ENDL
TEXAS

Date: 9 March 2006
To: T10 Technical Committee
From: Ralph O. Weber
Subject: More Log Page Cleanup

During the incorporation of 05-242r2, a quartet of problems that could not be handled as editorial fixes were encountered.

Revision 1 of this document incorporates the changes requested by the March CAP working group (minutes in 06-126) and changes are indicated by change bars.

Problem 1 — List Parameters Handling Not Defined When Parameter List Length is Zero

How to handle about List Parameters when the parameter list length is not specified. Modify table 92 as follows:

Table 92 — PCR bit, SP bit, and PC field meanings when parameter list length is zero (Sheet 1 of 2)

PCR bit	SP bit	PC field	Description
0b	0b	0xb	This is not an error. The device server shall make no change to any current threshold values or any current cumulative values and shall not save any values to non-volatile media.
0b	1b	00b	The device server shall make no change to any values and shall process the optional saving of current threshold values as follows: a) If the device server implements saving of the current threshold values, the device server shall save all current threshold values to non-volatile media; or b) If the device server does not implement saving of the current threshold values, the device server shall terminate the command[b].
0b	1b	01b	The device server shall make no change to any values and shall process the optional saving of current cumulative values as follows: a) If the device server implements saving of the current cumulative values, the device server shall save all current cumulative values to non-volatile media; or b) If the device server does not implement saving of the current cumulative values, the device server shall terminate the command[b].
0b	xb	10b	The device server shall set all current threshold values to the vendor specific default threshold values[a] and shall not save any values to non-volatile media.
0b	xb	11b	The device server shall set all current cumulative values to the vendor specific default cumulative values[a] and shall not save any values to non-volatile media.
1b	0b	xxb	The device server shall: 1) Set all current threshold values to the vendor specific default threshold values[a]; 2) Set all current cumulative values to the vendor specific default cumulative values[a]; ~~and~~ 3) Set all list parameters to their vendor specific default values; and 4) Not save any values to non-volatile media.

[a] Vendor specific default threshold values and vendor specific default cumulative values may be zero.

[b] The command shall be terminated with CHECK CONDITION status, with the sense key set to ILLEGAL REQUEST, and the additional sense code set to INVALID FIELD IN CDB.

18484 Preston Road, Suite 102 PMB 178, Dallas, TX 75252 214-912-1373 972-596-2775 Fx ENDL_TX@computer.org

Table 92 — PCR bit, SP bit, and PC field meanings when parameter list length is zero (Sheet 2 of 2)

PCR bit	SP bit	PC field	Description
1b	1b	00b	The device server shall process the optional saving of current threshold values as follows: a) If the device server implements saving of the current threshold values, the device server shall: 1) Save all current threshold values to non-volatile media; 2) Set all current threshold values to the vendor specific default threshold values[a]; ~~and~~ 3) Set all current cumulative values to the vendor specific default threshold values[a]. ~~and~~ 4) Set all list parameters to their vendor specific default values. or b) If the device server does not implement saving of the current threshold values, the device server shall terminate the command[b].
1b	1b	01b	The device server shall process the optional saving of current cumulative values as follows: a) If the device server implements saving of the current cumulative values, the device server shall: 1) Save all current threshold values to non-volatile media; 2) Set all current threshold values to the vendor specific default threshold values[a]; ~~and~~ 3) Set all current cumulative values to the vendor specific default threshold values[a]. ~~and~~ 4) Set all list parameters to their vendor specific default values. or b) If the device server does not implement saving of the current cumulative values, the device server shall terminate the command[b].
1b	1b	1xb	The device server shall: 1) Set all current threshold values to the vendor specific default threshold values[a]; 2) Set all current cumulative values to the vendor specific default cumulative values[a]; ~~and~~ 3) Set all list parameters to their vendor specific default values; and 4) Not save any values to non-volatile media.

[a] Vendor specific default threshold values and vendor specific default cumulative values may be zero.

[b] The command shall be terminated with CHECK CONDITION status, with the sense key set to ILLEGAL REQUEST, and the additional sense code set to INVALID FIELD IN CDB.

Problem 2 — Updating counter values

Why counters are updated is not critical to describe and might be confusing when the requirements being specified concern what application clients and device severs are allowed to do. Modify 6.5 as follows:

The current cumulative values may be updated by the device server or by the application client using the LOG SELECT command ~~to reflect the cumulative number of events experienced by the logical unit~~. The current threshold values may only be modified by the application client via the LOG SELECT command.

Problem 3 — DU Bit Definition unclear

The term 'not defined' is not a keyword. Modify 7.2.1 as follows:

The device server shall ignore the ~~The~~ DU bit ~~is not defined~~ for threshold values, indicated by the PC field (see table 199) of the LOG SENSE command, or for list parameters as indicated by the FORMAT AND LINKING field received with a LOG SELECT command. The device server shall ignore the value of the DU bit in any such log parameters received with a LOG SELECT command.

Problem 4 — Parameter Control Byte not defined for Last *n* Error Events log page

The values in the parameter control byte of the Last *n* Error Events log page are not stated. Modify 7.2.7 as follows (7.2.6 is included for reference):

7.2.6 Last *n* Deferred Errors or Asynchronous Events log page

The Last *n* Deferred Errors or Asynchronous Events log page (page code 0Bh) provides for a number of deferred errors or asynchronous events sense data records using the list parameter format of the log page. The number of these deferred errors or asynchronous events records supported, *n*, is vendor specific. Each deferred error or asynchronous event record contains SCSI sense data for a deferred error or asynchronous event that has occurred. The parameter code associated with the record indicates the relative time at which the deferred error or asynchronous event occurred. A higher parameter code indicates that the deferred error or asynchronous event occurred later in time.

The content of the PARAMETER VALUE field of each log parameter is the SCSI sense data describing the deferred error.

The DU bit, TSD bit, ETC bit, and TMC field shall be set to zero. The FORMAT AND LINKING field shall be set to 11b to indicate a binary format list parameter.

7.2.7 Last *n* Error Events log page

The Last *n* Error Events log page (page code 07h) provides for a number of error-event records using the list parameter format of the log page. The number of these error-event records supported, *n*, is vendor specific. Each error-event record contains vendor specific diagnostic information for a single error encountered by the device. The parameter code associated with error-event record indicates the relative time at which the error occurred. A higher parameter code indicates that the error event occurred later in time.

The content of the PARAMETER VALUE field of each log parameter is ASCII data (see 4.4.1) that may describe the error event. The contents of the character string is not defined by this standard.

When the last supported parameter code is used by an error-event record, the recording on this log page of all subsequent error information shall cease until one or more of the list parameters with the highest parameter codes have been reinitialized. If the RLEC bit of the Control mode page (see 7.4.6) is set to one, the command shall be terminated with CHECK CONDITION status, with the sense key set to RECOVERED ERROR, and the additional sense code set to LOG LIST CODES EXHAUSTED.

The DU bit, TSD bit, ETC bit, and TMC field shall be set to zero. The FORMAT AND LINKING field shall be set to 01b to indicate an ASCII format list parameter.