Sending Results to an LIS Using BD FACSLink[™] Software with BD FACSuite[™] and BD FACSDuet[™] Software Quick Reference Guide

This quick reference guide (QRG) contains instructions for sending results to a laboratory information system (LIS) using BD FACSLink^M software embedded within BD FACSuite^M software with the BD FACSDuet Sample Preparation System. BD FACSLink software provides an interface to an LIS. It is pre-installed and configured for you either on your server or on a small component that is connected by an Ethernet cable to both the BD FACSDuet^M computer and the computer on which BD FACSuite^M software is installed.

Workflow Overview



Create and add a user-defined (UD) assay

To use BD FACSLink in BD FACSuite software, you must create an assay with the following characteristics:

- Contains a Statistics View with the Include in Auto-Export checkbox selected in the Statistics View Properties dialog.

Statistics	View Properties	×
General	Colors and Fonts Decimal Places	
Display	/	
	Populations in Columns	
Acquis	ition	
	✓ Include in Auto-Export	

- The Automatically export results checkbox in the Auto Export Options dialog is selected.

Auto Export Options		
	 Automatically export results 	
Location	C:\BD Export\Results\Worklists	Browse
	🗹 Create dated subfolder (yyyymmd	d)

- Multiple Tube Statistics is selected on your worksheet.



- Contains LIS Assay names and Result names.
- Is a shared assay.

Add the UD assay





2

Expand Assays, select User-Defined, then select your assay.

Library	User-Defined Assays	
Assays	Name	Modified Date
User-Defined Beads and Reagents Keywords Labels Tube Settings		11/1/2016
Select the Send to Ll	S tab and click Edit .	



L&L UD	Edit
General Export Results Reports Send to LIS Assign Lot ID	
Enter a BD FACSLink Assay Name and click Send .	

- Only letters, numbers and underscores are allowed.

L&L UD			
General Export Results	Reports	Send to LIS	Assign Lot ID
BD FACSLink Assay Name	LandL	Send	



4

Check the corresponding Statistics box(es) that you would like to import to your LIS.



Enter the required names in the BD FACSLink Result Name column.

\mathbf{Z}	Statistics	BD FACSLink Result Name	
~	All Events, Events (Tube_001)	Q	
~	All Events, % Parent (Tube_001)	Required - Only let	ters, numbers and underscores are allowed.
~	All Events, % Grandparent (Tube_001)	Ų	
~	All Events, % Total (Tube_001)	Q	
~	All Events, Statistics, FSC-A, Mean (Tube_001)	Q	
~	All Events, Statistics, SSC-A, Mean (Tube_001)	ļ	

✓ Statistics BD FACSLink Result Name All Events, Events (Tube_001) AE All Events, % Parent (Tube_001) AEPP All Events, % Grandparent (Tube_001) AEPGP All Events, % Total (Tube_001) AEPT All Events, Statistics, FSC-A, Mean (Tube_001) \checkmark AEFSCM \checkmark All Events, Statistics, SSC-A, Mean (Tube_001) AESSCM

A confirmation dialog will be displayed.

Publish the UD FACSuite assay to FACSDuet software

When you have a UD assay in BD FACSuite, publish the assay to BD FACSDuet software to allow for a preparation method to be added.

In BD FACSuite software you must create an assay with the following characteristics:

- Contains an LIS assay name and result name.
- Is a shared assay.
- 1 Click the Library icon to go to your library.



2 Expand Assays, select User-Defined, then select your assay.

Library Assays OBD		User-Defined Assays		
			Name	Modified Date
	User-Defined		L&L UD	11/1/2016
Þ	Beads and Reagents			
Þ	Keywords			
	Labels			
Þ	Tube Settings			

3

Right-click on an assay name and select FACSDuet Publish.

Name	Modified Date	Author	
2222 UD	2/4/2019	Admin User	Y
City Of Hope Demo UD	1/31/2019	Admin User	Y
Lymph UD	2/11/2019	Admin User	Y
NK Activated T Cells UD	2/11/2019	Admin User	Y
T Cell Activation Panel UD	0.025.0040		
Z Test UD	Rename	Admin User	Y
	FACSDuet Publish		
	FACSDuet Export		

Note: A message will appear only if the assay cannot be published.

Import the UD FACSuite assay to FACSDuet software

After you have published an UD FACSuite assay to BD FACSDuet software, you must also import the assay.



Library			
ASSAYS REAGENTS PREPARATION METHODS			
📩 Import 🏦 Export 🏢 Delete			
ASSAY	STATUS	AUTHOR	DATE C

3

A dialog will appear. Click FACSLink/Import from middleware.

Choos	e Import Source	
-	File System Import from file	
-	FACSLink Import from middleware	
		Cancel

4

A dialog will appear. Select the assay you want to import.

says			
NAME	CREATOR	LAST MODIFICATION DATE	PUBLISHING DATE
NK Activated T Cells UD	BDAdministrator	2019-02-11	2019-02-11
Lymph UD	BDAdministrator	2019-02-11	2019-02-11
FSE5ul UD	BDAdministrator	2019-02-28	2019-02-28
	MARK Mit Activation of Toole LCD Arrest Not Section D Follower for	Kakehood Kakehood	Mark Mark Mark M Achingd Tochs UD BOdwinisterior 2019/211 mph UD BOdwinisterior 2019/211 Status BOdwinisterior 2019/211 Status BOdwinisterior 2019/211



Select the assay you imported, then tap the Edit icon and continue creating the assay.

G BD	Library							
80 Admin ~	ASSATS REAGENTS PREPARATION METHODS							
% 6	+ Import + Empet							
	a mport a opent							
WORKLISTS	ASSAY	STATUS	AUTHOR	DATE CREATED	LAST MODIFIED BY	DATE MODIFIED		
M LERUNY	🗌 💄 City Of Hope Demo UD 🗷	🔮 Complete		2019/01/31	80 Admin	2019/01/31	1	^
B REPORTS	🗌 🚊 Test2	🤣 Complete		2016/10/15		2019/02/06	1	
O SETTINGS	Crbital Mixer Testing5 UD	Oustomized		2019/01/29	BD Admin	2019/02/07	1	
	Crbital Mixer Testing UD	Oustomized		2019/01/29	80 Admin	2019/02/08	1	
• HELP	Crbital Mixer Testing 4 UD	Oustomized		2019/01/29	BD Admin	2019/02/08	1	1
	Crbital Maxer Testing 2 UD	 Oustomized 		2019/01/29	BD Admin	2019/02/08	1	
G Specimens	🗌 🏦 Lymph UD 🔍	🥝 Complete		2019/02/10	BD Admin	2019/02/11	1	
Beagents Fluids	1 NK Activated T Cells UD	S Complete		2019/02/10	BD Admin	2019/02/11	/	
# BD FACSuite # BD FACSLink	Crbital Mixer Testing 1 UD	 Oustomized 		2019/01/29	80 Admin	2019/02/26	1	
	🗌 🚊 Transfer Specimen	0 Oustomized		2016/10/15			1	\sim



Ensure that each tube has the appropriate preparation method assigned. Select a tube and tap **Options > Choose Method > Apply**. When the assay is complete, tap **Save**.

Library					
ASSAYS REAGENTS PREPARATION METHODS					
Back 🖬 Save					
± NK Activated T Cells UD	Status Complete Lis Name TCELL	Author -	Date Created 2019/02/10	Last Modified By BD Admin	Date Modified 2019/02/11

Send results to the LIS

2

1 After acquisition, analyze the entry and mark the entry **Approved** in either the **Entry Details** panel or the **Worklist Entries** panel. The results are automatically sent to the LIS upon approval of an entry.

B123: 4 Color TBNK + Truc				
CD3/8/45/4 + Truc 🔹 Cu	rrent Tube CD3/16+	56/45/19 + Truc 🔻	Approved Not Approved	
「 (
Lab Report	hysician Report	Supplemental R	eport	
Worklist Entries Approval Addit Trail				
- Approx	red tack	Status	Location	
Sample Approv	ask	Status		

Select Tools > BD FACSLink Test Results History to view information about when the results for all worklists were transferred.

BD FACSLink Test Results History						
	Status	Worklist Name	Sample ID	Task Name	Approved Time	Delivered Time
			B123	3/16+56/45/19 + Tr	10/21/2016 11:51:2:	10/21/2016 11:51:23 AM
	Sent	Worklist_001	C123	3/16+56/45/19 + Tr	10/21/2016 11:51:2:	10/21/2016 11:51:22 AM
	Sent	Worklist_001	B123	4 Color TBNK + Tru	10/21/2016 11:51:1!	10/21/2016 11:51:20 AM
	Sent	Worklist_001	B123	4 Color TBNK + Tru	10/21/2016 11:46:3(10/21/2016 11:46:31 AM
	Sent	Worklist_002	123	6 Color TBNK + Tru	09/13/2016 12:29:5:	09/13/2016 12:29:54 PM
					Refresh	Delete Close

Test the connections

Test the connection to BD FACSLink software

- 1
- Start BD FACSuite Clinical software.



Select Tools > Preferences, then select the Worklist tab.

3 Verify the following information, then click **Test Connection**.

BD FACSLink Connection			
Cytometer Serial Number:	Z6591800011		
Username:	IM_ADMIN		
Password:			
TCP/IP Address:	http 🔻 :// 172.16.10.1	Port 10005	Test Connection
Client Certificate:			Browse

Note: Only users with Administrator privileges can change connection settings.

Click OK.

4

Check the Troubleshooting table at the end of this QRG for resolving connection problems.

Test Connection		
\checkmark	Connection successful.	
	ОК	

System Status			
Cytometer	Universal Loader	Workstation	BD FACSLink
BD FACSLyric (SN:12345)	Installed	13B1KC2	
🗹 Connected			🗹 Connected 🛛 🔫 🔤

Test the connection to BD FACSDuet software

- 1 Start BD FACSDuet software.
- 2 Select Settings > System.
- 3 Verify the following information, then tap **Test Connection**.

🕲 BD	Settings		
BD Admin \sim			
1 5	General	System	
PREPARATION	System	FACSLink Connection	
≣ worklists	Preparation	Username IM_ADMIN	FACSLink URL http:// 172.16.10.1
LIBRARY	Users	Password	Port
REPORTS	Reports		10004
SETTINGS	Maintenance Window Snip	Certificate Path	Secure
	Disabled Notifications		Enables https connection
• HELP			
Not Initialized		9220000102	
 Specimens Carriers Reagents Eluido 		FACSLyric ID 26591800011	
BD FACSuite			
16:18			

Note: Only users with Administrator privileges can change connection settings.

Note: Consult the Troubleshooting table for help with resolving connection problems.



Troubleshooting Connection Issues

As a workaround until you resolve a connection issue with BD FACSLink software, you can export your worklists and import them into BD FACSLink software. See Exporting Worklists in the BD FACSDuet user guide.

Note: Only users with Administrator privileges can change connection settings.

Observation	Possible causes	Recommended solutions	
Unable to send orders down or results up to the LIS	Connection error	 1. Log into Data Innovations Instrument Manager[™] as an Administrator. 2. Select System > Status. 3. Check if the Status column shows Off for either FACSDuet, FACSLyric, or both. If the Status is: Off → ● Stat Selected Connections System Configuration Diagnostics Security Specimen Management SSR DC Stat Selected Connections ● Stop Selected Connections ● Purge Off Off ● ● Off ● ● Status In InQ S Purge Off Purge Off Purge Off Stat Selected Connections ● Stop Selected Connections ● Enter Find Text System Purge Off Purge Off Stat Selected Connections Trace Stop Selected Connections Trace Purge Communications Trace 	
BD FACSLink software is not connected	If BD FACSLink software connects through an Ethernet cable, the cable might be disconnected.	 Check the Ethernet cable connection on the back of the BD FACSDuet computer and on the BD FACSLink computer. Check the Ethernet cable connection on the BD FACSLyric computer and on the BD FACSLink computer. 	
	The BD FACSLink connection settings are invalid.	 After the BD FACSDuet system is installed, it should not be necessary to change the BD FACSLink connection settings. If you suspect that the connection settings need to be changed, contact BD Technical Support. In preparation, do the following steps: 1. With Administrator privileges, tap Settings > System and check the connection settings. 2. Ensure that there are no obvious issues that you can easily correct, such as empty fields or wrong instrument IDs. 3. Make a note of the settings so that you can provide this information to BD Technical Support. 	

This material is for training purposes.

BD FACSuite Clinical Software and BD FACSDuet Software are CE marked For In Vitro Diagnostic Use.

BD FACSLink software is CE marked For In Vitro Diagnostic Use.

BD FACSuite software is for Research Use Only. Not for use in diagnostic or therapeutic procedures. 23-21384-00

Becton, Dickinson and Company, BD Biosciences, 2350 Qume Drive, San Jose, CA 95131 USA

bdbiosciences.com

BD, the BD Logo, FACSDuet, FACSLink, FACSLyric, and FACSuite are trademarks of Becton, Dickinson and Company or its affiliates. All other trademarks are the property of their respective owners. © 2019 BD. All rights reserved.

