To: T10 Technical Committee
From: Mark Overby, NVIDIA Corporation (moverby@nvidia.com)
Date: 6 May 2008
Subject: T10/08-230r0 SAT-2: Translation of zero-length security commands (2)

Revision History
Revision 0 - Initial draft of document

Related Documents
SAT-2 (T10/1826-D rev 04)

1 Overview

T10, at the March plenary, voted to approve the translation of the SECURITY PROTOCOL commands into ATA commands. Subsequent to this, it has been identified that the SECURITY PROTOCOL commands permit an allocation length of zero. The corresponding ATA commands (defined in ATA8-ACS) use the DMA, PIO data-in, and PIO data-out protocols. None of these ATA protocols permit a host to transmit no data, or a device to transmit no data. Therefore, in the current translation, undefined behavior will exist on the ATA device and host when this occurs.

This proposal creates a translation between the new ATA non-data version of the security protocol related commands to acommodate translations from the SCSI versions. In additions to the new non-data command a bit field is translated in the ATA command to match if the command is being issued in response to a SECURITY PROTOCOL IN or SECURITY PROTOCOL OUT command.

2 Document Changes

2.1 Changes to SAT-2 (T10/1826-D rev 4)

8.9.3 ALLOCATION LENGTH field translation overview

The translation of ALLOCATION LENGTH varies based on the value of SECURITY PROTOCOL. If allocation length is zero, the SATL shall use the ATA TRUSTED NON-DATA command with bit 24 of the LBA field set to one, instead of TRUSTED RECEIVE or TRUSTED RECEIVE DMA.

8.10.3 TRANSFER LENGTH field translation overview

The translation of TRANSFER LENGTH varies based on the value of SECURITY PROTOCOL. If transfer length is zero, the SATL shall use the ATA TRUSTED NON-DATA command with bit 24 of the LBA field set to zero, instead of TRUSTED SEND or TRUSTED SEND DMA.