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X3T10/96-262R0
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From: Charles Monia
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To: Kathleen McMillan
ITIC Secretariat

Subject: X3T10/96-262R0 Digital Equipment Corp. Public Review Comments on SCSI-3 Primary Commands Draft Standard (SPC) (X3T10/995D revision 10)

Dear Ms. McMillan

The following public review comments on draft standard X3T10/995D revision 10 (SCSI-3 Primary Commands) are submitted by me on behalf of Digital Equipment Corporation.

Begin Public Review Comments:

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DEC-01 (T) 7.12.1.1 Read Keys says: "The keys may have been passed by a PERSISTENT RESERVE OUT command that has performed a Register service action, a Preempt service action, or a Preempt and Clear service action."

This contradicts several other places in the standard where it is stated that only the Register service action shall set a registration key to a non-zero value. Section 7.13.1.1 "Register" is one example: "the device server shall retain the reservation key until the key is changed by a new...command with the Register service action...or until the key is reset to the default value of zero by ...".

Another example is 7.13.2 "PERSISTENT RESERVE OUT parameter list", which says: "If a PERSISTENT RESERVE OUT command specifies a Reservation key field other than the reservation key registered for the initiator, the device server shall return a CHECK CONDITION..."

If the intent in section 7.12.1.1 was to list all events that might change a registration key value (including changes to zero) then the current list is incomplete, and the text should be restated to make that intent clear.

If the intent of the standard is to require that the registration key be updated by the Preempt service action, and the Preempt and Clear service action, then these inconsistencies must be addressed. In addition, the same behavior should be stipulated by the Reserve service action. If this is not done there will be an unnecessary and confusing difference between reservations that are created with a Reserve action and those that are created with the Preempt actions.

DEC-02 (T): Table 46 "Persistent Reserve Out Service actions and valid parameters"

The column heading "Parameters" spans two columns below it, implying that each sub-column describes parameters. The sub-heading "Reservation Key Changed" is not a parameter, and it is not clear what it refers to. Based on the Persistent Reservation Proposal, 95-229 Rev.2, by Bob Snively, the heading

should read "Service Action Reservation key". (The approved revision of 95-229 is Rev. 3 but that was never distributed, so accept our apologies if Rev. 2 and Rev. 3 differ in this area.)

DEC-03 (T): Section 7.13.2 "PERSISTENT RESERVE OUT parameter list"

This section says: "The reservation key of the initiator shall be valid for all Service action and Scope values (see also table 46)." This statement is contradicted by the information in Table 46. Most likely, this sentence is referring to an additional column that was in table 6 of 95-229, but has since been removed, presumably because every entry in the column was the same: "set/expected". The sentence in 7.13.2 should be deleted.

There should be a reference to table 46 at the end of the next paragraph in Section 7.13.2, which describes the Service Action Reservation key.

DEC-04 (T): Section 7.13.1.2 "Reserve"

This section says: "A status of RESERVATION CONFLICT shall be generated for a...command...that conflicts...in scope, type, extent, or reservation key..."

This conflicts with Section 7.13.2 which says that a conflicting reservation key causes a CHECK CONDITION, ILLEGAL REQUEST.

DEC-04 (T): Section 7.13.1.3 "Reserve"

This section says that for a Reserve service action "A persistent reservation shall be tested for conflicts with other persistent reservations...". The standard is silent, however, with regard to whether this test is applied when a Preempt or a Preempt and Clear service action is attempted. What happens, for example if several initiators have a "Read Shared" reservation and one initiator Preempts another with a "Write Exclusive"? The requested reservation clearly conflicts with the reservations that are held by all the other (non-preempted) initiators. Does the request succeed? Presumably not, which suggests that text similar to 7.13.1.3 should be added to 7.13.1.5 and 7.13.1.6.

DEC-05 (T): The earlier version of SPC (Rev. 9b) and the proposal (95-229 Rev.2) contain the statement: "A PERSISTENT RESERVATION OUT command ... shall not be performed ... if there are any pending or current tasks from any initiator that conflict..." This text is missing from SPC Rev. 10. While we agree with this change, it is a substantial technical reversal that should have received some form of broad review.

Editorial comments:

DEC-06 (E): Table 41 Persistent Reservation Type Codes

In the description for code 2h "Writes Shared" there is an "any any". Remove one "any".

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DEC 07 (E): Section 7.13.1.2 "Reserve"

(Last sentence) says: "...shall take effect with the task..." It should say "when the task".

DEC 08 (E): Section 7.13.1.3

Says "where of the scope". Delete the "of".

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End Public Review Comments

Regards,
Charles Monia