

T10/06-288r3 SAS-2 SMP ACTIVATE ZONE LOCKED UPDATE function.

To: T10 Technical Committee
From: Tim Symons, PMC-Sierra (Tim_Symons@pmc-sierra.com)
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Subject: 06-288r3 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.
- 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)**

Referenced Document

Sas2r04 Serial Attached SCSI – 2 (SAS-2) r4
06-286r0 SAS-2 Registered Zone Management client.
06-304r0 SAS 2.0 SMP Function Result Priority (Zenta Darnell, Vitesse)
06-289r3 SAS-2 SMP ZONE LOCK RELEASE (Tim Symons, PMC-Sierra)
06-326r0 SAS-2 SMP Zone Lock Timer (Tim Symons, PMC-Sierra)

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 **by originating the ACTIVATE ZONE LOCKED UPDATE request to all locked zoning expander devices**. The activate function causes each zoning expander device to make the shadow zone permission table active.

If the active zone management application client receives an error from any of the locked zoning expander devices during configuration changes, the configuration request may be abandoned, then the active zone management client, may not originate an ZONE LOCKED RELEASE request without originating an ACTIVATE ZONE LOCKED UPDATE request. All the shadow registers are ignored.

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
85h	ACTIVATE ZONE LOCKED UPDATE	The zoning expander device shall make the shadow register data operational.	10.4.3.xx
...			

10.4.3.2 SMP function response frame format

Table 198 – FUNCTION RESULT field

Code	Name	SMP function(s)	Description
...			
20h	SMP ZONE VIOLATION	CONFIGURE GENERAL, ZONED BROADCAST, PHY CONTROL, PHY TEST FUNCTION, CONFIGURE PHY EVENT INFORMATION, ZONE LOCK, ACTIVATE ZONE LOCKED UPDATE, ZONE LOCK RELEASE	The SMP target port supports the function, but zoning is enabled and the SMP initiator port does not have access to a necessary zone group according to the zone permission table (see 4.8.3.2).
21h	ZONE LOCK VIOLATION	CONFIGURE PHY ZONE, CONFIGURE ZONE PERMISSION, ZONE LOCK, ACTIVATE ZONE LOCKED UPDATE, ZONE LOCK RELEASE	A zoning expander device that is zone locked, receives an SMP zone locked request function 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
...	
ACTIVATE ZONE LOCKED UPDATE	1) INVALID REQUEST FRAME LENGTH 2) SMP ZONE VIOLATION 3) ZONE LOCK VIOLATION 4) SMP FUNCTION FAILED 5) SMP FUNCTION ACCEPTED
...	

...

10.4.3.xx ACTIVATE ZONE UPDATE function

When a zone locked configuration request is originated (i.e. SMP CONFIGURE ZONE PERMISSION TABLE function, SMP CONFIGURE PHY ZONE function), and the zoning expander devices are locked then 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. When a zoning expander device receives the ACTIVATE ZONE UPDATE request the CONFIGURING bit shall be set to one.

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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 10.4.3.1.

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.

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 10.4.3.1.