To: INCITS T10 Committee

From: Paul Entzel, Quantum

Date: 4 June 2007

Document: T10/07-266r0

Subject: SAM-4: No UA on NOTIFY DATA TRANSFER DEVICE command

1 Revision History

Revision 0:
Initial revision posted to the T10 web site on 4 June 2007.

2 Reference

T10/SAM-4 revision 11
T10/ADC-2 revision 7e
T10/06-475r4, ADC-2 letter ballot resolution

3 General

The ADC-2 command set provides a method to coordinate a device server within the removable medium devices to bridge commands via the ADT interface that are received through the primary ports in the removable medium device and are addressed for the SMC device server in the library. The NOTIFY DATA TRANSFER DEVICE command in the ADC-2 command set is used by an application client in a tape library to inform the ADC device server in a removable medium device within the library of change in status in the library that needs to be recognized by the SMC device server within the removable medium device. In other words, this command is used to inform a device server in a remote device of status changes that it needs to know about to properly service the library device.

Because the uses of this command normally have nothing to do with the device served by the ADC-2 device server to which the command is addressed, the ADI working group would like the command to be transparent of Unit Attentions conditions within the ADC-2 device server. That is, like INQUIRY and REPORT LUNS commands, the ADC device server would not report or clear unit attention conditions queued in the device. The description of the NOTIFY DATA TRANSFER device command in ADC-2 places this requirement on implementations, but a letter ballot comment by Ralph Weber of ENDL has asked us to proposed a change in SAM-4 also.

Proposed additions are in blue, removed text is in ~~crossed-out red~~.

4 Changes to SAM-4

Make the following changes in subclause 5.8.7 of SAM-4:

A unit attention condition shall persist on the logical unit for the SCSI initiator port port associated with each I_T nexus until the SCSI initiator port associated with the I_T nexus clears the condition. Unit attention conditions are affected by the processing of commands as follows:

a) If an INQUIRY command enters the enabled task state, the device server shall perform the INQUIRY command and shall neither report nor clear any unit attention condition;
b) If a REPORT LUNS command enters the enabled task state, the device server shall perform the REPORT LUNS command and shall not report any unit attention condition.

   If the UA_INTLCK_CTRL field in the Control mode page is set to 00b (see SPC-3), the SCSI target device shall clear any pending unit attention condition with an additional sense code of REPORTED LUNS DATA HAS CHANGED established for the initiator port associated with that

I_T nexus in each logical unit accessible by the I_T nexus on which the REPORT LUNS command was received. Other pending unit attention conditions shall not be cleared.

If the UA_INTLCK_CTRL field in the Control mode page is not set to 00b, the SCSI target device shall not clear any unit attention condition(s);

c) If a REQUEST SENSE command enters the enabled task state while a unit attention condition exists for the SCSI initiator port associated with the I_T nexus on which the REQUEST SENSE command was received, then the device server shall return GOOD status and either:
   A) Report any pending sense data as parameter data and preserve all unit attention conditions on the logical unit; or
   B) Report a unit attention condition as parameter data for the REQUEST SENSE command to the SCSI initiator port associated with the I_T nexus on which the REQUEST SENSE command was received. The logical unit may discard any pending sense data and shall clear the reported unit attention condition for the SCSI initiator port associated with that I_T nexus. If the unit attention condition has an additional sense code of REPORTED LUNS DATA HAS CHANGED, the SCSI target device shall clear any pending unit attention conditions with an additional sense code of REPORTED LUNS DATA HAS CHANGED established for the I_T nexus on which the command was received in each logical unit accessible by that I_T nexus;

   If the device server has already generated the ACA condition (see 5.8.2) for a unit attention condition, the device server shall report the unit attention condition (i.e., option c)B) above);~~ and~~

d) if the device server supports the NOTIFY DATA TRANSFER DEVICE command (see ADC-2) and a NOTIFY DATA TRANSFER DEVICE command enters the enabled task state, then the device server shall perform the NOTIFY DATA TRANSFER DEVICE command and shall neither report nor clear any unit attention condition; and

e) If a command other than INQUIRY, REPORT LUNS, ~~or~~ REQUEST SENSE, or NOTIFY DATA TRANSFER DEVICE enters the enabled task state while a unit attention condition exists for the SCSI initiator port associated with the I_T nexus on which the command was received, the device server shall terminate the commands with CHECK CONDITION status. The device server shall provide the sense data that reports a unit attention condition for the SCSI initiator port that sent the command on the I_T nexus.

   If a device server reports a unit attention condition with a CHECK CONDITION status and the UA_INTLCK_CTRL field in the Control mode page contains 00b (see SPC-3), then the device server shall clear the reported unit attention condition for the SCSI initiator port associated with that I_T nexus on the logical unit. If the unit attention condition has an additional sense code of REPORTED LUNS DATA HAS CHANGED, the SCIS target device shall clear any pending unit attention conditions with an additional sense code of REPORTED LUNS DATA HAS CHANGED established for the I_T nexus on which the command was received in each logical unit accessible by the I_T nexus. If the UA_INTLCK_CTRL field contains 10b or 11b, the device server shall not clear unit attention conditions reported with a CHECK CONDITION status.