



Agilent OpenLab CDS

Acquisition Failover Users Guide



Notices

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Overview

This document describes the OpenLab CDS Acquisition Failover feature available in the OpenLab CDS Client/Server system.

In the normal operation of the OpenLab CDS Client/Server system the connection between an AIC and the OpenLab Server is active. Usernames, privileges, and roles are enforced and a user has full access to all projects, instruments, and data.

In the event that the connection between the AIC and the OpenLab Server is broken, a Failover mode is available so a user can continue to process samples.

This guide describes additional details on running your system in Failover mode and transferring the files collected during Failover mode to Content Management after the AIC connection to the OpenLab server is restored.

Definition of terms used in this document

- **OpenLab Server:** A PC with an ECM XT installation that hosts Content Management. This may also be the storage location for all data/logs created on Clients/AICs.
- **(OpenLab) central server:** A PC with an ECM XT installation that hosts and is the main access to Content Management or a Data Server. There may be other PCs that act as the storage location for all data/logs created on Clients/AICs, which is still access through the central/main server.

How Failover Mode is Triggered

- Network connectivity between the AIC and the server is lost.
- When the client to server connection or a client to AIC connection is lost, if any Acquisition clients are open, a message window will appear stating that the connection has been lost. This message is seen in each client Acquisition window.

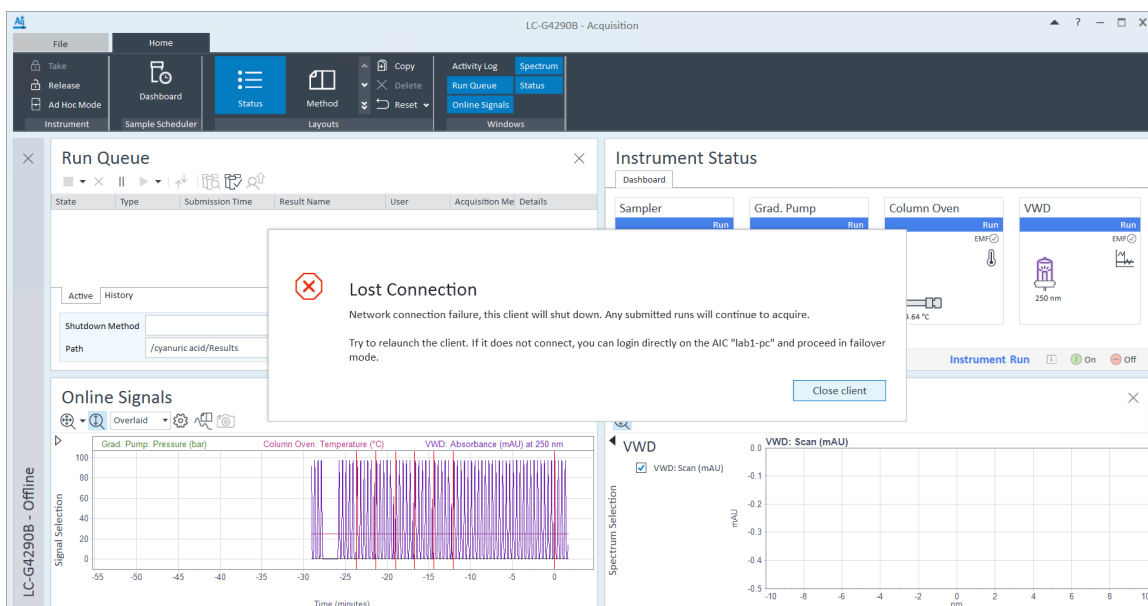


Figure 1. Network disconnection message example

- When an AIC to server connection is lost and you attempt to submit a run, the run will fail and a message will appear stating the connection is lost.

NOTE

When a network connection to a server is not truly lost, but one or more services such as Shared Service, Alfresco Tomcat, or OpenLab Automation on the server are down, Failover mode must not be used. Service failures themselves are not handled using Failover.

How to Access Failover Mode

Identify the AIC machine name for the instrument

To run an instrument in Failover mode, you must identify the AIC on which the instrument is configured. The AIC name is provided in the lost connection message shown in **“How Failover Mode is Triggered”** on page 5. You can also identify the AIC from the Instrument Controllers Reports in Control Panel Administrative Reports, which can be printed for the entire lab when the connection to OpenLab Server is up and running.

Connect to the AIC

Once you have the AIC name, you can connect and log in directly to the AIC by connecting a keyboard, mouse, and monitor to the AIC or remotely by using the Windows Remote Desktop Connection utility.

Any user with physical access to the AIC can launch Failover mode when the Acquisition Clients and AICs have lost connection to the server.

Connect to the AIC

To access Failover mode, launch the Control Panel on an AIC.

- If a connection cannot be made to the central server, there will be a prompt to access Failover mode.
- If the user was already directly accessing an AIC when the connection to the server was active, close and relaunch the Control Panel.

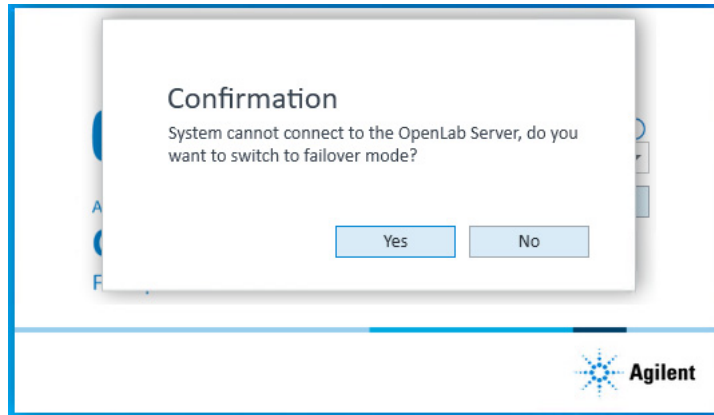


Figure 2. Prompt for accessing Failover mode

NOTE

Any action you perform in Failover mode is attributed to the "System" user, since the AIC cannot determine which user is performing the action. It is the responsibility of your organization to manage and control access to the AIC and manage the traceability of the actions performed in Failover mode.

Connect to the AIC

When the system is running in Failover mode, a red “Failover mode” status is displayed at the bottom of the Acquisition Client application.

The screenshot displays the GC-DS - Acquisition software interface. The top menu bar includes File, Home, GC Plugins, and Control. The main window is divided into several sections:

- Run Queue:** Shows a table with columns for State, Type, Submission Time, Result Name, User, and Acquisition Method. The current entry is 'Acquiring' for a 'Single sample' at '2022-04-06 09:47:15-07'.
- Instrument Status:** Displays the status of the 'Agilent 7890B' instrument. It shows 'GCALS' as 'Idle' and 'Agilent 7890B' as 'Online'. The instrument is currently in 'Instrument Idle' mode.
- Online Signals:** A 'Test Plot' showing signal intensity versus time (minutes). The plot shows several sharp peaks between -8 and 0 minutes.

At the bottom of the interface, a red status bar indicates 'Failover mode'. A yellow arrow points to this status bar.

Files, Projects, and Instruments Available in Failover Mode

Files

AICs automatically cache any methods (.amx, .pmx, .smx), sequences (.sqx), and report templates (.rdl) used during runs executed by them. Such cached files are available for use when submitting new single samples or sequence runs in Failover mode.

If you need to run with a method that is not in the cache, you can also create a new method and use it to submit a single sample or sequence run. However, these newly created methods are not automatically synchronized to the server. It is the responsibility of your organization to document, manage, and preserve such methods and their relationship to the generated result sets.

You can create a new method (.amx, .pmx, .smx) in Failover mode to submit a single sample or sequence run; however, these methods are stored locally in the AIC and do not get synchronized to Content Management. It is the responsibility of your organization to manage and preserve the relationship to the result sets.

Projects

When running in connected mode, AICs cache projects and project groups every 30 minutes. These cached projects are available for use in Failover mode. You cannot create new projects in Failover mode.

NOTE

If a project/project group is created or updated after the most recent synchronization, those changes will not be visible in Failover mode. Those changes will be synchronized next time after the connection from the AIC to the server is restored.

Instruments

In Failover mode, the AIC will only display the instruments it hosts.

NOTE

You cannot create new instruments in Failover.

Operating in Failover Mode

- Project cannot be created or modified.
- Instruments cannot be created, configured, or reconfigured in Failover mode.
- System Settings cannot be modified.
- Acquisition and Data Analysis have limitations added to their normal behaviors while in Failover mode (otherwise they function the same).
 - Runs submitted in normal mode cannot be reviewed in Data Analysis in Failover mode, and vice versa.
 - Sequences submitted in normal mode cannot be viewed in Failover mode, and vice versa
 - Snapshots cannot be taken of sequences submitted in normal mode, and vice versa.
 - Activity log entries generated in Failover mode are tagged with Failover once normal mode is restored.
 - Sequences submitted in Failover mode are named with the <I> <DS> tokens by default, and will have <DS> attached to the end of an existing name if no other date/time token is already attached.
 - Result names have a short date token appended to their selected names.
- To print hard copy reports on the AIC's default printer, when submitting the sequence, select [Local Printer] as the destination printer in the Acquisition client or specify [Local Printer] as the destination printer for reports in the processing method..
- When the network is restored, the message "Network connection is restored. Relaunch the OpenLab Control Panel and Acquisition Client to exit Failover mode" will appear on each Acquisition client window.
 - After acknowledging the message, you can complete your actions or submit new runs.
- When the connection is restored, activity log entries collected in Failover mode are uploaded to the server and all entries will have the same name of the AIC where the event occurred as the username.

Data Transfer to Content Management

All results files from runs submitted while in Failover mode will be cached and stored on the AIC. Once the connection is restored, the user needs to use a special tool to upload the data acquired in Failover mode to the central server.

Once the network is restored, the **Failover Results Uploader** is used for manually transferring project results data generated in Failover mode to Content Management.

Only results can be uploaded using the tool. Method, sequence, sequence template, and result template files need to be manually uploaded directly to the Server.

- 1 To launch the tool, on an AIC that has reestablished its connection to the Server, click **Start > Agilent Technologies > Failover Results Uploader**.
- 2 When prompted, enter your user credentials.
- 3 The tool looks for results stored in the following location:
C:\CDSProjects\\Results.

Only projects with valid results (those that contain .mfx data files) are available for upload.

Results that can be uploaded are displayed in green. Additional projects that have no data are displayed in gray. If no results are detected, the following message is displayed: "Found no failover results to upload."

Users without the permission to access a project folder will not be able to upload data from that project.

Select one or more projects and click **Upload Selected Projects**.

Duplicate data cannot be uploaded.

Data Transfer to Content Management

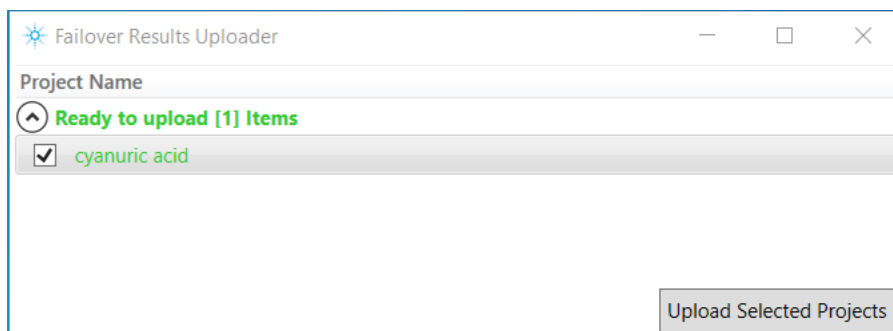


Figure 3. Failover Results Uploader example

Result set files are passed to the File Upload Queue to be transferred to Content Management.

Uploaded result set files are acknowledged in the Content Management Activity log.

Once a result set file has been uploaded, it is deleted from the local AIC storage.

NOTE

Upon reconnection, runs completed in normal mode before the disconnection will be automatically uploaded to Content Management by the File Upload Queue.

Traceability

Traceability

Any user with physical access to the AIC can launch Failover mode when the Acquisition Client or the AIC loses its connection to the server.

Any action you perform in Failover mode is attributed to the “System” user, since the AIC cannot determine which user is performing the action. It is the responsibility of your organization to manage and control access to the AIC and manage the traceability of the actions performed in Failover mode.

LC Not Connected

Project: Launch Launch Offline

Owner contact information:

Activity Log (last 7 days) 1 - 50 of 124

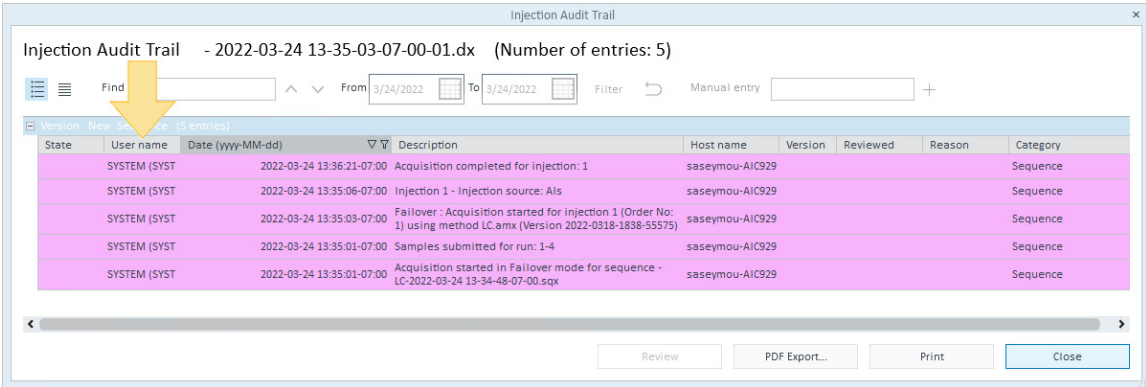
Date/Time	User	Description
2022-03-24 13:42:25-07:00	SYSTEM (SYSTEM)	Run Queue - Completed single sample analysis - LC-2022-03-24 13-34-54-07-00
2022-03-24 13:42:24-07:00	SYSTEM (SYSTEM)	Single sample analysis: LC-2022-03-24 13-34-54-07-00 - Submitted for processing injection 1 - LC-2022-03-24 13-34-54-07-00.dx
2022-03-24 13:42:23-07:00	SYSTEM (SYSTEM)	Single sample analysis: LC-2022-03-24 13-34-54-07-00 - Completed injection 1 - LC-2022-03-24 13-34-54-07-00.dx
Application: OpenLab CDS Source PC: saseymou-AIC929 Details:		Event Category: Instrument Level: Info
2022-03-24 13:41:06-07:00	SYSTEM (SYSTEM)	Single sample analysis: LC-2022-03-24 13-34-54-07-00 - Started injection 1 - LC-2022-03-24 13-34-54-07-00.dx
2022-03-24 13:41:06-07:00	SYSTEM (SYSTEM)	Run Queue - Start single sample analysis - LC-2022-03-24 13-34-54-07-00
2022-03-24 13:41:05-07:00	SYSTEM (SYSTEM)	Run Queue - Completed sequence - LC-2022-03-24 13-34-48-07-00
2022-03-24 13:41:01-07:00	SYSTEM (SYSTEM)	Sequence: LC-2022-03-24 13-34-48-07-00 - Submitted for processing injection 3 - 2022-03-24 13-39-42-07-00-04.dx
2022-03-24 13:41:00-07:00	SYSTEM (SYSTEM)	Sequence: LC-2022-03-24 13-34-48-07-00 - Completed injection 3 - 2022-03-24 13-39-42-07-00-04.dx
2022-03-24 13:39:42-07:00	SYSTEM (SYSTEM)	Sequence: LC-2022-03-24 13-34-48-07-00 - Started injection 3 - 2022-03-24 13-39-42-07-00-04.dx
2022-03-24 13:39:41-07:00	SYSTEM (SYSTEM)	Sequence: LC-2022-03-24 13-34-48-07-00 - Submitted for processing injection 2 - 2022-03-24 13-38-23-07-00-03.dx
2022-03-24 13:39:41-07:00	SYSTEM (SYSTEM)	Sequence: LC-2022-03-24 13-34-48-07-00 - Completed injection 2 - 2022-03-24 13-38-23-07-00-03.dx
2022-03-24 13:38:36-07:00	SYSTEM (SYSTEM)	G4281B:DEABC50000 - Run
2022-03-24 13:38:28-07:00	SYSTEM (SYSTEM)	G4284B:DEABC50000 - Detector: Idle

Failover mode

Ready

Figure 4. Instrument Activity Log in Failover mode showing “System” user

Traceability



Injection Audit Trail - 2022-03-24 13-35-03-07-00-01.dx (Number of entries: 5)

Find From 3/24/2022 To 3/24/2022 Filter Manual entry

State	User name	Date (yyyy-MM-dd)	Description	Host name	Version	Reviewed	Reason	Category
SYSTEM (SYST)	SYSTEM (SYST)	2022-03-24 13:36:21-07:00	Acquisition completed for injection: 1	saseymou-AIC929				Sequence
SYSTEM (SYST)	SYSTEM (SYST)	2022-03-24 13:35:06-07:00	Injection 1 - Injection source: AIs	saseymou-AIC929				Sequence
SYSTEM (SYST)	SYSTEM (SYST)	2022-03-24 13:35:03-07:00	Failover : Acquisition started for injection 1 (Order No: 1) using method LC.amx (Version 2022-0318-1838-55375)	saseymou-AIC929				Sequence
SYSTEM (SYST)	SYSTEM (SYST)	2022-03-24 13:35:01-07:00	Samples submitted for run: 1-4	saseymou-AIC929				Sequence
SYSTEM (SYST)	SYSTEM (SYST)	2022-03-24 13:35:01-07:00	Acquisition started in Failover mode for sequence - LC-2022-03-24 13-34-48-07-00.sqx	saseymou-AIC929				Sequence

Review PDF Export... Print Close

Figure 5. Injection Audit Trail in Failover mode showing "System" user

If the AIC "System" user creates a new method (.amx, .pmx, .smx) in Failover mode to submit a single sample or sequence run, the Injection Audit Trail and Result Set Audit Trail calls out these methods as Failover. It is the responsibility of your organization to manage the traceability between the method and result set.

Traceability

When the network is restored and normal mode is reestablished:

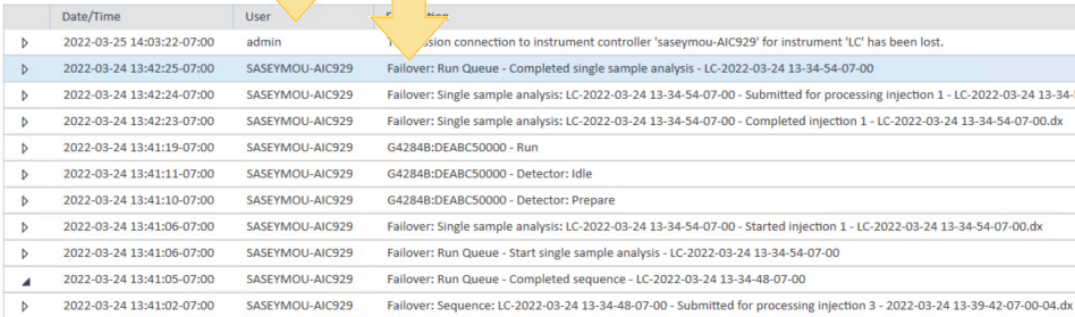
- Sequences and samples submitted in Failover mode are tagged with “Failover” in the Instrument Activity Log, Injection Audit Trail, Sequence Audit Trail, and ResultSet Audit Trail.
- In the Instrument Activity Log, the User name changes from “System” to the AIC name.

LC

Project: Ellameno

Details

Activity Log (last 7 days)



Date/Time	User	Message
2022-03-25 14:03:22-07:00	admin	...
2022-03-24 13:42:25-07:00	SASEYMOU-AIC929	Failover: Run Queue - Completed single sample analysis - LC-2022-03-24 13-34-54-07-00
2022-03-24 13:42:24-07:00	SASEYMOU-AIC929	Failover: Single sample analysis: LC-2022-03-24 13-34-54-07-00 - Submitted for processing injection 1 - LC-2022-03-24 13-34-54-07-00
2022-03-24 13:42:23-07:00	SASEYMOU-AIC929	Failover: Single sample analysis: LC-2022-03-24 13-34-54-07-00 - Completed injection 1 - LC-2022-03-24 13-34-54-07-00.dx
2022-03-24 13:41:19-07:00	SASEYMOU-AIC929	G4284B:DEABC50000 - Run
2022-03-24 13:41:11-07:00	SASEYMOU-AIC929	G4284B:DEABC50000 - Detector: Idle
2022-03-24 13:41:10-07:00	SASEYMOU-AIC929	G4284B:DEABC50000 - Detector: Prepare
2022-03-24 13:41:06-07:00	SASEYMOU-AIC929	Failover: Single sample analysis: LC-2022-03-24 13-34-54-07-00 - Started injection 1 - LC-2022-03-24 13-34-54-07-00.dx
2022-03-24 13:41:06-07:00	SASEYMOU-AIC929	Failover: Run Queue - Start single sample analysis - LC-2022-03-24 13-34-54-07-00
2022-03-24 13:41:05-07:00	SASEYMOU-AIC929	Failover: Run Queue - Completed sequence - LC-2022-03-24 13-34-48-07-00
2022-03-24 13:41:02-07:00	SASEYMOU-AIC929	Failover: Sequence: LC-2022-03-24 13-34-48-07-00 - Submitted for processing injection 3 - 2022-03-24 13-39-42-07-00-04.dx

Figure 6. Instrument Activity Log in normal mode showing user name and “Failover” tag

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