To: T10 Technical Committee
From: Rob Elliott, HP (elliott@hp.com)
Date: 10 October 2005
Subject: 05-380r0 SPC-4 Mode Page Policy MLUS bit correction

Revision history
Revision 0 (10 October 2005) First revision

Related documents
spc4r02 - SCSI Primary Commands - 4 revision 02
03-316r3 - SPC-3 Mode Page Policy VPD page (Rob Elliott, HP) - incorporated into SPC-3. This proposal introduced the error - table 2 in the proposal was correct (but not destined for the standard) but the text actually requested was incorrect.
04-355r9 - Response to T10 letter ballot comments on SPC-3 (Ralph Weber, ENDL) - HP 503 changed “should be” to “is,” but didn’t catch that one of the page names was incorrect

Overview
SPC-3/4 states that the multiple logical units share (MLUS) bit is set to one for the Protocol-Specific Logical Unit mode page; it is supposed to be the Protocol-Specific Port mode page instead. It is currently worded using “is set to one” rather than “shall be set to one,” so it’s just an incorrect statement of fact, not a broken requirement.

The Protocol-Specific Logical Unit mode page contains values specific for the logical unit. It is probably not shared by multiple logical units (although it could be, particularly if all the logical units have the same peripheral device type).

The Protocol-Specific Port mode page contains values that relate to the port and don’t care about the logical unit. The values in this page are thus always shared by all logical units.

Suggested changes

7.4.8 Disconnect-Reconnect mode page

The Disconnect-Reconnect mode page (see table 252) provides the application client the means to tune the performance of the service delivery subsystem. The name for this mode page, disconnect-reconnect, comes from the SCSI parallel interface. The mode page policy (see 6.7) for this mode page shall be shared or per target port. If the SCSI target device contains more than one target port, the mode page policy should be per target port.

The Disconnect-Reconnect mode page controls parameters that affect one or more target ports. The parameters that may be implemented are specified in the SCSI transport protocol standard (see 3.1.82) for the target port. The MLUS bit shall be set to one in the mode page policy descriptor for this mode page.

The parameters for a target port affect its behavior regardless of which initiator port is forming an I_T nexus with the target port. The parameters may be accessed by MODE SENSE (see 6.9) and MODE SELECT (see 6.7) commands directed to any logical unit accessible through the target port. If a parameter value is changed, all the device servers for all logical units accessible through the target port shall establish a unit attention condition for the initiator port associated with every I_T nexus that includes the target port except the I_T nexus on which the MODE SELECT command was received, with the additional sense code set to MODE PARAMETERS CHANGED.

7.4.13 Protocol Specific Logical Unit mode page

The Protocol Specific Logical Unit mode page (see table 259) provides protocol specific controls that are associated with a logical unit.

During an I_T_L nexus, the Protocol Specific Logical Unit mode page controls parameters that affect both:

a) One or more target ports; and
b) The logical unit.

The parameters that may be implemented are specified in the SCSI transport protocol standard (see 3.1.82) for the target port. The mode page policy (see 6.7) for this mode page shall be shared or per target port and should be per target port.

The parameters for a target port and logical unit affect their behavior regardless of which initiator port is forming an I_T_L nexus with the target port and logical unit. If a parameter value is changed, the device server shall establish a unit attention condition for the initiator port associated with every I_T nexus except the I_T nexus on which the MODE SELECT command was received, with the additional sense code set to MODE PARAMETERS CHANGED.

7.4.14 Protocol Specific Port mode page

The Protocol Specific Port mode page provides protocol specific controls that are associated with a SCSI port. The page_0 format (see table 260) is used for subpage 00h and sub_page format (see table 261) is used for subpages 01h through FEh. See the SCSI transport protocol standard (see 3.1.82) for definition of the protocol specific mode parameters.

The Protocol Specific Port mode page controls parameters that affect one or more target ports. The parameters that may be implemented are specified in the SCSI transport protocol standard (see 3.1.82) for the target port. The mode page policy (see 6.7) for this mode page shall be shared or per target port. If the SCSI target device contains more than one target port, the mode page policy should be per target port.

The parameters for a target port affect its behavior regardless of which initiator port is forming an I_T nexus with the target port. The MLUS bit shall be set to one in the mode page policy descriptor for this mode page. The parameters may be accessed by MODE SENSE (see 6.9) and MODE SELECT (see 6.7) commands directed to any logical unit accessible through the target port. If a parameter value is changed, the device server for all logical units accessible through the target port shall establish a unit attention condition for the initiator port associated with every I_T nexus except the I_T nexus on which the MODE SELECT command was received, with the additional sense code set to MODE PARAMETERS CHANGED.

7.6.6 Mode Page Policy VPD page

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If the SCSI target device has more than one logical unit, a multiple logical units share (MLUS) bit set to one indicates the mode page and subpage identified by the POLICY PAGE CODE field and POLICY SUBPAGE CODE field is shared by more than one logical unit. A MLUS bit set to zero indicates the logical unit maintains its own copy of the mode page and subpage identified by the POLICY PAGE CODE field and POLICY SUBPAGE CODE field.

The MLUS bit is set to one in the mode page policy descriptors or descriptor that indicates the mode page policy for the:

a) Disconnect-Reconnect mode page (see 7.4.8); and
b) Protocol Specific ~~Logical Unit~~Port mode page (see 7.4.~~13~~14).