

memorandum



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T10/08-201r3

To INCITS T10 Committee From Curtis Ballard, HP Subject Cleaning error codes usage

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Revision History

Revision 0 – Initial document

Revision 1 – Added model clause describing cleaning and auto-clean
Revised usage of suggested exception codes table (table y)

Revision 2 – Incorporated changes from August 6, 2008 conference call.

Removed Read Element Status return data exception bit requirement due to concerns over ISV compatibility

Revision 3 – Incorporated changes from March 2009, Oklahoma City, OK meeting.

Related Documents

smc3r12 – SCSI Media Changer Commands - 3 revision 12

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

New Model Clause section 5.6

5.6 Data Transfer Device Cleaning

5.6.1 Data Transfer Device Cleaning Introduction

A data transfer device may support being cleaned by loading a volume containing cleaning medium (see table 26). When a data transfer device that supports cleaning detects that a volume containing cleaning medium has been loaded it may automatically start the cleaning process and perform the cleaning process then unthread the medium. While a data transfer device is executing a cleaning process, access by the medium transport element may be prohibited.

5.6.2 Reporting Data Transfer Device Cleaning Requests

A medium changer may report a data transfer device cleaning request by completing a command that successfully moves or transfers a volume from the data transfer device that requires cleaning with CHECK CONDITION status. The sense key shall be set to RECOVERED ERROR and the additional sense code shall be set to CLEANING REQUESTED.

Editors note – when the new element status reporting commands are defined a clause needs added here to set a cleaning required status in the appropriate descriptors.

5.6.3 Cleaning Data Transfer Devices

An application client may clean a data transfer device by moving a volume containing a cleaning medium (see table 26) to the element containing the data transfer device. When a cleaning medium is moved to a data transfer element, then the device server shall report status upon successfully completing the move to the data transfer element.

While a data transfer device is executing a cleaning process, a command that requires access to the volume in the data transfer device may be rejected with CHECK CONDITION status. The sense key shall be set to NOT READY and the additional sense code shall be set to CLEANING CARTRIDGE INSTALLED.

Comment: Upon incorporation the editor shall request adding the 'M' bit to the CLEANING CARTRIDGE INSTALLED existing additional sense

Note: After moving a volume containing a cleaning medium to a data transfer device an application client may use the CLEANING CARTRIDGE INSTALLED additional sense data returned in response to a command that requires access to the volume in the data transfer device to monitor for cleaning completion.

When the device server detects that a cleaning process is complete, then the device server shall process a command that attempts to move a volume from the data transfer device without additional application client interaction (e.g., issue an unload command to the data transfer device). The method by which the device server detects that a cleaning operation is complete is not specified by this standard.

When the device server successfully processes a SCSI command that moves a cleaning medium from a data transfer device, then the command should return CHECK CONDITION status with the sense key set to RECOVERED ERROR, and the additional sense code set to:

- 1) CLEANING FAILURE if the device server detects a cleaning failure in the data transfer device; or
- 2) CLEANING VOLUME EXPIRED if the device server detects an expired cleaning medium.

Comment: CLEANING VOLUME EXPIRED is a new additional sense code

5.6.4 Auto-Cleaning

A media changer that reports an auto clean enabled (ACE) bit set to one in the device capabilities mode page (see 7.3.2) shall detect when a data transfer device requires cleaning and perform an auto-clean operation by automatically moving a cleaning medium to the data transfer element, and if necessary, initiating the cleaning process. When the device server detects that the cleaning process is complete, then the device server shall remove the cleaning medium from the data transfer element. A medium changer that supports auto-cleaning shall not report cleaning requests (see 5.6.2).

When processing a command that requires access to a data transfer device while a device server is executing an auto-clean operation, the device server shall

- a) complete the auto-clean operation before processing the command; or
- b) terminate the command with CHECK CONDITION status with the sense key set to NOT READY, and the additional sense code shall be set to CLEANING CARTRIDGE INSTALLED.