

To: T10 Technical Committee
From: Jim Hatfield, Seagate (James.C.Hatfield@seagate.com)
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Subject: SAT2 Translation of SECURITY PROTOCOL IN/OUT

Revision History

Revision 0 (Feb. 14, 2007) First revision

Revision 1 (Mar. 1, 2007) Incorporate comments from Feb. 19 SAT meeting

Related Documents

1) Project: 1711-D Rev: 09 (sat-r09.pdf)

2) SPC-4

[3\) Information technology - AT Attachment 8 - ATA/ATAPI Command Set \(ATA8-ACS\), \(rev 3f or later\)](#)

Overview

The SECURITY PROTOCOL IN and SECURITY PROTOCOL OUT commands were designed to be as similar as possible to the ATA 'TRUSTED SEND' and 'TRUSTED RECEIVE' commands. This document specifies the translation between the SCSI and the ATA forms

Suggested Changes

Add to Clause 8

8.AA. SECURITY PROTOCOL ~~OUT~~IN command

8.BB. SECURITY PROTOCOL OUT command

8.AA SECURITY PROTOCOL IN command

8.AA.1 SECURITY PROTOCOL IN command translation

The SECURITY PROTOCOL IN command shall be translated to either the ATA TRUSTED RECEIVE command or to the ATA TRUSTED RECEIVE DMA commands

8.BB.1.1 Opcode translation

The ATA Command field shall be set to either 5Ch or 5Dh.

8.BB.1.2 Security Protocol translation

The SCSI Security Protocol field shall be copied to the ATA Security_Protocol field.

8.BB.1.3 Security Protocol Specific translation

The SCSI Security Protocol Specific field shall be copied to the ATA SP_Specific field.

8.BB.1.4 Allocation Length translation

If the 512 increment (~~INC_512~~INC512) bit is set to one:

- a) if the Allocation Length is greater than FFFFh, then the device server shall return ~~CHECK CONDITION, with sense code XXXXX~~ a Security Protocol specific response.
- b) otherwise, the ATA Transfer_Length field shall be set to ALLOCATION LENGTH (15:0).

If the 512 increment (~~INC_512~~INC512) bit is set to zero:

- a) if the Allocation Length is greater than FFFE00h, then the device server shall return ~~CHECK CONDITION, with sense code XXXXX~~ a Security Protocol specific response.
- b) otherwise, the ATA Transfer_Length field shall be translated from bytes to a number of padded 512-byte units from the result of the following calculation:

$$\text{ATA Transfer_Length}(15:0) = (\text{Allocation Length} + ~~1~~511) / 512)$$

8.AA.2 SECURITY PROTOCOL IN data translation

The data transferred from the ATA device shall be translated as follows:

If the 512 increment (~~INC_512~~INC512) bit is set to one, then the data shall be transferred to the SCSI ~~initiator~~application client unmodified.

If the 512 increment (~~INC_512~~INC512) bit is set to zero, then the data shall be transferred to the SCSI ~~initiator~~application client unmodified, up to the specified Allocation Length number of bytes. Truncation may occur.

The device server shall complete the command with GOOD status as soon as the data transfer is complete.

8.BB SECURITY PROTOCOL OUT command

8.BB.1 SECURITY PROTOCOL OUT command translation

The SECURITY PROTOCOL OUT command shall be translated to either the ATA TRUSTED SEND command or to the ATA TRUSTED SEND DMA commands

8.BB.1.1 Opcode translation

The ATA Command field shall be set to either 5Eh or 5Fh.

8.BB.1.2 Security Protocol translation

The SCSI Security Protocol field shall be copied to the ATA Security_Protocol field.

8.BB.1.3 Security Protocol Specific translation

The SCSI Security Protocol Specific field shall be copied to the ATA SP_Specific field.

8.BB.1.4 Allocation Length translation

If the 512 increment (~~INC_512~~INC512) bit is set to one:

- c) if the SCSI Transfer Length is greater than FFFFh, then the device server shall return ~~CHECK CONDITION, with sense code XXXXX~~ a Security Protocol specific response.
- d) otherwise, the ATA Transfer_Length field shall be set to ALLOCATION LENGTH (15:0).

If the 512 increment (~~INC_512~~INC512) bit is set to zero:

- c) if the SCSI Transfer Length is greater than FFFE00h, then the device server shall return ~~CHECK CONDITION, with sense code XXXXX~~ a Security Protocol specific response.
- d) otherwise, the ATA Transfer_Length field shall be translated from bytes to a number of padded 512-byte units from the result of the following calculation:

$$\text{ATA Transfer_Length}(15:0) = (\text{SCSI Transfer Length} + ~~4~~511) / 512)$$

8.BB.2 SECURITY PROTOCOL OUT data translation

If the 512 increment (~~INC_512~~INC512) bit is set to one, then the data shall be transferred from the SCSI ~~initiator~~application client unmodified for Transfer_Length units of 512 bytes.

If the 512 increment (~~INC_512~~INC512) bit is set to zero, then the data shall be transferred from the SCSI ~~initiator~~application client, up to the specified Transfer_Length number of 512-byte units. Pad bytes shall be appended as needed to meet this requirement. Pad bytes shall have a value of 00h.

The device server shall complete the command with GOOD status as soon as the data transfer is complete.