

memorandum



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To
INCITS T10 Committee

From
Curtis Ballard, HP

Subject
Cleaning error codes usage

Date
24 April, 2008

Revision History

Revision 0 – Initial document

Related Documents

smc3r11 – SCSI Media Changer Commands - 3 revision 04

spc3r23 – SCSI Primary Commands -3 revision 23

Background

The working group has requested that I prepare a proposal for a standardized usage of the CLEANING REQUESTED and CLEANING FAILURE error codes in action item 07-003. This proposal fulfills that action item.

In the proposed changes that follow, new text appears in blue or purple, deleted text appears in ~~red-strikeout~~, and editorial comments appear in green.

Proposed Changes to SMC-3

Changes to 6.11 READ ELEMENT STATUS command:

6.11 REPORT ELEMENT STATUS command

No changes to this section or sections 6.11.1 through 6.11.6 are proposed so they are not repeated here

6.11.7 Data transfer element descriptor

Table 29 defines the data transfer element descriptor

Table 29 – Data transfer element descriptor

Bit Byte	7	6	5	4	3	2	1	0
0	(MSB)	ELEMENT ADDRESS						(LSB)
1								
2	Reserved				ACCESS	EXCEPT	Reserved	FULL
3	Reserved							
4	ADDITIONAL SENSE CODE							
5	ADDITIONAL SENSE CODE QUALIFIER							
6	Obsolete	Reserved	Obsolete	Obsolete	Reserved	Obsolete		
7	Obsolete							
8	Reserved							
9	SVALID	INVERT	Reserved		ED	MEDIUM TYPE		
10	(MSB)	SOURCE STORAGE ELEMENT ADDRESS						(LSB)
11								
...								
(36 bytes)	(MSB)	PRIMARY VOLUME TAG INFORMATION (field omitted if PVOLTAG = 0)						(LSB)
(36 bytes)	(MSB)	ALTERNATE VOLUME TAG INFORMATION (field omitted if AVOLTAG = 0)						(LSB)
...								
(1 byte)	Reserved				CODE SET			
(1 byte)	Reserved				IDENTIFIER TYPE			
(1 byte)	Reserved							
(1 byte)	IDENTIFIER LENGTH (x)							
(x bytes)	IDENTIFIER							
...								
to z-1	Vendor-specific							

An ACCESS bit set to one indicates access to the data transfer element by the medium transport element is allowed. ▲An ACCESS bit set to zero indicates that access to the data transfer element by a medium transport element is denied.

An exception (EXCEPT) bit set to one indicates that the element is in an abnormal state. An exception bit set to zero indicates that the element is in a normal state. If the EXCEPT bit is set to one information on the abnormal state may be available in the ADDITIONAL SENSE CODE field and ADDITIONAL SENSE CODE QUALIFIER field.

NOTE 9 — Access to the data transfer element by medium transport elements might be denied if a data transfer operation was under way. Note that a one value in this bit may not be sufficient to ensure a successful operation. This bit only reflects the best information available to the media changer device, which may not accurately reflect the state of the data transfer device.

The ADDITIONAL SENSE CODE field may provide specific information on an abnormal element state. The values in this field are as defined for the ADDITIONAL SENSE CODE field of REQUEST SENSE command response data (see SPC-3). This field is valid only if the EXCEPT bit is set to one.

The ADDITIONAL SENSE CODE QUALIFIER field may provide more detailed information on an abnormal element state. The values in this field are as defined for the ADDITIONAL SENSE CODE QUALIFIER field of REQUEST SENSE command response data (see SPC-3). This field is valid only if the EXCEPT bit is set to one.

If the device server detects that the data transfer device is in an abnormal state, then the device server should set the EXCEPT bit to one and indicate the reason that the data transfer device is in an abnormal state in the ADDITIONAL SENSE CODE field and ADDITIONAL SENSE CODE QUALIFIER field. See table y for abnormal states that should be reported.

Table y: Data Transfer Device abnormal states

Abnormal State	ASC	ASCQ
Data transfer device has set a cleaning requested indicator	00h	17h
Data transfer device has set a cleaning failure indicator	30h	07h

The CODE SET field and IDENTIFIER TYPE field are defined in 6.11.8.

The IDENTIFIER LENGTH field contains the length in bytes of the IDENTIFIER field (see 6.11.8). If no device identifier is available, or the DVCID bit in the CDB is set to zero, the IDENTIFIER LENGTH field shall be zero and the CODE SET field and IDENTIFIER TYPE field shall also be zero.

The IDENTIFIER field provides a device identifier for the data transfer device associated with this data transfer element as defined in 6.11.8. If no device identifier is available for this element, or the DVCID bit in the CDB is set to zero, this field shall be omitted.

For fields not defined in this subclause, see 6.11.4.