

NVM Express Technical Errata

Errata ID	030
Change Date	6/27/2012
Affected Spec Ver.	NVM Express 1.0c
Corrected Spec Ver.	

Submission info

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A typo in the Active Firmware Info is fixed.

LBA size encompasses LBA data size and metadata size. The text was clarified in several instances where LBA size should more properly be LBA data size.

The configuration for critical warnings in the Asynchronous Event Configuration command was updated to be 8 bits, consistent with the Health Log Page.

Description of the specification technical flaw:

Modify byte 0 of Figure 61 as shown below:

Bytes	Description
00	Active Firmware Info (AFI): Specifies information about the active firmware revision.
	Bits 7:3 are reserved.
	Bits 2:0 indicates the firmware slot that is contains the actively running firmware revision.

Modify the first paragraph of section 5.13 as shown below:

The Format NVM command is used to low level format the NVM media. This is used when the host wants to change the LBA **data** size and/or metadata size. A low level format may destroy all data and metadata associated with all namespaces or only the specific namespace associated with the command (refer to the Format NVM Attributes field in the Identify Controller data structure).

Modify bytes 25 and 26 of Figure 68 as shown below:

25	M	Number of LBA Formats (NLBAF): This field defines the number of supported LBA data size and metadata size combinations supported by the namespace. LBA formats shall be allocated in order (starting with 0) and packed sequentially. This is a 0's based value. The maximum number of LBA formats that may be indicated as supported is 16. The supported LBA formats are indicated in bytes 128 – 191 in this data structure.
		The metadata may be either transferred as part of the LBA (creating an extended LBA which is a larger LBA size that is exposed to the application) or it may be transferred as a separate contiguous buffer of data. The metadata shall not be split between the LBA and a separate metadata buffer. It is recommended that software and controllers transition to an LBA size that is 4KB or larger for ECC efficiency at the controller. If providing metadata, it is recommended that at least 8 bytes are provided per logical block to enable use with end-to-end data protection, refer to section Error! Reference source not found..
26	M	Formatted LBA Size (FLBAS): This field indicates the LBA data size & metadata size combination that the namespace has been formatted with.
		Bits 7:5 are reserved. Bit 4 if set to '1' indicates that the metadata is transferred at the end of the data LBA, creating an extended data LBA. Bit 4 if cleared to '0' indicates that all of the metadata for a command is transferred as a separate contiguous buffer of data. Bits 3:0 indicates one of the 16 supported combinations indicated in this data structure. This is a 0's based value.

Modify bits 15:00 of Figure 69 as shown below:

15:00	Metadata Size (MS): This field indicates the number of metadata bytes provided per LBA based on the LBA Data Size indicated. The namespace may support the metadata being transferred as part of an extended data LBA or as part of a separate contiguous buffer. If end-to-end data protection is enabled, then the first eight bytes or last eight bytes of the metadata is the protection information.
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Modify Figure 87 as shown below:

Figure 87: Asynchronous Event Configuration – Command Dword 11

Bit	Description
31:08 31:16	Reserved
07:00 15:00	SMART / Health Critical Warnings: This field determines whether an asynchronous event notification is sent to the host for the corresponding Critical Warning specified in the SMART / Health Information Log (refer to Figure 60). If a bit is set to '1', then an asynchronous event notification is sent when the corresponding critical warning bit is set to '1' in the SMART / Health Information Log. If a bit is cleared to '0', then an asynchronous event notification is not sent when the corresponding critical warning bit is set to '1' in the SMART / Health Information Log.

Disposition log

6/21/2012	Erratum captured.
6/27/2012	Erratum updated to remove next active firmware to a Technical Proposal.
7/31/2012	Erratum ratified.

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