

T10/07-060r0 SMC-3 Processed commands during not ready state

To: T10 Technical Committee
From: Noud Snelder, BDT (noud.snelder@bdt.de)
Date: 16 January 2006
Subject: T10/07-060 SMC-3 Processed commands during not ready state

Revision History

Revision 0 (16 January 2007): initial revision

Related Documents

SMC-3 r4 - SCSI Media Changer Commands – 3, revision 4
ADC-2 r7b – Automation/Drive Interface – Commands - 2

Overview

In the ADC-2 meeting it became apparent that for the local SMC server it is not clear on which commands it may return the cached ready state. Currently SMC-3 does not specify which commands are processed during the not ready state. This proposal adds the column 'Ready state required' to table 5 that specifies the required ready state of the logical unit in order to process the command. If Ready state required is set to 'N' the logical unit shall process the command independent of the ready state. If Ready state required is set to 'Y' the logical unit shall process the command when the logical unit is ready and shall not process the command when the logical unit is not ready. If Ready state required is set to '-' the logical unit may process the command when the logical unit is not ready and shall process the command when the logical unit is ready.

Suggested changes to SMC-3

[Add definitions]

3.1.x ready state: A state where a logical unit is able to process a medium-access command without returning CHECK CONDITION status with the sense key set to NOT READY.

3.1.y offline: A state of the device server. When the device server is offline it returns CHECK CONDITION status to all commands that require the logical unit to be in the ready state.

[Add column in table 5 with label: Ready state required]

6.1 Summary of commands for media changers

The commands for media changers shall be as shown in table 5. The following operation codes are obsolete: A7h (i.e., MOVE MEDIUM ATTACHED) and B4h (i.e., READ ELEMENT STATUS ATTACHED).

Table 5 — Commands for media changers

Command	Operation Code	Ready state required	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	Y	O	6.3
INITIALIZE ELEMENT STATUS	07h	Y	O	6.4
INITIALIZE ELEMENT STATUS WITH RANGE	37h	Y	O	6.5
INQUIRY	12h	N	M	SPC-3
LOG SELECT	4Ch	-	O	SPC-3

LOG SENSE	4Dh	N	O	SPC-3
MODE SELECT (6)	15h	-	O	SPC-3
MODE SELECT (10)	55h	-	O	SPC-3
MODE SENSE (6)	1Ah	N	O	SPC-3
MODE SENSE (10)	5Ah	N	O	SPC-3
MOVE MEDIUM	A5h	Y	M	6.6
OPEN/CLOSE IMPORT/EXPORT ELEMENT	1Bh	Y	O	6.7
PERSISTENT RESERVE IN	5Eh	N	O	SPC-3
PERSISTENT RESERVE OUT	5Fh	N	O	SPC-3
POSITION TO ELEMENT	2Bh	Y	O	6.8
PREVENT ALLOW MEDIUM REMOVAL with PREVENT field set to 1h	1Eh	-	O	SPC-3
PREVENT ALLOW MEDIUM REMOVAL with PREVENT field set to 0h	1Eh	N	O	SPC-3
READ ATTRIBUTE	8Ch	-	O	6.9
READ BUFFER	3Ch	N	O	SPC-3
READ ELEMENT STATUS	B8h	N	M	6.10
RECEIVE DIAGNOSTIC RESULTS	1Ch	N	O	SPC-3
RELEASE (6)	17h	N	O	SPC-2
RELEASE (10)	57h	N	O	SPC-2
REPORT ALIASES	A3h/0Bh ^a	N	O	SPC-3
REPORT DEVICE IDENTIFIER	A3h/05h ^a	N	O	SPC-3
REPORT LUNS	A0H	N	O	SPC-3
REPORT SUPPORTED OPERATION CODES	A3h/0Ch ^a	N	O	SPC-3
REPORT SUPPORTED TASK MANAGEMENT FUNCTIONS	A3h/0Dh ^a	N	O	SPC-3
REPORT TARGET PORT GROUPS	A3h/0Ah ^a	N	O	SPC-3
REPORT VOLUME TYPES SUPPORTED	44h	N	O	6.12
REQUEST DATA TRANSFER ELEMENT INQUIRY	A3h/06h ^a	N	O	6.11
REQUEST VOLUME ELEMENT ADDRESS	B5h	N	O	6.13
REQUEST SENSE	03h	N	M	SPC-3
RESERVE (6)	16h	N	O	SPC-2
RESERVE (10)	56h	N	O	SPC-2
SEND DIAGNOSTIC	1Dh	-	M	SPC-3
SEND VOLUME TAG	B6h	Y	O	6.14
SET DEVICE IDENTIFIER	A4h/06h ^a	N	O	SPC-3
SET TARGET PORT GROUPS	A4h/0Ah ^a	N	O	SPC-3
TEST UNIT READY	00h	N	M	SPC-3
WRITE ATTRIBUTE	8Dh	Y	O	6.15
WRITE BUFFER	3Bh	Y	O	SPC-3

Key:	M	= command implementation is mandatory.
	O	= command implementation is optional.
	N	= command is processed independent of ready state
	Y	= ready state is required in order to process command
	-	= command may be processed when logical unit is not ready, the command shall be processed when the logical unit is ready
^a This command is defined by a combination of operation code and service action. The operation code value is shown preceding the slash and the service action value is shown after the slash.		

Suggested changes to ADC-2

[change last paragraph in chapter 4.4.5]

Ready state indicates whether the remote SMC device server is accessible. The remote SMC device server is not accessible if it would respond to a command with a CHECK CONDITION status with the sense key set to NOT READY. Otherwise, it is accessible. The local SMC device server may monitor the ready state of the remote SMC device server via the cache. If the ready state indicates not accessible, then the local SMC device server shall terminate commands that require the remote SMC device server to be accessible with CHECK CONDITION status [as indicated by the 'Ready state required' column in table 5 of SMC-3](#), with the sense key to NOT READY, and the additional sense code set to the additional sense code contained in the cache.