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NVM Express Technical Proposal for New Feature

Technical Proposal ID	6028 – NVMe-MI Command Optional Support
Change Date	2021.02.22
Builds on Specification	NVM Express Management Interface 1.1b

Technical Proposal Author(s)

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This proposal is to align the NVMe-MI supported command with the eco-system requirements.

Revision History

Revision Date	Change Description
11/25/2020	Initial Draft
11/30/2020	Removed note 4 that was added as task group said it was not needed.
1/4/2021	Updated to Phase 3. Changed dates to 2021.
1/11/2021	Updated the description of changes.
1/14/2021	Accepted all changes and removed all comments for member review.
2/14/2021	Added comment from member review.
2/22/2021	Removed all comments, accepted all changes, and converted all references/cross-references to text.
2/22/2021	Integrated into the NVMe Management Interface Specification, Revision 1.1.

Description for NVMe-MI Changes Document

Following changes have occurred:

Feature Enhancements:

- NVMe-MI Command Optional Support
 - **Additional requirement / incompatible change** in section 5:
 - The following in-band NVMe-MI Command Set commands support has changed from mandatory to optional which is not a backwards compatible change:
 - VPD Write
 - Reset
 - The following out-of-band NVMe-MI Command Set commands support has changed from mandatory to optional which is not a backwards compatible change:
 - Read NVMe-MI Data Structure
 - Configuration Set
 - Configuration Get
 - VPD Write
 - Reset
 - References: NVMe Management Interface Specification, Revision 1.2 section 5

Description of Specification Changes

Markup Conventions:

Black: Unchanged (however, hot links are removed)
~~Red Strikethrough:~~ Deleted
Blue Underline: New
Blue Highlighted: TBD values, anchors, and links to be inserted in new text.
<Green Bracketed>: Notes to editor

Modify figure 56 and figure 57 in section 5 as follows:

5 Management Interface Command Set

...

Figure 56: Management Interface Command Set Support using an Out-of-Band Mechanism

NVMe Storage Device O/M/P ¹	NVMe Enclosure O/M/P ¹	Command
M	M	Read NVMe-MI Data Structure
M	O ³	NVM Subsystem Health Status Poll
M	O ³	Controller Health Status Poll
M	M ²	Configuration Set
M	M ²	Configuration Get
M	O ³	VPD Read
M O	O ³	VPD Write
M O	O ³	Reset
P	M	SES Receive

Figure 56: Management Interface Command Set Support using an Out-of-Band Mechanism

NVMe Storage Device O/M/P ¹	NVMe Enclosure O/M/P ¹	Command
P	M	SES Send
O	M	Management Endpoint Buffer Read
O	M	Management Endpoint Buffer Write
O	O	Vendor specific
NOTES: 1. O/M/P definition: O = Optional, M = Mandatory, P = Prohibited from being supported. An NVMe Enclosure that is also an NVMe Storage Device (i.e., implements namespaces) shall implement mandatory commands required by either an NVMe Storage Device or an NVMe Enclosure and may implement optional commands allowed by either an NVMe Storage Device or an NVMe Enclosure. 2. This command was architected for an NVMe Storage Device. The mapping of Health Status Change Configuration Identifier to an NVMe Enclosure is outside the scope of this specification. 3. This command was architected for an NVMe Storage Device. The mapping of this command to an NVMe Enclosure is outside the scope of this specification.		

Figure 57: Management Interface Command Set Support using In-Band Tunneling Mechanism

NVMe Storage Device		NVMe Enclosure		Command
O/M/P ¹	NVMe-MI Send/Receive Mapping ³	O/M/P ¹	NVMe-MI Send/Receive Mapping ³	
M O	NVMe-MI Receive	O ²	NVMe-MI Receive	Read NVMe-MI Data Structure
M	NVMe-MI Receive	O ²	NVMe-MI Receive	NVM Subsystem Health Status Poll
M	NVMe-MI Receive	O ²	NVMe-MI Receive	Controller Health Status Poll
M O	NVMe-MI Send	O ²	NVMe-MI Send	Configuration Set
M O	NVMe-MI Receive	O ²	NVMe-MI Receive	Configuration Get
M	NVMe-MI Receive	O ²	NVMe-MI Receive	VPD Read
M O	NVMe-MI Send	O ²	NVMe-MI Send	VPD Write
M O	NVMe-MI Send	O ²	NVMe-MI Send	Reset
P	n/a	M	NVMe-MI Receive	SES Receive
P	n/a	M	NVMe-MI Send	SES Send
P	n/a	P	n/a	Management Endpoint Buffer Read
P	n/a	P	n/a	Management Endpoint Buffer Write
O	Vendor Specific	O	Vendor Specific	Vendor specific
NOTES: 1. O/M/P definition: O = Optional, M = Mandatory, P = Prohibited from being supported. An NVMe Enclosure that is also an NVMe Storage Device (i.e., implements namespaces) shall implement mandatory commands required by either an NVMe Storage Device or an NVMe Enclosure and may implement optional commands allowed by either an NVMe Storage Device or an NVMe Enclosure. 2. This command was architected for an NVMe Storage Device. The mapping of this command to an NVMe Enclosure is outside the scope of this specification. 3. This column indicates whether the NVMe-MI Command is tunneled in-band using the NVMe-MI Send or NVMe-MI Receive command.				