



Date: 28 October 2023
 To: T10 Technical Committee
 From: Ralph O. Weber
 Subject: SAT-6 Add ATA READ LOG DMA EXT Command

Introduction

Among the most conspicuous differences between SATA and SCSI, the nature of logs holds a special place in the minds of SCSI / ATA Translation aficionados.

Direct access to the information transferred by an ATA READ LOG DMA EXT command will provide benefits to both the SATL and the application client.

- The SATL will gain knowledge of what the application client wants without becoming enmeshed in the messy work of parsing ATA PASS-THROUGH commands on the fly.
- The application client will benefit from access to the wide variety of ATA Log capabilities, including but not limited to reading vendor specific ATA Logs.

This proposal adds to the collection of SATL specific command extensions an ATA READ LOG DMA EXT command to eschew the baggage of pass-through generalities while simultaneously allowing the application to ask the question that's really on its *"mind"*.

Revision History

r0 Initial revision

Unless otherwise indicated additions are shown in underlined blue, deletions in ~~red-strikethrough~~, and comments in green. Differences between this revision and the previous revision, if any, are highlighted with change bars.

Proposed Changes in SAT-6 (based on SAT-5 r10)

2 Normative References

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~~T13/BSR~~ INC ITS 529-2018, ATA Command Set- 4 (ACS-4)

~~T13/BSR~~ INC ITS 558-2021, ATA Command Set- 5 (ACS-5)

T13/BSR INCITS 574 ATA Command Set- 6 (ACS-6)

12.2 SATL specific command extensions

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Table 198 – SCSI / ATA Translation specific commands

Command name	Operation code	Reference
ATA PASS-THROUGH (12)	A1h	12.2.2.2
ATA PASS-THROUGH (16)	85h	12.2.2.3
ATA PASS-THROUGH (32)	7Fh/1FF0h ^a	12.2.2.4
ATA READ LOG DMA EXT	TBDh	
^a This command is defined by a combination of operation code and service action. The operation code value is shown preceding the slash and the service action value is shown after the slash.		

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[12.2.new ATA READ LOG DMA EXT command](#)

<<<All of 12.2.new is added text. The use of changed text markups is suspended for all of 12.2.new.>>>

Table x1 shows the format of the CDB for the ATA READ LOG DMA EXT command.

Table x1 – ATA READ LOG DMA EXT command

Byte\Bit	7	6	5	4	3	2	1	0
0	OPERATION CODE (TBDh)							
1	LOG ADDRESS (7:0)							
2	PAGE NUMBER (15:8)							
3	PAGE NUMBER (7:0)							
4	LOG PAGE COUNT (15:8)							
5	LOG PAGE COUNT (7:0)							
6	FEATURES (15:8)							
7	FEATURES (7:0)							
8	Reserved							
9	Reserved							
10	Reserved						NCQ	
11	CONTROL (see 6.5)							

The OPERATION CODE field is defined in SPC-6 and shall be set as shown in table x1 for the ATA READ LOG DMA EXT command.

The SATL shall copy the contents of LOG ADDRESS (7:0) field to the ATA LOG ADDRESS field in the ATA READ LOG DMA EXT command (see ACS-6).

The SATL shall copy the contents of PAGE NUMBER (15:8) field to the ATA PAGE NUMBER (15:8) field in the ATA READ LOG DMA EXT command (see ACS-6).

The SATL shall copy the contents of PAGE NUMBER (7:0) field to the ATA PAGE NUMBER (7:0) field in the ATA READ LOG DMA EXT command (see ACS-6).

The SATL shall copy the contents of LOG PAGE COUNT (15:8) field to the most significant byte in the ATA LOG PAGE COUNT field in the ATA READ LOG DMA EXT command (see ACS-6).

The SATL shall copy the contents of LOG PAGE COUNT (7:0) field to the least significant byte in the ATA LOG PAGE COUNT field in the ATA READ LOG DMA EXT command (see ACS-6).

The SATL shall copy the contents of FEATURES (15:8) field to the most significant byte in the ATA FEATURE field in the ATA READ LOG DMA EXT command (see ACS-6).

The SATL shall copy the contents of FEATURES (7:0) field to the least significant byte in the ATA FEATURE field in the ATA READ LOG DMA EXT command (see ACS-6).

The NCQ field (see table x2) specifies whether the SATL encapsulates the ATA READ LOG DMA EXT command in an ATA RECEIVE FPDMA QUEUED command (i.e., whether the ATA READ LOG DMA EXT command is processed as a entry in the NCQ queue (see ACS-6)).

Table x2 – ncq field

Code	Description
00b	The SATL may <ul style="list-style-type: none"> a) process the ATA READ LOG DMA EXT command as a non-NCO command; or b) encapsulate the ATA READ LOG DMA EXT command in an ATA RECEIVE FPDMA QUEUED command as described in ACS-6.
01b	The SATL shall process the ATA READ LOG DMA EXT command as a non-NCO command.
10b	The SATL shall <ul style="list-style-type: none"> a) process the ATA READ LOG DMA EXT command as a non-NCO command, if the SATL has not placed a command in the NCO queue for a vendor specific time that is not less than ten minutes; or b) encapsulate the ATA READ LOG DMA EXT command in an ATA RECEIVE FPDMA QUEUED command as described in ACS-6, if: <ul style="list-style-type: none"> A) at least one command is in the NCO queue; or B) the SATL has placed a command in the NCO queue in the previous ten minutes.
11b	The SATL shall encapsulate the ATA READ LOG DMA EXT command in an ATA RECEIVE FPDMA QUEUED command as described in ACS-6.

The CONTROL field is described in 6.5.