To: T10 Technical Committee
From: Tim Symons, PMC-Sierra (Tim_Symons@pmc-sierra.com)
Date: 28 Aug 2006
Subject: 06-288r6 SAS-2 SMP ZONE ACTIVATE function

Revision Information

- Revision 0: First draft.
- Revision 1: Revisions to align with zone management client lock, load, activate and unlock procedure discussed and Denver face to face.
- Revision 2: Added usage for CONFIGURING bit and function result information.
- Revision 3: Removed time-out references as these belong in the time-out proposal (06-326). Moved Broadcast operation to the Zone Lock Release function. (06-289)
- Revision 4: Revised function name and moved description to the model definition (06-358)
- Revision 5: Name changed to SMP ZONE ACTIVATE.
- Revision 6: Added EXPECTED EXPANDER CHANGE COUNT field. Text changes agreed at Seattle working group meeting

Referenced Document

sas2r05a Serial Attached SCSI – 2 (SAS-2) revision 5a
06-201r5 SAS-2 SMP Configure phy zone (Tim Symons, PMC-Sierra)
06-202r6 SAS-2 SMP Configure zone permission (Tim Symons, PMC-Sierra)
06-203r5 SAS-2 SMP REPORT ZONE PERMISSION (Tim Symons, PMC-Sierra)
06-286r4 SAS-2 SMP ZONE LOCK (Tim Symons, PMC-Sierra).
06-288r5 SAS-2 SMP ZONE ACTIVATE function (Tim Symons, PMC-Sierra)
06-289r4 SAS-2 SMP ZONE UNLOCK (Tim Symons, PMC-Sierra)

Overview

The active zone manager uses the SMP ZONE ACTIVATE function to make the zoning expander shadow register values active.

[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 196 – SMP functions (FUNCTION **field)**

Code	SMP function	Description	Reference
		…	
87h	ZONE ACTIVATE	The zoning expander device sets the zoning expander active values equal to the zoning expander shadow values.	10.4.3.xx
		…	

Editors Note: Suggestion: 85h-8Fh could be assigned to zoning functions:
85h: ZONE BROADCAST (already defined)
86h: SMP ZONE LOCK
87h: SMP ZONE ACTIVATE
88h: SMP ZONE UNLOCK
89h: Reserved for zoning SMP functions
8Ah: CONFIGURE PHY ZONE
8Bh: CONFIGURE ZONE PERMISSION

8Ch – 8Fh: Reserved for zoning SMP functions

10.4.3.2 SMP function response frame format

Table 198 – FUNCTION RESULT **field**

Code	Name	SMP function(s)	Description
...			
04h	INVALID EXPANDER CHANGE COUNT	… ZONE ACTIVATE	The management device server supports the SMP function, but the EXPECTED EXPANDER CHANGE COUNT field does not match the current expander change count. The ADDITIONAL RESPONSE BYTES may be present but shall be ignored.
...			
xxh	ZONE LOCK VIOLATION	… ZONE ACTIVATE.	A zoning expander device that is zone locked, receives SMP zone configuration functions from a source that is not the active zone management client, or when the zoning expander device is not locked.
...			

…

Table xx - Function result priority per SMP Function

SMP Function (per table 197)	SMP Function Result Priority
...	
ZONE ACTIVATE	1) INVALID REQUEST FRAME LENGTH 2) ZONE LOCK VIOLATION 3) INVALID EXPANDER CHANGE COUNT 4) SMP FUNCTION FAILED 5) SMP FUNCTION ACCEPTED
...	

…

Start of new definitions. Changes between revisions are shown in red
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10.4.3.xx ZONE ACTIVATE function

All zoning expander devices shall support this function. If a zoning expander device receives a ZONE ACTIVATE request from the active zone manager, then the zoning expander device shall set the zoning expander active values equal to the zoning expander shadow values.

The ZONE ACTIVATE request format is defined in Table 1.

Table 1 – ZONE ACTIVATE request

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (40h)							
1	FUNCTION (87h)							
2	Reserved							
3	REQUEST LENGTH (01h)							
4	(MSB)		EXPECTED EXPANDER CHANGE COUNT					
5								(LSB)
6			Reserved					
7								
8	(MSB)		CRC					
11								(LSB)

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

The FUNCTION field shall be set to 87h.

The REQUEST LENGTH field shall be set to (00).

The EXPECTED EXPANDER CHANGE COUNT field is defined in 10.4.3.3

The CRC field is defined in 10.4.3.1.

The ZONE ACTIVATE response format is defined in Table 2.

Table 2 – ZONE ACTIVATE response

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (41h)							
1	FUNCTION (87h)							
2	FUNCTION RESULT							
3	RESPONSE LENGTH (00h)							
4	(MSB)		CRC					
7								(LSB)

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

The FUNCTION field shall be set to 87h.

The FUNCTION RESULT field is defined in 10.4.3.2

The RESPONSE LENGTH field shall be set to 00h.

The CRC field is defined in 10.4.3.2.