

T10/08-038r3 SMC-3 Use of LOGICAL UNIT NOT READY, INITIALIZING COMMAND REQUIRED error code

To: T10 Technical Committee

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Date: 28 May 2008

Subject: T10/08-038r2 SMC-3 Use of LOGICAL UNIT NOT READY, INITIALIZING COMMAND REQUIRED error code

Revision History

Revision 0 (31 December 2007): initial revision

Revision 1 (27 April 2008): incorporated comments from Rod Wideman

Revision 2 (28 May 2008): incorporated comments from SMC-3 telephone conference

Revision 3 (14 July 2008): incorporated comments from the July SMC-3 working group meeting

Related Documents

SMC3r01 - SCSI Media Changer Commands - 3 revision 9

Overview

The SMC3 WG is attempting to clarify the use of some existing error codes in the command standard to avoid misinterpretation. The error code LOGICAL UNIT NOT READY, INITIALIZING COMMAND REQUIRED is one of these error codes. This document specifies its use within media changers. Also the INITIALIZE ELEMENT STATUS command is made mandatory for media changer devices to minimize differences in the implementations of media changer command sets.

Suggested Changes to SMC-3

Proposed new text is shown in *blue*. Proposed deletions are shown in ~~red-strikeout~~.

Add definition:

3.1.x inventory scan: An action performed by a media changer where the inventory of volumes and the element address at which they may be found is determined. The inventory is determined by vendor specific methods (e.g., transport movement or optical scanning). An inventory scan may be initiated by a SCSI command and may occur at start-up or following a change that may affect the inventory of the media changer. An inventory scan may or may not scan all elements in the media changer.

Changes in paragraph 5.2.6:

5.2.6 Element status *data* maintenance requirements

~~When a media changer receives a valid READ ELEMENT STATUS command with a CURDATA bit set to zero, the media changer returns information required by each page type (e.g., full, error) as command response data. The media changer may maintain this information at all times or it may regenerate it after receiving a valid READ ELEMENT STATUS command. The optional INITIALIZE ELEMENT STATUS and INITIALIZE ELEMENT STATUS WITH RANGE commands may be used to force regeneration of this information.~~

The media changer determines element status data (see 6.11.2) during an inventory scan (see 3.1.x). The device server returns element status data upon successfully processing a READ ELEMENT STATUS command. The media changer should maintain the element status data between inventory scans.

SCSI commands that may modify the element status data are:

- a) EXCHANGE MEDIUM;
- b) MOVE MEDIUM;
- c) OPEN/CLOSE IMPORT/EXPORT ELEMENT; and
- d) SEND VOLUME TAG.

SCSI commands that perform an inventory scan are:

- a) an INITIALIZE ELEMENT STATUS command;
- b) an INITIALIZE ELEMENT STATUS WITH RANGE command; and
- c) a READ ELEMENT STATUS command with the CURDATA bit set to zero.

A READ ELEMENT STATUS command with CURDATA bit set to one shall not perform an inventory scan.

If the device server is unable to process a command due to invalid element status data, then the device server may terminate the command with CHECK CONDITION status and shall set the sense key to NOT READY and the additional sense code set to LOGICAL UNIT NOT READY, INITIALIZING COMMAND REQUIRED until element status data is valid.

Changes to table 6 in chapter 6.1

Table 6 — Commands for media changers (part 1 of 2)

Command	Operation Code	Type	Reference
ACCESS CONTROL IN	86h	O	SPC-3
ACCESS CONTROL OUT	87h	O	SPC-3
CHANGE ALIASES	A4h/0Bh ^a	O	SPC-3
EXCHANGE MEDIUM	A6h	O	6.3
INITIALIZE ELEMENT STATUS	07h	EM	6.4

...

Rest of table 6 remains unchanged

Change paragraph:

6.4 INITIALIZE ELEMENT STATUS command

The INITIALIZE ELEMENT STATUS command (see table 9) shall cause the media changer to ~~check all assigned element addresses for volume and any other status relevant to that element address~~ perform an inventory scan (see 3.1.x). The intent of this command is to enable the application client to get a quick response from a subsequent READ ELEMENT STATUS command. It may be useful to issue this command after a power failure, or if a volume has been changed by an operator, or if configurations have been changed. The device server shall not return GOOD status for this command until the inventory scan checking is complete. ~~If the elements status data is maintained, then the device server may return GOOD status for this command without performing an inventory scan.~~

Change paragraph:

6.5 INITIALIZE ELEMENT STATUS WITH RANGE command

The INITIALIZE ELEMENT STATUS WITH RANGE command (see table 10) shall cause the media changer to ~~check~~ perform an inventory scan (see 3.1.x) for the specified elements ~~s for volume status and any other relevant status range~~. The intent of this command is to enable the application client to get a quick response from a subsequent READ ELEMENT STATUS command. It may be useful to issue this command after a power failure, if a volume has been changed by an operator, or if configurations have been changed. The device server shall not return GOOD status for this command until ~~checking the inventory scan~~ is complete. ~~If the elements status data is maintained, then the device server may return GOOD status for this command without performing an inventory scan.~~

Change paragraph in chapter 6.11.1 READ ELEMENT STATUS introduction:

If the current data (CURDATA) bit is set to one, then the device server shall ~~return element status data without causing device motion~~ **not perform an inventory scan (see 3.1.x)**. If the CURDATA bit is set to zero, then the device server may ~~cause device motion~~ **perform an inventory scan** ~~to confirm element status data~~. Support for the CURDATA bit set to one is mandatory.