To: T10 Technical Committee
From: Steve Johnson LSI Logic (steve.johnson@lsil.com)
Date: 21 June 2006
Subject: 06-213r2 SAS-2 REPORT GENERAL additions for zoning and self configuration

Revision history

Revision 0 (2 May 2006) First revision
Revision 1(23 May 2006) Incorporated feedback from May 16 working group discussion.
Revision 2 (21 June 2006) Revisions accepted for inclusion June 20 meeting.

Related documents

sas2r03a - Serial Attached SCSI 2 revision 3a
06-078r0 SAS-2 Expander Route Table (REPORT EXPANDER ROUTE TABLE)
06-214r0 SAS-2 Expander Route Table (CONFIGURE EXPANDER ROUTE TABLE)
06-189r0 SAS-2 Allow table-to-table expander attachment

Overview

Add the following new field and bit to the SMP REPORT GENERAL response:

1) ZONING ENABLED bit
2) NUMBER OF EXPANDER ROUTE TABLE ENTRIES field

The zoning enabled bit indicates that the expander has zoning enabled or not. This bit is not configurable via SMP and the scope of enabling and disabling zoning on any given expander is outside the scope of the spec.

The NUMBER OF EXPANDER ROUTE TABLE ENTRIES field specifies the number of route entries for the expander route table. The expander route table is a single route table for all phys in the expander. The route table does not have to be programmed in any specific order and is aligned with actual expander HW implementations i.e. (a single list, with addresses associated to phys). See proposals 06-078 REPORT EXPANDER ROUTE TABLES and 06-214 CONFIGURE EXPANDER ROUTE TABLE for the SMP functions that will use this field and more details about the expander route table.

Suggested changes

Add the following new field and bit to the SMP REPORT GENERAL response:

1) ZONING ENABLED bit
2) NUMBER OF EXPANDER ROUTE TABLE ENTRIES field

Table 1 defines the response format.

Table 1 — REPORT GENERAL response

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (41h)							
1	FUNCTION (00h)							
2	FUNCTION RESULT							
3	RESPONSE LENGTH (09h)							
4	(MSB)	EXPANDER CHANGE COUNT						
5								(LSB)
6	(MSB)	EXPANDER ROUTE INDEXES						
7								(LSB)
8	Reserved							
9	NUMBER OF PHYS							
10	Reserved						CONFIGURING	CONFIGURABLE ROUTE TABLE
11	Reserved							
12		ENCLOSURE LOGICAL IDENTIFIER						
19								
20		Reserved						
29								
30	(MSB)	STP BUS INACTIVITY TIME LIMIT						
31								(LSB)
32	(MSB)	STP MAXIMUM CONNECT TIME LIMIT						
33								(LSB)
34	(MSB)	STP SMP I_T NEXUS LOSS TIME						
35								(LSB)
36	Reserved							ZONING ENABLED
37	Reserved							
38	(MSB)	NUMBER OF EXPANDER ROUTE TABLE ENTRIES						
39								(LSB)
40	(MSB)	CRC						
43								(LSB)

If the management device server supports the REPORT EXPANDER ROUTE TABLE and the CONFIGURE EXAPNDER ROUTE TABLE functions then the EXPANDER ROUTE INDEXES shall be set to zero.

The RESPONSE LENGTH field shall be set to 09h. For compatibility with previous versions of this standard, a RESPONSE LENGTH field set to 00h specifies that there are six dwords before the CRC field.

A ZONING ENABLED bit set to one indicates that zoning is enabled in the expander device. A ZONING ENABLED bit set to zero indicates that zoning is disabled in the expander device.

The NUMBER OF EXPANDER ROUTE TABLE ENTRIES field contains the number of route indexes in the expander route table. A management device server that does not support the REPORT EXPANDER ROUTE TABLE and the CONFIGURE EXPANDER ROUTE TABLE functions shall set this field to zero.