

T10/05-270r0 SAT – WRITE SAME (10) command (41h)

To: T10 Technical Committee
From: **samanth1@netapp.com**, Network Appliance
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Subject: T10/05-270r0 SAT – WRITE SAME command

Revision History

Revision 0 (July 7, 2005) first revision

Related Documents

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

(T10) sbc-2r16 – SCSI Block Commands -2, Revision 16

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

Overview

1. Some SCSI implementations and operating systems use the WRITE SAME command to initialize the data on block device media to a know state.
2. Inclusion of the WRITE SAME command seems beneficial. The complexity of the emulation of the said command seems minimal.

Suggested Changes

9.16 WRITE SAME (10) command (41h)

9.16.1 Command summary

The WRITE SAME (10) command requests that the device server transfer a single logical block from the data-out buffer and write the contents of that logical block to the specified range of logical block addresses (see SBC-2). Non-packet ATA devices do not support or have a direct translation for the WRITE SAME(10) command. The SATL device server may adopt one of the methods described in sections 9.16.1.1 or 9.16.1.2.

9.16.1.1 Method 1 – Translating into a Single WRITE command

The SATL device server may convert the WRITE SAME (10) command to a single WRITE command, derived with reference to section 9.12.2, assuming that FUA bit is not set, and alter the ATA sector count field to match the NUMBER OF BLOCKS field.

9.16.1.2 Method 2 – Translating into a multiple WRITE commands

Alternatively, the SATL device server may issue NUMBER OF BLOCK times the WRITE command, derived with reference to section 9.12.2, assuming that FUA bit is not set, and set the ATA sector count field to 1 in each of the WRITE commands. If a WRITE command fails, the WRITE SAME (10) command shall be terminated with CHECK CONDITION status with the sense key set to HARDWARE ERROR and the additional sense code set to WRITE ERROR.

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Table 1- REASSIGN BLOCKS command CDB fields

Field	SATType	Description or reference
OPERATION CODE	E	The SATL may convert this command to a single WRITE command and adjust the sector count field or issue NUMBER OF BLOCKS of WRITE commands with sector count set to 1, as defined by 9.16.1.
LBDATA	U	The SATL may implement this field as defined in SBC-2.
PBDATA	U	The SATL may implement this field as defined in SBC-2.
WRPROTECT	U	See SBC-2.
LOGICAL BLOCK ADDRESS	I	A 32 bit LBA shall be derived from bytes 2 through 5, where byte 5 is the LSB and byte 2 is the MSB.
GROUP NUMBER	U	The SATL may implement this field as defined in SBC-2.
NUMBER OF BLOCKS	I	The NUMBER OF BLOCKS shall be used to set the ATA sector count. ^a The SATL shall issue as many ATA commands as needed to satisfy the transfer length specified by the WRITE (10) command. (see 9.12.2)
CONTROL	I	(see 6.4)
^a The NUMBER OF BLOCKS field set to zero specifies that the device server write all the logical blocks starting with the one specified in the LOGICAL BLOCK ADDRESS field to the last logical block on the medium.		