

T10/06-288r1 SAS-2 SMP ACTIVATE ZONE LOCKED UPDATE function.

To: T10 Technical Committee
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 Date: 19 June 2006
 Subject: 06-288r1 SAS-2 SMP **ACTIVATE ZONE LOCKED UPDATE** 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.**

Referenced Document

Sas2r04 Serial Attached SCSI – 2 (SAS-2) r4
 06-286r0 SAS-2 Registered Zone Management client.

Overview

When the active zone management client has completed all zone updates and received SMP FUNCTION ACCEPTED from all zoning expander devices in the ZPSDS it shall activate the changes. The activate function causes each zoning expander device to make the shadow zone permission table active. This proposal defines the ACTIVATE ZONE UPDATE functions.

10.4.3.1 SMP function request frame format

Table 196 – SMP functions (FUNCTION field)

Code	SMP function	Description	Reference
...			
84h	ZONE LOCK	A zone management client sends the ZONE LOCK request to all zoning expanders in the ZPSDS. The zoning expander device shall register the ZONE LOCK ADDRESS and set the zone lock bit to one.	10.4.3.xx
85h	ACTIVATE ZONE LOCKED UPDATE	The zoning expander device shall make the shadow register data operational.	10.4.3.xx
86h	ZONE LOCK RELEASE	The zoning expander device shall set the zone lock bit to zero.	10.4.3.xx
...			

10.4.3.2 SMP function response frame format

Table 198 – FUNCTION RESULT field

Code	Name	SMP function(s)	Description
...			
21h	ZONE LOCK VIOLATION	ZONE LOCK ADDRESS	The zoning expander device received an ACTIVATE ZONE UPDATE from a source that is not the ZONE LOCK ADDRESS device
...			

10.4.3.xx ACTIVATE ZONE UPDATE function

The following are SMP zone locked functions and shall only be issued when the zoning expander device is locked:

- a) SMP CONFIGURE ZONE PERMISSION TABLE request; and
- b) SMP CONFIGURE PHY ZONE request.

The zoning expander device shall store the requested changes in shadow registers. The shadow register information shall not be operational until an ACTIVATE ZONE UPDATE request is received from the active zone management client.

The zone management client shall only originate an ACTIVATE ZONE UPDATE request when all of the zoning expander devices have returned an SMP FUNCTION ACCEPTED response to requested changes.

Time-out

During a [tbd] time-out period after receiving a SMP FUNCTION ACCEPTED response to the SMP zone locked function requests, the zone management client shall originate an ACTIVATE ZONE UPDATE request to the zoning expander devices.

If a [tbd] timeout occurs then the shadow zone permission table shall be ignored and the zoning expander device shall the ZONE LOCKED bit to zero (see 10.4.3.3 – Proposal 06-286r0) to unlock the zoning expander. A BROADCAST (Change) shall be sent to the zone management client device.

Event results

The ACTIVATE ZONE UPDATE request shall only be originated by a zone management client that has received an SMP FUNCTION ACCEPTED response to an SMP CONFIGURE ZONE PERMISSION request from all zoning expander devices in the ZPSDS.

When an ACTIVATE ZONE UPDATE request causes any change to a zone group then the zoning expander device shall:

- a) originate a BROADCAST (Change) on each expander port that has access permission to the zone group before the change, and after the change based on the zone permission table; or
- b) originate a BROADCAST (Change) to zone group 1 on all ports.

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The ACTIVATE ZONE UPDATE request format is defined in Table 1.

Table 1 – ACTIVATE ZONE UPDATE request

Byte\Bit	7	6	5	4	3	2	1	0	
0	SMP FRAME TYPE (40h)								
1	FUNCTION (84h)								
2	Reserved								
3	REQUEST LENGTH (00)								
4	(MSB)	CRC							
7								(LSB)	

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

The FUNCTION field shall be set to 84h.

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

The CRC field is defined in 10.4.3.2.

The ACTIVATE ZONE UPDATE response format is defined in Table 2.

Table 2 – ACTIVATE ZONE UPDATE response

Byte\Bit	7	6	5	4	3	2	1	0	
0	SMP FRAME TYPE (41h)								
1	FUNCTION (84h)								
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 84h.

When a zoning expander device receives an ACTIVATE ZONE UPDATE request then:

- 1) if the originating device does not have access to zone group 2 then the FUNCTION RESULT field shall contain ZONE VIOLATION (see 10.4.3.2);
- 2) if the originating device SAS address does not match the ZONE LOCK ADDRESS then FUNCTION RESULT field shall contain ZONE LOCK VIOLATION (see 10.4.3.2); and
- 3) if the originating device SAS address matches the ZONE LOCK ADDRESS then FUNCTION RESULT field shall contain SMP FUNCTION ACCEPTED (see 10.4.3.2).

The RESPONSE LENGTH field shall be set to 00h.

The CRC field is defined in 10.4.3.2.