ENDL
TEXAS

Date: 4 June 2003
To: T10 Technical Committee
From: Ralph O. Weber
Subject: PERSISTENT RESERVE OUT SPEC_I_PT additional parameter data

Revision History

r0 Initial proposal

Discussion

The definition of the PERSISTENT RESERVE OUT additional parameter data when the SPEC_I_PT bit is set to one incorporates the use of TransportID values based on definitions established by the Access Controls proposal.

Owing to incomplete the SPC-3 revisions available at the time 02-065r2 (the proposal containing the SPEC_I_PT bit definition) was prepared, the required usage of TransportIDs was not followed. The following table shows usage of TransportIDs envisioned by the Access Controls proposal.

Table x — Grant/Revoke ACE page format

Bit / Byte	7	6	5	4	3	2	1	0
0	PAGE CODE (00h)							
1	Reserved							
2	(MSB)	PAGE LENGTH (n-3)						
3								(LSB)
4	NOCNCL	Reserved						
5	ACCESS IDENTIFIER TYPE							
6	(MSB)	ACCESS IDENTIFIER LENGTH (m-7)						
7								(LSB)
8	ACCESS IDENTIFIER							
m								
	:							

The ACCESS IDENTIFIER TYPE field specifies the type of access identifier present in the ACCESS IDENTIFIER field, one option of which is TransportID. This construct need not be replicated in the PERSISTENT RESERVE OUT additional parameter data used when the SPEC_I_PT bit is set to one because only TransportIDs are allowed.

The ACCESS IDENTIFIER LENGTH field specifies the number of bytes in the ACCESS IDENTIFIER field. The construct should have been replicated in the PERSISTENT RESERVE OUT additional parameter data used when the SPEC_I_PT bit is set to one but was not. Inclusion of a length field is necessary to maintain the practice of having SCSI parameter data be self describing, a practice that dates back to at least SCSI-2 (almost twenty years).

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There appear to be two options for restoring the self describing nature of the PERSISTENT RESERVE OUT additional parameter data:

a) Add length fields to the PERSISTENT RESERVE OUT additional parameter data definition (see proposed change 1)
   Pro: Carries TransportID usage pattern forward from its original Access Controls heritage.
   Con: Modifies the PERSISTENT RESERVE OUT additional parameter data in a way that is hard to make backwards compatible with the format in SPC-3 r06 - r13.
   This change is believed to be possible because no implementations have used the SPEC_I_PT feature yet and because the SPEC_I_PT feature does not appear in a published standard.

b) Add a length field to the iSCSI TransportID format (see proposed change 2)
   Pro: Does not result in backwards compatibility problems in the PERSISTEN RESERVE OUT additional parameter data format.
   Con: Causes the Access Controls parameter data to have two length values for one TransportID.

Proposed Changes

Only one of the following two changes needs to be recommended for inclusion in SPC-3.

Change 1 [PERSISTENT RESERVE OUT additional parameter data]: The following changes are proposed for 6.12.3 (PERSISTENT RESERVE OUT parameter list). Warning: these changes are not backwards compatible.

Table 107 — PERSISTENT RESERVE OUT ~~specify initiator ports~~ SPEC_I_PT additional parameter data

Bit / Byte	7	6	5	4	3	2	1	0
24				TRANSPORTID PARAMETER DATA LENGTH (n - 27)				
27								
	TransportIDs list							
28				First TRANSPORTID LENGTH				
31				**backward incompatible field**				
~~28~~32				First TransportID				
				. . .				
i				Last TRANSPORTID LENGTH				
i+3				**backward incompatible field**				
i+4				Last TransportID				
n								

The TRANSPORTID PARAMETER DATA LENGTH field specifies the number of bytes of ~~TransportIDs~~ TransportID information that follows.

The command shall be terminated with a CHECK CONDITION status and the sense key set to ILLEGAL REQUEST:

a) If the value in the parameter list length field in the CDB does not include all of the additional parameter list bytes specified by the TRANSPORTID PARAMETER DATA LENGTH field; or
b) If the value in the TRANSPORTID PARAMETER DATA LENGTH field results in the truncation of a TransportID.

Each TRANSPORTID LENGTH field specifies the number of bytes in the TransportID immediately following it in the parameter data. Each TransportID length shall be at least 24 and shall be a multiple of four.

The format of a TransportID is specified in 7.5.4.

Change 2 [iSCSI TransportID format]: The following changes are proposed for 7.5.4.6 (TransportID for initiators using SCSI over Internet SCSI). Note that 03-203 is proposing other changes in 7.5.4.6 that are not fully reflected in this proposal. However, the changes in the two proposals are compatible.

Table 264 — iSCSI TransportID format

Bit / Byte	7	6	5	4	3	2	1	0
0	Reserved				PROTOCOL IDENTIFIER (5h)			
1	Reserved							
2	(MSB)			ADDITIONAL LENGTH (m-3)				
3								(LSB)
4	(MSB)			ISCSI NAME				
m								(LSB)

The ADDITIONAL LENGTH field specifies the number of bytes that follow in the TransportID. The additional length shall be at least 20 and shall be a multiple of four.

The null-terminated, null-padded (see 4.4.2) ISCSI NAME field shall contain the iSCSI name of an iSCSI initiator node (see iSCSI). The first ISCSI NAME field byte containing an ASCII null character terminates the ISCSI NAME field without regard for the specified length of the iSCSI TransportID or the contents of the ADDITIONAL LENGTH field.