

IBM LTO-9 Firmware Version P371 (HH) Release Announcement

April 2022

Preface

This Product Information Bulletin announces the release of IBM LTO-9 firmware update P371 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-9 HH drives.

Upgrade Considerations

All systems running code IBM LTO-9 NCA1 can be upgraded to LTO-9 P371.



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

- **Drive reset:** Fixed a code panic by clearing the watchdog timeout more often during UDS processing.
- **Drive fails READ with a FSC 7060:** Code was enhanced to improve read ERP to distinguish between c2 verification and reread from tape.
- **Code Panic:** Fixed a code panic caused by a logic issue in the ERPs at a boundary condition.
- **Incorrect bits per mm in density information:** Fix condition so the drive returns correct 21459 bits per mm to the host.
- **Drive fails with 601D on READ:** Areas with poor read quality can lead to mis-correction iterative error recovery process methods. Adding code to reset mis-correction counter.
- **READ command timeout:** Adding code to force restart reading at idle mode to avoid timeout.
- **Servo error with an FSC 78D1:** Improved code to provide correct motor current to prevent tape slack.
- **Improve logic in LTO Perm error reporting:** An FSC 7246 code was incorrectly reported as a drive perm. Changed the reporting of this FSC to avoid posting if the FSC has a sense Key of 1 (recovered error).
- **Read error with an FSC 7076:** Drive fails to start reading when it intends to locate/space to near BOT. Code was changed by setting the correct position to start reading.
- **Write error with an FSC 7340:** Added a code retry operation to avoid this write perm from being reported.
- **Read failure during ERP:** When the drive was attempting a READ ERP (Error Recovery Procedure) an incorrect LPOS position limit caused that ERP to fail.

- **WRITE append time out:** The drive was having trouble getting the current position on tape and used an estimated value instead. This caused the drive to time out because it could not find the position to append.
- **Incorrect sense ASC/ASCQ reported for FSC 2C0B “Invalid Cartridge Type”:** When an unsupported cartridge type was loaded into the drive, the drive reported an ASC/ASCQ of 3/3001. It was determined that a 3/3002 was more appropriate.
- **WRITE failed with a FSC 7346:** The Drive failed a WRITE command incorrectly. A reporting action, which should have been handled without a failure, should have been suppressed as a perm failure.
- **LP17 not correct on a load/hold:** When a cartridge was loaded but not treaded, LP17 was incorrectly updated. LP17h should not be updated at the HOLD position but should keep the last mounts values until fully mounted (for example, completed threading and ready to be used).
- **Drive fails the READ at EOW with a FSC 6353:** Drive failed a READ at the EOW because it mistakenly read stale data from the buffer when it should have checked the Tape Directory.
- **Reject load of refurbished cartridge:** Added code to reject a refurbished cartridge on LOAD.
- **TDS calibration was incorrectly done after MTR:** If the drive was interrupted during a TDS calibration, which required a MTR (Mid Tape Recovery), the drive would incorrectly execute a TDS calibration. The TDS calibration should have been done on the next cartridge load.
- **Avoid referring invalid TD for WP confirmation:** When reading the last wrap, which had failed a WRITE previously, the drive used the WP from the tape directory, which was invalid.
- **READ failed with an FSC 6353:** The starting position of a read ERP was not correct which caused the drive to start the ERP in the wrong position.
- **Drive failed a READ on a tape which had a previously failed WRITE:** The drive referred to an invalid tape directory caused by a previous WRITE failure. When the drive READ into the last wrap it failed. Drive should avoid referring to an invalid Tape Directory.
- **UNLOAD command hang:** If the drive issued an UNLOAD command, while going into power saving mode, then the drive UNLOAD may hang. Expected behavior would be for the drive to reload the tape do a LTU, then unload.
- **Drive incorrectly reported end of data:** Drive ran across an old EOD which had been overwritten by a suspended append write. A check was added to verify the EOD detected, was the EOD reported in the CM.
- **TDS calibration gets hung:** Due to a Servo race condition during the TDS calibration, a timeout could occur on the LOAD command or FORMAT command should this occur.
- **EOD READ failure on tape test:** During a tape test, the drive incorrectly read the EOD information from the CM which was not correct.
- **Full length LTU is sometimes done with no tape motion:** An unload command might take up to four minutes to complete even though no tape motion was done after the load command.
- **Reposition timeout due to incorrect location:** The drive would continually try to read from the same incorrect location and could not get to the proper position.
- **Improved TDS cartridge calibration time:** The TDS cartridge calibration process was improved to decrease the time it takes to complete the TDS calibration.
- **FID not written if TDS calibration fails with FSC 2C60:** If the drive does not find a FID when checking the CM at the next load, the drive will write the FID after the next TDS calibration finishes.
- **Reposition timeout:** The drive got into a condition where it could not get to the reposition target. The starting position of the reposition was corrected so that target could be found.
- **Improve “open” reader criteria:** Added additional logic to better identify when a read track was to be reported as “opened” by checking to read performance characteristics of the channel.
- **TDS Calibration failed with FSC 2C60:** Drive failed cartridge calibration due to its handling of invalid LPOS values. Improved the calibration process to handle some invalid LPOS conditions.
- **Improve thermal criteria:** Changed the high temperature thresholds for ejecting cart and fencing loads and reporting Tape Alerts when chip temperatures and or deck temperatures reach these thresholds.

- **Enhancing unload operation time after load with re-chuck ERP:** Changed code to reset high water mark position of tape correctly at re-chuck ERP, avoiding unload operation requesting a full length LTU that takes long time.
- **Load failure with WORM media:** Fix Tampering error when drive was loading a WORM tape and no Housekeeping Data Set is read.
- **Uninitialized WORM cartridge does not execute TDS calibration:** The TDS Calibration was not being done in an uninitialized cartridge.

Downloads

Firmware update code IBM LTO-9 P371 (HH) is available for download for supported NEO users. To download IBM LTO-9 firmware, browse to this site:

https://download.overlandtandberg.com/Firmware/Tape_Drives/IBM_LTO9_Drive/

Additional documentation on how to operate, configure, and support your NEO library is available at:

<https://www.overlandtandberg.com/knowledgebase/>