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NVM Express Technical Proposal for New Feature

Technical Proposal ID	**4083 Persistent Event Log Context Counter**
Change Date	**2021-01-14**
Builds on Specification	**NVM Express 1.4b**
References Specification	**TP 4063**

Technical Proposal Author(s)

Name	**Company**
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This proposal is adding a generation number to the Persistent Event Log so that while a host or Management Endpoint is reading the log page, it can detect if the persistent event log reporting context changed. This change is patterned after the change made to the Host-Initiated Telemetry log page with TP 4063 Telemetry Log Enhancement.

Revision History

Revision Date	**Change Description**
2020-08-28	Initial version
2020-11-05	Reduce Generation number to two bytes. Editorial changes.
2020-11-30	Rephased last paragraph in new text in section 5.14.1.13 for clarity based on David Black suggestion. Removed some commas not needed. Changed file to state Phase 3.
2020-12-03	Accepted all changes, removed all comments, and changed filename for member review.
2021-01-05	Added the step to specifically read the PEL header before releasing the context.
2021-01-06	The list to read the Generation Numbers works for TP 4083 but will no longer be valid for TP 4086 that is adding a new Action. Austin Bolen suggested an alternate wording that works for both TP's that is included in this version for consideration.
2021-01-07	Accepted all changes as approved by Technical WG.
2021-01-11	Integrated into the NVMe Base Specification.
2021-01-14	Accepted all changes and removed all comments for ratification.

Description for NVMe 1.4 Changes Document

This technical proposal adds a context generation number to the Persistent Event Log so that a host reading the log page can determine if the context changes while the log page is being read. The context could be manipulated by another host on another controller or a BMC through a Management Endpoint.

Description of Specification Changes

Markup Conventions:

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

Modify portions of NVMe 1.4b as shown below:

Modify portions of section 5.14.1.13 and figure 215 as shown below:

5.14.1.13 Persistent Event Log (Log Identifier 0Dh)

...

The host is expected to issue a Get Log Page command with the Action field set to 02h to release the persistent event log reporting context after reading the persistent event log page data.

If the Persistent Event Log is not read with a single Get Log Page command, then host software should read the Generation Number field in the Persistent Event Log header after establishing a reporting context but before reading the remainder of the log and then re-read the Generation Number field after it has read the entire log. If the generation numbers do not match, then:

- the reporting context may have been lost while reading the log;
- the Persistent Event Log contents read may be invalid; and
- host software should re-read the log.

Figure 215: Get Log Page – Persistent Event Log (Log Identifier 0Dh)

Bytes	Description
Persistent Event Log Header	
...	
03:01	Reserved
07:04	**Total Number of Events (TNEV):** Contains the number of event entries in the log.
15:08	**Total Log Length (TLL):** Contains the total number of bytes of persistent event log page data available, including the header.
16	**Log Revision:** Contains a number indicating the revision of the Get Log Page data structure that this log page data complies with. Shall be set to 02~~1~~h.
...	

Figure 215: Get Log Page – Persistent Event Log (Log Identifier 0Dh)

Bytes	Description
371:116	**NVM Subsystem NVMe Qualified Name (SUBNQN):** This field contains the same value as reported in the NVM Subsystem NVMe Qualified Name field of the Identify Controller data structure, bytes 1023:768. If the NVM Subsystem NVMe Qualified Name field of the Identify Controller data structure is not supported, then all bytes of this field shall be cleared to 0h.
373:372 <aligned on a 2byte boundary>	**Generation Number:** Contains a value that is incremented each time a persistent event log reporting context is established and the log page returns different data than when this log page last established a reporting context. If the value of this field is FFFFh, then the field shall be cleared to 0h when incremented (i.e., rolls over to 0h).