To: T10 Technical Committee
From: Tim Symons, PMC-Sierra (Tim_Symons@pmc-sierra.com)
Date: 2 May 2006
Subject: 06-203r2 SAS-2 SMP REPORT ZONE PERMISSION function.

Revision Information

- Revision 0 : Proposal extracted from 06-019r5 SAS-2 Zoning proposal.
- Revision 1 : Revised text
- Revision 2 : Improved definition of zone configuring bit

Referenced Document

sas2r03a Serial Attached SCSI – 2 (SAS-2) revision 3
06-019r5 SAS-2 Zoning (Tim Symons, PMC-Sierra)
06-202r2 SAS-2 SMP Configure zone permission (Tim Symons, PMC-Sierra)

Overview

SMP REPORT ZONE PERMISSION is a function that allows any management device with access permission to zone group 2 to read all or part of the ZONE PERMISSION TABLE of a zoning expander device.

[Suggested addition to SAS-2 existing text (included in black), new additional text (included in blue) and changes between revisions shown in red]

10.4.3.1 SMP function request frame format

Table 195 – SMP functions (FUNCTION **field)**

Code	SMP function	Description	Reference
		…	
03h	REPORT ZONE PERMISSION	Return zone permission table entries	10.4.3.18
		…	

10.4.3.2 SMP function response frame format

Table 197 – FUNCTION RESULT **field**

Code	Name	SMP function(s)	Description
		…	
22h	INDEXED STARTING SOURCE ZONE GROUP DOES NOT EXIST	REPORT ZONE PERMISSION	The phy specified by the STARTING SOURCE ZONE GROUP INDEX field in the SMP request frame does not exist. (e.g., the value is not within the range of 0 to 127).
		…	

10.4.3.18 REPORT ZONE PERMISSION function

The REPORT ZONE PERMISSION function returns a set of zone permission table entries. This function shall be supported by all zoning expander devices.

Table 1 defines the REPORT ZONE PERMISSION request format.

Table 1 – REPORT ZONE PERMISSION request

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (40h)							
1	FUNCTION (03h)							
2	Reserved							
3	REQUEST LENGTH (01h)							
4	Reserved							
5								
6	STARTING SOURCE ZONE GROUP INDEX							
7	NUMBER OF ZONE PERMISSION DESCRIPTORS							
8	(MSB)	CRC						
11								(LSB)

The SMP FRAME TYPE field shall be set to 40h.

The FUNCTION field shall be set to 03h.

The REQUEST LENGTH field shall be set to 01h.

The STARTING SOURCE ZONE GROUP INDEX field specifies the first source zone group, s (see table 23) to be reported. If the value in this field exceeds the end of the zone permission table then the FUNCTION RESULT field shall be set to SMP INDEXED STARTING SOURCE ZONE GROUP INDEX DOES NOT EXIST.

The NUMBER OF ZONE PERMISSION DESCRIPTORS field specifies the number of zone source groups to be reported.

The CRC field is defined in 10.4.3.2.

Table 2 defines the REPORT ZONE PERMISSION response format.

Table 2 – REPORT ZONE PERMISSION response

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (41h)							
1	FUNCTION (03h)							
2	FUNCTION RESULT							
3	RESPONSE LENGTH ((n - 7) / 4)							
4	Reserved							
5								
6	Reserved							
13								
14	STARTING SOURCE ZONE GROUP INDEX							
15	ZONE PERMISSION CONFIGURING	NUMBER OF ZONE PERMISSION DESCRIPTORS						
Zone group permission list								
8	Zone group permission descriptor (first)(see Table 3)							
23								
…	…							
n - 19	Zone group permission descriptor (last)(see Table 3)							
n - 4								
n - 3	(MSB)	CRC						
n								(LSB)

The SMP FRAME TYPE field shall be set to 41h.

The FUNCTION field shall be set to 03h.

The FUNCTION RESULT field is defined in 10.4.3.2

The RESPONSE LENGTH field indicates the number of dwords that follow, not including the CRC field.

The STARTING SOURCE ZONE GROUP INDEX field indicates the first source zone group, s (see table 23) reported in the first ZONE GROUP PERMISSION descriptor and contains the same value as the STARTING SOURCE ZONE GROUP INDEX field in the request frame.

A ZONE PERMISSION CONFIGURING bit set to one indicates that the zone permission entries are in the process of being updated at the time of reporting the data. A ZONE PERMISSION CONFIGURING bit set to zero indicates that the permission table is stable and not being updated. This bit provides status information and any response is user defined.

Editors Note: Is this an appropriate way to indicate what to do when the bit is set to one?

The NUMBER OF ZONE PERMISSION DESCRIPTORS field indicates the number of zone source groups being returned. If the zone permission entry indexed from the START SOURCE ZONE GROUP INDEX field does not exist then there shall be no ZONE GROUP PERMISSION DESCRIPTOR in the response frame.

Each zone group permission descriptor is 16 bytes long and follows the format in Table 3.

Table 3 - Zone group permission descriptor

Byte\Bit	7	6	5	4	3	2	1	0
0	ZP [s, 7] Reserved	ZP [s, 6] Reserved	ZP [s, 5] Reserved	ZP [s, 4] Reserved	ZP [s, 3]	ZP [s, 2]	ZP[s,1] = 1	ZP[s,0] = 0
1	ZP [s, 15]							ZP [s, 8]
…	…		Zone permission entries					…
15	ZP [s,127]							ZP [s, 120]

The zone permission entry descriptor contains all of the zone group permission entries for the source zone group s, referenced from the STARTING SOURCE ZONE GROUP INDEX field in the request and response frames. This information is extracted from the zone permission table (see Table 23).

The CRC field is defined in 10.4.3.2.