Agilent OpenLab CDS

Acquisition Failover Users Guide

Notices

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Software Revision

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1 OpenLab CDS Acquisition Failover in Client/Server Systems

In the normal operation of the OpenLab CDS Client/Server system, the connection between an AIC and the OpenLab server is active. User names, 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 Secure Storage after the AIC connection to the OpenLab server is restored.

Failover mode

When the connection to the server is lost, you can start OpenLab CDS Acquisition in Failover mode on the Analytical Instrument Controller (AIC). In this mode, you can create and submit single samples or sequences using the limited set of methods available in the local cache.

During Failover, OpenLab CDS Acquisition can continue to collect data. All acquired data is saved to the local disk along with complete sample information and any Custom Column values.

Operational Continuity using LC/(Q-)TOF instruments and MassHunter applications

When the connection to the server is lost, LC/(Q-)TOF instruments will continue acquiring a running sequence to completion. You can create and submit single samples or sequences using the limited set of methods available in the local cache. Processing data with MassHunter Data Analysis is not supported in Failover mode.

For details, see Operational Continuity using (Q-)TOF instruments, MassHunter applications, MAM sequences on page 15.

Operational Continuity using GC/MS and LC/MS single quadrupole instruments

Operational Continuity and Failover have been blocked for all GC/MS and LC/MS single quadrupole instruments. Acquisition will not start in Failover mode for these instruments, and any running sequences will abort if the system enters Operational Continuity.

Agilent plans to release a solution to allow LC/MS and GC/MS single quadrupole instruments to resume using Operational Continuity and Failover in an OpenLab CDS update. You may monitor this issue for updates under KPR# 1381839 on the Software Status Bulletin page.

Definition of terms used in this document

- *OpenLab server*: A PC with an OpenLab Server/ECM XT installation that hosts Secure Storage. This may also be the storage location for all data/logs created on Clients/AICs.
- *(OpenLab) central server*: A PC with an OpenLab Server/ECM XT installation that hosts and is the main access to Secure Storage 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 accessed through the central/main server.

2 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 displayed in every impacted client Acquisition window.

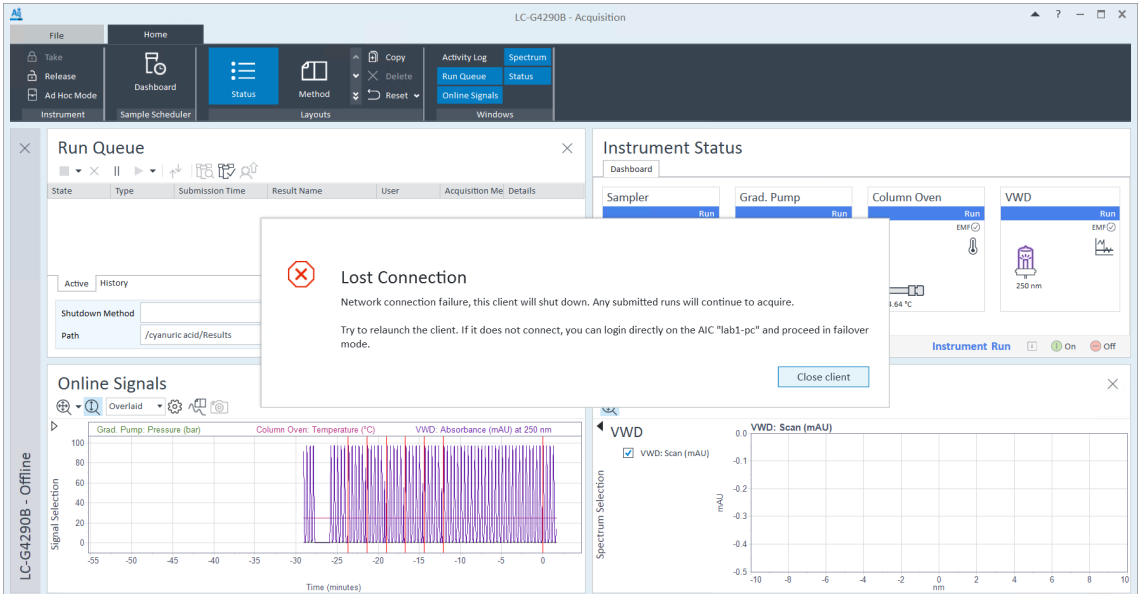


Figure 1: Network disconnection message example

- 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 Services, Secure Storage, or OpenLab Automation on the server are down, Failover mode must not be used. Service failures themselves are not handled using Failover.

3 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 (see How Failover Mode is Triggered on page 7). You can also identify the AIC from the Instrument Controllers Reports in Control Panel's 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 access 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.

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.

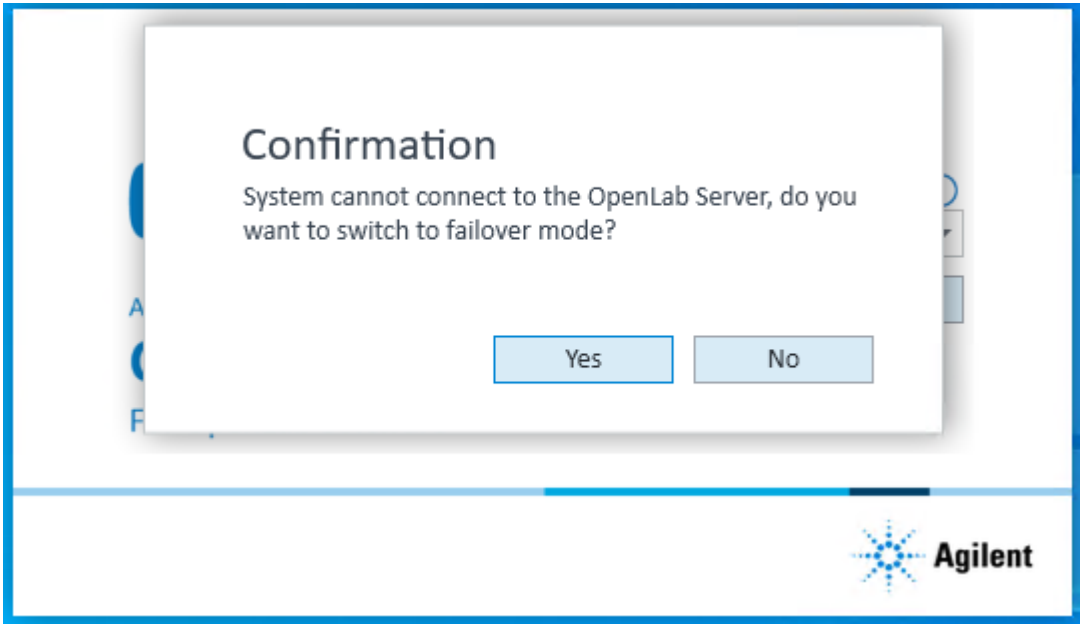
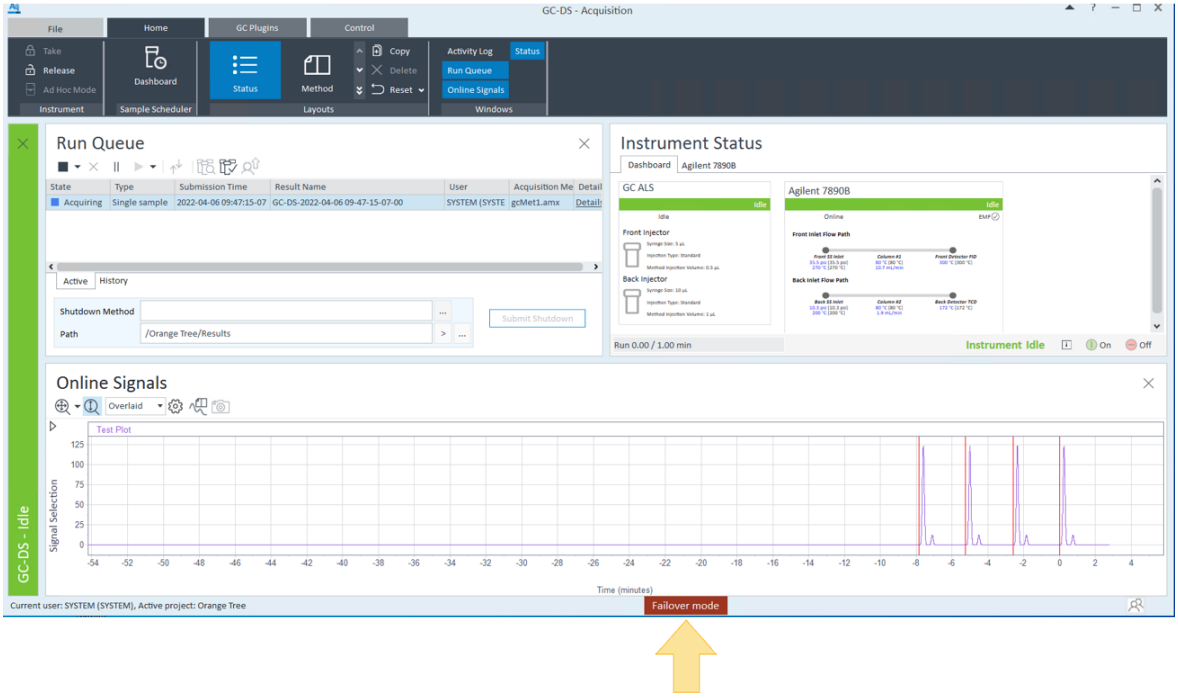


Figure 2: Prompt for accessing Failover mode

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.

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



4 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

In normal operation, when a connection to the OpenLab server is available, 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 before switching to Failover mode, 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 mode.

NOTE After upgrading an instrument's AIC to OpenLab CDS 3.0, OpenLab CDS Acquisition must be launched at least once for that instrument before it becomes available for use in Failover mode.

5 Operating in Failover Mode

- Projects cannot be created or modified.
- Instruments cannot be created, configured, or reconfigured.
- 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 when in Failover 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.

6 Operational Continuity using (Q-)TOF instruments, MassHunter applications, MAM sequences

To enable operational continuity using (Q-)TOF instruments, configure your sequence as follows:

1 With a sequence loaded in the sequence table, click **Run Options**.

2 Select **Use Data processing error handling**.

3 Select **Ignore error and continue**.

When the connection to the server is lost, LC/(Q-)TOF instruments will complete acquisition of the running sequence.

Data Acquisition

You can create and submit single samples or sequences using the limited set of methods available in the local cache.

If sequences contain custom column information for MassHunter Qual or BioConfirm, this information will be read-only; the system uses previously saved values.

All activity will be logged in the Instrument Activity Log and reflected in Run Queue details.

Data Processing

Processing data with MassHunter Data Analysis is not supported in Failover mode.

7 Data Transfer to Secure Storage

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 Secure Storage.

Only results can be uploaded using the tool. Method, sequence, sequence template, and report 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 (location can vary depending on the project root path configured when the AIC was installed): **C:\CDSProjects\<Project Name>\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.

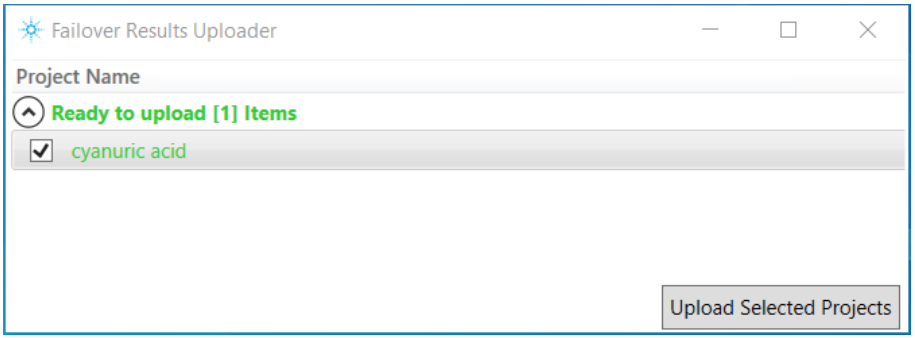


Figure 3: Failover Results Uploader example

Result set files are passed to the File Upload Queue to be transferred to Secure Storage.

Uploaded result set files are acknowledged in the 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 Secure Storage by the File Upload Queue.

8 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.

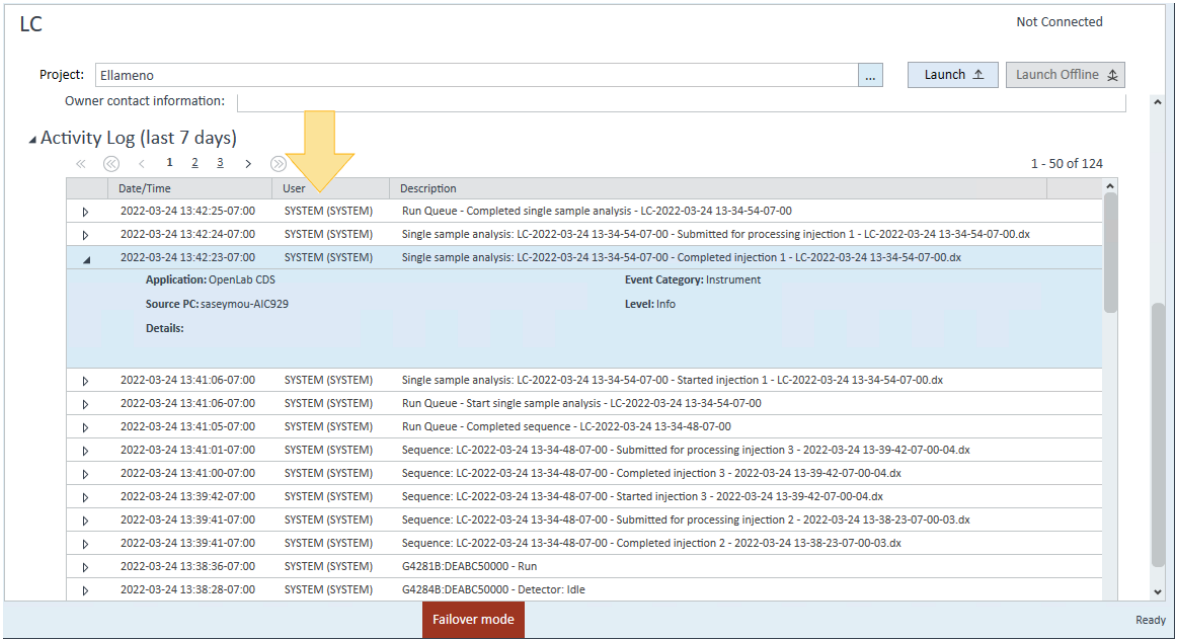


Figure 4: Instrument Activity Log in Failover mode showing System user

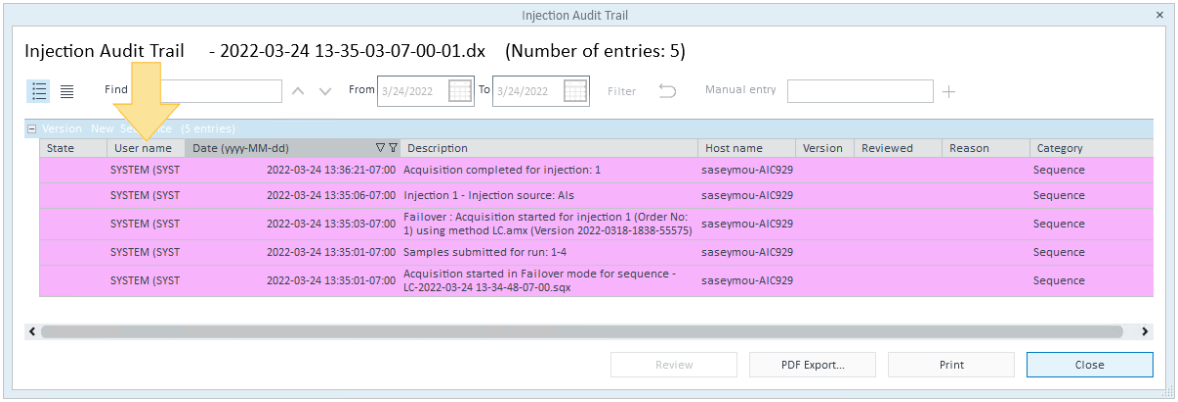


Figure 5: Injection Audit Trail in Failover mode showing System user

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.

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 Result Set Audit Trail.
- In the Instrument Activity Log, the User name changes from **System** to the AIC name.

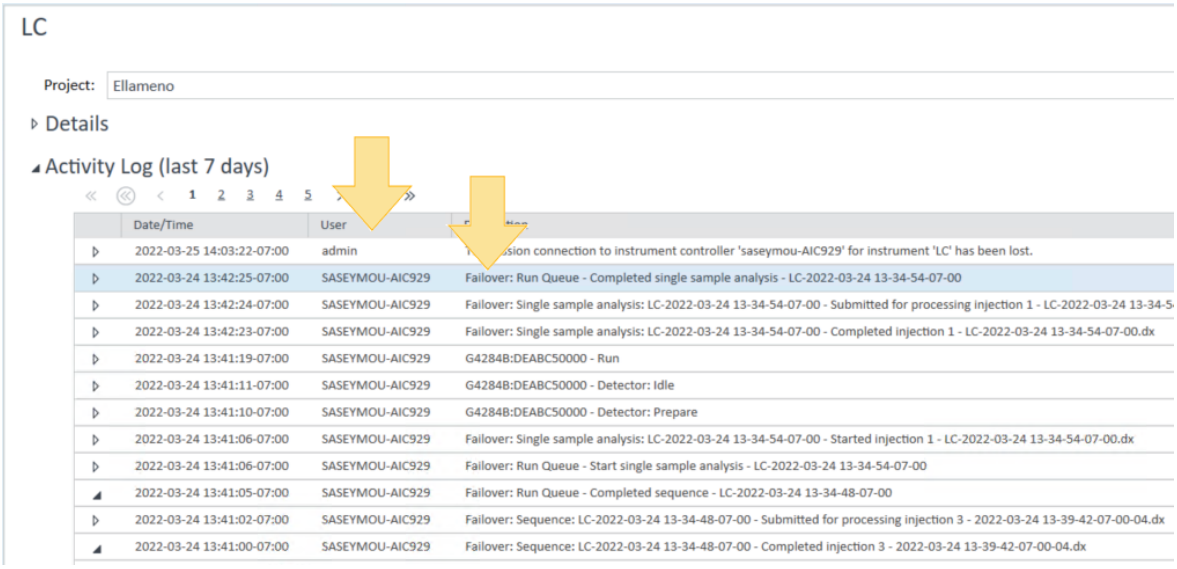


Figure 6: Instrument Activity Log in normal mode showing user name and Failover tag

In This Book

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

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