

IBM LTO-7 Firmware Version M570 (FH) and M571 (HH) Release Announcement

June 2020

Preface

This Product Information Bulletin announces the release of IBM LTO-7 firmware updates M570 for full-height (FH) drives and M571 for half-height (HH) drives. These updates are intended, among other things, to increase overall reliability, improve tape handling, further reduce any possibility of error, and provide continued enhancements to diagnostic capabilities.

Models Affected

This firmware affects all IBM LTO-7 drives, both FH and HH.

Upgrade Considerations

All systems running code IBM LTO-7 KAH0/KAH1 can be upgraded to LTO-7 M570/M571.



CAUTION: To prevent data corruption, verify that all active backup and recovery jobs to the NEO tape library are completed prior to performing the upgrade.

Downgrades

Downgrades are not supported.

Functional Improvements (Reduce Permanent Errors)

Firmware fixes included with the M570 FH and M571 HH updates:

General Drive Improvements

- **FSC 781X while reading/writing:** There were some cases where the drive was using tension compensation (for TDS) when it was not necessary.
- **FSC 7060 on READ:** Added an ERP to reposition the read track on the shingled track to the position that it was at, when the read verify was done during the write operation.
- **Locate or space failure:** Locate failure on file mark near beginning of wrap resulting in FSC 6353, position error on media with a secondary FSC 7230, Media inconsistent fragment.
- **A drive could hang or fail for a FSC 601D on Space to EOD:** If a previous WRITE command had permed, a drive spacing/locating to EOD might hang or fail.
- **Drive could Time Out on WRITE command without sense data:** The drive could sometime read register values that were transient. Code was added to wait until the values were stable before allowing the register values to be read.

- **Load fails with FSC 2C50:** If an attempt to partition fails the next load of the cartridge will fail. The EOD information page is modified to allow the cartridge to load.
- **Enabled diagnostic information to dumps on failed Long Erase command:** If an ERASE command failed, there was no diagnostic information included in the drive logs for problem determination.
- **FSC 7060 on READ Command:** An unreadable data set was generated at the beginning of a wrap due to a DFC error. When read it would perm with a 7060.
- **Improved READ ERPs to reduce FSC 7060.**
- **Host interface may incorrectly log byte counts when a CRC spans a burst boundary:** Fixed the boundary case so that the byte count is correct.
- **Broken tape at the leader pin and FSC 2E02:** Wait to pick pin until clutch test completion to reduce the chance of breaking tape near the leader pin when mechanical clutch condition is bad.
- **Failure of a SPACE/LOCATE command with FSC 6353.** Modify ERP to find the correct write pass by skimming beyond the next fragment.
- **Read error FSC 7274:** An incorrect entry was made during a repeated suspended write append which caused a FSC 7274 on readback.
- **Drive write performance might appear to be low.** The drive incorrectly handled when a manual recalibration was done and reported slower than normal write speeds.
- **FSC 7346 on Write:** During a write append, if the drive went into an ERP condition where it could fail with a 7346.
- **CM usage info not updated.** Suspended writes append entry in CM usage info is not updated. It always indicates zero.
- **Intermittent 5338 and 53A1.** Fixed a timing issue where the ADC read register would not have been updated before being read. This would cause the drive to report a failure when it was good.
- **Fix radius calculation for LTO7+ tapes:** Due to a wrong parameter, in the rare case where the drive loses servo in a highspeed locate at logical EOT, the drive may go past physical EOT.

Library Drive Improvements

- **Drive incorrectly sends check condition on LUN1 (library) command:** Incorrect checking of sense data for LUN1 causing check condition when determining if the library is ready.
- **An aborted command with delayed processing caused a panic:** The drive did not clean up an aborted command completely which caused the drive to panic.
- **Set VHF Cleaning Requested when the Clean is indicated in the Tape Alerts:** Although the cleaning request was indicated in the tape alerts, it was not always reported in the VHF data.
- **ADI drive communication failures:** If many re-login occurs for error recovery, some IUs may not be cleared correctly from tracker list, which can cause the drive to stop communicating with the library.
- **The in-HAT bit in the Read Logged-In Host Table is never set.**

SAS Drive Improvements

- **Multi-initiator on SAS may stop receiving frames:** Prevented race condition on multiple initiator SAS that interfere with open request.
- **SAS command Timeout:** When being accessed by multiple SAS initiators, a rare race condition that could cause the drive to timeout in handling multi-initiator change of initiators.
- **Drive may do unnecessary host interface retries:** Retry counts were not always cleared for test unit ready and request sense commands causing the drive to think it needed to issue host retries.

FC Drive Improvements

- **Panic due to HBA re-use of OX_ID too quickly:** Improved the re-use of host HBA originator exchange id in the drive to avoid unexpected reboot.

- **Log Page 0x38 was incorrectly updated during FC SRR:** The log page counters for blocks was incorrectly updated when an SRR occurs on an FC drive. This caused the values to go very large.

HH Drive Improvements

- **Change band change brushing criteria to less frequently:** Minimize the number of brushes during a clean cycle based on data band changes.
- **Improve stopwrite performance:** High PES and lower tensions with some tape/drive combinations could cause high stopwrites.
- **Drive hangs during head brush:** If two condition were met for a head brush. In that case one might be called while another one was on going, which could hang the drive.
- **Drive hangs on unload:** If the drive was near BOT and an UNLOAD was issued, the drive could hang.
- **FSC 2E00 on midtape failure:** Drive FSC should be 2E07.

Encryption Improvements

- **Encrypted record cannot be read after the encryption key was changed:** Resequenced the end marker so that the drive knows the encryption key had changed.

Downloads

Firmware update codes IBM LTO-7 M570 (FH) and M571 (HH) are available for download for supported NEO users with active software entitlement agreements. Go to the Overland-Tandberg Customer Support Portal by navigating to the Manage Products page: <http://support.overlandstorage.com/support/neo-series.htm>.