Date: September 07, 2005

To: T10 Committee (SCSI)

From: George Penokie (IBM/Tivoli)

Subject: SPC-4: Allow Mode Sense Through Read Only Pesistent Reservation

1 Overview

IBM is consistently fielding complaints from the field regarding a peculiarity of the SCSI Persistent Reservation behavior. Specifically, a reservation exists on a device such that a given initiator has "Read Only" access, this initiator is returned a reservation conflict on a Mode Sense command. We believe all initiators who are allowed access to the media should be able to view mode data settings. Things such as the Q_ERR value are of particular concern for initiators accessing the media.

This proposal requests that if an initiator is permitted to read from the media, they should be given visibility to the mode data settings under which this access occurs.

2 SPC-4 changes

Table 1 — SPC commands that are allowed in the presence of various reservations (part 1 of 3)

Command	Addressed logical unit has this type of persistent reservation held by another I_T nexus				
	From any I_T nexus		From registered I_T nexus (RR all types)	From not registered I_T nexus	
	Write Excl	Excl Access		Write Excl RR	Excl Access – RR
ACCESS CONTROL IN	Allowed	Allowed	Allowed	Allowed	Allowed
ACCESS CONTROL OUT	Allowed	Allowed	Allowed	Allowed	Allowed
CHANGE ALIASES	Conflict	Conflict	Allowed	Conflict	Conflict
EXTENDED COPY	Conflict	Conflict	Allowed	Conflict	Conflict
INQUIRY	Allowed	Allowed	Allowed	Allowed	Allowed
LOG SELECT	Conflict	Conflict	Allowed	Conflict	Conflict
LOG SENSE	Allowed	Allowed	Allowed	Allowed	Allowed
MODE SELECT(6) / MODE SELECT(10)	~~Conflict~~ Allowed[b]	Conflict	Allowed	~~Conflict~~ Allowed[b]	Conflict
MODE SENSE(6) / MODE SENSE(10)	Conflict	Conflict	Allowed	Conflict	Conflict
PERSISTENT RESERVE IN	Allowed	Allowed	Allowed	Allowed	Allowed
PERSISTENT RESERVE OUT	see table 2				
Key: **Excl**=Exclusive, **RR**=Registrants Only or All Registrants, **<>** Not Equal					
[a] Exceptions to the behavior of the RESERVE and RELEASE commands described in SPC-2 are defined in 5.6.3.					
[b] Logical units claiming compliance with previous versions of this standard (e.g., SPC-2, SPC-3) may return RESERVATION CONFLICT in this case.					

Table 1 — SPC commands that are allowed in the presence of various reservations (part 2 of 3)

Command	Addressed logical unit has this type of persistent reservation held by another I_T nexus				
	From any I_T nexus		From registered I_T nexus (RR all types)	From not registered I_T nexus	
	Write Excl	Excl Access		Write Excl RR	Excl Access – RR
PREVENT ALLOW MEDIUM REMOVAL (Prevent=0)	Allowed	Allowed	Allowed	Allowed	Allowed
PREVENT ALLOW MEDIUM REMOVAL (Prevent<>0)	Conflict	Conflict	Allowed	Conflict	Conflict
READ ATTRIBUTE	Conflict	Conflict	Allowed	Conflict	Conflict
READ BUFFER	Conflict	Conflict	Allowed	Conflict	Conflict
READ MEDIA SERIAL NUMBER	Allowed	Allowed	Allowed	Allowed	Allowed
RECEIVE COPY RESULTS	Conflict	Conflict	Allowed	Conflict	Conflict
RECEIVE DIAGNOSTIC RESULTS	Conflict	Conflict	Allowed	Conflict	Conflict
RELEASE(6)/ RELEASE(10)	As defined in SPC-2 [a]				
REPORT ALIASES	Allowed	Allowed	Allowed	Allowed	Allowed
REPORT DEVICE IDENTIFIER	Allowed	Allowed	Allowed	Allowed	Allowed
REPORT LUNS	Allowed	Allowed	Allowed	Allowed	Allowed
REPORT PRIORITY	Allowed	Allowed	Allowed	Allowed	Allowed
REPORT SUPPORTED OPERATION CODES	Conflict	Conflict	Allowed	Conflict	Conflict
REPORT SUPPORTED TASK MANAGEMENT FUNCTIONS	Conflict	Conflict	Allowed	Conflict	Conflict
REPORT TARGET PORT GROUPS	Allowed	Allowed	Allowed	Allowed	Allowed
REPORT TIMESTAMP	Allowed	Allowed	Allowed	Allowed	Allowed
REQUEST SENSE	Allowed	Allowed	Allowed	Allowed	Allowed
RESERVE(6) / RESERVE(10)	As defined in SPC-2 [a]				
SEND DIAGNOSTIC	Conflict	Conflict	Allowed	Conflict	Conflict
SET DEVICE IDENTIFIER	Conflict	Conflict	Allowed	Conflict	Conflict
SET PRIORITY	Conflict	Conflict	Allowed	Conflict	Conflict
SET TARGET PORT GROUPS	Conflict	Conflict	Allowed	Conflict	Conflict
SET TIMESTAMP	Conflict	Conflict	Allowed	Conflict	Conflict
Key: **Excl**=Exclusive, **RR**=Registrants Only or All Registrants, **<>** Not Equal					
[a] Exceptions to the behavior of the RESERVE and RELEASE commands described in SPC-2 are defined in 5.6.3. [b] Logical units claiming compliance with previous versions of this standard (e.g., SPC-2, SPC-3) may return RESERVATION CONFLICT in this case.					

Table 1 — SPC commands that are allowed in the presence of various reservations (part 3 of 3)

Command	Addressed logical unit has this type of persistent reservation held by another I_T nexus				
	From any I_T nexus		From registered I_T nexus (RR all types)	From not registered I_T nexus	
	Write Excl	Excl Access		Write Excl RR	Excl Access – RR
TEST UNIT READY	Allowed[b]	Allowed[b]	Allowed	Allowed [b]	Allowed [b]
WRITE ATTRIBUTE	Conflict	Conflict	Allowed	Conflict	Conflict
WRITE BUFFER	Conflict	Conflict	Allowed	Conflict	Conflict
Key: **Excl**=Exclusive, **RR**=Registrants Only or All Registrants, **<>** Not Equal					

[a] Exceptions to the behavior of the RESERVE and RELEASE commands described in SPC-2 are defined in 5.6.3.

[b] Logical units claiming compliance with previous versions of this standard (e.g., SPC-2, SPC-3) may return RESERVATION CONFLICT in this case.

Table 2 — PERSISTENT RESERVE OUT service actions that are allowed in the presence of various reservations

Command Service Action	Addressed logical unit has a persistent reservation held by another I_T nexus	
	Command is from a registered I_T nexus	Command is from a not registered I_T nexus
CLEAR	Allowed	Conflict
PREEMPT	Allowed	Conflict
PREEMPT AND ABORT	Allowed	Conflict
REGISTER	Allowed	Allowed
REGISTER AND IGNORE EXISTING KEY	Allowed	Allowed
REGISTER AND MOVE	Conflict	Conflict
RELEASE	Allowed [a]	Conflict
RESERVE	Conflict	Conflict
[a] The reservation is not released (see 5.6.10.2).		