

## T10/06-442r3 SMC-3 Add PREVENT ALLOW MEDIUM REMOVAL command

To: T10 Technical Committee

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Subject: T10/06-442 SMC-3 Add PREVENT ALLOW MEDIUM REMOVAL command

### Revision History

Revision 0 (18 September 2006): initial revision

Revision 1 (2 January 2007): incorporated changes as discussed in November '06 conference call

Revision 2 (12 March 2007): removed drive medium removal condition as discussed in March '07 SMC-3 WG meeting and description in model clause about the two different medium removal condition

Revision 3 (12 April 2007): incorporated editorial changes as discussed in April '07 conference call

### Related Documents

06-248r1 – Proposal to remove PREVENT ALLOW MEDIUM REMOVAL (PARM) command from SPC-4 SMC-3 r4 - SCSI Media Changer Commands – 3, revision 4

### Overview

Since the PAMR command is removed from SPC-4 (see 06-232r0) a description of this command is required in SMC-3.

### Suggested changes to SMC-3

*Change reference to SPC-3 in table 5*

**Table 5 — Commands for media changers (part 1 of 2)**

Command	Operation Code	Type	Reference
PREVENT ALLOW MEDIUM REMOVAL	1Eh	O	6.9

*Add PREVENT ALLOW MEDIUM REMOVAL command to table 6*

PREVENT ALLOW MEDIUM REMOVAL (Prevent=0)	Allowed	Allowed	Allowed	Allowed	Allowed
PREVENT ALLOW MEDIUM REMOVAL (Prevent=1)	Conflict	Conflict	Allowed	Conflict	Conflict

*Change paragraph in chapter 6.3 EXCHANGE MEDIUM command*

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If the element address specified in the SOURCE ADDRESS field or the FIRST DESTINATION ADDRESS field of an EXCHANGE MEDIUM command represents a data transfer element and a prevention of medium removal condition (~~see SPC-3~~) exists within the data transfer device (see applicable command standard), the device server shall return CHECK CONDITION status and shall set the sense key to ILLEGAL REQUEST and the additional sense code to MEDIUM REMOVAL PREVENTED BY DATA TRANSFER ELEMENT.

Add paragraph in chapter 6.3 EXCHANGE MEDIUM command

If the element address specified in the DESTINATION ADDRESS field or the FIRST DESTINATION ADDRESS field of an EXCHANGE MEDIUM command represents an import/export element, a prevention of medium removal condition exists within the medium changer, and the MVPRV bit in the Extended Device Capabilities mode page (see 7.3.3) is set to one, then the device server shall return CHECK CONDITION status and set the sense key to ILLEGAL REQUEST and the additional sense code to MEDIUM REMOVAL PREVENTED. If the MVPRV bit is set to zero then a prevention of medium removal condition within the medium changer shall not affect the EXCHANGE MEDIUM command.

Change paragraph in chapter 6.6 MOVE MEDIUM command

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If the element address specified in the SOURCE ADDRESS field of a MOVE MEDIUM command represents a data transfer element and a prevention of medium removal condition (~~see SPC-3~~) exists within the data transfer device (see applicable command standard), the device server shall return CHECK CONDITION status and shall set the sense key to ILLEGAL REQUEST and the additional sense code to MEDIUM REMOVAL PREVENTED BY DATA TRANSFER ELEMENT.

Add paragraph in chapter 6.6 MOVE MEDIUM command

If the element address specified in the DESTINATION ADDRESS field of a MOVE MEDIUM command represents an import/export element, a prevention of medium removal condition exist within the media changer, and the MVPRV bit in the Extended Device Capabilities mode page (see 7.3.3.) is set to one, then the device server shall return CHECK CONDITION status and set the sense key to ILLEGAL REQUEST and the additional sense code to MEDIUM REMOVAL PREVENTED. If the MVPRV bit is set to zero then a prevention of medium removal condition within the medium changer shall not affect the MOVE MEDIUM command.

Insert chapter 6.9, subsequent chapters move down.

## 6.9 PREVENT ALLOW MEDIUM REMOVAL command

The PREVENT ALLOW MEDIUM REMOVAL command (see table x) requests that the media changer logical unit enable-prevents or disable-allows the removal of the medium. removal of media from the media changer. The logical unit shall not allow medium removal if any initiator port currently has medium removal prevented.

**Table x — PREVENT ALLOW MEDIUM REMOVAL command**

Bit	7	6	5	4	3	2	1	0
Byte								
0	OPERATION CODE 1Eh							
1	Reserved							
2	Reserved							
3	Reserved							
4	Reserved						PREVENT	
5	CONTROL							

Table x+1 specifies the PREVENT field values and their meanings.

**Table x+1 PREVENT field**

PREVENT	Description
00	Medium removal shall be allowed.
01	Medium removal shall be <del>prohibited</del> <u>prevented.</u>
10	Obsolete
11	Obsolete

AThe prevention of medium removal condition shall begin ~~when any application client issues on successful completion of~~ a PREVENT ALLOW MEDIUM REMOVAL command with ~~a the~~ PREVENT field ~~of set to~~ 01b from at least one I T nexus (i.e., medium removal prevented). The prevention of medium removal condition for the logical unit shall terminate after:

- a) one of the following occurs for each I\_T nexus that had previously prevented medium removal:
  - A) successful completion of a PREVENT ALLOW MEDIUM REMOVAL command with the PREVENT field set to 00b; or

- B) an I\_T nexus loss.
- b) a power on;
- c) a hard reset; or
- d) a logical unit reset.

~~If possible, the device server shall perform an synchronize cache operation before terminating the prevention of medium removal.~~ If a persistent reservation or registration is being preempted by a PERSISTENT RESERVE OUT command with PREEMPT AND ABORT service action (see SPC-3), the equivalent of a PREVENT ALLOW MEDIUM REMOVAL command with the PREVENT field set to 00b shall be processed for each I\_T nexus associated with the persistent reservation or registrations being preempted. This allows an application client to override the prevention of medium removal condition for an initiator port that is no longer operating correctly.

A device that supports the PREVENT ALLOW MEDIUM REMOVAL command shall set to one in the Extended Device Capabilities mode page (see 7.3.3) at least one of:

- a) MVPRV bit;
- b) LCKD bit; or
- c) LCKIE bit.

While a prevention of medium removal condition is in effect the media changer logical unit shall inhibit mechanisms that normally allow removal of the medium by an operator.

SMC-3 WG considers replacing the previous paragraph with the following text:

While a prevention of medium removal condition is in effect the media changer logical unit shall follow the behaviour defined by the settings of the MVPRV bit, LCKD bit, and LCKIE bit in the Extended Device Capabilities mode page.

~~While a prevention of medium removal condition is in effect the media changer logical unit shall do one or more of the following:~~

- ~~a) prevent moves with an import/export element as destination element address if the MVPRV bit is set to one in the Extended Device Capabilities mode page;~~
- ~~b) secure the media changer door(s) if the LCKD bit is set to one in the Extended Device Capabilities mode page; and/or~~
- ~~c) secure the media changer import/export element(s) if the LCKIE bit is set to one in the Extended Device Capabilities mode page.~~