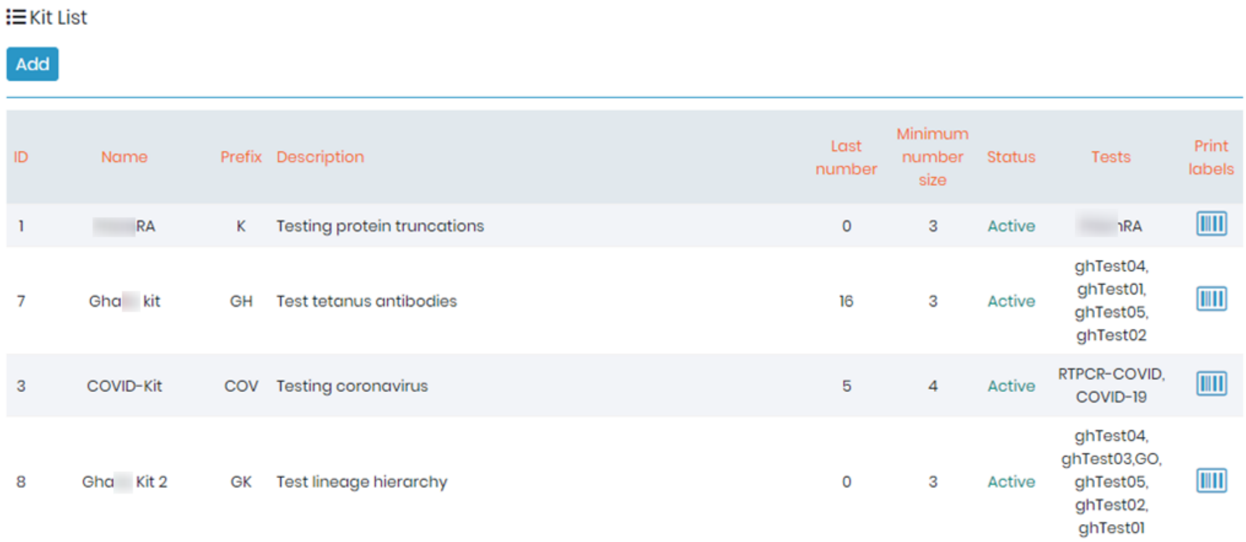
   **The the first Row header, will not be taken into account while importing the CSV.*
3. Once done, click on save to create category with selected test in them.



7.3.6 Kits

NEW! You can now create kits inside LSM and use them in connection with LSMRemote. this option is helpful for labs that receive sample via kits.

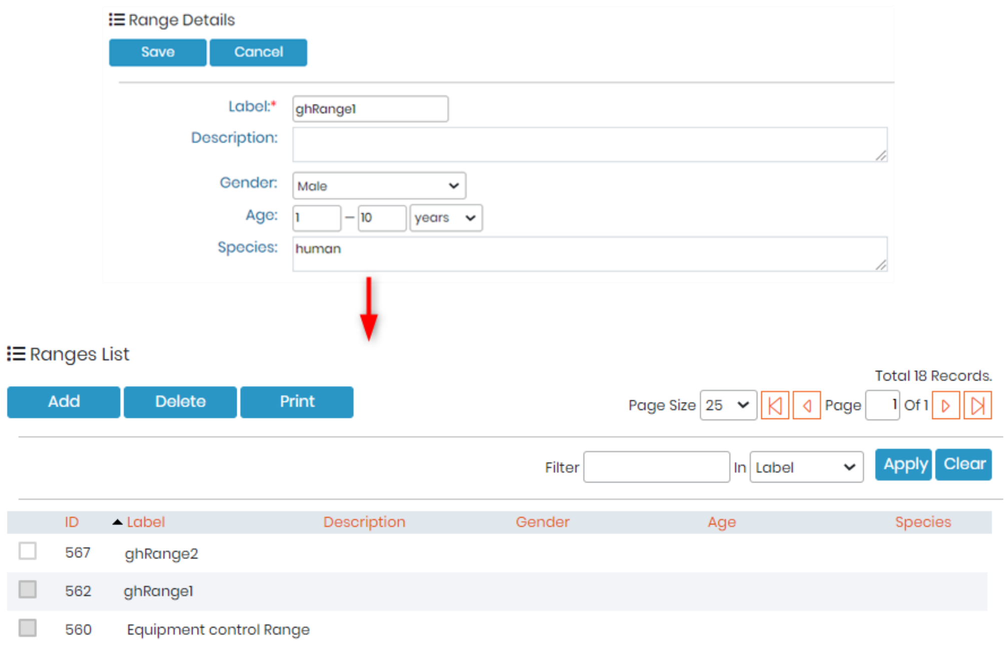
Please read the knowledge-base KB: how to create & use kits in LSM



7.3.7 Create ranges for test

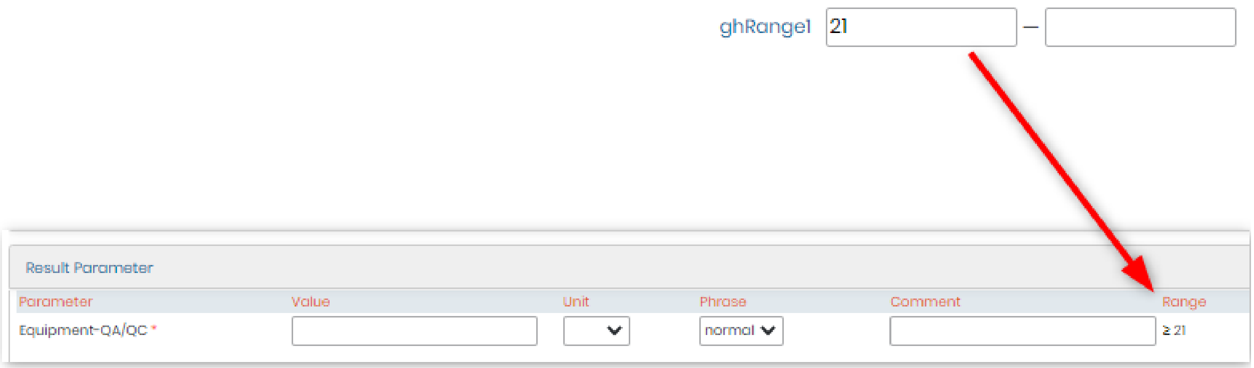
Please read the knowledge-base KB: how to create ranges for LSM.

Ranges for parameters are defined by **Admin → Preferences → Ranges**. You can add different ranges with their description and if required, the age, gender or species.



1. You need to EDIT the test and click to add the range.
2. You can either create and add or add existing ranges.
3. You can add the range values, by clicking on parameter name or adding the parameter. these

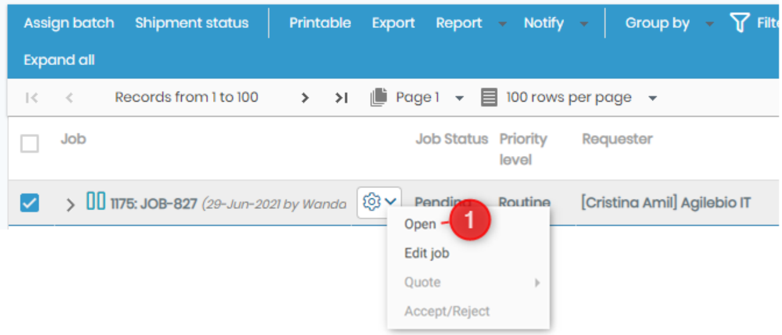
can be either processing or result parameter. While adding a parameter to the Processing or Result parameter tabs you can add a range with both the lower and upper bound filled in or just one of the two. Filling in just the lower bound will result in the ≥ symbol showing before the value (see image) and filling in just the upper bound results in the ≤ symbol showing before the value.

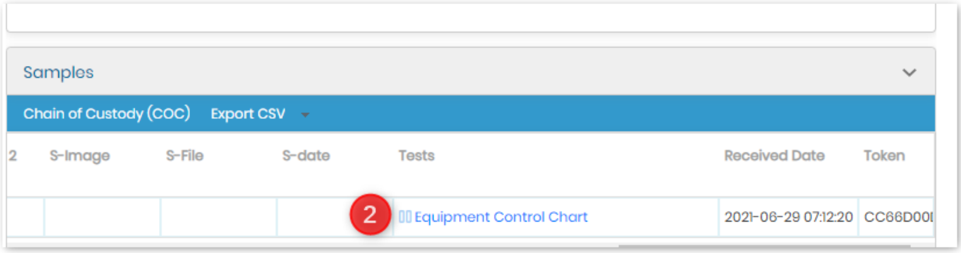


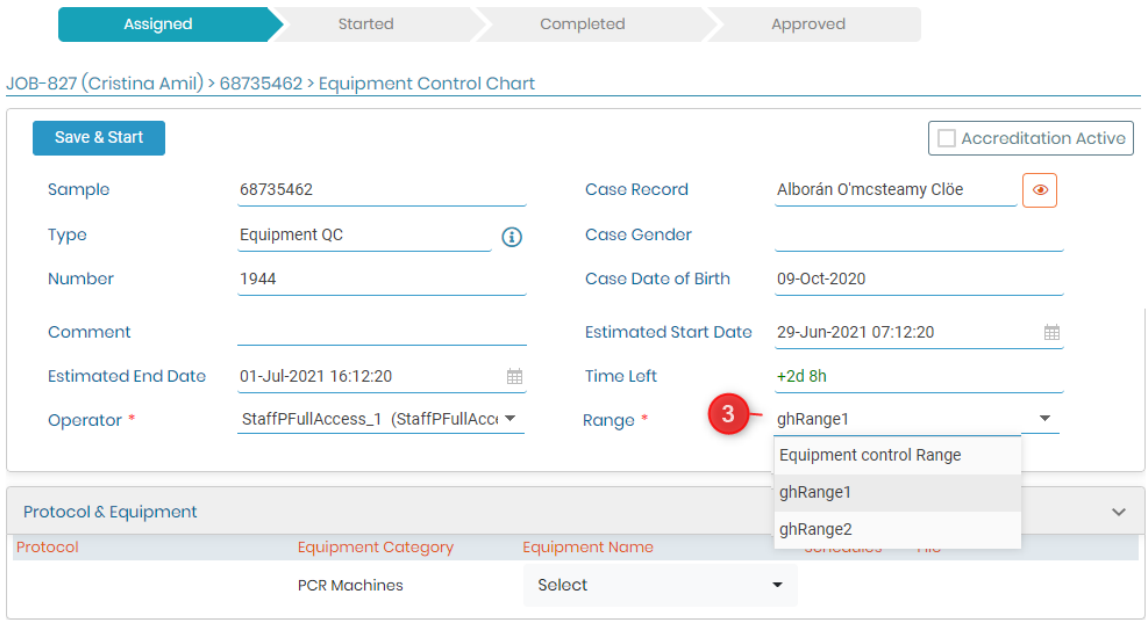
Note

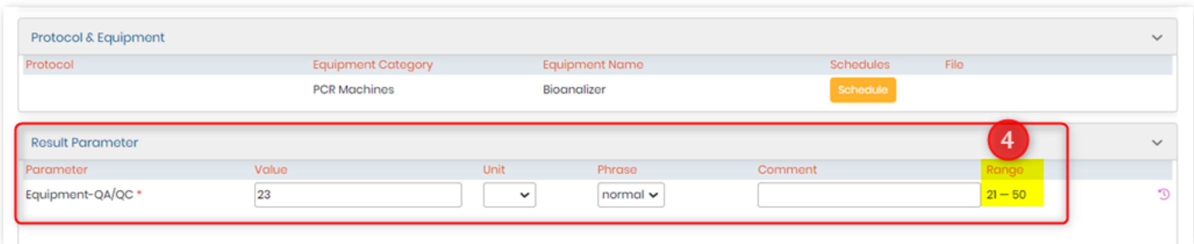
The range values will only show in a test which is inside a job. You can add ONLY one range per test.

An individual test (and all of the associated samples) will only have a single range applied.
The range is selected when submitting the job.







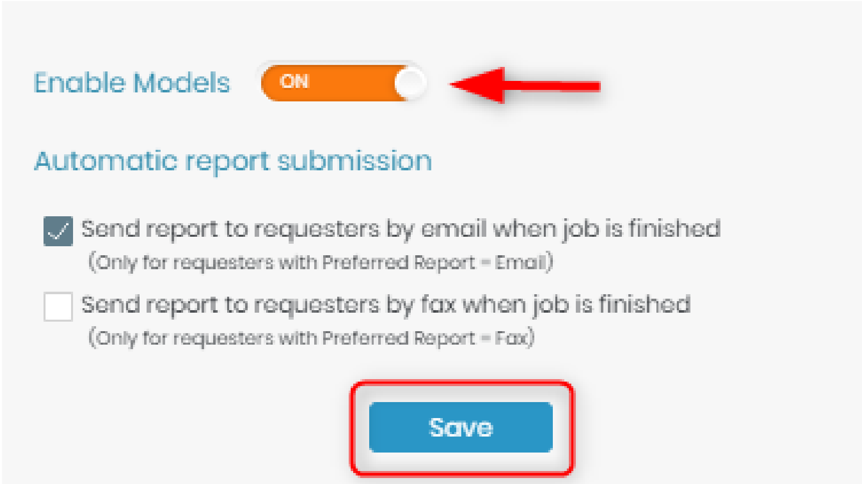


7.3.8 Models

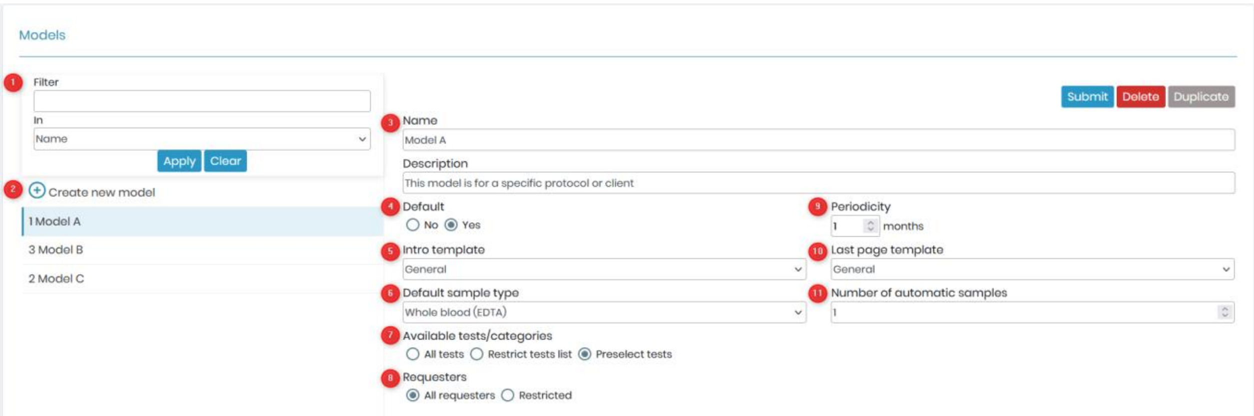
Models allow you to create templates specific to the requirements of your requester. Refer to section 3.1.1)

The job templates can be use to submit jobs from either from LSM add-on or LSMRemote.

If your requester/customers/partners, ask for different requirements to submit a job, like specific set of job or sample level parameters, then you can create specific templates for each requester. To activate this option you need to go to **Admin → Setup → Job Requests → Enable Models.**



Once activated, you can create models by going to **Admin → Preferences → Models.**



1. It is possible to search for the different models. For that you can type the key words and select the field in where these words can be find (Name, Description, Requester, Test).
2. You need to click on "Create new model" to create a new template.
3. You can add name and description of your model.
4. The model can either be set as default or not. Meaning that if it is by default it is the first model appearing when a job is added.
5. You can chose the template type for the intro.
6. It can be selected the default sample type that will be show when this model is in use.
7. In this option you can chose the visibility of your test list for each model. The first option *All tests* there are no restrictions in the tests list. The second option *Restrict test list*, means that not all tests will be available for selection in the test list. In the third option *Preselect tests* the

desired tests will be automatically selected.

8. In this option you can chose the visibility of your requesters in the model. It can be open to *All requester* or *Restricted* to specific requesters.
9. It is possible to set a periodicity for the model.
10. You can chose the template type for the last page.
11. The number of samples for each job can be automatically defined.

The job and sample level parameters that you created in **Admin → Preferences → Parameters** will be visible here. You can select which parameters are required for each model and add them here by clicking on the visible button.

Job Parameters

ID	Label	Visible
189	Matrice	

Sample Parameters

ID	Label	Visible
156	Collection Date and Time	

The tests that you created in **Admin → Preferences → Tests** will be visible here. You can select which tests are required for each model and add them here by clicking on the visible button.

Tests

ID	Name	Visible
59	AN	

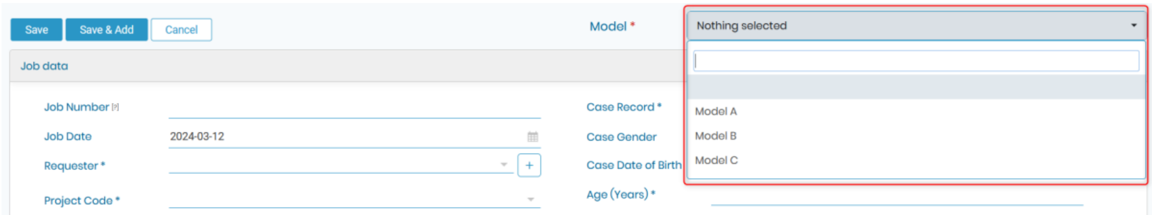
The categories that you created in **Admin → Preferences → Categories** will be visible here. You can select which categories are required for each model and add them here by clicking on the visible button.

Categories

ID	Name	Visible
2	Category TR	

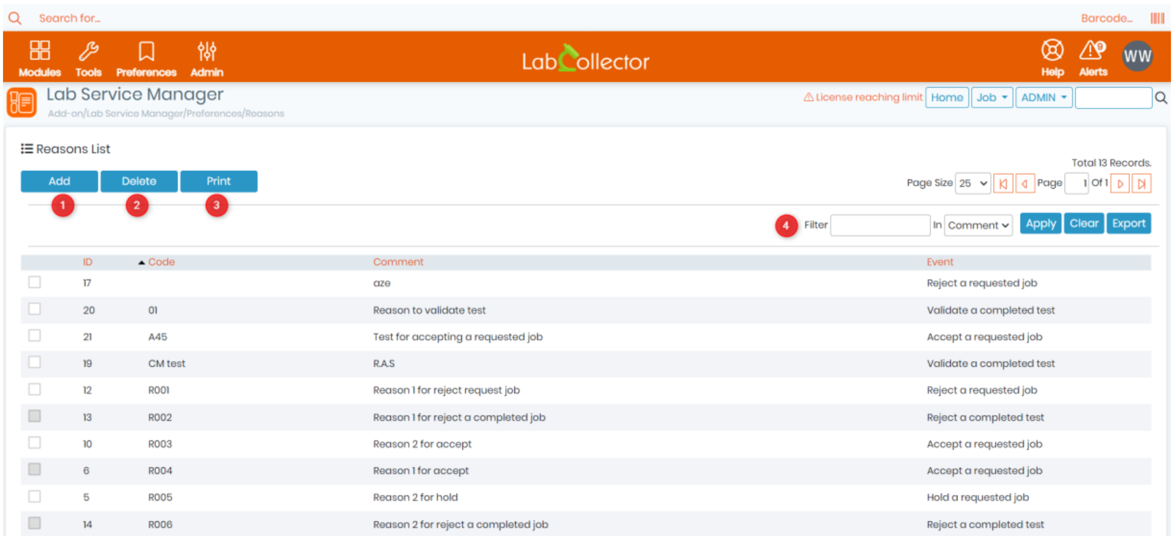
Once you have set visibility for all the parameters, tests and categories you can click on submit to create the template.

Now when you add job in LSM you will be asked to select the template with which you want to create the job. The template you select will have parameters that you activated during the template creation.



7.3.9 Reasons

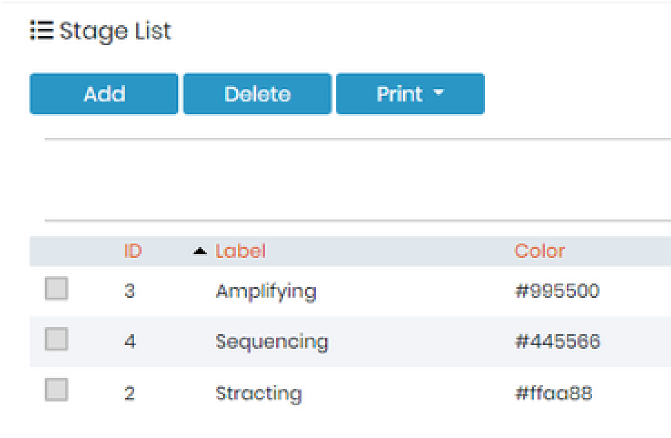
The **Reasons** tab within LSM is an important feature that allows users to easily manage and track reasons for certain events. This tab can be accessed by navigating to **Admin -> Preferences -> Reasons**. Here, users can add, delete, print, and export their reasons for specific events.



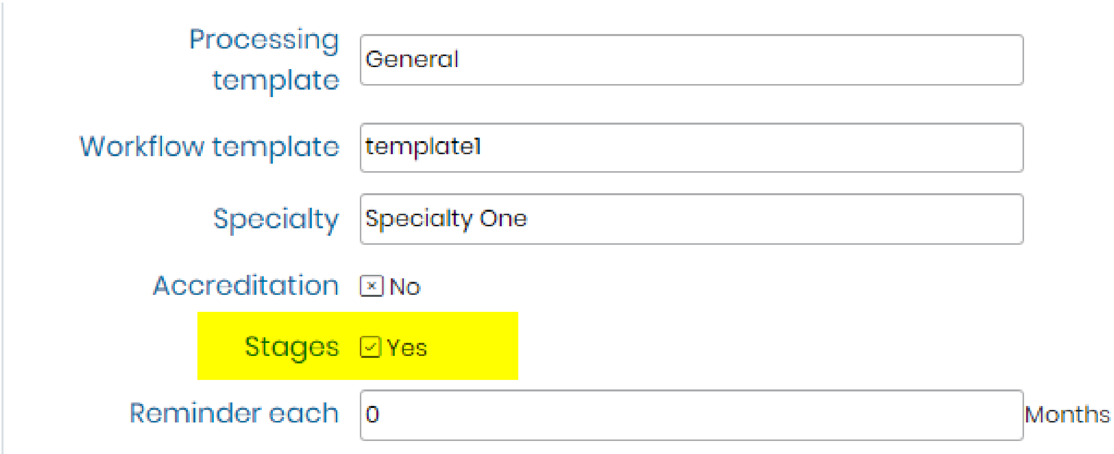
7.3.10 Stages

When samples/tests are ongoing a processing tab you might need to track specific moments of the work. With the option Stages you can have a mini workflow, with a stage select. These stages can be configurable per test. Here are the instruction on how to do it:

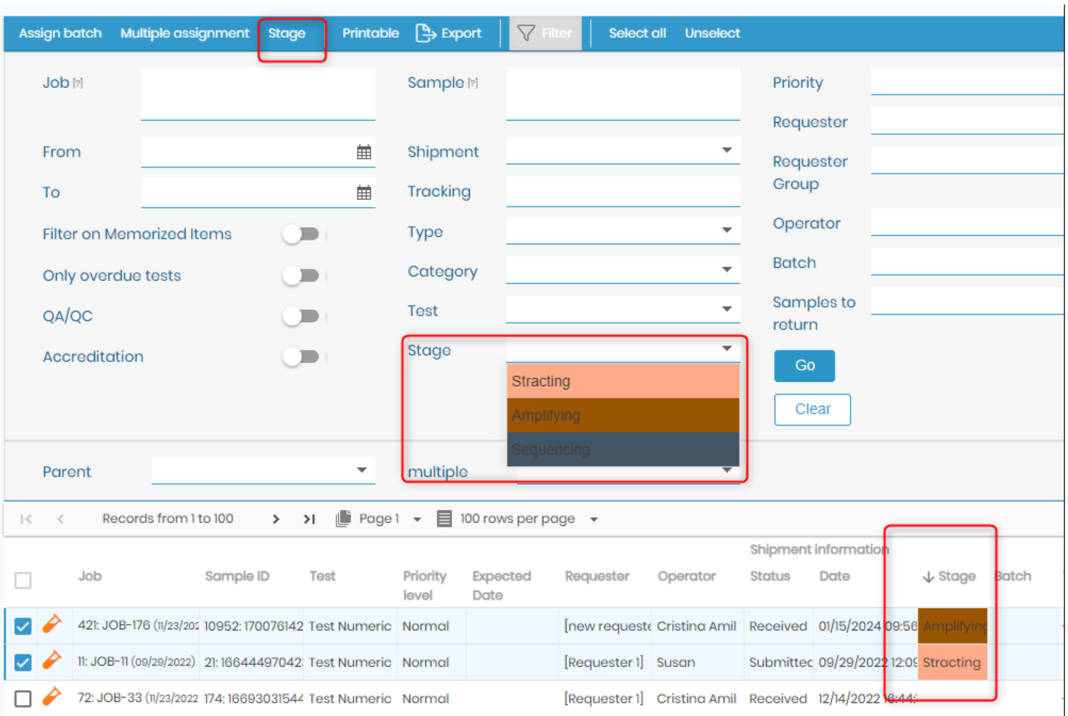
1. Add list of stages in Preferences > Stages



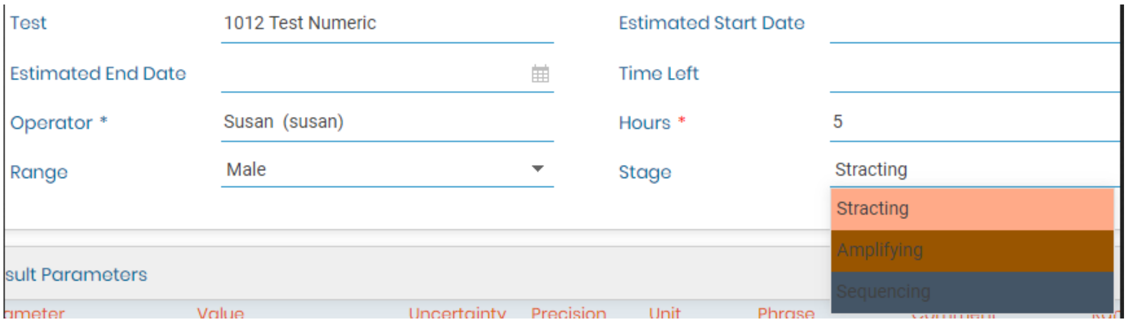
2. Mark Stages as YES in Preferences > Tests > Select the desired test



3. You can search for jobs by stage using: the toolbar button Stage; the option Stage in the Filter or the column Stage in the samples list.

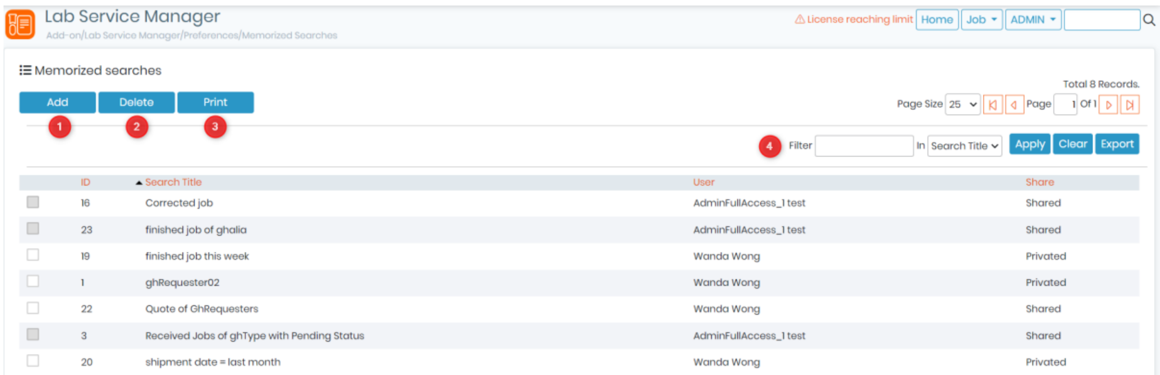


4. Is possible to update the stage by opening a single sample and edit the stage.



7.3.11 Memorized Searches

The **Memorized Searches** tab within LSM accessible by navigating to **Admin -> Preferences -> Memorized Searches**, allows users to save and reuse their custom searches for faster filtering of the job list.



1. To add a new memorized search, you will need to go to your **Job List -> Filter -> Memorize Current Search**.

The list of memorized searches can be sorted by columns such as ID, Search Title, User and Share option. You can also search (**4**) for specific memorized searches using the filter located on the top right corner, selecting the column you want to search in.

To delete (**2**) or print (**3**) a memorized search, simply click on the corresponding button.

For example, if you frequently search for jobs with a specific sample type and test method, you can create a memorized search with those criteria, save it, and reuse it whenever needed. This saves time and increases efficiency by eliminating the need to manually enter the same search criteria every time.

7.3.12 Report & invoice templates

In this section, you can create templates for result reports, a chain of custody list, a batch list and invoices to personalize documents that you will deliver to your customers and your staff.

Each template is assigned a name and a short description.

The editor offers numerous options to customize templates. There are paste special buttons in the editor for images and for common programs such as MS-Word. HTML can be used to create templates. In many cases copying and pasting from existing forms, such as your existing documents or websites can be used to speed up the design or editing of templates.

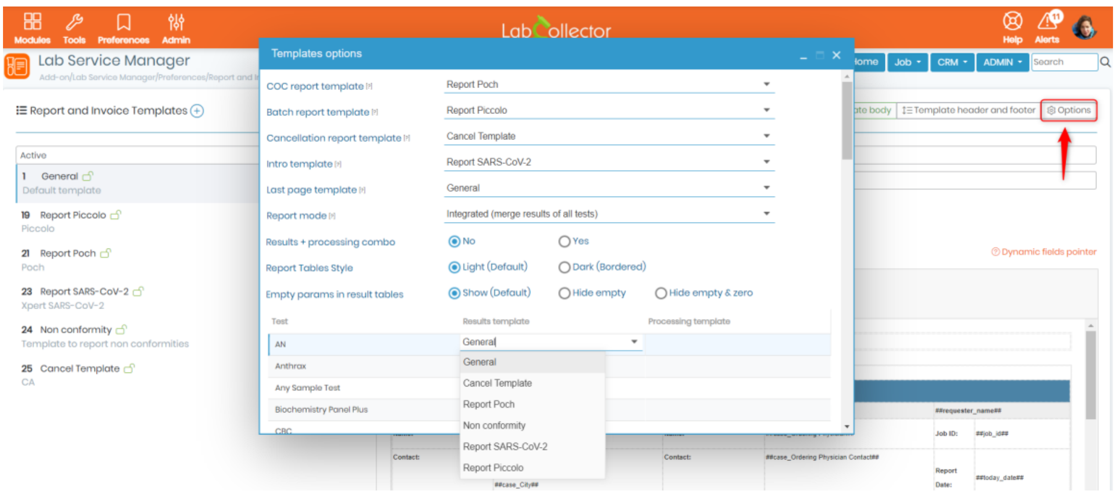
This system is designed to enhance quality and save time. Manual entry is minimized. Default tags are detailed below depending on the template. Individual tags corresponding to the parameters you created in section 3.4.2 can also be used, just copy ##NAME_OF_PARAMETER## in the template.

Result and processing report templates can be chosen when you create a test (section 3-4-5) and can also be defined in the Templates options. Through **Admin → Preferences → Report & invoice templates**, on the top right, you have a button **Options**. Here you can define template for results, COC reports, cancellation reports and Batch reports.

You can also select the job report mode:

- by default, results are separated by test;
- or integrated,
- results of all tests in a job are merged.

Selections are saved automatically.



⚠ Note

Just click in the cell where you want to select a new template. The update is automatic.

7.3.11.1 Results & processing report templates

A template is related to an assay/test. For multiple tests/assays in a project, different templates can be applied.

To create templates that will include job specific details, you need to use specific HTML tags that will be replaced by the corresponding values in the final result document.

Please read the knowledge-base KB: how to create a result report.

Please read the knowledge-base KB: how to create a Processing report.

Specific HTML tags for results and processing reports:

Results template / Processing template

##results## - results narrow table
##results_extended## - results wide table
##results_extended_wdate## - results wide table with completed date
##results_merged## - results wide table, without break by sample
##process_extended## - processing parameters table
##details## - results detailed table
##matrix## - results matrix
##matrix_with_sum## - results matrix with sum on footer
##matrix_catalog## - tests matrix
##samples## - samples list
##requester_name## - requester name
##requester2_name## - secondary requester name
##requester_address## - requester address
##requester_email## - requester email
##requester_company## - requester company
##requester_users## - requester users
##job_number## - job number
##job_date## - job date
##job_end_date## - job end date
##job_id## - job identifier
##job_param## - job custom parameters
##job_submitter## - the job submitter's name
##sample_number## - sample number
##sample_name## - sample name
##sample_type## - sample type
##sample_comment## - sample comment
##sample_id## - sample id
##test_name## - test name
##test_code## - test code
##test_description## - test description
##operator_name## - operator name
##validator_name## - validator name
##protocols## - protocols list
##protocol_name## - protocol name
##protocol_description## - protocol description
##report_number## - report unique identifier
##today_date## - report generation date
##labname## - lab name
##reagents## - reagents list
##equipments## - equipments list
##equipments_protocols## - equipments and protocols list
##equipments_protocols## - equipments and protocols list
##case_record## - case record name
##case_gender## - case record gender
##case_dob## - case record date of birth
##case_qr_code## - QR code with direct link to report
##received_date## - sample received date
##completed_date## - sample completed date
##samples_line## - samples list in a line
##tests_line## - tests list in a line
##amendment_title## - amendment label with previous report ID
##amendment_comment## - reason to restart
##corrective_title## - corrective title or empty if no correction
##corrective_comment## - corrective comment
##corrective_date## - date of correction
##accreditation_seal## - accreditation configured in the page Regulatory options

7.3.11.2 Invoice templates

A template can be related to an invoice/quote.

To create templates that will include job specific details, you need to use specific HTML tags that will be replaced by the corresponding values in the final invoice document.

Please read the knowledge base KB: [how to create a Invoice.]()

Specific HTML tags for invoices:

Invoice template

##details## - invoice details
##samples## - samples list
##requester_name## - requester name
##requester2_name## - secondary requester name
##requester_address## - requester address
##requester_email## - requester email
##job_number## - job number
##job_date## - job date
##job_id## - job identifier
##job_submitter## - the job submitter's name
##invoice_number## - invoice number
##invoice_date## - invoice date
##tax_number## - requester tax number
##purchase_order## - job purchase order
##protocols## - protocols list
##protocol_name## - protocol name
##protocol_description## - protocol description
##case_record## - case record name
##case_gender## - case record gender
##case_dob## - case record date of birth

7.3.11.3 Chain of custody/shipment templates

A template can be related to a CoC.

To create templates that will include job specific details, you need to use specific HTML tags that will be replaced by the corresponding values in the CoC document.

Please read the knowledge base KB: [how to create a CoC.]()

Specific HTML tags for CoC reports:

CoC report template

##details## - Chain of Custody (CoC) list
##requester_name## - requester name
##requester2_name## - secondary requester name
##requester_address## - requester address
##requester_email## - requester email
##job_number## - job number
##job_date## - job date
##job_id## - job identifier
##job_submitter## - the job submitter's name

7.3.11.4 Cancellation report template

A template can be related to a cancellation report.

To create templates that will include cancellation report specific details, you need to use specific HTML tags that will be replaced by the corresponding values in the cancellation report.

Specific HTML tags for Cancellation reports:

Cancellation report template

##details## - cancelled samples list
##cancellation_reason## - reason for cancellation
##cancellation_date## - date of cancellation
##requester_name## - requester name
##requester2_name## - secondary requester name
##requester_code## - requester code
##requester_address## - requester address
##requester_contact## - requester contact person
##requester_email## - requester email
##requester_phone## - requester phone
##requester_fax## - requester fax
##job_number## - job number
##job_date## - job date
##job_id## - job identifier
##job_submitter## - job submitter's name
##priority_level## - job priority level

7.3.11.5 Batch report templates

A template can be related to a batch report.

To create templates that will include batch specific details, you need to use specific HTML tags that will be replaced by the corresponding values in the Batch report.

Specific HTML tags for Batch reports:

Batch report template

##details## - batch samples list
##batch## - batch

7.3.11.6 Dynamic tags

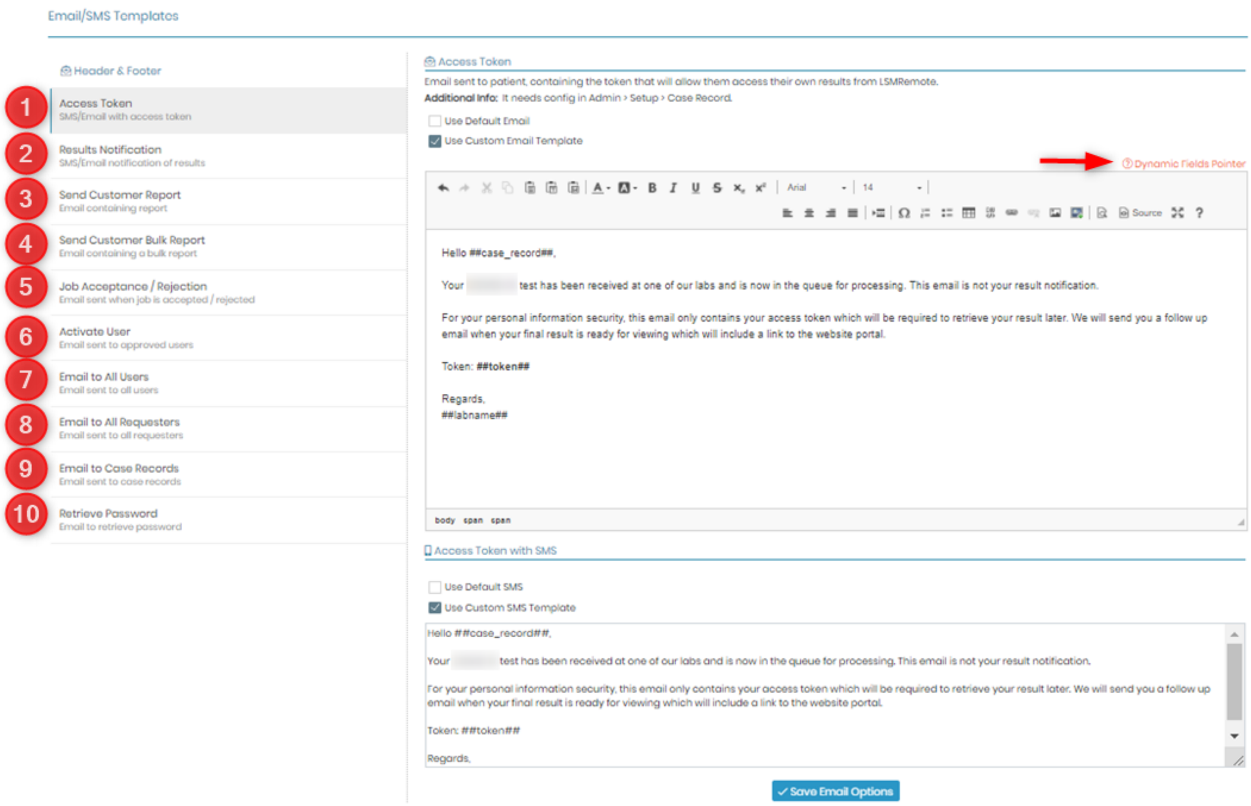
You can add dynamic tags using the custom field parameters you created in section 3.4.2

Dynamic tags

Any parameter can be used as tag adding ## around it. e.g. ##parameter_name##
For display the parameter's comment append _comment. e.g.
##parameter_name_comment##
For case record fields prepend case_. e.g. ##case_field_name##
For attached modules fields prepend the module code_. Ex: ##IS_field_name##

7.3.13 Email/SMS Templates

LSM is now capable of sending notifications via email or sms to either all users or requester or case records (patients). You can use "Dynamic Fields Pointer" that you can use in the email template, to auto-populate the field values.



1. Access Token: You can either use the default template or create your own custom template. This email will go when a job is created via LSMRemote. The email goes to the case record, who has registered their details along with email during registration. Please read the knowledge-base KB: LSMRemote pre-registration.

2. Results Notification: Once the job is finished / validated the case record ill receive notification that the results are released and are available on the following link. Please read the knowledge-base KB: Case record activation and notification settings

3. Send Customer Report: To send email to customer with the report copy or Batch list.

4. Send Customer Bulk Report: To send email sent to requester containing a bulk report (Batch list).

5. Job Acceptance / Rejection: Email sent to requester / job submitter when a job is accepted / rejected.

Additional Info: Require enable this option in **Admin → Setup → Job Requests**

6. Activate User: Email sent to approved users registered through LSMRemote.

Additional Info: Require enable this option in LSMRemote. Please read the knowledge-base KB: LSMRemote registration of User.

7. Email to All Users: Email sent to users through **Admin → Contacts → Users → Mail**

8. Email to All Requesters: Email sent to users through **Admin → Contacts → Requesters → Mail**

9. Email to case records: Email sent to patients through Job > Job List.

Additional Info: It needs configuration in **Admin → Setup→ Case Records**

10. Retrieve password: Email sent to external users that forgot password to access LSMRemote.

Additional Info: Require enable this option in LSMRemote. Please read the knowledge-base KB:Configuration of LSMRemote.

7.3.14 Manage costs

This menu allows general cost parameters definition and attribution to each test/service. Navigate to **Admin → Preferences → Costs.**

⚠ Note

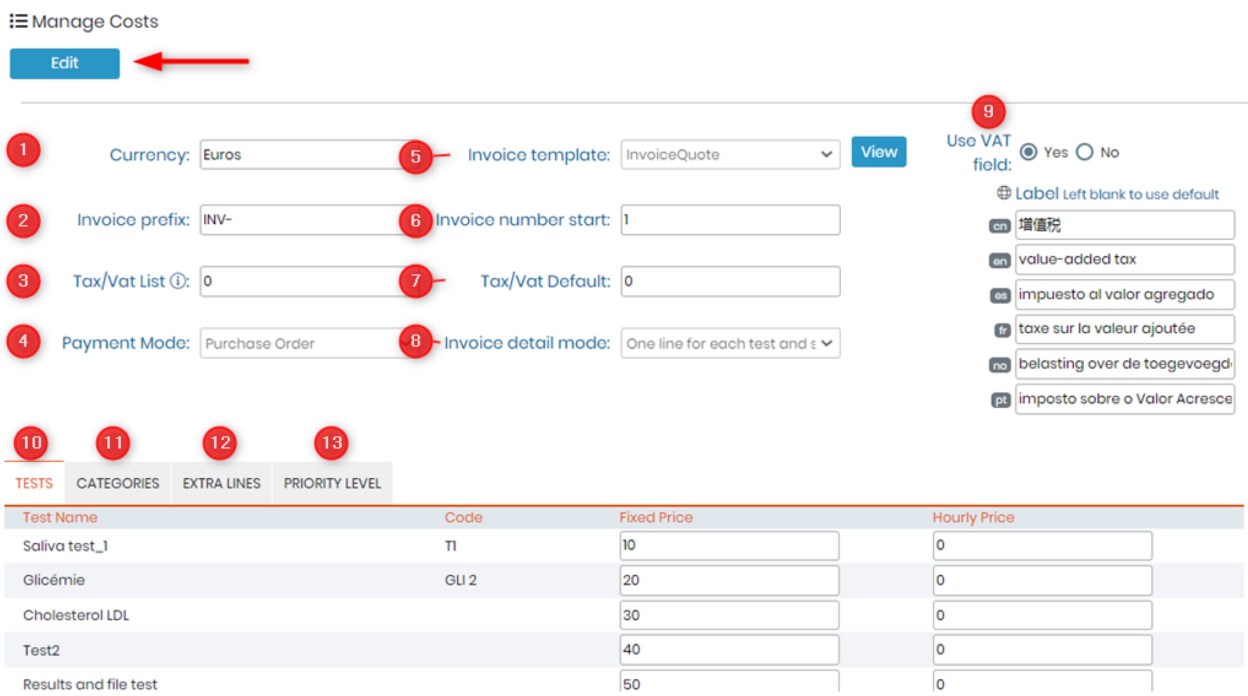
Your LSM license must include the billing option to have access to this feature.

You can edit currency, invoice prefix, tax rate, invoice template, invoice number start,tax default and payment mode.

⚠ Note

Note that these values can be connected via the API for situations where you use an existing form or portal on your website.

You need to click on edit, in order to change the settings for costs.



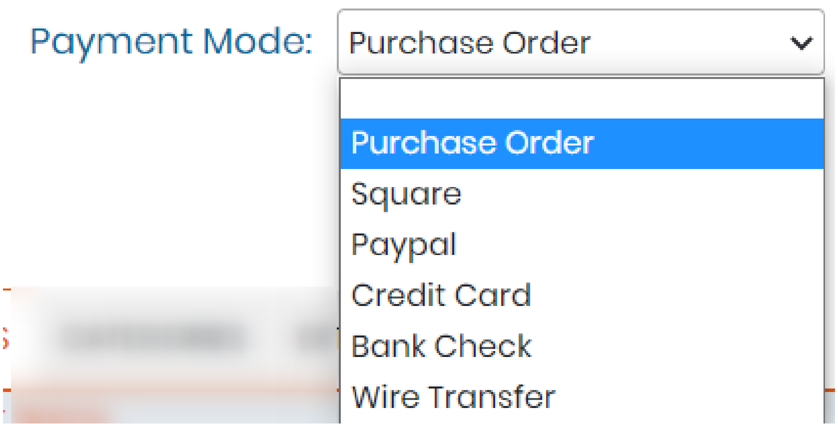
1) Currency: You can add currency of your country. You need to type the currency name. For example: Euros.

2) Invoice prefix: This will be the prefix before your each invoice number. For example: INV-

3) Tax/Vat List: Here you can add different values of tax or vat, separated by |. For example 10|20|15.

**Please do not add the percent sign. Just add the value.*

4) Payment mode: Here you can choose what kind of payment method the requester will make, to do the job (test).



Note

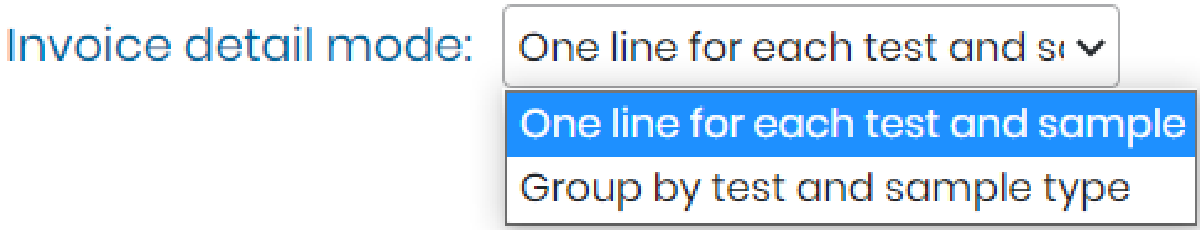
The payment option is for requesters to pay the labs to do the analysis for their samples.

5) Invoice template: you can add a template of how you invoice will look. Please read the knowledgebase KB: how to create invoice template.

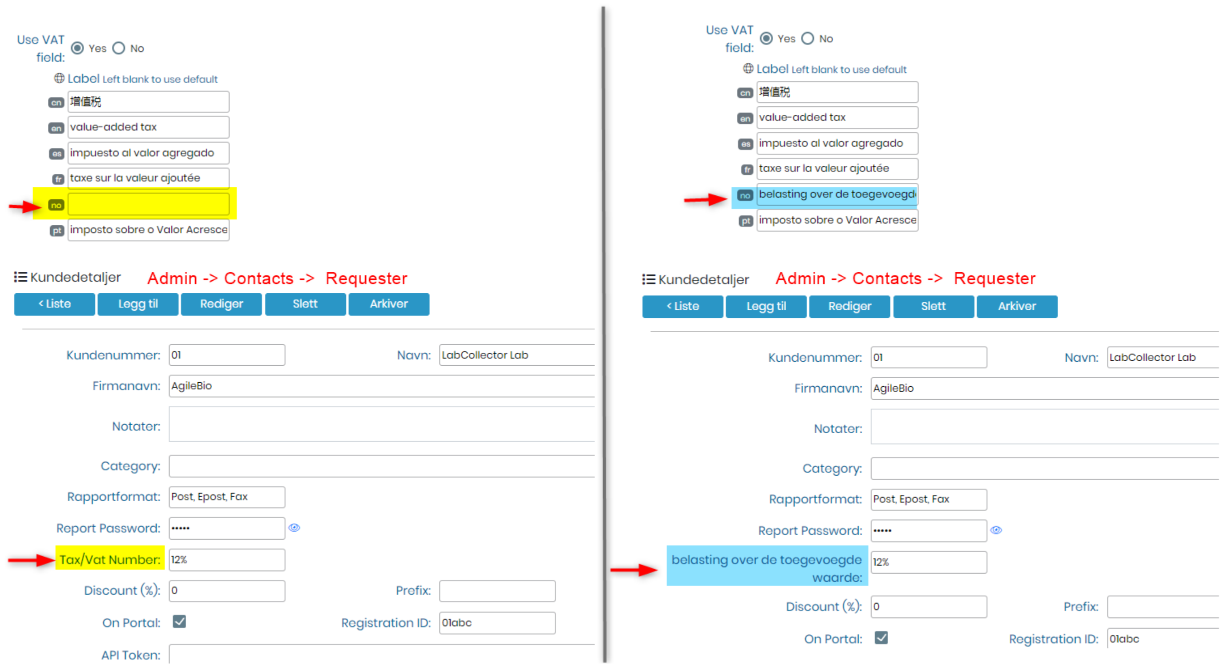
6) Invoice number start: This option will allow the invoice number to start by the number you enter here. For example you start with 101 so the first invoice number will be prefix-invoice number you entered that is INV-101.

7) Tax/Vat Default: Here you can add the default value for the tax for all invoices.

8) Invoice detail mode: Here you can choose which format you want for invoice.



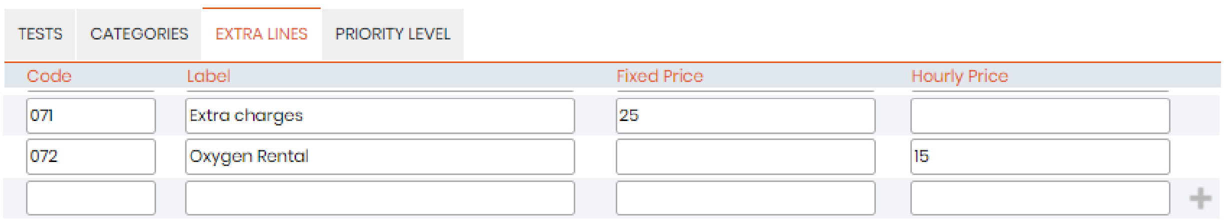
9) Use VAT field: If you don't want to use VAT field you can choose here. You can also choose the label for the VAT field, how it appears on your requester page when you change the language of the LabCollector.



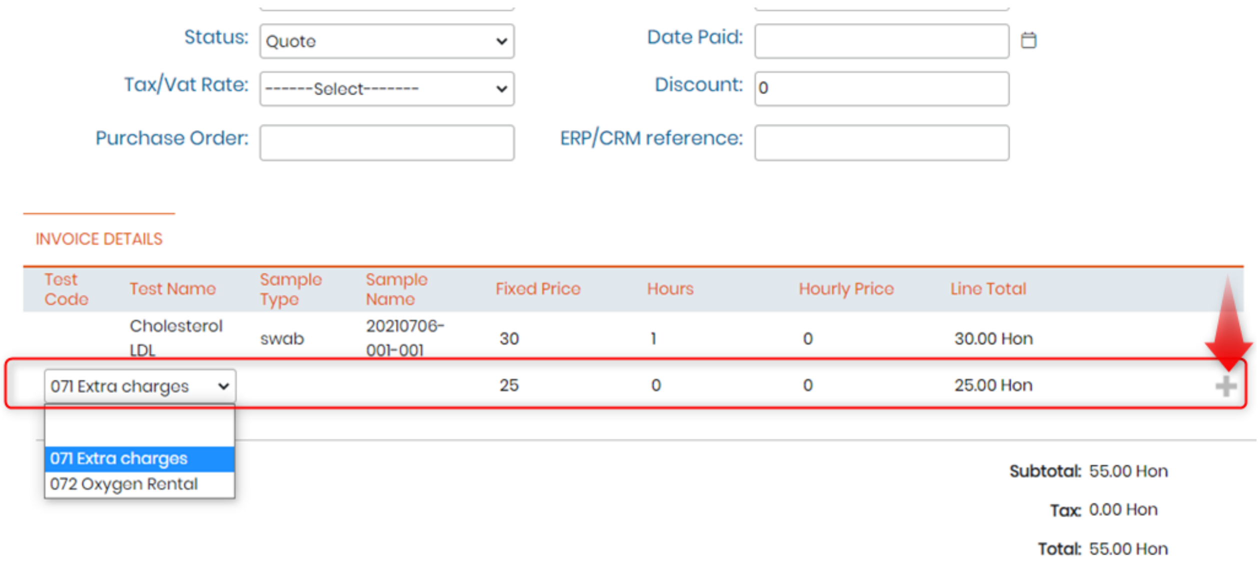
10) Tests: Here you will see the tests, their code and you can also enter the test price depending on if it is fixed or hourly.

11) Categories: Here you will see test categories. (refer to section 3.4.5)

12) Extra lines: You can add more lines to your invoice.



You can go to invoices by either **Admin → Invoices** or by going to **Admin → Contacts → Requesters → Invoices tab.** Here you can select the invoice and **EDIT** to add the extra line. You can add more extra lines by clicking on the + sign. Once you are done **SAVE** the invoice to store the changes.



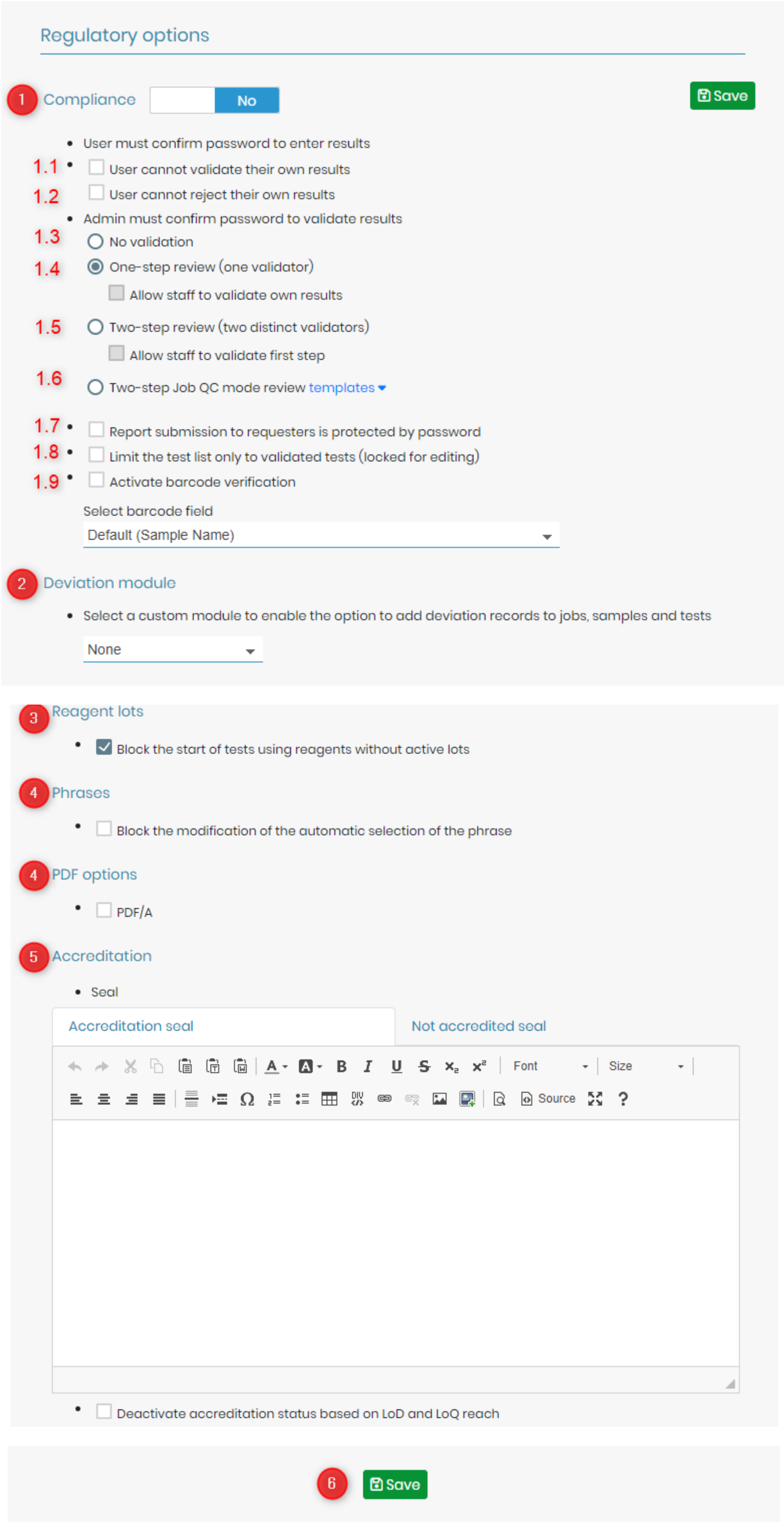
13) Priority level: This allows you to fix the rates/charges for different priority levels. You can add either the fixed price or the percentage increase in the rate of tests. You can also choose to skip the requesters discount (refer to section 3.1.1) if needed.

Tips / Hints

Hourly price can also be used as price per UNIT. For example, you have test on slides, and you set up the price for 1 slide (/hour). Instead of enter the samples 10 times, you can set up a cost per hour and when the staff do the test, they can indicate the number of slides they worked on.

7.3.15 Regulations compliance & validation

If you need security or regulation compliance, you can activate this function. By default the value is OFF. You need to activate it according to your lab requirements. It helps to activate options for validations of tests/jobs, activation of accreditation logo, enhance security measures, password protection to view reports, etc.


Regulatory options
1 Compliance No
Save
User must confirm password to enter results
1.1 User cannot validate their own results
1.2 User cannot reject their own results
Admin must confirm password to validate results
1.3 No validation
1.4 One-step review (one validator)
Allow staff to validate own results
1.5 Two-step review (two distinct validators)
Allow staff to validate first step
1.6 Two-step Job QC mode review templates
1.7 Report submission to requesters is protected by password
1.8 Limit the test list only to validated tests (locked for editing)
1.9 Activate barcode verification
Select barcode field
Default (Sample Name)
2 Deviation module
Select a custom module to enable the option to add deviation records to jobs, samples and tests
None
3 Reagent lots
Block the start of tests using reagents without active lots
4 Phrases
Block the modification of the automatic selection of the phrase
4 PDF options
PDF/A
5 Accreditation
Seal
Accreditation seal
Not accredited seal
Font
Size
Source
Deactivate accreditation status based on LoD and LoQ reach
6 Save

1. Compliance

If this function is activated, when users perform validation actions (single sample or batch), the system asks the user to confirm their password. Only the super- administrator or users defined with Administrator role within the LSM can validate results. The validator and timestamp of validation will be automatically added to reports. It is possible to add some rules:

1.1) User cannot validate their own results, meaning that is always needed a reviewer.

1.2) User cannot reject their own results, meaning that is always needed a reviewer.

The number of validations needed can also be configured (one or two):

1.3) No validation needed.

1.4) **One step review:** You can choose this option if you want your jobs to be validated by the supervisor of the lab. The jobs will reach finished status only when they are validated by supervisor.

1.5) **Two step review:** You can choose this option if you want to validate your jobs with two distinct supervisors in lab. The jobs will reach finished status only when they are validated by two different supervisors.

1.6) **Two-step Job QC mode review:** You can define your template for a passed and failed review.

Other options can also be defined:

1.7) You can activate this option to send result reports to requested in a password protected manner.

1.8) While creating tests in **Admin → Preferences → Tests** you can validate the test by locking the editing feature. After this when you choose limit only to validated tests, then only locked tests will be seen, when you create a job.

1.9) While creating a job, you need to add sample name. By activating this barcode verification, you need to just scan the barcode of the sample and the name (number) will be automatically entered. By default the sample name will be selected for barcode verification. However, you can also activate this option for any parameter that you have created at job, sample or test level. (refer to section 3.4.2.1)

2. Deviation module

On the job, test, assay level you can add record in the choice of your module.

1) You need to select the module for the deviation. The deviation module will be a custom module only and not default modules.

2) When you create a job by going to **Job → Add job** and when you start the job by going to **Job → Job list** , you can click on options button.

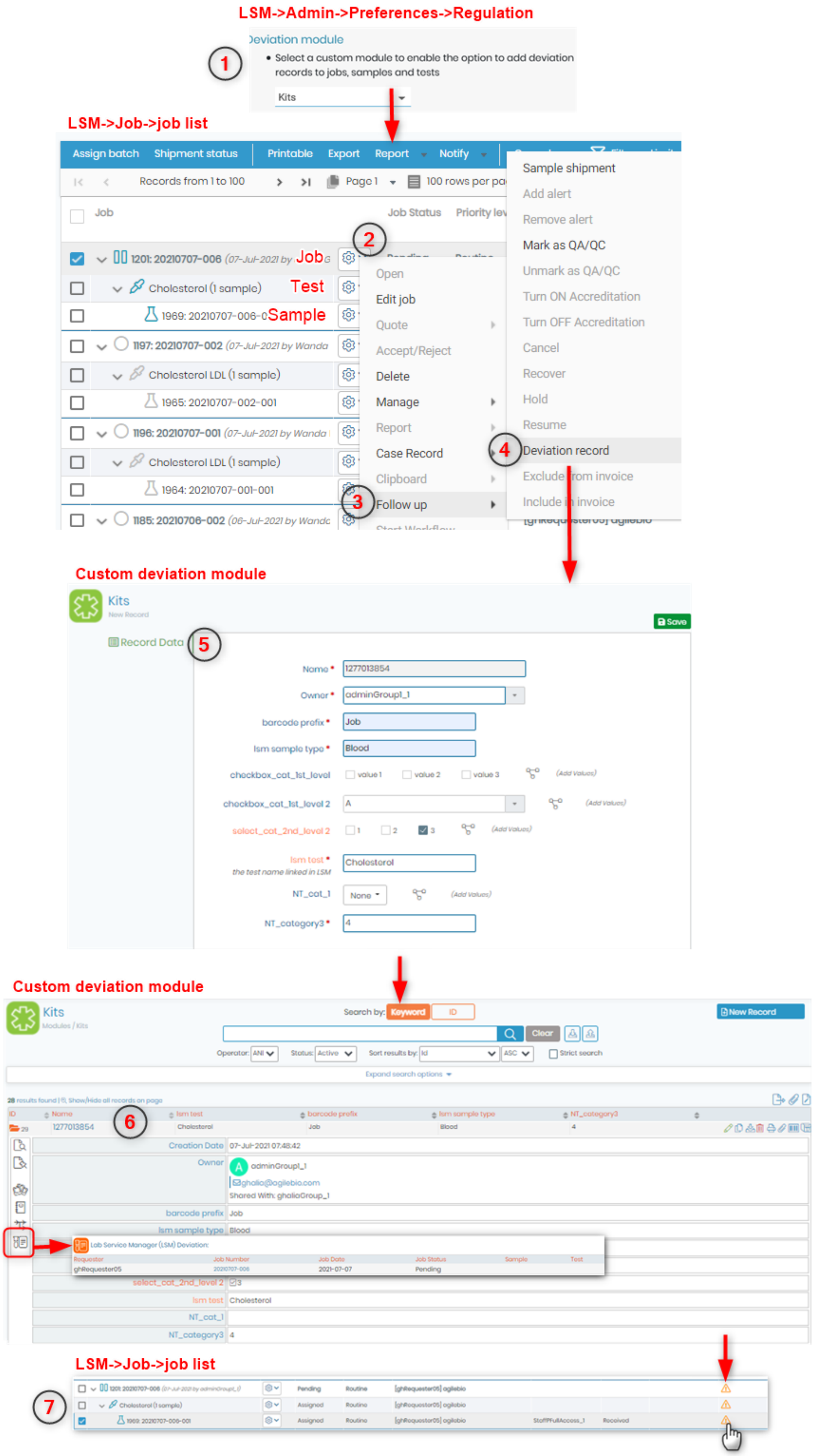
3) In options click on follow-up

4) Select Deviation record option

5) You will see a pop-up to create a record in the deviation custom module you selected. You can fill the fields accordingly and

6) Once the record is created you can see it by going directly in the custom module.

7) In the LSM the job, sample or test will have a small deviation icon. When you click on it you will see a popup of the deviation record you created.



3. Reagents lots
Here you can block the use of reagents which do not contain active lots or have only expired lots.

Note

Active lots means a lot which is not expired or the expiration date is either 00.00.0000 (no expiration date) OR greater date than today OR is not disposed off.

Please read the knowledgebase KB: how to dispose lots.

Please read the knowledgebase KB: how to manage lots.

3. Phrases
In this option you can block the modifications in the automatic selection of phrases. To create phrases related to the results and ranges please go to the section 7.3.2

4. PDF options
PDF/A is an ISO standardized version for PDF, for long time preservation, avoid tampering of results, etc. LSM offers to protect the result reports pdf by activating this option in the regulation tab.

5. Accreditation
You can put a logo for accredited tests in the result reports. Please read the knowledgebase KB: how to accreditate results.

6. Save
Click on save to update all your preferences ans rules of compliance.

7.3.16 Customizations

Here you edit the text and privacy policies of the patient pre-registeration forms in LSMRemote.

New! Option to customize any report label in any language!

Please refer to section 8

7.4. Barcode labels

LabCollector offers the possibility to print several **sample** barcode labels at once.

Please read our KB: on compatible printers with LabCollector.

With the Memorize Records functionality, you can search for records in a module, click on the memorized items icon and go to **Tools** □ **Barcode labels series** to print a batch of barcodes.

Record IDs are automatically added to the barcode labels series. If you don't want to use these records, click on clean and select other records.

Please read our KB: on how to configure a printer with LabCollector.

For Brady and Zebra printers you can use a "Raw Network bridge" utility by LabCollector in order to connect to the printer.

Please check our KB: on how to connect to a USB printer.

Please read the knowledge-base KB: Sample batch printing from a job in LSM.

7.4.1 Generic Printing

You can read about this from the online manual of LabCollector.

7.4.2 Direct EPL printing

You can read about this from the online manual of LabCollector.

7.4.3 Dymo printing

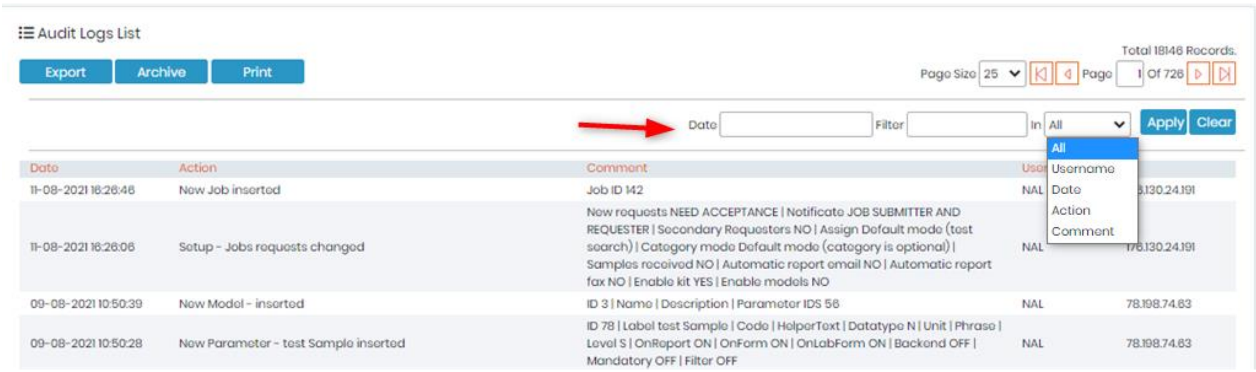
You can read about this from the online manual of LabCollector.

Please read the knowledgebase KB: DYMO labels in LSM.

7.5. Audit Trail Log

The audit function allows administrators to follow up user activities in the **LSM**. Go tothe **Admin** Menu and choose the **Log** tab.

The application displays all modifications. Each one is dated and identified by an action, a user login and IP address. Specific actions or time periods can be reviewed using the search engine.

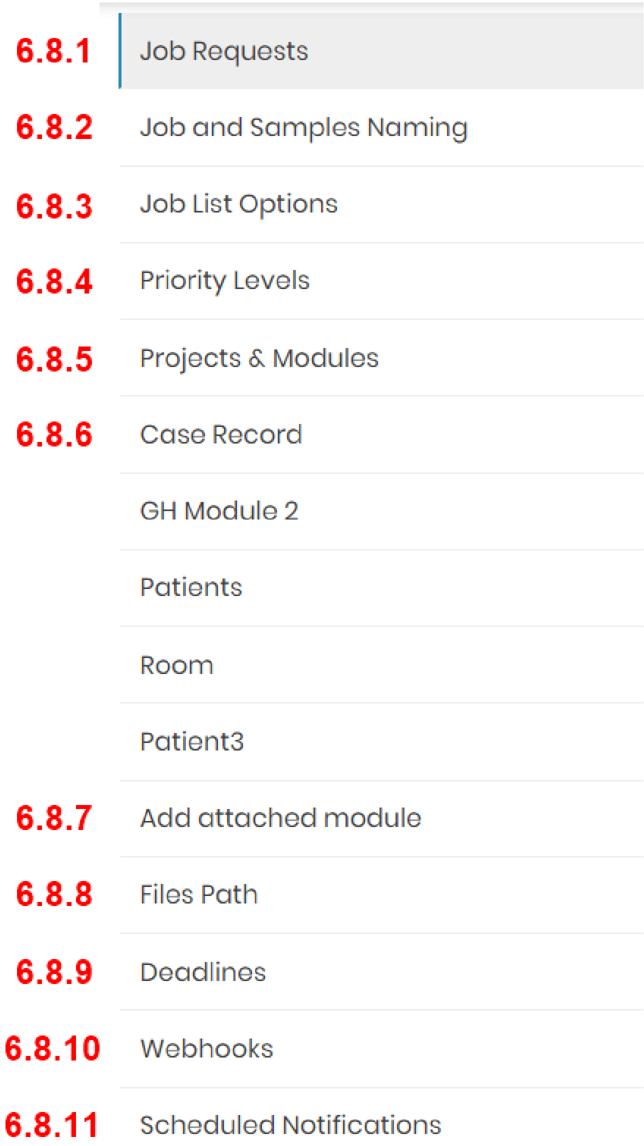


The results can also be exported.

AuditlogID	Username	DTS	Action	Comment	IP
1730	admin	9/23/2017 6:23	New Assay-Test 2 Cat 1 inserted		[illegible]
1729	admin	9/23/2017 6:22	New Assay-Test 1 Cat 1 inserted		[illegible]
1728	admin	9/23/2017 5:57	Job 306 Sample 1861 Assay completed		[illegible]

7.6 Setup

Setup will provide you with various options to configure and setup your LSM & LSMRemote.



7.6.1 Jobs Requests

You will find options for configuring the job request in LSM.

1 Acceptance

- (selected) New jobs need laboratory acceptance

  Notify the acceptance/rejection of new job requests to:
  - Job submitter's Email
  - Requester's Email (the same used for report and billing)
  - (selected) Both
  - None

  Default option for internal jobs creation: Job (accepted)

  Attach Chain of Custody (CoC): Yes

- All jobs are automatically accepted

2 Allow secondary requesters

- No
- (selected) Yes

3 Automatically mark sample as received

- (selected) No
- Yes

4 Link samples to lots

- (selected) No
- Yes

5 Sample retention period

- No
- (selected) Yes. Dispose or return samples after 15 days

6 Stability window

- (selected) No
- Yes. Stability window 72 hours
  - Collection datetime parameter

    -or-
  - Collection date parameter
  - Collection time parameter

7 Default option to assign tests

- Default mode (test search)
- Categories grid mode
- (selected) Tests grid mode

8 Category mode

- (selected) Default (category is optional and all tests are free to order)
- Mandatory (category is required and only categories can be ordered)

9 Default sample type

10 Enable Kit: No

11 Enable Models: No

12 Generate CoC + labels: No

13 Automatic report submission

- [ ] Send report to requesters by email when job is finished
  (Only for requesters with Preferred Report = Email)
- [x] Send report to requesters by fax when job is finished
  (Only for requesters with Preferred Report = Fax)
- [ ] Save report to Documents module when job is finished

Note: Report submission can slow down the process if volume is high

- [x] Create scheduled task to report submission

Task Frequency 1 Minute Task Time 00 : 00

Save

1. Acceptance: LSM requires you to accept a job after it is created either from the LSM add-on itself or LSMRemote. Here you can find options for changing the job acceptance.

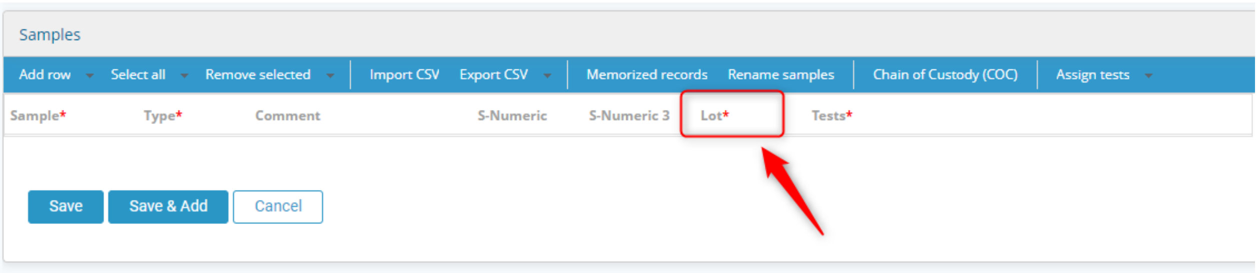
- Once the job is accepted or rejected, the notification will be sent to:
  - Job submitter email
  - Requester email (it can be requester/provider/client)
  - Both (Job submitter & Requester email)
  - None
- If you want to automatically accept all jobs then you can select this option "All jobs are automatically accepted".

2. If you have more than one requester for the job creation then you can activate this option to add extra secondary requesters.

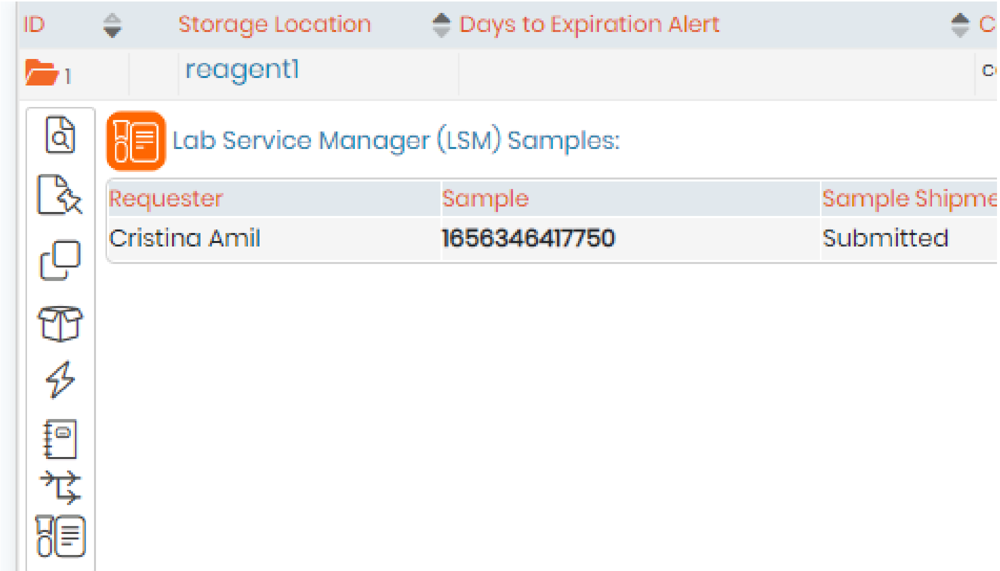
3. If you want the option for samples as received by default then you can activate this option.

4. Here you can choose whether or not you want to link samples to specific lots.

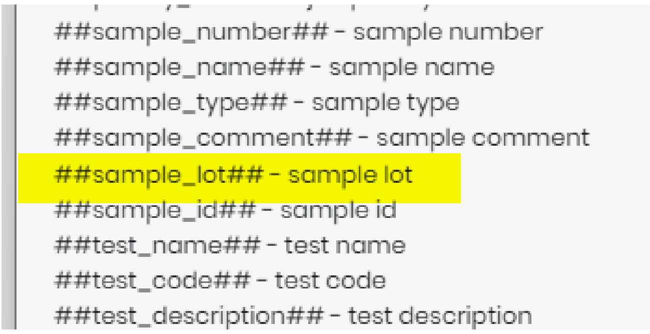
- During the job creation process, users are prompted to select lots for individual samples. Only lots in the **HOLD** status are eligible for selection, ensuring that samples are associated with materials awaiting quality control testing.



- Upon selection, the chosen lot becomes associated with the respective sample, creating a clear link between them within LSM.
- Following the association of samples with lots, users can visualize these links within the LSM job interface. This provides immediate visibility into the testing status of samples and the corresponding lots.
- The linked lots are also displayed within the sample's related module (R&S for example). This ensures that users have access to pertinent information regarding the testing status of raw materials.



- You can also decide to showcase the lot related to the sample within your PDF report, simply insert the below tag in your report's template ##sample_lot##



##sample_number## - sample number
##sample_name## - sample name
##sample_type## - sample type
##sample_comment## - sample comment
##sample_lot## - sample lot
##sample_id## - sample id
##test_name## - test name
##test_code## - test code
##test_description## - test description

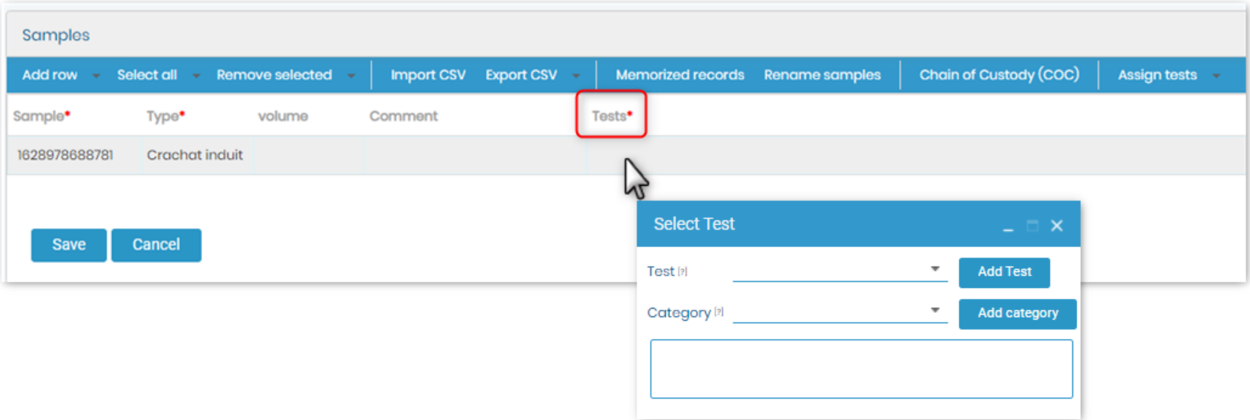
To know more about this option go the KB: [Lot-Sample Linking in LSM for Quality Control]()

5. Select if samples should be disposed or returned after a specified number of days.

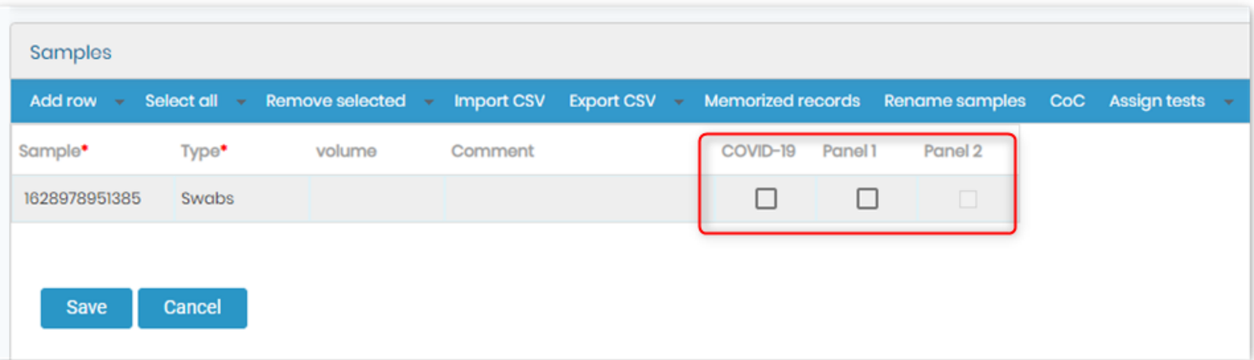
6. Choose whether to activate the stability window feature. Set the stability window duration in hours. You can select parameters for collection date-time, collection date, and collection time.

7. When you create a job, you need to add test. You can change here the option for how adding test will appear.

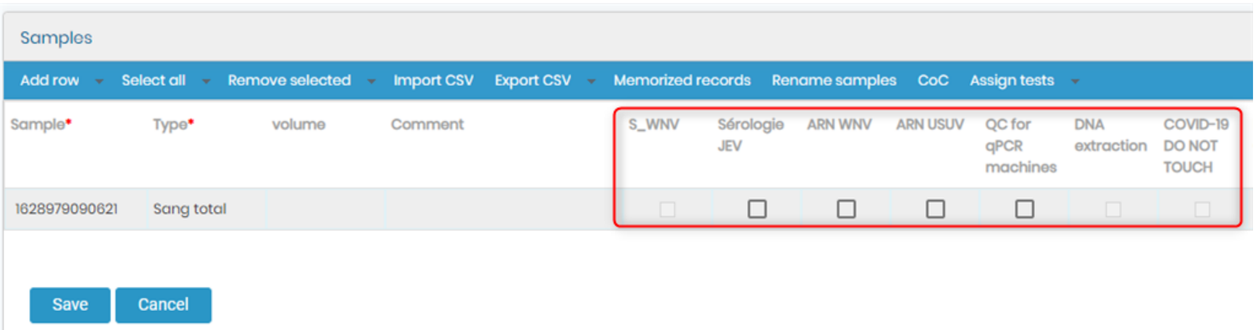
- **Default mode (test search)**
  LSM add-on: here you can select test by typing the initial letters of the test.



- **Categories grid mode:** Here you will see the categories of the test. When you add a category, all the tests in that category will be added for the sample to be performed.



- **Tests grid mode:** Here you will see all the tests alongside their name.



8. Category mode:

- Default (category is optional and all tests are free to order) meaning that you will see options for both, either to add a category or tests.
- Mandatory option, you will only be allowed to add categories and not directly the tests.

9. Here you can select the default sample type.

10. Enable Kit function allows to add the kit option and also activate it on LSMRemote. Please read the knowledge-base KB: how to add kit and activate in LSMRemote.

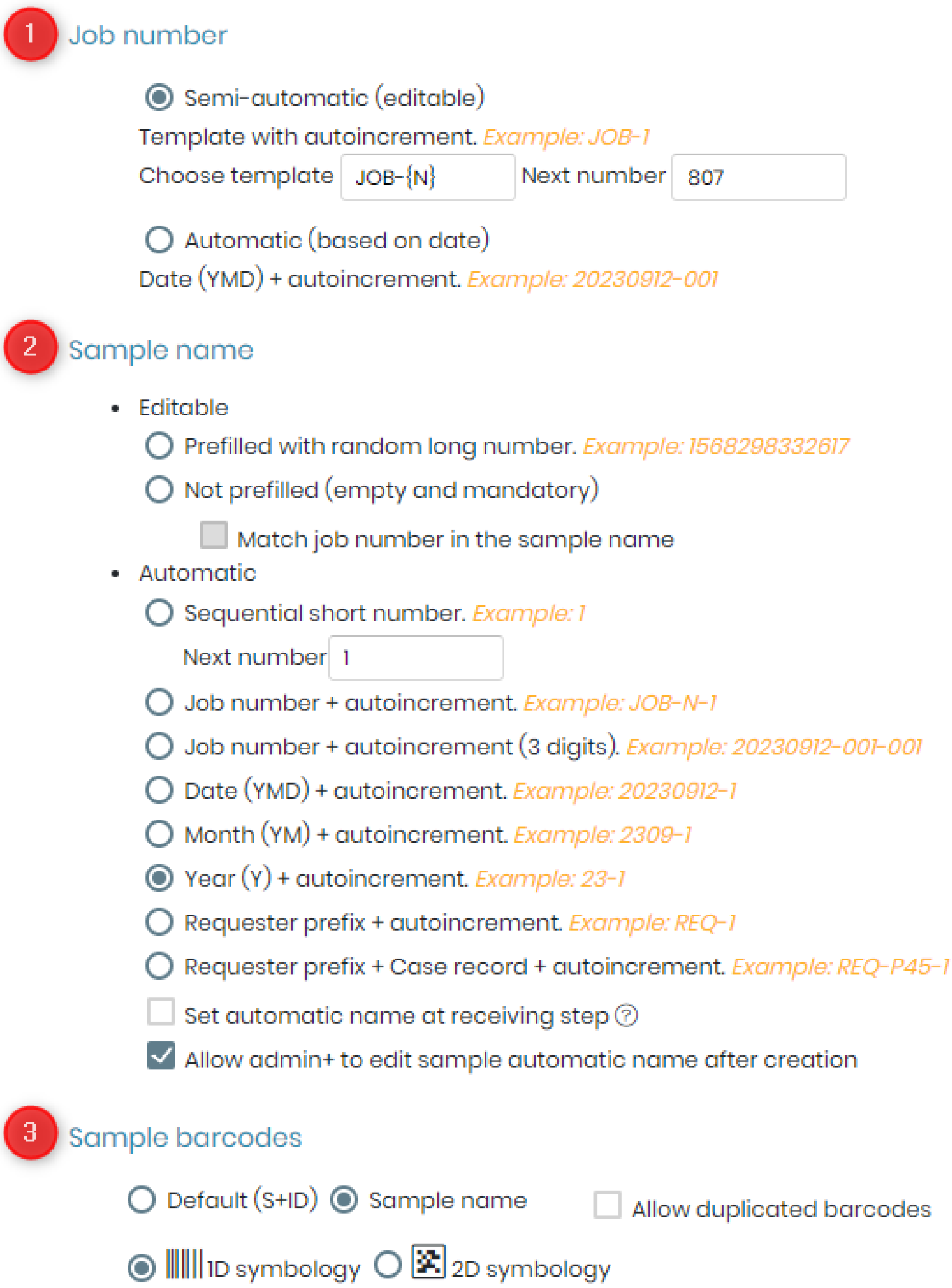
11. Enable Models allows you to add model templates for adding a job. For more information please refer to section 3.4.8.

12. Select whether to generate Chain of Custody (CoC) reports and labels for the samples.
13. Automatic report submission will allow you to:
    - Send report to requesters by **email,** when a job is finished.
    - Send report to requesters by **fax**, when a job is finished.

Don't forget to click "Save" once you finish.

7.6.2 Job & Sample naming

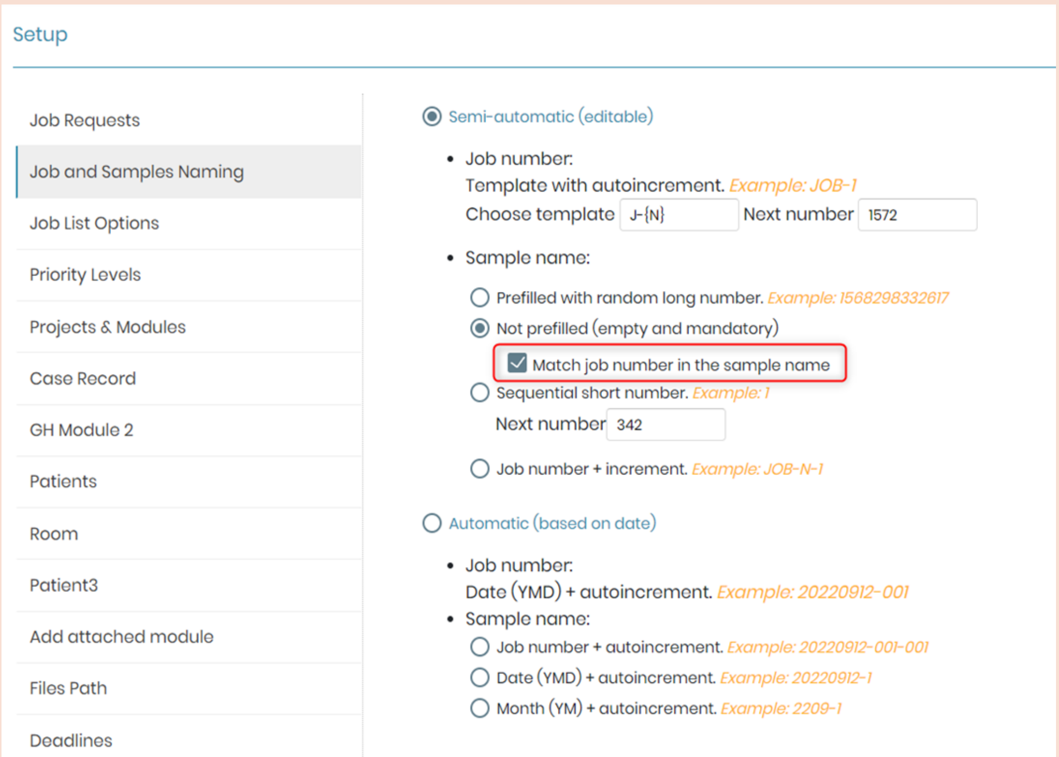
Here you will see options for job & sample naming:



1. Here you can see semi-automatic options.
    - Job number: Every job that you add will be added in auto increment manner. For example: JOB-1, JOB-2, JOB-3 and so on.
    - You can also choose a template and a number so that the jobs can be started from that template and number.
    - Sample name:
        - You can choose to add a pre-filled random long number. It will be generated automatically by LSM.
        - You can choose to add nothing in the sample's name (not pre-filled) and also make it mandatory to add a number.

Note

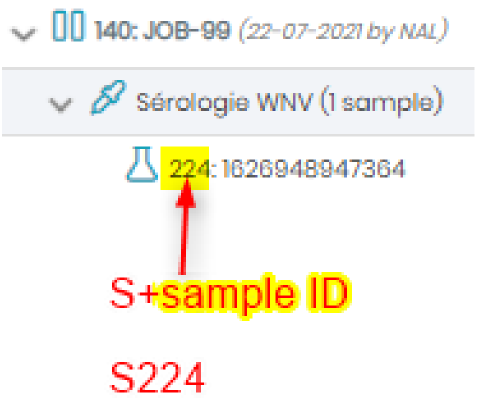
Please note that when setting up your samples name, you have the possibility to match the job number in the sample name, this feature allows you to assign the sample with the precise job number, making it easier to identify and associate it with the corresponding job.



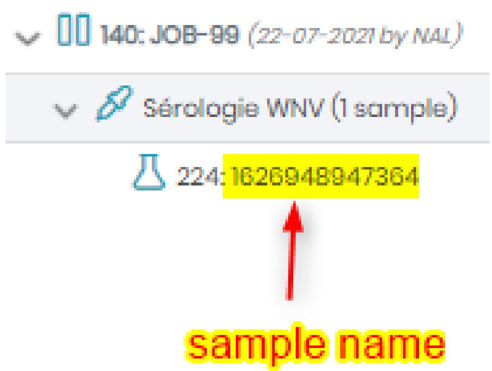
- You can try to add a sequential short number starting from a number template.

For example it can start from 00000001,0000100, etc.

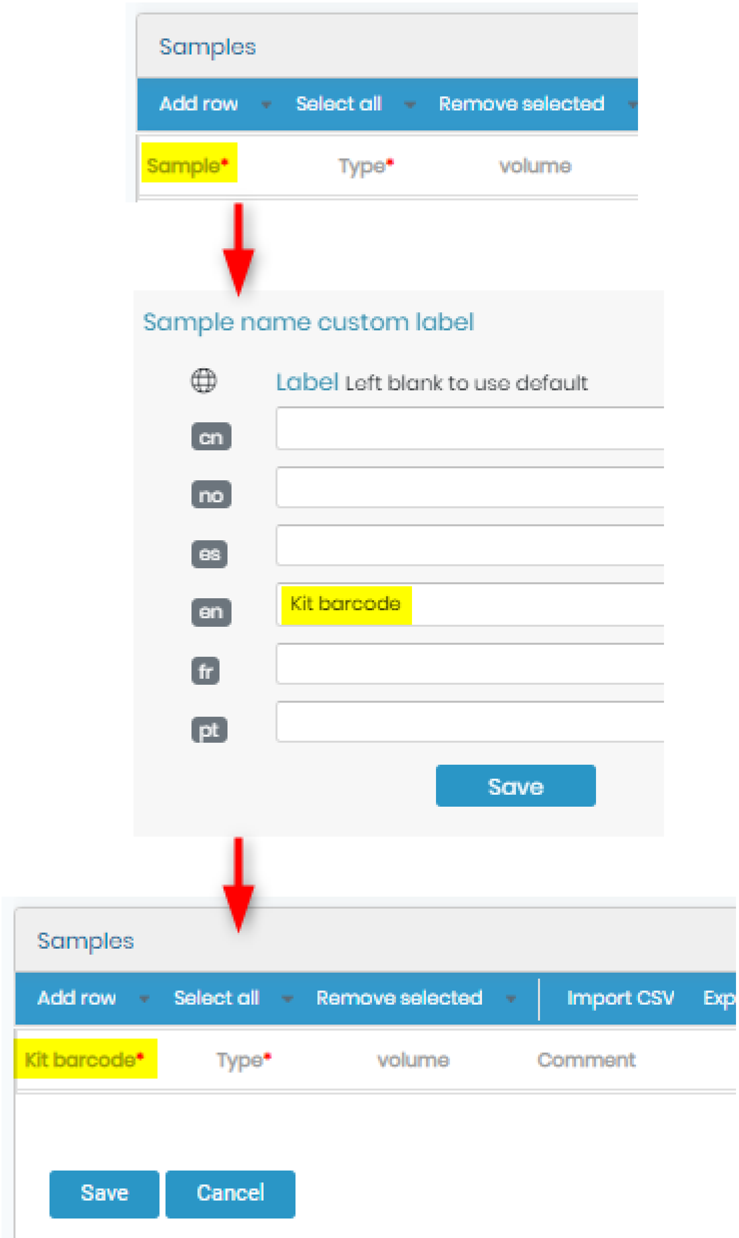
2. Here you can see semi-automatic options.
    - Job number can be automatic like date (Year Month Day) + autoincrement. For example, 20210912-001, etc.
    - Sample name can be either job number (selected before) + autoincrement. For example, 20210912-001-001, etc.
    - Date + autoincrement. For example, 20210912-001, etc.
3. You can select what you want to have has sample barcode.
    - Default meaning sample S+ID.



    - Sample name will be sample barcode.



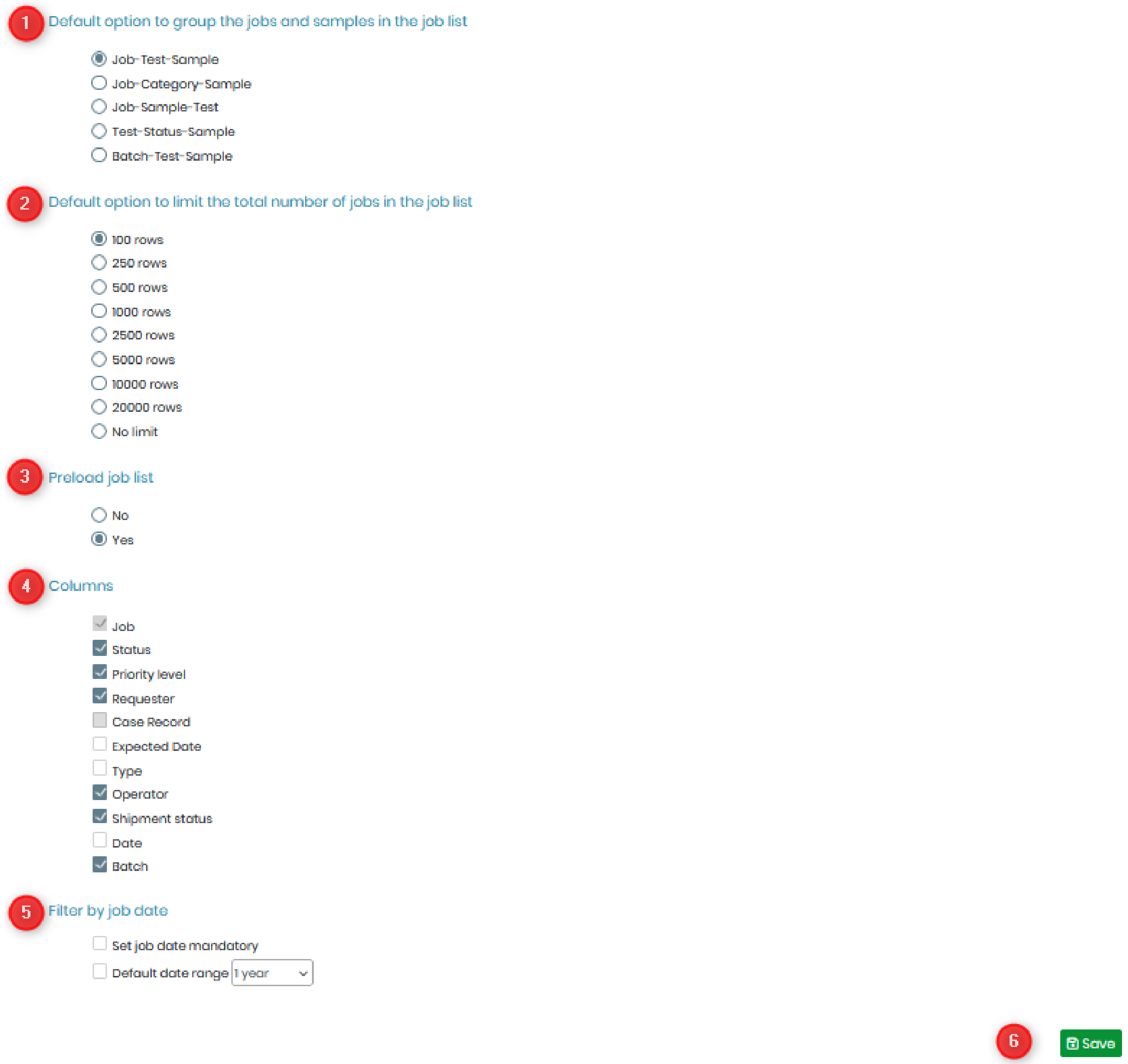
4. You can create a custom name for your sample label.



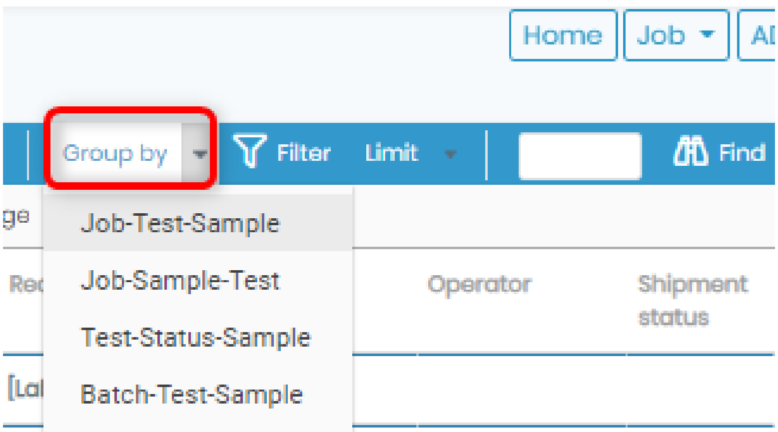
5. Once you are done, you save the changes.

7.6.3 Job List options

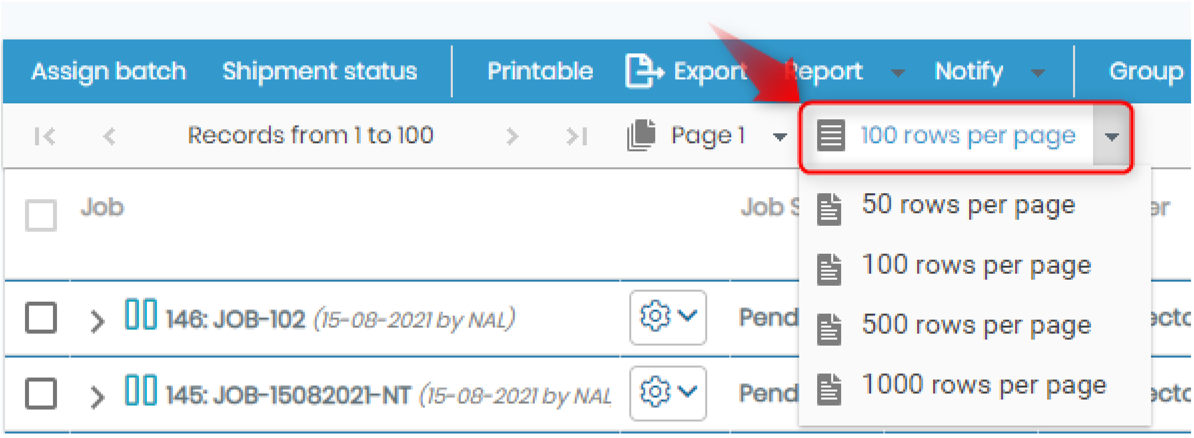
Here you choose options for job list.



1. You can choose to do group jobs and samples in job list. You can see these options in **Job → Job list.**

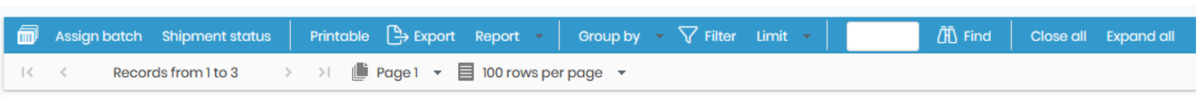


2. When you search jobs, you can limit how many rows of job you can see in he list. You can also see this when you go to **Job → Job list.**

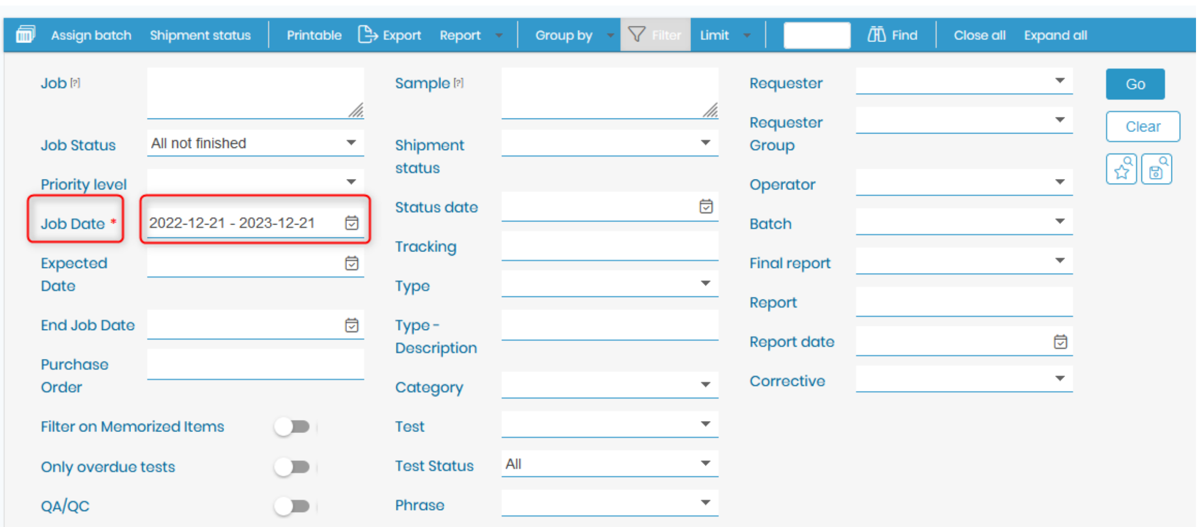


3. If the preload job list option is selected when you open the Job List you will see automatically all the jobs assigned, started and concluded. If the preload job list is not selected the Job List will appear empty, to see the desired jobs you need to search using the filter option.

4. You can personalized the options of the bar in the Job List. The *Job* and *Case Record* fields are mandatory, afterwards you can customize choosing among the different option: *Status*, *Priority level*, *Requester*, *Expected Date*, *Type*, *Operator*, *Shipment status*, *Date* and *Batch*. The bellow image is an example of a options bar personalized:



5. In the Job List you can set the *Job Data* in the filter search as mandatory. The * in front of Job Date alerts for the fact that is a mandatory field (see image bellow). Moreover, you can set as default a data range of one year, as the example image bellow.

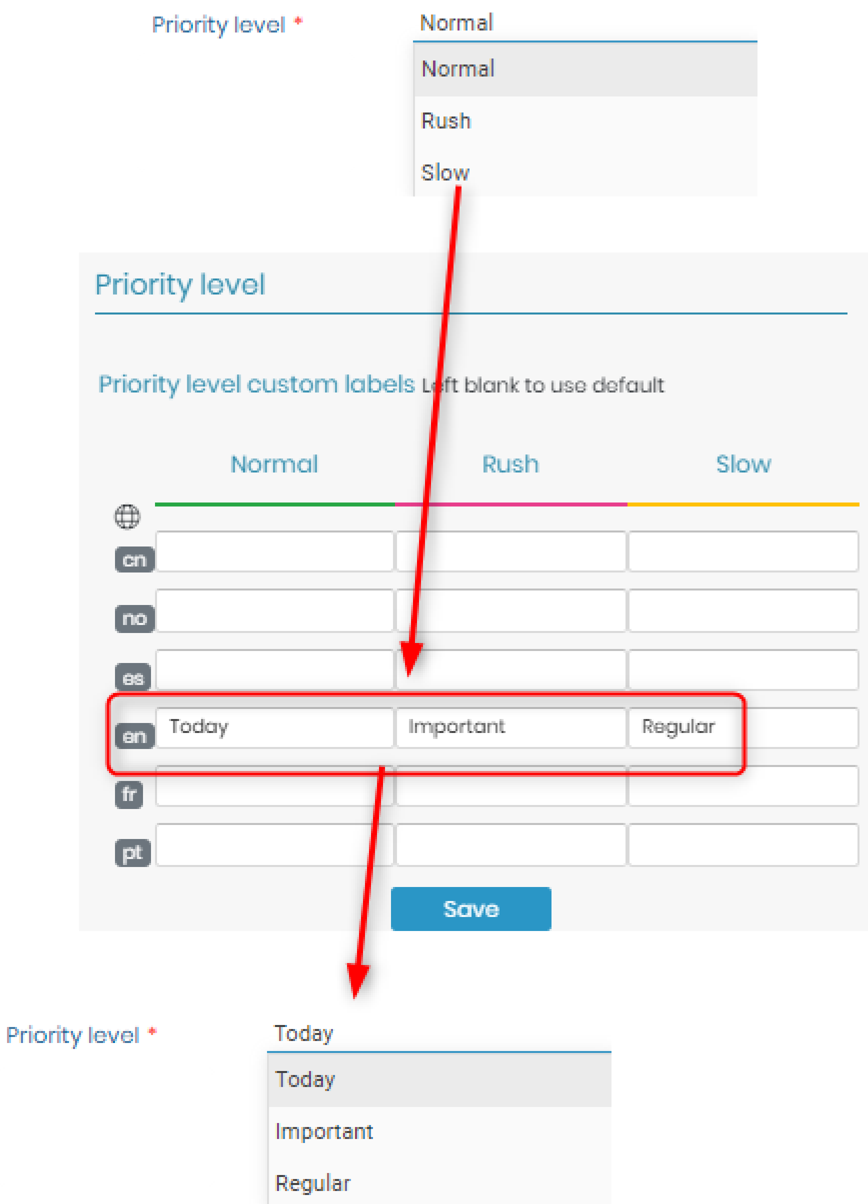


6. Once you are done, you can save the job.

7.6.4 Priority levels

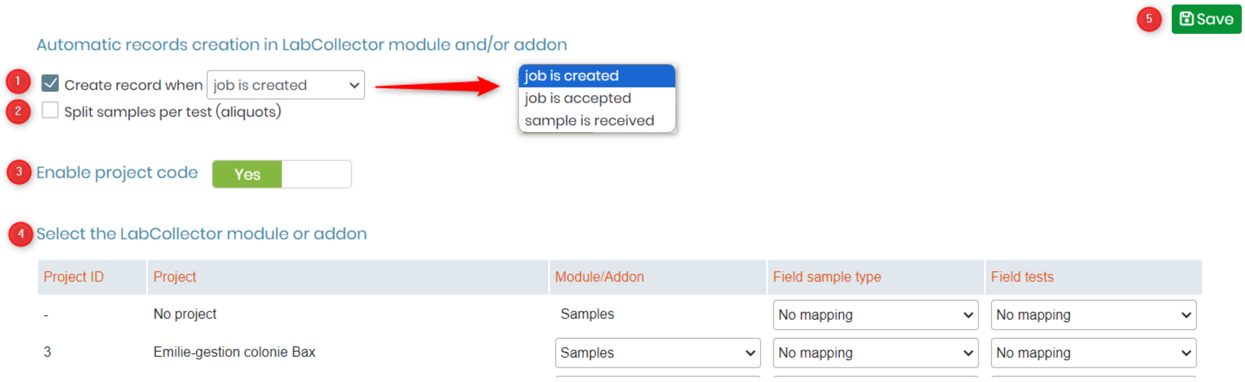
Priority level tells how you can label the jobs. They can be treated depending upon their priority level.

To see the changes for this go to **Job → Add Job.**



7.6.5 Projects & Modules

LSM add-on offers possibility to add samples to a module of choice for the selected project code (Go to **LabCollector → Tools → Project code**).



1. This option allows you to automatically create a record when: job is created; job is accepted; sample is received.

2. This option allows you to split a sample in as much aliquots as tests are required per job.

3. You can enable the settings for projects and modules here.

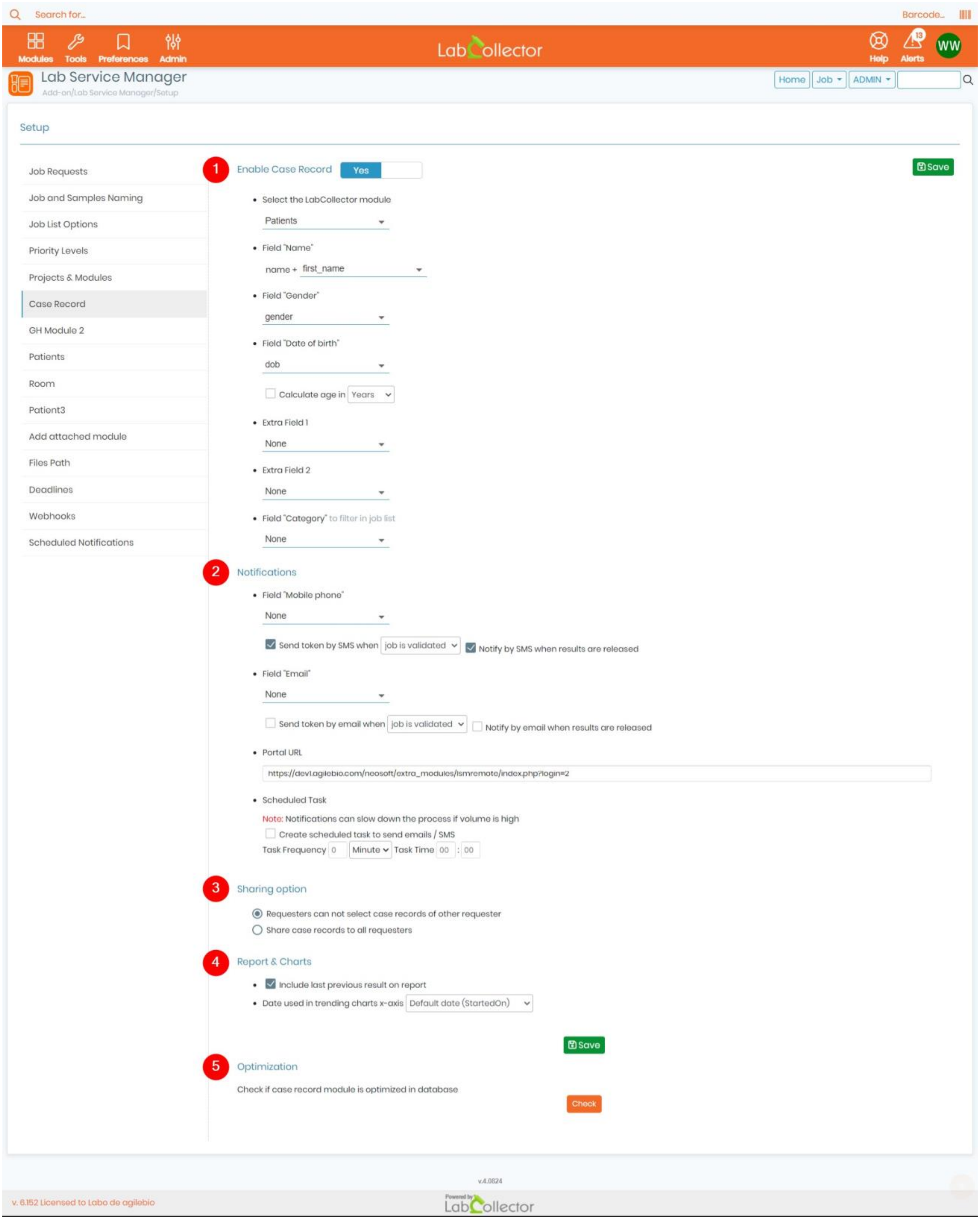
4. You can either create a sample as a record in a chosen module or addon when job is created or accepted.

5. You need to save the new settings for project & modules.

7.6.6 Case Record

Here you can configure settings case records.

Please read the knowledge-base KB: how to set case record.



Please refer to the numbers on the screenshot above:

1. You can switch this option ON/OFF if you want to activate or disable case record option, then proceed to link the custom module you need and add the corresponding **name**, **date of birth**, **gender** fields.

2. Here, you can set the fields for notifications, either a "mobile phone" or "email" field, you can also select whether you want the tokens to be sent by SMS or email whenever a job is created, accepted or validated.

3. Sharing options allow you to select whether you want requesters to be able to select case records of other requesters or to share them with all requesters.

4. In this section, you can choose whether you want to include the latest obtained results on your report, you can also choose which date you want to use in trending charts x-axis.

5. With this feature, you can check whether your case record module is optimized in the database, simply click on the "**check**" button.

Tips / Hints

You can add two more extra fields to your case record. Please note that only "**field**" and "**calculate**" can be added, these extra fields will then appear on the job form.

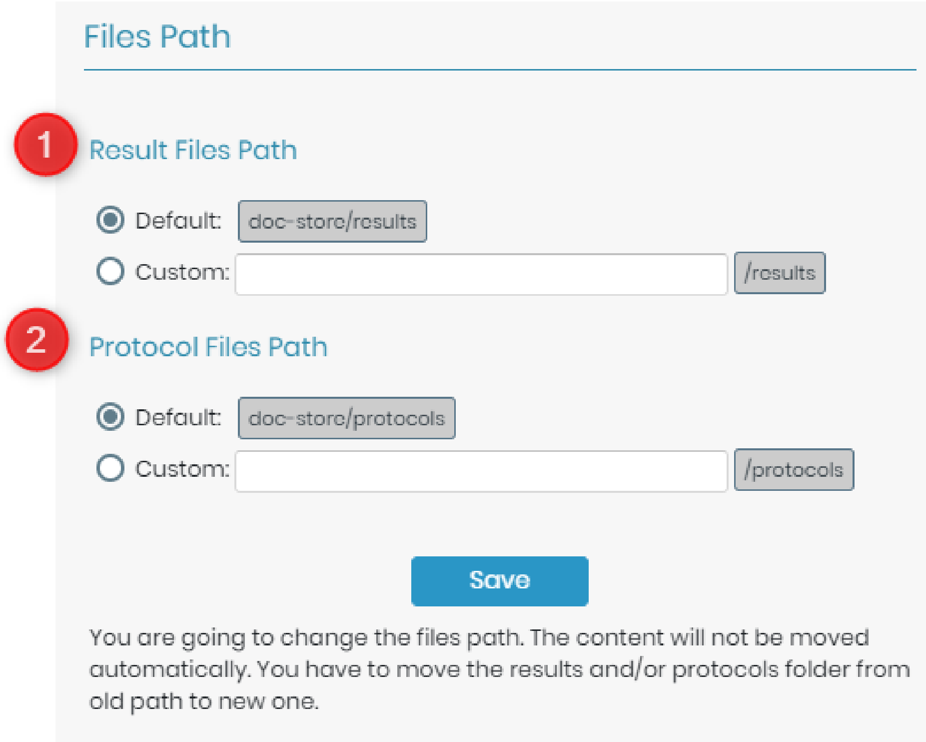
7.6.7 Attached modules

You can any custom module to LSM by going to **LSM → Admin → Attached modules → Add attached module.**

Please read the knowledgebase KB: How to link custom module to LSM.

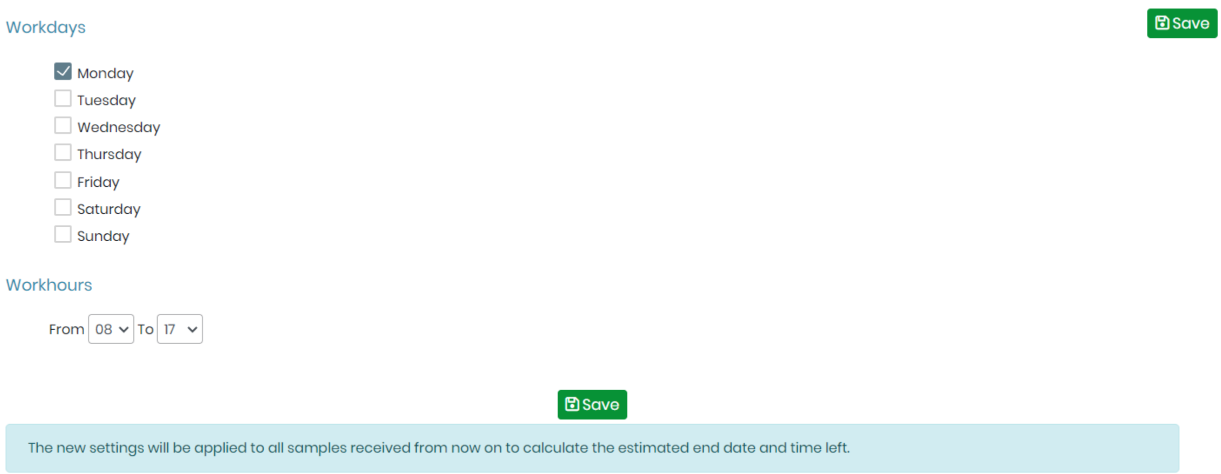
7.6.8 Files Path

- This option is to choose a folder in server to store LSM files (results & protocols).
- Generally to the viewers it will be greyed out as it is mostly handled by AgileBio.
- If your LabCollector is hosted with AgileBio then we will manage it.
- If it is hosted with you (on your servers) then you can manage the storage of files through this option in LSM.
- The usual default filepath is:
    1. extra_modules/lsm/doc-store/results
    2. extra_modules/lsm/doc-store/protocols

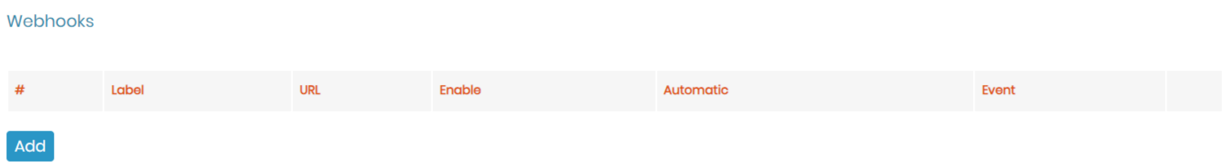


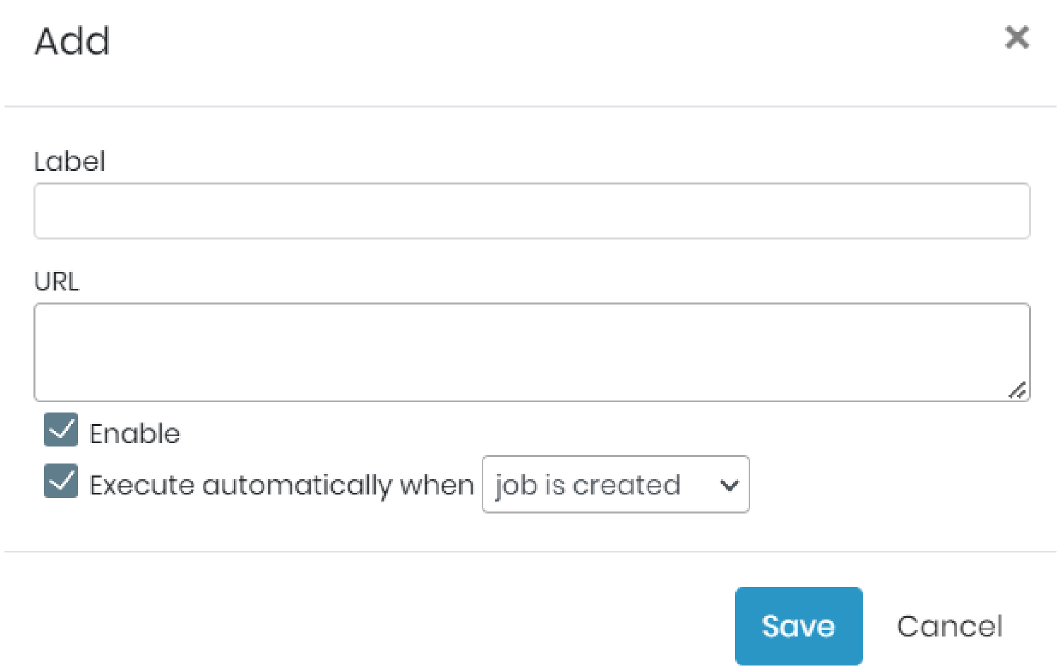
7.6.9 Deadlines

Some labs only work on weekdays 8 hours a day, others run their instruments 24/7, some of them run only on weekdays but instruments runs overnight. In LSM, you have the option to configure your workdays and working hours according to your needs. Simply navigate to **Admin -> Setup -> Deadlines** to setup



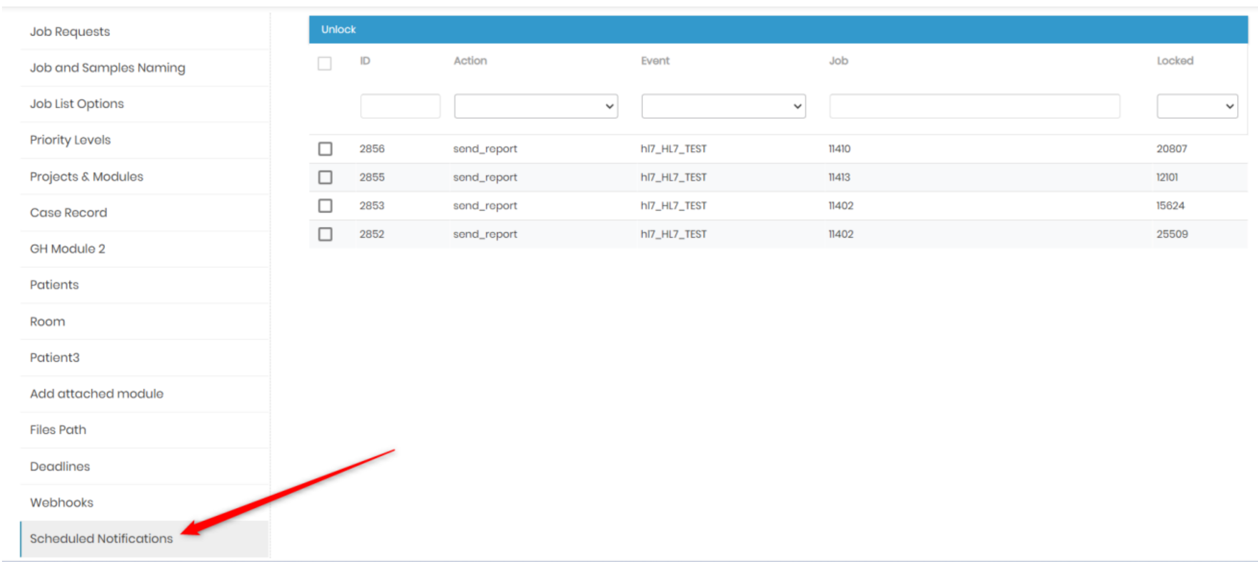
7.6.10 Webhooks





7.6.11 Scheduled Notifications

You can view all pending scheduled notifications in one tab, simply go to **Admin -> Setup -> Scheduled Notifications**, this will help you stay update and make sure you stay ahead with your notifications.



7.7 Integrations

Integrations is a new feature in LSM that allows you to connect to 3rd Party websites that have their own portal for job creation. With the help from API you can import job information from these 3rd party websites into LSM add-on.

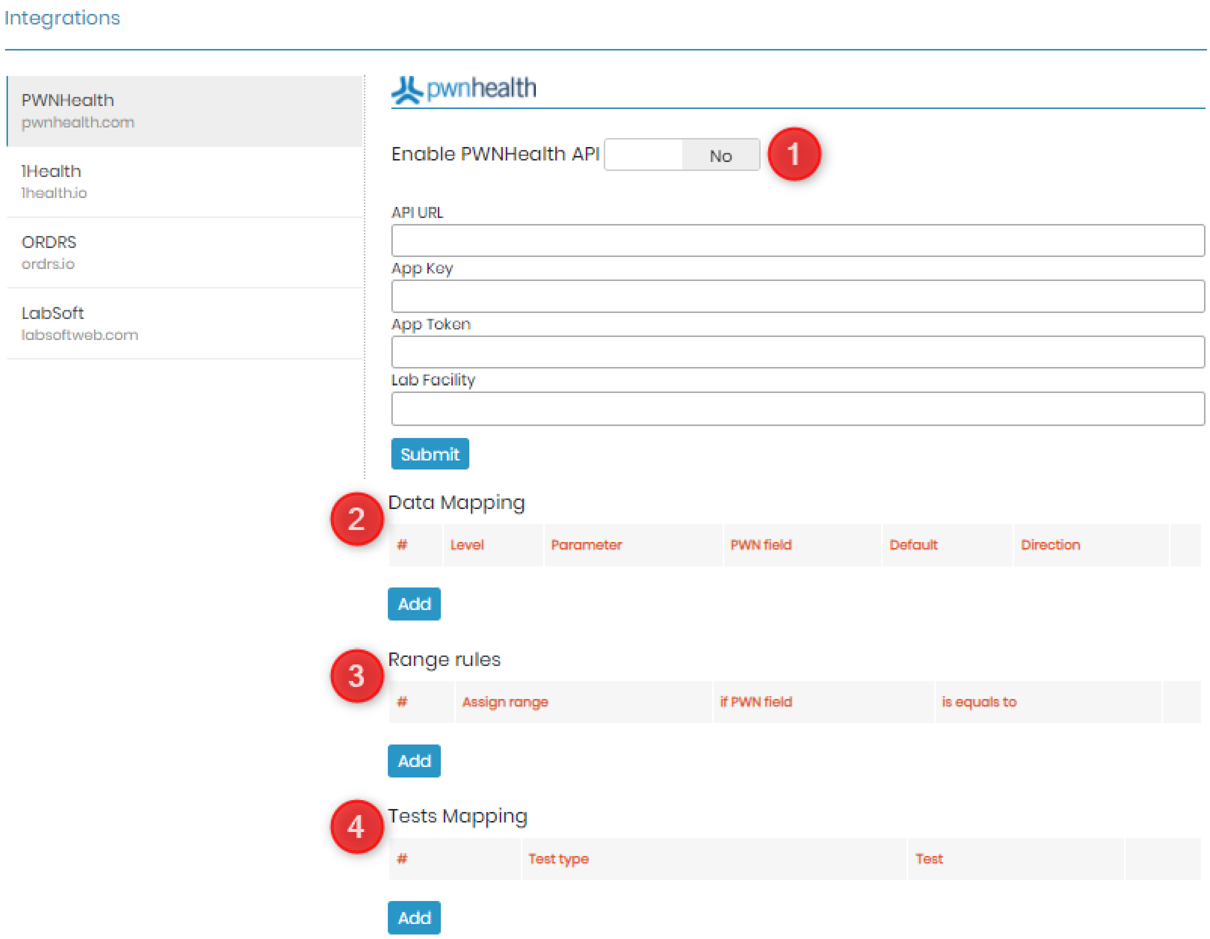
This feature gives a access to configure the 3rd Party websites with API to connect to LSM.
Some of the configurations that are already existing for 3rd Party websites in the add-on are

- PWNHealth
- 1Health
- ORDRS
- LabSoft

Each of the above have their own configuration settings.

For example:

PWNHealth.

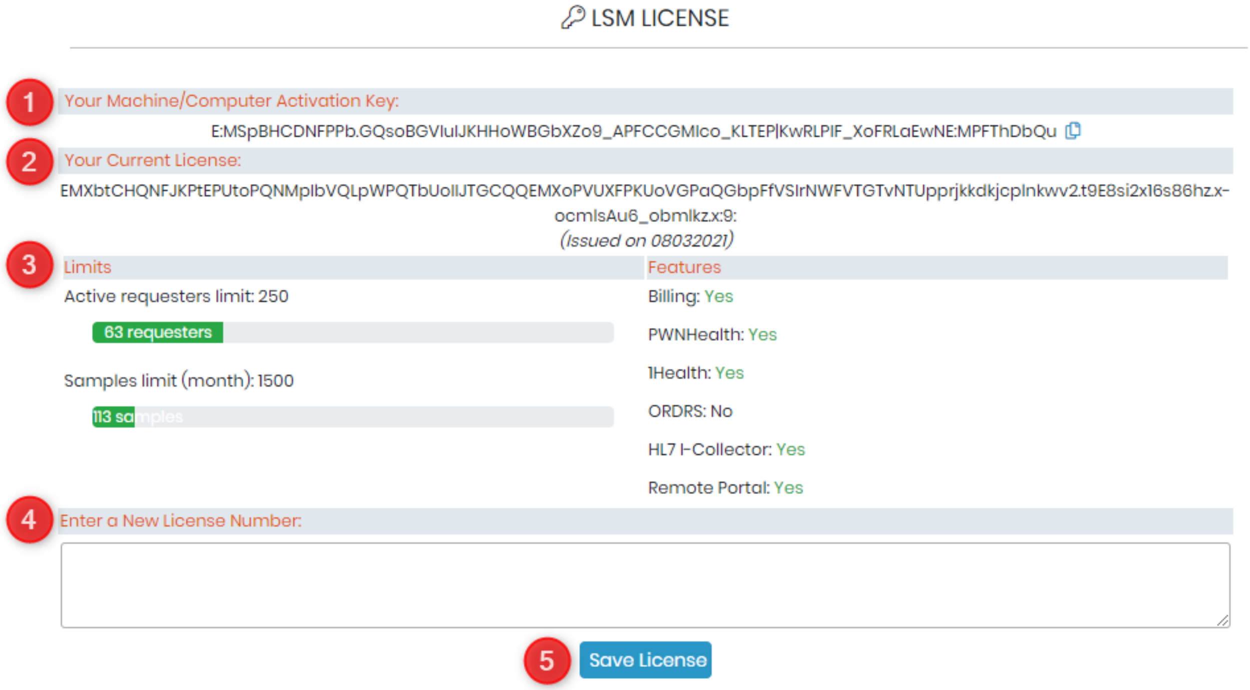


1. You can switch on the API button and add the settings for the same. (These connection details such as API URL, key, token, Facility will be provided by the 3rd party IT personnel, in this case PWNHealth lab team).
2. Data mapping will allow you to connect the parameters in LSM via API to 3rd party website. Please read the knowledgebase KB: [how to create LSM parameters.]()
3. Range rules will allow you to add ranges to the tests, if any. Please read the knowledgebase KB: [how to add ranges in LSM]()
4. Test mapping will allow you to add tests that need to be connected. Please read the knowledgebase KB: [how to create tests.]()

7.8 License

Here you can visualize the license of the LSM you have.

For example, like below image you will see these options:

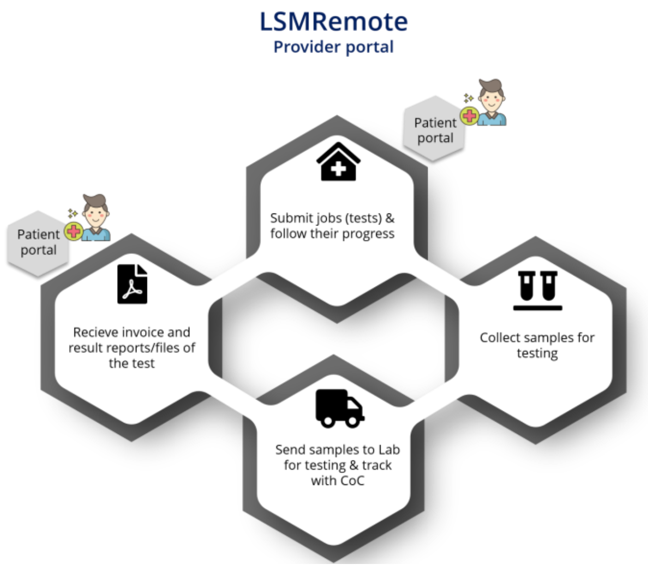


1. You can see your machine or computer activation key.
2. You will see the current license of your LSM.
3. Depending upon the license you will see the number of requester and samples (per month) then you will see their limit. If you exceed this limit you will have to purchase a license with more threshold of requester and samples.

   You will also see features if you have purchased options like
   - Billing option (You will see option for Costs activated in **Admin → Invoices**)
   - Integration for PWNHealth, 1Health, ORDRS, HL7 or I-Collector or
   - Having the LSMRemote portal.
4. If you want to activate your new license, then you can add it here. Generally, AgileBio will provide you with the same.
5. You can click the license here.

8. LSMRemote

LSMRemote allows the clients or customers of the lab that request a test in the form of jobs. Jobs contain the information about the patient or samples, tests, etc.

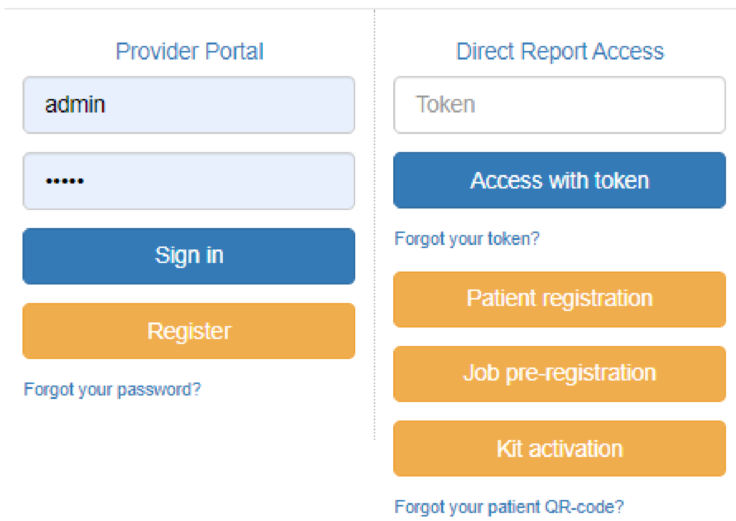


You will be able to see both the provider portal and patient portal at the same time. You can separate the 2 logins by changing the URL.

***You need to replace YOURLABURL by the instance name of your LabCollector.**

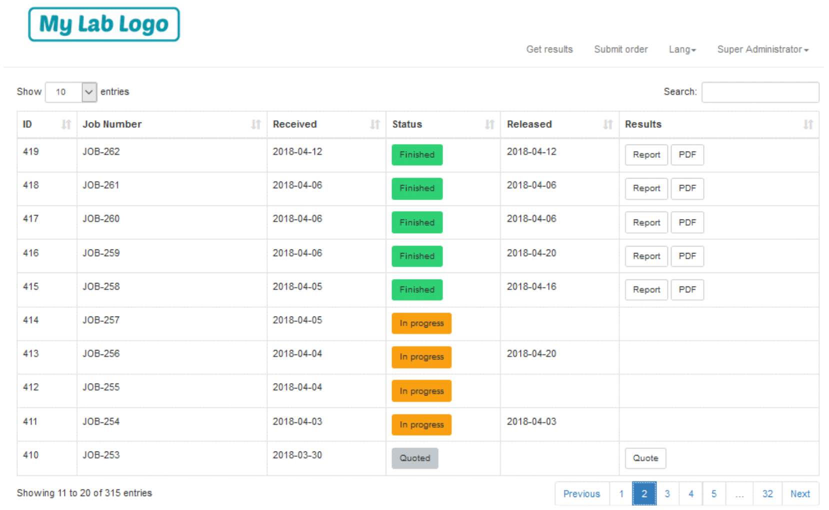
- Provider portal
  https://YOURLABURL/extra_modules/lsmremote/index.php?login=1

- Patient portal
  https://YOURLABURL/extra_modules/lsmremote/index.php?login=2

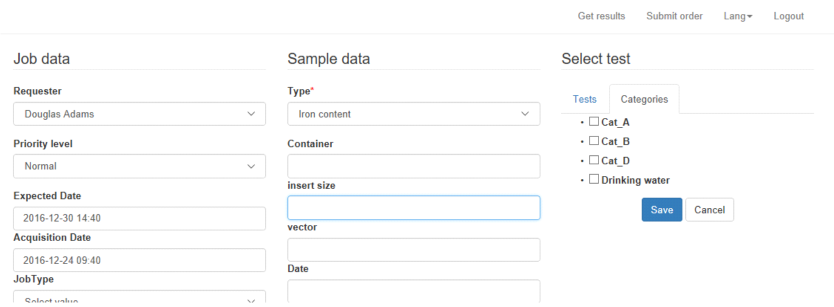


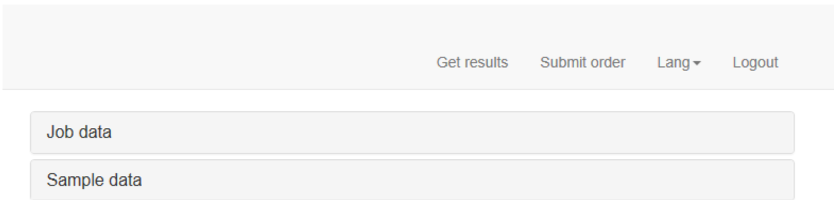
The LSMRemote has a minimal interface to allow 1) viewing of the status of jobs, 2) retrieval of results, 3) submission of jobs. The exact views will vary as they correspond to the way each lab configures their LSM.

View of LSMRemote job list showing the status of jobs and links to retrieve results. Note that output can be sent as a .csv file to another program if needed (contact AgileBio for details).



View of LSMRemote order submission form. Note that the appearance will vary slightly depending on the lab-specific configuration. The form may be connected to an existing website if desired. For more information, please read the [KB-116](KB-116).





8.1 Config.ini

You can configure several options in the LSMRemote according to your requirements.

The new option for config.ini now allows you to configure options using the LSMRemote config.ini feature.

All the options that allow you to set the LSMRemote are mentioned in the Knowledge Base KB: how to set options in config.ini.

Warning

Only a superadmin can access the config.ini options

8.2 Provider Portal

Provider portal allows the requester/Provider the portal allows yo to submit , track jobs, see the patient CoC, results et.

You can integrate the remote portal in your website. You can configure various options in LSMRemote.

To have more information about the portal please read the knowledge-base KB: LSMRemote & related options.

Registration:

In scenarios where the **LabCollector users are themselves requester/provider**, etc. then they can register themselves and will be added automatically as a requester and as a user in LSM. To have more information on registration please read the knowledge-base KB: LSMRemote Registeration.

Warning

The requesters generated from LSMRemote need to be validated in LSM. Please see the link to the above knowledge-base to see the process.

Sign In:

When you login the provider portal, the provider will be able to view all the jobs and follow them.

There are various sections in the provider portal like Get results, submit order , etc that are explain in below section.

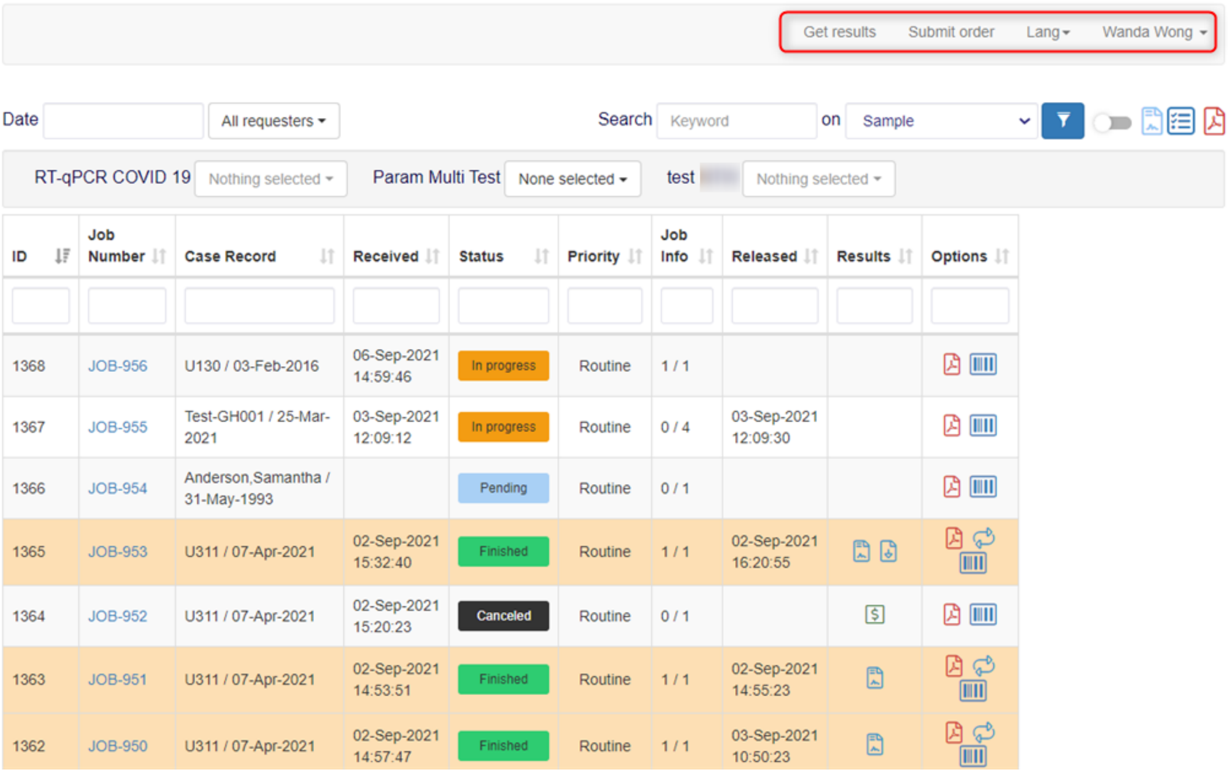
You can even configure your LSMRemote by using config.ini.

To have more information on how to configure LSMRmote using config.ini please read the knowledge-base 🎓KB: [LSMRemote Config.ini.]()

⚠ Warning

Configuration can be only done by the superadmin.

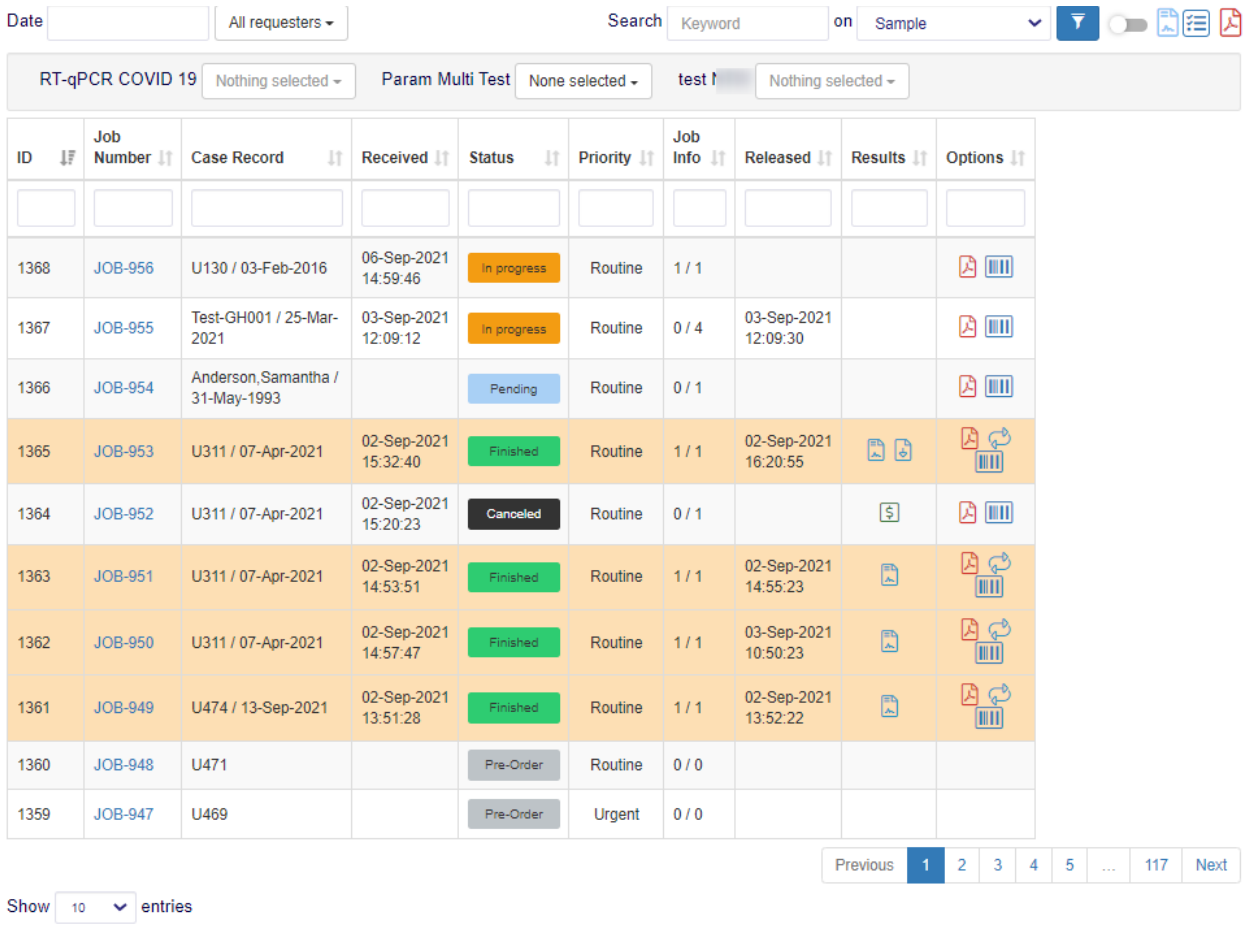
**Below is an image from already configured instance when you sign in. You might not see the exact same thing in your instance.*



8.2.1 Get results

The get results option will bring you to the page below where you can filter and track all your jobs. To have more information about the filters in the portal please read the knowledgebase 🎓KB: [LSMRemote search.]()

**Below is an image from already configured instance. You might not see the exact same thing in your instance.*



Date | All requesters | Search | Keyword | on | Sample

RT-qPCR COVID 19 | Nothing selected | Param Multi Test | None selected | test | Nothing selected

ID	Job Number	Case Record	Received	Status	Priority	Job Info	Released	Results	Options
1368	JOB-956	U130 / 03-Feb-2016	06-Sep-2021 14:59:46	In progress	Routine	1 / 1			
1367	JOB-955	Test-GH001 / 25-Mar-2021	03-Sep-2021 12:09:12	In progress	Routine	0 / 4	03-Sep-2021 12:09:30		
1366	JOB-954	Anderson,Samantha / 31-May-1993		Pending	Routine	0 / 1			
1365	JOB-953	U311 / 07-Apr-2021	02-Sep-2021 15:32:40	Finished	Routine	1 / 1	02-Sep-2021 16:20:55		
1364	JOB-952	U311 / 07-Apr-2021	02-Sep-2021 15:20:23	Canceled	Routine	0 / 1			
1363	JOB-951	U311 / 07-Apr-2021	02-Sep-2021 14:53:51	Finished	Routine	1 / 1	02-Sep-2021 14:55:23		
1362	JOB-950	U311 / 07-Apr-2021	02-Sep-2021 14:57:47	Finished	Routine	1 / 1	03-Sep-2021 10:50:23		
1361	JOB-949	U474 / 13-Sep-2021	02-Sep-2021 13:51:28	Finished	Routine	1 / 1	02-Sep-2021 13:52:22		
1360	JOB-948	U471		Pre-Order	Routine	0 / 0			
1359	JOB-947	U469		Pre-Order	Urgent	0 / 0			

Previous 1 2 3 4 5 ... 117 Next

Show 10 entries

8.2.2 Submit order

Submit order option allows you to create jobs. The fields in the submit order form can be configured witht he help of Config.ini option and using the LSM add-on.

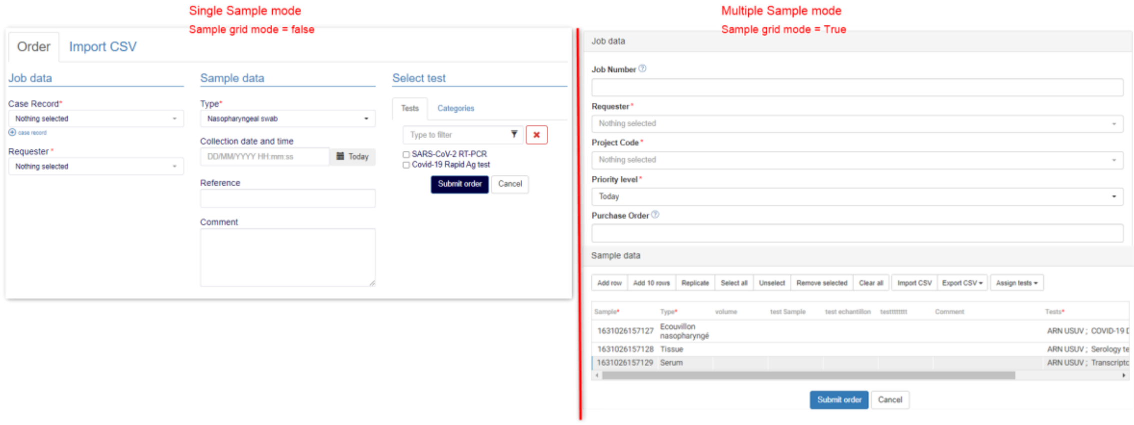
To have more information about how to submit job using LSMRemote please read the knowledgebase KB: [LSMRemote submit job.]

You can have a view of submit job depending upon the if you have setting in config.ini for single samples (Sample grid mode = false) or multiple samples (Sample grid mode = false). The main tabs that you will see in both scenarios below are:

1. Job data
2. Sample data
3. Test data

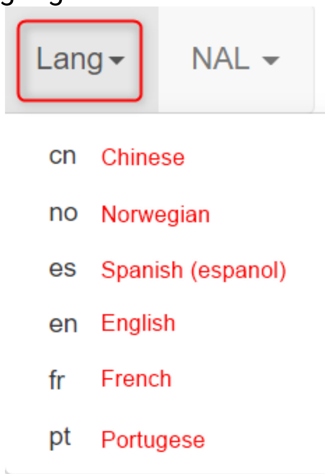
Note

You will only see the "Import CSV" option for the single sample mode.



8.2.3 Lang

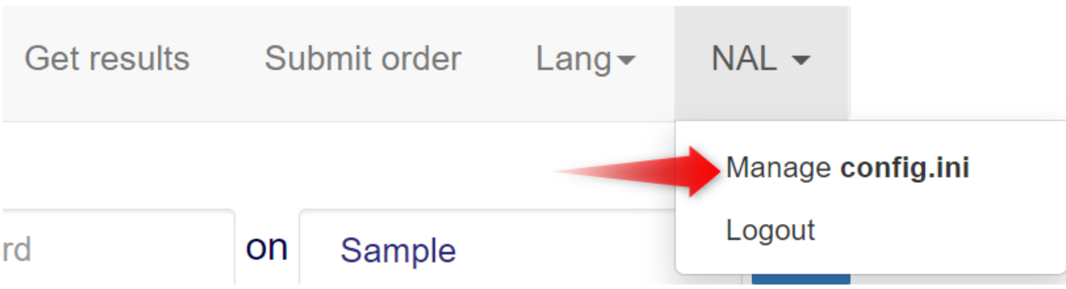
This option allows you to set the language of LSMRemote.



8.2.4 Profile

The profile section will show your name and provide you with login or logout option.

If you have logged in as super admin then you will also see the option to manage option in config.ini that allows you to configure the LSMRemote.



8.2.5 Search in LSMRemote

LSMRemote allows various options to search samples, sample type, jobs, comment, project code, etc.

You can also create custom filters as well.

Please read the Knowledge Base KB: how to search using LSM.

8.3 Direct Report Access

This part of the LSMRemote provides access to the patients to be able to see their test result report or to be able to register their kits, or do pre-registrations with them.

Please read the Knowledge Base KB: how to use the token to access the test result report.

8.4 Patient pre-registeration

Patient registration allows the patients to enter themselves with the respective requester before going to give the sample for testing.

After registration you receive a QR code that you can take while going to give the sample.

Using the QR-code, all their details will be automatically pre-loaded, saving time and making the sample collection process more faster.

Please read the Knowledge Base KB: how to do patient registration using LSMRemote.

8.5 Job pre-registration

Job pre-registration allows patients to not only registration their details but also fill the form the lab offers. Generally this form can contain certain queries about past health history, or previous infections, insurance details, etc related to the patient.

After registration you receive a QR code that you can take while going to give the sample.

When you go to sample collection center, all you have to do is provide your QR code and the providers can pull up the information. You give your sample, and the process is done without loosing any time.

Please read the Knowledge Base KB: how to do job pre-registration using LSMRemote.

8.6 Kit activation

The kit activation allows the patients who purchase kits online or with pharmacy to activate them using LSMRemote. These kits belong to the lab or are registered with the lab that use the LSM and LSMRemote.

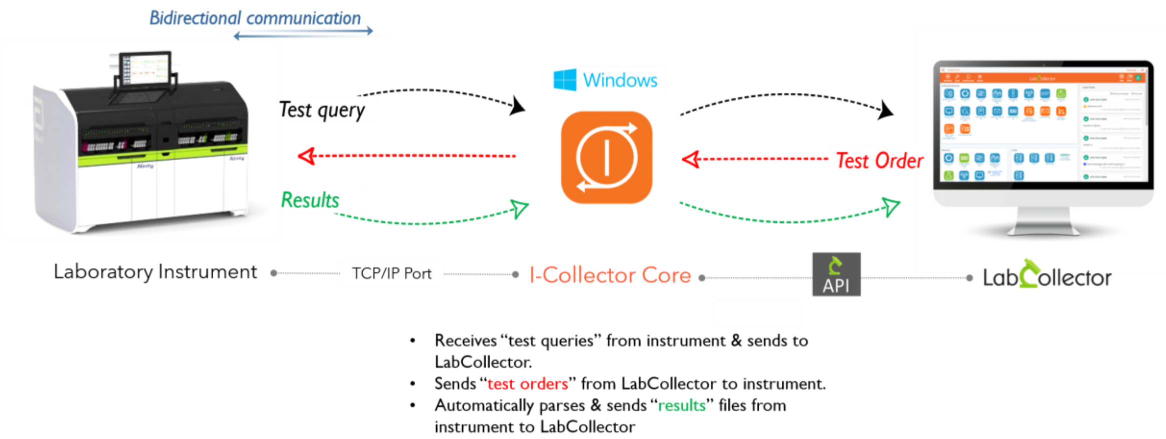
Please read the Knowledge Base KB: how activate kit using LSMRemote.

9. I-Collector & LSM Communication protocols

The LabCollector **LSM** add-on can be associated with i-collector for directcommunication with lab equipment.

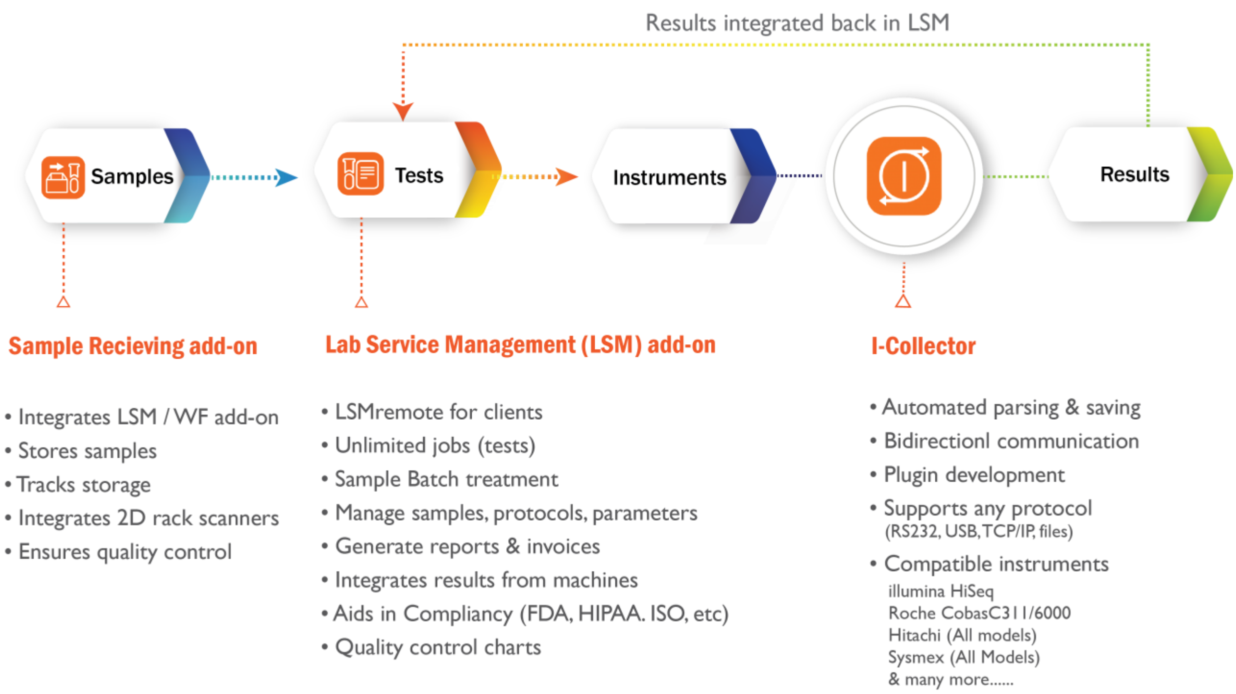
This will allow a selection of some or all information from a test to be entered automatically with minimal manual data entry.

Please read the Blog: I-Collector.

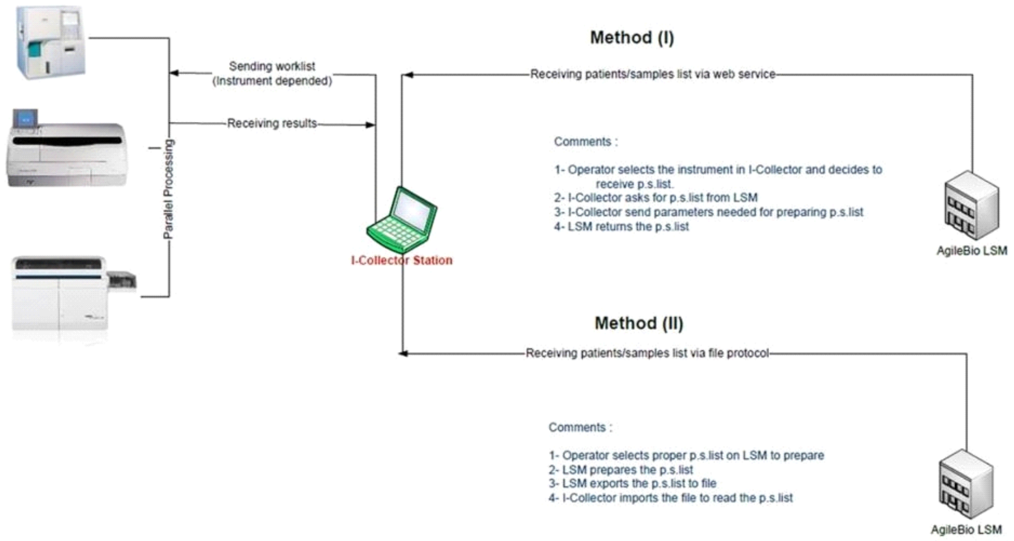


You can integrate the lab instruments and with the help of interpretation logics you can automate to send the results directly in the LSM. Below is the simple general workflow, of how one can use other add-ons like sample receiving, I-Collector with LSM to automate result input.

Please read the Blog: Automation.



Here is an example:

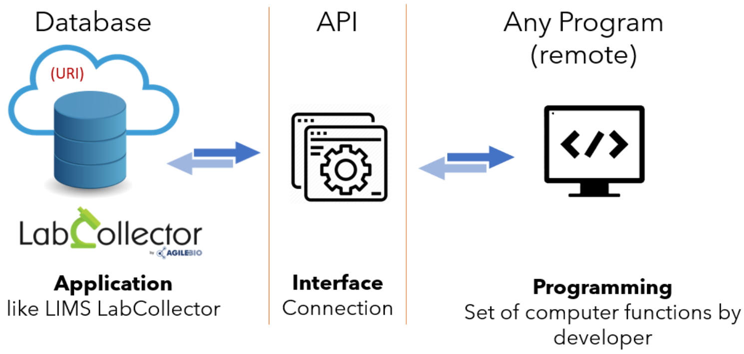


Some equipment is already compatible with LabCollector. Most equipment from common suppliers can be readily connected. Contact us for details on your needs.

The LabCollector API contains many features that allow connections to websites or other systems.

10. API

API is the Application Programming Interface a computing interface that defines interactions between multiple software intermediaries.



LabCollector & LSM add-on can also utilize this API technology to connect 3rd party software.

Please read the knowledgebase KB: API in LabCollector.

Please read the knowledgebase KB: LSM API.

11. Upgrading & Updating

To update or upgrade the **LSM Add-on** module, just download it from our website (www.labcollector.com). Then, unzip the folder and paste files in the following folder: *Programs\AgileBio\LabCollector\www\lab*\extra_modules\lsm*

***The name of this folder is the laboratory nickname chosen during LabCollector installation.**

As a best practice we recommend making a LabCollector backup prior to performing an update or upgrade. Note that instances hosted with AgileBio are backed up regularly.