AHCI 1.3

Errata 004 Draft

AHCI 1_3 Errata_004.doc

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1 Removal of conflicting section

1.1 Description of Technical Issue

In Section 6.1.12 the specification describes how a host should behave if it receives a DMA Setup FIS without an active command slot associated with it by setting PxIS.IFS. However, Section 6.1.7 is in direct conflict of Section 6.1.12 by stating that the HBA does not do any active checking of a received DMA Setup FIS.

Section 6.1.7 was included in the original AHCI 1.0 specification. At that time no validation checking of the TAG vs. active commands was done on received DMA Setup FIS. Since then HBAs have evolved (now with better error checking) and, as such, Section 6.1.12 was added in AHCI revision 1.2. However, Section 6.1.7 was never removed (causing the conflict).

1.2 Description of Correction to Specification

Remove section 6.1.7 from the specification

~~**6.1.7 Native Command Queuing Tag Errors**~~

~~The HBA does not actively check incoming DMA Setup FISes to ensure that the PxSACT register bit for that slot is set.~~

~~The reason for this is if the device gives an incorrect tag, it could just as likely be for a tag that is active. In this case, the HBA would see no error, although the data transfer that occurs is incorrect. Therefore, there is little benefit in the HBA checking for inactive tags. Just as in the wrong active tag case, the data transfer that occurs will be incorrect.~~

~~Existing error mechanisms, such as host bus failure, or bad protocol, are used to recover from this case.~~

2 Definition Addition

2.1 Description of Technical Issue

In Section 6.1.12 the specification describes how a host should behave if it receives a DMA Setup FIS without an active command slot, however, there is no definition of what a “active command slot” is. This could lead to misinterpretation.

2.2 Description of Correction to Specification

Add definition of “active command slot” to Section 1.6

1.6 Definitions

1.6.15 active command slot

A slot, z, is considered active when PxCI[z] is set to ‘1’ by software, and remains active until PxCI[z] and PxSACT[z] are both cleared to ‘0’ by hardware indicating the command is complete. This condition is only valid if PxCMD.ST is set to ‘1’ (prior to software setting PxCI[z] is to ‘1’) and remains set to ‘1’ until after PxCI[z] and PxSACT[z] are both cleared to ‘0’ by hardware.