

To: T10 Technical Committee
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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

Revision 2 (May 8, 2007) Incorporate comments from Mar. 13 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 IN command

8.BB SECURITY PROTOCOL OUT command

8.AA SECURITY PROTOCOL IN command

8.AA.1 SECURITY PROTOCOL IN command overview

The SECURITY PROTOCOL IN command provides a means for the application client to retrieve security information from a SCSI target device. ~~Table 1~~ shows a translation for fields specified in the SECURITY PROTOCOL IN CDB.

Table 1 - SECURITY PROTOCOL IN translations

Field	Description or reference
OPERATION CODE	Set to A2h. The SATL shall issue the ATA TRUSTED RECEIVE command or the ATA TRUSTED RECEIVE DMA command to the ATA device.
SECURITY PROTOCOL	8.AA.1.1
SECURITY PROTOCOL SPECIFIC	8.AA.1.2
INC_512	8.AA.1.3
ALLOCATION LENGTH	8.AA.1.3
CONTROL	6.4

8.AA.1.1 Security Protocol field

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

8.AA.1.2 Security Protocol Specific field

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

8.AA.1.3 Allocation Length field

The translation of the Allocation Length field depends on the Security Protocol.

8.AA.1.3.1 Security Protocol values 00h – 06h

If the INC_512 bit is set to one:

- a) if the Allocation Length is greater than FFFFh, then the SATL shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and the additional sense code set to INVALID FIELD IN CDB.
- b) otherwise, the ATA Transfer_Length field shall be set to ALLOCATION LENGTH (15:0). After completion of the ATA TRUSTED RECEIVE or ATA TRUSTED RECEIVE DMA command, the data shall be transferred to the SCSI application client.

If the INC_512 bit is set to zero:

- a) if the Allocation Length is greater than 1FF_FE00h, then the SATL shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and the additional sense code set to INVALID FIELD IN CDB.
- 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:

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

After completion of the ATA TRUSTED RECEIVE or ATA TRUSTED RECEIVE DMA command, the data shall be transferred to the SCSI application client up to the specified ALLOCATION LENGTH number of bytes.

8.AA.1.3.2 Security Protocol values 07h – FFh

The translation of this field is Unspecified (see 3.4.2)

8.BB SECURITY PROTOCOL OUT command

8.BB.1 SECURITY PROTOCOL OUT command overview

The SECURITY PROTOCOL OUT command provides a means for the application client to send security information to a SCSI target device. ~~Table 2~~ [Table 2](#) shows a translation for fields specified in the SECURITY PROTOCOL OUT CDB.

Table 2 - SECURITY PROTOCOL OUT translations

Field	Description or reference
OPERATION CODE	Set to B5h. The SATL shall issue the ATA TRUSTED SEND command or the ATA TRUSTED SEND DMA command to the ATA device.
SECURITY PROTOCOL	8.BB.1.1
SECURITY PROTOCOL SPECIFIC	8.BB.1.2
INC_512	8.BB.1.3
TRANSFER LENGTH	8.BB.1.3
CONTROL	6.4

8.BB.1.1 Security Protocol field

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

8.BB.1.2 Security Protocol Specific field

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

8.BB.1.3 Allocation Length field

The translation of the Allocation Length field depends on the Security Protocol.

8.BB.1.3.1 Security Protocol values 00h – 06h

If the INC_512 bit is set to one:

- a) if the SCSI Transfer Length is greater than FFFFh, then the SATL shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and the additional sense code set to INVALID FIELD IN CDB.
- b) otherwise, the ATA Transfer_Length field shall be set to ALLOCATION LENGTH (15:0). The ATA TRUSTED SEND or ATA TRUSTED SEND DMA command shall transfer the data.

If the INC_512 bit is set to zero:

- a) if the SCSI Transfer Length is greater than 1FF_FE00h, then the SATL shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and the additional sense code set to INVALID FIELD IN CDB.
- 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:

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

The final data block may be padded (see SPC-4). The ATA TRUSTED SEND or ATA TRUSTED SEND DMA command shall transfer the padded data for ATA Transfer_Length number of data blocks.

8.BB.1.3.2 Security Protocol values 07h – FFh

The translation of this field is Unspecified (see 3.4.2)