

Title:	GUI 4.0 Playback Issue	Version:	v.2	Date:	062020
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Action Required:	Information Only				

Summary

GUI 4.0 introduced a new database structure concept to improve the performance of video searching at the local GUI. During the transition, local GUI playback may have been experiencing sluggish playback, video skipping or black screen, missing recording, and unresponsiveness. This technical bulletin will explain details regarding the database issue and provide clear instructions on how to resolve the problem.

Device and Firmware

The models and firmware that may experience the issue are I Series firmware between v4.1.10 and v4.1.70 and Super NVR firmware v.4.1.63

The following firmware versions resolve the issue (as of June 2020):

- NVR I Series – Firmware version v4.22.005
- Super NVR I series – Firmware version v4.1.65

Symptoms

- Local playback is slow and unresponsive
- Local playback does not retrieve video that was recorded
- No color (blue or orange) filled in the date of the calendar, but it is supposed to have recording (intermittent recording)

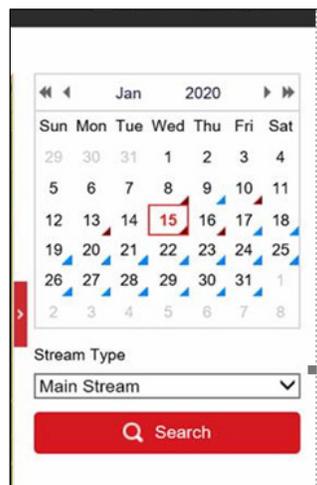


Figure 1, No Color Indicator on the Calendar with Recording

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- Recording bar is shown, but only black screen (no OSD either) on playback.



Figure 2, Time Bar Should Be Continuous Blue, but Shows Blank Gap

- When playing back the video, the video playback bar either gets stuck or jumps to different time frame.
- Playback Video plays, but when fast forward is beyond 4x, playback video stops, shows black screen, or shows a frozen image.
- Record schedule is continuous, but playback bar scatter is not a solid blue bar.
- HDD status constantly shows “repairing,” repairing status rotates on each of the HDDs.

Cause

Prior to GUI 4.0, B-Tree indexing was the searching mechanism for our data storage. GUI 4.0 introduced a new database structure concept to improve the video searching performance. Web browser and SDK still use the B-Tree indexing for data search mechanism. Only local GUI playback in GUI 4.0 has adapted the new mechanism. When upgrading an NVR from v3.x.x to v4.1.61, the NVR will start data structure transition from B-Tree to the new database structure. During the transition, memory for the playback may not properly allocate in the new database structure to perform its task; thus causing the repairing task to overuse the memory for playback. The system has fewer resources to perform search and playback in the local GUI, which causes video skipping and slow playback performance.

Solution

Firmware v4.22.005 for I Series and firmware v4.1.65 for Super NVR I Series have corrected the database memory handling issue. The **Manual Database Repair** function under storage management in the local GUI also introduced in the new firmware. If, however, the system is still experiencing any local playback issues due

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to an unhealthy database, manual database repair for each HDD can restructure the storage database to improve the performance. During the database repair process, the system should not have any rebooting action. If so, please resume the repairing process after the system boots up. **The system is fully functional during the data repair process.** Only the local GUI playback session may experience slow performance during the repair process. The following steps demonstrate how to perform a manual database repair. At the local GUI of the device:

1. Log in as admin > **Storage > Storage Management.**
2. **Select HDD > Click on “Repair Database.”**
3. A warning message, **“Repairing will rebuild all database. Existing data will NOT be affected...”** will pop up; click **Yes** to proceed or **Cancel** to cancel the action.
4. Status of the HDD will show the progress percentage. If checked multiple drives, the database repair will perform based on the HDD number. Drives on the line to database rebuild will show **“1%”** in the status.
5. No further action is necessary after start the database repairing process.

How To Verify the Database Repair Is Completed

1. In the Web user interface, **Configuration > System > Maintenance.**
2. Click on Log – Major type select Information – Minor type select Data Rebuild Stopped.
3. Configure the Start Time and End Time.
4. Search

You should see Data Rebuild Stopped in the minor type like below.

NOTE: Please expect days to finish database repair, not minutes or hours.

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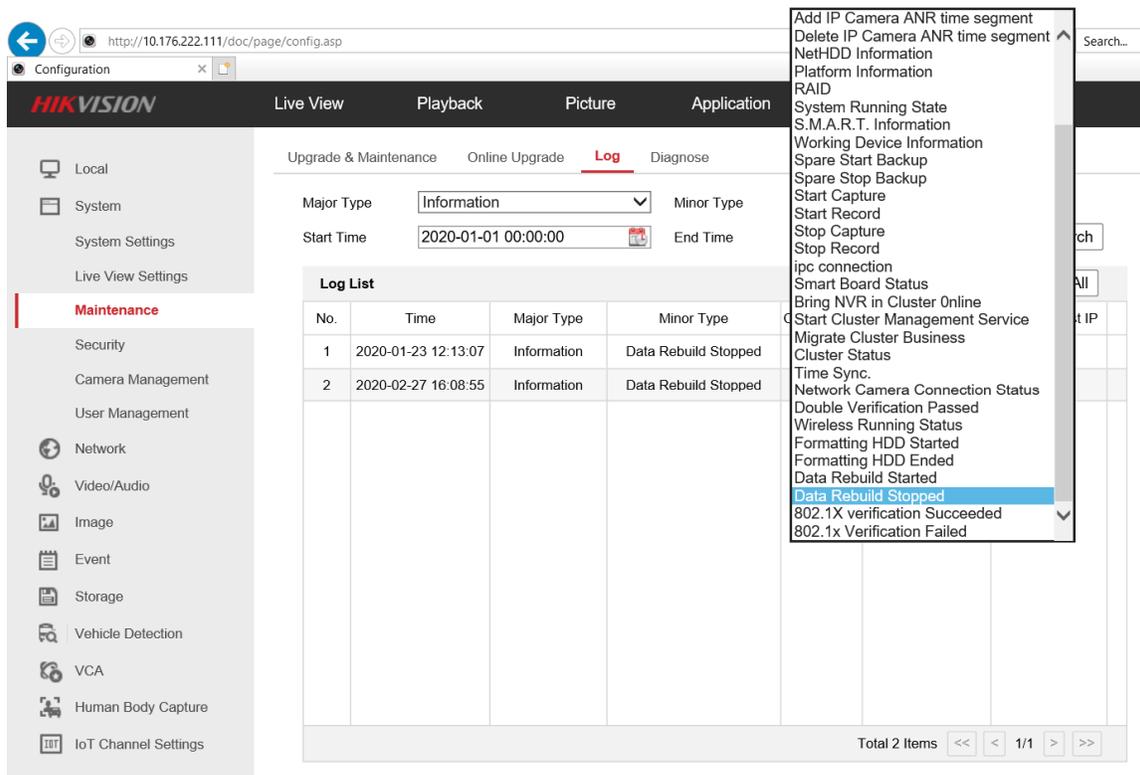


Figure 3, Check Log To See if Data Rebuild Is Completed

List of Firmware Relate to Database Rebuild from Old to New

V4.21.008 190625

Database rebuild available on Web interface and local GUI

Added two ways to repair the database on the Web client: repair video and repair all the data. Repairing video will take less time, about half an hour. Repairing all data will repair videos, pictures, and events. It usually takes several hours to one day depending on the size and number of hard drives.

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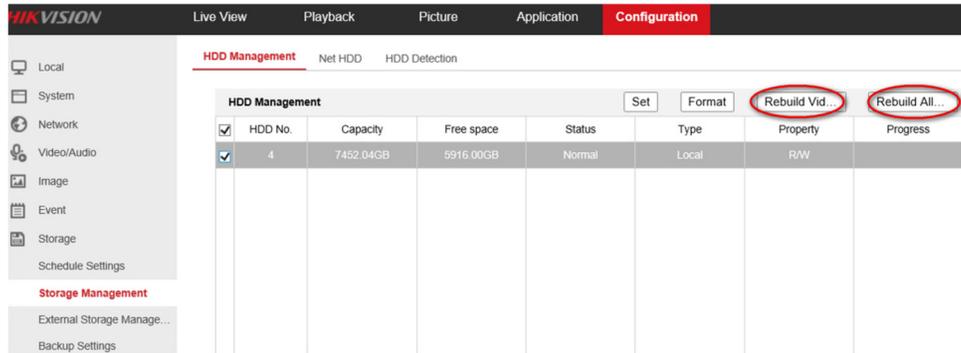


Figure 4, Rebuild Database Function Is Available on the Web Interface

V4.22.005 191208

Once upgraded to 4.21.008 and performed manual database repair, in most case the database will be re-indexed and playback will come back with no recording gap. However, in some cases, if before the upgrade the NVR resource was having issues, manual database repair will not resolve the issue. This is where the problem arises here. 4.22.005 addresses such an issue.

v4.40.010 200430

New feature update but unrelated to playback issue.

Keynote

- System will still be fully functional during the repairing process.
- Recording will still record based on its recording schedule.
- Old recordings will not be deleted, the process only rebuilds the database structure.
- Size of the recordings, number of drives, and complexity of the recording (event recording) determine the timeframe of the database repair. Please allow days to finish database repair, not hours or minutes.
- Local GUI Playback may still experience slow performance during the database repair process.
- New recording on the hard drives will not have issues to playback when formatting the HDD after firmware upgrade.