

T10/05-233r3 SAT - ATA Errors to SCSI Errors - Translation Map

To: T10 Technical Committee
From: Wayne Bellamy (wayne.bellamy@hp.com), Hewlett Packard
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Subject: T10/05-233r3 SAT - ATA Errors to SCSI Errors - Translation Map

Revision History

Revision 0 (June 08, 2005) first revision

Revision 1 (June 27, 2005) second revision

Changes: (per 6-20-05 W.G.)

- 1) Removed ILI, C/D, I/O, BBK, and CHK bits (per 6-20-05 W.G. T13 recommendations) from Table 1.
- 2) A table, similar to Table 2, preferred with the words for sense key asc/ascq (not the hex values). (Two choices provided – pick one.)
- 3) Removed DRDY, DSC, IDX bit lines from Table 2.
- 4) For CORR bit error put “Not an error” under SCSI side in Table 2.
- 5) Removed 03/13/00 from IDNF row in Table 2.
- 6) The W.G. shall decide before next meeting the appropriate SCSI error for the ABRT bit and IDNF bit from the values presented.
- 7) Noted: All other bit mapping communicated to be correct in Table 2.

Revision 2 (June 30, 2005) third revision

- 1) Moved ATA bits acronym table and all additional related information to the end of the proposal (to be deleted later).
- 2) Changed ATA “ABRT” bit map to SCSI “0Bh/00h/00h” (ABORTED COMMAND – NO ADDITIONAL SENSE INFORMATION).
- 3) ATA “IDNF” bit mapped to SCSI “03h/14h/01h” (MEDIUM ERROR – RECORD NOT FOUND).

Revision 3 (July 13, 2005) fourth revision – **approved for SAT inclusion** -

- 1) Put sense key and asc each in their own column.
- 2) Remove AMNF (been gone since 1998).
- 3) Add a line for the ATA “WP” bit and map to DATA PROTECT (07/27/00).
- 4) The “ABRT” bit takes lower priority to any other bit error bit if multiple bits are set. Make this a note in table 1.
- 5) Remove all editors notes, W.G. notes, and everything after table 1.

Related Documents

(T10) sat-r04 – SCSI to ATA Translation (SAT), Revision 4

(T10) spc-3 r22 – SCSI Primary Commands - 3, Revision 22

(T13) ata7v1r4b – AT Attachment with Packet Interface -7 Volume1, Revision 4b

Overview

1. All ATA errors must be properly translated to appropriate SCSI errors.
2. Incorrect error translations can result in improper responses from the SCSI application client. As a result, drastically incorrect actions may be taken by a data center storage manager (device removal, etc.).

3. CLOSE SCRUTINY OF THIS PROPOSAL BY THE ATA COMMUNITY IS REQUESTED.

Suggested Changes

12.2 Error Translation – ATA (non-packet device) to SCSI error map

“ATA” non-packet device errors must be mapped (or translated) to the appropriate SCSI errors. The ATA Status register and Error register bit settings provide the information to be translated into SCSI sense key, additional sense code, and additional sense code qualifier for error reporting. Table 1 provides the translation map of all ATA non-packet device errors to SCSI errors.

Table 1: ATA Errors to SCSI Errors

ATA Error		SCSI Error	
Register		SENSE KEY	ADDITIONAL SENSE CODE
Status	Error		
DF	-	HARDWARE ERROR	INTERNAL TARGET FAILURE
ERR	NM	NOT READY	MEDIUM NOT PRESENT
ERR	UNC	MEDIUM ERROR	UNRECOVERED READ ERROR
ERR	WP	DATA PROTECT	WRITE PROTECTED
ERR	IDNF	MEDIUM ERROR	RECORD NOT FOUND
ERR	ABRT ^a	ABORTED COMMAND	NO ADDITIONAL SENSE INFORMATION
ERR	MC	UNIT ATTENTION	NOT READY TO READY CHANGE, MEDIUM MAY HAVE CHANGED
ERR	MCR	UNIT ATTENTION	OPERATOR MEDIUM REMOVAL REQUEST
ERR	ICRC	ABORTED COMMAND	INFORMATION UNIT iuCRC ERROR DETECTED
CORR	-	(This is not considered to be an error.)	
^a ABRT bit is ignored if any other ATA error bit is set.			