IBM LTO-8 Firmware Version N4Q1 (HH) Release Announcement

July 2021

Preface

This Product Information Bulletin announces the release of IBM LTO-8 firmware update N4Q1 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-8 HH drives.

Upgrade Considerations

All systems running code IBM LTO-8 MA71 can be upgraded to LTO-8 N4Q1.

> ⚠ **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.

Fixes That Affect All Drives

- **FSC 6000 on an UNLOAD Command**: Improved the error handling when recovered error handling is enabled. The drive would sometimes return GOOD status, even though the unload failed. Pending prior to the unload commands may not be handled correctly.

- **Enhanced error recovery algorithms to help reduce FSC 7060/6353 failures**: Modified error recovery procedures (ERPs) to implement conditional use of a different variation of tape tension and retry methods to reduce media related failures.

- **LOCATE/SPACE command time out**: Due to a code bug, a reposition timeout could occur when moving to the last record on tape.

- **Drive hang during unload on a mid-tape recovery (MTR)**: The drive encountered a hardware error during a MTR. Instead of reporting the hardware error (78E3) the drive hung and became unresponsive.

- **Improve tape handling during MTR at BOT**: After a power cycle with a tape in the drive, the drive did a MTR (Mid Tape Recovery) did not completely recovery due to a velocity stall near BOT. A change was made to better control the speed transition as the drive approached BOT.

- **UNLOAD command hang after a previous UNLOAD failure**: The drive was unloading and had a hardware failure that caused an FSC 2E0C. Subsequent UNLOAD commands received no return response from the drive.

- **Drive failed a LOCATE/SPACE with an FSC 7274**: The drive code was using an invalid value as a start position for a locate which caused the failure.

- **Cartridge load fails with an FSC 2C3E**: When a cartridge is in an invalid state, the drive would fail with a 2C3E. This change allows the customer to reformat the cartridge and correct the invalid state so the cartridge can be reused.

- **Adjust IFC trigger criteria**: Adjusted the thresholds that call IFC (In Field Calibration) to better react to dead tracks and stop writes.

- **Stuck tape due to tape being pulled out of the cartridge**: The drive did not properly dequeue commands after a previous tape failure when that tape was unloaded. When a second tape was loaded, these commands were unexpectedly executed with the first tapes parameters, causing the second tape to be pulled out of the cartridge. This caused the drive to fail with a FSC 2E12, and the tape to get stuck.

- **Remove LP3 pass count as EOL trigger**: The trigger to flag media as EOL based on the LP3 tape passes, was removed. This was requested by multiple customers.

- **Drive failed with a FSC 7175/6353 during skimming operation**: The drive did not properly handle the reading of a dataset written at a wrap turn during a suspended append write.

- **Drive failed a write append with FSC 7165**: The drive used the wrong estimated LPOS value that caused the drive to fail the write append.

- **Drive did not respond to a READ command causing that command to Timeout**: Due to a race condition between drive code components the drive did not respond to a read commend with cause a Command timeout.

- **Fail writes for corroded writers**: Added code to determine if the write process is compromised by writer elements that may be corroded. If that is determined, the drive will fail the write and report a FSC 53B1 and then fence the drive from further writing (which would then report a FSC 105B). This was done to help prevent drives from creating tapes that cannot be read.

- **Tape pack refresh after MTR**: After the mid-tape recovery (MTR) is complete a tape refresh (BOT to EOT) will be performed to reduce media damage that might have happen during the MTR.

- **Unexpected reboot may occur**: When reading a combination of encrypted and non-encrypted data near BOP, a drive panic may occur which causes the drive to reboot.

Downloads

Firmware update code IBM LTO-8 N4Q1 (HH) is available for download for supported NEO users. To download IBM LTO firmware, browse to this site:

https://download.overlandtandberg.com/Firmware/Tape_Drives/IBM_LTO8_Drive/